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List of Scolytinae and Platypodinae (COLEOPTERA: Curculionidae) captured from trunks of felled trees in a tropical rainforest in southern Sabah, Malaysia

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マレーシア国サバ州南部の熱帯雨林において伐採された木の樹幹から採集されたキクイムシ亜科とナガキクイムシ亜科（甲虫目：キクイムシ科）のリスト

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Introduction

It is widely recognized that biodiversity exhibits geographic gradients, one of which is the latitudinal gradient, where lower latitudes tend to foster higher diversity (Willig *et al*., 2003). Among terrestrial ecosystems, tropical rainforests are the most diverse (Hutchinson, 1959), often hosting over 480 tree species per hectare (Bulter, 2024).

The Ulu Padas Forest Reserve (UPFR), spanning 30,605 hectares, is located in southwestern Sabah, Malaysia, on the northern Borneo Island. The UPFR is predominantly composed of upper dipterocarp and oak-laurel forests, with elevations ranging from 1,000 to 1,700 m a.s.l. (Loh *et al*., 2020). This reserve is exceptionally rich in plant diversity, as it forms part of the tropical rainforest and is home to numerous endemic and rare plant species.

Bark and ambrosia beetles are ecological guilds found within the two subfamilies (Scolytinae and Platypodinae) of the family Curculionidae (Coleoptera). This group includes many economically significant species that cause mass mortality of woody plants, not only in forests but also in orchards and tea gardens (Kamata *et al*., 2002; Grégoire *et al*., 2015), and lead to damage in coffee beans (Vega *et al*., 2015). Despite their economic importance, information regarding bark and ambrosia beetles in Sabah,

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Malaysia, is lacking, likely due to the region's rich biodiversity and the small body sizes of these beetles.

Gunggot *et al*. (2025) conducted a three-year monitoring study on the two subfamilies using ethanol-baited traps in and around Long Miau village, Sipitang, located in southeastern Sabah, Malaysia. However, the use of ethanol-baited traps provides only a limited subset of these beetles, as the attractiveness of ethanol is suggested to greatly depend on species with phylogenetic constraints (e.g., Iidzuka *et al*., 2016). Therefore, data obtained from the same area through different methodologies are crucial for enhancing our understanding of the biology of these groups.

In this study, bark and ambrosia beetles were directly collected from host trees in the same area where Gunggot *et al*. (2025) set up ethanol-baited traps. The data obtained from this study offers valuable insights, facilitating future comparisons of beetle assemblages across different geographical ranges.

Materials and Methods

Study site

This study was conducted in and around Long Mian village in the UPFR (Figure 1(a)). The research area is predominantly composed of upper dipterocarp and oak-laurel forests, with elevations ranging from 900 to 1,700 meters above sea level (m a.s.l.). The research took place in and around Long Miau village,

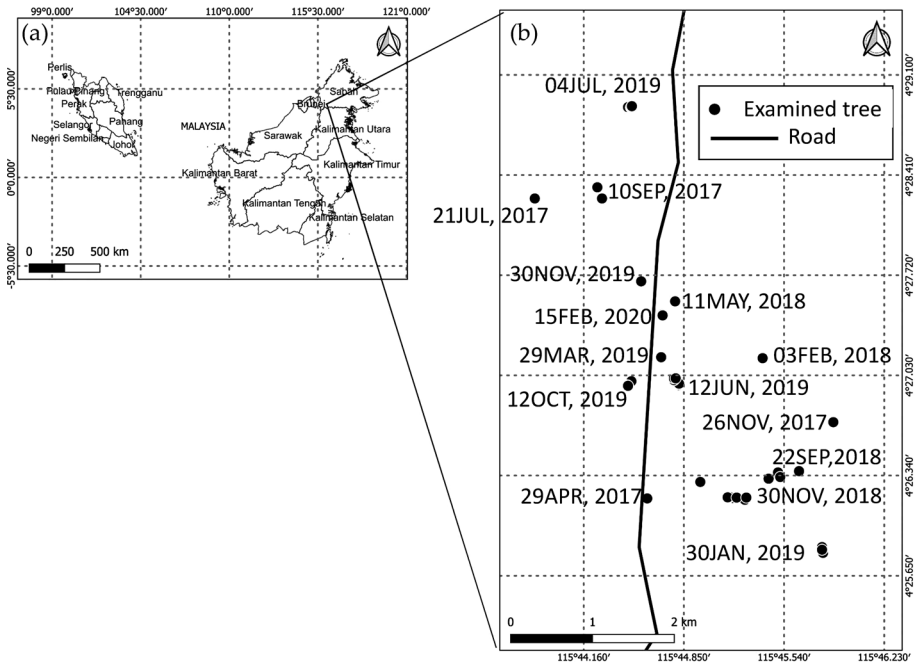

Figure 1. Location of the study site in Long Miau, Sipitang, Sabah, Malaysia: (a) Overall site location, (b) Representative locations for each sampling date, indicating where five logs were collected from each individual tree sampled.

located in Sipitang, Sabah (927–1,213 m a.s.l., 4° 25′ –28′ N, 115° 44′ –45′ E) (refer to Figure 1(b)).

Beetle collection

Bark and ambrosia beetles (Coleoptera: Curculionidae: Scolytinae and Platypodinae) were collected by dissecting logs at approximately three-month intervals. Prior to each field trip to Long Miau, we engaged with local residents to identify suitable trees for our study. These trees included those felled by the local community for personal use—trees not utilized for their primary purposes—as well as trees harvested by the Sabah Forest Industry (SFI) for timber production that were subsequently left in the forest and sold to locals as firewood. We procured a selection of these trees from the community.

