Last updated: 11 January 2024

TRYPOXYLON

Trypoxylon Latreille, 1796:121, no included species. Type species: *Sphex figulus* Linnaeus, 1758, designated by Latreille, 1802b:339 (first included species).

Tripoxilon Spinola, 1806:65. Lapsus or emendation of *Trypoxylon* Latreille, 1796.

Apius Panzer, 1806:106. Type species: *Sphex figulus* of Panzer, 1801 [= *Sphex figulus* Linnaeus, 1758], by monotypy.

Apius Jurine, 1807:140, junior homonym of *Apius* Panzer, 1806. Type species: *Sphex figulus* of Fabricius, 1775 [= *Sphex figulus* Linnaeus, 1758], designated by Morice and Durrant, 1915:394.

Trypoxilon Jurine, 1807:141 and tableau comparatif, p. 2. Lapsus or emendation of *Trypoxylon* Latreille, 1796.

Trypoxylum Agassiz, 1846:380. Unjustified emendation of *Trypoxylon* Latreille, 1796.

Trypoxylum W. Schulz, 1906:212, junior homonym of *Trypoxylum* Agassiz, 1846. Unjustified emendation of *Trypoxylon* Latreille, 1796.

Trypargilum Richards, 1934:191. Type species: *Trypoxylon nitidum* F. Smith, 1856, by original designation.

Asaconoton Arnold, 1959:322. Type species: *Trypoxylon egregium* Arnold, 1959, by original designation.

Keys to species: Arnold, 1924:11 (Afrotropical species); Richards, 1934 (North and South America); Sandhouse, 1940 (Nearctic Region), with addition by Krombein, 1962a; Tsuneki, 1966b:1 (Ryukyu Islands and Taiwan); Leclercq, 1965a:81 (Afrotropical species); Richards, 1969:122 (*Trypargilum* of Greater Antilles); Alayo Dalmau, 1976:7 (Cuba); Tsuneki, 1967d:1 (Taiwan), 1976b:93 (Philippines), 1978a (*Trypoxylon scutatum* species group of Oriental and Australian regions, also Madagascar), 1979a (Indian subcontinent and southeastern Asia), 1979b (Sri Lanka), 1979c (Sumatra, Java, and Lesser Sunda Islands), 1980a (Borneo, Sulawesi, and Moluccas), 1980b (Philippines), 1981a (New Guinea and South Pacific Islands), 1981b (Australia), 1981c (Taiwan), 1981d:17 (Sri Lanka), 61 (Myanmar), 1981e (Japan and northeastern Asia), 1981f:2, 83 (species groups); Antropov, 1991b (*Trypoxylon attenuatum* species group), 2003 (North American species of *Trypoxylon figulus* species group), 2011 (*Trypoxylon scutatum* species group of eastern Mediterranean Region and southwestern Asia); Olszewski and Pawlikowski, 2014 (Poland); Pham, Nguyen, and Antropov, 2023 (northern Vietnam).

Revisions: Richards, 1934 (North and South America), supplemented by Gemignani, 1933, 1940, 1941; Sandhouse, 1940 (North America); Coville, 1982b (North American species of subgenus *Trypargilum*).

Key to larvae: Evans, 1959b.

Key to subgenera of *Trypoxylon* and to species groups of *Trypargilum*: Amarante, 2005b (*Trypoxylon scrobiferum* species group recognized).

Male behavior: Brockmann, 1992 (*monteverdeae*)

Study of karyotypes: Gomes, Pompolo, and Campos, 1997.

Nest: Barth, 1910:121.

Review of biology: Kazenas, 2001b:173.

Nest parasite: Pagliano and Scaramozzino, 2000:21 (*Gasteruption assectator* (Linnaeus) on *Trypoxylon* sp.), 29 (*Gasteruption jaculator* (Linnaeus) on *Trypoxylon* sp.), 31 (*Gasteruption opacum* (Tournier) on *Trypoxylon figulus*).

Subgenus *Trypoxylon* s.s.

1. *abditum* Arnold

Trypoxylon abditum Arnold, 1924:24, ♂. Syntypes: South Africa: Westernn Cape Province: George; and Zimbabwe: Bulawayo (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:338 (member of *Trypoxylon scutatum* species group); Arnold, 1944:18 (description of ♀); Leclercq, 1965a:98 and 100 (in key to Afrotropical *Trypoxylon*), 126 (in revision of Afrotropical *Trypoxylon*; Zaire); de Beaumont, 1967b:511 (South Africa: Cape Province); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1981f:46 (single member of *Trypoxylon abditum* species group; as *abdidum*); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains); Antropov, 1993b:53 (Central African Republic); Hancock, Chahwanda, and Mhlanga, 1995:40 (paratype in Bulawayo Museum).

