

A Catalogue of Primates in the Singapore *Zoological Reference Collection*

Department of Zoology
National University of Singapore
(Formerly the Zoological Collection
of the Raffles Museum)



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Painting: The type of *Presbytis potenziani* figured by W. Peters, *Monatsberichte der Königl. Preussischen Akad. der Wissensch.*, Berlin 1879:829-32. Of doubtful origin, the skin was discovered in Berlin and described by Bonaparte in 1856, forty years before its home was found in the Mentawai Islands, off West Sumatra. In the days before the Raffles Museum Collection, very little was known of the animal life in some corners of South-east Asia.

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Introduction

The Zoological Reference Collection (ZRC) of the National University of Singapore originated from the natural history collection of the former Raffles Museum in Singapore. The Raffles Museum was first established in 1849 as a museum of anthropology and natural history and was renamed the National Museum of Singapore in 1961. After 1972, it became a museum of ethnology, history and art of Singapore and her surrounding region. As a result of these changes, some of the mounted zoological specimens were donated to the Singapore Science Centre for display purposes and the entire zoological reference collection was transferred to the then University of Singapore and housed at various locations. The collection is now housed in the Department of Zoology at the National University of Singapore, Kent Ridge, where it is provided with 24-hour air conditioning and controlled humidity.

Before the Raffles Museum building in Stamford Road was completed in 1887, little effort was made to build a large zoological collection because of the lack of space. Specimens were mostly received as donations from the public or as dead animals sent from the then Zoological Department of the Botanic Gardens on Fort Canning Hill; a few were purchased. Since then, the collection has been gradually built up through many expeditions to the Malay Peninsula, Thailand, the Indochina region, Sumatra, Java, Borneo and their adjacent islands by curators and directors of the Raffles Museum and the Federated Malay State Museums (i.e. the Selangor Museum in Kuala Lumpur and the Perak Museum in Taiping). The major collectors were H.C. Robinson, C.B. Kloss, F.N. Chasen, M.W.F. Tweedie, C.A. Gibson-Hill, J.C. Moulton, R. Hanitsch, C. Dover and N. Smedley.

Besides collections made by expeditions, the Raffles Museum also exchanged specimens with other museums. For example, in 1926 when H.C. Robinson retired from his directorship of the Federated Malay States Museums, the reference collection (mainly birds and mammals) of the Selangor Museum was moved to Singapore in exchange for the insect collection of the Raffles Museum (Kloss, 1928; Gibson-Hill, 1949b). Other valuable collections were also received by the museum; for example, Baram (Sarawak) specimens were donated by C. Hose and E. Banks; Tenasserim (Burma) specimens by G.C. Shortridge; specimens from Thailand by C.J. Aagaard; specimens from Rhio and Lingga Archipelagos by W.L. Abbott; and specimens from Singapore and Malaysia by H.N. Ridley.

At present, the ZRC holds about 155,000 specimens, including 15,000 mammals, 30,000 birds, 6,000 reptiles and amphibians, 26,000 fishes, 20,000 mollusks, 25,000 crabs, 10,000 prawns, 10,000 insects and 13,000 other invertebrates. These specimens also include collections of D.S. Johnson, J.L. Harrison, the Singapore Marine Fisheries Research Department, former Nanyang University and University of Singapore.

Although recorded as in the Raffles Museum, many specimens cannot presently be located. Some of these specimens were probably exchanged for other specimens, given to other museums as gifts or loaned but not returned. Unfortunately, there are no records of these transactions. Some specimens are believed to have been lost during the Japanese occupation of Singapore. It is also believed that some specimens and the greater part of F.N. Chasen's manuscripts and notes were destroyed when his ship was sunk as a result of enemy action while leaving Singapore for London in 1941.

This catalogue lists all the primates found in the ZRC. The 878 specimens include 52 *Pongo*, 182 *Hylobates*, 7 *Pygathrix*, 35 *Nasalis*, 162 *Presbytis*, 175 *Trachypithecus*, 228 *Macaca*, 4 *Tarsius* and 33 *Nycticebus*. The majority of these specimens have been examined, described or listed by Kloss (1911-1931), Chasen (1924-1940), Robinson (1910-1921) and others. Many new races of Malaysian primates were named by them during those periods. However, most of the holotypes are deposited in other museums e.g. British Museum of Natural History (Gibson-Hill, 1949a). Some paratypes are deposited in the Singapore collection.

The taxonomy of primates listed in this catalogue does not follow Kloss and Chasen's classifications. However, their identifications are still indicated in the column under 'terms' in the inventory since their work has proved invaluable to understanding mammal systematics and distribution in this region.

Explanation of Tables

A few abbreviations have been used to reduce the size of the tables; the names of collectors and of the authors of references are initialised and a **List** and **Key** to names is at the end of the catalogue (see also the **Bibliography**).

Categories are listed across the top of each page of the catalogue; an explanation of each heading is listed in order as follows:

The ZRC (Zoological Reference Collection) Number: The numbering scheme applied to the collection in the present reorganisation and inventory of the entire zoological collection. This catalogue is an annotated inventory of the eight hundred and seventy-eight primate specimens currently held in the collection (excluding the tree shrews which are no longer placed among the primates).

Sex: 'm'ale, 'f'emale or 'un'known.

Age: Two standards of age determination were applied, depending on the completeness of information. If a skin only was present, age was determined by the size of the skin; 'in'fant, 'juv'enile, 'subad'ult, 'ad'ult, designating the discernible groupings. However these are rough characterisations. A more accurate estimate of the age of a specimen can be made, for specimens with a skull, by examining dental eruption sequence, usually of the maxillary molars. The latest molar fully erupted in the dental arcade is given in the catalogue. Except for the prosimians, all Old World monkeys and apes have two deciduous and three permanent molars (barring irregular variation). If the animal has only deciduous (milk) molars (**dm1**, **dm2**), the specimen is an infant; permanent molars (**M1**, **M2**, **M3**) erupt as the animal grows through juvenile and subadult stages, **M3** coming into occlusion near adulthood.

Dates: The day/month/year of collection.

Verification: If there exist other records in addition to specimen tags, 'y'es, otherwise 'n'o. Such records consist of Selangor Museum catalogue cards from 1906 to 1922, ledger size registers of accession from the Raffles Museum, covering the same period, and a series of field records, mostly in bound octavo note books, very incomplete but covering the period from about 1910 to 1940. These are all that we could find of the official records of these museums. References verified in literature are recorded in footnotes. If a given reference is a type description, it is followed by the letter 'T'; if only measurements are given, the reference is followed by an 'M'.

Other Numbers: Any other numbers relating to a given specimen are included in the catalogue; some low-digit numbers (eg. 1 through 100) appear to have been assigned by tanners or preparators, others may be the numbers assigned by the collector when he initially took the specimen (we have deduced from existing records that this was a number to be later exchanged for a 'collector's number' upon return to

camp or in the museum). Numbers preceded by a museum code are most important as they are essentially accession numbers; 'KM' = Sarawak Museum, Kuching; 'SM' = Selangor Museum, Kuala Lumpur; 'PM' = Perak Museum; 'RM' = Raffles Museum, Singapore. There is also a specimen on exchange from the 'US' National Museum, the Smithsonian Institution in Washington, D.C. For SM numbers (after 1904), the year of accession is given in the two digits following a stroke '/'; this was not known to some zoologists working on the collection. A number of the older specimens, most of them mounted, had red bordered tags and were evidently specimens on display when the collection was housed at the Raffles Museum. We have identified these by preceding the number with the § character.

Unit of Measure: 'm' millimetres or 'i' – inches.

Collector's Measurements: These flesh measurements were taken from the freshly killed specimen by the collector and recorded in field notes. The almost universal set of measurements taken on mammals are; 'total' length of the specimen, including the tail; 'head and body' length excluding tail length; 'hind foot' length is taken from the tip of the longest digit to the proximal end of the calcaneus bone; 'ear' length is often excluded from measurements of primates. Usually, either the total length or the head and body length is given, not both since only one need be measured, along with tail length, to give the other. Measurements are also given in the literature, and where these are not otherwise known, we have added them to the catalogue.

Added Measures: These were also taken on fresh specimens; descriptions are found in footnotes. The descriptions for some of these measurements are poor; we have decided to let the reader decide what they mean. One early alternative way of taking head and body length was to measure from the tip of the nose to the pubic symphysis; wherever we find the measure taken in this way, we have placed it in this category rather than in the previous one.

Terms: We have provided under the main listing, a revision of names; we, as other reviewers, have chosen to sink some terms applied to these specimens. Such terms are nonetheless important, as they elucidate the approach of earlier curators and revisors of the collection. Those names were either proposed or named by C.B. Kloss or F.N. Chasen. We therefore include the more important ancillary terms in this column. In addition, the nature of the colouration of the specimen is of some importance, and this is also listed here.

Type: A number of specimens are part of a type series, or 'P'aratypes. A single 'H'olotype remains in the collection, that of *Macaca siamica*, now recognised to be a synonym for *M. mulatta* (J. Fooden, pers. comm. to VW).

The collection holds 13 paratypes:

Presbytis nemaeus moi Kloss, 1926

Simias concolor siberu Chasen and Kloss, 1927
Presbytis neglecta keatii Robinson and Kloss, 1911
Pithecus potenziani siberu Chasen and Kloss, 1927
Presbytis cristatus pullata Thomas and Wroughton, 1909
Presbytis germaini mandibularis Kloss, 1916
Pithecus laotum Thomas, 1921
Pithecus obscurus seimundi Chasen, 1940
Presbytis obscurus styx Kloss, 1911
Presbytis argenteus Kloss, 1919
Macaca irus atriceps Kloss, 1919
Macaca irus argentimembris Kloss, 1911
Macaca irus condorensis Kloss, 1926

Inventory: Four single-character entries represent the presence 'y' or absence 'n' respectively of a skin, calvarium, mandible and any postcranial remains for each specimen. Footnotes indicated after the inventory are from notes on specimen labels or else editorial comments.

An extensive **Gazetteer** was prepared to accompany this catalogue; whenever possible, localities are recorded from literature, and both older and more modern versions of place names are given to avoid confusion. Geographical coordinates have been checked as closely as possible against published and unpublished references as well as by a rather elaborate reconstruction of itineraries. For locality names, we have generally adopted the roman orthography of the U.S. Air Force and U.S. Board of Geographic Names gazetteers. The gazetteer is presented so as to be compatible with Fooden (1975).

With the exception of the leaf monkeys, where the order of authorship is reversed, introductory taxonomic annotations are by C.P. Groves and Vern Weitzel, who appreciate this opportunity to work with our colleagues in Singapore.

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We are also mindful of the fine work of earlier scientists, including H.C. Robinson, C.B. Kloss, F.N. Chasen, C.A. Gibson-Hill and many others: the collectors, preparators, curators, academics and administrators who have shown us so much of the zoology of this most beautiful region of the world through the window of the Zoological Reference Collection.

Genus *Pongo*

Large-bodied great ape; marked sexual dimorphism; intermembral index 135 to 150; long reddish fur; face bare, bluish black; males develop cheek flanges, very large in one subspecies; laryngeal sac in males; neurocranium high, rounded; brow ridges lacking or small, not formed into a torus; large lower face; prognathous; facial profile concave; mandible massive; upper central incisors large; molars bunodont, crenellated with thick enamel. Humerus about as long as radius; hands wide with very reduced pollex; short legs; foot curled medially during progression, not plantar as in African pongids and *Homo*.

There exists a single species of Asian great ape, divided into two well differentiated subspecies. However, Andrews (1984), reviewing the collection of papers on genetic and behavioural variation in *Pongo*, edited by de Boer (1982), concludes that these varieties could differ specifically.

The proper terminology for the great apes has been the source of a great deal of debate, which we would have hoped was settled by Opinion 114 of the International Commission on Zoological Nomenclature (Stiles, 1929); the common understanding of this Opinion being that the prior terms *Simia* and *S.satyru*s were to be suppressed and replaced on the Official List of Names by *Pongo* and *Pongo pygmaeus*, as was suggested by Stiles (1926, 1927), who prepared the supporting arguments.

However, Röhrer-Ertl (1983, 1984) correctly pointed out that, although the prior names were suppressed, no substitutes were selected for the Official List. Röhrer-Ertl would resurrect *satyrus* in conjunction with the genus name *Pongo*, arguing that *satyrus* has only been invalidated in conjunction with the genus name *Simia*. Noting this controversy, we have elected to remain with current terminology, correcting an earlier work (Groves, 1971b) in finding the author of the thesis of Hoppius to be Linnaeus, and the date of publication is given on the cover as 1760.

Pongo pygmaeus (Linnaeus, 1760)

Elliot (1913) was convinced that there existed such great variability among individuals that he did not believe himself justified in differentiating between the Sumatran and Bornean forms of *Pongo pygmaeus*, but Chasen (1940) detailed significant infraspecific variability between islands, giving each subspecific rank.

Thus, according to current nomenclature, the nominotypical subspecies is from Kalimantan, while *P.p.abelii* occurs in northern Sumatra.

Röhrer-Ertl (1984) gives information supporting Elliot's (1913) suggestion that it is

actually the Sumatran subspecies which is the nominate form, and uses a name *borneensis* Wurm, 1784 for the Bornean taxon; we are unable to substantiate the name which appears only as 'Pongo van Borneo', and nowhere appears as a latinised binomial. The type of both *pygmaeus* and *satyrus* is figured by Edwards (1758) and, though a young animal, could have been the Sumatran form, as argued by Röhrer-Ertl, following Elliot (1913), from whom the present convention is derived. A more complete examination of the issues raised by Röhrer-Ertl (1983, 1984) and de Boer (1982) are discussed in Groves and Holthuis (1985), which concludes that the terms in current use, as presented here, are satisfactory.

Of the two subspecies, the Sumatran form, *P.p.abelii*, is larger, and cinnamon coloured rather than maroon; males of *abelii* have a larger beard and moustache, and females of this subspecies also have a beard; the face is more orthognathous, elongate and is O-shaped in the frontal view rather than prognathous and figure-eight shaped as in *P.p.pygmaeus*. Males develop cheek pads in adulthood; in *abelii* these are flat and covered with downy hair, not forward curving and sparsely haired as in the nominate form. Males of *abelii* also tend to be more muscular and linear in build (from Groves, 1971b). Röhrer-Ertl (1984) finds that skulls of the two can always be distinguished by the presence of a suborbital fossa in the Bornean and its absence in the Sumatran animal; nearly always by the form of the zygomaxillary suture, and by several other cranial features.

For specimens of known locality, only *P.p.pygmaeus* is present in the Singapore collection. Most of the remaining specimens derive either from menagerie collections or are animals that died as a consequence of the unfortunate conditions under which they were transported to international zoos during the early decades of this century. Hence, while this is a large and important collection of orang-utan, many of the specimens are, themselves, rather poorly documented.

Zoological Reference Collection

PONGO PYGMAEUS (LINNAEUS, 1760)

ZRC# sex age dates ver collectors other numbers

Borneo

4-754	f	ad	24/04/1925	n	purchased	RM744
4-755	m	ad	06/05/1925	n		RM728
4-874	un	juv	-----	n		
4-876	f	ad	-----	n		
4-877	m	ad	-----	n		

Pontianak; INDONESIA: Kalimantan Barat

4-742	f	ad	--/03/1921	n	LKSa	RM751, 20.21
4-743	f	ad	19/11/1923	n	purchased	RM733
4-744	m	juv	15/05/1924	n		RM724
4-746	f	ad	06/01/1925	n		RM742
4-747	f	M1	21/01/1925	n	purchased	RM740, S
4-748	m	M3	16/09/1925	n	purchased	RM739
4-749	m	M1	23/12/1925	n	WLSB	RM741
4-750	f	ad	11/01/1926	n	WLSB	RM750
4-751	m	M1	15/07/1926	n	purchased	RM737
4-752	m	M3	19/07/1926	n	GF	RM726
4-875	un	juv	13/01/1904	n		

menagerie specimen

4-737	m	ad	03/11/1922	n	GF	RM732, 6
4-738	m	ad	05/01/1923	n	GF	RM731, 20
4-739	m	subad	18/01/1923	n	GF	RM725, 23
4-740	m	ad	18/03/1923	n	GF	RM734, 22
4-741	m	ad	11/01/1923	n	GF	RM727, 21
4-745	f	M2	29/07/1924	n	WLSB	RM743, XYZ
4-753	m	M1	16/01/1925	n		RM736
4-756	m	dm2	--/11/1939	y	HHTM	RM6917

menagerie specimen

4-757	m	juv	17/10/1899	n		RM753
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Common name: mawas, orang-utan

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
------	-----	-----	------	------	-----	----------------	-------	------	-----

pygmaeus (Linnaeus, 1760)

yyyy¹
 nyyn
 ynnn
 ynnn
 ynnn

pygmaeus (Linnaeus, 1760)

i	26.5	11	1.19	28.5 ³	87 ⁴	yyyy ²
i	19.75	7	1			ynny ⁵
						ynnn
m		273	35			yyyn
m	578	239	27			yyyn ⁵
i	26	10.5	1.19			yyyn ⁵
						yyyn ⁵
m	28	10.5	1.25			yyyn ⁵
						yyyn ⁵
						nyyn
						ynnn

pygmaeus (Linnaeus, 1760)

m	835	325	40	880 ³	2240 ⁴	217 ⁶	ynnn ⁷
m	743	295	33	855 ³	1980 ⁴		yyyn ⁷
i		9.75	1.25	21.25 ³	39.75 ⁸	69.5 ⁴	ynnn ⁹
i		10.75	1.25	32.5 ³	46 ⁸	79 ⁴	ynnn ⁷
							nyyn ¹⁰
i	26.5	9.25	1.25	73.75 ⁴			yyyn ¹¹
m	540	239	35				yyyn ¹²
m	540	180	29				yyyn ¹³

yyyy¹⁴

(1) purchased in the flesh, skeleton given to Nit Hicks; (2) stated to be from Pontianak; (3) girth; (4) arm span; (5) in the flesh; (6) width of face; (7) died in captivity in Singapore, from Sintang, Pontianak; (8) head to foot; (9) died in captivity in Singapore, from Sintang, Pontianak, skin does not match skull [labelled ZRC 4-765]; (10) died in captivity in Singapore, from Katoengoa; (11) died in captivity; (12) died in captivity in Singapore; (13) born in captivity May, 1937 Johore, died 1939, mother from Borneo; (14) from the gardens

Pongo pygmaeus (cont.)

ZRC#	sex	age	dates	ver	collectors	other numbers
menagerie specimen						
4-763	f	ad	26/02/1925	n		RM747
4-820	m	juv	21/12/1933	n	WLSB	
unknown						
4-758	m	subad	03/01/1899	n	CM	RM749
4-759	m	?ad	13/12/1898	n	CM	RM748
4-760	m	inf	29/07/1924	n		RM723
4-761	f	dm2	22/12/1924	n	purchased	RM722
4-762	m	ad	22/12/1924	n		RM738
4-764	m	ad	02/05/1925	n		RM729
4-765	f	ad	21/05/1925	n		RM725
4-766	f	?ad	21/12/1926	n	WLSB	RM735
4-767	f	ad	-----	n		RM745
4-768	m	juv	-----	n		RM752
4-769	f	ad	-----	n		RM754
4-770	m	ad	-----	n		RM765
4-771	f	juv	21/07/1916	n	purchased	
4-772	f	M1	28/01/1927	n		
4-773	f	dm2	29/03/1927	n		
4-774	m	dm2	29/03/1927	n		
4-775	f	M2	31/01/1927	n		
4-776	m	M2	30/06/1931	n		
4-777	f	juv	-----	n		
4-778	m	ad	-----	n		
4-779	m	ad	-----	n		
4-780	f	ad	-----	n		
4-781	f	ad	-----	n		
4-782	un	M1	-----	n		
4-783	m	ad	-----	n		

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added</u>	<u>measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
m	655			280	35				yyyn ¹ yyyy ²	
m	615			200	27				yyyn ynnn ynnn ¹ yyyn ³ yyyn nyyn nyyn ⁴	
m	762			261	31	1090 ⁵	1837 ⁶		ynnn yyyy yyyy yyyy ⁷ nyyn yyyn ⁸ nyyn ⁹ nyyn nyyn nyyn nyyn yyyy yyyy ¹⁰ yyyn yyyn nyyn nyyn nyyn	

(1) died in captivity in Singapore; (2) in spirit; (3) in the flesh, died in captivity in Singapore; (4) skull does not match subadult skin [labelled ZRC 4-739]; (5) height; (6) arm span; (7) may be same specimen as shown in RH1908:13, left figure; (8) purchased this date; (9) brain spoiled, skull only kept; (10) probably specimen at bottom right in RH1908:13, plate 1

Genus *Hylobates* Subgenus *Hylobates*

Cranial length small, generally 75-82mm; vault low; orbital rim thickened; facial profile strongly sinuous; crown hair directed fanwise from front of scalp; no laryngeal sac; intermembral index below 136; thoracic vertebrae average 13; no colour change at sexual maturity in female (Groves, 1972; Prouty *et al.*, 1983).

Singapore has an especially good collection of gibbons.

***Hylobates (Hylobates) agilis* F. Cuvier, 1821**

Hands and feet coloured as body; white brow-band; occurs in both black (to maroon) and buff (to grey or creamy) colour morphs, these being sharply distinct; the pale morph is dark on the venter. Generally, males possess light (white or rusty coloured) cheek whiskers, which females usually lack. This taxon does not intergrade with *H.lar* where their ranges meet, and is consequently recognised as a full species (Groves, 1984).

There appear to be no strong differences between the two geographic isolates of the species: the population in Sumatra and that in northwestern Malaya. From field observations and museum specimens outside the Asian collections, it is evident that the two colour morphs are about equally common in the highlands of Sumatra, whereas black predominates in the east Sumatran lowlands and in Malaya; in the Singapore collection, none the less, two of the four Malay specimens are pale (both of those from Taiping).

***Hylobates (Hylobates) klossii* (Miller, 1903)**

Completely black; fur sparser than on other species of the subgenus, especially sparse on throat. There are also peculiarities of the skull and postcranial skeleton. This species is certainly the most distinctive in the nominate subgenus, having originally -- and falsely -- been allied with the siamang. Restricted to the Mentawai Islands, off the west coast of Sumatra.

***Hylobates (Hylobates) lar* (Linnaeus, 1771)**

Hands and feet white, contrasting with body colour; a white ring around face; body either dark (brown or black) or pale (buff or creamy).

This species is here restricted to the white-handed gibbons of northern Sumatra and the Southeast Asian mainland: of the other taxa assigned to the species by Groves (1972), the parapatric *H.agilis* proves to be reproductively isolated (see above), while the insular *H.muelleri* and *H.moloch* are at least as distinct as *H.agilis*.



Figure 1. *H. (Hylobates)*: a - *agilis*; e - *lar entelliodes*; l - *lar lar*; i - *lar lar > entelloides*; v - *lar vestitus*; f - *muelleri funereus*; m - *muelleri abbotti*; k - *klossii*; o - *moloeh*; p - *pileatus*.

Three of the four subspecies are represented in the Singapore collection:

H.l.lar: Pale phase creamy, dark phase brown. Malaya and southern peninsular Thailand.

H.l.entelloides: Pale phase honey-coloured, dark phase black. Northern peninsular and western continental Thailand.

H.l.vestitus: Black phase absent; pale phase light brown; venter darkened. Northern

Sumatra.

The nominate subspecies' range is split in two by that of *H. agilis*; representatives north and south of this zone appear not to differ overall, but whereas the pale phase dominates to the north, the dark phase predominates to the south, indeed it now seems doubtful whether any pale phase animals at all occur in the southern population, whose 'dark phase' is none the less rather variable in colour (Groves, 1984). For the northern population, Groves (1972) gives a frequency of above 90% for the pale phase; and in the Singapore collection all three skins from Trang and both of those from Perlis are pale.

***Hylobates (Hylobates) moloch* (Audebert, 1798)**

Silvery to grey, generally with black on crown of head and on venter; hands and feet as body; a poorly expressed light face ring. The skull and teeth very distinctive. Western Java.

***Hylobates (Hylobates) muelleri* Martin, 1841**

Variably brown to grey, darkened on crown and venter, this colour rapidly spreading with age; a light brow-band, and often cheek-whiskers as well.

Kloss (1929) recognised four subspecies within Borneo; these he referred to *H. moloch*. Groves (1971a, 1972), provisionally referring the Bornean gibbon to *H. lar*, allowed only two of these subspecies: *H. m. muelleri* and *H. m. abbotti*. A number of new facts now require this arrangement to be reassessed. First is the discovery by Marshall and Marshall (1976) that the Great Calls of gibbons in southwestern Borneo resemble those of *H. agilis*, whereas over the rest of the island these vocalisations are more similar to those of *H. pileatus*. In the view of Marshall and Marshall (1976), this requires that the southwestern gibbon be assigned to *H. agilis* as a subspecies, those of the rest of Borneo being classed as a full species, *H. muelleri*. There are two separate questions here: first, should two species in fact be recognised on Borneo; second, should one of them be assigned to *H. agilis*? Given the broad resemblance of all Bornean gibbons among themselves, none being morphologically more like *H. agilis* than any other, Groves (1984) has argued that the answer should, provisionally at least, be 'no' to the first question, but that there might be a case for referring all Bornean gibbons to *H. agilis*. In the present instance, a conservative course will be followed, recognising *H. muelleri* as a distinct species, including all the gibbons of Borneo.

The second new factor is the discovery (J.T. Marshall, pers. comm. to CPG) that some of the localities as recorded on the labels in the Smithsonian collection are incorrect. These localities derive from a collecting trip by Raven, and retracing the itinerary shows first, that two skins recorded as being from the Mahakam River are actually from the Makam river (= Segah River, 2°10'N 117°30'E); second and more important, Madang and 'Pelawan River' are not in Sabah and Sarawak respectively, but in the Talisaian district of East Kalimantan ('Pelawan' is probably Pelawan Besar, at 1°10'N 117°54'E). It should also be pointed out that in Groves (1971a, fig. 2), a number of specimens have been inadvertently missed out of the Klumpang sample: specimens

which under the Cap, Venter and Extremities sections increase the uniformity of the sample. Finally, the black colour of the extremities in the *abbotti* sample turns out not to be a pigment, but is staining from Dr. W.L. Abbott's mercuric chloride disinfectant (J.T. Marshall, pers. comm. to CPG).

These new findings considerably alter the picture presented by Groves (1971a). Kloss (1929) divided his Bornean gibbons into a light-footed and a dark-footed section, each with a light- and a dark-coloured representative. When the alterations necessitated by the above information are made, Kloss's scheme becomes more plausible. In particular, the division on the basis of the colour of the extremities (mainly the feet) is rather clear-cut: the Klumpang and Birang samples and *albibarbis* have darkened extremities, those from Sabah, Baram, 4th Division and Saribas, as well as *abbotti*, have extremities coloured like the body or somewhat lighter: a good north/south division. The shade (ie. dark/light body) differentiation is less clear, but the tendency to have a darkened cap and ventral region distinguishes those from the eastern half rather well.

Kloss's four subspecies may therefore be resurrected as follows:

H.m.muelleri: Dark colour, darkened venter and crown; extremities dark. Klumpang and Birang districts of Groves (1971a).

H.m.abbotti: Lighter colour with little or no black on venter and crown; extremities not dark. As well as the sample mapped under *abbotti* in Groves (1971a), specimens from Saribas (not including 'Pelawan') belong here.

H.m.albibarbis: Lightest colour, with blackened extremities. The vocalisations are different from those of the rest of Borneo.

H.m.funereus: Dark colour; extremities not dark. Sabah, Baram and 4th Division samples.

Three of the four subspecies appear to be represented in the Singapore collection: two (*H.m.funereus* and *H.m.abbotti*) by wild shot specimens, and *H.m.albibarbis* by menagerie specimens which have been identified by earlier curators, principally C.B. Kloss, with this taxon.

Hylobates (Hylobates) pileatus Gray, 1861

Hands and feet white; female and young of both sexes buffy, with black on venter and crown of head; adult male black; female with white face-ring, male with white face-ring or brow-band; long white hairs at sides of head, over ears; pubic tuft white in males. Skull characters also tend to differentiate this species.

***HYLOBATES (HYLOBATES) AGILIS* F. CUVIER, 1821**

ZRC# sex age dates ver collectors other numbers

Batu Tigor; Taiping; WEST MALAYSIA: Perak

4-554 m ad 26/10/1908 y MC SM2190/08, 2109
 4-555 m ad 02/11/1908 y SM2189/08, 2108

Kotapinang; INDONESIA: Sumatera Utara

4-558 m ad -----/1937 y MB RM6225
 4-559 m ad -----/1937 y MB RM6226
 4-560 m ad -----/1937 y MB RM6227
 4-561 m ad -----/1937 y MB RM6228

Maxwell Hill, Taiping; WEST MALAYSIA: Perak

4-553 f ad 29/08/1908 y CBK SM2200/08

Panji, Teluk; Kotapinang; INDONESIA: Sumatera Utara

4-562 f juv 10/06/1937 n MB

Selama, Ulu; WEST MALAYSIA: Perak

4-557 m ad ----- n 363, 126

Sumatera, INDONESIA

4-563 f subad -----/1940 n purchased

Tea Garden; Larut Hills; WEST MALAYSIA: Perak

4-556 m ad 03/10/1910 y ES SM2108/11, 4019

menagerie specimen

4-564 f ad 28/02/1930 n WLSB RM3782
 4-565 f ad 20/12/1933 n WLSB RM19211
 4-566 m M1 29/11/1934 n WLSB RM19224

unknown

4-567 m M1 02/09/1968 n purchased
 4-869 f ad ----- n

***HYLOBATES (HYLOBATES) KLOSSII* (MILLER, 1903)**

ZRC# sex age dates ver collectors other numbers

Siberut, Pulau; INDONESIA: Sumatera Barat

4-598 f ad 26/09/1924 n¹ CBK 2094

(1) CBK1928:2; FNC,CBK1927:810M

Common name: ungko tangan hitam, agile gibbon

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
m		470		140	31	1415 ¹	brown	yyyn	
m		410		130	31		brown	yyyn	
							black	yyyn ²	
							black	yyyn	
							brown	yyyn	
							buff	yyyn	
								nyyn	
							black	yynn	
m	549			147	35		black	yyyn	
								yyyn ³	
m		434		133	31		black	yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn ⁴	
								yynn	

Common name: biloh, Kloss's gibbon

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
m		433		133				yyyn	

(1) arms; (2) purchased as a skin; (3) said to come from Sumatra; (4)
from animal dealers in Singapore

Hylobates klossii (cont.)

ZRC#	sex	age	dates	ver	collectors	other numbers
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Siberut, Pulau; INDONESIA: Sumatera Barat

4-599	m	M2	26/09/1924	n ¹	CBK	2095
4-600	m	dm2	26/09/1924	n ¹	CBK	2096

Sipora, Pulau; INDONESIA: Sumatera Barat

4-601	m	ad	17/10/1924	n ¹	CBK	2280
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HYLOBATES (HYLOBATES) LAR (LINNAEUS, 1771)

ZRC#	sex	age	dates	ver	collectors	other numbers
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Cheraka Klang, Bukit; Jeram; WEST MALAYSIA: Selangor

4-639	m	ad	18/11/1910	y	MC	SM2589/10, 3938
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Khao Chong; THAILAND: Trang

4-618	f	ad	08/12/1909	y	MC	SM1238/10, 3103
4-619	f	ad	15/12/1909	y	MC	SM1065/10, 3134
4-620	m	ad	18/12/1909	y	MC	SM1062/10, 3142

Gaik Lien Estate; Jalan Damansara; WEST MALAYSIA: Selangor

4-640	f	ad	23/12/1920	n		RM394
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Genting; Kuala Lipis; WEST MALAYSIA: Pahang

4-633	m	ad	17/05/1910	y ²	MC	SM1325/10, 3484
4-634	m	ad	18/07/1910	y ²	MC	SM2042/10, 4241

Johor, WEST MALAYSIA

4-647	f	ad	14/01/1893	n		RM379
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Kota Tinggi; WEST MALAYSIA: Johor

4-646	m	ad	-----/1891	n ³		RM377
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Kuala Lumpur; WEST MALAYSIA: Selangor

4-637	m	M2	06/02/1908	y	MC	SM1473/08, 580
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Kuala Tahan; Sungei Tahan; WEST MALAYSIA: Pahang

4-635	un	un	26/11/1921	n	FNC	RM395, 32
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Kuala Tembeling; WEST MALAYSIA: Pahang

4-632	f	ad	01/09/1893	n ³		RM390
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(1) CBK1928:2; FNC, CBK1927:810M; (2) CBK1911b:145; (3) RH 1898:8; F1900:313

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
m		335		110				yyyn	
m		260		86				yyyn	
m		435		126				yyyn	

Common name: ungko tangan putih, wa-wa, white-handed gibbon

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
<i>lar</i> (Linnaeus, 1771)									
m		443		141	35		pale	yyyn	
<i>lar</i> (Linnaeus, 1771)									
m		430		146	34.5		pale	yyyn	
m		486		131	33		pale	yyyn	
m		532		140	39		pale	yyyn	
<i>lar</i> (Linnaeus, 1771)									
m		430		130	35		pale	yyyn	
<i>lar</i> (Linnaeus, 1771)									
m		451		126	28		pale	yyyn	
m		460		127	28.5			nyyn	
<i>lar</i> (Linnaeus, 1771)									
								yyyn	
<i>lar</i> (Linnaeus, 1771)									
							pale	yyyy	
<i>lar</i> (Linnaeus, 1771)									
m		395		128	32		pale	yyyn	
<i>lar</i> (Linnaeus, 1771)									
m		446		136	31		pale	yynn ¹	
<i>lar</i> (Linnaeus, 1771)									
							pale	yyyy	

(1) soles of feet and ears blackish, irides brown, face very dark slate, almost black, anal pads blackish

Hylobates lar (cont.)

