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**Supplementary material**

# Phylogenetic position of the enigmatic termite family Stylotermitidae (Insecta : Blattodea)

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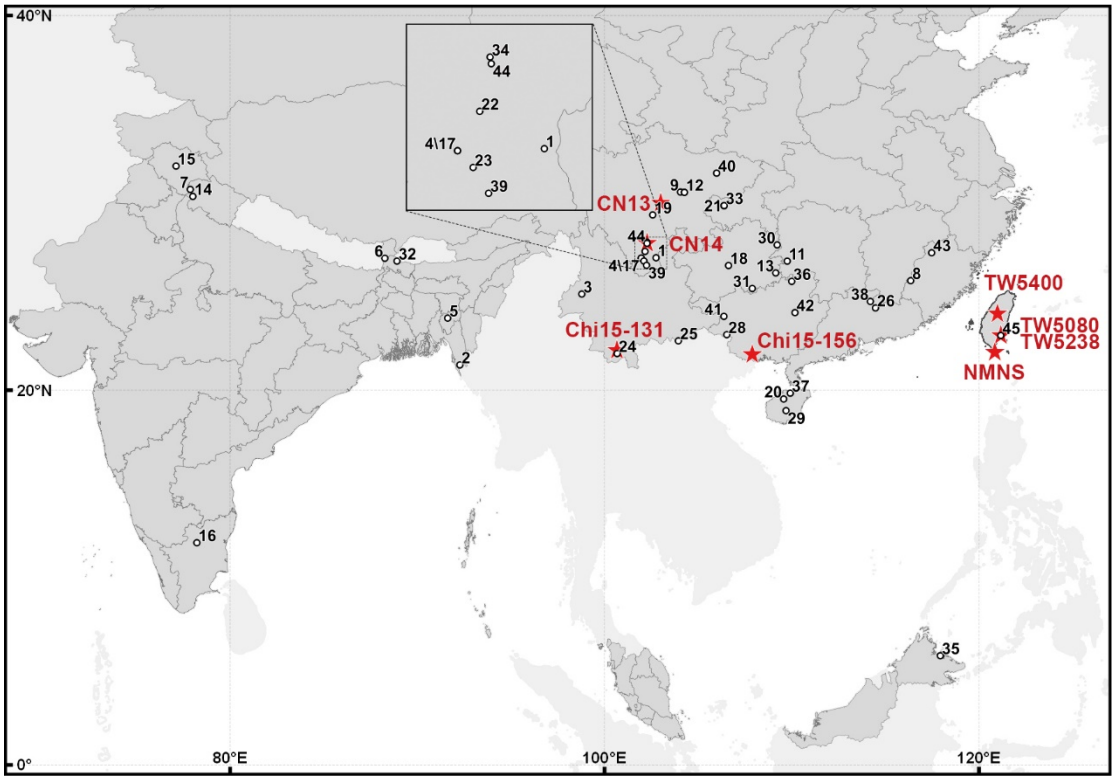


**Fig. S1.** Map of Asia showing the localities where specimens used in the present study were collected (red star). Type localities of the 45 described species of *Stylotermes* are indicated by open circles. Additional details are listed in Table S1 (modified from Liang *et al.* (2017)).

