Some conspicuous beetles of Sulawesi

by
David Mead

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ABSTRACT

In this paper I draw attention to seven kinds of beetles. Each is conspicuous by its large size and may bear its own name in the local language. An appendix lists a few additional kinds of beetles, giving their English and Indonesian common names and scientific identification.

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VERSION HISTORY

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Introduction

Beetles are an insect order (Coleoptera) known for their hardened forewings, called elytra. Worldwide there are more than 400,000 described species of beetles, more than any other order of plant or animal. Whilst a comprehensive guide to the beetles of Sulawesi lies beyond my meager ability, I would like to bring your attention to at least the following seven kinds of beetles. Each is conspicuous by its large size and may bear its own name in the local language.

In an appendix I list some additional beetles along with their Indonesian and English common names, scientific classifications, and brief descriptions. This list makes no claim to completeness. Nonetheless I hope it might lead the lexicographer to an identification or two, or at least spur on your own further investigations.

Atlas beetle

Atlas beetles (Indonesian *kumbang tanduk*) are some of the largest beetles on earth. Atlas beetles are a kind of dynastid rhinoceros beetle. Males have three long horns while females are hornless (the female body shape is more suited to burrowing). Males are also larger, growing up to five inches long, versus the more diminutive females that grow up to two and a half inches long.

Male atlas beetle *Chalcosoma atlas*, Cibodas Botanical Garden, Java.

Male atlas beetle, *Chalcosoma moellenkampi*.

Atlas beetles belong to genus *Chalcosoma* of the rhinoceros beetle subfamily (Dynastinae) of the scarab beetle family (Scarabaeidae).

Scarabaeidae
Dynastinae
Chalcosoma spp.

According to current research, this genus is divided into four species. However only two are widely distributed, and only one species (*C. atlas*) occurs east of the Wallace line.

1. *Chalcosoma atlas* L.
Thailand to Indonesia, the only species occurring east of the Wallace line

2. *Chalcosoma caucasus* E.
distributed in Southeast Asia, especially Malaysia, also Sumatra, Java

3. *Chalcosoma moellenkampi* Kolbe
distributed in Borneo

4. *Chalcosoma engganensis* Nagai
first described in 2004, on Enggano Island off the coast of Sumatra

Coconut rhinoceros beetle

The coconut rhinoceros beetle, *Oryctes rhinoceros* L., also known as the coconut palm rhinoceros beetle and the Asiatic rhinoceros beetle (Indonesian *bangbung, kumbang kelapa*), is a well-known pest of coconut palms. Adult beetles bore into the palm heart and damage the folded leaves, leaving characteristic angular notches in the fronds when the leaves later unfurl.

Damage from coconut rhinoceros beetles. Ben Quichocho, Guam. Animal and Plant Health Inspection Service, U.S. Department of Agriculture (APHIS USDA). Public Domain.

Adult coconut rhinoceros beetles are dark brown to black, and may range from over an inch to two and a half inches long. Males have a single, backward-curving horn that ends in a single point. Females also have a horn, but it is reduced in size compared to the male's. Larvae (grubs) develop in rotten wood or other decaying matter.

Male *Oryctes rhinoceros*, 44 mm., Pattaya, Chonburi, Thailand.

Coconut rhinoceros beetle grubs, Buton Island, Indonesia.

Other rhinoceros beetles

Worldwide there are more than three hundred species of rhinoceros beetles (subfamily Dynastinae). Besides the already-mentioned atlas and coconut rhinoceros beetles, you may come across other horned beetles (Indonesian generally *kumbang badak*, *kumbang tanduk*).

Xylotrupes gideon L., Chalyaphum, Thailand.