ZRC# sex age dates ver collectors other numbers

Kuantan; WEST MALAYSIA: Pahang

4-636 f subad ----- n L

Kupang, Tanjong; WEST MALAYSIA: Johor

4-645 m ad 06/05/1882 n¹ RM388

Labatuah; WEST MALAYSIA: Pahang

4-631 m ad 20/11/1890 n¹ RM389

Lantai, Bukit; WEST MALAYSIA: Negri Sembilan

4-641 f ad 17/07/1910 y² MC SM2039/10, 3348

4-642 f ad 15/07/1910 y² MC SM2038/10, 3345

4-643 m ad 19/07/1910 y² MC SM2041/10, 3349

4-644 m ad 16/07/1910 y² MC SM2040/10, 3346

Nylas; WEST MALAYSIA: Malaca

4-638 m dm2 28/10/1910 y MC SM2568/10, 3913

Padang Tuan; Segamat; WEST MALAYSIA: Johor

4-649 f ad 20/02/1911 y MC SM1098/11, 4753

4-650 m M2 20/02/1911 y MC SM1099/11, 4754, 25

4-651 f ad 20/02/1911 y MC SM1100/11, 4755, 24

Pelarit; WEST MALAYSIA: Perlis

4-621 m ad 30/10/1911 y MC SM1/12, 4631

4-622 f ad 30/10/1911 y MC SM2/12, 4632

Pulai, Gunong; WEST MALAYSIA: Johor

4-648 m M2 10/11/1904 y SM1489/11, RM378, 150

Ban Nong Kok; THAILAND: Krabi

4-625 m ad 07/01/1918 y RM381, 171

4-626 f ad 10/01/1918 y RM384, 190

Khao Luang; THAILAND: Nakhon Srithammarat

4-628 m ad 22/03/1922 y JB 7396

Khao Rham; THAILAND: Nakhon Srithammarat

4-629 m un 24/02/1922 y JB 7357

4-630 f ad 25/02/1922 n MC RM383

(1) RH1898:8; F1900:313; (2) CBK1911d:219

unit		tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>lar</i> (Linnaeus, 1771)										
								pale		yyyn
<i>lar</i> (Linnaeus, 1771)										
								pale		YYYY
<i>lar</i> (Linnaeus, 1771)										
								pale		YYYY
<i>lar</i> (Linnaeus, 1771)										
m		443		130	33			dark		yyyn
m		439		144.5	34.5			pale		yyyn
m		456		132	33			dark		yyyn
m		440		146	35			dark		yyyn
<i>lar</i> (Linnaeus, 1771)										
								pale		yyyn ¹
<i>lar</i> (Linnaeus, 1771)										
m		450		124	32			pale		yyyn
m		342		116	32			pale		yyyn
m		444		112	29			pale		yyyn
<i>lar</i> (Linnaeus, 1771)										
m		470		140	33			pale		yyyn
m		460		134	32			pale		yyyn
<i>lar</i> (Linnaeus, 1771)										
m							460 ²	pale		yyyn ³
<i>lar</i> > <i>entelloides</i>										
m		480		130	35			pale		yyyn
m		165		140	33			pale		yyyn
<i>lar</i> > <i>entelloides</i>										
m		498		145	33			pale		yyyn
<i>lar</i> > <i>entelloides</i>										
m	523			138	31			pale		ynnn
m				145				pale		yyyn

(1) young *wah wah*; (2) leg; (3) from Johore Museum, presented by Johore Government Dec., 1912; iris dark brown

Hylobates lar (cont.)

ZRC# sex age dates ver collectors other numbers

Klong Tung Sai; Ko Phuket; THAILAND: Phuket

4-623 f ad 19/12/1917 y CBK RM386, 26
4-624 m ad 21/12/1917 y RM385, 59

Maliwun; Victoria Point; BURMA: Tenasserim

4-607 f ad 06/02/1914 y¹ GCS SM727/16, 4768, 57
4-617 m ad 06/02/1914 y¹ GCS SM728/16, 4767

Takua Thung; THAILAND: Phangnga

4-627 m M2 13/02/1919 y HCR,CBK SM223/19, 8206

Ban Tha San; THAILAND: Chumphon

4-612 f ad 16/03/1919 y HCR,CBK SM461/19, 8444

Bankachon; Victoria Point; BURMA: Tenasserim

4-606 f ad 05/01/1914 y GCS SM725/16, 4708

Huai Nua Pla; THAILAND: Tak

4-605 m ad 16/05/1919 n JHC 56
4-613 f ad 09/05/1924 n JHC 50
4-614 m ad 16/05/1924 n JHC 57
4-615 m M1 16/05/1924 n JHC 58
4-616 m ad 02/06/1924 n JHC 71

Tapli; Ban Klong Wan; THAILAND: Ranong

4-609 f dm1 04/03/1919 y HCR,CBK SM405/19, 8388
4-610 m ad 05/03/1919 y CBK,HCR SM406/19, 8389
4-611 m ad 07/03/1919 y HCR,CBK SM421/19, 8404

Thaget; BURMA: Tenasserim

4-608 m ad 02/04/1914 y¹ GCS SM726/16

Tuntungan Estate; Deli; INDONESIA: Sumatera Utara

4-602 un ad ----- n vH

unknown

4-603 f ad -----/1940 n purchased
4-604 f subad -----/1940 n purchased

Johor or Pahang, WEST MALAYSIA

4-684 un subad ----- n RM382

(1) RCW1915:699

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>lar > entelloides</i>									
m		430		132	42		pale	yyyn	
m		495		135	35		pale	yyyn	
<i>lar > entelloides</i>									
m		535		147	36		pale	yyyn ¹	
m		560		158	36		pale	yyyn ¹	
<i>lar > entelloides</i>									
m		372		124	31		pale	yyyn	
<i>entelloides</i> I. Geoffroy, 1842									
m		612		149	34		pale	yyyn	
<i>entelloides</i> I. Geoffroy, 1842									
m		550		141	32		dark	yyyn ¹	
<i>entelloides</i> I. Geoffroy, 1842									
m		470		140	35		pale	yyyn	
m		443		136	32		pale	yyyn	
m		465		145	32		dark	yyyn	
m		375		115	21		pale	yyyn	
m		445		149	36		pale	yyyn	
<i>entelloides</i> I. Geoffroy, 1842									
							dark	yyyn ²	
m		490		147	33		dark	yyyn	
m		465		167	35		dark	yyyn	
<i>entelloides</i> I. Geoffroy, 1842									
m		565		134	37		dark	yyyn ¹	
<i>vestitus</i> Miller, 1942									
							'albimanus'	yyyn	

yyyn³
ynnn³

yyyy⁴

(1) Bombay Nat. Hist. Soc. Mammal Survey; (2) young of 8386 [not in collection]; (3) said to come from Sumatra; (4) found 1893 without label but certainly from either Johore or Pahang

Hylobates lar (cont.)

ZRC# sex age dates ver collectors other numbers

menagerie specimen

4-668	m	dm2	20/01/1922	n		RM380
4-669	m	ad	23/11/1925	n	WLSB	RM397
4-670	m	dm2	23/12/1925	n	WLSB	RM399
4-671	?m	dm2	07/06/1926	n	WLSB	RM400
4-672	f	ad	04/01/1934	n	WLSB	RM19209
4-673	f	M1	12/02/1934	n	WLSB	RM19219
4-674	f	ad	18/10/1935	n	WLSB	RM19165
4-675	f	M1	19/12/1935	y	WLSB	RM6127
4-676	m	M1	19/12/1935	y	WLSB	RM6128
4-677	m	ad	--/04/1936	y	WLSB	RM6214
4-678	m	ad	27/04/1936	y	WLSB	RM6210
4-679	f	ad	27/04/1936	y	WLSB	RM6211
4-680	f	ad	17/06/1936	y	WLSB	RM6213
4-681	f	M1	-----/1936	y	WLSB	RM6212
4-682	m	M1	-----	n	WLSB	RM387
4-683	f	ad	-----	n		

unknown

4-867	m	un	-----	n		
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***HYLOBATES (HYLOBATES) MOLOCH* (AUDEBERT, 1798)**

ZRC# sex age dates ver collectors other numbers

Citambur; INDONESIA: Jawa Barat

4-654	f	ad	24/04/1928	n		12
4-655	m	dm2	27/04/1928	n		13
4-656	m	ad	27/04/1928	n		23
4-657	m	ad	29/04/1928	n		28
4-658	f	ad	29/04/1928	n		31

Jawa; INDONESIA

4-659	m	un	-----	n		
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Pelabuhanratu, Teluk; INDONESIA: Jawa Barat

4-652	m	ad	07/03/1920	y	CBK	SM154/20, 8754
4-653	m	ad	16/03/1920	y	CBK	SM199/20, 8799

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
m		275		88	25			yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								ynnn	
m		439		144.5	34.5			ynnn	
								yyyn	
								yyyn	
								yyyn	
								ynnn	
								ynnn	

Common name: ungko jawa, javan gibbon

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
								nyyn ¹	
							brown	yyyn	
							brownish grey	yyyn	
							grey	yyyn	
							grey	yyyn	
							grey	ynnn	
m		480		159	35		grey	yyyn	
m		445		141			grey	yyyn	

(1) may belong with skin ZRC 4-659 but recorded sex differs

***HYLOBATES (HYLOBATES) MUELLERI* MARTIN, 1841**

ZRC# sex age dates ver collectors other numbers

Anyut; Pulau Paku; EAST MALAYSIA: Sarawak

4-591 ad 14/07/1916 y 330/HCR, C

Belingan; EAST MALAYSIA: Sarawak

4-594 f ad 22/04/1917 y MC 338/HCR, 148

Entawa-Samarahan; EAST MALAYSIA: Sarawak

4-585 m ad 23/11/1919 y CU 346

Paku, Pulau; Betong; Saribas; EAST MALAYSIA: Sarawak

4-593 f ad 08/03/1917 y MC 336/HCR, 127

menagerie specimen

4-586 f un 06/01/1926 n purchased
 4-587 m dm2 29/06/1926 n purchased RM364
 4-588 m dm2 30/07/1926 n dS RM366
 4-589 ?m M2 07/04/1927 n purchased RM365
 4-590 f ad 18/03/1936 n WLSB RM6215
 4-596 m M2 26/01/1924 n WLSB RM371
 4-597 f ad 01/04/1925 n WLSB RM370

menagerie specimen

4-568 m M1 24/09/1923 n purchased RM376
 4-569 m M1 --/11/1923 n purchased RM375
 4-570 m ad ----- y WLSB RM6216

Baram District; EAST MALAYSIA: Sarawak

4-592 f ad -----/1891 n CH RM373

Baram, Sungei; EAST MALAYSIA: Sarawak

4-595 m ad 20/11/1920 n JCM RM372

Betotan; EAST MALAYSIA: Sabah

4-572 m ad 26/07/1927 n¹ CBK, FNC 3078
 4-573 f ad 26/07/1927 n¹ CBK, FNC 3079
 4-574 m ad 28/07/1927 n¹ CBK, FNC 3113
 4-575 f ad 01/08/1927 n¹ CBK, FNC 3154
 4-576 f ad 01/08/1927 n¹ CBK, FNC 3248
 4-577 m ad 14/08/1927 n² CBK, FNC 3266

(1) FNC,CBK1931:50M; (2) FNC,CBK1931:2

Common name: ungko klawat, bornean gibbon

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>abbotti</i> Kloss, 1929									
m		476		125	34			yyyn	
<i>abbotti</i> Kloss, 1929									
m		505		145	32			yyyn	
<i>abbotti</i> Kloss, 1929									
m		520		145	32			yyyn	
<i>abbotti</i> Kloss, 1929									
m		472		124	25			yyyn	
<i>abbotti</i> Kloss, 1929									
								yynn	
								yyyn	
								yyyn	
								yyyn ¹	
								yyyn	
								yyyn	
								yyyn	
<i>albibarbis</i> Martin, 1841									
m	341			107	26			yyyn	
								yyyn	
								yyyn	
<i>funereus</i> I. Geoffroy, 1850									
							' <i>abbotti</i> '	yyyn ²	
<i>funereus</i> I. Geoffroy, 1850									
							' <i>abbotti</i> '	yyyn	
<i>funereus</i> I. Geoffroy, 1850									
m	485		147	31	987 ³	1500 ⁴		yyyn	
m	485		148	31	985 ³	1410 ⁴		yyyn	
m	485		142	32	930 ³	1000 ⁴		yyyn	
m	475		145		955 ³	1380 ⁴		yyyn	
m	490		145		940 ³	1440 ⁴		yyyn	
m	485		136					yyyn	

(1) recorded sex female, skin is probably male; (2) coal black gibbon;
 (3) nose to toe; (4) arms

Hylobates muelleri (cont.)

ZRC# sex age dates ver collectors other numbers

Kinabalu, Gunong; EAST MALAYSIA: Sabah

4-583 un un -----/1933 n REH

Lumu Lumu; Gunong Kinabalu; EAST MALAYSIA: Sabah

4-581 m ad 12/04/1929 n FNC 4079

4-582 m M2 16/04/1929 n FNC 4111

Rayoh; EAST MALAYSIA: Sabah

4-578 m ad 25/06/1928 n¹ MC 3563

4-579 f ad 26/06/1928 n¹ MC 3572

4-580 f ad 28/06/1928 n¹ MC 3583

Terusan, Ulu; EAST MALAYSIA: Sarawak

4-571 f ad 30/04/1939 n 13, (13)

menagerie specimen

4-584 f ad 07/10/1924 n WLSB RM369

menagerie specimen

4-685 f ad 19/01/1921 n purchased RM368

4-686 f ad --/01/1924 n WLSB RM362

4-687 f M1 20/12/1933 n WLSB RM19207

4-688 f ad ----- n

***HYLOBATES (HYLOBATES) PILEATUS* GRAY, 1861**

ZRC# sex age dates ver collectors other numbers

Ban Huang Som; THAILAND: Trat

4-660 m ad 09/01/1915 y² CBK 1859/CBK

Ban Nong Kho; THAILAND: Chon Buri

4-661 m ad 23/03/1926 n³ CJA RM391, 5

4-662 f ad 26/03/1926 n³ CJA RM392, 15

4-663 m inf 26/03/1926 n³ CJA RM393, 16

E. THAILAND

4-664 f ad 13/12/1929 n³ RM3683

(1) FNC,CBK1931:50M; (2) CBK1916b:67M; (3) FNC1935b:32

unit tot H&B tail foot ear added measures terms type inv

funereus I. Geoffroy, 1850

ynnn

funereus I. Geoffroy, 1850

m	450	137	30	yyyn ¹
m	390	119	32	yyyn

funereus I. Geoffroy, 1850

m	471	135	32	yyyn
m	505	140	35	yyyn
m	430	130	35	yyyn

funereus I. Geoffroy, 1850

m	439	120	34	yyyn
---	-----	-----	----	------

funereus I. Geoffroy, 1850

yyyn

yyyn²

yyyn

yyyn

ynny

Common name: pileated gibbon

unit tot H&B tail foot ear added measures terms type inv

m	460	150	yyyn
---	-----	-----	------

yyyn³

yyyn³

ynnn⁴

yyyn⁵

(1) naked skin, all black; (2) purchased \$1.00, stated location of 'Indragiri, Sumatra' is incorrect; (3) purchased; (4) skull ZRC 4-689 may fit this skin; (5) domesticated: killed by police in Kuala Lumpur and presented to Selangor Museum

Hylobates pileatus (cont.)

ZRC#	sex	age	dates	ver	collectors	other numbers
------	-----	-----	-------	-----	------------	---------------

Khlong Yai; THAILAND: Trat

4-665	m	ad	18/12/1931	n ¹		RM19102
4-666	m	ad	18/12/1931	n ¹	CJA	RM19103

menagerie specimen

4-667	m	un	05/02/1938	n	WLSB	RM95
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HYLOBATES (HYLOBATES) SP.

ZRC#	sex	age	dates	ver	collectors	other numbers
------	-----	-----	-------	-----	------------	---------------

unknown

4-689	un	ad	-----	n		
4-868	m	?ad	-----	n		
4-870	m	juv	-----	n		

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
------	-----	-----	------	------	-----	----------------	-------	------	-----

								yyyn	
								yyyn	

m	401			134	22			ynnn ¹	
---	-----	--	--	-----	----	--	--	-------------------	--

Common name: ungko tangan hitam

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
------	-----	-----	------	------	-----	----------------	-------	------	-----

								nyyn	
						buff		ynnn	
						greyish		ynnn	

(1) died in Singapore

Genus *Hylobates* Subgenus *Nomascus*

Cranial length as previous subgenus, or slightly larger; vault high, rounded; orbital rims flattened; facial profile straight; crown hair directed upwards, elongated in middle in males, at sides in adult females; small laryngeal sac in males; intermembral index above 136; thoracic vertebrae averaging 14; adult female changes colour from black to buff at maturity, males being always black, subsequent to neonate stage (Groves, 1972; Prouty, *et al.*, 1983).

There appear to be two species of this subgenus (Dao, 1983). Only one is represented in the Singapore collection.

Hylobates (Nomascus) leucogenys Ogilby, 1840

Black phase (comprising juvenile females, and males at all ages) with light patches on cheeks; pale phase (adult females) without black on venter, but with a black streak from crown to nape, up to 120mm long.

Three subspecies are distinguishable (Dao, 1983; Schilling, 1984), of which two are represented in the Singapore collection. *H.l.gabriellae* has, in black phase, reddish cheek-whiskers which surround the corners of the mouth; in *H.l.leucogenys* they are white.

Genus *Hylobates* Subgenus *Symphalangus*

Size large, cranial length over 90mm; vault low; orbital rims somewhat raised; facial profile sinuous; crown hair directed fanwise from a whorl above brows; large laryngeal sac in both sexes; intermembral index above 136; thoracic vertebrae averaging 13; no colour changes with maturity, both sexes being black (after Groves, 1972).

Hylobates (Symphalangus) syndactylus (Raffles, 1821)

The representatives of this species in Malaya and Sumatra differ slightly on average, but subspecific separation cannot be supported (Groves, 1972).



Figure 2. *H. (Nomascus)*: g - *leucogenys gabriellae*; i - *leucogenys leucogenys*
H. (Symphalangus): s - *syndactylus*.

HYLOBATES (NOMASCUS) LEUCOGENYS OGILBY, 1840

ZRC# sex age dates ver collectors other numbers

Da Ban; VIETNAM: Ninh Thuan

4-692	m	ad	14/03/1918	y	CBK	3213/CBK
4-693	f	ad	14/03/1918	y	CBK	3214/CBK
4-694	m	ad	15/03/1918	y	CBK	3215/CBK
4-695	f	ad	15/03/1918	y	CBK	3216/CBK
4-696	m	ad	17/03/1918	y	CBK	3234/CBK

Don Duong; VIETNAM: Tuyen Duc

4-697	m	ad	16/05/1918	y	CBK	3598/CBK
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Trang Bom; VIETNAM: Bien Hoa

4-690	m	ad	04/06/1918	y	CBK	3641/CBK, 131
4-691	m	ad	-----	y	CBK	3642/CBK, 132

Muang Liap (camp 15); LAOS: Xaignabouri

4-698	m	ad	16/01/1920	y		7169
4-699	m	un	16/01/1920	n	JB	7170

Common name: white-cheeked gibbon

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>gabriellae</i> Thomas, 1909									
m		485		150		300 ¹	210 ²	yyyn	
m		460		141		275 ¹	195 ²	yyyn	
m		495		158		305 ¹	225 ²	yyyn	
m		475		152		270 ¹	195 ²	yyyn	
m		455		145		295 ¹	210 ²	yyyn	
<i>gabriellae</i> Thomas, 1909									
m		475		147		300 ¹	208 ²	yyyn	
<i>gabriellae</i> Thomas, 1909									
m		450		150	38			yyyn	
m		455		150	38			yyyn	
<i>leucogenys</i> Ogilby, 1840									
m	432			153	38			yyyn	
m		361		129	35			yynn	

(1) forearm; (2) lower leg

HYLOBATES (SYMPHALANGUS) SYNDACTYLUS
(RAFFLES, 1821)

ZRC# sex age dates ver collectors other numbers

Kledang Hill; WEST MALAYSIA: Perak

4-700	m	dm2	20/11/1927	n		24
4-701	f	ad	22/11/1927	n		33
4-702	m	ad	23/11/1927	n		35

Kuala Tahan; Sungei Tahan; WEST MALAYSIA: Pahang

4-704	f	ad	16/11/1921	n	CH	6
4-705	m	ad	16/11/1921	n	CH	5

Kumbang, Sungai; Gunung Kerinci; INDONESIA: Sumatera Barat

4-714	m	ad	16/04/1914	y ¹	HCR, CBK	SM412/14, 6212
4-717	f	ad	--/05/1914	y ¹	HCR, CBK	SM622/14, 6422
4-718	f	ad	16/04/1914	y ¹	HCR, CBK	SM401/14, 6201

Palembang; INDONESIA: Sumatera Selatan

4-712	m	ad	13/02/1906	y	ML	
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Sandaran Agung; Gunung Kerinci; INDONESIA: Sumatera Barat

4-715	m	ad	26/05/1914	y ¹	HCR, CBK	SM544/14, 6344
4-716	f	ad	30/05/1914	y ¹	HCR, CBK	SM549/14, 6349

Semangko Pass; WEST MALAYSIA: Selangor

4-706	m	M2	25/10/1909	y	MC	SM2425/09, 1872
4-707	f	ad	25/10/1909	y	MC	SM2423/09, 1870
4-708	m	un	28/10/1909	y	MC	SM2418/09, 1884
4-709	m	ad	--/03/1912	n	PMF	DS.3
4-710	f	ad	--/03/1912	n	PMF	DS.3

Tapanuli, Teluk; INDONESIA: Sumatera Barat

4-711	f	ad	23/03/1903	y	WLA	US114494, SM1519/11, 1683
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Wray's Camp; Gunong Tahan; WEST MALAYSIA: Pahang

4-703	f	ad	02/07/1911	y		SM1845/11, 25
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menagerie specimen

4-713	m	M1	19/07/1921	y	purchased	RM6209
4-719	f	M1	26/02/1925	y	WLSB	RM6207

(1) HCR,CBK1918:7M

Common name: siamang

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
m	473			132	30			yyyn	
m	600			149	34			yyyn	
m	646			146	34			yyyn	
m		475		145	32			yyyn ¹	
m		478		150	33			yyyn	
m		586		165	32			nyyn	
m		589		171	35			yyyn	
m		545		163	32			yyyn	
								yyyn	
m		640		170	32			yyyn	
m		585		175	31			yyyn	
m	540			149	39			yyyn	
m		570		158	37			yyyn ²	
								ynnn	
								nyyn ³	
								nyyn ³	
m		470				530 ⁴		yyyn ⁵	
m		505		140	28			yyyn	
								ynnn ⁶	
								yyyn	

(1) 'shot by one of the Dyak collectors of Kuala Lumpur and passed on to me by HCR -- FNC'; (2) locality is Bukit Fraser in MS; (3) two skulls with the same number; (4) head to symphysis pubis; (5) tag says 'sent to Nat. Mus. Smithsonian Institute', but this is obviously wrong; (6) face, soles and anal area black, died in captivity in Singapore

Hylobates syndactylus (cont.)

ZRC#	sex	age	dates	ver	collectors	other numbers
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menagerie specimen

4-720	m	dm2	22/02/1928	y	WLSB	RM6208
4-721	m	ad	02/09/1933	n	WLSB	RM19210
4-722	f	subad	20/09/1933	n	WLSB	
4-723	m	dm2	--/06/1937	y		RM6206

unknown

4-724	m	ad	02/09/1968	n	purchased	
4-725	f	subad	-----	n		
4-726	m	ad	-----	n		
4-727	?f	un	-----	n		
4-871	f	ad	-----	n		
4-872	m	ad	-----	n		
4-873	un	juv	-----	n		

unit tot H&B tail foot ear added measures terms type inv

yyyn

yyyn

yynn

yyyn

yyyn¹

yynn

yyyn

yyyn

yynn

yynn

yynn

(1) from animal dealer, Singapore

Genus *Pygathrix*

Arms nearly as long as legs; nose with a small flap on rim of each nostril; skull with short, broad facial skeleton, with very reduced nasal bones; very wide interorbital pillar; orbits prominent with strong torus above and lateral to them; long palate; jaw angles not enlarged; sutures patent well into adult life. Ischial callosities small, well separated (after Groves, 1970).

Groves (1970) combined the nominate taxon with *Rhinopithecus*, defining two subgenera; some dental and cranial evidence (Weitzel, in preparation) as well as strong similarity in details of infant colouration (Lippold, 1977; Kavanagh, 1978), suggest that at least the nominate subgenus is allied with *Presbytis* (as limited below).

Pygathrix (Pygathrix) nemaeus Linnaeus, 1771

Infant coat white with chestnut band on top of head, across shoulders onto arms, and along back from shoulders to rump; adult general colour blackish, with white annulation on hairs; face yellow in nominate subspecies, black in *P.n.nigripes*; broad white band surrounds face and extends to neck; very large orbits; gracile mandible for a large bodied colobine; distal cusps may occur on maxillary third molar (Weitzel, 1978).

Only the southerly black-legged subspecies, *P.n.nigripes*, is represented in the Singapore collection.

Genus *Nasalis*

Arms nearly as long as legs; nose prominent but with simple nostrils; skull with long, narrow facial skeleton, elongated nasals, prominent brow ridges depressed towards nasion; very narrow interorbital pillar; wide zygomatic root, and inflated maxilla similar to that of some fossil colobines, but not found in other extant forms; orbits not prominent; palate short; jaw angles somewhat enlarged; sutures fuse at maturity; ischial callosities large, fusing across midline in males (after Groves, 1970).

No subgenera are recognised. This is not because the two species are not highly distinct, but because there are only two species and subgenera would be an unnecessary complication. None the less, higher level splitting of the Colobinae would enable further splitting at the generic level, such that the genus *Simias* Miller, 1903 could be resurrected for *Nasalis concolor*.

Nasalis larvatus Wurm, 1781

Red, with arms and legs tending to grey; tail and croup white; cheeks paler than body. Tail long, as long as in normal colobines. Skull very elongated; external nose

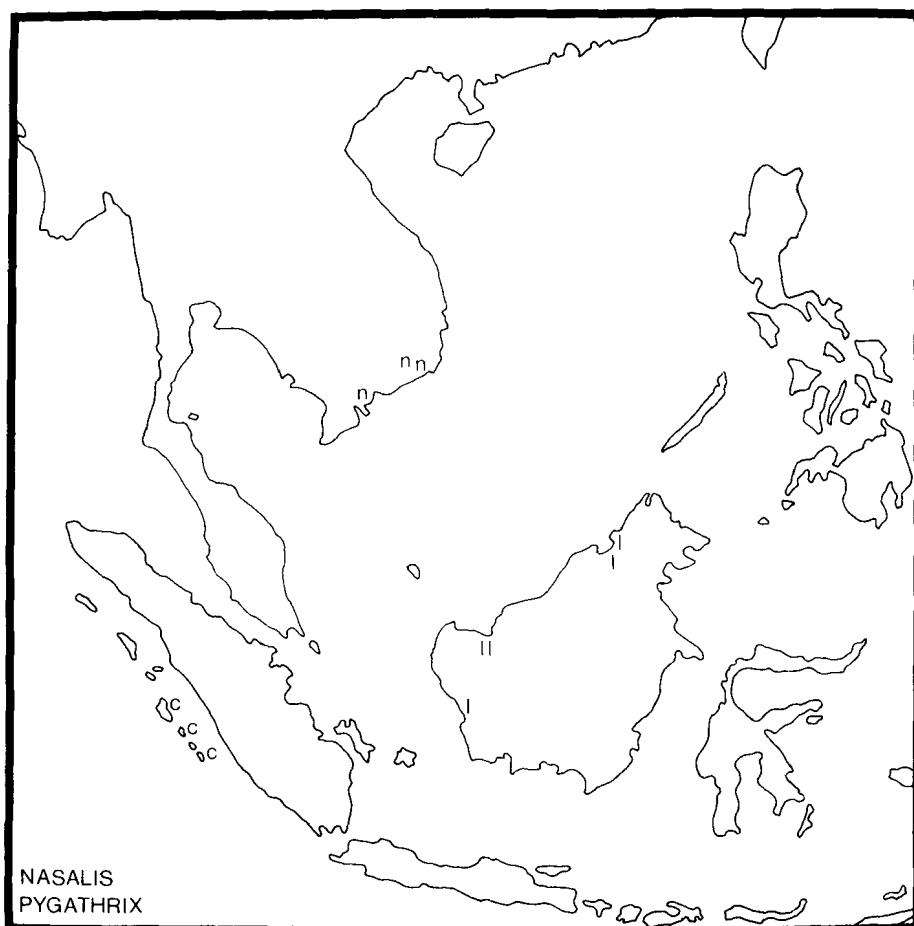


Figure 3. *Pygathrix*: n - *nemaus nigripes*. *Nasalis*: l - *larvatus*; c - *concolor*.

prominent in juveniles and in adult females, pendulous in adult males.

***Nasalis concolor* (Miller, 1903)**

Lacking the extreme facial and external nasal elongation of *N.larvatus*; two colour phases: brownish black (hairs banded on foreparts) or creamy buff. Cheeks coloured as body. Tail very short, hairless except for small terminal brush.

Two subspecies, both represented in the collection, are recognisable. *N.c.siberu* has broader, less prognathous skull than *N.c.concolor*.