Five 1-meter logs were taken from the trunk of each individual tree using a chainsaw, with a deliberate selection of sections exhibiting conspicuous external evidence of beetle infestation, such as holes and sawdust (Figure 2(a)). The logs were transported to the basement of a local household (Figure 2(b)), where they were cut into small pieces (approximately 15–20 cm in length) (Figure 2(c)). Holes created by the beetles were marked with a waterproof pen. When it was difficult to identify the gallery entrance, the outer bark was removed using a hatchet to enhance visibility, although this action might have damaged individuals, particularly male Platypodinae guarding the gallery entrance from natural enemies. Each log piece was then further broken down with an ax and a hatchet. Different sizes of fishing lines were employed to push out insects residing in the galleries. The collected insects from each gallery were placed into a single microcentrifuge tube filled with 95% ethanol for further identification. The numbers of males, females, and immatures in each marked hole were recorded, and one to a few individuals of each morphospecies were sent to RAB for identification.

Figure 2. Photos illustrating the collection of beetles from felled trees in Long Miau, Sipitang, Sabah, Malaysia.
(a) Selecting a 1-meter log from a felled tree based on evidence of beetle attacks.
(b) Measuring the circumference at the top and end of the logs.
(c) Cutting each log into smaller pieces and marking beetle galleries after debarking.

Table 1. Information on the examined trees, including their ID, sampling date, family and Latin names, collection location (latitude and longitude), and the maximum and minimum diameters of the investigated logs from Long Miau, Sipitang, Sabah, Malaysia.