However it seems best to mention one other genus by name, *Xylotrupes*. Unlike atlas beetles with their three horns and coconut rhinoceros beetles that have a single horn, males of this genus[1] are characterized by having two horns that bifurcate at the tip. The lower (cephalic) horn grows from the head, while the upper (pronotal) horn grows from the thorax. In addition to the typical male-female dimorphism seen in rhinoceros beetles, you may also encounter differences between large and small males of the same species. In some parts of the world—though in my experience not particularly Indonesia—*Xylotrupes* beetles are kept as pets, or the males pitted against each other in fighting matches.

In recent years this genus has been revised taxonomically, such that what at one time was considered a single species (the common rhinoceros beetle, *Xylotrupes gideon* L., distributed from mainland Southeast Asia through Australia) has been divided into several species with regional distributions. For current trends see among others Rowland (2003, 2011) and Rowland and Miller (2012). The two species distributed in Sulawesi are *X. pubescens* and *X. ulysses*.

Stag beetles

Stag beetles (Indonesian *kumbang capit*) are known for their more-or-less long, antler-like mandibles that males use to fight each other. Females have smaller jaws, but can deliver bites that are equally if not more painful.

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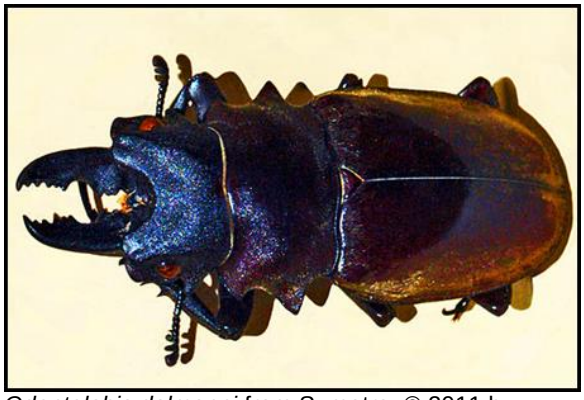
[1] As well as of the subtribe Xylotrupina generally (Rowland and Miller 2012:10).

Male of *Prosopocoilus giraffa keisukei* (93mm long). Public Domain (Wikimedia).



Odontolabis dalmanni from Sumatra. © 2011 by Hectonichos. CC BY-SA 3.0 Unported.

Female *Odontolabis dalmanni celebensis*.
© 2003 by Udo Schmidt. CC BY-SA 2.0 Generic.

Stag beetles can be easily distinguished from rhinoceros beetles by their overall more flattened body shape and the mandibles which operate from side to side, versus the vertically aligned horns of rhinoceros beetles.

The stag beetle family (Lucanidae) comprises around 1,200 species worldwide. There are a number of species of stag beetles on Sulawesi. The following is a partial list.

Aegus frontalis
Dorcus titanus
Cyclommatus metallifer
Odontolabis dalmanni celebensis
Odontolabis ledcurti
Odontolabis micros
Odontolabis stephensi
Odontolabis taronii
Odontolabis ursulae
Prosopocoilus buddha
Prosopocoilus doesburg
Prosopocoilus fabriche fabriche
Prosopocoilus giraffa nishiyamai
Prosopocoilus occipitalis

Dung beetles

Dung beetles (Indonesian *kumbang kotoran*, *kumbang tahi*, *kumbang tinja*) feed on feces, a predilection technically known as coprophagy. Since at least Hanski and Cambefort (1991), it has been common to divide dung beetles into three functional types or guilds. The well-known rollers form dung into balls which they then roll away to burrows to feed or raise their young on it. Tunnelers bury dung where they find it, while dwellers simply live in dung without burying or transporting it. Dung beetles are generally thought to have beneficial effects on the environment, i.e. by improving soil and by preventing flies or other pests from breeding in feces.

A dung beetle, *Scarabaeus laticollis*, in Sardinia, Italy.