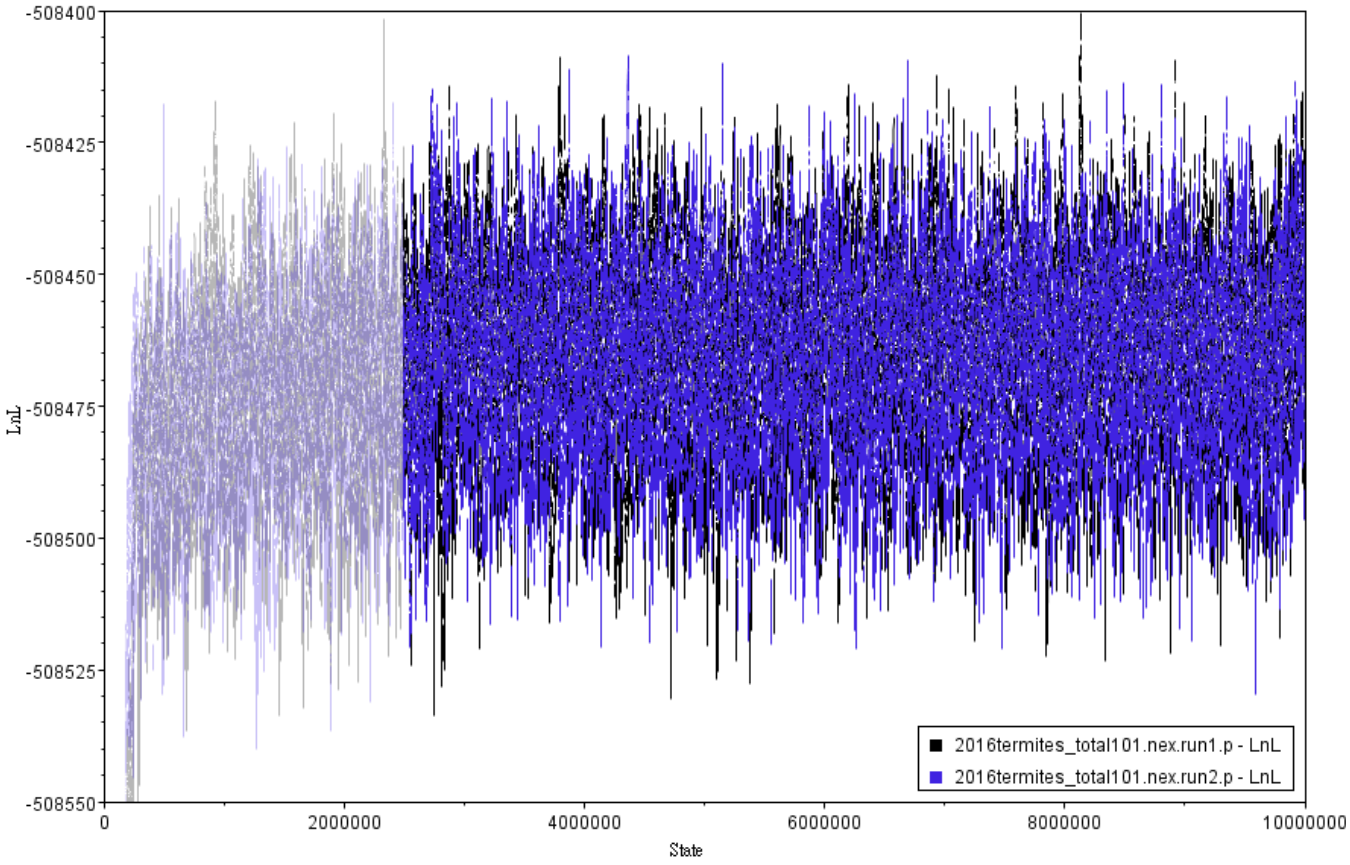


**Fig. S2.** Trace plot of ln L in Tracer 1.6.

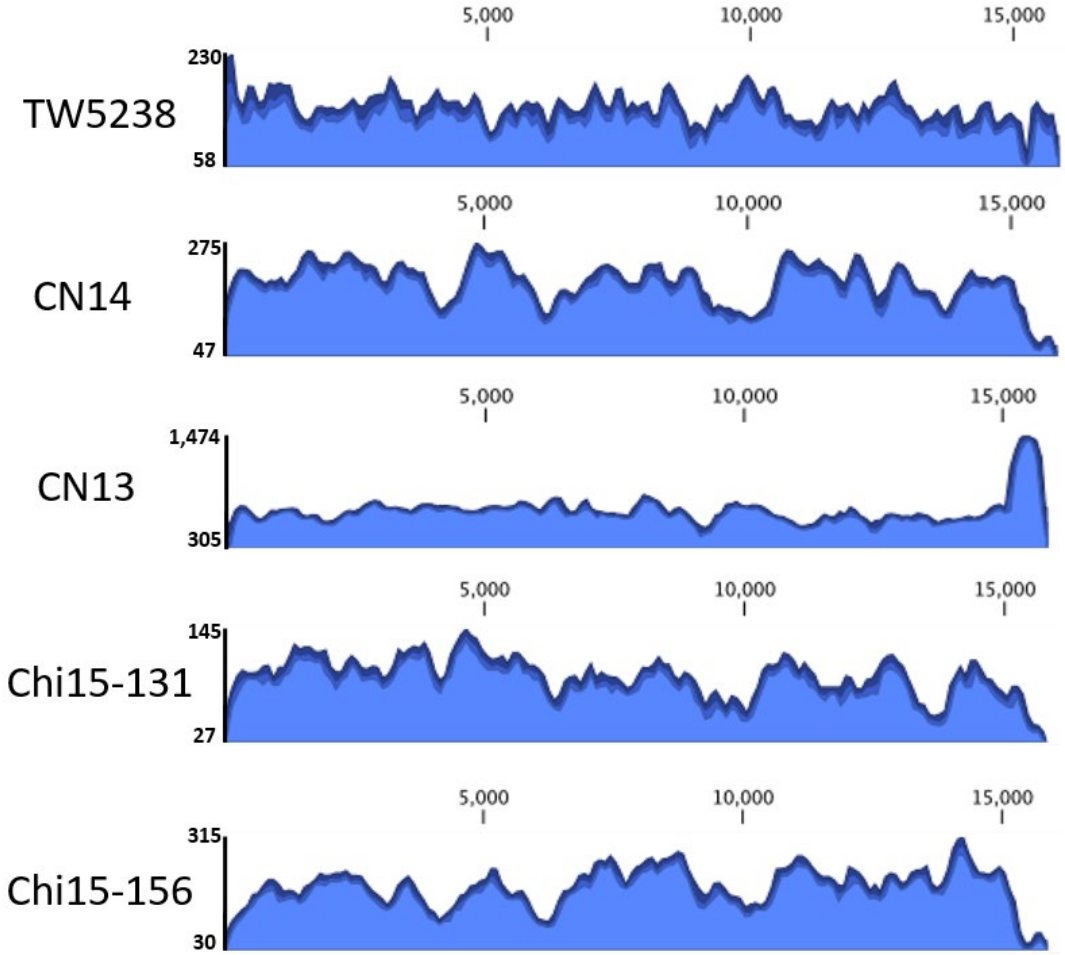


**Fig. S3.** Read coverage for each sample sequenced in this study.


**Fig. S4.** Phylogenetic tree of 101 termites reconstructed using full mitochondrial genome complements. Node labels are BP: Bayesian posterior probabilities, and BS: Maximum Likelihood bootstrap supports.