Date	Tree ID	Host plant		Coordinate		Elevation (m)	Circumference (cm)		Note
		Family	Latin name	Latitude	Longitude		Min	Max	
29-Apr-2017	1	Burseraceae	*Dacryodes sp.*	4°26'17.76"N	115°44'57.78"E	996	38.0	84.0	
21-Jul-2017	2	Araucariaceae	*Agathis borneensis*	4°28'14.94"N	115°43'49.38"E	1314	24.0	71.0	
10-Sep-2017	3	Rutaceae	*Melicope confusa*	4°28'14.94"N	115°44'17.16"E	1138	26.0	76.0	
	4	Asteraceae	*Vernonia arborea*	4°28'14.94"N	115°44'17.16"E	1138	49.0	76.0	
	5	Anacardiaceae	*Mangifera indica*	4°28'14.94"N	115°44'17.16"E	1138	25.0	63.0	
	6	Fagaceae	*Castanopsis* sp.	4°28'19.56"N	115°44'15.24"E	1125	30.0	67.0	
	7	Elaeocarpaceae	*Elaeocarpus* sp.	4°28'19.56"N	115°44'15.24"E	1125	34.5	85.0	
26-Nov-2017	8	Myrtaceae	*Syzygium* sp.	4°26'42.48"N	115°45'52.76"E	1009	70.2	95.9	
	9	Moraceae	*Artocarpus tamaran*	4°26'42.48"N	115°45'52.76"E	1009	30.0	90.0	
	10	Hypericaceae	*Cratoxylum arborescens*	4°26'42.48"N	115°45'52.76"E	1199	44.0	75.0	
	11	Clusiaceae	*Garcinia penanginia*	4°26'42.48"N	115°45'52.76"E	1199	52.0	65.0	
	12	Theaceae	*Schima wallichii*	4°26'42.48"N	115°45'52.76"E	1199	40.0	92.0	
	13	Phyllanthaceae	*Aporosa* sp.	4°26'42.48"N	115°45'52.76"E	1199	21.0	36.0	
	14	Podocarpaceae	*Dacrycarpus imbricatus*	4°26'42.48"N	115°45'52.76"E	1199	37.0	74.0	
3-Feb-2018	15	Theaceae	*Schima* sp.	4°27'8.93"N	115°45'23.54"E	1213	30.0	80.0	
	16	Myrtaceae	*Syzygium sp.*	4°27'8.93"N	115°45'23.54"E	1213	66.0	118.0	
	17	Unidentifiable	Unknown_1	4°27'8.93"N	115°45'23.54"E	1213	54.0	83.0	
	18	Euphorbiaceae	*Macaranga conifera*	4°27'8.93"N	115°45'23.54"E	1213	35.0	51.0	
	19	Meliaceae	*Dysoxylum* sp.	4°27'8.93"N	115°45'23.54"E	1213	38.0	53.0	
	20	Fagaceae	*Lithocarpus* sp.	4°27'8.93"N	115°45'23.54"E	1213	40.0	112.0	
11-May-2018	21	Clusiaceae	*Garcinia* sp. 1	4°27'32.42"N	115°44'47.38"E	1031	43.0	45.1	
	22	Meliaceae	Unidentified Meliaceae species	4°27'32.42"N	115°44'47.38"E	1031	31.0	50.2	
	23	Lauraceae	*Litsea* sp.	4°27'32.42"N	115°44'47.38"E	1031	56.0	90.0	
	24	Phyllanthaceae	*Aporosa lunata*	4°27'32.42"N	115°44'47.38"E	1031	30.2	58.0	
	25	Fagaceae	*Castanopsis evansii*	4°27'32.42"N	115°44'47.38"E	1031	28.6	37.6	
	26	Sapindaceae	*Xerospermum* sp.	4°27'32.42"N	115°44'47.38"E	1031	30.6	76.0	
	27	Euphorbiaceae	*Macaranga hypoleuca*	4°27'32.42"N	115°44'47.38"E	1031	45.8	58.8	
7-Jul-2018	28	Anacardiaceae	*Gluta oba*	4°26'10.95"N	115°44'35.85"E	1022	49.6	81.8	
	29	Urticaceae	*Leucosyke capitellata*	4°26'10.95"N	115°44'35.85"E	1022	20.0	47.0	
	30	Clusiaceae	*Garcinia* sp. 2	4°26'10.95"N	115°44'35.85"E	1022	22.0	40.8	
	31	Asteraceae	*Vernonia arborea*	4°26'10.95"N	115°44'35.85"E	1022	16.8	42.2	
	32	Lauraceae	*Actinodaphne glabra*	4°26'10.95"N	115°44'35.85"E	1022	21.2	35.4	
	33	Araliaceae	*Arthrophyllum collinum*	4°26'10.95"N	115°44'35.85"E	1022	14.8	37.8	
	34	Fagaceae	*Lithocarpus cantleyanus*	4°26'10.95"N	115°44'35.85"E	1022	21.2	39.2	
	35	Leguminosae	*Archidendron* sp.	4°26'10.95"N	115°44'35.85"E	1022	19.8	40.2	
	36	Phyllanthaceae	*Bischofia javanica*	4°26'10.95"N	115°44'35.85"E	1022	20.8	36.4	
22-Sep-2018	37	Fagaceae	*Lithocarpus conocarpus*	4°26'19.10"N	115°45'26.00"E	1122	33.2	47.4	
	38	Euphorbiaceae	*Macaranga puberula*	4°26'19.10"N	115°45'26.00"E	1122	41.6	59.8	
	39	Phyllanthaceae	*Bridelia glauca*	4°26'21.70"N	115°45'29.90"E	1146	65.0	81.0	
	40	Fagaceae	*Lithocarpus cooperatus*	4°26'19.80"N	115°45'30.80"E	1138	34.2	76.6	
	41	Moraceae	*Artocarpus* sp.	4°26'19.80"N	115°45'30.80"E	1138	46.2	81.6	
	42	Lauraceae	*Litsea lancifolia* var. *iliapaei*	4°26'22.23"N	115°45'38.60"E	1168	21.4	51.8	
	43	Fagaceae	*Lithocarpus bennettii*	4°26'22.23"N	115°45'38.60"E	1168	24.2	39.6	
30-Nov-2018	44	Moraceae	*Ficus* sp.	4°26'10.40"N	115°45'16.20"E	1045	30.0	78.0	
	45	Sapindaceae	*Harpullia cupanioides*	4°26'11.30"N	115°45'12.70"E	1065	14.0	64.4	
	46	Sapotaceae	*Palaquium dasyphyllum*	4°26'11.60"N	115°45'12.10"E	1066	23.3	100.0	
	47	Sapotaceae	Unidentified Sapotaceae species	4°26'11.60"N	115°45'10.70"E	1062	55.8	73.8	
	48	Fagaceae	*Lithocarpus leptogyne*	4°26'11.10"N	115°45'10.80"E	1061	49.0	114.0	
	49	Annonaceae	*Polyalthia* sp.	4°26'11.50"N	115°45'9.90"E	1059	32.0	42.0	
	50	Alangiaceae	*Alangium* sp.	4°26'11.40"N	115°45'9.10"E	1056	30.4	47.2	
	51	Moraceae	*Artocarpus odoratissimus*	4°26'11.30"N	115°45'12.80"E	1056	56.2	79.2	
	52	Rutaceae	*Melicope hootei*	4°26'11.30"N	115°45'16.80"E	1048	59.6	75.4	
30-Jan-2019	53	Unidentifiable	Unknown_2	4°25'49.60"N	115°45'48.70"E	1109	29.8	47.0	
	54	Phyllanthaceae	*Aporosa lunata*	4°25'48.50"N	115°45'48.50"E	1097	24.5	48.0	
	55	Clusiaceae	*Garcinia maingayi*	4°25'49.90"N	115°45'48.20"E	1108	16.1	34.0	
	56	Phyllanthaceae	*Baccaurea bracteata*	4°25'50.10"N	115°45'48.40"E	1102	30.4	58.7	
	57	Rosaceae	*Prunus spicata*	4°25'50.90"N	115°45'48.10"E	1104	48.8	66.8	
	58	Clusiaceae	*Garcinia* cf. *triantii*	4°25'49.80"N	115°45'48.10"E	1108	43.6	57.4	
29-Mar-2019	59	Myrtaceae	*Syzygium korthalsiana*	4°26'57.70"N	115°44'48.60"E	927	60.2	71.5	
	60	Lauraceae	*Litsea accedens*	4°26'57.70"N	115°44'48.40"E	928	57.4	70.2	
	61	Leguminosae	*Cynometra* sp.	4°26'57.70"N	115°44'48.50"E	927	30.2	42.2	
	62	Leguminosae	*Fordia coriacea*	4°26'57.70"N	115°44'48.60"E	946	35.4	42.6	
	63	Sabiaceae	*Meliosma sumatrana*	4°26'57.70"N	115°44'48.60"E	947	42.4	51.2	
	64	Lauraceae	*Beilschmiedia perakensis*	4°26'57.70"N	115°44'48.30"E	947	39.7	48.6	
	65	Phyllanthaceae	*Baccaurea macrocarpa*	4°26'57.90"N	115°44'49.00"E	1000	44.2	53.0	
	66	Meliaceae	*Dysoxylum undulatum*	4°26'57.80"N	115°44'48.70"E	997	47.3	54.5	
	67	Sapindaceae	*Nephelium sp.*	4°26'58.30"N	115°44'48.60"E	998	34.2	42.1	
	68	Malvaceae	*Pterospermum elongatum*	4°26'58.40"N	115°44'49.00"E	997	50.4	60.4	
12-Jun-2019	69	Hypericaceae	*Cratoxylum sumatranum*	4°26'59.90"N	115°44'46.90"E	1003	17.0	39.0	
	70	Annonaceae	*Mezzetia havilandii*	4°26'59.90"N	115°44'46.90"E	1003	25.2	42.1	
	71	Fagaceae	*Castanopsis clemensii*	4°26'59.90"N	115°44'46.90"E	1003	28.1	40.6	
	72	Lamiaceae	*Vitex quinata*	4°26'59.90"N	115°44'46.90"E	1003	34.3	67.2	
	73	Myrtaceae	*Syzygium longiflorum*	4°27'0.60"N	115°44'46.90"E	1003	26.8	57.0	
	74	Lauraceae	*Cryptocalya acutiflora*	4°27'0.60"N	115°44'47.60"E	1003	50.0	67.8	
4-Jul-2019	75	Theacea	*Adinandra excelsa*	4°28'52.80"N	115°44'28.10"E	1186	39.0	71.8	
	76	Asteraceae	*Vernonia arborea*	4°28'53.20"N	115°44'28.10"E	1188	38.6	66.6	
	77	Euphorbiaceae	*Macaranga costulata*	4°28'52.60"N	115°44'28.40"E	1186	32.8	60.8	
	78	Styracaceae	*Bruinsmia styracoides*	4°28'52.70"N	115°44'27.90"E	1187	33.1	45.0	
	79	Euphorbiaceae	*Glochidion* sp.	4°28'52.60"N	115°44'29.10"E	1190	29.8	53.5	
	80	Apocynaceae	*Kopsia arborea*	4°28'52.60"N	115°44'29.20"E	1189	32.1	50.2	
	81	Myristicaceae	*Knema laurina*	4°28'52.80"N	115°44'29.30"E	1191	40.2	55.0	
	82	Celestraceae	*Salacia chinesis*	4°28'53.00"N	115°44'29.50"E	1192	26.4	59.6	
	83	Theacea	*Schima wallichii*	4°28'53.10"N	115°44'29.50"E	1190	37.8	54.8	