PYGATHRIX (PYGATHRIX) NEMAEUS (LINNAEUS, 1791)

ZRC# sex age dates ver collectors other numbers

Don Duong; VIETNAM: Tuyen Duc

4-547	m	ad	31/03/1918	y ¹	CBK	3307/CBK
4-548	m	M2	31/03/1918	y ¹	CBK	3308/CBK

Lang Bian, Nui; VIETNAM: Tuyen Duc

4-549	f	ad	23/04/1918	y ¹	CBK	3517/CBK
4-550	f	ad	23/04/1918	y ¹	CBK	3518/CBK
4-551	m	dm1	23/04/1918	y ¹	CBK	3519/CBK
4-552	m	juv	23/04/1918	y ¹	CBK	3520/CBK

Trang Bom; VIETNAM: Bien Hoa

4-728	m	ad	04/06/1918	y	CBK	3636, 126
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Common name: Douc langur

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>nigripes</i> Milne-Edwards, 1871									
m	1300		740	207			'moi'	P	yyyn ¹
m	1000		570	165			'moi'	P	yyyn ¹
<i>nigripes</i> Milne-Edwards, 1871									
m	1213		685	183		250 ² 230 ³	'moi'	P	yyyn ¹
m	1212		655	189		255 ² 235 ³	'moi'	P	yyyn ¹
m	600		375				'moi'	P	yyyn ¹
m	620		360				'moi'	P	yynn ¹
<i>nigripes</i> Milne-Edwards, 1871									
m	590		635	188	40				yynn

(1) paratype of *moi*; (2) lower leg; (3) forearm-wrist

NASALIS LARVATUS (WURMB, 1781)

ZRC# sex age dates ver collectors other numbers

Borneo

4-206	m	dm2	27/02/1968	n		
4-207	m	dm2	28/02/1968	n		A
4-208	f	M1	28/02/1968	n		
4-209	f	ad	-----	n		
4-210	m	ad	-----	n		
4-211	m	M2	-----	n		
4-215	m	subad	-----	n		
4-824	f	M1	07/--/1970	n	KYL	
4-825	m	M2	07/05/1971	n	DM	
4-858	f	ad	-----	n		
4-859	un	juv	-----	n		
4-860	m	ad	-----	n		

Kuching; SARAWAK

4-197	f	ad	27/02/1939	n		
4-198	m	ad	01/03/1939	n		

Kuching, Sungei; EAST MALAYSIA: Sarawak

4-202	f	ad	03/04/1940	n		5
4-203	f	ad	15/04/1940	n		6

Pontianak; INDONESIA: Kalimantan Barat

4-213	f	subad	30/06/1916	n	purchased	\$52
4-214	f	ad	04/08/1916	n	purchased	\$47

Punang, Sungei; EAST MALAYSIA: Sarawak

4-199	m	ad	15/04/1939	n		2, (2)
4-200	f	ad	14/05/1939	n	GN	34, (34)
4-201	f	ad	14/05/1939	n	GN	36, (36)

SABAH

4-216	m	subad	-----/1890	n		
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Sarawak, EAST MALAYSIA

4-192	f	ad	15/04/1920	n ¹		7
4-193	f	ad	03/04/1922	n ¹		
4-194	m	dm1	09/04/1922	n ¹		
4-195	f	dm2	09/04/1922	n ¹		

(1) Anon1923:22

Common name: bekantan, kera belanda, proboscis monkey

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn ¹	
								yyyn	
								nyyn	
								yynn	
								yynn	
								yynn	
								yyyn	
								yyyn	
i	45		21.5	7.5	5.0			yyyn ²	
								yyyn ²	
								yyyn ³	
								yyyn ¹	
m	1290		656	218	32			yyyn	
m	1184		628	187	26			yyyn	
m	1126		582	175	30			yyyn	
							'orientalis'	yyyn	
								yyyn	
m		560	590	195	30		'sarawakensis'	yyyn ⁴	
m		240	280	86	24		'sarawakensis'	yyyn ⁴	
m		360	400	110	26		'sarawakensis'	yyyn ⁴	

(1) location perhaps a little doubtful; (2) found along Kuching River among Bacau trees; (3) purchased from Jambi Kechil, S2; (4) died in zoological collection, Malaya-Borneo Exposition

Nasalis larvatus (cont.)

ZRC# sex age dates ver collectors other numbers

Sarawak, EAST MALAYSIA

4-196 f ad 09/04/1922 n¹
 4-204 un un ----- n
 4-212 m ad -----/1905 n WLA \$47

Weston; EAST MALAYSIA: Sabah

4-205 m ad 09/03/1941 n LAC 7

NASALIS CONCOLOR (MILLER, 1903)

ZRC# sex age dates ver collectors other numbers

Mentawai Ids., INDONESIA: Sumatera Barat

4-217 un ?ad ----- n

Pagi Seletan, Pulau; INDONESIA: Sumatera Barat

4-218 f ad 17/12/1902 y² WLA M, \$39

Sipora, Pulau; INDONESIA: Sumatera Barat

4-219 m ad 04/11/1924 n³ CBK 2411

Siberut, Pulau; INDONESIA: Sumatera Barat

4-220 f ad 25/09/1924 n³ CBK 2086
 4-221 f ad -----/1924 n³ CBK 2011

(1) Anon1923:22; (2) RH1903:3; (3) FNC,CBK1927:814M

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
------	-----	-----	------	------	-----	----------------	-------	------	-----

m		510	575	180	29		'sarawakensis'	yyyn ¹	
							'sarawakensis'	ynny	
								yyyn ²	

m		628	648	221	31			yyyn	
---	--	-----	-----	-----	----	--	--	------	--

Common name: simakobu, pig-tailed langur

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
------	-----	-----	------	------	-----	----------------	-------	------	-----

concolor (Miller, 1903)

							black	ynnn ³	
--	--	--	--	--	--	--	-------	-------------------	--

concolor (Miller, 1903)

							black	yyyn	
--	--	--	--	--	--	--	-------	------	--

concolor (Miller, 1903)

m	620	490	130	165		540 ⁴	black	yyyn	
---	-----	-----	-----	-----	--	------------------	-------	------	--

siberu (Chasen and Kloss, 1927)

m	610	460	150	148		515 ⁴	black	P yyyn ⁵	
---	-----	-----	-----	-----	--	------------------	-------	---------------------	--

m	585	465	120	150			gold	P yyyn	
---	-----	-----	-----	-----	--	--	------	--------	--

(1) died in zoological collection, Malaya-Borneo Exposition; (2) part of a set of three specimens on display, see RH1908 plate 3 no. 2; (3) face mottled; (4) head to symphysis pubis; (5) face and hands black

Genus *Presbytis*

Small, short-faced langurs; brachial index above 106; intermembral index 80 and below (Washburn, 1944); posture upright, more adapted to climbing and jumping, rather than quadrupedal; sexual dimorphism in body size absent; skull round with brow ridges poorly developed; molars short in most species, fifth cusp on third lower molar reduced or absent; no functional occlusion to distal surface of distal loph on upper third molar; incisors maintain a consistent underbite; sexual dimorphism of canine/premolar complex limited; cranial base strongly flexed; neonatal coat white with black dorsal stripe crossing arm stripe (the *cruciger* pattern); adult colouration differs greatly among species, but body proportions and cranial measurements are similar (the exceptions being the cranially robust *P.potenziani* and *P.rubicunda carinatae*). The genus is limited to the islands and rim of Sundaland.

Following Hooijer (1962) and Weitzel (1983), the genus *Presbytis* as commonly recognized is here broken up. Whether its components, *Presbytis*, *Trachypithecus* and *Semnopithecus*, form a natural group, or one of them forms a natural group with *Pygathrix* or *Nasalis*, is not yet clear. In their 'aygula-melalophos'-group, Napier and Napier (1967) recognise four species: *P.aygula*, *P.melalophos*, *P.frontata* and *P.rubicunda*. To these, Tilson (1976) and Weitzel (1983) have added *P.potenziani*, a species long considered of dubious affinities (Groves, 1970). Medway (1970) was dissatisfied with the polytopic species *P.aygula*, and split it into three geographic components: *P.aygula* (Java), *P.hosei* (Borneo) and *P.thomasi* (northern Sumatra). Wilson and Wilson (1976) separated *P.femoralis* from *P.melalophos* on the basis of colour pattern and vocalisations, as well as probable sympatry. *P.melalophos* is limited to Sumatra; *P.femoralis* is found in East and West Malaysia, in parts of Sumatra and Borneo, and also exists on many islands of the South China Sea.

As a further complication, Napier and Groves (1983) show that the Linnaean name *Simia aygula* refers not to a leaf monkey at all, but to a macaque (see below, under *Macaca fascicularis*). The name *aygula* cannot be used for the Javan *Presbytis*; the earliest available name is *comata* Desmarest, 1822 (Weitzel and Groves, 1985).

Of the eight species recognised here, only *P.thomasi* is not in the Singapore collection.

Presbytis comata Desmarest, 1822

Dark grey, grizzled dorsum; white venter in nominate subspecies; blackish cap formed from hair rising in a crest. Restricted to west Java. A subspecies, *P.c.fredericae*, collected at Gunung Slamet in central Java, is darker, has longer back hair and the white on the venter is limited to the neck and lower abdomen. Only the nominate subspecies is present in the Singapore collection.

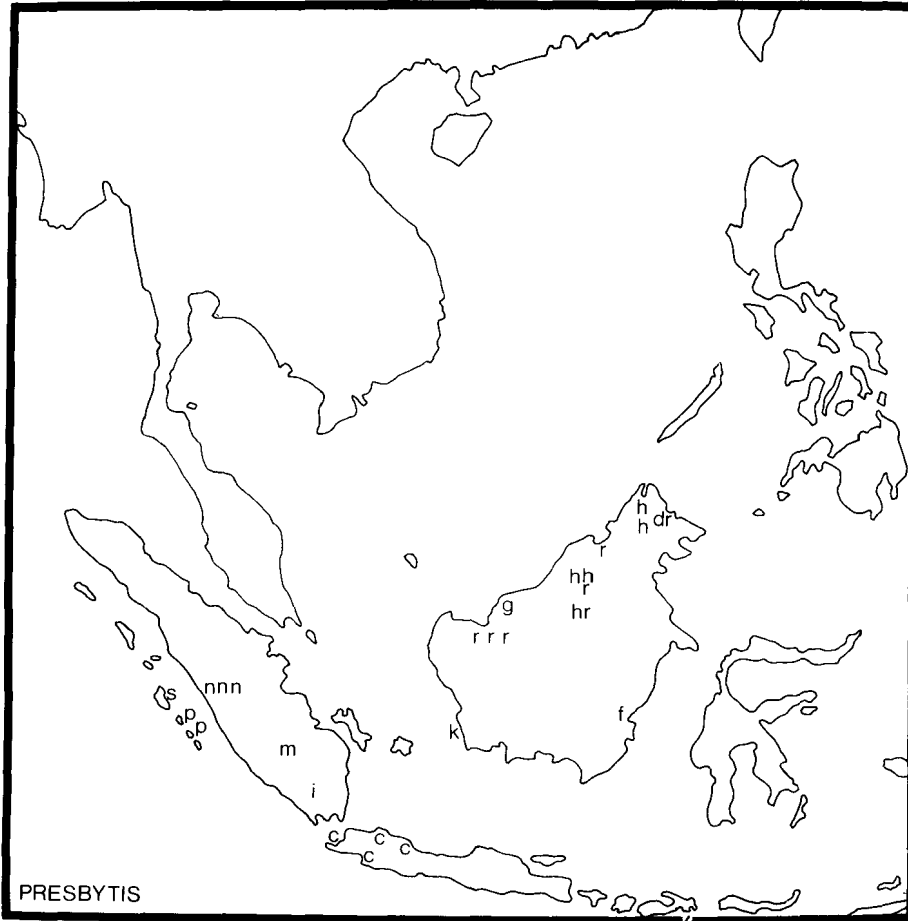


Figure 4. *Presbytis* (for *P. femoralis* see figure 5): c - *comata*; f - *frontata frontata*; g - *frontata nudifrons*; h - *hosei hosei*; d - *hosei sabana*; m - *melalophos melalophos*; n - *melalophos nobilis*; i - *melalophos mitrata*; p - *potenziani potenziani*; s - *potenziani siberu*; r - *rubicunda rubicunda*; k - *rubicunda carinatae*.

***Presbytis femoralis* Martin, 1838**

Dorsal colour ranges from grey to black, contrasting with pale underparts of variable extent, but at least leaving the postumbilical area pale; the pale marking follows onto the inner side of the leg as a well defined (femoral) stripe, continued onto the external thigh in some races; hands and feet dark; small crest on forehead, radiating from one or two centres; in most forms a rim of white flesh surrounds the lips and eyes, which reddens when the animal is excited (T. Turner, pers. comm.). Miller (1934) identifies convexity of the nasal region as diagnostic; CPG has found a large proportion of *P. femoralis* have an inverted gonion. However, neither of these features consistently

differentiates the species. An alarm vocalisation is common to the several members of this species, and is the source of the common name 'keka'. *P.femoralis* is quite variable in form; though it is possible that some of these forms are valid species, in most cases intermediate forms are known. Terms are modified after Miller (1934) and Chasen (1940):

P.f.femoralis: Blackish dorsum, white on abdomen, medial side of arm and leg, and in a thin line on the chest. Singapore Island and adjacent Johore. Chasen (1940) proposed a separate subspecies, *australis*, for specimens from Johore, the contrasting underside of the latter being generally more brown. This distinction seems not quite consistent, more important is the difference between these and *siamensis* (which has an external thigh patch) in the hills to the north. By sinking *australis* into the nominate subspecies, overall variation is clearer.

P.f.canana: Underparts buff, dorsum contrasting mouse grey; forehead greyish, rimmed with brown. Pulau Kundur.

P.f.catemana: Venter white or grey, not obviously contrasted with grey sides and back; broad pale area on external thigh not as well contrasted as in *canana*; cheeks between eyes and ears white; dorsum drab. Central Sumatra.

P.f.chrysomelas: Two colour phases coexist: the typical form is black dorsally, abdomen and inner part of thigh white or pale brown, as underside of the proximal half of the tail; the '*cruciger*' variant is reddish on head, flanks and outer surfaces of legs, with a variably expressed band of black from nape to tail and from between the shoulders onto the arms, a retention of the juvenile coat; underside as in the black form. In both forms the face is slate coloured. West and northwest Borneo.

P.f.natunae: Venter white from chin to pubis; dorsum dark brownish grey; cheeks between eye and ear white. Pulau Bunguran.

P.f.rhionis: Similar to *natunae* with venter white from chin to pubis, pale grey dorsum, forehead paler grey than *natunae*; strongly contrasting pale patch on larger part of external thigh; cheeks white between eye and ear. Pulau Bintang.

P.f.robinsoni: Uniformly dark brown to black, axilla, abdomen pale, following onto the inside of the thigh as a pale line; thorax dark brown. Some specimens, including the type and a paratype still in Singapore, are white (but not albino). The name *keatii* (Robinson and Kloss, 1911) is a junior synonym; both names are based on specimens from this collection. North Malay Peninsula.

P.f.siamensis: Underparts white, pale patch extending around back of leg onto external thigh and shin; upper parts greyish brown or blackish brown; lacks white hairs on temples found in most other *P.femoralis* with white thighs. Central Malay Peninsula. Chasen (1940) also applied the name *nubigena* to an intergrade with the southern *P.f.femoralis* (= *australis*).



Figure 5. *Presbytis femoralis*: f - *femoralis femoralis*; a - *cana*; b - *catemana*; h - *chrysomelas*; n - *natunae*; r - *rhionis*; o - *robinsoni*; s - *siamensis*.

***Presbytis frontata* (Müller, 1838)**

Grey or brownish grey, slightly darker above than below; turning darker on limbs; hands and feet black; cheeks and hairs of brow black; quite unlike *femoralis* in that insides of thigh and arm are only slightly more pale than venter; face black except for a diamond shaped patch of naked skin in middle of forehead (this patch is purportedly orange in the living animal); crest formed from two whorls, hair being reflected away from forehead and down along temples. This unusual animal is one of the least known of living primates. Unlike many congeners, *P. frontata* has not been easy to ally morphologically with other *Presbytis* species, as it differs so markedly in pelage and because of the singular nature and location of the forehead patch; the use of this marking

can only be imagined. Two subspecies are recognized: the nominate form, from southeastern Kalimantan, is darker in colour, while specimens from northwestern Borneo, attributed to *P.f.nudifrons*, are much more pale, the differentiation in colour between back and limbs is less apparent, and the forehead patch is bisected sagittally by a line of black hairs. An example of each is in Singapore.

***Presbytis hosei* (Thomas, 1889)**

Venter white; dorsum bluish, grizzled grey; lower arm and lower leg blackish inside and out; low crest or cap, colour and pattern depending upon race and sex; racial differences in white skin pattern on face. Inhabits the northeastern third of Borneo.

The species is named after Charles and Ernest Hose who, along with A.H. Everett, contributed many specimens to the Singapore and British Museum (Natural History) collections. Three subspecies are recognised, of which only the brown capped *canicrus* is not in Singapore:

P.h.hosei: Male and juvenile with white cheeks and temples, white hair extending as a collar around nape of neck; low, elongated, black crest; in female, black of cap extends onto cheeks and nape, with the white collar incomplete, and leaving a small white triangular patch on the forward aspect of the crown; face in both sexes dark, except for white skin between nares and corners of the mouth. Sarawak, part of Sabah. Thomas (1892) mistakenly described the female as a separate species, *everetti*, noting the the difference in pelage. To add to the confusion, the skins sent him by Everett had been prepared over a campfire. This left the white parts bright yellow, which Thomas took to be the colour of what is in fact a fabricated species.

P.h.sabana: Lacks white collar of nominate race; cheeks between mouth and corner of eye and extending over ears, blackish; narrow median black crest rising from brow to top of crown; greyish white patches over temples, chin and lower cheeks greyish white, so that black patches on top and either side of head are offset by intervening white; skin of face white around eyes and mouth, leaving a narrow dark patch of skin between the corner of the nares, the cheeks and upper lip, with philtrum white. Sabah.

***Presbytis melalophos* (Raffles, 1821)**

Dorsum red, to some degree, intermingled with black hairs, the red decolourising through yellow to pale grey among races; chin, chest (with a few exceptions), abdomen, inner sides of limbs and proximal tail white or buff; crest with hairs spreading over temples; colouration of crest varies, but generally reflects coat colour; a common element of the crest being a narrow, D-shaped band of black hairs crossing brow to temples, then rising to top of crest; hair enclosed within this D-pattern contrastingly paler than colour of nape and cheeks; face uniformly coloured, but varies from black to flesh colour. Inhabits the mountains and lowlands of Sumatra south of Aceh (Wilson and Wilson, 1976). Singapore has a representative collection of *P.melalophos* :

P.m.melalophos: Venter white to pale reddish; dorsum red, tinged with black hairs; external arm and leg yellow; cheeks white; forepart of crest reddish. Central to southwestern mountains of Sumatra.

P.m.fluviatilis: Venter white; dorsum and outer parts of limbs buff or creamy (but not reddish); crown cream; coronal tuft smoky black; nape washed with grey. Southwestern Sumatra.

P.m.mitrata: Venter white; dorsum and external limbs ashen grey, tinged with brown; prominent black D-pattern on crest, enclosing white hairs of forecrown. Lowlands of southern Sumatra. Elliot (1906) described *fuscumurina* (type locality Telukbetung) for this form, but it is clear from the description of *Presbytis mitrata* (Eschscholtz, 1821), that the same form is represented. Kotzebue (1821) records the type to have been purchased near Zutphen Id., off the southern tip of Sumatra, rather than on Java, as many later authors have mistakenly believed.

P.m.nobilis: Venter white; dorsum and external limbs red, saddle on back is nearly black in some specimens; crest and cheeks yellowish; D-shaped marking may be absent or incomplete. Central Sumatra near Padang.

Presbytis potenziani Bonaparte, 1856

Black dorsum; orange to red venter merging with the the white of the chest and neck; tail all black; face black; cranium robust; molars large; vocalisation most similar to *P.thomasi* (Wilson and Wilson, 1976). Limited to the Mentawai Islands.

This is the most distinctive of the species of *Presbytis*, long thought to be intermediate between *Presbytis* and *Trachypithecus* (Groves, 1970) in cranial anatomy and neonate colour. Tilson (1976) showed that the infant colour is that of *Presbytis*. The skull is superficially similar to that of *Trachypithecus*, sharing snout lengthening and narrow postorbital constriction; but the incisors and third molars are those of *Presbytis*, the external orbital rim is square, not expanded ventrally as in *Trachypithecus*; the ascending ramus is low with a broad condyle as occurs in *Presbytis*. The species may be adapted to a different environment than its congeners. Two subspecies are recognised, differing in the extent of white infusion of underparts; examples of both are in Singapore.

Presbytis rubicunda (Müller, 1838)

Red adult coat overall; bluish-black face; crest not prominent; distal part of limbs blackish in some specimens, but this is variable, as is the degree of darkening of the coat. Animals with pale reddish coat and limbs like back have been allocated to several additional races by other reviewers. However, on the basis of a larger collection, we do not find these differences consistent, and have abandoned all but *P.r.carinatae*, which is characterised by its very robust cranium, and is restricted to Karimata Island, off the southwest coast of Borneo (Lyon, 1907c, 1911). A large collection of *P.rubicunda* exists in Singapore, but it is rather poorly documented owing its early date.

***PRESBYTIS COMATA* (DESMAREST, 1822)**

ZRC# sex age dates ver collectors other numbers

Ceremai; INDONESIA: Jawa Barat

4-229 f ad 08/09/1927 n M 106

Cibodas; Gunung Gede; INDONESIA: Jawa Barat

4-223 m ad 23/02/1916 y HCR SM167/16, 7277

4-224 f ad 28/02/1916 y HCR SM169/16, 7397

4-225 m M2 01/03/1916 y HCR SM170/16, 7400

Jawa; INDONESIA

4-222 un juv pre 1900 y RM7259

Pelabuanratu, Teluk; INDONESIA: Jawa Barat

4-226 f ad 08/03/1920 y CBK SM156/20, 8756

4-227 m ad 08/03/1920 y CBK SM164/20, 8764

Ujung; INDONESIA: Jawa Barat

4-228 m ad 05/04/1920 y CBK SM238/20, 8838

***PRESBYTIS FEMORALIS* (MARTIN, 1838)**

ZRC# sex age dates ver collectors other numbers

†

Changi; SINGAPORE

4-249 f M1 27/07/1908 y HCR,ES SM1999/08, 1091

4-250 un un -----/1929 y purchased RM7335

Johor, WEST MALAYSIA

4-232 f juv 30/04/1897 y RM7344, \$31

4-236 un un ----- y RM7342

Kota Tinggi; WEST MALAYSIA: Johor

4-234 m ad 25/09/1932 n HAL 4255

4-235 f ad 25/09/1932 n HAL 4256

Kuala Semburong; WEST MALAYSIA: Johor

4-230 m subad 19/10/1892 y RM7343

4-231 m ad 05/10/1893 y RM7345

† ZRC #4-878. Bukit Timah; SINGAPORE. f, ad, 4/10/1987, H K Lua.
tot:1170, tail: 720, foot: 165, ear: 34. inv: yyyy. preserved in spirit.

Common name: surili

<u>unit tot H&B tail foot ear added measures terms type inv</u>						
<i>comata</i> (Desmarest, 1822)						
					'aygula'	nyyn
<i>comata</i> (Desmarest, 1822)						
m	460	590	152	30	'aygula'	yyyn
m	441	605	167	35	'aygula'	yyyn
m	425	600	162	35	'aygula'	yyyn
<i>comata</i> (Desmarest, 1822)						
					'aygula'	yyyn ¹
<i>comata</i> (Desmarest, 1822)						
m	455	700	161	28	'aygula'	yyyn ²
m	470	657	175	31	'aygula'	yyyn
<i>comata</i> (Desmarest, 1822)						
m	505	663	174	30	'aygula'	yyyn ³

Common name: keka, cencka

<u>unit tot H&B tail foot ear added measures terms type inv</u>						
<i>femoralis</i> (Martin, 1838)						
						yyyn
						yyyn
<i>femoralis</i> (Martin, 1838)						
					'australis'	yyyn
					'australis'	yynn ⁴
<i>femoralis</i> (Martin, 1838)						
m	1125	672	167	28	'australis'	yyyn
m	1190	755	160	29	'australis'	yyyn
<i>femoralis</i> (Martin, 1838)						
					'australis'	yyyy
					'australis'	yyyn

(1) labelled *Pithecus aygula hosei*, from the Baram District, Sarawak, but the coloration is that of *Presbytis comata*; (2) face brownish black; (3) *surili*; (4) from the old Johore Museum; presented by Johore Government, December 1912

Presbytis femoralis (cont.)

ZRC# sex age dates ver collectors other numbers

Pandan; SINGAPORE

4-251 m un 28/09/1916 y¹ LKS RM7337, \$24

Padang Tuan; Segamat; WEST MALAYSIA: Johor

4-233 f ad 21/02/1911 n MC SM1096/11, 4000, 31

Tampines; SINGAPORE

4-248 m un 12/12/1894 y¹ RM7334

Tuas; SINGAPORE

4-252 m ad 09/09/1923 y¹ AWH RM7333

menagerie specimen

4-253 m ad ----- y RM7336, \$22

Bliak; Pulau Kundur; INDONESIA: Riau

4-314 m ad 16/08/1908 y² HCR, ES SM1956/08, 1429

Kateman, Sungai; INDONESIA: Riau

4-315 f ad 16/09/1903 y³ WLA RM7376, \$12

Baram District; EAST MALAYSIA: Sarawak

4-237 m ad -----/1891 y CH RM7338

Belingeau; EAST MALAYSIA: Sarawak

4-241 f ad 18/04/1917 y MC 352/HCR, 141

4-242 m M3 21/04/1917 y MC 354/HCR, 145

Betong; Saribas; EAST MALAYSIA: Sarawak

4-238 m ad 06/08/1916 y MC 341/HCR, 41

4-239 f ad 07/08/1916 y MC 343/HCR, 45

4-240 m dm2 07/09/1922 y MC RM7399

Entawa-Samarahan; EAST MALAYSIA: Sarawak

4-244 m un -----/1919 y CU RM7341

Melalop; EAST MALAYSIA: Sabah

4-245 m un 05/04/1941 n LAC 119

(1) FNC1924-5:78; (2) OT,RCW1909b:106; (3) RH1903:3

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>femoralis</i> (Martin, 1838)									yyyn
m		452	700	155	28		'australis'	yyyn	
<i>femoralis</i> (Martin, 1838)									yynn
m		430	630	162	30			yyyn ¹	
cf <i>femoralis</i> (Martin, 1838)									yyyn ²
m		405	603	157	30			yyyn	
<i>catemana</i> Lyon, 1908									yyyn
<i>chrysomelas</i> (Müller, 1838)									black yyyn
m		514	683	164	30		black	yyyn	
m		597	664	170	26		black	yyyn	
<i>chrysomelas</i> (Müller, 1838)									'cruciger' yyyn nyyn ³
m		499	777	161	36		'cruciger'	yyyn	
m		524	774	169	33		'cruciger'	yyyn	
<i>chrysomelas</i> (Müller, 1838)									yynn ⁴
m		473	622	113	16			yynn ⁵	

(1) pubis and ischial region black, face slaty black, eyelids, edge of lips, fleshy pink; (2) tag has Pontianak as location, but a note argues that the specimen is probably Malayan; (3) MS calls this *hosei* but we cannot check skin; (4) may match skull ZRC 4-731; (5) iris light yellow

Presbytis femoralis (cont.)

ZRC# sex age dates ver collectors other numbers

Mora Bharu; Samarahan; EAST MALAYSIA: Sarawak

4-243 m ad 13/11/1919 y CU RM7339, 312

menagerie specimen

4-246 f M2 05/02/1926 y purchased RM7340

4-247 m M3 ----- y purchased RM7262

Bunguran, Pulau; INDONESIA: Riau

4-256 m ad 25/08/1928 n¹ FNC RM579

4-257 f ad 25/08/1928 n¹ FNC RM580

4-258 f ad 29/08/1928 n¹ FNC RM605

Ranai, Gunung; Pulau Bunguran; INDONESIA: Riau

4-254 f ad --/07/1894 y² EH RM7372

4-255 m subad --/09/1894 y² EH RM7373

Bintang, Pulau; INDONESIA: Riau

4-264 f ad 03/06/1930 n MC, GN RM2776, 75

4-265 f ad 03/06/1930 n MC, GN RM2778, 76

4-266 f ad 04/06/1930 n MC, GN RM2780, 79

4-267 f ad 07/06/1930 n MC RM2777, 86

4-268 f ad 07/06/1930 n MC RM2779, 89

Biru, Sungai; Pulau Bintang; INDONESIA: Riau

4-263 f ad 12/06/1908 y³ HCR, ES RM785, SM1957/08

Air Kuning; Taiping; WEST MALAYSIA: Perak

4-280 m ad 14/10/1910 y MC PM1486/11, 4030

Ban Ron Phi Bun; THAILAND: Nakhon Sri Thammarat

4-276 f ad 14/02/1922 y MC RM7332

Ban Tha San; THAILAND: Chumphon

4-274 m M2 13/03/1919 y HCR, CBK SM435/19, 8418

4-275 f ad 19/03/1919 y HCR, CBK SM478/19, 8461

Gantang, Bukit; WEST MALAYSIA: Perak

4-279 f ad 28/11/1908 n⁴ MC SM190/09, 6, (7)

(1) FNC1935a:30M; (2) GSM1901:111; (3) OT,RCW1909b:106; (4) OT1910b:25T; OT1910a:635; HCR,CBK1911:174T

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>chrysomelas</i> (Müller, 1838)									
m		500	740	175	42		black	yyyn	
<i>chrysomelas</i> (Müller, 1838)									
m		390	630	155	30		'cruciger'	yyyn ¹ yyyn	
<i>natunae</i> (Thomas and Hartert, 1894)									
m	1020		605	153	30			yyyn ²	
m	1095		614	155	32			yyyn ³	
m	1080		625	150	30			yyyn	
<i>natunae</i> (Thomas and Hartert, 1894)									
								yyyn	
								yyyn	
<i>rhionis</i> Miller, 1903									
m	1150		685	155	31			yyyn ⁴	
m	1150		685	155	31			yyyn ⁴	
m	1925		655	165	31			yyyn ⁵	
m	1150		685	155	31			yyyn	
m	1150		685	155	31			yyyn ⁴	
<i>rhionis</i> Miller, 1903									
m		447	685	159	27			yyyn	
<i>robinsoni</i> (Thomas, 1910)									
m		447	731	164	31		'keatii'	yyyn	
<i>robinsoni</i> (Thomas, 1910)									
m		436	692	161	39			yyyn	
<i>robinsoni</i> (Thomas, 1910)									
m		380	675	163	30			yyyn	
m		508	703	172	28			yyyn	
<i>robinsoni</i> (Thomas, 1910)									
i	52		30	6.5	1		'keatii'	P yyyn ⁶	

(1) in the flesh, said to be from Pontianak; (2) face grey, muzzle, area around eyes, ears fleshy, callosities black; (3) face grey, ears, muzzle and area around eyes fleshy, palms and callosities black; (4) several specimens have same measurements; (5) total length too large to be correct; (6) paratype of *keatii*

Presbytis femoralis (cont.)

ZRC#	sex	age	dates	ver	collectors	other numbers
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Khao Chong; THAILAND: Trang

4-269	f	M2	11/12/1909	y ¹	MC	SM1234/10, 3120
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Khao Rham; THAILAND: Nakhon Srithammarat

4-277	f	ad	28/02/1922	y	MC	7372
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Khau, Ko; THAILAND: Trang

4-270	f	ad	13/01/1910	y ¹	MC	SM1235/10, 3199
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Klong Tung Sai; Ko Phuket; THAILAND: Phuket

4-271	f	ad	18/12/1917	y	MC	RM7329, 5
4-272	f	ad	18/12/1917	y	MC	RM7330, 3
4-273	m	M3	20/12/1917	y	MC	RM7331, 49

Pelarit; WEST MALAYSIA: Perlis

4-278	f	ad	14/11/1911	y	MC	SM7/12, 4683
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Changkat Mentri; Sungei Bernam; WEST MALAYSIA: Perak

4-281	f	ad	09/09/1918	y	CBK	8016
4-282	m	ad	09/09/1918	y	CBK	8017

Cheras Road (7th mile); Kuala Lumpur; WEST MALAYSIA: Selangor

4-294	m	ad	25/01/1929	n	ES, purch.	SM826
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Chereka Klang, Bukit; Jeram; WEST MALAYSIA: Selangor

4-292	f	ad	16/11/1910	y		SM2585/10, 3931
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Dasun Tua; WEST MALAYSIA: Selangor

4-288	f	ad	03/10/1906	y ²	ES	SM1466/08, 67
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Genting Bidai; WEST MALAYSIA: Selangor

4-293	m	ad	02/09/1914	y		FM170/14, 5869, 1
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Gombak, Ulu; WEST MALAYSIA: Selangor

4-289	f	ad	02/11/1910	y		SM1491/11, 3920, 80
4-290	m	ad	02/11/1910	y		SM1494/11, 3921, 81
4-291	m	un	03/11/1910	y		SM1492/11, 3924

Kledang Hill; WEST MALAYSIA: Perak

4-283	f	ad	20/11/1927	n		RM403, 23
4-284	m	ad	25/11/1927	n		RM402, 40

(1) OT1910b:25T; OT1910a:635; HCR,CBK1911:174T; (2) OT,RCW
1909b:106

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>robinsoni</i> (Thomas, 1910)									
m		415	602	144	30		'keatii'	P	yyyn ¹
<i>robinsoni</i> (Thomas, 1910)									
m	1280		819	178	31				yyyn
<i>robinsoni</i> (Thomas, 1910)									
m		475	828	178	24		white	P	yyyn ¹
<i>robinsoni</i> (Thomas, 1910)									
m		447	727	160	38				yyyn
m		453	715	160	37				yyyn
m		435	675	164	35				yyyn
<i>robinsoni</i> (Thomas, 1910)									
m		473	735	165	35		'keatii'		yyyn
<i>siamensis</i> (Müller and Schlegel, 1841)									
m		445	745	170					yyyn
m		445	720	170					yyyn
<i>siamensis</i> (Müller and Schlegel, 1841)									
m		415	730	168	40				nyyn
<i>siamensis</i> (Müller and Schlegel, 1841)									
m		416	709	170	32		'dilecta'		yyyn
<i>siamensis</i> (Müller and Schlegel, 1841)									
m		425	668	163	33				nyyn
<i>siamensis</i> (Müller and Schlegel, 1841)									
m		445	665	170	35		'dilecta'		yyyn
<i>siamensis</i> (Müller and Schlegel, 1841)									
m		485	730	166	30				yyyn
m		480	825	155	31				yyyn
m		470	580	157	30		'dilecta'		ynnn
<i>siamensis</i> (Müller and Schlegel, 1841)									
m	1254		737	159	30				yyyn
m	1231		739	161	34				yyyn

(1) paratype of *keatii*

Presbytis femoralis (cont.)