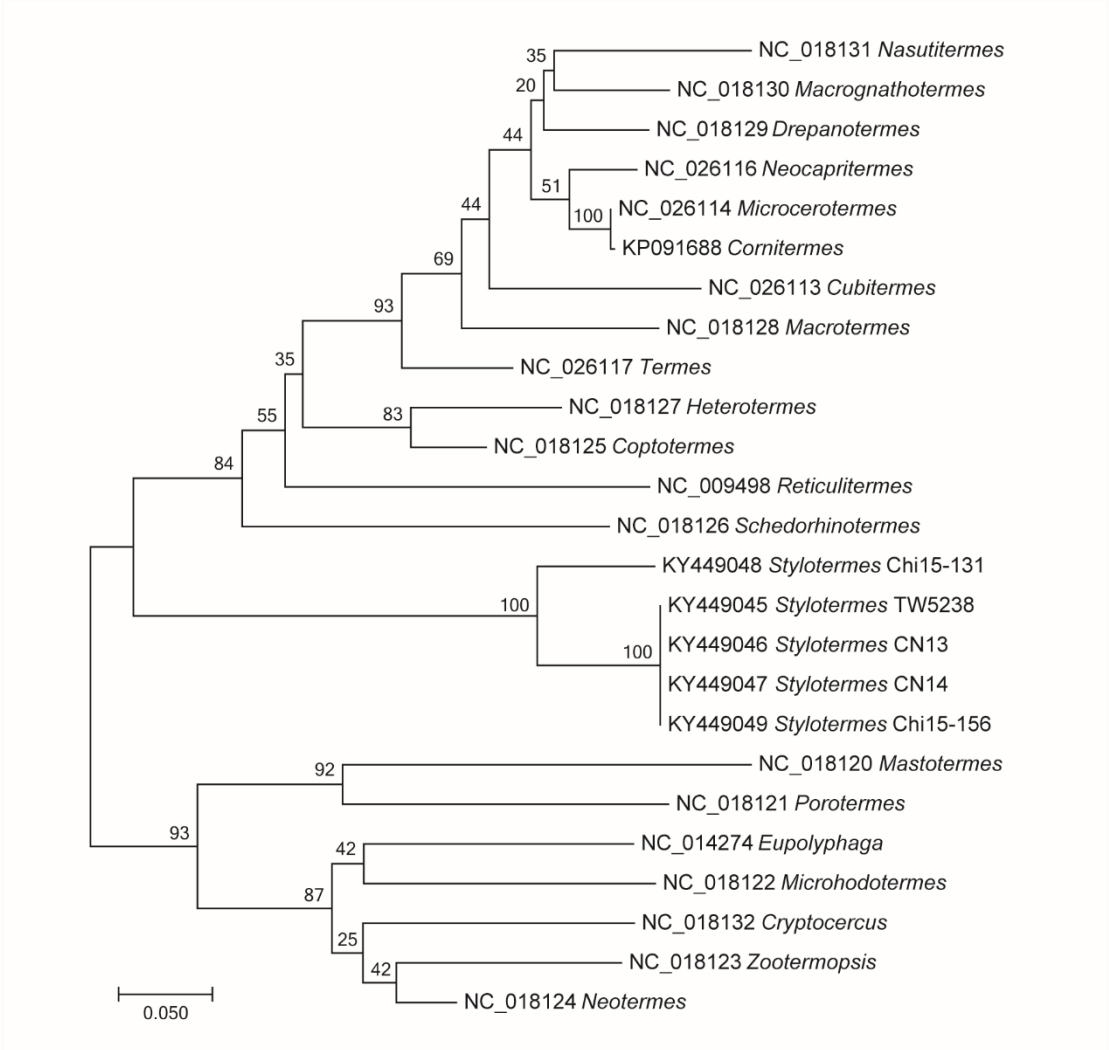


**Fig. S5**. Neighbor-joining of dictyopteran insects based on RGC1 sequences. Bootstrap values are showed at each node.

**Table S1.** Collection sites and host trees of *Stylotermes* spp.

| Code | Termite species | Host tree family and species | Locality | Latitude | Longitude | Altitude (m) | Reference |
|---|---|---|---|---|---|---|---|
| TW5238 | *S. halumicus* | Ulmaceae: *Zelkova serrata* (Thunb.) Makino | Luanshan, Taiwan | 22.9139 | 121.1839 | 605 | Liang *et al.* (2017), present study, mt genome |
| TW5400 | *Stylotermes* sp. | Cannabaceae: *Trema tomentosa* var. *viridis* Planch. & Hewson | Huisun, Taiwan | 24.079 | 121.0046 | 569 | present study, damage pattern |
| NMNS | *S. halumicus* | | Lide, Taiwan | 22.0193 | 120.8618 | 208 | Liang *et al.* (2017) |
| Chi15-131 | *Stylotermes* sp. | Dead portion of small living tree | Mandian Village, Yunnan, China | 22.1268 | 100.6697 | 798 | present study, mt genome |
| Chi15-156 | *S. halumicus* | Cavity inside a living tree | Nianban, Guangxi, China | 21.9018 | 107.9021 | 378 | present study, mt genome |
| CN13 | *S. halumicus* | | Sichuan Agricultural University, Sichuan, China | 29.9858 | 103.0081 | 584 | present study, mt genome |
| CN14 | *S. halumicus* | | Qonghai Park, Sichuan, China | 27.8384 | 102.2837 | 1511 | present study, mt genome |
| 1 | *S. acrofrons* | Malvaceae: *Bombax malabarica* DC | Ningnan Xian | 27.0633* | 102.7601* | 1179* | Ping (1981) |
| 2 | *S. ahmadi* | in a dead portion of living tree | Ukhia | 21.341* | 92.2768* | 44* | Akhtar (1975) |
| 3 | *S. alpinus* | | Mt. Gaoligong, Tengchong County 【25N, 98E】 | 25 | 98 | 2335* | Ping (1983) |
| 4 | *S. angustignatlus* | Betulaceae: *Alnus nepalensis* D. Don. | Puwei | 27.0444* | 101.9703* | 1733* | Gong (1982a) |
| 5 | *S. beesoni* | | Tiliamura | 23.8424* | 91.6277* | 1936* | Thakur (1975) |
| 6 | *S. bengalensis* | Moraceae: *Morus laevigata* Wall./ Ericaceae: dead portion of a green standing *Rhododendron* sp. | West Bengal: Darjeeling Division | 27.0369* | 88.2705* | 50* | Mathur and Chhotani (1959) |
| 7 | *S. chakratensis* | Fagaceae*: Quercus incana* Roxb | Uttarakhand, Chakrata, ca. 6000 ft. | 30.7121* | 77.8732* | ca. 1829 | Mathur and Thapa (1963) |
| 8 | *S. changtingensis* | Altingiaceae: *Liquidambar formosana* Hance | Changting | 25.8399* | 116.367* | 314* | Fan and Xia (1981) |
| 9 | *S. chengduensis* | Ginkgoaceae: *Ginkgo biloba* L. (in a dead portion of living tree) | Chengdu | 30.5728* | 104.0668* | 494* | Gao and Zhu (1980) |
| 10 | *S. chongqingensis* | Sterculiaceae: *Firmiana simplex* (L.) W. F. Wight | Jinyuan Shan, Chongqing Shi. | 29.8476* | 106.3982* | 780 | Chen and Ping (1983) |
| 11 | *S. choui* | | Huitong Xian | 26.8835* | 109.7706* | 421* | Ping (1981) |
| 12 | *S. crinis* | Betulaceae: *Alnus cremastogyne* Burk. (a living tree) | Chengdu | 30.5565* | 104.2746* | 546* | Gao (1981) |
| 13 | *S. curvatus* | Altingiaceae: *Liquidambar formosana* Hance (a living tree) | Liping County 【26N, 109E】 | 26 | 109 | 588* | Ping (1984) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 14 | *S. dunensis* | | Dehra Dun: New Forest | 30.3384* | 78.0101* | 673* | Thakur (1975) |
| 15 | *S. faveolus* | Betulaceae: *Alnus nitida* (Spach) Endl. (a living tree) | Himachal Pradesh | 31.9603* | 77.1129* | 1202* | Chatterjee and Thakur (1964) |
| 16 | *S. fletcheri* | Anacardiaceae: *Mangifera indica* L. (Burrowing in rotten interior and sound wood of a mango-tree) | Coimbatore, Shevaroy Hills, about 4000 ft. | 11.8474* | 78.2248* | ca. 1219 | Holmgren and Holmgren (1917) |
| 17 | *S. fontanellus* | Betulaceae: *Alnus nepalensis* D. Don. | Puwei | 27.0437* | 101.9719* | 1762* | Gong (1982b) |
| 18 | *S. guiyangensis* | Salicaceae: *Salix cathayana* Diels and *Populus* sp./ Platanaceae: *Platanus* sp./ Fabaceae*: Robinia pseudoacacia* L. (all from living tree) | Guiyang City 【26N, 106E】 | 26 | 106 | 1587* | Ping (1984) |