Table 1. (Continued)

	84	Fagaceae	*Castanopsis clemensii*	4°28'53.10"N	115°44'29.50"E	1190	35.0	47.8	
12-Oct-2019	85	Apocynaceae	*Rauwolfia* sp.	4°26'57.60"N	115°44'27.80"E	1059	36.8	45.2	
	86	Myrtaceae	*Syzygium kunstleri*	4°26'59.40"N	115°44'29.30"E	1029	28.1	39.6	
	87	Euphorbiaceae	*Macaranga* cf. *pearsonii*	4°26'59.40"N	115°44'29.30"E	1029	35.8	44.2	
	88	Fagaceae	*Castanopsis buruana*	4°26'59.40"N	115°44'29.30"E	1029	35.6	47.1	
	89	Moraceae	*Artocarpus tamaran*	4°26'59.40"N	115°44'29.30"E	1029	25.5	49.2	
	90	Fagaceae	*Castanopsis buruana*	4°26'57.60"N	115°44'27.60"E	1022	32.3	44.3	
	91	Fagaceae	*Castanopsis buruana*	4°26'57.70"N	115°44'27.70"E	1031	41.5	52.3	
	92	Lauraceae	*Litsea elliptica*	4°26'57.50"N	115°44'27.90"E	1059	30.5	40.7	
30-Nov-2019	93	Clusiaceae	*Garcinia cf. mangostana*	4°27'40.59"N	115°44'33.81"E	1060	46.0	64.3	
	94	Myrtaceae	*Syzygium kunstleri*	4°27'41.08"N	115°44'33.55"E	1059	26.3	43.6	
	95	Elaeocarpaceae	*Elaeocarpus sp.*	4°27'41.06"N	115°44'33.35"E	1059	29.8	45.7	
	96	Fagaceae	*Lithocarpus* cf. *meijeri*	4°27'40.95"N	115°44'33.14"E	1061	38.2	50.8	
	97	Clethraceae	*Clethra* cf. *longispicata*	4°27'41.06"N	115°44'33.82"E	1058	40.5	50.0	
	98	Unidentifiable	Unknown_3	4°27'40.76"N	115°44'33.77"E	1058	29.0	43.8	
	99	Elaeocarpaceae	*Elaeocarpus* sp.	4°27'40.72"N	115°44'33.28"E	1063	34.1	47.1	
	100	Euphorbiaceae	*Macaranga pearsonii*	4°27'40.70"N	115°44'33.34"E	1064	52.1	59.8	
	101	Magnoliaceae	*Magnolia marklettii*	4°27'9.44"N	115°44'41.33"E	1018	25.4	37.0	
	102	Sapindaceae	*Nephelium cuspidatum*	4°27'9.33"N	115°44'41.61"E	1017	28.4	53.8	
15-Feb-2020	103	Aquifolaceae	*Ilex cissoidea*	4°27'27.04"N	115°44'41.98"E	1040	30.0	36.9	
	104	Actinidiaceae	*Saurauia glabra*	4°27'26.87"N	115°44'42.17"E	1040	28.8	41.0	
	105	Ebenaceae	*Diospyros* sp.	4°27'26.49"N	115°44'42.32"E	1039	28.8	50.2	
	106	Clusiaceae	*Garcinia mangostana*	4°27'26.25"N	115°44'42.15"E	1040	38.1	47.0	Four logs were examined
	107	Fagaceae	*Castanopsis evansii*	4°27'26.19"N	115°44'42.09"E	1041	30.7	45.1	Four logs were examined
	108	Juglandaceae	*Engelhardia roxburghiana*	4°27'27.04"N	115°44'42.05"E	1041	30.7	31.9	
	109	Clethraceae	*Clethra cf. longispicata*	4°27'26.61"N	115°44'42.20"E	1040	38.3	44.6	Three logs were examined

Table 1 presents a list of the examined trees, including the sampling date, host tree species, collection location (latitude and longitude), and the maximum and minimum diameters of the five investigated logs from each examined tree. A total of 109 individual trees, comprising 90 species from 55 genera within 39 families, were included in the study. Among these, three individual trees could not be identified at the family level. Additionally, one individual belonged to the family Meliaceae and another to the family Sapotaceae, but both could not be identified at the genus level. These unidentifiable trees were not included in the count of the 90 species.