ZRC# sex age dates ver collectors other numbers

Kuala Teku; Gunong Tahan; WEST MALAYSIA: Pahang

4-285 f ad 09/02/1921 y RM7362

4-286 f ad 24/11/1921 y FNC RM7363, 29

Nylas; WEST MALAYSIA: Malaca

4-259 f ad 22/10/1910 y SM1497/11, 3852

4-260 m dm2 25/10/1910 y SM1498/11, 3893, 53

4-261 f ad --/10/1910 y SM1496/11, 3902

Semangko Pass; WEST MALAYSIA: Selangor

4-287 m ad 19/02/1904 y MC SM4/3104, SM1472/08

unknown

4-262 un ?ad ----- n

***PRESBYTIS FRONTATA* (MÜLLER, 1838)**

ZRC# sex age dates ver collectors other numbers

Klumpang, Teluk; INDONESIA: Kalimantan Seletan

4-295 f un 11/03/1908 y WLA RM7377, \$27

Mukah, Ulu; EAST MALAYSIA: Sarawak

4-296 f ad 12/02/1928 y EB KM5.72p.16, R 74

***PRESBYTIS HOSEI* (THOMAS, 1889)**

ZRC# sex age dates ver collectors other numbers

Baram District; EAST MALAYSIA: Sarawak

4-298 f un pre 1900 y CH

4-301 m ad ----/1889 y CH 1881, R

Belaga; EAST MALAYSIA: Sarawak

4-299 f ad 27/03/1940 n EB 2, 2

Dulit; Gunong; EAST MALAYSIA: Sarawak

4-297 un juv ----/1891 y CH RM7258

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
------	-----	-----	------	------	-----	----------------	-------	------	-----

siamensis (Müller and Schlegel, 1841)

m		492	698	164	29			yyyn	
m		435	769	171				yyyn	

siamensis (Müller and Schlegel, 1841)

m		440	710	157	25		'nubigena'	yyyn	
m		305	495	115	28		'nubigena'	yyyn	
m		480	730	162			'nubigena'	yyyn	

siamensis (Müller and Schlegel, 1841)

							'albo cinereus'	ynnn	
--	--	--	--	--	--	--	-----------------	------	--

siamensis (Müller and Schlegel, 1841)

							'nubigena'	ynnn	
--	--	--	--	--	--	--	------------	------	--

Common name: lutung jidat putih, white-fronted leaf monkey

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
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frontata (Müller, 1838)

								yyyn	
--	--	--	--	--	--	--	--	------	--

nudifrons Elliot, 1909

i	47.2		27.2		1.2			yyyn ¹	
---	------	--	------	--	-----	--	--	-------------------	--

Common name: lutung Kalimantan Utara

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
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hosei (Thomas, 1889)

								yyyn	
								yyyn ²	

hosei (Thomas, 1889)

								yyyn	
--	--	--	--	--	--	--	--	------	--

hosei (Thomas, 1889)

								yyyn	
--	--	--	--	--	--	--	--	------	--

(1) iris dark brown, a diamond-shaped white spot on forehead, pads black, paws brown, with embryo; (2) found 1893 without label, probably presented by CH

Presbytis hosei (cont.)

ZRC# sex age dates ver collectors other numbers

Kiau, Gunong Kinabalu; EAST MALAYSIA: Sabah

4-308	m	ad	14/04/1924	n	FNC	3638
4-309	f	ad	14/04/1929	n	FNC	3641
4-310	m	ad	19/04/1929	n	FNC	3646
4-311	f	ad	25/04/1929	n	FNC	3648
4-312	m	ad	25/04/1929	n	FNC	3649

Rayoh; EAST MALAYSIA: Sabah

4-302	f	ad	24/06/1928	n ¹	MC	3553
4-303	m	M1	24/06/1928	n ²	MC	3554
4-304	f	ad	27/06/1928	n ¹	MC	3575
4-305	m	M2	27/06/1928	n ²	MC	3576
4-306	m	M3	27/06/1928	n ¹	MC	3577
4-307	m	M3	04/07/1928	n ¹	MC	3797

Sarawak, EAST MALAYSIA

4-300	m	ad	-----	n		
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Betotan; EAST MALAYSIA: Sabah

4-313	f	ad	31/07/1927	n ¹	CBK, FNC	3150
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***PRESBYTIS MELALOPHOS* (RAFFLES, 1821)**

ZRC# sex age dates ver collectors other numbers

Rimbo Pengadang Lebong; INDONESIA: Sumatera Seletan

4-322	m	ad	08/06/1916	n ³	EJ	EJ23
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menagerie specimen

4-321	f	Ad	23/09/1936	y		RM7263
4-320	m	M3	21/08/1931	n		RM19048

Kota Bumi; INDONESIA: Lampung

4-316	un	un	27/05/1940	y	V	RM7392, 1K
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menagerie specimen

4-317	f	M1	09/12/1925	y		RM7264
4-318	f	M2	21/01/1926	y		RM7265, A
4-319	m	M1	18/09/1931	n		RM3770

(1) FNC,CBK1931:51M; (2) FNC,CBK1931:51; (3) HCR,CBK1919a:259

unit tot H&B tail foot ear added measures terms type inv

hosei (Thomas, 1889)

m	1235	735	180	38		yyyn
m	1125	675	163	35		yyyn
m	1125	640	168	32		yyyn
m	1175	695	163	38		yyyn
m	1120	640	174	36		yyyn

hosei (Thomas, 1889)

m	1203	739	160	30		yyyn
m	935	593	148	30		yyyn
m	1245	750	170	32		yyyn
m	960	570	140	30		yyyn
m	1090	665	160	30		yyyn
m	1150	710	160	27		yyyn

hosei (Thomas, 1889)

yyyn

sabana (Thomas, 1893)

m	1330	815	180	560 ¹		yyyn
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Common name: simpai

unit tot H&B tail foot ear added measures terms type inv

melalophos (Raffles, 1821)

m	403	665	174	29		nyyn ²
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cf fluviatilis (Chasen, 1940)

m	1240	750	168	23		yyyn
m	1183	76-	16-	3-		yyyn

mitrata Eschscholtz, 1821

'catemana' yyyn³

cf mitrata Eschscholtz, 1821

m	985	618	145	28	'fuscomurina'	yyyn
m	742	455	110	31	'fuscomurina'	yyyn

(1) head to symphysis pubis; (2) Mus. N.H. Leiden; (3) purchased as a skin

Presbytis melalophos (cont.)

ZRC# sex age dates ver collectors other numbers

Kerinci Peak; Gunung Kerinci; INDONESIA: Sumatera Barat

4-330 f ad 05/05/1914 y¹ HCR,CBK SM513/14, 6313, 5
 4-331 m M1 05/05/1914 y¹ HCR,CBK SM514/14, 6314

Kumbang, Sungai; Gunung Kerinci; INDONESIA: Sumatera Barat

4-325 f un 19/04/1914 y¹ HCR,CBK SM414/14, 6214
 4-326 f ad --/05/1914 y¹ HCR,CBK SM618/14, 6418
 4-327 m ad --/05/1914 y¹ HCR,CBK SM620/14, 6420
 4-328 m ad --/05/1914 y¹ HCR,CBK SM621/14, 6421
 4-329 f M2 14/04/1914 y¹ HCR,CBK SM393/14, 6193

Siolak Daras; Gunung Kerinci; INDONESIA: Sumatera Barat

4-323 m ad 17/03/1914 y¹ HCR,CBK SM230/14, 6030, 14
 4-324 f ad 28/03/1914 y¹ HCR,CBK SM287/14, 6087

***PRESBYTIS POTENZIANI* (BONAPARTE, 1856)**

ZRC# sex age dates ver collectors other numbers

Pagi Utara, Pulau; INDONESIA: Sumatera Barat

4-332 m subad 11/11/1902 y² WLA RM7391, \$33

Sipora, Pulau; INDONESIA: Sumatera Barat

4-333 m ad 22/10/1924 n³ CBK 2313
 4-334 f ad 28/10/1924 n³ CBK 2365
 4-335 un dm2 --/10/1924 y⁴ CBK RM7393

Siberut, Pulau; INDONESIA: Sumatera Barat

4-336 f ad 16/09/1924 n³ CBK 2024
 4-337 f M2 02/10/1924 n³ CBK 2159

***PRESBYTIS RUBICUNDA* (MÜLLER, 1838)**

ZRC# sex age dates ver collectors other numbers

Anyut; Pulau Paku; EAST MALAYSIA; Sarawak

4-341 f ad 20/07/1916 y 346/HCR, 14

(1) HCR,CBK1918:7M; (2) RH1903:3; (3) FNC,CBK1927:812M; (4)
 FNC,CBK1927:812

unit tot H&B tail foot ear added measures terms type inv

nobilis Gray, 1842

m	515	615	163	35			yyyn ¹
m	360	495	134	39			yyyn ²

nobilis Gray, 1842

m	530	700	171	31			ynnn
m	491	675	168	27			yyyn
m	485	675	174	32			yyyn
m	510	652	180	30			yyyn
m	445	663	152	35			yyyn

nobilis Gray, 1842

m	530	785	172	37			yyyn
m	455	675	171	36			yyyn

Common name: joja, mentawai leaf monkey

unit tot H&B tail foot ear added measures terms type inv

potenziani (Bonaparte, 1856)

yyyn

potenziani (Bonaparte, 1856)

m	1095	505	590	160			yyyn ³
m	1125	485	640	156	550 ⁴		yyyn
							yyyn

siberu (Chasen and Kloss, 1927)

m	930	435	495	148	480 ⁴		P yyyn
m	840	390	450	130	435 ⁴		P yyyn

Common name: lutung merah, maroon leaf monkey

unit tot H&B tail foot ear added measures terms type inv

rubicunda (Müller, 1838)

m	473	657	157	35			yyyn
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(1) mother of 6314 [ZRC 4-331]; (2) young of 6313 [ZRC 4-330]; (3) face black, lips dusky fleshy; (4) head to symphysis pubis

Presbytis rubicunda (cont.)

ZRC# sex age dates ver collectors other numbers

Baram District; EAST MALAYSIA: Sarawak

4-344	m	ad	-----/1891	n	CH	
4-345	f	ad	-----/1891	n	CH	
4-346	un	subad	-----/1891	n	CH	
4-347	m	ad	-----/1891	n	CH	
4-348	f	ad	-----	n	CH	
4-349	m	ad	-----/1891	n	CH	
4-350	f	ad	-----/1891	n	CH	
4-351	m	ad	-----/1891	n	CH	
4-352	f	subad	-----/1891	n	CH	
4-353	m	subad	-----/1891	n	CH	
4-354	m	ad	-----/1891	n	CH	
4-355	m	subad	-----	n	CH	
4-356	m	ad	-----/1890	n	CH	

Betotan; EAST MALAYSIA: Sabah

4-360	m	M3	22/07/1927	n	CBK, FNC	3040
4-361	f	ad	28/07/1927	n ¹	CBK, FNC	3114
4-362	f	ad	28/07/1927	n ¹	CBK, FNC	3115
4-363	m	M1	28/07/1927	n ²	CBK, FNC	3116
4-364	m	ad	29/07/1927	n ²	CBK, FCN	3136
4-365	m	ad	11/08/1927	n ¹	CBK, FNC	3242
4-366	f	ad	11/08/1927	n ¹	CBK, FNC	3243
4-367	f	ad	11/08/1927	n ¹	CBK, FNC	3254
4-368	m	M1	15/08/1927	n ²	CBK, FNC	3277
4-369	m	M2	15/08/1927	n ²	CBK, FNC	3278

Borneo

4-359	f	M1	26/11/1926	n	purchased	
4-371	un	subad	-----	n	FPB, WFL	

Dulit; Gunong; EAST MALAYSIA: Sarawak

4-357	m	ad	--/01/1897	n	CH	
4-358	f	ad	--/01/1897	n	CH	

Paku, Pulau; Betong; Saribas; EAST MALAYSIA: Sarawak

4-340	m	M1	12/08/1915	y		359/HCR, 39
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Tawai; EAST MALAYSIA: Sarawak

4-370	?m	un	11/07/1962	n	JLH	JLH2101
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(1) FNC,CBK1931:51M; (2) FNC,CBK1931:3

unit tot H&B tail foot ear added measures terms type inv

rubicunda (Müller, 1838)

yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn

rubicunda (Müller, 1838)

m	1024	750	182			yyyn
m	1250	770	170	540 ¹		yyyn
m	1230	740	170	525 ¹		yyyn
m	980	610	147	410 ¹		yyyn
m	1150	660	172	500 ¹		yyyn
m	1240	710	180	545 ¹		yyyn
m	1235	720	170	540 ¹		yyyn
m	1230		176			yyyn
m	970	580	147			yyyn
m	1090	670	168	640 ¹		yyyn

rubicunda (Müller, 1838)

m	886	550	134	28		yyyn ²
						yyyn

rubicunda (Müller, 1838)

yyyn
yyyn

rubicunda (Müller, 1838)

m	451	582	147	31		yyyn
---	-----	-----	-----	----	--	------

rubicunda (Müller, 1838)

m	550	660	170	32		ynnn ³
---	-----	-----	-----	----	--	-------------------

(1) head to symphysis pubis; (2) in the flesh, face nearly slaty black;
(3) Bernice P. Bishop Museum, Sarawak

Presbytis rubicunda (cont.)

ZRC#	sex	age	dates	ver	collectors	other numbers
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Terusan, Ulu; EAST MALAYSIA: Sarawak

4-342	f	ad	02/05/1939	n	GN	20, (20)
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4-343	f	ad	02/05/1939	n	GN	23, (23)
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Karimata, Pulau; INDONESIA: Kalimantan Barat

4-338	f	ad	26/08/1904	n		3658
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4-339	f	ad	07/10/1908	y	WLA	
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PRESBYTIS SP.

ZRC#	sex	age	dates	ver	collectors	other numbers
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unknown

4-729	m	subad	-----	n		R
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4-730	m	ad	-----	n		
-------	---	----	-------	---	--	--

4-731	f	ad	-----	n		RM2891
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4-865	m	juv	-----	n		
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4-866	un	juv	-----	n		
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unit	tot	H&B	tail	foot	ear	added	measures	terms	type	inv
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rubicunda (Müller, 1838)

m	1235		756	171	31				yyyn	
m	1200		760	170	31				yyyn	

carinatae Miller, 1906

m		522	730	172					nyyn	
									yynn	

unit	tot	H&B	tail	foot	ear	added	measures	terms	type	inv
------	-----	-----	------	------	-----	-------	----------	-------	------	-----

nyyn
nyyy
nynn¹
ynnn
ynnn

(1) found with *Trachypithecus cristatus* ZRC 4-416 but skull is *Presbytis*

Genus *Trachypithecus*

Widely distributed langur with small (6 kg) to large (20 kg) forms; intermembral index 80 and above; brachial index below 101, indicating generalised, quadrupedal progression; colouration variable, most frequently dark overall; white patches surround sexual skin in females of most species; low vaulted, but rather gracile calvarium with a longer snout and longer molar row than occurs in *Presbytis*, but similar to *Colobus* and *Semnopithecus*; pronounced sexual dimorphism in canine/premolar complex; mandible relatively large, ascending ramus high; interorbital pillar wide; piriform aperture generally narrow; brow ridges pronounced but narrow, and depressed in a 'V' towards nasion, giving the animal a supercilious expression.

This genus is more widespread than *Presbytis*, occurring as far north as Bhutan and southern China; Brandon-Jones (1984) has shown that two more southwesterly species, *Trachypithecus johnii* (southwest India) and *T.vetulus* (Sri Lanka), sometimes referred to a separate genus, *Kasi*, are integral members of *Trachypithecus*. *T.auratus* has been shown by Weitzel and Groves (1985) to be the correct term for the Javan *Trachypithecus*. We have suggested that this taxon may be specifically distinct from the Sunda Island leaf monkey, *T.cristatus*; if this is not accepted, then *T.auratus* would supersede *T.cristatus* as described below. Ranges of the several species of *Trachypithecus* have been delineated by Fooden (1976a). The Singapore collection lacks only representatives of the South Asian *T.johnii* and *T.vetulus*, and of *T.pileatus* and *T.geei* from Assam and Bhutan.

Trachypithecus auratus (E.Geoffroy, 1812)

The Javan langur occurs in two colour phases: a smaller central and west Javan race, *T.sondaicus*, which is jet black with occasional grey tipped hairs; and in eastern Java, the much larger nominate race, in which many individuals are red or orange in colour, the *pyrrhus* of Horsfield (1824). A third race, black like the first, is *T.a.kohlbruggei* from Bali and Lombok. Hair on the crown is formed into an upstanding cap, the sides of which merge with hairs from the temple and cover the ears. Weitzel (1983) found the dental arcade of both east and west Javan forms to be longer for the size of the calvarium than is the case in *T.cristatus*; associated mandibular measurements are also larger. Given that the body size of *T.a.sondaicus* is equivalent to that of *T.cristatus* on adjacent islands of the Archipelago, this suggests that *T.auratus* should be considered specifically distinct from *T.cristatus*. Specimens of the Javan races of *T.auratus* are in the collection.

Trachypithecus cristatus (Raffles, 1821)

The silvered leaf monkey of the Indonesian Archipelago is blackish overall, suffused with white on the dorsum; tail black; body size 6-7 kg; moderate deepening of ascending ramus of mandible; skull gracile, with moderate development of the snout; face black.



Figure 6. *Trachypithecus*: a - *auratus auratus*; s - *auratus sondaicus*; c - *cristatus cristatus*; g - *cristatus germaini*; v - *cristatus vigilans*; l - *francoisi laotum*; o - *obscurus obscurus*; b - *obscurus carbo*; f - *obscurus flavicauda*; h - *obscurus halonifer*; e - *obscurus seimundi*; m - *obscurus smithi*; t - *obscurus styx*; p - *phayrei argenteus*; n - *phayrei shanicus*; i - *phayrei shanicus* > *argenteus*.

The degree of peppering of coat is variable; localised populations of paler-backed forms in Sumatra and Borneo have been identified as a separate, polytopic subspecies, '*ultimus*' (see Chasen, 1940). Some specimens of *T.c.germaini* from the continent are quite silvered, approaching the colour of the sympatric *T.phayrei* (Osgood, 1932); *T.c.germaini* also has a slightly larger skull than equatorial *cristatus*; we follow Pocock (1934) in assigning *germaini* to *T.cristatus*. Miller (1913) differentiates *T.c.vigilans* from the South Natuna Islands cranially from *cristatus*. Chasen (1940) is unsure of the validity of *pullata* from Pulau Bintang and Pulau Battam. We have followed him in lumping this with *cristatus*.

Trachypithecus francoisi (Pousargues, 1898)

Medium sized black leaf monkey from Indochina; crown ornamented with a cap; variations in white or golden patches identify subspecies. A number of quite distinct subspecies exist, some confined to very narrow ranges (see Dao, 1970; Li and Ma, 1980).

Only two specimens of this species are represented in the collection, these date from an expedition to Indochina (Day, 1920) and belong to *T.f.laotum* which differs from the nearly all black nominate subspecies in having a white head and neck, the brows remaining black.

Trachypithecus obscurus (Reid, 1837)

The spectacled leaf monkey, so called because this black-faced animal has a broad white patch around the upper half of each eye, resembling eyeglasses; lips are surrounded by a similar white patch. Lacks a pronounced cap or raised hair; crown and nape contrastingly lighter in shade, compared with face rim; skull similar to *T.cristatus*. The hair on the dorsum is long, brownish grey to pale grey, sparser and paler on the underparts. Inhabits the Malay Peninsula to southern Thailand (Fooden, 1976a).

Chasen (1940) retained a large number of subspecies, mostly insular, for *T.obscurus*; these differ only slightly from the nominate form. Hence, Pocock (1934, 1939) contracted Chasen's checklist:

T.o.obscurus: Dorsum dark brown to blackish, contrasted with grey of back of head; legs somewhat more pale; underside dark brown. Central Malay Peninsula.

T.o.carbo: Black above with reddish shoulders, dark brown below; nuchal patch pale drab grey; thighs and tail grey. Langkawi and Terutau Islands.

T.o.flavicauda: Similar to *obscurus* but thigh and legs more pale; occipital cap pale drab grey. From Trang northwards into peninsular Thailand.

T.o.halonifer: A dark form, originally described by Cantor (1845), which Chasen (1940) limited to Pulau Penang.

T.o.seimundi: As *carbo* but frontal band browner. Ko Bha Ngan.

T.o.smithi: Similar to *flavicauda* but tail and limbs lighter and white of thigh extending further onto rump, contrasting with dorsal colour; occipital patch less yellowish. Upper peninsular Thailand.

T.o.styx: Darker dorsum and outer parts of arm black, hind limbs dark ashy grey, venter dark brown, tail silver ashy grey. Perhentian Islands.

Trachypithecus phayrei (Blyth, 1837)

About the size of *T.obscurus*; dorsum silver or mouse grey; more uniformly brown in northern races; southern races have a contrastingly lighter occipital cap; cap does not form into a crest; venter dark; as in *T.obscurus*, lips and eye fringe white; skull similar to that of *T. obscurus* (after Pocock, 1934, 1939).

A few specimens of *T.phayrei* are found in the Singapore collection:

T.p.argenteus from central Thailand which was distinguished by Kloss (1919) as pale, and extensively silvered dorsally, the long hairs of the arm being brownish grey; there is a buff wash on the occiput. Pocock (1934) asserted that this is a seasonal variation, representing bleaching of the hairs in the later months of the year; however the collection at Singapore was procured throughout the year, and shows little variation in coat colour. Hence, we feel justified in retaining Kloss's term.

T.p.shanicus has a whorl parting the hairs on the brow; eye ring only on inner side of eye (Pocock, 1939).

T.cristatus germaini has been discussed with reference to this species. Pocock (1934) assessed the evidence for association; he found that *germaini* agrees with other *T.cristatus* in lacking eye or lip rings, in having contrasting yellow temporal markings and in having a basic dorsal underfur colour that is blackish rather than silvery. Hence, we have placed this taxon in *T.cristatus*, rather than in *T.phayrei*.

TRACHYPITHECUS AURATUS (E. GEOFFROY, 1812)

ZRC# sex age dates ver collectors other numbers

Arjuno; INDONESIA: Jawa Timur

4-378 m ad 26/11/1927 n JJM 168

Arjuno; INDONESIA: Jawa Timur

4-379 m ad ----- n JJM 155

Jawa; INDONESIA

4-373 m ad 06/04/1916 n SM585/16, 5700p--, 102

Karang Bolang; INDONESIA: Jawa Tengah

4-377 m ad 17/02/1920 y CBK SM115/20, 8615

Ongop Ongop; INDONESIA: Jawa Timur

4-372 f un 03/04/1916 n 82

Subang; INDONESIA: Jawa Tengah

4-374 f ad 07/04/1916 n 1025

4-375 m ad 09/04/1916 n 1035

Tamansari; INDONESIA: Jawa Tengah

4-376 f ad 17/01/1920 y CBK SM33/20, 8633

Pelabuhanratu, Teluk; INDONESIA: Jawa Barat

4-380 f un 11/03/1920 y CBK SM176/20, 8776

4-381 m M2 23/03/1920 y CBK SM214/20, 8814

Ujung Tebu; INDONESIA: Jawa Barat

4-382 f ad 03/04/1920 y CBK SM224/20, 8824, 4

TRACHYPITHECUS CRISTATUS (RAFFLES, 1821)

ZRC# sex age dates ver collectors other numbers

Baram District; EAST MALAYSIA: Sarawak

4-411 m ad -----/1891 n CH

4-412 f ad ----- n CH

4-413 m ad ----- n CH

Bintang, Pulau; INDONESIA: Riau

4-396 f ad 03/05/1930 n 2784, 50

Common name: lutung Jawa

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>auratus</i> (E. Geoffroy, 1812)									
								yyyn	1
cf <i>auratus</i> (E. Geoffroy, 1812)									
								yyyn	2
<i>auratus</i> (E. Geoffroy, 1812)									
m		575	610	165	40			yyyn	
<i>auratus</i> (E. Geoffroy, 1812)									
m		530	865	179	34			yyyn	
<i>auratus</i> (E. Geoffroy, 1812)									
m		545	675	175	40			yyyn	
<i>auratus</i> (E. Geoffroy, 1812)									
m		552	679	157	32			yyyn	
m		641	721	165	38			yyyn	
<i>auratus</i> (E. Geoffroy, 1812)									
m		515	735	164	32			yyyn	
<i>sondaicus</i> (Robinson and Kloss, 1919)									
m		535	775	165	32			ynnn	
m		480	765	174	32			yyyn	
<i>sondaicus</i> (Robinson and Kloss, 1919)									
m		500	770	167	31			yyyn	

Common name: lutung biasa, lotong kelabu, silvered leaf-monkey

unit	tot	H&B	tail	foot	ear	added	measures	terms	type	inv
<i>cristatus</i> (Raffles, 1821)										
								'ultimus'	YYYY	
								'ultimus'	YYYY	
								'ultimus'	YYYY	
<i>cristatus</i> (Raffles, 1821)										
								'pullata'	yyyn	

(1) iris brown fussohle pink, Naturalienhandel Cheribon; (2) fussohle black

Trachypithecus cristatus (cont.)

ZRC# sex age dates ver collectors other numbers

Bintang, Pulau; INDONESIA: Riau

4-397	f	ad	29/05/1930	n		2783, 40
4-398	f	ad	05/06/1930	n		2782, 55
4-399	m	ad	11/06/1930	n		2785, 96
4-400	f	M1	-----/1930	n		2781, 51

Biru, Sungai; Pulau Bintang; INDONESIA: Riau

4-394	m	dm2	12/06/1908	y ¹	HCR, ES	SM2460/09, RM798
4-395	f	ad	12/06/1908	y ¹	HCR, ES	SM1961/08, RM797

Borneo

4-414	f	ad	-----	n		
4-417	un	subad	-----	n		\$29

Botanical Gardens; SINGAPORE

4-429	m	subad	05/03/1902	n		
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Changkat Menti; Sungei Bernam; WEST MALAYSIA: Perak

4-383	f	ad	21/09/1918	y	CBK	8074
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Entawa-Samarahan; EAST MALAYSIA: Sarawak

4-416	f	ad	21/11/1919	y	CU	RM2891, 335
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Galang, Pulau; INDONESIA: Riau

4-401	f	M2	30/12/1924	n ²	FNC	2889, 9
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Kota Bumi; INDONESIA: Lampung

4-406	m	ad	05/05/1940	n	V	4
4-407	m	dm2	05/05/1940	n	V	5
4-408	un	dm2	05/05/1940	n	V	9
4-409	un	dm1	05/05/1940	n	V	10
4-410	f	ad	06/05/1940	n	V	3

Kuala Selangor; WEST MALAYSIA: Selangor

4-384	f	ad	09/12/1904	y ³	MC	SM4/3102, SM1512/08
4-385	f	un	04/08/1906	y ³	HCR	SM1513/08, 1
4-386	m	ad	04/08/1906	y ³	HCR	SM1514/08, 2
4-387	m	ad	--/12/1906	y	MC	SM2457/09
4-388	f	ad	--/12/1906	y	MC	SM2458/09
4-389	f	ad	--/02/1907	y	MC	SM2828/07

(1) OT,RCW1909a:439T; OT,RCW1909b:106; FNC1940:82R; (2) FNC 1925:93; (3) OT,RCW1909b:106

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>cristatus</i> (Raffles, 1821)									
m	1095		645	150	30		'pullata'	yyyn	
m	1205		675	165	30		'pullata'	yyyn	
							'pullata'	yyyn	
m	735		435	50	22		'pullata'	yyyn	
<i>cristatus</i> (Raffles, 1821)									
							'pullata'	P yyyn ¹	
m		452	620	146	26		'pullata'	P yyyn ²	
<i>cristatus</i> (Raffles, 1821)									
							'ultimus'	yyyy	
							'ultimus'	yyyn	
<i>cristatus</i> (Raffles, 1821)									
								yyyn ³	
<i>cristatus</i> (Raffles, 1821)									
m		458	680	153				yyyn	
<i>cristatus</i> (Raffles, 1821)									
m		520	775	157	34		'ultimus'	ynyn	
<i>cristatus</i> (Raffles, 1821)									
m	1010		615	140	30			yyyn ⁴	
<i>cristatus</i> (Raffles, 1821)									
								yyyn	
								yyyn	
								yyyn	
								yyyn	
								yyyn	
<i>cristatus</i> (Raffles, 1821)									
m		518	667	148	27			ynnn	
								ynnn	
								yyyn	
								nyyn	
								nyyn	
								nyyn	

(1) young of 797 [ZRC 4-395], paratype of *pullata*; (2) mother of 798 [ZRC 4-394], paratype of *pullata*; (3) from the gardens; (4) face, ears and soles of feet slaty black, buttocks fleshy white patch or silver

Trachypithecus cristatus (cont.)

ZRC# sex age dates ver collectors other numbers

Kuala Selangor; WEST MALAYSIA: Selangor

4-390 m ad 11/09/1909 y MC SM2456/09, 3031

Panji, Teluk; Kotapinang; INDONESIA: Sumatera Utara

4-403 f ad 04/05/1937 n MB A

4-405 f M2 ----/1937 n MB B

Pasar Panjang; Pulau Bintang; INDONESIA: Riau

4-392 m M3 09/06/1908 y¹ HCR, ES SM1962/08, RM761

4-393 m dm1 10/06/1908 y¹ MC SM2461/09, RM764

Pelandok, Sungei; Pulau Paku; Saribas; EAST MALAYSIA: Sarawak

4-415 m ad 04/08/1916 n RM2890, 1202

Sandaran Agung; Gunung Kerinci; INDONESIA: Sumatera Barat

4-402 f ad 03/06/1914 y² HCR, CBK SM560/14, 6360

Semimba, Teluk; Pulau Battam; INDONESIA: Riau

4-425 f ad 20/09/1905 n CBK 26

4-426 f M2 20/09/1905 n CBK

Tuan Keramat, Tanjong; WEST MALAYSIA: Negri Sembilan

4-391 m ad 07/04/1920 n RM2892

menagerie specimen

4-430 f juv 05/09/1911 n RM2895

4-431 f un 26/03/1924 n purchased RM2897, 2897

4-432 f dm2 03/11/1925 n purchased RM2894, K

4-433 f M2 02/12/1926 n purchased RM2893

4-434 f ad 13/04/1927 n purchased RM2896

unknown

4-435 un inf ----- n

Chang, Ko; THAILAND: Trat

4-418 f ad 07/12/1914 y³ CBK 1434/CBK, 29

4-419 f M2 07/12/1914 y⁴ CBK 1436/CBK

(1) OT, RCW1909a:439T; OT, RCW1909b:106; FNC1940:82R; (2) HCR, CBK1918:7M; (3) CBK1916b:67M; (4) CBK1916b:67T

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>cristatus</i> (Raffles, 1821)									
m		506	704	172	32			nyyn	
<i>cristatus</i> (Raffles, 1821)									
								yyyn	
								nyyn	
<i>cristatus</i> (Raffles, 1821)									
m		449	653	142	31		'pullata'	P yyyn ¹	
							'pullata'	P yyyn ¹	
<i>cristatus</i> (Raffles, 1821)									
m		548	632	153	39		'ultimus'	yyyn	
<i>cristatus</i> (Raffles, 1821)									
m		480	640	155	37			yyyn	
<i>cristatus</i> (Raffles, 1821)									
m	1170	540	680	155			'pullata'	yynn ²	
m	1000	450	610				'pullata'	nyyn	
<i>cristatus</i> (Raffles, 1821)									
m		535	823	175	40			nyyn	
<i>cristatus</i> (Raffles, 1821)									
m	773		460	115	27			yynn	
m	715		445	75	34			yyyn	
m	950		565	141	29			yyyn	
m	1084		633	137	27			yyyn	
<i>cristatus</i> (Raffles, 1821)									
								yyyn ³	
<i>germaini</i> (Milne-Edwards, 1876)									
m	1285		780	157	38	5304	'mandibularis'	P yyyn ⁵	
m	1225		690	142	37	4704	'mandibularis'	P yyyn ⁵	

(1) paratype of *pullata*; (2) upper eyelids greyish, buttocks, genital area white, remaining bare skin black; (3) local name *chichok*, sent for identification [collector's number and dates not provided]; (4) head to symphysis pubis; (5) paratype of *mandibularis*

Trachypithecus cristatus (cont.)