2. *acutangulum* Arnold

Trypoxylon acutangulum Arnold, 1951:99, ♀. Holotype: ♀, Niger: Niamey (BMNH). – Leclercq, 1965a:98 (in key to Afrotropical *Trypoxylon*), 127 (bibliographic reference); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

3. *aegyptium* Kohl

Trypoxylon aegyptium Kohl, 1906a:202, ♀. Holotype or syntypes: ♀, Egypt: no specific locality (NHMW). – Gussakovskij, 1936:650 (in revision of Palearctic *Trypoxylon*; as *aegyptiacum*; *scutigerum* Taschenberg is possibly a senior synonym); de Beaumont, 1953a:175 (Mauritania; as *aegyptiacum*), 1956a:215 (Libya; as *aegyptiacum*), 1958b:66 (Algeria: Tassili des Ajjer; as *aegyptiacum*); Pulawski, 1964:142 (Egypt: Luxor, Saqqara; description of ♂); Krombein, 1969a:7 (nest structure, prey); de Beaumont, Bytinski-Salz and Pulawski, 1973:20 (Israel); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Roche and Zalat, 1994:116 (Egypt: Sinai Peninsula); Roche, 2007a:100 and 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Antropov, 2011a:614 (in key to *Trypoxylon scutatum* species group of eastern Mediterranean Region and southwestern Asia); Khosroabadi, Fallahzadeh, Schmid-Eger, and Dousti, 2019:440 (Iran: Fars: Neyriz-Ghatruyeh at 29º10"N 54º41'E); Gadallah, 2020b:58 (in list of aculeate wasps of Arabian Peninsula).

4. *aeneipenne* Arnold

Trypoxylon aeneipenne Arnold, 1944:71, ♀ (as *aeneipennis*, incorrect original termination). Holotype: ♀, Zaire: Megera Lake in Albert National Park (MRAC). – **As *Trypoxylon aeneipenne***: Leclercq, 1965a:85 (in key to Afrotropical *Trypoxylon*), 107 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

5. *albipes* F. Smith

Trypoxylon albipes F. Smith, 1856:377, ♀. Lectotype: ♀, Albania: no specific locality (OXUM), designated by Antropov, 1986b:627. – Kirchner, 1867:223 (in catalog of European Hymenoptera); Kohl, 1885a:194 (in key to European *Trypoxylon*), 201 (original description copied), 202 (in checklist of world *Trypoxylon*); Ed. André, 1888:207 (in revision of Sphecidae of Europe and Algeria), 17* (bibliographic references); Kohl, 1893a:30 (redescription, Albania, Spain: Granada); Medina, 1894a:260 (Spain: Sevilla), 1896:104 (record of 1894a was first record from Spain); Dalla Torre, 1897:700 (in catalog of world Hymenoptera); Mercet, 1906c:465 (in key to Palearctic species); Richards, 1931:244 (redescription; France: Bouche-du-Rhône: Cassis), 1934:315 (member of *Trypoxylon figulus* species group); Gussakovskij, 1936:654 (in revision of Palearctic *Trypoxylon*); Giner Marí, 1943a:216 (in Sphecid Fauna of Spain); de Beaumont, 1947b:396 (Cyprus); Ceballos, 1949:102 (Spain); Pittioni, 1950:26 (Cyprus); Ceballos, 1956:391 (in catalog of Hymenoptera of Spain); Compte Sart, 1959:138 (Spain: Mayorca); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1965a:56 (Greece), 1969:92 (Turkey); Balthasar, 1972:229 (in Sphecid Fauna of Czechoslovakia: may be expected in

the country); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Georghiou, 1977:193 (Cyprus); Antropov, 1986b:627 (Syria, Greece, Albania, Azerbaijan, Uzbekistan, Turkmenistan, Tajikistan); Gayubo, 1987a:117 (Spain: Ciudad Real Province); Gayubo and Mingo, 1988:87 (Spain); Antropov, 1994c:125 (synonymy; Italy, Spain, Algeria, Egypt, Syria, Israel, Turkey, Armenia, Tajikistan, Pakistan); Antropov *in* Bitsch et al., 2001:381 (in Sphecid Fauna of Western Europe); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia); Gayubo, Özbek, and Yıldırım, 2003:90 (Turkey: Iğdır: Aralık: Devlet Üretme Çiftliği); Pagliano and Negrisolo, 2005:416 (in Sphecid Fauna of Italy); Yildirim and Ljubomirov, 2005:1799 (Turkey: Kahramanmaraş: Tömek); Roche, 2007a:100 and 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Ljubomirov and Yildirim, 2008:238 (in catalog of Crabronidae of Turkey); Ebrahimi, 2014:42 (Iran: Markazi: Khomein: Shahābieh); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Atbaei, Fallahzadeh, and Ljubomirov, 2015:26 (Iran: Fars Province); Koçak and Kemal, 2015:153 (in checklist of Hymenoptera of Turkey); Rezaei and Fallahzadeh, 2015:11 (Iran: Fars: Kaftarak at 29°34′N 52°41′E); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:39 (Turkey: Tunceli: Çiçekli); Jahantigh, Rakhshani; Mokhtari, and Ramroodi, 2017:69 (Iran: known from Fars and Markazi provinces); Kemal and Koçak, 2018:35 (Turkey: in list of pterygot insects of Van Province); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:397 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2021:78 (in catalog of Crabronidae of Turkey); Mokrousov and Proshchalykin, 2021a:327 (Russia: Dagestan: near Izberbash at 42.587°N 47.8202°E; Uzbekistan); Kaplan and Yildirim, 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

Trypoxylon mediator Nurse, 1903b:8, ♀, ♂. Lectotype: ♀, Pakistan: Quetta (BMNH), designated by Tsuneki, 1978b:63. Synonymized with *Trypoxylon albipes* by Antropov, 1994c:125. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:63 (redescription), 76 (in key to Oriental *Trypoxylon*), 1979a:9 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 70 (Pakistan: Quetta; comments), 1981f:31 (single member of *Trypoxylon mediator* species group).