Results

A total of 236 species belonging to the two subfamilies were documented, comprising 9,057 galleries: 102 species from the subfamily Platypodinae (6,105 galleries, which include 34 galleries with unidentifiable Platypodinae specimens) and 134 species from the subfamily Scolytinae (2,952 galleries, which include 13 galleries with unidentifiable Scolytinae specimens) (Table 2).

A summary table presenting the number of individuals for each beetle species collected from each tree is included in the supplemental material (Appendix T1).

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Table 2. Total number of each species of bark and ambrosia beetles collected from the logs of the 109 felled trees in Long Miau, Sipitang, Sabah, Malaysia.

Subfamily	Tribe	Species	No. of galleries
Platypodinae	Platypodini	*Baiocis orientalis* Beaver & Liu	8
Platypodinae	Platypodini	*Baiocis pernanulus* (Schedl)	24
Platypodinae	Platypodini	*Baiocis* sp. SA2	6
Platypodinae	Platypodini	*Baiocis* sp. SB03	2
Platypodinae	Platypodini	*Baiocis* sp. SB04	3
Platypodinae	Platypodini	*Baiocis* sp. SB05	1
Platypodinae	Platypodini	*Carchesiopygus alternantes* Schedl	5
Platypodinae	Platypodini	*Carchesiopygus wollastoni* (Chapuis)	19
Platypodinae	Platypodini	*Crossotarsus* aff. *ursus* Schedl	144
Platypodinae	Platypodini	*Crossotarsus comatus* Chapuis	7
Platypodinae	Platypodini	*Crossotarsus decliviornatus* (Schedl)	2
Platypodinae	Platypodini	*Crossotarsus fractus* Sampson	583
Platypodinae	Platypodini	*Crossotarsus horni* Schedl	28
Platypodinae	Platypodini	*Crossotarsus inermis* Schedl	50
Platypodinae	Platypodini	*Crossotarsus longicollis* Browne	207
Platypodinae	Platypodini	*Crossotarsus nitens* Chapuis	207
Platypodinae	Platypodini	*Crossotarsus platypoides* Browne	5
Platypodinae	Platypodini	*Crossotarsus serratulus* (Browne)	35
Platypodinae	Platypodini	*Crossotarsus siporanus* Schedl	12
Platypodinae	Platypodini	*Crossotarsus* sp.	17
Platypodinae	Platypodini	*Crossotarsus* sp. SA1	1
Platypodinae	Platypodini	*Crossotarsus* sp. SA14	8
Platypodinae	Platypodini	*Crossotarsus* sp. SA17	1
Platypodinae	Platypodini	*Crossotarsus* sp. SA18	2
Platypodinae	Platypodini	*Crossotarsus* sp. SA3	1
Platypodinae	Platypodini	*Crossotarsus* sp. SA31	1
Platypodinae	Platypodini	*Crossotarsus* sp. SA32	1
Platypodinae	Platypodini	*Crossotarsus* sp. SA7	3
Platypodinae	Platypodini	*Crossotarsus* sp. SA8	8
Platypodinae	Platypodini	*Crossotarsus* sp. SB04	11
Platypodinae	Platypodini	*Crossotarsus* sp. SB07	2
Platypodinae	Platypodini	*Crossotarsus* sp. SB08	2
Platypodinae	Platypodini	*Crossotarsus* sp. SB09	3
Platypodinae	Platypodini	*Crossotarsus* sp. SB10	1
Platypodinae	Platypodini	*Crossotarsus* sp. SB11	2
Platypodinae	Platypodini	*Crossotarsus squamulatus* Chapuis	109
Platypodinae	Platypodini	*Crossotarsus terminatus* Chapuis	173
Platypodinae	Platypodini	*Crossotarsus wallacei* (Thomson)	69
Platypodinae	Platypodini	*Dinoplatypus agathis* (Browne)	6
Platypodinae	Platypodini	*Dinoplatypus biuncus* (Blandford)	52
Platypodinae	Platypodini	*Dinoplatypus cupulatus* (Chapuis)	783
Platypodinae	Platypodini	*Dinoplatypus pseudocupulatus* (Schedl)	1086
Platypodinae	Platypodini	*Dinoplatypus* sp. SB01	2
Platypodinae	Platypodini	*Dinoplatypus tenuissimus* (Schedl)	2
Platypodinae	Platypodini	*Dinoplatypus*? sp. SB02	2
Platypodinae	Platypodini	*Peroplatypus* aff. *capito* (Browne)	1
Platypodinae	Platypodini	*Platypus pasaniae* Schedl	14
Platypodinae	Platypodini	*Platypus* aff. *deflectus* Schedl	59
Platypodinae	Platypodini	*Platypus* aff. *fraterculus* Schedl	1
Platypodinae	Platypodini	*Platypus* aff. *hamaticollis* Schedl	2
Platypodinae	Platypodini	*Platypus* aff. *lunifer* Schedl	19
Platypodinae	Platypodini	*Platypus* aff. *lunifer* 2 Schedl	1
Platypodinae	Platypodini	*Platypus* aff. *quercicola* Schedl	1
Platypodinae	Platypodini	*Platypus* aff. *quercinus* 2 Schedl	1
Platypodinae	Platypodini	*Platypus* aff. *quercinus* Schedl	1
Platypodinae	Platypodini	*Platypus apicaloides* Schedl	795
Platypodinae	Platypodini	*Platypus convexicauda* Schedl	1
Platypodinae	Platypodini	*Platypus deflectus* Schedl	4
Platypodinae	Platypodini	*Platypus fraterculus* Schedl	289
Platypodinae	Platypodini	*Platypus hamaticollis* Schedl	6
Platypodinae	Platypodini	*Platypus loricatus* (Sampson)	11
Platypodinae	Platypodini	*Platypus lunatipennis* Schedl	5
Platypodinae	Platypodini	*Platypus partitus* Schedl	2
Platypodinae	Platypodini	*Platypus puerulus* (Schedl)	46
Platypodinae	Platypodini	*Platypus quadrifissilis* Schedl	74
Platypodinae	Platypodini	*Platypus quercicola* Schedl	4
Platypodinae	Platypodini	*Platypus quercinus* Schedl	20
Platypodinae	Platypodini	*Platypus semiermis* Schedl	104
Platypodinae	Platypodini	*Platypus signatus* Chapuis	3
Platypodinae	Platypodini	*Platypus* sp.	5
Platypodinae	Platypodini	*Platypus* sp. SA14	1
Platypodinae	Platypodini	*Platypus* sp. SA17	5
Platypodinae	Platypodini	*Platypus* sp. SA19	2