ZRC# sex age dates ver collectors other numbers

Pak Chong; Sathani; THAILAND: Nakhon Ratchasima

4-420	f	ad	20/01/1931	n	CJA	46
4-421	f	ad	30/05/1931	n	CJA	RM19061
4-422	f	ad	30/05/1931	n	CJA	RM19062
4-423	m	ad	30/05/1931	n	CJA	RM19066

THAILAND

4-424	m	ad	-----/1917	n	CBK	A
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Serasan, Pulau; Natuna Seletan; INDONESIA: Riau

4-427	f	ad	15/08/1931	n ¹	PMF	RM2887, 65
4-428	f	ad	27/08/1931	n ¹	PMF	RM2888, 149

unknown

4-853	f	ad	-----	n		
4-854	m	ad	-----	n		

TRACHYPITHECUS FRANCOISI (POUSARGUES, 1898)

ZRC# sex age dates ver collectors other numbers

Ban Naxao; LAOS: Khammouan

4-436	f	ad	24/02/1920	y ²	MC, JB	7212
4-437	f	ad	25/02/1920	y ²	MC, JB	7219

TRACHYPITHECUS OBSCURUS (REID, 1837)

ZRC# sex age dates ver collectors other numbers

Ban Nara; THAILAND: Pattani

4-465	m	ad	09/07/1916	y ³	WJFW, MAS	2476/CBK, (98)
4-466	m	ad	11/05/1924	y ⁴		RM7464, 47
4-467	f	ad	16/05/1924	y ⁴		RM7463, 52
4-468	f	dm2	19/05/1924	y ⁴		RM7462, 54
4-469	m	ad	14/07/1926	n ⁴	CJA	RM19069
4-470	m	ad	16/07/1926	y ⁴	CJA	RM7503, 3
4-471	f	M1	18/07/1926	y ⁴	CJA	RM7502, 14
4-472	m	ad	18/07/1926	n ⁴	CJA	RM19071
4-473	m	ad	19/07/1926	y ⁴	CJA	RM7500, 16
4-474	m	ad	-----/1926	n ⁴	CJA	RM19060

(1) FNC1935a:30M; (2) LAD1920:34; (3) CBK1917a:288; (4) FNC 1935a:34

unit tot H&B tail foot ear added measures terms type inv

germaini (Milne-Edwards, 1876)

yyyn
'koratensis' yyyn
'koratensis' yyyn
'koratensis' yyyn

germaini (Milne-Edwards, 1876)

yyyn¹

vigilans (Miller, 1913)

m 1315 790 155 32 yyyn
m 1290 735 150 25 yyyn

nyyn
nyyn

Common name: François' langur

unit tot H&B tail foot ear added measures terms type inv

laotum (Thomas, 1921)

m 535 895 163 45 P yyyn
m 460 810 155 40 P yyyn

Common name: chenkong, lotong bercelak, dusky or specacled langur

unit tot H&B tail foot ear added measures terms type inv

obscurus (Reid, 1837)

m 1342 770 172 42 yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn
yyyn

(1) date of receipt 30.4.17 sent for identification

Trachypithecus obscurus (cont.)

ZRC#	sex	age	dates	ver	collectors	other numbers
Bentong (6-9 miles west); WEST MALAYSIA: Pahang						
4-492	f	ad	26/06/1910	y ¹	MC	SM1836/10, 3334, 20, 5, 22
4-493	f	ad	17/06/1910	y ¹	MC	SM1835/10, 3335, 5, 19
Changkat Mentri; Sungei Bernam; WEST MALAYSIA: Perak						
4-482	m	ad	09/09/1918	y	CBK	8018/CBK
4-483	m	ad	13/09/1918	y	CBK	8039/CBK
4-484	m	ad	13/09/1918	y	CBK	8040/CBK
Chereka Klang, Bukit; Jeram; WEST MALAYSIA: Selangor						
4-498	m	ad	16/11/1910	y		SM2590/10, 3929
4-499	f	ad	16/11/1910	y		SM2591/10, 3930, 89
Gantang, Bukit; WEST MALAYSIA: Perak						
4-485	m	ad	-----	y		SM146/14, (13)
4-486	f	ad	-----	y		SM120/14, 14, (14)
Genting Bidai; WEST MALAYSIA: Selangor						
4-500	m	ad	14/09/1914	y		SM172/14, 5871, 17
Hantu, Tanjong; Dindings; WEST MALAYSIA: Perak						
4-481	m	ad	19/07/1918	y	ES	RM7501, 12
Johor or Pahang, WEST MALAYSIA						
4-515	m	ad	-----	y		RM7468
Jong, Bukit; WEST MALAYSIA: Trengganu						
4-487	m	ad	27/09/1910	y	B	SM2506/10, 3837, 156, 24
4-488	m	ad	27/09/1910	y	CBK	SM2507/10, 3838
Kota Tinggi; WEST MALAYSIA: Johor						
4-510	m	juv	06/07/1891	y		RM7467
Kuala Tahan; Sungei Tahan; WEST MALAYSIA: Pahang						
4-491	f	dml	31/07/1908	y	HCR	SM1509/08, 47
Kuala Tembeling; WEST MALAYSIA: Pahang						
4-490	m	ad	25/08/1905	y	HCR	SM1479/08, 58A
Luang Khao; THAILAND: Nakhon Srithammarat						
4-475	f	ad	26/03/1924	y	CJA	RM7570, 32
4-476	f	ad	26/03/1924	y	CJA	RM7573, 33

unit tot H&B tail foot ear added measures terms type inv

obscurus (Reid, 1837)

m	489	725	154	31		yyyn
m	531	738	154	24		yyyn

obscurus (Reid, 1837)

m	475	695	155			yyyn
m	461	530	165	29		ynnn
m	462	573	157	32		yyyn

obscurus (Reid, 1837)

m	482	790	164	54		yyyn
m	460	690	146	34		yyyn

obscurus (Reid, 1837)

i	19	33	7	1.38		yyyn
i	18	29	6	1		yyyn

obscurus (Reid, 1837)

m	495	724	158	30		yyyn
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obscurus (Reid, 1837)

m	530	730	163	38		yyyn
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obscurus (Reid, 1837)

yyyn

obscurus (Reid, 1837)

m	480	760	171	32		yyyn
m	515	740	178	30		yyyn

obscurus (Reid, 1837)

yyyn

obscurus (Reid, 1837)

m	245	353	83	28		yyyn ¹
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obscurus (Reid, 1837)

m	496	720	169	29		yyyn
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obscurus (Reid, 1837)

nyyn

yyyn

(1) skin of ears and face pale livid grey

Trachypithecus obscurus (cont.)

ZRC# sex age dates ver collectors other numbers

Nylas; WEST MALAYSIA: Malacca

4-505	f	ad	21/10/1910	y		SM1469/11, 3842
4-506	m	M2	21/10/1910	y		SM1470/11, 3841, 7
4-507	m	ad	25/10/1910	y	MC	SM1467/11, 3888, 8
4-508	f	ad	27/10/1910	y	MC	SM1472/11, 3905, 6
4-509	m	ad	28/10/1910	y	MC	SM1473/11, 3908, 11

Pelari; WEST MALAYSIA: Perlis

4-477	m	ad	09/11/1911	y	MC	SM5/12, 4677
4-478	m	ad	10/11/1911	y	MC	SM3/12, 4678, 25, H

Sebah, Pulau; Sungei Pahang; WEST MALAYSIA: Pahang

4-489	m	ad	04/07/1891	y		RM7469
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Semangko Pass; WEST MALAYSIA: Selangor

4-494	m	un	26/10/1909	y	MC	SM2417/09, 1875
4-495	m	ad	27/10/1909	y		SM2444/09, 1877
4-496	m	un	--/03/1912	y		RM7470
4-497	f	un	--/03/1912	y		RM7471

Si Karang; WEST MALAYSIA: Johor

4-511	m	ad	01/08/1908	y	MC, HCR, ES	SM2553/08, 1280, 3
4-512	m	--	01/08/1908	y	HCR, ES	SM1954/08, 1261, 4
4-513	f	M2	02/08/1908	y	HCR, ES	SM1955/08, 1281, 2

Tangga, Bukit; WEST MALAYSIA: Negri Sembilan

4-501	m	ad	--/07/1910	y ¹		SM2035/10, 3357
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Tea Garden; Larut Hills; WEST MALAYSIA: Perak

4-479	m	ad	03/10/1910	y	ES	RM1475/11, 4020
4-480	m	ad	05/10/1910	y		SM1474/11, 4026

Tebrau, ? Sungei; WEST MALAYSIA: Johor

4-514	m	ad	22/03/1907	n	CBK	SM1487/11
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Tuan Keramat, Tanjong; WEST MALAYSIA: Negri Sembilan

4-502	f	ad	30/03/1920	y		RM7466, 2
4-503	m	ad	31/03/1920	y	ES	RM7504, 11
4-504	m	ad	07/04/1920	y		RM7465, 28

WEST MALAYSIA

4-516	un	subad	-----	y		RM7472
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unit tot H&B tail foot ear added measures terms type inv

obscurus (Reid, 1837)

m	472	755	152	25		yyyn
m	485	729	143	26		yyyn
m	540	772	175	29		yyyn
m	504	810	165	27		yyyn
m	550	782	152	30		yyyn

obscurus (Reid, 1837)

m	480	705	160	38		yyyn
m	554	804	165	39		yyyn

obscurus (Reid, 1837)

yyyn

obscurus (Reid, 1837)

m	549	801.5	162	27		yynn
m	515	802	175	32		nyyn
						yyny
						yynn

obscurus (Reid, 1837)

m	505	773	173	31		yyyn
m	420	703	161	33		yyyn
m	410	707	149	32		yyyn

obscurus (Reid, 1837)

m	453	741	173			nyyn
---	-----	-----	-----	--	--	------

obscurus (Reid, 1837)

m	506	745	173	36		yyyn
m	512	804	176	33		nyyn

obscurus (Reid, 1837)

nyyn

obscurus (Reid, 1837)

m	534	755	162	37		yyyn
m	512	754	166	38		yyyn
m	522	819	170	39		yyyn

obscurus (Reid, 1837)

yynn

Trachypithecus obscurus (cont.)

ZRC# sex age dates ver collectors other numbers

WEST MALAYSIA

4-517 f ad ----- n

Buraw; Pulau Langkawi; WEST MALAYSIA: Perlis

4-442 f ad 12/12/1916 y HCR SM523/17, 7552

Dayang Bunting, Pulau; WEST MALAYSIA: Perlis

4-440 f ad 06/12/1916 y HCR SM526/17, 7502

4-441 f ad 09/12/1916 y HCR SM524/17, 7525

Tarutao, Ko; THAILAND: Satun

4-439 f ad 22/12/1916 y HCR SM274/17, 7661

Waw, Telok; Pulau Tarutao; THAILAND: Satun

4-438 m ad 20/12/1916 y HCR,CBK SM275/17, 7639

Ban Dohn; THAILAND: Nakhon Sri Thammarat

4-458 f ad 01/09/1930 y¹ CJA RM7571, 68

4-459 f M1 01/09/1930 y¹ CJA RM7572, 67

Ban Nong Kok; THAILAND: Krabi

4-448 m ad 05/01/1918 y MC RM7566, 155

4-449 f ad 05/01/1918 y MC RM7569, 156

4-450 m ad 07/01/1918 y MC RM7568, 172

Bankachon; Victoria Point; BURMA: Tenasserim

4-443 m M2 10/12/1913 y² GCS SM733/16, 4463

4-444 f M2 27/12/1913 y² GCS SM734/16, 4635

Khao Chong; THAILAND: Trang

4-445 m ad --/12/1909 y MC SM48/10, 3059, 28

4-446 f ad ----- y MC SM1230/10, 3116

Luang Khao; THAILAND: Nakhon Srithammarat

4-456 f ad 15/03/1922 n MC, JB 7380

4-457 m un 25/09/1926 y¹ CJA RM7576, 9, (510)

Pasir Raya; Pulau Luntar; THAILAND: Krabi

4-447 f subad 10/01/1917 y HCR,ES SM525/17, 7936

Poh, Telok; Ko Yao Yai; THAILAND: Phangnga

4-451 f ad 22/01/1918 y RM7567, 299

(1) FNC1935b:34; (2) RCW1915:701

unit tot H&B tail foot ear added measures terms type inv

cf obscurus (Reid, 1837)

ynnn

carbo (Thomas and Wroughton, 1909)

m 504 710 151 25 yyyyn

carbo (Thomas and Wroughton, 1909)

m 505 730 154 31 yyyyn

m 460 660 140 31 yyyyn

carbo (Thomas and Wroughton, 1909)

m 500 850 154 36 yyyyn

carbo (Thomas and Wroughton, 1909)

m 495 738 150 37 yyyyn

flavicauda (Elliot, 1910)

yyyn

yyyn

flavicauda (Elliot, 1910)

m 473 768 145 35 yyyyn

m 474 705 144 32 yyyyn

m 470 735 168 40 yyyyn

flavicauda (Elliot, 1910)

m 480 610 150 30 yyyyn¹

m 440 625 139 27 yyyyn¹

flavicauda (Elliot, 1910)

m 521 819 159 39 ynnn

ynnn²

flavicauda (Elliot, 1910)

m 1275 793 155 33 ynnn

ynnn

flavicauda (Elliot, 1910)

m 411 725 144 29 yyyyn

flavicauda (Elliot, 1910)

m 530 750 155 35 yyyyn

(1) Bombay Nat. Hist. Soc. Mammal Survey; (2) note says to be sent to British Museum, but it apparently wasn't

Trachypithecus obscurus (cont.)

ZRC# sex age dates ver collectors other numbers

Poh, Telok; Ko Yao Yai; THAILAND: Phangnga

4-452 m un 22/01/1918 y RM7574, 300
4-453 m un 22/01/1918 y RM7575, 301

Takua Thung; THAILAND: Phangnga

4-454 f ad 13/02/1919 y HCR,CBK SM222/19, 8205

Yao Yai, Ko; THAILAND: Phangnga

4-455 m ad 18/02/1919 y HCR,CBK SM287/19, 8270

Bahang, Telok; WEST MALAYSIA: Pulau Pinang

4-460 m ad 09/03/1911 y ES SM1476/11, 4054
4-461 f ad 12/03/1911 y ES SM1480/11, 4104
4-462 m ad 13/03/1911 y ES SM1477/11, 4105
4-463 m ad 15/03/1911 y ES SM1478/11, 4145
4-464 f ad 03/03/1911 y ES SM1481/11, 4278

Bha Ngan, Ko; THAILAND: Nakhon Sri Thammarat

4-518 m M2 26/05/1913 y¹ HCR,ES SM538/13, 5443
4-519 f ad 27/05/1913 y¹ HCR,ES SM535/13, 5465
4-520 m dm2 27/05/1913 y¹ HCR,ES SM534/13, 5466

Ban Pak Nam; THAILAND: Chumphon

4-523 m M2 11/07/1917 y² WJFW,MAS 2565, 125
4-524 f ad 11/07/1917 y² WJFW,MAS 2566, 126

Ban Tha San; THAILAND: Chumphon

4-525 m ad 13/03/1919 y HCR,CBK SM436/19, 8419

Hat Sanuk, near Rat Buri; THAILAND: Rat Buri

4-526 f ad 13/04/1919 y HCR,CBK SM572/19, 8555

Prachuap Khiri Khan; THAILAND: Prachuap Khiri Khan

4-521 f ad 09/11/1916 y³ CBK 2408
4-522 m ad 06/04/1919 y HCR,CBK SM547/19, 8530

Perhentian Besar, Pulau; WEST MALAYSIA: Trengganu

4-527 m ad 08/09/1910 y⁴ CBK SM2065/10, 3545
4-528 f M2 08/09/1910 y⁴ CBK SM2067/10, 3550
4-529 m ad 09/09/1910 y⁴ CBK SM2064/10, 3571
4-530 f ad 09/09/1910 y⁴ CBK SM2066/10, 3568
4-531 f ad 12/09/1910 y⁴ CBK SM2063/10, 3635

(1) HCR,CBK1915:131; FNC1940:80T; CAG-H1949a:172; (2) CBK 1917:288M; (3) CBK1919:350M; (4) CBK1911a:117T; CBK1911c: 186M

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>flavicauda</i> (Elliot, 1910)									
m		515	485	158	40			yynn	
m		470	700	147	35			yynn	
<i>flavicauda</i> (Elliot, 1910)									
m		435	820	160	26			yyyn	
<i>flavicauda</i> (Elliot, 1910)									
m		575	725	174	32			yyyn ¹	
<i>halonifer</i> (Cantor, 1845)									
m		466	706	157	42			yynn	
m		479	708	148	31			yynn	
m		484	786	168	33			yynn	
m		500	745	165	30			yynn	
m		477	692	149	35			yynn	
<i>seimundi</i> (Chasen, 1940)									
m		473	662	147	32		P	yyyn	
m		491	695	145	33		P	yyyn	
							P	yyyn	
<i>smithi</i> (Kloss, 1916)									
m		515	650	160	29			yyyn	
m		534	660	155	27			yyyn	
<i>smithi</i> (Kloss, 1916)									
m		553	675	170	30			yyyn	
<i>smithi</i> (Kloss, 1916)									
m		415	715	159	30			yyyn	
<i>smithi</i> (Kloss, 1916)									
m	1230		700	162				yyyn	
m		425	630	165	34			yyyn	
<i>styx</i> (Kloss, 1911)									
m	1236		734	164		572 ²	P	yyyn	
m	1135		665	150		500 ²	P	yyyn	
m	1310		800	160		580 ²	P	yyyn	
m	1125		720	159		560 ²	P	yyyn	
m	1297		768	166		568 ²	P	yyyn	

(1) eyelids and muzzle livid grey white, --- black, skin of ---; (2) head to symphysis pubis

***TRACHYPITHECUS PHAYREI* (BLYTH, 1847)**

ZRC# sex age dates ver collectors other numbers

Ban Pak Nam Pho; THAILAND: Nakhon Sawan

4-537 m M2 --/06/1922 n WM 539

Lat Bua Khao; THAILAND: Nakhon Ratchasima

4-532 f un 08/10/1916 y¹ CBK 2128

4-533 m juv 08/10/1916 y¹ CBK 2130

4-534 m ad 13/09/1916 y¹ WJFW 2461/CBK

Maa Wang Forest; THAILAND: Nakhon Sawan

4-535 un dm2 -----/1917 y C, HSY 2662/CBK

Me Sot; THAILAND: Tak

4-536 m ad 01/01/1922 n KGG 530

Ping Rapids, Mae Nam; THAILAND: Chiang Mai

4-538 f ad 10/04/1922 n KGG 531

4-539 m M1 10/04/1922 n KGG 532

4-540 m M2 10/04/1922 n KGG 533

Tha Chang Tai; THAILAND: Tak

4-541 f ad 09/07/1924 y KGG RM7387, 112

4-542 f ad 09/07/1924 y KGG RM7388, 113

4-543 f ad 28/07/1924 y KGG RM7389, 129

4-544 f M1 25/07/1924 y KGG RM7390, 125

Khet Don Hieng (Camp 22); LAOS: Vientiane

4-546 f ad 31/01/1920 y MC 7182

Gokteik; BURMA: Shan

4-545 f ad 20/04/1913 n GCS 2738

***TRACHYPITHECUS* SP.**

ZRC# sex age dates ver collectors other numbers

unknown

4-732 m ad ----- n 7618

(1) CBK1919:338T

Common name: lingmun, dathwa, shwame, Phayre's langur

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>argenteus</i> (Kloss, 1919)									
								yy	nn
<i>argenteus</i> (Kloss, 1919)									
m	1260		750	150	39	540 ¹	P	ynnn	²
m	730		460	115			P	ynnn	
m	1434		878	172	36			yy	yn
<i>argenteus</i> (Kloss, 1919)									
								ny	yn
<i>argenteus</i> (Kloss, 1919)									
								yy	yn ³
<i>argenteus</i> (Kloss, 1919)									
								yy	yn ⁴
								yy	yn
								yy	yn ⁵
<i>argenteus</i> (Kloss, 1919)									
m		470	710	150	33			yy	yn
m		475	780	163	33			yy	yn
m		460	700	142	30			yy	yn
m		380	640	130	28			yy	yn
<i>shanicus</i> > <i>argenteus</i>									
m		445	655	157	30			yy	yn
<i>shanicus</i> (Wroughton, 1917)									
m		540	760	164	37			yy	yn ⁶
unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv

nyyn⁷

(1) head to symphysis pubis; (2) anal region, mouth white eyelids purplish blue to slaty; (3) grey langur; (4) usually found on limestone cliffs and precipices adjacent to the Me Ping rapids, grey langur; (5) cliff langur; (6) Bombay Nat. Hist. Soc. Mammal Survey; (7) found with skin of *Macaca fascicularis* [ZRC 4-083]

Trachypithecus sp. (cont.)

ZRC#	sex	age	dates	ver	collectors	other numbers
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unknown

4-861	m	ad	-----	n		
4-862	m	un	-----	n		
4-863	f	juv	-----	n		
4-864	m	ad	10/05/1905	n		

unit tot H&B tail foot ear added measures terms type inv

ynnn

yynn

ynnn

ynnn¹

(1) purchased from Tambi Kecil, Omar Road

Genus *Macaca*

Strongly built, medium- or long-faced monkeys, with brown or black fur, ischial callosities large but not fused across the midline (in Asian species), periodic changes in face colour or rump skin in female with sexual cycle, prominently pointed ear pinnae. Interorbital pillar narrow; prominent supraorbital ridges with deep notch near median angle of superior margin of each orbit; at least traces of paranasal ridges. This genus is difficult to define, and may be paraphyletic. The species have been classified into groups by Fooden (1976b.) These are: a *sylvanus*-group (including *maura*, *nigra*, *nemestrina*, and *tonkeana*, a *fascicularis*-group (with *fascicularis* and *mulatta*), a *sinica*-group (which includes *assamensis*) and an *arctoides*-group.

Macaca arctoides I. Geoffroy, 1831

Glans penis elongate (greater than 40mm), lanceolate in dorsal view (Fooden, 1976b). Fur brown, usually with reddish tones, lank, sparse on underside, becoming sparse (and finally lost) with age on scalp. Face elongated, reddish, darkening with age in a blotchy fashion. Tail short, a few centimetres long.

Macaca assamensis McClelland, 1840

Apex of glans penis subacute, less than 30mm long, sagittate in dorsal view (Fooden, 1976b). Pelage some shade of brown (not reddish), crown with small cap, or tufted; cheek whiskers prominent, whitish; ventral region thinly haired; tail short, 30-60% of head and body length (Fooden, 1982).

Macaca fascicularis (Raffles, 1821)

Apex of glans penis bluntly bilobed; its breadth less than 57% of its length (Fooden, 1976b). Colour brown, usually greyish or even blackish toned. Hair on crown of head usually with a slight crest along midline. Cheek whiskers well-developed, greyish. Tail long, longer than head and body. Napier and Groves (1983) have applied to the International Commission on Zoological Nomenclature for the suppression of the senior synonym *Simia aygula* Linnaeus, 1758, which would otherwise upset the stability of the species' admittedly labile nomenclature. The geographic variation of the species has not yet been surveyed using material from all available collections. On the basis of the Singapore and Bogor material, however, Scott (1982) concludes that the following subspecies are represented in Singapore:

M.f.fascicularis: Medium sized, reddish black dorsally, becoming lighter on the flanks; black crown. Sumatra.

M.f.bintangensis: A medium-sized brownish form, rather variable, with a north-south cline of decreasing size. Peninsular Thailand, Malaya and Riau.



Figure 7. *Macaca* (for *M.fascicularis* and *M.mulatta* see figure 8): a - *arctoides*; s - *assamensis*; n - *nemestrina nemestrina*; l - *nemestrina leonina*; m - *maura*; n - *nigra*; m - *tonkeana hecki*.

M.f.mandibularis: Dark brown dorsal tone, darkening on the shoulders; flanks light, creamy-grey. A broad dark median dorsal stripe. Borneo, except the northeast.

M.f. subspecies (no available name): Skins from Sabah are consistently different from those of the rest of Borneo, becoming black dorsally; specimens are also smaller in size. Sabah and nearby region of northeast Kalimantan.

M.f.laeta: Rather light, grey-brown pelage, with blackish crown and tail; otherwise resembles the Malay/Riau form. Pulau Tioman and Pulau Tinggi, East coast of Malaya.

M.f.lingungensis: A very dark form, black dorsally and blackish grey laterally; no dorsal stripe. Size is very small. Pulau Bunguran, North Natuna Island.

M.f.mordax: Rather variable in colour, resembling Sumatran and southwest Bornean races; distinguished by its much larger cheek teeth. Java.

M.f.sirhassenensis: Dorsally grey-black, laterally more grey-creamy; rather small in size, but larger than the North Natuna form. A browner form from Pulau Siantan may be distinct. South Natuna Islands.

The subspecies *phaeura*, *valida* and *condorensis*, of which reputed examples are present in the Singapore collection, could not be assessed, given the small number of examples.

***Macaca maura* (Schinz, 1825)**

Apex of penis bluntly bilobed, its breadth more than 57% of its length. Large, brown or blackish, lacking all but a trace of the grey area on the thighs (cf. *M.tonkeana*).

***Macaca mulatta* (Zimmermann, 1780)**

Penis shape resembles *M.fascicularis*, from which it is distinguished by the tail being shorter than the head and body, the smoothly backswept cheek hairs, and the orange tone of the posterior part of the body and thighs. Fooden (1964) proposed that *M. mulatta* and *M.fascicularis* are conspecific, on the basis of three specimens from Thailand which showed intermediate characters; later he reversed his opinion and suggested that there was only casual interbreeding where the two are parapatric. Eudey (1981) has shown from field studies that this is in fact the case, and the two do maintain their separate identities where the ranges interdigitate.

***Macaca nemestrina* (Linnaeus, 1766)**

Penis form resembling *M.tonkeana* and *M.maura*. A large species with a short, rather curly tail; colour brownish; long pale backswept cheek whiskers, directed upwards to meet outwardly directed crown hairs to form a crest which continues around side of crown. Muzzle considerably elongated. The two highly distinctive subspecies, *M.n.nemestrina* and *M.n.leonina*, are compared in detail by Fooden (1975), who at the same time includes the Mentawai macaque, *M.pagensis*, which has since been raised to species rank for reasons which seem convincing (Wilson and Wilson, 1976; Whitten and Whitten, 1982).

***Macaca nigra* (Desmarest, 1822)**

Penis form as in *M.maura*, *M.nemestrina* and *M.tonkeana*. Large, black (this colour restricted to limbs and head in one subspecies), with extreme tail reduction; prominent, broadened ischial tuberosities supporting very prominent, broadened raised ischial callosities; face extremely elongated, baboon-like, with strongly developed paranasal ridges; an elongated backwardly-directed crest on crown.

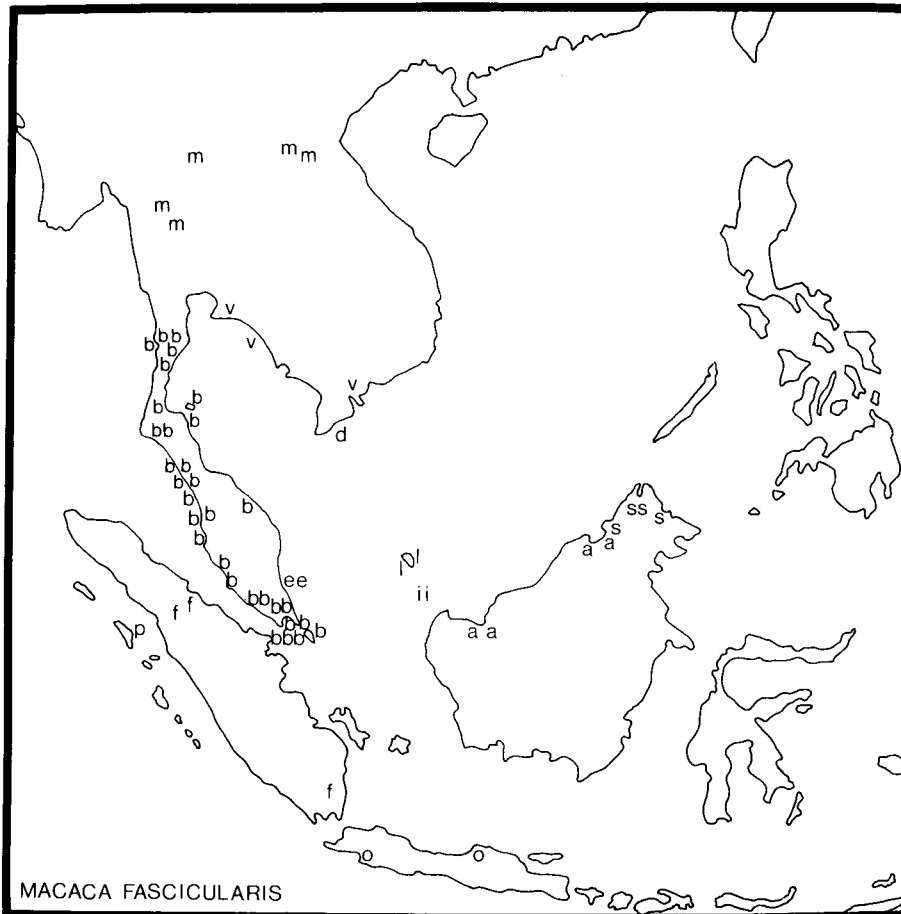


Figure 8. *Macaca fascicularis*: f - *fascicularis*; b - *bintangensis*; a - *mandibularis*; s - unnamed subspecies; d - *condorensis*; e - *laeta*; o - *mordax* p - *phaeura*; l - *lingungensis*; i - *sirhassenensis*; v - *valida*. *Macaca mulatta*: m - *mulatta*

On this species, see Fooden (1969) and Groves (1980). Only the nominate subspecies, the all-black *M.n.nigra*, is represented in the Singapore collection.

***Macaca tonkeana* (Meyer, 1899)**

Penis characters resembling *M.maura*, to which it is closely related. Large, blackish, with white-grey cheek whiskers and posterior thighs, and very short, knob-like tail. On this species, see Fooden (1969) and Groves (1980).