Trypoxylon sulcifrons Gussakovskij, 1936:654, ♀, ♂. Lectotype: ♂, Turkmenistan: Farab (ZIL), designated by Antropov, 1986b:627 (ZIN). Synonymized with *Trypoxylon albipes* by Antropov, 1986b:627. – Gussakovskij, 1935:421 (Tajikistan: Kulab; nomen nudum); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Kazenas, 1978b:147 (in key to Sphecidae of Kazakhstan and Central Asia); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast').

6. *albispinosum* Tsuneki

Trypoxylon albispinosum Tsuneki, 1979a:173, ♂. Holotype: ♂, Laos: Vientiane Province: Gi Sion Vill. de Tha Ngone (Bishop Mus.). – Tsuneki, 1979a:18 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:29 (India; additional description), 78 (Hong Kong), 1981f:54 (member of *Trypoxylon mindanaonis* species group).

7. *albitarsatum* Tsuneki

Trypoxylon albitarsatum Tsuneki, 1977h:8, ♀. Holotype: ♀, Bismarck Islands: New Britain: Yalom (ZMUC). – Tsuneki, 1981a:7 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 45 (additional description), 1981f:52 (single member of *Trypoxylon albitarsatum* species group), 1982a:46 (Bismarck Archipelago); Cardale, 1985:264 (in catalog of Australian Sphecidae).

ssp. *huonense* Tsuneki

Trypoxylon huonense Tsuneki, 1977h:14, ♂, ♀. Holotype: ♂, Papua New Guinea: Huon Golf: Simbang (TMB). – **As *Trypoxylon albitarsatum huonense***: Tsuneki, 1981a:6, 7 (new status, in key to *Trypoxylon* of New Guinea

and South Pacific Islands), 46 (New Guinea; new status), 1981b:100 (in key to *Trypoxylon* of Australia), 103 (Australia: Queensland); Cardale, 1985:264 (in catalog of Australian Sphecidae).

ssp. *muruanum* Tsuneki

Trypoxylon albitarsatum muruanum Tsuneki, 1981a:49, ♀. Holotype: ♀, Papua New Guinea: Milne Bay District: Island of Woodlark (Murua): Kulumalau Hill (Bishop Mus.). – Tsuneki, 1981a:6, 7 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

8. *algoense* Arnold

Trypoxylon algoensis Arnold, 1924:15, ♀, ♂, incorrect original termination. Syntypes: South Africa: Eastern Cape Province: Algoa Bay near Port Elizabeth (TMP). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:89 (in key to Afrotropical *Trypoxylon*), 115 (bibliographic reference); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

9. *amankutanum* Antropov

Trypoxylon amankutanum Antropov, 1986b:625, ♀. Holotype: ♀, Uzbekistan: Aman Kutan (ZMMU). – Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia).

10. *amatorium* Tsuneki

Trypoxylon amatorium Tsuneki, 1980a:91, ♂. Holotype: ♂, Malaysia: northern Borneo: Sandakan (USNM). – Tsuneki, 1980a:11 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas); Nuhn and Menke, 1994:25 (holotype in USNM).

11. *ambiguum* Tsuneki

Trypoxylon ambiguum Tsuneki, 1956g:21, ♂. Holotype: ♂, Japan: Fukui Province: Ohno (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956f:122 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:8 (in key to *Trypoxylon* of northeastern Asia), 1958e:54 (Japan: city of Toyama), 1972b:5 (redescription, description of ♀), 1973e:32, 36 (in key to *Trypoxylon* of Japan, in Japanese); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1981e:6 (in key to *Trypoxylon* of Japan and northeastern Asia), 56 (redescription); Antropov, 1987:58 (Kuril Islands: Island of Kunashir); Tano, 1994a:5 (holotype in K. Tsuneki collection); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:416 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.); Nemkov, 2007b:70 (Russia: Kuril Islands: Island of Kunashir), 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:84 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Terayama and Nambu, 2009:7, 24 (in key to Trypoxylini of Japan), 2011:95 (known only from Kuril Islands and Japan); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); Antropov, 2017b:244 (in catalog of Crabroninae of Russia); Antropov and Kochetkov, 2019:50 (Russia: first record from continenal Far East: Khingan Nature Reserve).

12. *anamalaiense* Tsuneki

Trypoxylon anamalaiense Tsuneki, 1979a:124, ♀, ♂. Holotype: ♀, India: Madras: Anamalai Hills: Cinchona (RMNH). – Tsuneki, 1979a:14, 15 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:67 (single member of *Trypoxylon anamalaiense* species group).