| 19 | *S. hanyuanicus* | Euphobiaceae: *Vernicia fordii* (Hemsl.) Airy Shaw | Hanyuan Xian | 29.3506* | 102.5819* | 1752* | Ping (1981) |
| 20 | *S. inclinatus* | Euphobiaceae: *Hevea brasiliensis* Müll.Arg. | Zhan-xian | 19.5211* | 109.5808* | 160* | Yu and Ping (1964) |
| 21 | *S. jinyunicus* | Lauraceae: *Litsea pungens* Hemsl. | Jinyunshan, Shongqing Shi | 29.8594* | 106.3814* | 296* | Ping (1981) |
| 22 | *S. labralis* | Betulaceae: *Alnus cremastogyne* Burk. | Sichuan Province: Dechang Xian | 27.4024* | 102.1722* | 1396* | Ping (1981) |
| 23 | *S. laticrus* | Fagaceae: *Quercus* sp. | Miyi Xian | 26.892* | 102.1121* | 1131* | Ping (1981) |
| 24 | *S. latilabrum* | | Yunnan: Cheli 【21.56'N, 100.40'E】 | 21.9333* | 100.6667* | 921* | Tsai and Chen (1963) |
| 25 | *S. latipedunculus* | Rutaceae: *Citrus grandis* Osbeck | Yunnan: Nan-xi | 22.6264* | 103.9523* | 150 | Yu and Ping (1964) |
| 26 | *S. lianpingensis* | | Lianping County 【24N, 114E】 | 24 | 114 | 864* | Ping (1983) |
| 27 | *S. longignathus* | Betulaceae: *Alnus cremastogyne* Burk. (a living tree) | Chengdu | 30.5523* | 104.2841* | 634* | Gao (1981) |
| 28 | *S. mecocephalus* | | Jingxi Xian | 22.9563* | 106.5387* | 550 | Tsai (1978) |
| 29 | *S. minutus* | Altingiaceae: *Liquidambar formosana* Hance | Five-finger mountain | 18.8995* | 109.7068* | 650 | Yu and Ping (1964) |
| 30 | *S. mirabilis* | | Tongren County | 27.7502* | 109.2314* | 446* | He and Qui (1990) |
| 31 | *S. orthognathus* | Altingiaceae: *Liquidambar formosana* Hance (a living tree) | Libo County 【25N, 107E】 | 25 | 107 | 554* | Ping (1984) |
| 32 | *S. parabengalensis* | Moraceae: *Ficus bengalensis* L. (damage portion of the trunk of a *Ficus bengalensis*)/ Anacardiaceae: *Mangifera indica* L. | Jalpaiguri District, near Nagrakata railway station, alt. 270m, 85km NE of Jalpaiguri | 26.8875* | 88.9181* | 270 | Maiti (1975) |
| 33 | *S. planifrons* | Lauraceae: *Litsea pungens* Hemsl. | Chongqing | 29.8527* | 106.3929* | 750 | Chen and Chen (1984) |
| 34 | *S. robustus* | Salicaceae: *Salix* sp. | Xichang Xian | 27.8962* | 102.2668* | 2062* | Ping (1981) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 35 | *S. roonwali* | Dipterocarpaceae: *Parashorea tomentella* (Symington) Meijer (branch of fallen tree of *Parashorea tomentella* ) | Malaysia: Sabah: Sandakan: South District, Lungmanis | 5.8151* | 117.9517* | 6* | Thapa (1982) |
| 36 | *S. setosus* | Altingiaceae: *Liquidambar formosana* Hance | (Kwangsi): Longsheng Xian | 25.8042* | 110.0114* | 230* | Tsai (1978) |
| 37 | *S. sinensis* | Euphobiaceae: *Aleurites montana* Wils/ Altingiaceae: *Liquidambar formosana* Hance/ Moraceae: *Ficus hispida* L.f./ Fagaceae: *Quercus acutissima* Carruth. | Hainan Island: Fu-Shan | 19.8350* | 109.9334* | 500 | Yu and Ping (1964) |
| 38 | *S. sui* | Altingiaceae: *Liquidambar formosana* Hance (a living tree) | Shixing County: Xianrendong of Chebaling | 24.7328* | 114.2124* | 522* | Ping and Xu (1993) |
| 39 | *S. triplanus* | Fagaceae: *Quercus* sp. | Huili Xian | 26.6578* | 102.2532* | 1833* | Ping (1981) |
| 40 | *S. tsaii* | Lauraceae: *Phoebe bournei* (Hemsley) Yang | Langzhong | 31.5813* | 105.9966* | 480 | Gao (1982) |
| 41 | *S. undulatus* | Illiciaceae: *Illicium verum* Hook.f. | (Kwangsi): Bose Xian | 23.9349* | 106.3855* | 400 | Tsai (1978) |
| 42 | *S. valvules* | | Guangxi (Kwangsi): Jinxiu Yaozu Zizhixian | 24.1341* | 110.1846* | 800 | Tsai (1978) |
| 43 | *S. wuyinicus* | Altingiaceae: *Liquidambar formosana* Hance | Shaowu, Xian | 27.3300* | 117.4873* | 234* | Ping (1981) |
| 44 | *S. xichangensis* | | Q'onghai lake, Xichang | 27.8357* | 102.2774* | 1500 | Huang and Zhu (1986) |
| 45 | *S. hulumicus* | Ulmaceae: *Zelkova serrata* (Thunb.) Makino | Luanshan | 22.9139 | 121.1839 | 605 | Liang *et al.* (2017) |