MACACA ARCTOIDES I. GEOFFROY, 1831

ZRC# sex age dates ver collectors other numbers

Angut; THAILAND: Trang

4-005	f	M2	01/02/1910	y	MC	SM1259/10, 3216
4-006	m	ad	09/02/1910	y	MC	SM1260/10, 3231
4-007	m	ad	01/02/1910	y	MC	SM1261/10, 3215

Ban Nong Kok; THAILAND: Krabi

4-009	f	M2	06/01/1918	y		163
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Khao Chong; THAILAND: Trang

4-008	m	M2	24/01/1910	y		SM1246/10, 3472
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Dalat; VIETNAM: Tuyen Duc

4-001	m	ad	07/04/1918	y	CBK	3345/CBK
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Lam Phura; Sathani; THAILAND: Trang

4-002	m	ad	05/01/1910	y	MC	3416
4-003	m	un	17/01/1910	y	MC	SM1247/10, 3452
4-004	f	dm2	01/02/1910	y	MC	SM108/14, 3479
4-010	m	un	28/01/1910	y	MC	SM1241/10, 3476, 126

unknown

4-190	m	?ad	-----		n	
4-191	un	un	-----		n	

MACACA ASSAMENSIS M'CLELLAND, 1840

ZRC# sex age dates ver collectors other numbers

Huai Nua Pla; THAILAND: Tak

4-011	f	M2	09/05/1924	n	JHC	51
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MACACA FASCICULARIS (RAFFLES, 1821)

ZRC# sex age dates ver collectors other numbers

Kota Bumi; INDONESIA: Lampung

4-124	f	M2	06/05/1940	n	V	6
-------	---	----	------------	---	---	---

101

unit	tot	H&B	tail	foot	ear	added	measures	terms	type	inv
------	-----	-----	------	------	-----	-------	----------	-------	------	-----

Common name: pio, sahu, bandar, assam macaque

m	420	210	143	35	yyyn
---	-----	-----	-----	----	------

unit	tot	H&B	tail	foot	ear	added	measures	terms	type	inv
------	-----	-----	------	------	-----	-------	----------	-------	------	-----

 $yyyn$

(1) leg length; (2) nose to symphysis pubis; (3) head and body measurement is unusually small

Macaca fascicularis (cont.)

ZRC# sex age dates ver collectors other numbers

Siak, Sungei; INDONESIA: Riau

4-827 m dm2 27/03/1931 n

Aur, Pulau; WEST MALAYSIA: Johor

4-079 m juv 01/05/1927 n NS RM498, A14

4-080 f M2 08/05/1927 n NS RM500, A33

Bahang, Telok; WEST MALAYSIA: Pulau Pinang

4-056 m M2 12/03/1911 y MC, ES SM1420/11, 4103

4-057 f M2 13/03/1911 y MC, ES SM1421/11, 4124

4-058 m ad 15/03/1911 y MC, ES SM1414/11, 4150

4-059 m ad 25/03/1911 y MC, ES SM1416/11, 4207

4-060 m ad 28/03/1911 y MC, ES SM1417/11, 4227

4-061 m ad 03/04/1911 y MC, ES SM1418/11, 4276

Ban Nong Kok; THAILAND: Krabi

4-034 m M2 11/01/1918 y 208

Ban Pak Nam; THAILAND: Chumphon

4-029 f ad 07/07/1917 y¹ WJFW, MAS 2563, 98

4-030 m M2 07/07/1917 y¹ WJFW, MAS 2564, 97

Ban Pak Nam Pho; THAILAND: Nakhon Sawan

4-031 m ad 02/04/1924 n JHC 1

Benom, Gunong; WEST MALAYSIA: Pahang

4-065 m ad 08/11/1913 y MC SM110/14, 5755, 39

4-066 m M2 08/11/1913 y MC SM111/14, 5756, 40

Bintang, Pulau; INDONESIA: Riau

4-091 f ad 11/06/1908 n² HCR, ES SM1965/08, 781

4-092 f ad 08/06/1908 n² HCR, ES SM1966/08, 740

4-093 m M1 11/06/1930 n GN RM2786, 95

4-094 m ad 11/06/1930 n GN RM2787, 94

Botanical Gardens; SINGAPORE

4-081 m ad 22/04/1893 n RM7614

4-082 m ad 11/02/1944 n OS 2D

4-083 f un 26/07/1912 y RM7618

4-084 f M2 23/03/1925 n MC RM7619, A

Changkat Menti; Sungei Bernam; WEST MALAYSIA: Perak

4-064 f ad 19/09/1918 y CBK 8062

(1) CBK1917a:289; (2) OT,RCW1909b:107

unit tot H&B tail foot ear added measures terms type inv

fascicularis (Raffles, 1821)

nyyn

bintangensis (Elliot, 1909)

m 596 335 94 36

yynn

m 896 515 122 29

yynn

bintangensis (Elliot, 1909)

m 339 484 113 34

yynn

m 309 454 104 29

yynn

m 408 523 117 39

yynn

m 410 525 119 31

yynn

m 374 539 122 36

yynn

m 423 519 125 36

yynn

bintangensis (Elliot, 1909)

m 383 545 130 32

'capitalis'

yynn

bintangensis (Elliot, 1909)

m 430 490 125 44

'capitalis'

yynn

m 400 450 136 40

'capitalis'

yynn

bintangensis (Elliot, 1909)

m 435 500 133 37

'capitalis'

yynn

bintangensis (Elliot, 1909)

m 475 640 146 31

yynn

m 438 540 136 30

yynn

bintangensis (Elliot, 1909)

nyyn

nyyn

m 815 465 95 25

yynn

m 890 485 95 29

yynn

bintangensis (Elliot, 1909)

yynn¹

yynn

yynn

m 450 115 30

yynn

bintangensis (Elliot, 1909)

m 370 465 118

yynn

(1) killed in the gardens

Macaca fascicularis (cont.)

ZRC# sex age dates ver collectors other numbers

Chereka Klang, Bukit; Jeram; WEST MALAYSIA: Selangor

4-069 m ad 16/11/1910 y MC SM2595/10, 3928, 87

Dasun Tua; WEST MALAYSIA: Selangor

4-068 m M1 03/10/1906 y¹ ES SM1465/08, 69

Galang, Pulau; INDONESIA: Riau

4-098 f ad 05/04/1924 n² FNC RM7620, 48

4-099 f M2 10/04/1924 n² FNC RM7606, 50

4-100 f M1 01/01/1925 n² FNC RM7610, 26

4-101 m M2 01/01/1925 n² FNC RM7622, 24

4-102 m ad 01/01/1925 n³ FNC RM7623, 25

4-103 m M1 01/12/1925 n² FNC RM7607, 23

Gantang; THAILAND: Trang

4-032 m M2 11/01/1918 y CBK SM26/16, 6691

Hantu, Tanjong; Dindings; WEST MALAYSIA: Perak

4-063 m ad 19/07/1918 n 7616, 13, 1

Khram Yai, Ko; THAILAND: Chon Buri

4-012 f ad 30/10/1916 y⁴ CBK 2288/CBK

4-013 m ad 30/10/1916 y⁴ CBK 2285/CBK

4-015 m ad 01/06/1917 y⁵ WJFW 2567/CBK, 2

4-016 f ad 01/06/1917 y⁵ WJFW 2568/CBK, 1

Kundur, Pulau; INDONESIA: Riau

4-095 m ad 19/08/1908 y¹ MC,ES SM1960/08, 1475, 25

4-096 m ad 19/08/1908 y¹ MC,ES SM1961a/08, 1476

Luang Khao; THAILAND: Nakhon Srithammarat

4-035 m ad 27/03/1924 n RM7592, 37

4-036 f M1 19/09/1926 n 511, 6

4-037 m ad 19/09/1926 n 512, 7

Luang, Ko; THAILAND: Krabi

4-042 f ad 08/02/1918 y 565

Mapor, Pulau; INDONESIA: Riau

4-097 m ad 06/06/1915 y⁶ HCR SM418/15, 6470

(1) OT,RCW1909b:107; (2) FNC1925:93; (3) FNC1925:93M; (4) CBK 1919:347M; (5) CBK1919:347M; CBK1920:77; (6) HCR1916:62M

unit tot H&B tail foot ear added measures terms type inv

<i>bintangensis</i> (Elliot, 1909)							
m	438	560	132	37.5			yyyy
<i>bintangensis</i> (Elliot, 1909)							
m	291	402	100	31			yyyy
<i>bintangensis</i> (Elliot, 1909)							
m	842	508	111	31			yyyn
m	930	533	115	32			yyyn
m	650	380	92	27			yyyn
m	825	480	117	30			yyyn
m	1005	425	580	130			yyyn
m	700	410	102	30			yyyn ¹
<i>bintangensis</i> (Elliot, 1909)							
m	392	543	124	31	'capitalis'		yyyn
<i>bintangensis</i> (Elliot, 1909)							
m	440	604	128	42			yyyn
<i>bintangensis</i> (Elliot, 1909)							
m	912	475	117	43	'atriceps'	P	yyyn ²
m	1000	540	132	49	'atriceps'	P	nyyn ²
m	465	510	133	43	'atriceps'		yyyn ³
m	415	465	118	42	'atriceps'		yyyn
<i>bintangensis</i> (Elliot, 1909)							
							nyyn
							nyyn
<i>bintangensis</i> (Elliot, 1909)							
					'capitalis'		yyyn
					'capitalis'		yyyn
					'capitalis'		yyyn
<i>bintangensis</i> (Elliot, 1909)							
m	375	420	130	35	'capitalis'		yyyn
<i>bintangensis</i> (Elliot, 1909)							
m	395	535	135	25			yyyn

(1) soles brown-grey, forehead pink flesh, face, ears black; (2) paratype of *atriceps*; (3) 'S. Lajang' [may be a collector, see LAD1920]

Macaca fascicularis (cont.)

ZRC# sex age dates ver collectors other numbers

Naka Yai, Ko; THAILAND: Phuket

4-043 f ad 04/02/1918 y 7593, 507

Nguwal, Pulau; INDONESIA: Riau

4-104 f ad 03/01/1925 n¹ FNC RM7603, 30
 4-105 m M3 03/01/1925 n² FNC RM7604, 29
 4-106 m M2 03/01/1925 n¹ FNC RM7605, 31
 4-107 m M1 03/01/1925 n¹ FNC RM7608, 32
 4-108 m un 03/01/1925 n¹ FNC RM7609, 28
 4-109 f M2 03/01/1925 n¹ FNC RM7621, 27

Nylas; WEST MALAYSIA: Malaca

4-076 f M2 --/10/1910 y MC SM2565/10, 3899, 59
 4-077 f ad 23/10/1910 y MC SM2566/10, 3867, 27
 4-078 m ad 23/10/1910 y MC SM2567/10, 3872, 32

Pak Chong; Sathani; THAILAND: Nakhon Ratchasima

4-025 f ad 29/02/1924 n HMS RM7591, 16
 4-026 m ad 21/05/1931 n CJA RM19064

Pak Klong; Pran; THAILAND: Rat Buri

4-027 f ad 28/06/1917 y³ WJFW,MAS 2546, 57
 4-028 f ad 28/06/1917 y³ WJFW,MAS 2545, 56

Panjaer, Tanjong; Sungei Rumpin; WEST MALAYSIA: Pahang

4-067 f ad 02/09/1919 y MC SM57/19, 109

Panji, Teluk; Kotapinang; INDONESIA: Sumatera Utara

4-111 m ad 06/06/1937 n⁴ MB RM7594

Pepidon, Ko; THAILAND: Krabi

4-046 f M2 03/02/1919 y HCR,CBK SM151/19, 8134
 4-047 f ad 04/02/1919 y HCR,CBK SM175/19, 8158
 4-048 f ad 04/02/1919 y HCR,CBK SM174/19, 8157
 4-049 m ad 05/02/1919 y HCR,CBK SM196/19, 8179

Phangan, Ko; THAILAND: Surat Thani

4-044 f ad 27/05/1913 y⁵ HCR,ES SM542/13, 5478
 4-045 f ad 25/05/1913 y⁵ HCR,ES SM543/13, 5427

Phayam, Ko; THAILAND: Ranong

4-038 m M2 20/02/1919 y HCR,CBK SM341/19, 8324

(1) FNC1925:93; (2) FNC1925:93M; (3) CBK1917a:289; (4) CAG-H 1949a:172; (5) HCR, CBK1915:131M

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>bintangensis</i> (Elliot, 1909)									
m		418	430	120	37		'capitalis'	yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m	880		505	122	30			yyyn	
m	960	425	535	125	31			yyyn	
m	710		400	112	30			yyyn	
m	725		415	102	31			yyyn	
m	700		415	100	31			yyyn	
m	880		510	120	27			yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		380	540	115	30			nyyn	
m		365	480	104	34			nyyn	
m		390	515	124	17			yyyn	
<i>bintangensis</i> (Elliot, 1909)									
							'capitalis'	yyyn	
							'capitalis'	yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		435	425	114	35		'capitalis'	yyyn	
m		458	495	133	33		'capitalis'	yyyn ¹	
<i>bintangensis</i> (Elliot, 1909)									
m		388	556	124	25			yyyn	
<i>bintangensis</i> (Elliot, 1909)									
								yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		417	543	128	32		'capitalis'	yyyn	
m		415	528	129	36		'capitalis'	yyyn	
m		426	552	127	33		'capitalis'	yyyn	
m		450	570	157	39		'capitalis'	yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		391	442	114	34		'capitalis'	yyyn	
m		400	411	109.5	38		'capitalis'	yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		390	435	121	35		'capitalis'	yyyn	

(1) 'S. Lajang' [may be a collector, see LAD1920:MS]

Macaca fascicularis (cont.)

ZRC# sex age dates ver collectors other numbers

Pintu, Pulau; Gedong; WEST MALAYSIA: Selangor

4-070 m ad 03/11/1912 y MC SM548/12, 5146, 64
4-071 m ad 03/11/1912 y MC SM549/12, 5147

Port Dickson; WEST MALAYSIA: Negri Sembilan

4-073 m ad 06/01/1937 y ES SM6204
4-074 m ad 03/02/1937 n ES SM7595
4-075 m ad 02/05/1937 n ES SM7596, P.D.B.

Punggol; SINGAPORE

4-086 f ad 08/11/1910 y AHW SM2667/10, B1
4-087 m un 15/12/1910 n RM7613, B4
4-088 m un 16/12/1910 n RM7612, B3

Redang, Pulau; WEST MALAYSIA: Trengganu

4-054 m ad 02/09/1910 y¹ CBK SM2070/10, 3488
4-055 m M2 05/09/1910 y¹ CBK SM2071/10, 3833

Samui, Ko; THAILAND: Nakhon Srithammarat

4-050 m ad 07/05/1913 n HCR, ES SM545/13, 5221

Sandaran Agung; Gunung Kerinci; INDONESIA: Sumatera Barat

4-110 f ad 06/06/1914 y² HCR, CBK SM584/14, 6384

Sembawang, Sungei; SINGAPORE

4-089 f un 21/05/1922 n FNC RM7611

SINGAPORE

4-090 un dm2 22/03/1943 n 1D

Talibong, Ko; THAILAND: Trang

4-051 m ad 03/01/1917 y HCR SM527/17, 7802

Tenasserim Town; BURMA: Tenasserim

4-021 f ad 19/03/1914 y³ GCS SM731/16, 4980
4-022 f M2 19/03/1914 y³ GCS SM730/16, 4977
4-023 m M2 19/03/1914 y³ GCS SM729/16, 4976

Thaget; BURMA: Tenasserim

4-024 m M2 31/03/1914 n⁴ GCS SM732/16, 5011

(1) CBK1911a:117; CBK1911c:188; (2) HCR,CBK1918:7M; (3) RCW 1915:699; (4) RCW1915:699

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>bintangensis</i> (Elliot, 1909)									
m		411	515	113	37			yyyn	
m		356	490	112	28			yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		402	601	138	37			yyyn	
m		430	625	145	40			yyyn	
m		370	545	130	40			yyyn	
<i>bintangensis</i> (Elliot, 1909)									
i	29		17.5	4.25				yyyn	
i	41	18.5	23.5	5.0				yynn	
i	32.5	13.5	19.0	4.7				yynn	
<i>bintangensis</i> (Elliot, 1909)									
m	1055		630	131		470 ¹	'argenteimembris' P	yyyn ²	
m	915		510	126		415 ¹	'argenteimembris' P	yyyn ²	
<i>bintangensis</i> (Elliot, 1909)									
m		423	459	125	39		'capitalis'	yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		420	530	121	35			yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		520	340	93	32			yynn ³	
<i>bintangensis</i> (Elliot, 1909)									
								yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		482	556	141	45		'capitalis'	yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		512	485	129	38		'capitalis'	yyyn	
m		440	460	129	37.5		'capitalis'	yyyn	
m		480	445	132	41		'capitalis'	yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		485	465	133	40		'capitalis'	yyyn	

(1) head to symphysis pubis; (2) paratype of *argenteimembris*; (3) shot in mangrove beside river, pregnant

Macaca fascicularis (cont.)

ZRC# sex age dates ver collectors other numbers

Tuan Keramat, Tanjong; WEST MALAYSIA: Negri Sembilan

4-072 m ad 06/04/1920 n SM7615, 25

Waw, Telok; Pulau Tarutao; THAILAND: Satun

4-053 f ad 25/12/1916 y HCR SM276/17, 7676

Yao Noi, Ko; THAILAND: Phangnga

4-052 m ad 30/01/1918 y 448

menagerie specimen

4-123 m inf 29/05/1931 n purchased RM126

Con Son; VIETNAM

4-017 m un 06/11/1920 y¹ CH SM298/20, 7263

4-018 m dm2 06/11/1920 y¹ CH SM300/20, 7265

4-019 m M1 18/11/1920 y¹ CH SM350/20, 7315

Juara, Telok; Pulau Tioman; WEST MALAYSIA: Pahang

4-125 f ad 22/06/1915 y HCR SM414/15, 6558

4-126 f M2 01/07/1915 y HCR SM415/15, 6696

4-127 f ad 02/07/1915 y HCR SM416/15, 6731

Sedagong; Pulau Tioman; WEST MALAYSIA: Pahang

4-129 f ad 14/05/1927 n NS RM501, T6

4-130 f ad 20/05/1927 n NS RM499, T14

Tinggi, Pulau; WEST MALAYSIA: Johor

4-131 f M2 25/06/1908 y² HCR, ES SM1964/08, 851

4-132 m ad 17/06/1915 y VK SM413/15, 6474

Tioman, Pulau; WEST MALAYSIA: Pahang

4-128 f ad 20/06/1916 y CBK SM646/16, T8

Ulu, Sungai; Pulau Bunguran; INDONESIA: Riau

4-138 m un 25/04/1909 n VK RM7617, 43

Bunguran, Pulau; INDONESIA: Riau

4-139 m ad 27/08/1928 n FNC 596

4-140 m ad 05/09/1928 n FNC 654

Banggi, Pulau; EAST MALAYSIA: Sabah

4-116 m M2 04/09/1927 n³ CBK, FNC 3394

(1) CBK1926b:357T; CAG-H1949a:172; (2) OT, RCW1909b:107; (3) FNC, CBK1931:9

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>bintangensis</i> (Elliot, 1909)									
m		473	592	130	39			yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		379	512	121	35		'capitalis'	yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m		440	530	145	42		'capitalis'	yyyn	
<i>bintangensis</i> (Elliot, 1909)									
m	435		245	29	23			yynn ¹	
<i>condorensis</i> Kloss, 1926									
m		392	520	126	41			P yynn	
m		364	397	94	35			P yyyn	
m		337	421	106	33			P yyyn	
<i>laeta</i> (Elliot, 1909)									
m		386	434	114	32			yyyn	
m		395	440	111	33			yyyn	
m		409	215	118	34			yyyn ²	
<i>laeta</i> (Elliot, 1909)									
m	760		395	108	30			yyyn	
m	821		400	108	28			yyyn	
<i>laeta</i> (Elliot, 1909)									
m		368	470	116	33			yyyn	
m	942		572	128	28			yyyn	
<i>laeta</i> (Elliot, 1909)									
m		380	450	112				n yyn	
<i>lingungensis</i> (Elliot, 1910)									
							'pumila'	yyyn	
<i>lingungensis</i> (Elliot, 1910)									
m	925		480	112	34		'pumila'	yyyn	
m	845		460	128	32		'pumila'	yyyn	
<i>mandibularis</i> (Elliot, 1910)									
m	920		525	123	29			yyyn	

(1) purchased in the flesh; (2) tail imperfect

Macaca fascicularis (cont.)

ZRC# sex age dates ver collectors other numbers

Banggi, Pulau; EAST MALAYSIA: Sabah

4-117 f M2 04/09/1927 n¹ CBK, FNC 3395

4-118 m ad 05/09/1927 n² CBK, FNC 3413

Botanical Gardens; SINGAPORE

4-085 m ad --/04/1925 n

Bukar, Samarahan; EAST MALAYSIA: Sarawak

4-113 m M2 02/11/1919 y CU 275

Pelandok, Sungei; Pulau Paku; Saribas; EAST MALAYSIA: Sarawak

4-112 m ad 15/08/1916 y HCR 326/HCR, 1200

Punang, Sungei; EAST MALAYSIA: Sarawak

4-114 f ad 16/04/1939 n GN 3

Rayoh; EAST MALAYSIA: Sabah

4-119 f M1 24/06/1928 n¹ MC, GN 3552

Pelabuanratu, Teluk; INDONESIA: Jawa Barat

4-134 m ad 18/03/1920 y CBK SM206/20, 8806

Tamansari; INDONESIA: Jawa Tengah

4-133 f ad 20/01/1920 y CBK SM47/20, 8647

Nias, Pulau; INDONESIA: Sumatera Utara

4-135 m un --/11/1904 y WLA K11, S49

Serasan, Pulau; Natuna Seletan; INDONESIA: Riau

4-144 m ad 27/08/1931 y PMF RM6070

Siantan, Pulau; INDONESIA: Riau

4-136 m ad 14/09/1925 n FNC RM2585, 460

4-137 m ad 03/10/1925 n FNC RM2712, 440

Subi Kecil, Pulau; INDONESIA: Riau

4-141 m ad 05/08/1931 y PMF RM6069

4-142 m ad 05/08/1931 y PMF RM6071

4-143 f ad 05/08/1931 y PMF RM6072, 125

Betotan; EAST MALAYSIA: Sabah

4-115 m ad 13/08/1927 n² CBK, FNC 3258

(1) FNC,CBK1931:9; (2) FNC,CBK1931:50M

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>mandibularis</i> (Elliot, 1910)									
m	860		475	116	29			yyyn	
m	1145		620	137	35			yyyn	
<i>mandibularis</i> (Elliot, 1910)									
								nyyn	
<i>mandibularis</i> (Elliot, 1910)									
m		455	640	228	32			yyyn ¹	
<i>mandibularis</i> (Elliot, 1910)									
m		501	577	141	42			yyyn	
<i>mandibularis</i> (Elliot, 1910)									
m	903		513	121	27			yyyn	
<i>mandibularis</i> (Elliot, 1910)									
m	702		412	96	29			yyyn	
<i>mordax</i> Thomas and Wroughton, 1909									
m		485	715	150	38			yyyn	
<i>mordax</i> Thomas and Wroughton, 1909									
m		455	470	115	27			yyyn	
<i>phaeura</i> Miller, 1903									
								yyyn	
<i>sirhasseensis</i> (Elliot, 1910)									
m			140	40			'pumila'	yyyn	
<i>sirhasseensis</i> (Elliot, 1910)									
m	980		520	130	38		'pumila'	yyyn	
m	1005		565	134	38		'pumila'	yyyn	
<i>sirhasseensis</i> (Elliot, 1910)									
m	953		500	128	38		'pumila'	yyyn	
m	1015		586	139	35		'pumila'	yyyn	
m	858		465	114	34		'pumila'	yyyn	
<i>ssp.</i>									
m	1053		633	133				yyyn	

(1) foot is too large in all records

Macaca fascicularis (cont.)

ZRC# sex age dates ver collectors other numbers

Kenokok, Gunong Kinabalu; EAST MALAYSIA: Sabah

4-122 f un 25/04/1929 n FNC 4175

Kiau, Gunong Kinabalu; EAST MALAYSIA: Sabah

4-120 m ad 24/04/1929 n FNC 3647

4-121 m ad 29/04/1929 n FNC 3653

Pantai Krachut; WEST MALAYSIA: Pulau Pinang

4-062 f ad 24/03/1911 y MC,ES SM1419/11, 4201, 17

Chang, Ko; THAILAND: Trat

4-039 f M2 11/12/1914 y CBK 1484/CBK

Kut, Ko; THAILAND: Trat

4-040 m ad 25/12/1914 y¹ CBK 1722

4-041 f M2 29/12/1914 y² CBK 1780

Lat Bua Khao; THAILAND: Nakhon Ratchasima

4-033 f dm2 10/10/1916 y³ CBK 2138/CBK

Trang Bom; VIETNAM: Bien Hoa

4-020 m ad 01/06/1918 y CBK 3627, 117

unknown

4-733 m un ----- n

4-734 f M2 ----- n

4-735 m ad ----- n

4-829 m M1 17/04/1931 n purchased

4-830 m M2 18/04/1931 n purchased

4-837 m M1 20/06/1931 n purchased

4-856 m ad ----- n

4-857 m ad ----- n

MACACA MAURA SCHINZ, 1825

ZRC# sex age dates ver collectors other numbers

Sulawesi, INDONESIA

4-147 m ad 20/10/1897 n⁴ purchased \$44

4-148 m ad ----- n⁴ purchased

4-149 m ad 25/11/1903 n ALD \$48

(1) CBK1916b:67M; (2) CBK1916a:31; (3) CBK1919:346; (4) RH1897:7

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
<i>ssp.</i>									
m	845		470	123	30			yyyn	
<i>ssp.</i>									
m	950		545	133	42			yyyn	
m	1025		605	137	40			yyyn	
<i>ssp.</i>									
m		340	464	113	32			yyyn	
<i>valida</i> (Elliot, 1909)									
m			480	115	40	420 ¹		yyyn	
<i>valida</i> (Elliot, 1909)									
m	940	455	485	123	40	455 ¹		ynnn	
m	850		460	108		410 ²		yyyn	
<i>valida</i> (Elliot, 1909)									
m	630		350	102				yyyn	
<i>valida</i> (Elliot, 1909)									
m		520	580	145	43			yyyn	
								ynnn	
								nyyn	
								nyyn	
								nyyn	
								nyyn ³	
								nyyn	
								ynnn	
								ynnn	

Common name: kera hitam darre

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
								yyyn	
								yyyn	
								yyyn ⁴	

(1) nose to vent.; (2) head to symphysis pubis; (3) purchased in the flesh; (4) 'Makassar' stated as locality

MACACA MULATTA (ZIMMERMANN, 1778)

ZRC# sex age dates ver collectors other numbers

Ban Mak Nao; LAOS: Vientiane

4-152 m M2 16/02/1920 y JB 7203

Chiang Mai; THAILAND: Chiang Mai

4-154 f ad -----/1931 n¹ HGD 139

Nong Kha, Houay (camp 28); LAOS: Vientiane

4-150 m ad 09/02/1920 y JB 7194

4-151 m ad 09/02/1920 y JB 7195

Ping Rapids, Mae Nam; THAILAND: Chiang Mai

4-188 m ad 14/04/1916 y² KGG 2530/CBK, 320, K1

Tha Chang Tai; THAILAND: Tak

4-153 f dml 14/07/1924 n JHC 116

4-822 un in 25/07/1924 n KGG

MACACA NEMESTRINA (LINNAEUS, 1766)

ZRC# sex age dates ver collectors other numbers

Bentong (6-9 miles west); WEST MALAYSIA: Pahang

4-172 m M2 12/06/1910 y³ MC SM1832/10, 3333

Betotan; EAST MALAYSIA: Sabah

4-183 m un 14/08/1927 n⁴ CBK, FNC 3267

4-184 m ad 15/08/1927 n⁴ CBK, FNC 3276

Chereka Klang, Bukit; Jeram; WEST MALAYSIA: Selangor

4-178 m ad 16/11/1910 y SM2592/10, 3933

Cheras Road (7th mile); Kuala Lumpur; WEST MALAYSIA: Selangor

4-180 m un 08/02/1929 n presented

Hantu, Tanjong; Dindings; WEST MALAYSIA: Perak

4-171 f M2 02/08/1918 n 83

Kebun Klang, Jalan (7th mile); WEST MALAYSIA: Selangor

4-181 m ad 22/07/1935 n MC RM6203

- (1) FNC1935b:38; (2) CBK1917b:247; RIP1939:45R; (3) CBK1911b:146;
(4) FNC1931:50M

Common name: leng leng, rhesus monkey

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
m		362	232	140	35			yyyn	
								yyyn	
m		420	240	150	50			yyyn	
m		410	205	145	45			yyyn	
m		495	235	137	38		'siamica'	H yyyn ¹	
m		205	230	75	28			yyyn yyyy ²	

Common name: beruk, pig-tailed macaque

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>nemestrina</i> (Linnaeus, 1766)									
m		490	185	161	39			yyyn	
<i>nemestrina</i> (Linnaeus, 1766)									
m	790	580	210	185	40			ynnn	
m	835	590	245	182	40			yyyn	
<i>nemestrina</i> (Linnaeus, 1766)									
m		469	148	154	41			yyyn	
<i>nemestrina</i> (Linnaeus, 1766)									
m		520	220	178	46			ynnn	
<i>nemestrina</i> (Linnaeus, 1766)									
m		440	160	144	40			yyyn	
<i>nemestrina</i> (Linnaeus, 1766)									
m		502	184	171	44			yyyn	

(1) palms, hair dark brown; belly bluish; orbital skin pinkish red, anal--bright deep pink, common on Me Ping; hard to get to come to ground;
 (2) in spirit; specimen is labelled *M. fascicularis* but is tentatively placed with an *M. mulatta* with the same locality; but this locality is in a region where the species interdigitate, so the first determination may be correct.

Macaca nemestrina (cont.)

ZRC# sex age dates ver collectors other numbers

Kepong; WEST MALAYSIA: Selangor

4-176 m ad --/11/1908 y MC SM2201/08
 4-177 m ad ----- y ALB 1755, SM3/09

Kuala Lumpur; WEST MALAYSIA: Selangor

4-179 m ad 29/12/1910 y HCR SM1188/11, 4756
 4-185 m ad ----- n 3485

Lam Phura; Sathani; THAILAND: Trang

4-168 f ad 26/01/1910 y MC SM1214/10, 3473
 4-169 m ad 20/01/1910 y MC SM1244/10, 3469

Malim, Tanjong; WEST MALAYSIA: Selangor

4-173 m ad --/04/1908 y SM2202/08

Phatthalung; THAILAND: Phatthalung

4-170 m ad 24/12/1910 y MC SM1215/10, 3160

Sidong, Gunong; Samarahan; EAST MALAYSIA: Sarawak

4-182 f un 10/10/1919 y CU 189

Weld's Hill; Kuala Lumpur; WEST MALAYSIA: Selangor

4-174 f ad 06/11/1908 y FVG PM2423/08, 2105
 4-175 f juv 06/11/1908 y FVG PM2424/08, 2106

Ban Nong Kok; THAILAND: Krabi

4-162 un un 07/01/1918 y HCR, CBK 170

Ban Tha San; THAILAND: Chumphon

4-164 m un 14/03/1919 y HCR, CBK SM445/19, 8428
 4-165 f ad 14/03/1919 y HCR, CBK SM446/19, 8429

Chantaburi; THAILAND: Chantaburi

4-166 m M1 16/12/1926 n¹ CJA 514, 12
 4-167 m M2 17/12/1926 n¹ CJA 513, 14

Da Ban; VIETNAM: Ninh Thuan

4-155 m M2 24/03/1918 y CBK 3277

Klong Tung Sai; Ko Phuket; THAILAND: Phuket

4-159 m M2 20/12/1917 y CBK 44

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>nemestrina</i> (Linnaeus, 1766)									
								nynn	
								yyyn	
<i>nemestrina</i> (Linnaeus, 1766)									
								nynn	
m	765		215	191	42			nynn	
<i>nemestrina</i> (Linnaeus, 1766)									
m		590	159	147	34			yyyn	
m		532	50.5	149	32			yyyn	
<i>nemestrina</i> (Linnaeus, 1766)									
								nyyn	
<i>nemestrina</i> (Linnaeus, 1766)									
m		580	182	202	40			nyyn ¹	
<i>nemestrina</i> (Linnaeus, 1766)									
m		485	165	150	43			yynn	
<i>nemestrina</i> (Linnaeus, 1766)									
								yyyn	
								yyyn	
<i>leonina</i> Blyth, 1863									
m		380		105	30			yynn	
<i>leonina</i> Blyth, 1863									
m		520	190	172	35			yyyn ²	
m		425	170	143	32			yyyn	
<i>leonina</i> Blyth, 1863									
						'indochinensis'		yyyn	
						'indochinensis'		yyyn	
<i>leonina</i> Blyth, 1863									
m	590		180	143				yyyn	
<i>leonina</i> Blyth, 1863									
m		450	160	148	37			yyyn	

(1) received February, 1910 but supposed to have been collected December, 1910; (2) eyebrows white, eyelids tinged with blue

Macaca nemestrina (cont.)