13. *angoramum* Tsuneki

Trypoxylon angoramum Tsuneki, 1981a:27, ♂, ♀. Holotype: ♂, New Guinea: ♂, East Sepik: Angoram (Bishop Mus.). – Tsuneki, 1981a:5, 6 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:20 (one of three members of *Trypoxylon angoramum* species group).

14. *angustum* Tsuneki

Trypoxylon angustum Tsuneki, 1979a:89, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

15. *antennatum* Tsuneki

Trypoxylon antennatum Tsuneki, 1979a:68, ♂, ♀. Holotype: ♂, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:8, 12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979c:5, 8 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 28 (Java), 1980a:20 (Malaysia: northern Borneo), 1981f:53 (single member of *Trypoxylon antennatum* species group).

ssp. *longulum* Tsuneki

Trypoxylon antennatum longulum Tsuneki, 1980a:21, ♀, ♂. Holotype: ♂, Malaysia: northern Borneo: Forest Camp 19 km north of Kalabakan (Bishop Mus.). – Tsuneki, 1980a:4 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

16. *apicatum* Tsuneki

Trypoxylon apicatum Tsuneki, 1979a:144, ♂. Holotype: ♂, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:14 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:48 (member of *Trypoxylon apicatum* species group).

17. *apicum* Tsuneki

Trypoxylon apicum Tsuneki, 1980b:109, ♀. Holotype: ♀, Philippines: Luzon: Mount Makiling (Bishop Mus.). – Tsuneki, 1980b:11 (in key to *Trypoxylon* of Philippines).

18. *appendiculatum* Tsuneki

Trypoxylon appendiculatum Tsuneki, 1974b:632, ♂. Holotype: ♂, Malaysia: Borneo: Mount Kinabalu (T. Tano coll., Fukui). – R. Bohart and Menke, 1976:630 (in checklist of world Sphecidae); Tsuneki, 1979a:9, 16 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 162 (Malaysia), 1980a:5, 9 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 21 (Borneo), 1980b:5, 6 (in key to *Trypoxylon* of Philippines), 32 (Philippines; additional description; description of ♂), 1981f:23 (member of *Trypoxylon appendiculatum* species group).

19. *arabicum* Gussakovskij

Trypoxylon arabicum Gussakovskij, 1936:649, ♀, ♂. Syntypes: Yemen: Sanaa (ZIL). – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1978a:21 and 40 (tentative synonym of *Trypoxylon schmiedeknechti*); Guichard, 1980:228 (Oman); Antropov, 2011a:615 (in key to *Trypoxylon scutatum* species group of eastern Mediterranean Region and southwestern Asia); Gadallah, 2020b:58 (in list of aculeate wasps of Arabian Peninsula).

20. *arnoldi* Menke

Trypoxylon cognatum Arnold, 1924:21, ♀, ♂, junior primary homonym of *Trypoxylon cognatum* Cameron, 1897. Syntypes: Zimbabwe: Sawmills; South Africa: KwaZulu-Natal: Mfongosi (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae), 1959:324 (Tanzania: Rukwa Valley); Leclercq, 1965a:97 and 98 (in key to Afrotropical *Trypoxylon*), 124 (in revision of Afrotropical *Trypoxylon*; Zaire, Zimbabwe, also "Est Africain": Perhalorge Port); I. Robertson, 1969:480 (Tanzania: Ukiriguru); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntypes in Bulawayo Museum).

Trypoxylon arnoldi Menke *in* R. Bohart and Menke, 1976:345. Substitute name for *Trypoxylon cognatum* Arnold, 1924.

21. *arroyense* Richards

Trypoxylon arroyense Richards, 1934:298, ♂. Holotype: ♂, Mexico: Guerrero: Dos Arroyos (BMNH). Paratype: Panama. – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

22. *arudum* Leclercq

Trypoxylon arudum Leclercq, 1965a:103, ♀, ♂. Holotype: ♀, Zaire: Garamba National Park: Ndelele (MRAC). – Leclercq, 1965a:83 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains, as *arundum*).

23. *ashmeadi* Baltazar

Trypoxylon elongatum Ashmead, 1905:961, ♀, junior primary homonym of *Trypoxylon elongatum* F. Smith, 1856. Holotype: ♀, Philippines: Manila (USNM). – R. Brown, 1906:687 (in catalog of Philippine Hymenoptera); F. Williams, 1919d:143 (Philippines: Luzon: Los Baños: nesting habits); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Evans, 1957b:97 (description of larva).

Trypoxylon ashmeadi Baltazar, 1966:336. Substitute name for *Trypoxylon elongatum* Ashmead, 1905. – Tsuneki, 1978b:72 (redescription), 1980b:8 (in key to *Trypoxylon* of Philippines), 79 (Philippines; description of ♂; additional description), 1981f:75 (member of *Trypoxylon bicolor* species group).