Dung beetles do not belong to a single taxonomic group. Formerly all dung beetles were considered scarabs. However earth-boring dung beetles, thought to be a subfamily within the scarab family (Scarabaeidae), have recently been elevated to their own family (Geotrupidae). Currently dung beetles are distributed across the taxonomic classification as follows:

Geotrupidae (earth-boring dung beetles)
Scarabaeidae
Scarabaeinae (true dung beetles)
Onthophagus spp.
Copris spp.
etc.
Aphodiinae (small dung beetles, most adults < 8 mm)

I don't know how many dung beetle species there might be on Sulawesi, However one study alone collected twenty-four species near Lore Lindu National Park, of which "the five most predominant species were *Onthophagus wallacei*, *O. fuscostriatus*, *O. limbatus*, *Copris macacus*, and *O. ribbei*" (Shahabuddin 2010).

I suspect one could dig up a word for 'dung beetle' in almost every language of Sulawesi. As with the Balantak term, which is compounded from *lulun* 'to roll' and *ta'i* 'dung,' the following selected names all make reference to forming or rolling balls of dung:

Balantak	*lulunta'i*
Uma	*luli'nta'i* or *lulinta'i*
Pamona	*yuli ta'i*, *duli ta'i*
Mori Bawah	*lundi-lundi ta'i*
Tolaki	*kule-kule nda'i*
Kulisusu	*lego-legonta'i*
Seko	*lenteng tai:*

Longhorn beetles

Longhorn beetles (Indonesian *kumbang sungut panjang*, *kumbang tanduk panjang*) can be recognized from their long antennae that equal or exceed the length of the beetle's body.

Worldwide more than 25,000 species of longhorn beetles (family Cerambycidae) have been described; however the number of longhorn beetle tribes and species drops east of

the Wallace line (Heffern 2005:3). Most longhorn beetles have a body shape that could be described as long and stocky. However, a few are built more delicately and, with reduced elytra, have even been described as wasp-mimics.[2] Some longhorn beetles are twig girdlers—the female cuts all the way around the bark to kill a twig in which it has laid eggs.

Palm weevils

Palm weevils (Indonesian *kumbang sagu*) are the adult form of the edible grubs that are harvested from the pith of sago palms. Worldwide there are two species (formerly considered a single species) of red palm weevils, *Rhynchophorus ferrugineus* Oliver and *R. vulneratus* Panzer, but only the latter occurs in Indonesia (see the global distribution map in Rugman-Jones et al. 2013:11). Adult weevils are over an inch long. Coloration ranges from rusty red with black markings to black with a red stripe, to almost entirely black. Two color morphs are illustrated below; for additional color variants, see the images in Abad et al. (2014) and Rugman-Jones et al. (2013:2) among others.

Amy Roda, USDA. Public Domain.

Adult male *Rhynchophorus vulneratus* recovered from an infested Canary Island date palm in Laguna Beach, California. Copyright © 2016 Regents of the University of California. Used by permission.

[2] Such as *Scalenus fasciatipennis*, a pest of clove trees in Indonesia.

As with weevil larvae in general, palm weevil grubs (*lundi* or *tempayak*) are legless. In this respect they distinguish themselves from the larvae of palm beetles (family Scarabaeidae), which are generally C-shaped and have well-developed legs.

Sago grub.

Indonesia is home to at least one other species of palm weevil, *Rhynchophorus bilineatus* Montrouzier (Maluku to New Guinea and Solomon Islands). The adults of this species are black in color.

Appendix

Beetles compose the order Coleoptera order within the class Insecta. Within this order there are more than 170 extant beetle families.[3] By contrast the following checklist mentions only around thirty families, and even then my expectations are low that they would be separately named in languages of Sulawesi (lightning bugs, weevils, and ladybugs are important exceptions; a number of beetle pests also have the potential of being recognized locally). In this guide families are shaded light yellow, while certain better-known subfamilies, tribes or species within that family appear below it without shading. If one name is given to the adult beetle and a different name to its larvae, I include the common name of the larvae in parentheses, e.g. 'click beetles (wireworms)'. The beetles recognized above in the main text are also listed below.

This checklist makes no claim to completeness. I would be glad to receive recommendations on how it could be improved.