Table 2. (Continued)

Platypodinae	Platypodini	*Platypus* sp. SA2	1
Platypodinae	Platypodini	*Platypus* sp. SA26	1
Platypodinae	Platypodini	*Platypus* sp. SA27	3
Platypodinae	Platypodini	*Platypus* sp. SA3	7
Platypodinae	Platypodini	*Platypus* sp. SA46	1
Platypodinae	Platypodini	*Platypus* sp. SA51	3
Platypodinae	Platypodini	*Platypus* sp. SA55	2
Platypodinae	Platypodini	*Platypus* sp. SB01	1
Platypodinae	Platypodini	*Platypus* sp. SB02	2
Platypodinae	Platypodini	*Platypus* sp. SB05	3
Platypodinae	Platypodini	*Platypus* sp. SB06	5
Platypodinae	Platypodini	*Platypus* sp. SB07	7
Platypodinae	Platypodini	*Platypus* sp. SB09	10
Platypodinae	Platypodini	*Platypus* sp. SB13	1
Platypodinae	Platypodini	*Platypus* sp. SB14	1
Platypodinae	Platypodini	*Platypus* sp. SB15	1
Platypodinae	Platypodini	*Platypus substriatus* (Schedl)	2
Platypodinae	Platypodini	*Platypus vetulus* Schedl	49
Platypodinae	Platypodini	*Treptoplatypus* aff. *franciai* (Browne)	5
Platypodinae	Platypodini	*Treptoplatypus* aff. *hirtus* (Schedl)	8
Platypodinae	Platypodini	*Treptoplatypus fulgens* (Schedl)	5
Platypodinae	Platypodini	*Treptoplatypus solidus* (Walker)	484
Platypodinae	Platypodini	*Treptoplatypus* sp. SB01	1
Platypodinae	Platypodini	*Treptoplatypus* sp. SB02	16
Platypodinae	Tesserocerini	*Diapus aff. minutissimus* Schedl	1
Platypodinae	Tesserocerini	*Diapus pusillimus* Chapuis	77
Platypodinae	Tesserocerini	*Diapus quinquespinatus* Chapuis	190
Platypodinae	Tesserocerini	*Genyocerus serratus* (Schedl)	1
Platypodinae	Tesserocerini	*Spathidicerus* sp. n. SA1	10
Platypodinae	NA	Unidentifiable *Platypodinae*	34
Platypodinae	Sub Total		6105
Scolytinae	Cryphalini	*Cryphalus dorsalis* (Motschulsky)	3
Scolytinae	Cryphalini	*Cryphalus* sp. SA1	13
Scolytinae	Cryphalini	*Cryphalus* sp. SA2	72
Scolytinae	Cryphalini	*Cryphalus* sp. SA3	6
Scolytinae	Cryphalini	*Cryphalus* sp. SA4	290
Scolytinae	Diamerini	*Diamerus curvifer* (Walker)	4
Scolytinae	Dryocoetini	*Coccotrypes* aff. *fallax* (Eggers)	1
Scolytinae	Dryocoetini	*Coccotrypes confertus* (Schedl)	3
Scolytinae	Dryocoetini	*Coccotrypes longior* (Eggers)	8
Scolytinae	Dryocoetini	*Coccotrypes politus* (Browne)	2
Scolytinae	Dryocoetini	*Coccotrypes vulgaris* (Eggers)	10
Scolytinae	Dryocoetini	*Coccotrypes* sp.	1
Scolytinae	Dryocoetini	*Coccotrypes* sp. SA1	1
Scolytinae	Dryocoetini	*Cyrtogenius perakensis* (Schedl)	447
Scolytinae	Dryocoetini	*Cyrtogenius* sp. SA2	1
Scolytinae	Dryocoetini	*Ozopemon brownei* Schedl	79
Scolytinae	Dryocoetini	*Ozopemon obanus* Hagedorn	1
Scolytinae	Dryocoetini	*Peridryocoetes nitens* (Schedl)	61
Scolytinae	Hylesinini	*Ficicis javanus* (Eggers)	10
Scolytinae	Phloeosinini	*Hyledius nitidicollis* (Motschulsky)	16
Scolytinae	Phloeosinini	*Hyledius* sp. SB01	34
Scolytinae	Phloeosinini	*Phloeoditica* sp. SA1	3
Scolytinae	Polygraphini	*Polygraphus vexator* (Browne)	2
Scolytinae	Scolytoplatypodini	*Scolytoplatypus carinatus* Bright	2
Scolytinae	Scolytoplatypodini	*Scolytoplatypus glaber* Eggers	8
Scolytinae	Scolytoplatypodini	*Scolytoplatypus javanus* Eggers	13
Scolytinae	Scolytoplatypodini	*Scolytoplatypus nanus* Schedl	1
Scolytinae	Scolytoplatypodini	*Scolytoplatypus parvus* Sampson	2
Scolytinae	Trypophloeini	*Hypothenemus birmanus* (Eichhoff)	1
Scolytinae	Trypophloeini	*Hypothenemus eruditus* ex Westwood	5
Scolytinae	Trypophloeini	*Hypothenemus* sp. SB06	1
Scolytinae	Xyleborini	*Amasa glauca* (Sampson)	1
Scolytinae	Xyleborini	*Amasa resecta* (Eggers)	3
Scolytinae	Xyleborini	*Amasa striatotruncata* (Schedl)	1
Scolytinae	Xyleborini	*Amasa versicolor* (Sampson)	4
Scolytinae	Xyleborini	*Amasa* sp. SA3	1
Scolytinae	Xyleborini	*Amasa* sp. SB01	3
Scolytinae	Xyleborini	*Ambrosiodmus lewisi* (Blandford)	26
Scolytinae	Xyleborini	*Ambrosiophilus consimilis* (Eggers)	6
Scolytinae	Xyleborini	*Ambrosiophilus* sp. SA2	5
Scolytinae	Xyleborini	*Ambrosiophilus* sp. SA3	1
Scolytinae	Xyleborini	*Ancipitis puer* (Eggers)	5
Scolytinae	Xyleborini	*Anisandrus* sp. SB01	1
Scolytinae	Xyleborini	*Arixyleborus castaneae* Schedl	3
Scolytinae	Xyleborini	*Arixyleborus grandis* (Schedl)	1
Scolytinae	Xyleborini	*Arixyleborus granifer* (Eichhoff)	7
Scolytinae	Xyleborini	*Arixyleborus granulifer* (Eggers)	17
Scolytinae	Xyleborini	*Arixyleborus leprosulus* Schedl	31
Scolytinae	Xyleborini	*Arixyleborus liratus* Sittichaya, Beaver & Smith	144
Scolytinae	Xyleborini	*Arixyleborus puberulus* (Blandford)	24