24. *asinum* Leclercq

Trypoxylon asinum Leclercq, 1965a:108, ♀, ♂. Holotype: ♂, Zaire: Kivu du Nord: Rutshuru (MRAC). – Leclercq, 1965a:85 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

25. *asuncicola* Strand

Trypoxylon asuncicola Strand, 1910a:173, ♀, ♂. Lectotype: ♀, Paraguay: Asunción (NMHU), designated by Richards, 1934:288. – Strand, 1912:286 (nest structure), 1927:255 (in list of species described by the author); Richards, 1934:288 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 1993:19 (northeastern Brazil); Gomes, Pompolo, and Campos, 1995:174 (chromosome number n = 16); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Peruquetti and Del Lama, 2003a:297 (nesting habits)..

ssp. *levius* Richards

Trypoxylon asuncicola var. *levius* Richards, 1934:288, ♀. Holotype: ♀, Brazil: Rio de Janeiro (NHMW). – Richards, 1934:345 (nest structure). – **As *Trypoxylon asuncicola levius***: R. Bohart and Menke, 1976:345 (new status, in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

26. *atricorne* Tsuneki

Trypoxylon melanocorne Tsuneki, 1979a:121, ♀, ♂, junior primary homonym of *Trypoxylon melanocorne* Strand, 1922. Holotype: ♀, Singapore (USNM). – Tsuneki, 1979a:14, 15, 17 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Nuhn and Menke, 1994:26 (holotype in USNM)

Trypoxylon atricorne Tsuneki, 1979c:59. Substitute name for *Trypoxylon melanocorne* Tsuneki. – Tsuneki, 1979c:10 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 59 (Indonesia: Java), 1981f:62 (single member of *Trypoxylon atricorne* species group).

ssp. *planum* Tsuneki

Trypoxylon atricorne planum Tsuneki, 1979c:59,♀. Holotype: ♀, Indonesia: Island of West Sumba: Pogobina (Basel Mus.). – Tsuneki, 1979c:10 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

27. *atrum* Tsuneki

Trypoxylon atrum Tsuneki, 1979a:169, ♀. Holotype: ♀, Laos: Wapikhamtong Province: Khong Sedone, Wapi (Bishop Mus.). – Tsuneki, 1979a:17 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

28. *attenuatum* F. Smith

Trypoxylon attenuatum F. Smith, 1851:120, ♀. Lectotype: ♂, Great Britain: Bristol (OXUM), designated by Antropov, 1991b:682. – F. Smith, 1853:63 (in checklist of British Hymenoptera), 1855:97 (Great Britain: Bristol),