English common name	Indonesian common name	taxonomic classification	brief description
predatory larva	larva pemangsa	(no taxon)	A predatory larva (a.k.a. campodeiform) is a highly mobile beetle larva that feeds on prey. They are from various families including the larvae of ladybugs (Coccinellidae), rove beetles (Staphylinidae) and ground beetles (Carabidae).
woodworm		(no taxon)	A woodworm is the larval stage of certain wood-boring beetles including bark beetles, ambrosia beetles, longhorn beetles, powderpost beetles, and wood weevils (see below).
bookworm	kutu buku	(no taxon)	Powderpost beetles (see below) feed on wood, but will also enter paper if nearby. The term 'bookworm' can also refer to book lice (order Psocoptera). Termites, silverfish, and cockroaches also feed on books or parts of books.

[3] Wikipedia The Free Encyclopedia, s.v. "List of subgroups of the order Coleoptera" https://en.wikipedia.org/wiki/List_of_subgroups_of_the_order_Coleoptera (accessed February 24, 2020).

whirligig beetles	kumbang putar	Gyrinidae	Adult beetles carry a bubble of air near their rear, and they can often be seen 'spinning' around on the surface of the water. All adult whirligigs have compound eyes; the upper sees in the air, while the lower part sees in the water.
water beetles, predaceous diving beetles, diving beetles (water tigers)	kumbang selam	Dytiscidae	Adults are about one inch long, dark brown with golden highlights, and short, sharp pinchers. The larvae, known as water tigers, are one-half to two inches long, crescent shaped with long, large pinchers, their body and tail covered with thin hairs. Water beetles are distinct from *water bugs*, which are not beetles but rather order Hemiptera (related to bedbugs).
water scavenger beetles	kumbang pemulung air	Hydrophilidae	Most Hydrophilidae are aquatic, but one subfamily is terrestrial. Larvae are predatory, adults may be predatory, vegetarians, or scavengers. Some species are able to produce sounds.
ground beetles	kumbang tanah, kumbang carabid	Carabidae	Most carabid beetles have ridged elytra (wing covers) and are usually shiny black or metallic. The Carabidae family includes tiger beetles (Cicindelinae) and bombadier beetles (Brachinini)
tiger beetles	kumbang macan	Cicindelinae	Most tiger beetles have bulging eyes, long, curved mandibles, and slender legs for fast locomotion. They are predatory in nature, whence the common name.
bombadier beetles	kumbang pembom	Brachinini and other tribes within Carabidae	Bombadier beetles are named for the noxious chemical secretions sprayed defensively from their abdomens. There are more than 500 species, distributed among the Brachinini, Paussini, Ozaenini and Metrinini tribes.
violin beetles, banjo beetles	kumbang biola, kumbang banjo	*Mormolyce* spp.	So named because of their unusually shaped elytra, which give the body a violin or banjo shape.

hister beetles, clown beetles	kumbang badut	Histeridae	Hister beetles (from Latin *histrio* ‘actor’) are named for their flattened leg segments that resemble the baggy clothing of clowns or actors. Some hister beetles are associated with dung and carrion, others with dead trees or decaying vegetable matter. Some form symbiotic relationships, living in nests, burrows, and colonies of social insects.
large carrion beetles, carrion beetles	kumbang bangkai	Silphidae	Most species feed on carrion, in which they raise their young. A few species are found on dung or certain fungi. In the subfamily Silphinae, elytra cover the entire abdomen; In the subfamily Nicrophorinae, the elytra leave the last three segments of the abdomen exposed.
burying beetles, sexton beetles	kumbang bangkai	*Nicrophorus* spp. (family Silphidae)	Burying beetles are a type of carrion beetle of subfamily Nicrophorinae, in particular the genus *Nicrophorus*, that bury small dead animals (birds, rodents) for purposes of raising their young. Most burying beetles are black with red markings.
rove beetles	kumbang kalajenking, semut semai	Staphylinidae	Rove beetles are a large family (63,000 species) and variable in appearance, but are known generally for their short elytra (hardened forewings) that leave more than half of the abdomens exposed. Most rove beetles are less than a third of an inch long, the largest up to one and a half inches.
bess beetles, betsy beetles, horned passalus beetles	kumbang kulit keras	Passalidae	Bess beetles are generally black, elongate and cylindrical, with heavily striated elytra. Antennae end in a three-segmented club. There are 500 species, mostly tropical.
stag beetles	kumbang rusa, kumbang capit, kumbang lucanid	Lucanidae	Stag beetles are named after their more-or-less long, antler-like mandibles that males use to fight each other. *See description above.*