ZRC# sex age dates ver collectors other numbers

Klong Tung Sai; Ko Phuket; THAILAND: Phuket

4-160 f ad 21/12/1917 y CBK 53
 4-161 m ad 26/12/1917 y CBK 111

Muang Liap (camp 15); LAOS: Xaignabouri

4-157 m M2 15/01/1920 y JB 7164

Poh, Telok; Ko Yao Yai; THAILAND: Phangnga

4-158 m ad 22/01/1918 y CBK 305

Tapli; Ban Klong Wan; THAILAND: Ranong

4-163 f ad 14/03/1919 y HCR,CBK SM413/19, 8396

Trang Bom; VIETNAM: Bien Hoa

4-156 f ad 05/06/1918 y CBK 3645, 135

unknown

4-186 m ad ----- n 825
 4-187 f ad ----- n 335
 4-736 un un ----- n
 4-821 f juv ----- n

MACACA NIGRA (DESMAREST, 1822)

ZRC# sex age dates ver collectors other numbers

Sulawesi, INDONESIA

4-189 f un 10/03/1905 y purchased \$50

MACACA TONKEANA (MEYER, 1899)

ZRC# sex age dates ver collectors other numbers

Sulawesi, INDONESIA

4-145 f ad 06/03/1905 y purchased \$46
 4-146 f ad 20/12/1926 n purchased

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
------	-----	-----	------	------	-----	----------------	-------	------	-----

leonina Blyth, 1863

m		555	190	130	35			yyyn	
m		545	175	168	42			yyyn	

leonina Blyth, 1863

m		475	199	170	24			yyyn	
---	--	-----	-----	-----	----	--	--	------	--

leonina Blyth, 1863

m		410	164	106	34			nyyn	
---	--	-----	-----	-----	----	--	--	------	--

leonina Blyth, 1863

m		500	207	170	37			yyyn	
---	--	-----	-----	-----	----	--	--	------	--

leonina Blyth, 1863

m		485	70	140	35			yyyn	
---	--	-----	----	-----	----	--	--	------	--

nyyn
nyyn
ynnn
yyyy¹

Common name: kera hitam yaki, kera hitam bolai

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
------	-----	-----	------	------	-----	----------------	-------	------	-----

yyyn²

Common name: kera hitam digo

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
------	-----	-----	------	------	-----	----------------	-------	------	-----

hecki (Matschie, 1901)

m		600		154	40			yyyn ³ yyyn ⁴	
---	--	-----	--	-----	----	--	--	--	--

(1) in spirit; (2) Omar Road \$2.00, black monkey from Gerontolo; (3) purchased Omar Road \$2.00, *monyet hitam*; (4) in the flesh

MACACA SP.

<u>ZRC#</u>	<u>sex</u>	<u>age</u>	<u>dates</u>	<u>ver</u>	<u>collectors</u>	<u>other numbers</u>
unknown						
4-823	un	M1	-----	n		
4-826		m2	-----	n		RM2895
4-828	f	M1	15/04/1931	n	purchased	
4-831	m	1	22/04/1931	n		
4-832	f	dm2	24/04/1931	n	purchased	
4-833	un	dm2	25/04/1931	n		
4-834		2	25/04/1931	n	purchased	
4-835	m	dm2	02/05/1931	n		
4-836	m	M1	12/06/1931	n		
4-838	m	dm2	29/06/1931	n	purchased	
4-839	f	M1	16/07/1931	n	purchased	
4-840	un	M2	20/07/1931	n		
4-841	un	dm2	-----/1931	n		
4-842	f	M1	-----/1931	n		
4-843	un	dm2	-----/1931	n	purchased	
4-844	un	dm2	-----/1931	n	purchased	
4-845	un	dm2	-----/1931	n	purchased	
4-846	un	dm2	-----/1931	n	purchased	
4-847	un	M1	-----/1931	n	purchased	
4-848	un	dm2	-----/1931	n		
4-849	un	dm2	-----/1931	n	purchased	
4-850	un	dm2	-----/1931	n	purchased	
4-851	un	dm2	-----/1931	n	purchased	
4-852	un	dm2	-----/1931	n	purchased	
4-855	un	dm2	-----	n		14

unit	tot	H&B	tail	foot	ear	added	measures	terms	type	inv
------	-----	-----	------	------	-----	-------	----------	-------	------	-----

									yyyy ¹	
									nyyn ²	
									nyyn ³	
									nyyn	
									nyyn ³	
									nyyn	
									nyyn ³	
									nyyn	
									nyyn ³	
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									nyyn ³	
									nyyn ³	
									nyyn ³	
									nyyn ³	
									nyyn ³	
									nyyn ³	
									nyyn ¹	

(1) in spirit; (2) skull does not belong with skin 2895; (3) purchased in the flesh

Genus *Tarsius*

Small, adult about 12cm long; upright posture accommodating vertical clinging and leaping; long narrow tail; long digits with terminal pads and scale-like nails excepting index and middle digit of pes which are clawed. Head large with big, forward facing orbits, very short muzzle; laterally facing, well-separated nostrils; ears large and membranous. Skull globular, foramen magnum rotated under base of skull; short, bell-shaped dental arcade with small incisors; prominent auditory bulla with short meatus formed by ectotympanic; postorbital bar, incomplete closure of orbital wall.

The three recognised species of *Tarsius* are more distinct than is commonly realised; they are compared by Niemitz (1974); only the most specialised of the three, the Sundaland *T.bancanus*, is represented in the collection in Singapore.

Tarsius bancanus Horsfield, 1821

Brown colour, greyish below. Tail sparsely haired, with tuft at end, its ventral tract bearing V-shaped scales; dark above, pale below. Hind feet elongated; terminal digital pads dish-shaped, expanded. Skull extremely broad; flared orbits, making cranium broader than long; nasals short, their tips only extending beyond lateral margin of pyriform aperture. Auditory bulla much enlarged, encroaching on mesopterygoid fossa. Tympanic tube relatively short; zygomaticofacial foramen represented only by a notch in the orbital rim. Upper molars with large lingual cingulum, expanded distally into an incipient cusp on all three molars. Niemitz (1974) recognises no subspecies for *T.bancanus*.

Genus *Nycticebus*

Small, plump, woolly furred prosimian; limbs of equal length; hands with widely divergent thumb; nails on all digits except second digit of pes which bears a toilet claw. Tail very short. Muzzle short; rhinarium present; eyes anteriorly directed; orbits tubular; small ears; large, inflated auditory bulla; extension of ectotympanic into tubular meatus; nasal bones elongated; tooth comb formed of mandibular incisors and canine (after Groves, 1971c). Two species are recognised, the nominate species and *N.pygmaeus*, which has a distribution limited to Vietnam and Laos. Only *N.couang* is represented in the Singapore collection.

Nycticebus couang (Boddaert, 1785)

The Singapore collection is of special interest, as many specimens are from localities poorly represented in other collections. The specimens from the Riau Archipelago, though clearly referable to *N.c.couang* by their light brown colour and well-marked head forks, are smaller (skull length 56-59mm, mean 57.25mm; N=4) and more reddish than



Figure 9. *Nycticebus coucang*: c - *coucang*; b - *bengalensis*; m - *menagensis*.

Mainland and Sumatran specimens that were the bulk of the sample in Groves's (1971c) revision. Of the five skulls, one lacks the upper lateral incisors: this character occurs in 20% in the Malay/Sumatran series of *N.c.coucang* previously examined. The Natuna specimen lacks lateral incisors, and is fairly small (skull length 57mm), but also conforms more closely to *N.c.coucang* than to *N.c.menagensis*. The four specimens from peninsular Thailand are from the intergrade zone between *N.c.coucang* and *N.c.bengalensis*. Like the latter, they are creamy-white on the neck and shoulders as well as the head, and the head forks are clear on one of the four. Skull length is 60-63mm, mean 61.67mm -- distinctly smaller than specimens from further north. In only two cases are external measurements recorded, and in only one of these is the skull present as well; but in this, ear length is 41.9% of the skull length, larger than any previously recorded specimen of the species, but closest to *N.c.bengalensis*. These important specimens therefore confirm that the lorises from the peninsula are *N.c.bengalensis* but grading somewhat towards *N.c.coucang*.

***TARSIUS BANCANUS* HORSFIELD, 1821**

ZRC# sex age dates ver collectors other numbers

Borneo

4-819 un un ----- n purchased

Kuching; SARAWAK

4-817 m subad 03/03/1927 n purchased A

4-818 m ?ad 06/03/1927 n purchased

Kalabakan (mile 12), Tawai; SARAWAK

4-997 m un 13/10/1962 n JLH 1, 236

Common name: binatang hantu barat, kera hantu, tarsier

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
								yyyy ¹	
							'borneanus'	ynny ²	
							'borneanus'	ynny ³	
m		128	202	68	28			nyyn	

(1) in spirit; (2) presented to RM by Sarawak Museum, purchased from a Dyak; proximal part of tail naked, distal third tufted; (3) proximal part of tail naked, distal third tufted

***NYCTICEBUS COUCANG* (BODDAERT, 1785)**

ZRC# sex age dates ver collectors other numbers

Batam, Pulau; INDONESIA: Riau

4-784 m ad --/01/1928 n¹ HJB 418
 4-785 un ad ----- n² 776, Dr5

Bentong (6-9 miles west); WEST MALAYSIA: Pahang

4-801 m ad 13/06/1910 y³ MC SM1833/10, 3330, 26

Bunguran, Pulau; INDONESIA: Riau

4-811 f ad 30/08/1928 n² FNC RM611

Gantang, Bukit; WEST MALAYSIA: Perak

4-794 un ad 10/11/1908 y SM1440/11, Dr6, 3
 4-795 un M1 -----/1910 y SM1561/11, 139
 4-796 un M1 ----- y SM503A/11

Kayu Laut; Teluk Tapanuli; INDONESIA: Sumatera Barat

4-809 un ad 24/07/1925 n CPB 49, Dr4

Kuala Lumpur; WEST MALAYSIA: Selangor

4-803 f ad 13/12/1907 y FVG SM2454/09, 545

Larut; WEST MALAYSIA: Perak

4-798 m ad ----- y SM1410/11, Dr2

Palembang; INDONESIA: Sumatera Seletan

4-810 m ad 21/08/1926 n S

Pasir Panjang; WEST MALAYSIA: Negri Sembilan

4-804 m ad 27/09/1937 n 11

Simpang; Taiping; WEST MALAYSIA: Perak

4-797 m ad 17/01/1912 y purchased PM137/14, 5194

Tekong (? Besar), Pulau; SINGAPORE

4-805 m ad --/12/1930 n

Teriang; WEST MALAYSIA: Pahang

4-802 m ad 09/09/1912 y MC FM494/12, 5104

Timbang; Serdang; INDONESIA: Sumatera Utara

4-806 m ad -----/1937 y MB RM6190

(1) FNC1935a:8M; (2) FNC1935a:8; (3) CBK1911b:146M

Common name: kukang, kongkang, kera duku, slow loris

unit	tot	H&B	tail	foot	ear	added measures	terms	type	inv
<i>cougang</i> (Boddaert, 1785)									
m	290		10	58	19		' <i>bancanus</i> '	yyyn	
							' <i>bancanus</i> '	nyyn ¹	
<i>cougang</i> (Boddaert, 1785)									
m		331	23	57	21		' <i>malayanus</i> '	yyyn	
<i>cougang</i> Nachtrieb, 1892									
m	290		16	62	20		' <i>natunae</i> '	yyyn	
<i>cougang</i> (Boddaert, 1785)									
								nyyn	
							' <i>malayanus</i> '	yyyn	
								nyyn	
<i>cougang</i> (Boddaert, 1785)									
								nyyn	
<i>cougang</i> (Boddaert, 1785)									
m		233	24	60	20		' <i>malayanus</i> '	yyyn	
<i>cougang</i> (Boddaert, 1785)									
								nynn	
<i>cougang</i> (Boddaert, 1785)									
m	315		10	62	23			ynyn	
<i>cougang</i> (Boddaert, 1785)									
m		251	25	61	20			yyyn	
<i>cougang</i> (Boddaert, 1785)									
m		278		56	20		' <i>malayanus</i> '	yyyn ²	
<i>cougang</i> (Boddaert, 1785)									
m	288		17	60	21			yyyn	
<i>cougang</i> (Boddaert, 1785)									
m		275	20	57	21		' <i>malayanus</i> '	yyyn	
<i>cougang</i> (Boddaert, 1785)									
								yyyn	

(1) may have been collected by HJB in 1928; (2) bought \$1

Nycticebus coucang (cont.)

ZRC# sex age dates ver collectors other numbers

Timbang; Serdang; INDONESIA: Sumatera Utara

4-807 un ad -----/1937 y MB RM6191
 4-808 m ad -----/1937 n MB RM6193

Trengganu, WEST MALAYSIA

4-799 f ad 24/02/1931 n purchased 8
 4-800 m ad 24/02/1931 n purchased Y

menagerie specimen

4-786 m ad 22/04/1929 n M
 4-787 m ad 12/01/1931 n Q
 4-788 m ad 06/06/1931 n 3773

Ban Nong Khang; THAILAND: Prachuap Khiri Khan

4-792 un M2 --/04/1918 y¹ WJFW,MAS 2672/CBK

Chantaburi; THAILAND: Chantaburi

4-793 f ad 15/08/1928 n² CJA 694, 21

Prachuap Khiri Khan; THAILAND: Prachuap Khiri Khan

4-790 m ad -----/1915 y³ MAS 2084/CBK
 4-791 m ad --/09/1916 y⁴ MAS 2464/CBK

Sanggau; INDONESIA: Kalimantan Barat

4-812 m ?ad 22/07/1905 n⁵ WLA

Paku, Pulau; Betong; Saribas; EAST MALAYSIA: Sarawak

4-789 m ad 31/03/1932 n SM 8

unknown

4-813 un ad ----- n 3774
 4-814 un ad ----- n
 4-815 f ad ----- n 8--
 4-816 un subad ----- n

(1) CBK1917a:289; (2) FNC1935b:39; (3) CBK1916c:77; (4)
 CBK1917a: 289; (5) MWL1907a:535T

<u>unit</u>	<u>tot</u>	<u>H&B</u>	<u>tail</u>	<u>foot</u>	<u>ear</u>	<u>added measures</u>	<u>terms</u>	<u>type</u>	<u>inv</u>
<i>coucang</i> (Boddaert, 1785)									
								yyyn	
								yynn	
<i>coucang</i> (Boddaert, 1785)									
m	310		25	14	21			yyyn ¹	
m	285		20	50	22			yyyn ¹	
<i>coucang</i> (Boddaert, 1785)									
m	298		15	65	23		' <i>bancanus</i> '	yyyn	
m	240			53	24		' <i>bancanus</i> '	yyyy	
m	285		35		15		' <i>bancanus</i> '	yyyn ²	
<i>bengalensis</i> Lacépède, 1799									
m	200	190	10	56	12	250 ³		ynyn	
<i>bengalensis</i> Lacépède, 1799									
							' <i>cinereus</i> '	yyyn	
<i>bengalensis</i> Lacépède, 1799									
								yyyn	
m	277		20	69	26		' <i>cinereus</i> '	yyyn	
<i>menagensis</i> Nachtrieb, 1892									
i	35		15				' <i>borneanus</i> '	yynn ⁴	
<i>menagensis</i> Nachtrieb, 1892									
m	157			24	15		' <i>borneanus</i> '	ynyn	
								nyyn	
								nyyn	
								yynn	
								yynn	

(1) in the flesh; (2) tail measure, if correct, is rather long for a loris;
 (3) skull; (4) total length given is far too large

Gazetteer of Primate Localities

Air Kuning; Taiping: **WEST MALAYSIA**; Perak; 4°49'N 100°45'E.

Angut; **THAILAND**: Trang.

Antu, Tanjong; See: Hantu, Tanjong.

Anyut; Pulau Paku: **EAST MALAYSIA**: Sarawak; 1°33'N 111°33'E.

Aor, Pulau See: Aur, Pulau.

Ardgoeno; See: Arjuno.

Arjuno: **INDONESIA**; Jawa Timur; 7°45'S 112°34'E.

Aur, Pulau: **WEST MALAYSIA**; Johor; 2°27'N 104°31'E.

Ayer Kuning; See: Air Kuning.

Bahang, Telok; **WEST MALAYSIA**: Pulau Pinang; 5°28'N 100°13'E.

Banguay Island; See: Banggi, Pulau.

Ban Dohn; **THAILAND**: Nakhon Sri Thammarat; 9°10'N 99°15'E.

Bandon; See: Ban Dohn.

Banggi, Pulau; **EAST MALAYSIA**: Sabah; 6°35'N 117°05'E.

Bang Nara; See: Ban Nara.

Ban Huang Som; **THAILAND**: Trat; 11°51'N 102°50'E.

Ban Nara; **THAILAND**: Pattani; 6°50'N 101°15'E.

Bankachon; Victoria Point; **BURMA**: Tenasserim; 9°58'N 98°35'E.

Bankasoon; See: Bankachon.

Bankasun; See: Bankachon.

Ban Klong Wan; See: Tapli, Ban Klong Wan.

Ban Manao; **See:** Ban Mak Nao.

Ban Ma Nao; **See:** Ban Mak Nao.

Ban Mak Nao; **LAOS:** Vientiane; 18°00'N 102°58'E.

Ban Nong Khang; **THAILAND:** Prachuap Khiri Khan; 12°20'N 99°52'E.

Ban Nong Kho; **THAILAND:** Chon Buri; 13°07'N 101°04'E.

Ban Nong Kok; **THAILAND:** Krabi; 8°04'N 98°52'E.

Ban Na Sao; **See:** Ban Naxao.

Ban Naxao; **LAOS:** Khammouan; 17°30'N 104°54'E; elevation: 1000'.

Ban Pak Nam; **THAILAND:** Chumphon; 10°26'N 99°15'E.

Ban Pak Nam Pho; **THAILAND:** Nakhon Sawan; 15°43'N 100°09'E.

Ban Ron Phi Bun; **THAILAND:** Nakhon Sri Thammarat; 8°09'N 99°51'E.

Ban Tha San; **THAILAND:** Chumphon; 10°29'N 98°55'E; elevation: 200'.

Baram District; **EAST MALAYSIA:** Sarawak; 4°00'N 114°30'E.

Baram, Sungei; **EAST MALAYSIA:** Sarawak; 4°00'N 114°30'E.

Batam, Pulau; **INDONESIA:** Riau; 1°05'N 104°03'E.

Batu Tegur; Taiping; **WEST MALAYSIA:** Perak; 4°52'N 100°45'E.

Batu Tugoh; **See:** Batu Tegur.

Belaga; **EAST MALAYSIA:** Sarawak; 4°00'N 114°30'E.

Belingean; **EAST MALAYSIA:** Sarawak; 2°59'N 112°34'E.

Benom, Gunung; **WEST MALAYSIA:** Pahang; 3°50'N 102°06'E.

Bentong (6-9 miles west); **WEST MALAYSIA:** Pahang; 3°22'N 101°50'E.

Betong; Saribas; **EAST MALAYSIA:** Sarawak; 1°20'N 111°31'E.

Betotan; **EAST MALAYSIA:** Sabah; 5°55'N 117°40'E; elevation: 31M.

Bettotan; **See:** Betotan.

Bha Ngan, Ko; **THAILAND:** Nakhon Sri Thammarat; 9°40'N 100°02'E.

Bintang, Pulau; **INDONESIA:** Riau; 1°12'N 104°25'E; **See also:** Pasar Pajang; Sungai Biru.

Biru, Sungai; Pulau Bintang **INDONESIA:** Riau; 1°12'N 104°30'E.

Bliak, Pulau Kundur; **INDONESIA:** Riau; 0°54'N 103°22'E.

Botanical Gardens; **SINGAPORE:** 0°19'N 103°48'E.

Bukar; Samarahan; **EAST MALAYSIA:** Sarawak; 1°16'N 110°27'E.

Bukit Timah; **SINGAPORE:** 01°20'N 103°45'E

Bunguran, Pulau; **INDONESIA:** Riau; 4°05'N 108°20'E; **See also:** Ranai, Gunung, Ulu, Sungai.

Buraw; Pulau Langkawi; **WEST MALAYSIA:** Perlis; 6°22'N 99°48'E.

Ceremai; **INDONESIA:** Jawa Barat; 6°54'S 108°24'E.

Chang, Ko; **THAILAND:** Trat; 12°05'N 102°20'E.

Changi; **SINGAPORE;** 1°20'N 104°00'E.

Changkat Mentri; Sungei Bernam; **WEST MALAYSIA:** Perak; 1°20'N 104°00'E.

Chantaboon; **See:** Chantaburi.

Chantaburi; **THAILAND:** Chantaburi; 12°36'N 102°09'E.

Cheras Road (7th mile); Kuala Lumpur; **WEST MALAYSIA:** Selangor; 3°05'N 101°45'E.

Chereka Klang, Bukit; Jeram; **WEST MALAYSIA:** Selangor; 3°13'N 101°19'E.

Chiang Mai; **THAILAND:** Chiang Mai; 18°50'N 98°58'E.

Chiengmai; **See:** Chiang Mai.

Chong; **See:** Khao Chong.

Citambur; **INDONESIA:** Jawa Barat; 7°11'S 107°15'N.

Cibodas; Gunung Gede; **INDONESIA:** Jawa Barat; 6°45'N 106°55'E; elevation: 4500-5000'.

Condore, Poulo; **See:** Con Son.

Con Son; **VIETNAM:** 8°42'N 106°38'E.

Da Ban; **VIETNAM:** Ninh Thuan; 11°45'N 108°45'E.

Dalat; **VIETNAM:** Tuyen Duc; 11°56'N 108°25'E; elevation: 4500'.

Delisle Island; **See:** Ko Phayam.

Dasun Tua; **WEST MALAYSIA:** Selangor; 3°08'N 101°50'E.

Dayang Bunting, Pulau; **WEST MALAYSIA:** Perlis; 6°08'N 99°48'E.

Don Duong; **VIETNAM:** Tuyen Duc; 11°51'N 108°35'E; elevation: 3000'.

Dran; **See:** Don Duong.

Dulit; Gunong; **EAST MALAYSIA:** Sarawak; 1°30'N 114°00'E; elevation:
2000-3000'.

Entaina-Samarahan; **See:** Entawa-Samarahan.

Entawa-Samarahan; **EAST MALAYSIA:** Sarawak; 1°07'N 111°32'E.

Etawa-Samarahan; **See:** Entawa-Samarahan.

Gaik Lien Estate; Jalan Damansara; **WEST MALAYSIA:** Selangor; 3°07'N
101°37'E.

Galang, Pulau; **INDONESIA:** Riau; 0°45'N 104°15'E.

Gantang, Bukit; **WEST MALAYSIA:** Perak; 4°46'N 100°42'E.

Gantang; **THAILAND:** Trang; 7°35'N 99°40'E.

Gap; **See:** Phattalung.

Genting; Kuala Lipis; **WEST MALAYSIA:** Pahang; 4°11'N 101°03'E.

Genting Bidai; **WEST MALAYSIA:** Selangor; 3°18'N 101°49'E.

Geram; **See:** Chereka Klang, Bukit.

Ginting Bidai; **See:** Genting Bidai.

Gokteik; **BURMA**: Shan; 22°20'N 96°52'E.

Gombak, Ulu; **WEST MALAYSIA**: Selangor; 3°20'N 101°50'E.

Great Redang Island; **See**: Redang, Pulau.

Hantu, Tanjong; Dindings; **WEST MALAYSIA**: Perak; 4°30'N 100°39'E.

Hat Sanuk; **See**: Rat Buri.

Huai Nua Pla; **THAILAND**: Tak; 16°54'N 98°48'E; elevation: 2500'.

Hue Yah Pla; **See**: Huai Nua Pla.

Hue Ya Pa; **See**: Huai Nua Pla.

Jeram; **See**: Chereka Klang, Bukit.

Jong, Bukit; **WEST MALAYSIA**: Trengganau; 5°22'N 103°02'E.

Juara, Telok; Pulau Tioman; **WEST MALAYSIA**: Pahang; 2°48'N 104°10'E.

Junkseylon; **See**: Phuket, Ko; Klong Tung Sai.

Kalabakan (12th mile), Tawau; elevation 200'; **See**: Tawai.

Kampong Kuala Tembeling; **See**: Kuala Tembeling.

Kampong Senigong; **See**: Sanggau.

Karang Bolang; **INDONESIA**: Jawa Tengah; 7°50'S 109°25'E.

Karimata, Pulau; **INDONESIA**: Kalimantan Barat; 1°35'S 108°50'E.

Kateman, Sungai; **INDONESIA**: Riau; 0°21'N 103°36'E.

Katungoa; **INDONESIA**: Kalimantan.

Kayu Laut; Teluk Tapanuli; **INDONESIA**: Sumatera Barat; 1°38'N 98°45'E.

Kebun Klang, Jalan (7th mile); **WEST MALAYSIA**: Selangor; 3°05'N 101°45'E.

Kenokok, Gunong Kinabalu; **EAST MALAYSIA**: Sabah; 6°11'N 116°43'E.

Kepang; **See**: Kepong.

Kepong; **WEST MALAYSIA**: Selangor; 3°13'N 101°38'E.

Kerinci, Gunung; **See:** Kerinci Peak; Kumbang, Sungai; Sandaran Agung; Siolak Daras.

Kerinci Peak; Gunung Kerinci; **INDONESIA:** Sumatera Barat; 1°42'S 101°16'E.

Kerong; **See:** Kepong.

Khao Chong; **THAILAND:** Trang; 7°33'N 99°50'E.

Khao Luang; **THAILAND:** Nakhon Srithammarat; 8°31'N 99°47'E.

Khao Rham; **THAILAND:** Nakhon Srithammarat; 8°25'N 99°58'E.

Khau, Ko; **THAILAND:** Trang; 7°35'N 99°35'E.

Khet Don Hieng (Camp 22); **LAOS:** Vientiane; 17°53'N 101°34'E.

Khlong Yai; **THAILAND:** Trat; 11°46'N 102°54'E.

Khram Yai, Ko; **THAILAND:** Chon Buri; 12°45'N 100°47'E.

Kiau, Gunong Kinabalu; **EAST MALAYSIA:** Sabah; 6°10'N 116°42'E.

Kinabalu, Gunong; **EAST MALAYSIA:** Sabah; 6°10'N 116°40'E; **See also:** Lumu Lumu; Kiau.

Kledang Hill; **WEST MALAYSIA:** Perak; 4°35'N 101°01'E.

Klong Menao; **See:** Ban Huang Som.

Klong Menas; **See:** Ban Huang Som.

Klong Tun Sai; **See:** Klong Tung Sai.

Klong Tung Sai; Ko Phuket; **THAILAND:** Phuket; 7°58'N 98°22'E.

Klong Yai; **See:** Khlong Yai.

Klumpang, Teluk; **INDONESIA:** Kalimantan Selatan; 2°45'S 116°00'E.

Kopang, Tanjong; **See:** Kupang, Tanjong.

Korinchi, Gunung; **See:** Kerinci, Gunung.

Korinchi Peak; **See:** Kerinci Peak.

Kota Bumi; **INDONESIA**: Lampung; 4°50'S 104°50'E.

Kotaboemi; **See**: Kota Bumi.

Kotapinang; **INDONESIA**: Sumatera Utara; 1°53'N 100°05'E.

Kota Tinggi; **WEST MALAYSIA**: Johor; 1°44'N 103°55'E.

Kram, Ko; **See**: Khram Yai, Ko.

Kuala Lipis; **See**: Genting.

Kuala Lumpur; **WEST MALAYSIA**: Selangor; 3°05'N 101°45'E; **See also**:
Cheras Road; Gaik Lien Estate; Weld's Hill.

Kuala Selangor; **WEST MALAYSIA**: Selangor; 3°20'N 101°20'E.

Kuala Semburong; **WEST MALAYSIA**: Johor; 2°20'N 103°35'E.

Kuala Semurong; **See**: Kuala Semburong.

Kuala Tahan; Sungei Tahan; **WEST MALAYSIA**: Pahang; 4°23'N 102°24'E.

Kuala Teku; Gunong Tahan; **WEST MALAYSIA**: Pahang; 4°33'N 102°18'E.

Kuala Tembeling; **WEST MALAYSIA**: Pahang; 4°04'N 102°19'E.

Kuantan; **WEST MALAYSIA**: Pahang; 3°47'N 103°18'E.

Kuching; **SARAWAK**; 1°33'N 110°20'E.

Kuching, Sungei; **EAST MALAYSIA**: Sarawak; 1°04'N 110°44'E.

Kumbang, Sungai; Gunung Kerinci; **INDONESIA**: Sumatera Barat; 1°49'N
101°15'E.

Kundor, Pulau; **See**: Kundur, Pulau.

Kundur, Pulau; **INDONESIA**: Riau; 0°45'N 103°26'E; **See also**: Bliak.

Kupang, Tanjong; **WEST MALAYSIA**: Johor; 1°21'N 103°36'E.

Kut, Ko; **THAILAND**: Trat; 11°30'N 102°35'E.

Labatuah; **WEST MALAYSIA**: Pahang.

Lacon; **See**: Luang Khao

Lak, Ko; **See:** Prachuap Khiri Khan.

Lam Phura; Sathani; **THAILAND:** Trang; 7°40'N 99°35'E.

Lam Ra; **See:** Lam Phura.

Lang, Ko; **See:** Luang, Ko.

Langkawi, Ko; **See:** Buraw.

Lang Bian, Nui; **VIETNAM:** Tuyen Duc; 12°05'N 108°30'E.

Langbian Peaks; **See:** Lang Bian, Nui.

Lanta, Ko; **THAILAND:** Krabi; 7°35'N 99°05'E; **See also:** Pasir Raya.

Lantai, Bukit; **WEST MALAYSIA:** Negri Sembilan; 2°51'N 102°01'E; elevation: 2500'.

Larut, Bukit; **See:** Tea Garden.

Larut; **WEST MALAYSIA:** Perak; 4°48'N 100°45'E.

Lat Bua Kao; **See:** Lat Bua Khao.

Lat Bua Khao; **THAILAND:** Nakhon Ratchasima; 14°52'N 101°36'E.

Lipis, Kuala; **See:** Genting; Kuala Lipis.

Luang Khao; **THAILAND:** Nakhon Srithammarat; 8°26'N 99°58'E.

Luang, Ko; **THAILAND:** Krabi; 7°32'N 98°57'E.

Lumu Lumu; Gunong Kinabalu; **EAST MALAYSIA:** Sabah; 6°20'N 116°35'E.

Luntar, Pulau; **See:** Lanta, Ko.

Maa Wang Forest; **THAILAND:** Nakhon Sawan; 15°40'N 99°40'E.

Malewoon; **See:** Maliwun.

Malim, Tanjong; **WEST MALAYSIA:** Selangor; 3°41'N 101°44'E.

Maliwun; Victoria Point; **BURMA:** Tenasserim; 10°25'N 98°40'E.

Mapor, Pulau; **INDONESIA:** Riau; 1°00'N 104°50'E; **See also:** Panjang, Pulau,

Riau.

Maxwell's Hill, Taiping; **WEST MALAYSIA**: Perak; 4°52'N 100°47'E; elevation: 3000'.

Melalop; **EAST MALAYSIA**: Sabah; 5°14'N 116°00'E.

Meliwini; **See**: Maliwun.

Me Ping Rapids; **See**: Ping, Mae Nam.

Me Sort; **See**: Me Sot.

Me Sot; **THAILAND**: Tak; 16°43'N 98°34'E.

Mora Bharu; Samarahan; **EAST MALAYSIA**: Sarawak; 1°06'N 110°26'E.

Muang Liap (camp 15); **LAOS**: Xaignabouri; 18°29'N 101°40'E.

Muang Liep; **See**: Muang Liap.

Naka Yai, Ko; **THAILAND**: Phuket; 8°06'N 98°26'E.

Na Ka, Ko; **See**: Naka Yai, Ko.

Ngoewal, Pulau; **See**: Nguwal, Pulau.

Nguwal, Pulau; **INDONESIA**: Riau; 0°40'N 104°14'E.

Nias, Pulau; **INDONESIA**: Sumatera Utara; 1°00'N 96°20'E.