1856:376 (in catalog of Hymenoptera in British Museum), 1857d:40 (Great Britain: Devon and Surrey: Reigate Common), 1858c:80 (in review of British Aculeata, redescription); Schenck, 1860:147 (Germany: Nassau region), 1861:151 (redescription, Germany: Nassau Region: Weisel); Kirchner, 1867:223 (in catalog of European Hymenoptera); Schenck, 1867a:353 (Germany: Nassau Region); Thomson, 1870:250 (in revision of Swedish wasps); F. Smith, 1871b:13 (in catalog of British Aculeata); Thomson, 1874:253 (in revision of Hymenoptera of Scandinavia); Becker, 1880:153 (Russia: Sarepta, now Krasnoarmeysk south of Volgograd); E. Saunders, 1880:278 (in revision of British Aculeata); Marquet, 1881:184 (southern France); Kohl, 1885a:194 (in key to European *Trypoxylon*), 197 (in revision of European *Trypoxylon*), 202 (in checklist of world *Trypoxylon*); Wüstnei, 1886:38 (Germany: Schleswig-Holstein: Sonderburg); Ed. André, 1888:209 (in revision of Sphecidae of Europe and Algeria), 18* (bibliographic references); Kohl, 1888b:723 (Austria: Tirol, now Italy: Alto Adige), 1883e:657 (Switzerland); Gasperini, 1889:68 (Dalmatia: Lesine, now Croatia: Hvar); V. Perkins, 1892:204 (Great Britain: Gloucestershire: Wotton-under-Edge); F. Morawitz, 1893a:113 (Russia: Karelian Isthmus); Sickmann, 1893:81 (Germany: Niedersachsen: Iburg); Krieger, 1894:10 (Germany: Kingdom of Saxony); E. Saunders, 1896:86 (in revision of British Aculeata); Westerlund, 1896:28 (Finland: no specific locality); Borries, 1897:75 (nesting habits); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Mocsáry, 1897:77 (Kingdom of Hungary, some localities are in today's Slovakia); Nevinson, 1900:62 (Great Britain: Wales: Criccieth); Schletterer, 1901:219 (Croatia: southern Istria Peninsula); Pigeot, 1902:63 (nesting habits); E. Saunders, 1902b:143 (Great Britain: Channel Islands: Island of Jersey); de Cobelli, 1903:109 (Italy: Province of Trentino); E. Saunders, 1903b:17 (Great Britain: North Wales), 1903d:246 (Great Britain: Channel Islands: Island of Jersey); Antiga and Bofill, 1904:12 (Spain: Cataluña Province); Aurivillius, 1904:278 (in revision of Swedish Sphecidae); Höppner, 1904:168 (nest parasite: *Eurytoma rubicola* Gir.); E. Saunders, 1904c:604 (Spain: Mayorca); W. Schulz, 1904b:102 (Czechoslovakia); Kubes, 1905:84 (Czech Republic: Vytruby); Mantero, 1905:73 (Italy: Toscana: Isola del Giglio); Dusmet y Alonso, 1906:7 (Spain); Mercet, 1906c:465 (in key to Palearctic species); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); W. Wagner, 1907:131 (nesting in old galls of *Lipara lucens* Meigen, Chloropidae); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Höppner, 1908:179 (mixed nest of *Chevrieria unicolor* and of *Trypoxylon attenuatum*); Dittrich, 1911b:26 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:45 (Italy: Trieste area); Mantero, 1911:75 (Italy: Sardegna: Isola dell'Asinara); Morice, 1911:131 (Algeria: Alger, Bône (now Annaba), and Constantine); M. Müller, 1911:114 (Germany: Brandenburg: no specific locality); Birula, 1912:546 (Ukraine: Zhytomyr Oblast': Radomyshl'); Schirmer, 1912:168 (Germany: Berlin area); Haupt, 1913:51 (Germany: Sachsen-Anhalt: Dolauer Heide and Nietlebener Bruchfelder in Halle area); Alfken, 1914:284 (northwestern Germany); Birula, 1914:390 (Belorussia: Ambrosovichi and Luskinopol' near Vitebsk); Szilády, 1914:88 (Hungary: Nagyenyed); Dusmet y Alonso, 1915:87 (Spain: Aragón); Storey, 1916:108 (Egypt: Barrage, Gezira, Hamul, Ras el Bar); Noskiewicz, 1918:139 (Galicia, now western Ukraine: Janów, Winniki); Dubois, 1919:96 (first record from Belgium: Bruxelles: Uccle); O. Meyer, 1919:157 (Germany: Posen Province, now Poland: Poznań Region); Dubois, 1920:88 (Belgium: Uccle); A. Wagner, 1920:37 (Germany: Lower Elbe region); Chevalier, 1922:46 (nest parasite: *Pachyophtalmus signatus* (Meigen), a calliphorid); Dubois, 1922:217 (in key to Belgian Sphecidae); Hedicke, 1922:272 (Germany: Brandenburg: Gross Machnower Weinberg); Maréchal, 1923:15 (Belgium: Chaudfontaine near Liège); R. Perkins, 1924:229 (Great Britain: Devon); Berland, 1925d:151 (in Sphecid Fauna of France); Bischoff, 1925:302 (Latvia: Jelowka and Wezkukkul; Poland: Grajewo area); Blüthgen, 1925:166 (Germany: Saale River valley: Himmellrleich); Koornneef, 1925:362 (Netherlands: Gelderland: Dieren); R. Perkins, 1925:154 (Great Britain: Gloucestershire and Somersetshire); Schütze, 1925:114 (Germany: Lausitz Region); Bouwman, 1926:280 (in list of Sphecidae of Netherlands); Hémon, 1926:199 (France: Finistère: Fouesnant); von Schulthess, 1926b:219 (Tunisia); Crèvecoeur and Maréchal, 1927:139 (Belgium); Falcoz and Ferrière, 1927:123 (France: mont Pilat in northern Cévennes); Benoist, 1928:410 (France: Alpes-Maritimes: Saint-Martin-Vésubie); Berland,