earth-boring dung beetles		Geotrupidae	Beetles dig burrows and provision their nests with dung or leaf litter.
scarabs, scarab beetles		Scarabaeidae	Scarab is a superordinate category that includes dung beetles and rhinoceros beetles. Scarab beetle larvae are generally C-shaped and have well-developed legs.
true dung beetles, dung chafers	kumbang kotoran, kumbang tahi, kumbang tinja	subfamily Scarabaeinae	Most species feed exclusively on dung. *See description above*.
small dung beetles		subfamily Aphodiinae	Adult beetles are generally less than 8 mm long. Most species feed on dung, but some feed on decaying plant material while a few are predatory.
flower beetle, flower chafer, fruit chafer	kumbang bunga	subfamily Cetoniinae	Flower beetles are active during the day. Most species are found feeding on flowers, while some can drink nectar. Many species have striking color patterns.
shining leaf chafer beetle		subfamily Rutelinae	Shining leaf chafer beetles lack horns, but many are brightly and iridescently colored.
Japanese beetle	sonthe	*Popillia japonica* (subfamily Rutelinae)	Japanese beetles are one of the most widely distributed of the shining leaf beetles. Adults have a shiny green head and thorax, and copper-colored elytra. The term *sonthe* is found on the internet, but I have not been able to confirm it from any Indonesian dictionary.
chafer beetle, cockchafer, may beetle, june bug	ampal (Javanese)	subfamily Melolonthinae	The Melolonthinae is a diverse group with worldwide distribution. Some species are colorful, most are brown or less commonly black. The term *ampal* is reportedly Javanese, not Malay.

rhinoceros beetles	kumbang tanduk, kumbang bertanduk, kumbang badak	subfamily Dynastinae	
common rhinoceros beetle	kumbang tanduk	*Xylotrupes* spp.	*Xylotrupes* is a very common and widely distributed rhinoceros beetle, completely black-brown in color. *See description above*.
palm rhinoceros beetle, coconut rhinoceros beetle	bangbung, kumbang kelapa, kumbang tanduk kelapa	*Oryctes rhinoceros*	Males are black with a single recurved horn. This beetle is a widespread pest of coconut and other palms. *See description above*.
atlas beetle	kumbang tanduk, kumbang badak	*Chalcosoma* spp.	Males are large, 2.5 to 5 inches long, with horns on head and thorax. *See description above.*
		Beckius beccarii	Like atlas beetles adult males have three horns, but elytra are reddish. Beetles are endemic to New Guinea. Formerly known as *Eupatorus beccarii*.
Melanesian rhinoceros beetle		*Scapanes australis*	Males have two large forward-pointing horns, while the lower (cephalic) horn is recurved. This beetle is endemic to New Guinea, where it is a major pest of *young* coconut palms (up to 2 m in height).
taro beetle	kumbang talas	*Papuana* spp.	Beetles feed on underground taro corms, both on the exterior surface and inside, creating tunnels.