Nong Kay; **See**: Nong Kha, Houay.

Nong Kha, Houay (camp 28); **LAOS**: Vientiane; 17°37'N 104°37'E.

Nong Khor; **See**: Ban Nong Kho.

Nong Kok; **See**: Ban Nong Kok.

Nylas; **WEST MALAYSIA**: Malacca; 2°26'N 102°28'E.

Oedjoeng; **See**: Ujung.

Oedjoengteboe; **See**: Ujung Tebu.

Ongop Ongop; **INDONESIA**: Jawa Timur; 8°05'S 114°14'E.

Padang Tuan; Segamat; **WEST MALAYSIA**: Johor; 2°30'N 102°50'E.

Pagi Seletan, Pulau; **INDONESIA**: Sumatera Barat; 3°00'S 100°20'E.

Pagi Utara, Pulau; **INDONESIA**: Sumatera Barat; 2°40'S 100°00'E.

Pak Chong; Sathani; **THAILAND**: Nakhon Ratchasima; 14°42'N 101°25'E.

Pak Jong; **See**: Pak Chong.

Pak Klong; Pran; **THAILAND**: Rat Buri; 12°20'N 99°68'E.

Pak Maga; **See**: Terusan, Ulu.

Pak Nam; **See**: Ban Pak Nam.

Paknampho; **See**: Ban Pak Nam Pho.

Pak Naupoh; **See**: Ban Pak Nam Pho.

Paku, Pulau; Betong; Saribas; **EAST MALAYSIA**: Sarawak; 1°30'N 111°15'E.

Palembang; **INDONESIA**: Sumatera Seletan; 2°55'S 104°45'E.

Pandan; **SINGAPORE**; 1°19'N 103°47'E.

Pandji, Teluk; **See**: Panji, Teluk.

Panjaer, Tanjong; Sungei Rumpin; **WEST MALAYSIA**: Pahang; 2°49'N 103°29'E.

Panjang, Pulau, Phangnga; **See**: Yao Yai, Ko.

Panjang, Pulau, Riau; **See**: Mapor, Pulau.

Panjang Anak, Pulau; **See**: Yao Noi, Ko.

Panji, Teluk; Kotapinang; **INDONESIA**: Sumatera Utara; 2°05'N 100°15'E.

Pantai Krachut; **WEST MALAYSIA**: Pulau Pinang; 5°28'N 100°11'E.

Pasar Panjang; Pulau Bintang; **INDONESIA**: Riau; 1°12'N 104°30'E.

Pasir Panjang; **WEST MALAYSIA**: Negri Sembilan; 2°26'N 101°26'E.

Pasir Raya; Pulau Luntar; **THAILAND**: Krabi; 7°35'N 99°05'E.

Patalung; **See:** Phatthalung.

Pelabuanratu, Teluk; **INDONESIA:** Jawa Barat; 6°58'S 106°32'E.

Pelabuhan Ratu, Teluk; **See:** Pelabuanratu, Teluk.

Pelandok, Sungei; Pulau Paku; Saribas; **EAST MALAYSIA:** Sarawak; 1°32'N 110°44'E.

Pelarit; **WEST MALAYSIA:** Perlis; 6°39'N 100°11'E.

Pennan, Ko; Surat Thani; **See:** Phangan, Ko.

Pennan, Ko; Nakhon Srithammarat; **See:** Bha Ngan, Ko.

Pepidon, Ko; **THAILAND:** Krabi; 7°45'N 98°48'E.

Perhentian, Pulau; **See:** Perhentian Besar, Pulau.

Perhentian Besar, Pulau; **WEST MALAYSIA:** Trengganau; 5°54'N 102°46'E.

Phangan, Ko; **THAILAND:** Surat Thani; 9°45'N 100°00'E.

Pha Ngan, Ko; **See:** Bha Ngan, Ko.

Phatthalung; **THAILAND:** Phatthalung; 7°37'N 100°05'E.

Phayam, Ko; **THAILAND:** Ranong; 9°44'N 98°25'E.

Phuket, Ko; **THAILAND:** Phuket; 7°58'N 98°22'E.

Piam, Ko; **See:** Phayam, Ko.

Ping Rapids, Mae Nam; **THAILAND:** Chiang Mai; 17°00'N 98°40'E.

Pintu, Pulau; Gedong; **WEST MALAYSIA:** Selangor; 2°55'N 101°15'E.

Pipidon, Ko; **See:** Pepidon, Ko.

Poh, Telok; Ko Yao Yai; **THAILAND:** Phangnga; 8°00'N 98°38'E.

Poh, Telok; Pulau Panjang; **See:** Poh, Telok; Ko Yao Yai.

Ponggol; **See:** Punggol.

Pontianak; **INDONESIA:** Kalimantan Barat; 0°05'S 109°35'E.

Port Dickson; **WEST MALAYSIA**: Negri Sembilan; 2°31'N 101°48'E.

Prachuap Khiri Khan; **THAILAND**: Prachuap Khiri Khan; 11°49'N 99°48'E.

Pulai, Gunong; **WEST MALAYSIA**: Johor; 1°36'N 103°33'E.

Puli; **See**: Pulai, Gunong.

Punang, Sungei; **EAST MALAYSIA**: Sarawak; 4°54'N 115°21'E.

Punggol; **SINGAPORE**; 1°25'N 103°55'E.

Ranai, Gunung; Pulau Bunguran; **INDONESIA**: Riau; 4°05'N 108°20'E.

Rat Buri; **THAILAND**: Rat Buri; 13°30'N 99°30'E.

Rayoh; **EAST MALAYSIA**: Sabah; 5°15'N 115°55'E.

Redang, Pulau; **WEST MALAYSIA**: Trengganu; 5°48'N 103°01'E.

Rimbo Pengadang Lebong; **INDONESIA**: Sumatera Selatan; 4°08'S 103°45'E.

Ronphibun; **See**: Ban Ron Phi Bun.

Salama, Ulu; **See**: Selama, Ulu.

Samarahan; **See**: Entawa-Samarahan.

Samui, Ko; **THAILAND**: Nakhon Srithammarat; 9°20'N 99°05'E.

Sandaran Agung; **See**: Sandaran Agung.

Sandaran Agung; Gunung Kerinci; **INDONESIA**: Sumatera Barat; 2°07'N 101°30'E;
elevation: 2450'.

Sanggau; **INDONESIA**: Kalimantan Barat; 0°12'N 110°39'E.

Saribas; **See**: Paku, Pulau; Pelandok, Sungei.

Sebah, Pulau; Sungei Pahang; **WEST MALAYSIA**: Pahang; 3°31'N 103°26'E.

Sedagong; Pulau Tioman; **WEST MALAYSIA**: Pahang; 2°48'N 104°00'E.

Selama, Ulu; **WEST MALAYSIA**: Perak; 5°15'N 101°50'E.

Semangko Pass; **WEST MALAYSIA**: Selangor; 3°40'N 101°45'E.

- Sembawang, Sungei; **SINGAPORE**; 1°27'N 103°50'E.
- Semimba, Teluk; Pulau Battam; **INDONESIA**: Riau; 1°03'N 103°55'E.
- Serasan, Pulau; Natuna Seletan; **INDONESIA**: Riau; 2°30'N 109°00'E.
- Siak, Sungei; **INDONESIA**: Riau; 0°20'S 102° 50'E.
- Siantan, Pulau; **INDONESIA**: Riau; 2°40'N 106°05'E.
- Siberut, Pulau; **INDONESIA**: Sumatera Barat; 1°25'S 98°55'E.
- Sidong, Gunong; Samarahan; **EAST MALAYSIA**: Sarawak; 1°05'N 110°25'E.
- Si Karang; **WEST MALAYSIA**: Johor; 1°25'N 104°05'E.
- Simpang; Taiping; **WEST MALAYSIA**: Perak; 4°49'N 100°42'E.
- Siolak Daras; Gunung Kerinci; **INDONESIA**: Sumatera Barat; 1°55'N 101°16'E.
- Sipora, Pulau; **INDONESIA**: Sumatera Barat; 2°10'N 99°45'E.
- Sirhassan, Pulau; **See**: Pulau Serasan.
- Subang; **INDONESIA**: Jawa Tengah; 6°35'S 107°45'E.
- Subi Kecil, Pulau; **INDONESIA**: Riau; 3°05'N 108°25'E.
- Subi Kechil, Pulau; **See**: Subi Kecil, Pulau.
- Sudang; **See**: Subang.
- Sugar Loaves Island; **See**: Yao Yai, Ko.
- Sumbawang, Sungei; **See**: Sembawang, Sungei.
- Ta Chang Tai; **See**: Tha Chang Tai.
- Takua Thung; **THAILAND**: Phangnga; 8°24'N 98°27'E.
- Taiping; **See**: Air Kuning; Batu Tegur; Larut; Maxwell's Hill; Simpang; Tea Garden.
- Talibong, Ko; **THAILAND**: Trang; 7°15'N 99°22'E.
- Tamansari; **INDONESIA**: Jawa Tengah; 7°57'S 111°31'E.
- Tampines; **SINGAPORE**; 1°23'N 103°57'E.

Tangga, Bukit; **WEST MALAYSIA**: Negri Sembilan; 2°24'N 102°09'E; elevation: 1300'.

Tapanuli, Teluk; **INDONESIA**: Sumatera Barat; 1°38'N 98°45'E; **See also**: Kayu Laut.

Tapli; Ban Klong Wan; **THAILAND**: Ranong; 10°30'N 98°49'E.

Tarutao, Ko; **THAILAND**: Satun; 6°35'N 99°40'E; **See also**: Waw, Telok.

Tasan; **See**: Ban Tha San.

Tawai; **EAST MALAYSIA**: Sarawak; 1°13'N 111°30'E; **See also**: Kalabakan.

Tawau; **See**: Tawai.

Tea Garden; Larut Hills; **WEST MALAYSIA**: Perak; 4°52'N 100°47'E.

Tebrau, ? Sungei (Selat Tebrau is Johore Strait); **WEST MALAYSIA**: Johor; 1°32'N 103°46'E.

Tekong (? Besar), Pulau; **SINGAPORE**; 1°24'N 104°03'E.

Telibon, Pulau; **See**: Talibong, Ko.

Telibong, Pulau; **See**: Talibong, Ko.

Tempines; **See**: Tampines.

Tenasserim Town; **BURMA**: Tenasserim; 12°06'N 99°01'E.

Teriang; **WEST MALAYSIA**: Pahang; 3°14'N 102°25'E.

Terusan, Ulu; **EAST MALAYSIA**: Sarawak; 4°10'N 115°30'E.

Terutau, Pulau; **See**: Tarutao, Ko.

Tha Chang Tai; **THAILAND**: Tak; 16°51'N 99°03'E.

Thaget; **BURMA**: Tenasserim; 12°15'N 99°07'E.

Timbang; Serdang; **INDONESIA**: Sumatera Utara.

Tinggi, Pulau; **WEST MALAYSIA**: Johor; 2°20'N 104°10'E.

Tioman, Pulau; **WEST MALAYSIA**: Pahang; 2°48'N 104°10'E; **See also**: Juara

Telok; Sedagong.

Tjerimay; **See:** Ceremai.

Tjibamboer; **See:** Citambur.

Tjitamboer; **See:** Citambur.

Tjibodas; **See:** Cibodas.

Toetoengan Estate; Deli; **See:** Tuntungan.

Tongka, Ko; **See:** Phuket, Ko; Klong Tung Sai.

Tong Pran; Takuatung; **See:** Takua Thung.

Trang; **See:** Chong.

Trang Bom; **VIETNAM:** Bien Hoa; 10°57'N 107°00'E.

Trang Bom; Saigon; **See:** Trang Bom; Bien Hoa.

Triang; **See:** Teriang.

Trusan, Ulu; **See:** Terusan, Ulu.

Tuan Keramat, Tanjong; **WEST MALAYSIA:** Negri Sembilan; 2°24'N 101°52'E.

Tuas; **SINGAPORE;** 1°20'N 103°40'E.

Tunge Siamang; **See:** Panji, Teluk.

Tuntungan; **INDONESIA:** Sumatera Utara; 3°45'N 98°41'E.

Ujung; **INDONESIA:** Jawa Barat; 6°45'S 105°20'E.

Ujung Tebu; **INDONESIA:** Jawa Barat; 6°15'N 106°00'E; elevation: 1000'.

Ulu, Sungai; Pulau Bunguran; **INDONESIA:** Riau; 4°05'N 108°20'E.

Victoria Point; **See:** Bankachon; Mailiwun.

Waw, Telok; Pulau Tarutao; **THAILAND:** Satun; 6°35'N 99°40'E.

Weld's Hill; Kuala Lumpur; **WEST MALAYSIA:** Selangor; 3°05'N 101°45'E.

Weston; **EAST MALAYSIA:** Sabah; 5°13'N 115°36'E.

Wang Pong; See: Ban Nong Khang.

Wray's Camp; Gunong Tahan; **WEST MALAYSIA**: Pahang; 4°39'N 102°14'E.

Wynkoops Bay; See: Pelabuhanratu, Teluk.

Yam Yai, Ko; See: Yao Yai, Ko.

Yao Noi, Ko; **THAILAND**: Phangnga; 8°10'N 98°40'E.

Yao Yai, Ko; **THAILAND**: Phangnga; 8°00'N 98°38'E.

List of Collectors

[abbreviations in square brackets]

Aagaard, C. J. [CJA]

Collected in south and west THAILAND

Years: 1924-1931

Abbott, William L. [WLA]

Collected in Sumatera, Kalimantan

Years: 1902-1908

Baker, H.J. [HJB]

Collected in Pulau Batam, INDONESIA

Years: 1928

Bangassar, J. [JB]

Collected in LAOS and Nakhon Srithammarat, THAILAND

Years: 1920-1922

Banks, E. [EB]

Collected in SARAWAK

Years: 1928-1940

Basapa, W.L.S. [WLSB]

Presented Menagerie Specimens

Years: 1924-1936

Bedford, F.P. [FPB]

Collected in Borneo

Years: ----

Boogaarts, M. [MB]

Collected in Sumatera Utara, INDONESIA

Years: 1937

Brook, Carlton P. [CPB]

Collected in Teluk Tapanuli, Sumatera Barat, INDONESIA

Years: 1925

Butler, A.L. [ALB]

Collected in Kepong, WEST MALAYSIA

Years: ----

Chambrai, J.H. [JHC]

Collected in Nakhon Sawan and Bak, THAILAND

Years: 1919-1924

Charles, L.A. [LAC]

Collected in Melalop, SABAH

Years: 1941

Chasen, Frederick Nutter [FNC]

Collected in Riau, INDONESIA, SINGAPORE, SABAH

Years: 1921-1929

Clives [C]

Collected in Nakhon Sawan, THAILAND

Years: 1917

Day, A.L. [ALD]

Collected in Sulawesi, INDONESIA

Years: 1903

Deignan, Herbert Girton [HD]

Collected in Chaing Mai, THAILAND

Years: 1931

Feig, G. [GF]

Presented Menagerie Specimens

Years: 1922-1926

de Fontaine, P.M. [PMF]

Collected in Semangko Pass, WEST MALAYSIA and Riau, INDONESIA

Years: 1912-1931

Gairdner, K.G. [KGG]

Collected in Bak, Chiang Mai, THAILAND

Years: 1916-1924

Guy, Lt. F.V. [FVG]

Collected in Kuala Lumpur, WEST MALAYSIA

Years: 1907-1908

Harrison, J.L. [JLH]

Collected in Tawai, SARAWAK

Years: 1962

Heng Ah Leck [HAL]

Collected in Kota Tinggi, WEST MALAYSIA

Years: 1932

Herre, A.W.C.T. [AWH]

Collected in Tuas, SINGAPORE

Years: 1923

Holtum, R.E. [REH]

Collected in Gunong Kinabalu, SABAH

Years: 1933

Hose, Charles [CH]

Collected in SARAWAK and Con Son, VIETNAM

Years: 1889-1921

Hose, Ernest [EH]

Collected in Pulau Bunguran, INDONESIA

Years: 1894

Jacobson, E. [EJ]

Collected in Sumatera Seletan, INDONESIA

Years: 1916

Kloss, Cecil Boden [CBK]

Collected in MALAYSIA, INDONESIA, THAILAND, VIETNAM

Years: 1905-1927

Knight, Valentine [VK]

Collected in Johor, WEST MALAYSIA and Riau, INDONESIA

Years: 1909-1915

Koh Y.L. [KYL]

Presented Menagerie Specimens

Years: 1970

Lanchester, W.F. [WFL]

Collected in Borneo

Years: ----

Langgi [L]

Collected in Kuantan, WEST MALAYSIA

Years: ----

Lee Kit Soon [LKS]

Collected in SINGAPORE

Years: 1916

Lim Kiang Soon [LKSa]

Presented Menagerie Specimens

Years: 1921

Loebell, M. [ML]

Collected in Palembang, INDONESIA

Years: 1906

Mabert, W. [WM]

Collected in Ban Pak Nam Pho, Nakhon Sawan, THAILAND

Years: 1922

Mangga, S. [SM]

Collected in SARAWAK

Years: 1932

Mayer, C. [CM]

Locality not known

Years: 1898-1899

Menden, J.J. [JJM]

Collected in Jawa and Sumatera, INDONESIA

Years: 1927

Moholief, D. [DM]

Presented Menagerie Specimens

Years: 1977

Moulton, J.C. [JCM]

Collected in Baram, SARAWAK

Years: 1920

Nunong, G. [GN]

Collected in Pulau Bintang, INDONESIA and SARAWAK

Years: 1928-1939

Oshita [OS]

Collected in SINGAPORE

Years: 1944

Ridley, H.N. [HNR]

Presented specimens from the Botanical Gardens, SINGAPORE

Years: 1895-1905

Robinson, Herbert Christopher (1874-1929) [HCR]

Collected in INDONESIA, WEST MALAYSIA, SINGAPORE, THAILAND

Years: 1905-1919

Seimund, E. [ES]

Collected in INDONESIA, WEST MALAYSIA, SINGAPORE, THAILAND

Years: 1906-1937

Shortridge, G.C. [GCS]

Collected in BURMA

Years: 1913-1914

Smedley, Norman [NS]

Collected in Pulau Aur, Pulau Tioman, WEST MALAYSIA

Years: 1927

Smith, Malcom A. [MAS]

Collected in Prachuap Khiri Khan, THAILAND

Years: 1915-1918

de Sousa [dS]

Presented Menagerie Specimen

Years: 1926

Tungku Makota, His Highness (Sultan of Johor) [HHTM]

Presented Menagerie Specimen

Years: 1939

Ulok, C. [CU]

Collected in Samarahan, SARAWAK

Years: 1919

Van Heyst [vH]

Collected in Deli, Sumatera Utara, INDONESIA

Years: ----

Vogelpol [V]

Collected in Lampung, Sumatera, INDONESIA

Years: 1940

Williamson, W.J.F. [WJFW]

Collected in Lat Bua Khao, Nakhon Ratchasima, THAILAND

Years: 1916

Wong, A.H. [AHW]

Collected in SINGAPORE

Years: 1910

Yates, H.S. St. J. [HSY]

Collected in Nakhon Sawan, THAILAND

Years: 1917

Key to Abbreviations for Authors and Collectors

AHW	Wong, A.H.	HSY	Yates, H.S. St. J.
ALB	Butler, A.L.	JB	Bangassar, J.
ALD	Day, A.L.	JCM	Moulton, J.C.
AWH	Herre, A.W.C.T.	JHC	Chambrai, J.H.
B	?	JJM	Menden, J.J.
C	Clives	JLH	Harrison, J.L.
CAG-H	Gibson-Hill, C. A.	KGG	Gairdner, K.G.
CBK	Kloss, C. B.	KYL	Koh Y.L.
CH	Hose, C.	L	Langgi
CJA	Aagaard, C. J.	LAC	Charles, L.A.
CM	Mayer, C.	LAD	Day. L. A.
CPB	Brook, C. P.	LKS	Lee Kit Soon
CU	Ulok, C.	LKSa	Lim Kiang Soon
dS	de Sousa	MAS	Smith, M. A.
DM	Moholief, D.	MB	Boogaarts, M.
EB	Banks, E.	MC	Museum Collector
EH	Hose, E.	ML	Loebell, M.
EJ	Jacobson, E.	MWL	Lyon, M. W.
ES	Seimund, E.	NS	Smedley, N.
F	Flower, S. M.	OS	Oshita
FNC	Chasen, F. N.	OT	Thomas, O.
FPB	Bedford, F.P.	PMF	de Fontaine, P.M.
FVG	Guy, Lt. F.V.	RCW	Wroughton, R. C.
GCS	Shortridge, G.C.	REH	Holtum, R.E.
GF	Feig, G.	RH	Hanitsch, R.
GN	Nunong, G.	RIP	Pocock, R. I.
GSM	Miller, G. S.	SM	Mangga, S.
HAL	Heng Ah Leck	V	Vogelpol
HCR	Robinson, H. C.	vH	Van Heyst
HD	Deignan, H. G.	VK	Knight, V.
HHTM	Tungku Makota, HH (Sultan of Johor)	WFL	Lanchester, W.F.
HJB	Baker, H.J.	WJFW	Williamson, W.J.F.
HNR	Ridley, H.N.	WLA	Abbott, W. L.
		WLSB	Basapa, W.L.S.
		WM	Mabert, W.

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<i>assamensis</i> , <i>Macaca</i>	96, 97, 100
' <i>atriceps</i> ', <i>Macaca fascicularis</i>	105
<i>auratus</i> , <i>Trachypithecus</i>	72, 73, 76
cf. <i>auratus</i> , <i>Trachypithecus</i>	77
' <i>australis</i> ', <i>Presbytis</i>	50, 55-57
<i>aygula</i> , <i>Pithecus</i>	48
<i>aygula</i> , <i>Presbytis</i>	48, 55
<i>aygula</i> , <i>Simia</i>	48, 96
' <i>bancanus</i> ', <i>Nycticebus</i>	124, 129-131
<i>bancanus</i> , <i>Tarsius</i>	124, 126
<i>bengalensis</i> , <i>Nycticebus coucang</i>	125, 131
<i>bintangensis</i> , <i>Macaca fascicularis</i>	96, 99, 103-111
' <i>borneanus</i> ', <i>Nycticebus</i>	131
' <i>borneanus</i> ', <i>Tarsius</i>	127
' <i>borneensis</i> ', <i>Pongo</i>	7
<i>cana</i> , <i>Presbytis femoralis</i>	50, 51, 57
<i>canicrus</i> , <i>Presbytis hosei</i>	52
' <i>capitalis</i> ', <i>Macaca</i>	103-111
<i>carbo</i> , <i>Trachypithecus obscurus</i>	73, 74, 89
<i>carinatae</i> , <i>Presbytis rubicunda</i>	48, 49, 53, 71
<i>catemana</i> , <i>Presbytis femoralis</i>	50, 51, 57
<i>chrysomelas</i> , <i>Presbytis femoralis</i>	50, 51, 57-59
<i>cinereus</i> , <i>Nycticebus coucang</i>	131
<i>Colobus</i>	72
<i>comata</i> , <i>Presbytis</i>	48, 49, 55
<i>concolor</i> , <i>Nasalis</i>	40, 41, 47
<i>condorensis</i> , <i>Macaca fascicularis</i>	98, 99, 111
<i>coucang</i> , <i>Nycticebus</i>	124, 125, 128-131
<i>cristatus</i> , <i>Trachypithecus</i>	72, 73, 77-83
' <i>cruciger</i> ', <i>Presbytis</i>	48, 50, 57-59

<i>'dilecta'</i> , <i>Presbytis</i>	61
<i>entelloides</i> , <i>Hylobates</i> (<i>Hylobates</i>) <i>lar</i>	13, 21-23
<i>'everetti'</i> , <i>Presbytis</i>	53
<i>fascicularis</i> , <i>Macaca</i>	48, 96, 97, 98, 100-115
<i>femoralis</i> , <i>Presbytis</i>	49, 50, 51, 54-63
cf. <i>femoralis</i> , <i>Presbytis femoralis</i>	57
<i>flavicauda</i> , <i>Trachypithecus obscurus</i>	73, 74, 89-91
<i>fluviatilis</i> , <i>Presbytis melalophos</i>	53
cf. <i>fluviatilis</i> , <i>Presbytis melalophos</i>	65
<i>francoisi</i> , <i>Trachypithecus</i>	73, 74, 82
<i>fredericae</i> , <i>Presbytis comata</i>	48
<i>frontata</i> , <i>Presbytis</i>	49, 51, 52, 62
<i>funereus</i> , <i>Hylobates</i> (<i>Hylobates</i>) <i>muelleri</i>	13, 15, 27-29
<i>fuscumurina</i> , <i>Presbytis melalophos</i>	53, 65
<i>gabriellae</i> , <i>Hylobates</i> (<i>Nomascus</i>) <i>leucogenys</i>	32, 33, 34
<i>geei</i> , <i>Trachypithecus</i>	72
<i>germaini</i> , <i>Trachypithecus cristatus</i>	73, 81-83
<i>halonifer</i> , <i>Trachypithecus obscurus</i>	73, 74, 91
<i>hecki</i> , <i>Macaca tonkeana</i>	97, 99, 121
<i>Homo</i>	6
<i>hosei</i> , <i>Presbytis</i>	48, 49, 52, 57, 62-65
<i>Hylobates</i> (<i>Hylobates</i>)	12
<i>Hylobates</i> (<i>Nomascus</i>)	32
<i>Hylobates</i> (<i>Symphalangus</i>)	32
<i>'indochinensis'</i> , <i>Macaca</i>	119
<i>johnii</i> , <i>Trachypithecus</i>	72
<i>Kasi</i>	72
<i>'keatii'</i> , <i>Presbytis femoralis</i>	50, 59-61
<i>klossii</i> , <i>Hylobates</i> (<i>Hylobates</i>)	12, 13, 16
<i>kohlbruggei</i> , <i>Trachypithecus auratus</i>	72
<i>'koratensis'</i> , <i>Trachypithecus cristatus</i>	83
<i>laeta</i> , <i>Macaca fascicularis</i>	97, 99, 111
<i>laotum</i> , <i>Trachypithecus farancoisi</i>	73, 74, 83
<i>lar</i> , <i>Hylobates</i> (<i>Hylobates</i>)	12, 13, 18-25
<i>lar</i> > <i>entelloides</i> , <i>Hylobates</i> (<i>Hylobates</i>) <i>lar</i>	13, 21-23
<i>larvatus</i> , <i>Nasalis</i>	40, 41, 44
<i>leonina</i> , <i>Macaca nemestrina</i>	97, 98, 119-121
<i>leucogenys</i> , <i>Hylobates</i> (<i>Nomascus</i>)	32, 33, 34

<i>lingungensis</i> , <i>Macaca fascicularis</i>	98, 99, 111
<i>Macaca</i>	96
'malayanus', <i>Nycticebus coucang</i>	129
<i>mandibularis</i> , <i>Macaca fascicularis</i>	97, 99, 111-113
'mandibularis', <i>Trachypithecus</i>	81
<i>maura</i> , <i>Macaca</i>	97, 98, 99, 114
<i>melalophos</i> , <i>Presbytis</i>	48, 49, 52, 64
<i>menagensis</i> , <i>Nycticebus coucang</i>	125, 131
<i>mitrata</i> , <i>Presbytis melalophos</i>	49, 53, 65
cf. <i>mitrata</i> , <i>Presbytis melalophos</i>	65
'moi', <i>Pygathrix</i> (<i>Pygathrix</i>)	43
<i>moloch</i> , <i>Hylobates</i> (<i>Hylobates</i>)	13, 14, 24
<i>mordax</i> , <i>Macaca fascicularis</i>	98, 99, 113
<i>muelleri</i> , <i>Hylobates</i> (<i>Hylobates</i>)	13, 14, 15, 26
<i>mulatta</i> , <i>Macaca</i>	98, 99, 116
<i>Nasalis</i>	40, 41, 44, 48
'natunae', <i>Nycticebus</i>	129
<i>natunae</i> , <i>Presbytis femoralis</i>	50, 51, 59
<i>nemaeus</i> , <i>Pygathrix</i> (<i>Pygathrix</i>)	40, 41, 42
<i>nemestrina</i> , <i>Macaca</i>	97, 98, 116
<i>nigra</i> , <i>Macaca</i>	97, 98, 120
<i>nigripes</i> , <i>Pygathrix</i> (<i>Pygathrix</i>) <i>nemaeus</i>	40, 41, 43
<i>nobilis</i> , <i>Presbytis melalophos</i>	49, 53, 67
<i>nubigena</i> , <i>Presbytis</i>	50, 63
'nudifrons', <i>Presbytis frontata</i>	49, 51, 52, 59
<i>Nycticebus</i>	124, 125, 128
<i>obscurus</i> , <i>Trachypithecus</i>	73, 74, 82
cf. <i>obscurus</i> , <i>Trachypithecus obscurus</i>	89
'orientalis', <i>Nasalis</i>	45
<i>pagensis</i> , <i>Macaca</i>	98
<i>phaeura</i> , <i>Macaca fascicularis</i>	98, 99, 113
<i>phayrei</i> , <i>Trachypithecus</i>	73, 75, 92
<i>pileatus</i> , <i>Hylobates</i> (<i>Hylobates</i>)	13, 14, 15, 28
<i>pileatus</i> , <i>Trachypithecus</i>	72
<i>Pongo</i>	6
<i>potenziani</i> , <i>Presbytis</i>	48, 49, 53, 66
<i>Presbytis</i>	40, 48, 49, 51, 54, 72
'pullata', <i>Trachypithecus</i>	73, 77-81
<i>pumila</i> , <i>Macaca</i>	111-113
<i>Pygathrix</i>	40, 41, 48
<i>pygmaeus</i> , <i>Nycticebus</i>	124
<i>pygmaeus</i> , <i>Pongo</i>	6, 7, 8-11
'pyrrhus', <i>Trachypithecus</i>	72

<i>Rhinopithecus</i>	40
<i>rhionis</i> , <i>Presbytis femoralis</i>	50, 51, 59
<i>robinsoni</i> , <i>Presbytis femoralis</i>	50, 51, 59-61
<i>rubicunda</i> , <i>Presbytis</i>	49, 53, 66
' <i>rufescens</i> ', <i>Macaca</i>	101
<i>sabana</i> , <i>Presbytis hosei</i>	49, 52, 65
' <i>sarawakensis</i> ', <i>Nasalis</i>	45-47
<i>satyrus</i> , <i>Simia</i>	6
<i>seimundi</i> , <i>Trachypithecus obscurus</i>	73, 74, 91
<i>Semnopithecus</i>	48, 72
<i>shanicus</i> , <i>Trachypithecus phayrei</i>	73, 75, 93
<i>shanicus</i> > <i>argenteus</i> , <i>Trachypithecus phayrei</i>	73, 93
<i>siamensis</i> , <i>Presbytis femoralis</i>	50, 51, 61-63
' <i>siamica</i> ', <i>Macaca</i>	117
<i>siberu</i> , <i>Presbytis potenziani</i>	49, 53, 67
<i>Simia</i>	6
<i>Simias</i>	40
<i>sirhassenensis</i> , <i>Macaca fascicularis</i>	98, 99, 113
<i>smithi</i> , <i>Trachypithecus obscurus</i>	73, 74, 91
<i>sondaicus</i> , <i>Trachypithecus auratus</i>	72, 73, 77
sp., <i>Hylobates (Hylobates)</i>	30
sp., <i>Presbytis</i>	70
sp., <i>Trachypithecus</i>	92-94
sp., <i>Macaca</i>	122
ssp., <i>Macaca</i>	97, 99, 113-115
<i>styx</i> , <i>Trachypithecus obscurus</i>	73, 74, 91
<i>syndactylus</i> , <i>Hylobates (Symphalangus)</i>	32, 33, 36
<i>Tarsius</i>	124, 126
<i>thomasi</i> , <i>Presbytis</i>	48, 53
<i>tonkeana</i> , <i>Macaca</i>	97, 99, 120
<i>Trachypithecus</i>	48, 72
' <i>ultimus</i> ', <i>Trachypithecus</i>	73, 77-81
<i>valida</i> , <i>Macaca fascicularis</i>	98, 99, 115
<i>vestitus</i> , <i>Hylobates (Hylobates)</i>	13, 23
<i>vetulus</i> , <i>Trachypithecus</i>	72
<i>vigilans</i> , <i>Trachypithecus cristatus</i>	73, 83