*Estimated latitude, longitude, or altitude

**Table S2.** List of termite mitogenome sequences used in this study.

| Species name | Accession no. |
|---|---|
| *Reticulitermes flavipes* | EF206314 |
| *Reticulitermes santonensis* | EF206315 |
| *Reticulitermes flavipes* | EF206316 |
| *Reticulitermes flavipes* | EF206317 |
| *Reticulitermes virginicus* | EF206318 |
| *Reticulitermes virginicus* | EF206319 |
| *Reticulitermes hageni* | EF206320 |
| *Macrotermes barneyi* | JX050221 |
| *Mastotermes darwiniensis* | JX144929 |
| *Porotermes adamsoni* | JX144930 |
| *Microhodotermes viator* | JX144931 |
| *Zootermopsis angusticollis* | JX144932 |
| *Neotermes insularis* | JX144933 |
| *Coptotermes lacteus* | JX144934 |
| *Schedorhinotermes breinli* | JX144935 |
| *Heterotermes sp.* | JX144936 |
| *Macrotermes subhyalinus* | JX144937 |
| *Drepanotermes sp.* | JX144938 |
| *Macrognathotermes errator* | JX144939 |
| *Nasutitermes triodiae* | JX144940 |
| *Zootermopsis nevadensis* | KJ958410 |
| *Reticulitermes chinensis* | KM216388 |
| *Macrotermes natalensis* | KM405637 |
| *Odontotermes formosanus* | KP026254 |
| *Sinocapritermes mushae* | KP026255 |
| *Prorhinotermes canalifrons* | KP026256 |
| *Glyptotermes satsumensis* | KP026257 |
| *Dolichorhinotermes longilabius* | KP026258 |
| *Hodotermopsis sjostedti* | KP026259 |