Table 2. (Continued)

Scolytinae	Xyleborini	*Arixyleborus rugosipes* Hopkins	12
Scolytinae	Xyleborini	*Arixyleborus* sp. 2	10
Scolytinae	Xyleborini	*Arixyleborus suturalis* (Eggers)	16
Scolytinae	Xyleborini	*Beaverium latus* (Eggers)	5
Scolytinae	Xyleborini	*Coptodryas confusa* Hopkins	1
Scolytinae	Xyleborini	*Cryptoxyleborus* aff. *turbineus* (Sampson)	1
Scolytinae	Xyleborini	*Cryptoxyleborus cuneatus* Beaver & Hulcr	1
Scolytinae	Xyleborini	*Cyclorhipidion circumcisum* (Sampson)	47
Scolytinae	Xyleborini	*Cyclorhipidion perpilosellum* (Schedl)	64
Scolytinae	Xyleborini	*Cyclorhipidion* sp.	2
Scolytinae	Xyleborini	*Cyclorhipidion* sp. SA1	16
Scolytinae	Xyleborini	*Cyclorhipidion* sp. SA3	17
Scolytinae	Xyleborini	*Cyclorhipidion* sp. SA6	1
Scolytinae	Xyleborini	*Cyclorhipidion* sp. SA7	4
Scolytinae	Xyleborini	*Debus adusticollis* (Motschulsky)	8
Scolytinae	Xyleborini	*Debus amphicranoides* (Hagedorn)	2
Scolytinae	Xyleborini	*Debus emarginatus* (Eichhoff)	16
Scolytinae	Xyleborini	*Debus pumilus* (Eggers)	15
Scolytinae	Xyleborini	*Debus quadrispinus* (Motschulsky)	21
Scolytinae	Xyleborini	*Debus spinatus* (Eggers)	2
Scolytinae	Xyleborini	*Debus*? sp.	1
Scolytinae	Xyleborini	*Diuncus ciliatoformis* (Schedl)	11
Scolytinae	Xyleborini	*Eccoptopterus limbus* Sampson	59
Scolytinae	Xyleborini	*Eccoptopterus spinosus* (Olivier)	73
Scolytinae	Xyleborini	*Euwallacea* aff. *siporanus* (Hagedorn)	1
Scolytinae	Xyleborini	*Euwallacea fornicatus* cx (Eichhoff)	1
Scolytinae	Xyleborini	*Euwallacea interjectus* (Blandford)	4
Scolytinae	Xyleborini	*Euwallacea minutus* (Blandford)	6
Scolytinae	Xyleborini	*Euwallacea piceus* (Motschulsky)	19
Scolytinae	Xyleborini	*Euwallacea semirudis* (Blandford)	4
Scolytinae	Xyleborini	*Euwallacea* sp. SA2	2
Scolytinae	Xyleborini	*Euwallacea* sp. SA6	1
Scolytinae	Xyleborini	*Immanus* sp. SA1	3
Scolytinae	Xyleborini	*Leptoxyleborus machili* (Niijima)	1
Scolytinae	Xyleborini	*Leptoxyleborus sordicauda* (Motschulsky)	23
Scolytinae	Xyleborini	*Microperus corporaali* (Eggers)	19
Scolytinae	Xyleborini	*Microperus diversicolor* (Eggers)	33
Scolytinae	Xyleborini	*Microperus intermedius* (Eggers)	106
Scolytinae	Xyleborini	*Microperus nugax* (Schedl)	112
Scolytinae	Xyleborini	*Microperus recidens* (Sampson)	2
Scolytinae	Xyleborini	*Microperus* sp. SA1	1
Scolytinae	Xyleborini	*Microperus* sp. SA2	3
Scolytinae	Xyleborini	*Microperus* sp. SB01	1
Scolytinae	Xyleborini	*Microperus* sp. SC01	1
Scolytinae	Xyleborini	*Planiculus limatus* (Schedl)	1
Scolytinae	Xyleborini	*Planiculus* sp. SA2	10
Scolytinae	Xyleborini	*Stictodex dimidiatus* (Eggers)	5
Scolytinae	Xyleborini	*Streptocranus bicolor* Browne	9
Scolytinae	Xyleborini	*Streptocranus bicuspis* (Eggers)	1
Scolytinae	Xyleborini	*Streptocranus longicauda* Browne	5
Scolytinae	Xyleborini	*Truncaudum agnatum* (Eggers)	5
Scolytinae	Xyleborini	*Webbia cornuta* Schedl	3
Scolytinae	Xyleborini	*Webbia pabo* Sampson	13
Scolytinae	Xyleborini	*Webbia platypoides* Eggers	29
Scolytinae	Xyleborini	*Webbia talaurica* (Eggers)	4
Scolytinae	Xyleborini	*Webbia* sp. SA1	7
Scolytinae	Xyleborini	*Webbia* sp. SA4	1
Scolytinae	Xyleborini	Xyleborini genus? sp.	4
Scolytinae	Xyleborini	Xyleborini genus? sp. SA1	1
Scolytinae	Xyleborini	Xyleborini genus? sp. SA2	2
Scolytinae	Xyleborini	Xyleborini genus? sp. SA4	2
Scolytinae	Xyleborini	*Xyleborinus andrewesi* (Blandford)	139
Scolytinae	Xyleborini	*Xyleborinus artestriatus* (Eichhoff)	1
Scolytinae	Xyleborini	*Xyleborinus exiguus* (Walker)	384
Scolytinae	Xyleborini	*Xyleborinus horridulus* (Browne)	22
Scolytinae	Xyleborini	*Xyleborus affinis* Eichhoff	60
Scolytinae	Xyleborini	*Xyleborus perforans* (Wollaston)	88
Scolytinae	Xyleborini	*Xylosandrus morigerus* (Blandford)	5
Scolytinae	Xyloterini	*Indocryphalus* sp. SA1	5
Scolytinae		Unidentifiable Scolytinae	13
Scolytinae	Sub Total		2952
		Unidentifiable specimens	389
	Total		9446