1928b:179 (add Borries, 1897 to bibliography in Berland, 1925d); Bouwman, 1928a:387 (in revision of Sphecidae of Netherlands); Crèvecoeur and Maréchal, 1928:172 (Belgium: Boitsfort and Comblain-au-Pont); Barovskij, 1929:148 (Russia: Sankt Petersburg); Chevalier, 1929a:14 (nesting habits); Crèvecoeur and Maréchal, 1929:167 (Belgium: Chaudfontaine); Grandi, 1929:277 (nest structure); Hamm and Richards, 1930:121 (summary of nesting habits), 126 (list of prey); Schmiedeknecht, 1930:711 (in keys to Hymenoptera of North and Central Europe); Bischoff, 1931:9 (Spain); Dusmet y Alonso, 1931:6 (Portugal: Mitra); Grandi, 1931:49 (nesting habits), 57 (Italy: Toscana: Vallata delle Pozze near Le Mandriole); Pulkkinen, 1931:103 (in revision of Sphecidae of Finland); Spooner, 1931:15 (Great Britain: Cambridgeshire); Bondroit, 1932:39 (Belgium: Solbosch, Uccle); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Jones, 1932:82 (Great Britain: Nottinghamshire: Bramcote); Mortimer, 1932:108 (nesting in wood confirmed); Nadig, 1933:77 (Morocco: Tizi n'Tichka); Balles, 1934:29 (Germany: Baden-Württemberg: Achern, Oberachern); Bondroit, 1934:60 (Belgium: Watermael); Giner Marí, 1934:135 (Spain); Grandi, 1934:75 (prey: *Xysticus nubilus* E.S., Thomisidae); Jansson, 1934:291 (Sweden); Richards, 1934:35 (member of *Trypoxylon figulus* species group); Bernard, 1935:66 (France: Var: Fréjus area); Forsius *in* Forsius and Hellén, 1935:12 (in checklist of Hymenoptera of Finland); Grandi, 1935a:111 (Italy); Vergne, 1935:119 (France: Auvergne: common); Crèvecoeur and Maréchal, 1936:252 (in catalog of Belgian Hymenoptera); Drogoszewski, 1936:130 (Poland: Łowicz, Opatów); Gussakovskij, 1936:658 (in revision of Palearctic *Trypoxylon*); Maréchal, 1936:386 (review of literature on nesting habits, description of nest); Dulac, 1937:17 (France: Saône-et-Loire: Saint-Laurent d'Andenay); Grandi, 1937:305 (nesting in dry stems); Richards, 1937b:104 (in checklist of British aculeates); Zavadil, Šustera, and Bat'a, 1937:221 (in catalog of Sphecidae of Czechoslovakia); P. Freeman, 1938:4 (nest and prey); Hallett, 1938:73 (Great Britain: Herefordshire: Tarrington); Maréchal, 1938b:211 (Belgium, on leaves of *Tilia*); Móczár, 1938c:80 (Hungary: Kőszeg Hills); A. Wagner, 1938a:124 (northwestern Germany); Giordani Soika, 1939b:74 (Italy: Venezia); Guichard, 1939a:42 (Great Britain: southern Cornwall: Polperro); Móczár, 1939:4 (Hungary: Jászberény); Balthasar, 1941b:114 (Czech Republic: eastern Moravia); de Graham, 1941:99 (Great Britain: Lincolnshire); Leclercq, 1941b:12 (Belgium: Liège area); Paul, 1941:50 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); Schneid, 1941:1053 (Germany: Bayern: Bamberg area); Audcent, 1942:25 (nest parasite: *Amobia signata* Meigen, Sarcophagidae); Balthasar, 1943:42 (Czech Republic: Moravia: Zlin area); Giner Marí, 1943a:216 (in Sphecid Fauna of Spain); Guiglia, 1943b:72 (Albania: Kopliku); Spooner, 1943:71 (Great Britain: Bournemouth, Charmouth); Guiglia, 1944a:149 (Cyprus: Limassol), 1944b:33 (Italy); Richards, 1944a:118 (Great Britain: Wales: Cardigan); Šnoflák, 1944a:144 (Czech Republic: serpentine steppe near Mohelno); T. Fletcher, 1945:53 (Great Britain: Gloucestershire: Wotton); Spooner, 1946:26 (Britain: Leicestershire: Charnwood Forest); de Beaumont, 1947b:396 (Cyprus); Móczár, 1947b:90 (Hungary: Siebenbürgen: Székelykeresztúr, now Romania: Transylvania: Cristuru Secuiese); Balthasar, 1948:144 (Slovakia: Kovačov); Guichard and Yarrow, 1948:89 (Great Britain: London: Hampstead Heath); Guiglia, 1948c:202 (Italy: Sardegna: Villasalto); Šnoflák *in* Zavadil and Šnoflák, 1948:59 (in key to Sphecidae of Czechoslovakia); de Andrade, 1949:20 (Portugal); Chambers, 1949:224 (Great Britain: Bedfordshire); Stelfox, 1949:276 (first record from Ireland); Aerts, 1950a:51 (Germany: Nordrhein-Westfalen: Rheidter Wertchens near Köln); Cavro, 1950:37 (France: Département du Nord); Georgel, 1950:64 (France: Seine-et-Oise: Sucy-en-Brie); Pittioni, 1950:26 (Cyprus); Szulczewski, 1950:102 (Poland: Wielkopolski National Park 15 km south of Poznań); Caruel, 1951:100 (France: Marne Department); de Beaumont, 1951h:33 (Switzerland: Neuchâtel area); Leininger, 1953:18 (Germany: Baden-Württemberg: Binningen, Karlsruhe); Móczár, 1953 (Hungary); Nouvel and Ribaut, 1953:181 (France: Haute-Garonne: Saint-Béat); de Beaumont, 1954e:92 (Italy); Fahlander, 1954:253 (Sweden: Gästrikland Region); Grandi, 1954:166 (nest and prey), 237 (Italy); Hertzog, 1954:101 (France: Bouches-du-Rhône: Camargue); Tjeder, 1954:68 (Sweden: eastern Skåne: Bredarör); Aerts, 1955:66 (Germany: Rheinland); Hellén, 1955a:122 (Finland: Jomala: Ytternäs, northwards to Vasa); Lehrer, 1955:265 (Romania: Moldova: Broşteni and Dealul Rusca