| | |
|---|---|
| *Nasutitermes takasagoensis* | KP026260 |
| *Nasutitermes nr.* | KP026261 |
| *Embiratermes neotenicus* | KP026262 |
| *Glyptotermes sp.* | KP026263 |
| *Serritermes serrifer* | KP026264 |
| *Cubitermes fungifaber* | KP026265 |
| *Promirotermes redundans* | KP026266 |
| *Ancistrotermes pakistanicus* | KP026267 |
| *Postsubulitermes parviconstrictus* | KP026268 |
| *Jugositermes tuberculatus* | KP026269 |
| *Synacanthotermes sp.* | KP026270 |
| *Duplidentitermes sp.* | KP026271 |
| *Astalotermes sp.* | KP026272 |
| *Procubitermes arboricola* | KP026273 |
| *Ateuchotermes sp.* | KP026274 |
| *Amalotermes phaeocephalus* | KP026275 |
| *Leptomyxotermes doriae* | KP026276 |
| *Cephalotermes rectangularis* | KP026277 |
| *Pericapritermes nigerianus* | KP026278 |
| *Sphaerotermes sphaerothorax* | KP026279 |
| *Acanthotermes acanthothorax* | KP026280 |
| *Basidentitermes aurivillii* | KP026281 |
| *Aderitotermes sp.* | KP026282 |
| *Cryptotermes secundus* | KP026283 |
| *Rugitermes sp.* | KP026284 |
| *Caetetermes taquarussu* | KP026285 |
| *Neocapritermes araguaia* | KP026286 |
| *Anoplotermes group* | KP026287 |
| *Silvestritermes holmgreni* | KP026288 |
| *Orthognathotermes aduncus* | KP026289 |
| *Constrictotermes cavifrons* | KP026290 |

| | |
|---|---|
| *Glossotermes occulatus* | KP026291 |
| *Labiotermes labralis* | KP026292 |
| *Syntermes spinosus* | KP026293 |
| *Cavitermes tuberosus* | KP026294 |
| *Parrhinotermes browni* | KP026295 |
| *Nasutitermes bikpelanus* | KP026296 |
| *Microcerotermes biroi* | KP026297 |
| *Termitogeton planus* | KP026298 |
| *Neotermes sp.* | KP026299 |
| *Glyptotermes sp.* | KP026300 |
| *Glyptotermes sp.* | KP026301 |
| *Cornitermes sp.* | KP091688 |
| *Cubitermes ugandensis* | KP091689 |
| *Microcerotermes parvus* | KP091690 |
| *Nasutitermes corniger* | KP091691 |
| *Neocapritermes taracua* | KP091692 |
| *Termes hospes* | KP091693 |
| *Reticulitermes aculabialis* | KP334994 |
| *Coptotermes testaceus* | KR872938 |
| *Reticulitermes labralis* | KT224427 |

**Table S3.** Sampling information of mitochondrial genomes.

| Name | Family | Collecting Locality | References | Accession no. |
|---|---|---|---|---|
| *Locusta migratoria* | Acrididae | GenBank | Flook *et al.* (1995) | X80245 |
| *Megacrania alpheus* | Phasmatidae | GenBank | Kômoto *et al.* (2011) | AB477471 |
| *Sclerophasma paresisensis* | Mantophasmatidae | GenBank | Cameron *et al.* (2006) | DQ241798 |
| *Leptomantella albella* | Tarachodidae | GenBank | Wang *et al.* (2016) | NC024028 |
| *Tamolanica tamolana* | Mantidae | GenBank | Cameron *et al.* (2006) | NC007702 |
| *Hierodula formosana* | Mantidae | GenBank | Tian *et al.* (2017a) | NC029326 |
| *Eupolyphaga sinensis* | Blattidae | GenBank | Zhang *et al.* (2010) | NC014274 |
| Blattodea sp. | - | GenBank | Tang *et al.* (2014) | KM244690 |
| *Blattella germanica* | Blattellidae | GenBank | Xiao *et al.* (2012) | NC012901 |
| *Blattella bisignata* | Blattellidae | GenBank | Chen (2013) | NC018549 |
| *Blaptica dubia* | Blattellidae | GenBank | Tian *et al.* (2017b) | NC029224 |
| *Opisthoplatia orientalis* | Blaberidae | GenBank | Tian *et al.* (2017b) | NC029225 |
| *Periplaneta fuliginosa* | Blattidae | GenBank | Yamauchi *et al.* (2004) | NC006076 |
| *Periplaneta americana* | Blattidae | GenBank | Xiao *et al.* (2012) | NC016956 |
| *Cryptocercus relictus* | Cryptocercidae | GenBank | Cameron *et al.* (2012) | NC018132 |
| *Mastotermes darwiniensis* | Mastotermitidae | GenBank | Cameron *et al.* (2012) | NC018120 |
| *Porotermes adamsoni* | Stolotermitidae | GenBank | Cameron *et al.* (2012) | NC018121 |
| *Hodotermopsis sjostedti* | Archotermopsidae | GenBank | Bourguignon *et al.* (2015) | KP026259 |
| *Microhodotermes viator* | Hodotermitidae | GenBank | Cameron *et al.* (2012) | NC018122 |
| *Zootermopsis angusticollis* | Archotermopsidae | GenBank | Cameron *et al.* (2012) | NC018123 |
| *Zootermopsis nevadensis* | Archotermopsidae | GenBank | Qian (2016) | NC024658 |
| *Glyptotermes sp.* | Kalotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026263 |
| *Glyptotermes sp.* | Kalotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026301 |
| *Glyptotermes satsumensis* | Kalotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026257 |
| *Glyptotermes sp.* | Kalotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026300 |
| *Rugitermes sp.* | Kalotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026284 |
| *Cryptotermes secundus* | Kalotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026283 |
| *Neotermes sp.* | Kalotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026299 |
| *Neotermes insularis* | Kalotermitidae | GenBank | Cameron *et al.* (2012) | NC018124 |
| *Stylotermes halumicus* (TW5238) | Stylotermitidae | Taitung, Taiwan. (2015-Nov-13) | this study | KY449045 |
| *Stylotermes halumicus* (CN13) | Stylotermitidae | Yaan, Sichuan, China (2016-May-01) | this study | KY449046 |
| *Stylotermes halumicus* (CN14) | Stylotermitidae | Xichang, Sichuan, China (2016-May-02) | this study | KY449047 |
| *Stylotermes halumicus* (Chi15-131) | Stylotermitidae | Xishuangbanna, Yunnan, China (2016-Mar-25) | this study | KY449048 |