fan-horned beetles, feather horn beetles, cicada parasite beetles	kumbang parasit tonggeret	Rhipiceridae	Adult fan-horned beetles range in size from under half an inch to one inch long. Males have large, fan-like antennae. Elytra are marked with spots.
jewel beetles, metallic wood-boring beetles, metallic beetles (flatheaded borers)	kumbang permata, samberlilen (Javanese)	Buprestidae	Some species are very colorful and are prized by collectors. They are somewhat similar to longhorn beetles, but lack the long antennae.
click beetles, snapping beetles, spring beetles, elaters, skipjacks (wireworms)	kumbang klik, kumbang kertik	Elateridae	Click beetles are known for their clicking mechanism that can spring the beetle into the air. Some are large and colorful (e.g. metallic green), but most are less than an inch long and dull brown or black. In some species the larvae (called wireworms) are pests of grain crops.
fireflies, lightning bugs	kunang-kunang	Lampyridae	Firefly larvae that emit light are sometimes called glow worms.

skin beetles, hide beetles, leather beetles, larder beetles, carpet beetles	kumbang kulit	Dermestidae	Adults (1 to 12 mm long) feed on flowers and plants, but the larvae are destructive to natural fibers such as wool, silk, fur, feathers, and also infest copra and cocoa beans. Some members of genus *Dermestes* are also found in animal carcasses, and on dried fish.
khapra beetle	kumbang khapra, kumbang beras	*Trogoderma granarium*	The khapra beetle is an invasive species and pest of stored products especially grains, also pulses, noodles, bread, crackers, and dried coconut. Adult beetles are brownish, 2 to 3 mm long, larvae are up to 5 mm long and covered in reddish-brown hair. Do not confuse with the copra beetles mentioned below.
powderpost beetles	kumbang penggerek kering	Ptinidae	The larvae cause extensive damage to wood and to various stored commodities. When adults emerge they leave behind small holes the size of a pin or pencil lead. The Ptinidae and Bostrichidae are taxonomically complex with several revisions, The former Anobiidae family (furniture and death watch beetles) is now considered a subfamily (Anobiinae) with the Ptinidae family.
common furniture beetle		*Anobium punctatum* (subfamily Anobiinae)	The common furniture beetle can, in a more general way, be considered a kind of powderpost beetle.
death watch beetle		*Xestobium rufovillosum* (subfamily Anobiinae)	Death watch beetles are named from the clock-like ticking sound (mating call) made by adult beetles, in folklore regarded as a harbinger of death. *X. rufovillosum* is distributed in Europe and North America; two other species are strictly North American.

cigarette beetle, cigar beetle, tobacco beetle	kumbang tembakau	*Lasioderma serricorne* (subfamily Xyletininae)	The larvae infest tobacco and other stored products.
spider beetles		subfamily Ptininae	Spider beetles are so named because of their bodies and long legs that superficially resemble those of spiders.
auger beetles, false powderpost beetles, horned powderpost beetles	kumbang penggerek kering	Bostrichidae	The larvae are damaging similar to the Ptinidae. The Ptinidae and Bostrichidae are taxonomically complex with several revisions. The former Lyctidae family (true powerpost beetles) is now considered a subfamily (Lyctinae) within the Bostrichidae family.
lesser grain borer	bubuk gabah	*Rhyzopertha dominica*	The lesser grain borer is a pest of grain. Adult beetles are dark brown to black, cylindrical, and small, 2 to 3 mm long. Despite being identified as a kind of *bubuk*, they are not weevils.
ship-timber beetles, timber beetles (timber borers)	kumbang kayu kapal	Lymexylidae	The larvae bore into living or decaying wood, mining tunnels and eating the fungus that grows there. Some species are pests that kill live trees and damage wooden structures. There are thirty-seven species in seven genera.
checkered beetles, clerid beetles	kumbang kopra	Cleridae	Checkered beetles are mainly predators of wood-boring insects, usually other beetles.