utilize their facilities for the identification of tree species.

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Reference

Bulter, R.A. (2024). A Place Out of Time: Tropical Rainforests and the Perils They Face. https://worldrainforests.com/ (last visited on SEP 06, 2024)

Grégoire, J.-C., Raffa, K.F., and Lindgren, B.S. (2015). "Chapter 15 - Economics and Politics of Bark Beetles," in Bark Beetles, eds. F.E. Vega & R.W. Hofstetter. (San Diego: Academic Press): 585-613.

Gunggot, E., Beaver R.A., Lucas, J.J., George, S.G., Rasiah, A., Wong, W.V.C., Lardizabal, M.L.T., and Kamata, N. (2025) List of Scolytinae and Platypodinae (COLEOPTERA: Curculionidae) captured by ethanol-baited traps in a tropical rainforest in southern Sabah, Malaysia. Miscellaneous Information of University of Tokyo Forest 71: 83-94.

Hutchinson, G.E. (1959). Homage to Santa Rosalia or Why Are There So Many Kinds of Animals? The American Naturalist 93(870): 145-159. doi: 10.1086/282070.

Iidzuka, H., Goto, H., Yamasaki, M., and Osawa, N. (2016). Wood-boring beetles (Coleoptera: Scolytidae, Platypodidae) captured in ethanol-baited traps in a natural forest in Japan. Applied Entomology and Zoology 51(3): 347–352. doi: 10.1007/s13355-016-0406-7.

Kamata, N., Esaki, K., Kato, K., Igeta, Y., and Wada, K. (2002). Potential impact of global warming on deciduous oak dieback caused by ambrosia fungus *Raffaelea* sp. carried by ambrosia beetle *Platypus quercivorus* (Coleoptera: Platypodidae) in Japan. *Bulletin of Entomological Research* 92(2): 119-126. doi: 10.1079/BER2002158.

Loh, H.Y., James, D., Ioki, K., Wong, W.V.C., Tsuyuki, S., and Phua, M.-H. (2020). Aboveground biomass changes in tropical montane forest of northern Borneo estimated using spaceborne and airborne digital elevation data. *Remote Sensing* 12(22): 3677.

Vega, F.E., Infante, F., and Johnson, A.J. (2015). "The genus *Hypothenemus*, with emphasis on *H. hampei*, the coffee berry borer," in *Bark Beetles: Biology and Ecology of Native and Invasive Species,* eds. F.E. Vega & R.W. Hofstetter. (London: Academic Press), 427-494.

Willig, M.R., Kaufman, D.M., and Stevens, R.D. (2003). Latitudinal Gradients of Biodiversity: Pattern, Process, Scale, and Synthesis. Annual Review of Ecology, Evolution, and Systematics 34: 273-309. doi: 10.1146/annurev.ecolsys.34.012103.144032.

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