| | | | | |
|---|---|---|---|---|
| *Stylotermes* sp. (Chi15-156) | Stylotermitidae | Guangxi, China (2016-Mar-29) | this study | KY449049 |
| *Parrhinotermes browni* | Rhinotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026295 |
| *Dolichorhinotermes longilabius* | Rhinotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026258 |
| *Schedorhinotermes breinli* | Rhinotermitidae | GenBank | Cameron *et al.* (2012) | NC018126 |
| *Termitogeton planus* | Rhinotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026298 |
| *Serritermes serrifer* | Serritermitidae | GenBank | Bourguignon *et al.* (2015) | KP026264 |
| *Glossotermes occulatus* | Serritermitidae | GenBank | Bourguignon *et al.* (2015) | KP026291 |
| *Prorhinotermes canalifrons* | Rhinotermitidae | GenBank | Bourguignon *et al.* (2015) | KP026256 |
| *Heterotermes sp.* | Rhinotermitidae | GenBank | Cameron *et al.* (2012) | NC018127 |
| *Coptotermes testaceus* | Rhinotermitidae | GenBank | Li *et al.* (2016) | NC028722 |
| *Coptotermes formosanus* | Rhinotermitidae | GenBank | Tokuda *et al.* (2012) | NC015800 |
| *Coptotermes lacteus* | Rhinotermitidae | GenBank | Cameron *et al.* (2012) | NC018125 |
| *Reticulitermes aculabialis* | Rhinotermitidae | GenBank | Kai *et al.* (2016) | NC026695 |
| *Reticulitermes labralis* | Rhinotermitidae | GenBank | Su *et al.* (2016) | KT224427 |
| *Reticulitermes chinensis* | Rhinotermitidae | GenBank | Chen *et al.* (2016) | NC025567 |
| *Reticulitermes hageni* | Rhinotermitidae | GenBank | Cameron and Whiting (2007) | NC009501 |
| *Reticulitermes virginicus* | Rhinotermitidae | GenBank | Cameron and Whiting (2007) | EF206319 |
| *Reticulitermes virginicus* | Rhinotermitidae | GenBank | Cameron and Whiting (2007) | NC009500 |
| *Reticulitermes flavipes* | Rhinotermitidae | GenBank | Cameron and Whiting (2007) | EF206316 |
| *Reticulitermes flavipes* | Rhinotermitidae | GenBank | Cameron and Whiting (2007) | EF206317 |
| *Reticulitermes flavipes* | Rhinotermitidae | GenBank | Cameron and Whiting (2007) | NC009498 |
| *Reticulitermes santonensis* | Rhinotermitidae | GenBank | Cameron and Whiting (2007) | NC009499 |
| *Ancistrotermes pakistanicus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026267 |
| *Acanthotermes acanthothorax* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026280 |
| *Odontotermes formosanus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026254 |
| *Synacanthotermes sp.* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026270 |
| *Macrotermes barneyi* | Termitidae | GenBank | Wei *et al.* (2012) | NC018599 |
| *Macrotermes subhyalinus* | Termitidae | GenBank | Cameron *et al.* (2012) | NC018128 |
| *Macrotermes natalensis* | Termitidae | GenBank | Meng *et al.* (2016) | NC025522 |
| *Sphaerotermes sphaerothorax* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026279 |
| *Duplidentitermes sp.* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026271 |
| *Jugositermes tuberculatus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026269 |
| *Anoplotermes sp.* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026287 |
| *Astalotermes sp.* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026272 |
| *Amalotermes phaeocephalus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026275 |
| *Ateuchotermes sp.* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026274 |
| *Aderitotermes sp.* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026282 |

| | | | | |
|---|---|---|---|---|
| *Promirotermes redundans* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026266 |
| *Cephalotermes rectangularis* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026277 |
| *Postsubulitermes parviconstrictus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026268 |
| *Leptomyxotermes doriae* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026276 |
| *Caetetermes taquarussu* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026285 |
| *Constrictotermes cavifrons* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026290 |
| *Nasutitermes nr. perparvus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026261 |
| *Nasutitermes takasagoensis* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026260 |
| *Nasutitermes corniger* | Termitidae | GenBank | Dietrich and Brune (2016) | NC026115 |
| *Nasutitermes bikpelanus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026296 |
| *Nasutitermes triodiae* | Termitidae | GenBank | Cameron *et al.* (2012) | NC018131 |
| *Neocapritermes araguaia* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026286 |
| *Neocapritermes taracua* | Termitidae | GenBank | Dietrich and Brune (2016) | NC026116 |
| *Microcerotermes biroi* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026297 |
| *Microcerotermes parvus* | Termitidae | GenBank | Dietrich and Brune (2016) | NC026114 |
| *Syntermes spinosus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026293 |
| *Cornitermes sp.* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP091688 |
| *Labiotermes labralis* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026292 |
| *Embiratermes neotenicus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026262 |
| *Silvestritermes holmgreni* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026288 |
| *Sinocapritermes mushae* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026255 |
| *Pericapritermes nigerianus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026278 |
| *Orthognathotermes aduncus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026289 |
| *Drepanotermes sp.* | Termitidae | GenBank | Cameron *et al.* (2012) | NC018129 |
| *Cavitermes tuberosus* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026294 |
| *Macrognathotermes errator* | Termitidae | GenBank | Cameron *et al.* (2012) | NC018130 |
| *Termes hospes* | Termitidae | GenBank | Dietrich and Brune (2016) | NC026117 |
| *Procubitermes arboricola* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026273 |
| *Basidentitermes aurivillii* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026281 |
| *Cubitermes fungifaber* | Termitidae | GenBank | Bourguignon *et al.* (2015) | KP026265 |
| *Cubitermes ugandensis* | Termitidae | GenBank | Dietrich and Brune (2016) | NC026113 |