red-legged ham beetle, copra beetle	kumbang kopra	*Necrobia rufipes*	Adults and especially the larvae are pests of cured meats, dried fish, and dried coconut (copra).
lady beetles, ladybugs, ladybird beetles	kumbang kubah, kumbang helm, kumbang lembing, kumbang buas, kumbang koksi	Coccinellidae	Some ladybug species are beneficial, others feed on plants and are thus pests.
28-spot lady beetle		*Henosepilachna vigintioctopunc-tata*	The 28-spot lady beetle is a common pest of potatoes, tomatoes and eggplants in Indonesia, also sometimes squash.
darkling beetles	kumbang gudang	Tenebrionidae	Tenebrionidae is a highly variable family with more than 20,000 species. Most species are omnivorous scavengers.
pleasing fungus beetles	kumbang jamur	Erotylidae	Pleasing fungus beetles are small to medium-sized beetles associated with fungus or rotted wood. They are often marked with red or other bright colors.
handsome fungus beetles	kumbang koksi semu	Endomychidae	Handsome fungus beetles feed on fungus. They are small beetles, often brightly colored, with clubbed antennae. Some have a superficial resemblance to ladybugs.
blister beetles	kumbang lepuh	Meloidae	When handled they can secrete a chemical irritant that causes blistering.

longhorn beetles, twig girdlers, (long-horned borers, roundheaded borers)	kumbang sungut panjang, kumbang tanduk panjang	Cerambycidae	Longhorn beetles have antennae that equal or exceed the length of the beetle's body. *See description above*.
		Scalenus fasciatipennis, Scalenus hemipterus	Both species are wasp mimics. The larvae bore into the trunks of clove trees. Synonyms include *Nothopterus fasciatipennis* and *N. hemipterus*
leaf beetles	kumbang daun	Chrysomelidae	Chrysomelidae is a diverse family with up to 60,000 species. Adults feed on live plants. Soma larvae feed on leaves, but others live underground attacking roots or underground stems.
rice hispa, paddy hispa	kumbang hispa	*Dicladispa armigera*	Rice hispids feed primarily on rice. Adult beetles are small (5 mm long), blue-black, and spiny. Formerly known as *Hispa armigera*.
coconut leaf beetle, coconut hispid beetle, coconut hispid	kumbang bibit kelapa	*Brontispa longissima*	Adult beetles are about 1 cm long. The elytra are brown or black, or sometimes with a spindle-shaped black marking along the centerline where the elytra meet. Both larvae and adults inhabit the developing, unfurled leaves, resulting in emergent leaves that have burned or dried-up appearance.

two-toned coconut leaf beetle, coconut hispid beetle, coconut hispid	kumbang bibit kelapa	*Plesispa reichei*	Adult beetles are about 1 cm long, with black head, black elytra, and yellowish-brown thorax. Both larvae and adults inhabit the developing, unfurled leaves, resulting in emergent leaves that have burned or dried-up appearance.
nipa palm hispid	kumbang bibit nipah	*Octodonta nipae*	Similar to *Plesispa reichei* except that *O. nipae* lays eggs in groups (*P. reichei* lays eggs singly), and is said to have a reddish prothorax. Preferred host is the nipa palm. Formerly known as *Plesispa nipae*.
coconut leafminer	penambang daun kelapa	*Promecotheca cumingii*	Adults feed on the leaflets of coconut, areca, sago and African oil palms, causing fronds to dry up. Larval feeding appears in the form of blister mines.
tortoise beetles	kumbang kura-kura	Cassidini	Some species superficially resemble ladybugs. They were formerly regarded as their own family, Cassidae.
true weevils, snout beetles	bubuk, kumbang bubuk, kumbang moncong, kumbang penggerek	Curculionidae	The Curculionidae are known as ‘true weevils’ in distinction to other members of superfamily Curculionoidea, labelled ‘primitive weevils’.
bark beetles, engraver beetles	kumbang kayu, kumbang kulit kayu	subfamily Scolytinae	The name ‘engraver beetle’ is from the squiggly patterns of tunnels which are revealed when bark is removed or falls off. Beetles are a major pest of pine and other trees.

ambrosia beetles, wood weevils (pinhole borers)	kumbang ambrosia	subfamily Platypodinae	Beetles infest wood and mine galleries, larvae feed on the fungus (ambrosia) growing on the gallery walls. Wood weevils attack rotten wood in damp conditions, which distinguish them from powderpost beetles (see above) which attack wood in dry condition.
palm weevils (sago grubs)	kumbang sagu	*Rhynchophorus* spp.	Adults are large growing to over an inch long. Grubs (known as *lundi* or *tempayak*) are edible. There are ten species worldwide, of which at least two occur in Indonesia. *See description above*.
wheat weevil, granary weevil	bubuk gandung	*Sitophilus granarius* (subfamily Dryophthorinae)	
rice weevil	bubuk beras	*Sitophilus oryzae* (subfamily Dryophthorinae)	
maize weevil	bubuk jagung	*Sitophilus zeamais* (subfamily Dryophthorinae)	

References

Abad, Reynaldo G.; Joie Sheen A. Bastian, Rose L. Catiempo, Marian L. Salamanes, Phoebe Nemenzo-Calica, and Windell L. Rivera. 2014. Molecular profiling of different morphotypes under the genus Rhynchophorus (Coleoptera: Curculionidae) in Central and Southern Philippines. *Journal of Entomology and Nematology* 6(9):122–133. Online. DOI: 10.5897/JEN12.014.

Hanski, Ilkka, and Yves Cambefort (eds). 1991. *Dung beetle ecology*. Princeton, NJ: Princeton University Press.

Heffern, Daniel J. 2005. Catalog and bibliography of longhorned beetles from Borneo (Coleoptera: Cerambycidae). Typescript, 102 pp. Online. URL: http://www.zin.ru/animalia/Coleoptera/pdf/borneo_catalog_electronic_version_2005-1.pdf, accessed December 12, 2012.

Kawano, Kazuo. 2002. Character displacement in giant rhinoceros beetles. *The American Naturalist* 159(3):255–271. Online. URL: http://www.ugr.es/~jmgreyes/character displacement beetles.pdf, accessed December 12, 2012.

Rowland, J. Mark. 2003. Male horn dimorphism, phylogeny and systematics of rhinoceros beetles of the genus *Xylotrupes* (Scarabaeidae : Coleoptera). *Australian Journal of Zoology* 51(3):213–258.

Rowland, J. Mark. 2011. Notes on nomenclature in *Xylotrupes* Hope (Scarabaeidae: Dynastinae: Dynastini). *Insecta Mundi: A Journal of World Insect Systematics* 0176:1–10. Online. URL: https://journals.flvc.org/mundi/article/view/0176, accessed February 12, 2020.

Rowland, J. Mark; and Kelly B. Miller. 2012. Phylogeny and systematics of the giant rhinoceros beetles (Scarabaeidae: Dynasini). *Insecta Mundi: A Journal of World Insect Systematics* 0263:1–15. Online. URL: https://journals.flvc.org/mundi/article/view/0263, accessed February 12, 2020.

Rugman-Jones, Paul F.; Christina D. Hoddle, Mark S. Hoddle, and Richard Stouthamer. 2013. The lesser of two weevils: Molecular-genetics of pest palm weevil populations confirm *Rhynchophorus vulneratus* (Panzer 1798) as a valid species distinct from *R. ferrugineus* (Olivier 1790), and reveal the global extent of both. PLOS ONE 8(10):e78379. Online. DOI: https://doi.org/10.1371/journal.pone.0078379.

Shahabuddin. 2010. Diversity and community structure of dung beetles (Coleoptera: Scarabaeidae) across a habitat disturbance gradient in Lore Lindu National Park, Central Sulawesi. *Biodiversitas* 11(1):29–33. Online. URL: http://biodiversitas.mipa.uns.ac.id/D/D1101/D110107.pdf, accessed December 12, 2012.