**Table S4.** Best-fit partition scheme used in this study. The best-fit partitions and models were inferred by PartitionFinder using BIC criterion (Lanfear *et al.* 2012).

| Strategies | Method | Partition nos. | Partition scheme |
|---|---|---|---|
| 1 | Bayesian | 17 | atp6 pos1, cob pos1, cox2 pos1, cox3 pos1 (GTR+I+G); atp6 pos2, cob pos2, cox2 pos2, cox3 pos2, nad3 pos2 (GTR+I+G); atp6 pos3, cox2 pos3 (GTR+I+G); atp8 pos1, nad6 pos1 (GTR+I+G); atp8 pos2, nad2 pos2, nad6 pos2 (GTR+I+G); atp8 pos3, nad3 pos3, nad6 pos3 (GTR+I+G); cob pos3, cox3 pos3 (GTR+I+G); cox1 pos1 (GTR+I+G); cox1 pos2 (GTR+I+G); cox1 pos3 (GTR+G); nad1 pos1, nad4 pos1, nad4l pos1, nad5 pos1 (GTR+I+G); nad1 pos2, nad4 pos2, nad4l pos2, nad5 pos2 (GTR+I+G); nad1 pos3, nad4 pos3, nad4l pos3, nad5 pos3 (GTR+I+G); nad2 pos1, nad3 pos1 (GTR+I+G); nad2 pos3 (HKY+G); rrnL, rrnS (GTR+I+G); tRNAs (GTR+I+G) |
| 2 | ML | 17 | GTRGAMMA model for each partition as strategy 1 |

**Table S5.** High-throughput sequencing output for each termite sample.

| TW5238 | Count | Percentage of reads | Average length | Number of bases | Percentage of bases |
|---|---|---|---|---|---|
| References | 1 | - | 15855 | 15855 | - |
| Mapped reads | 12712 | 0.12% | 190.95 | 2427336 | 0.12% |
| Not mapped reads | 10883107 | 99.88% | 186.85 | 2033542940 | 99.88% |
| Reads in pairs | 10184 | 0.09% | 374.37 | 2025385 | 0.10% |
| Broken paired reads | 2528 | 0.02% | 159 | 401951 | 0.02% |
| Total reads | 10895819 | 100.00% | 186.86 | 2035970276 | 100.00% |

| CN13 | Count | Percentage of reads | Average length | Number of bases | Percentage of bases |
|---|---|---|---|---|---|
| References | 1 | - | 15861 | 15861 | - |
| Mapped reads | 11929 | 0.42% | 252.97 | 3017722 | 0.45% |
| Not mapped reads | 2817029 | 99.58% | 238.82 | 672766328 | 99.55% |
| Reads in pairs | 10370 | 0.37% | 426.46 | 2661258 | 0.39% |
| Broken paired reads | 1559 | 0.06% | 228.65 | 356464 | 0.05% |
| Total reads | 2828958 | 100.00% | 238.88 | 675784050 | 100.00% |

| CN14 | Count | Percentage of reads | Average length | Number of bases | Percentage of bases |
|---|---|---|---|---|---|
| References | 1 | - | 15854 | 15854 | - |
| Mapped reads | 43499 | 1.44% | 254.49 | 11070066 | 1.50% |
| Not mapped reads | 2976979 | 98.56% | 243.51 | 724922736 | 98.50% |
| Reads in pairs | 41260 | 1.37% | 428.62 | 10554457 | 1.43% |
| Broken paired reads | 2239 | 0.07% | 230.29 | 515609 | 0.07% |
| Total reads | 3020478 | 100.00% | 243.67 | 735992802 | 100.00% |

| Chi15-131 | Count | Percentage of reads | Average length | Number of bases | Percentage of bases |
|---|---|---|---|---|---|
| References | 1 | - | 15805 | 15805 | - |
| Mapped reads | 5807 | 0.25% | 250.61 | 1455313 | 0.26% |
| Not mapped reads | 2342739 | 99.75% | 241.93 | 566786703 | 99.74% |
| Reads in pairs | 5210 | 0.22% | 421.58 | 1324886 | 0.23% |

| | | | | | |
|---|---|---|---|---|---|
| Broken paired reads | 596 | 0.03% | 218.74 | 130370 | 0.02% |
| Total reads | 2348546 | 100.00% | 241.95 | 568242016 | 100.00% |

| Chi15-156 | Count | Percentage of reads | Average length | Number of bases | Percentage of bases |
|---|---|---|---|---|---|
| References | 1 | - | 15858 | 15858 | - |
| Mapped reads | 12094 | 0.49% | 248.76 | 3008530 | 0.52% |
| Not mapped reads | 2445278 | 99.51% | 237.42 | 580561907 | 99.48% |
| Reads in pairs | 11288 | 0.46% | 416.76 | 2832619 | 0.49% |
| Broken paired reads | 806 | 0.03% | 218.25 | 175911 | 0.03% |
| Total reads | 2457372 | 100.00% | 237.48 | 583570437 | 100.00% |

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