in Iaşi District); Steiner, 1955:139 (France: Dordogne); Vogrin, 1955:40 (Yugoslavia); Binaghi, 1956:8 (nesting); Bytinski-Salz, 1956:226 (Turkey: Aydın, Bursa, İznik, Konya); Ceballos, 1956:391 (in catalog of Hymenoptera of Spain); Leclercq, 1956g:324 (Greece); Morel, Nouvel, and Ribaut, 1956:339 (France: Département des Pyrénées-Orientales); Bajári, 1957a:67 (in key to Hungarian Sphecidae); Benno, 1957:144 (Netherlands: Tilburg area, nesting in stems of *Rubus*); de Beaumont, 1957a:149 (Morocco); Zirngiebl, 1957:186 (Germany: Rheinland-Pfalz: Pfalz region); Benno, 1958a:128 (nesting in stems of *Rubus*), 1958b:17 (in review of Dutch Sphecidae); Nouvel and Ribaut, 1958:16 (France: Pyrénées-Orientales: Banyuls-sur-Mer area); Puławski, 1958a:186 (Bulgaria: Burgas, Sozopol); de Beaumont, 1959a:30 (Italy); Diniz, 1959:31 (Portugal: five localities); Grandi, 1959b:287 (Italy: Ferrara: Valle Pega); Suárez, 1959:59 (Spain: Almería Province); Wolf, 1959b:25 (Germany: Nassau); de Beaumont, 1960a:21 (Greece: Island of Rhodes); Hamann, 1960:195 (Austria: Niederöstereich: Mönchgraben at 48°13'N 14°21'E); Noskiewicz and Puławski, 1960:108 (in key to Polish Sphecidae); de Beaumont, 1961c:51 (Greece: Island of Crete); Grandi, 1961:181 (nesting habits); Hoop, 1961:66 (Germany: Schleswig-Holstein: Landwehr); Grandi, 1962:96 (Italy); Valkeila, 1962b:66 (southwestern Finland); Wengris, 1962:205 (Lithuania: Vilnius area); Felton, 1963:177 (Great Britain: Kent County); Valkeila, Brander, and Käpylä, 1963:41 (Finland: historical region Lounais-Hämeen = southwest Häme); Babiy, 1964:115 (Austria: Land Salzburg); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964c:85 (in Sphecid Fauna of Switzerland), 1965a:56 (Greece); Fæster, 1965:192 (Denmark: Hansted Nature Reserve); Isensee, Lesemann, and Röseler, 1965:612 *(*Spain: Gerona: no specific locality); B. Klug, 1965:132 (Germany: Baden-Württemberg: Freiburg im Breisgau area); Roberti, Frilli, and Pizzaghi, 1965:110 (Italy: Emilia-Romagna: Pianello in Piacenza Province); Scobiola-Palade, 1966b:392 (Romania: Tulcea District: Periprava); Benno, 1967:38 (in list of Sphecidae of Netherlands); de Beaumont, 1967a:338 (Turkey); Gauss, 1967:554 (Germany: Baden-Württemberg); J. Heinrich, 1967:76 (Germany: Bayern: Unterfranken District); Niedl and Deneš, 1967:79 (Czech Republic: Třeboň area); Scobiola-Palade, 1967a:162 (Romania: Constanţa District: Comarova, Dumbrăveni); Yarrow, 1967:63 (Great Britain: Cornwall: Isles of Scilly); Benedek, 1968:73 (Hungary, floral records); de Beaumont, 1968a:272 (Canary Islands: Island of Gran Canaria); Haneda, 1968c:69 (a European species found in Japan); Leclercq, 1968b:39 (Great Britain: Kent); Wolf, 1968:12 (Germany: Nordrhein-Westfalen: Siegen, inhabitant of forest edge); Lefeber, 1969c:234 (Netherlands: Sint Pietersberg = Montagne Saint Pierre); Scobiola-Palade, 1968b:142 (Romania: Island of Letea in delta of Danube; list of prey), 1968c:385 (Romania: Comana, Copăceani, Mogoşoia, Pantelimon); Benedek, 1969a:84 (Hungary; marshy meadow), 1969b:421 (Hungary: Csopak, collected in vicinity of aphid *Hyalopteritena pruni* (Geoffroy)); Dathe, 1969:440 (Germany: Berlin Zoological Garden); Stelfox, 1969:238 (in key), 239 (Ireland: Kildare County: Landenstown House); Zangheri, 1969:1704 (Italy: in catalog of flora and fauna of Romagna Region); Benedek, 1970:99 (Hungary: Tapolca); de Beaumont, 1970a:402 (Afghanistan); Hoop, 1970:61 (Germany: Schleswig-Holstein: Heiligenhafen); Oehlke, 1970:723 (Democratic Germany); Tumšs, 1970:81 (Latvia); Danks, 1971a:347 (nesting habits); Dathe, 1971:234 (Germany: Berlin Zoological Garden; phenology); K. Schmidt, 1971b:38 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mainzer Sand), 1971c:74 (Germany: Schleswig-Holstein); Stritt, 1971a:104 (Germany: Baden-Württemberg: Karlsruhe); Balthasar, 1972:226 (in Sphecid Fauna of Czechoslovakia); Haeseler, 1972:155, 165, 175, 200 (Germany: Schleswig-Holstein; anthropogenic habitats); Oehlke, 1972:137 (Germany: Island of Hiddensee); Kazenas, 1972b:155 (Kazakhstan); Lomholdt, 1972:122 (Denmark: Island of Læsø); Niedl and Deneš, 1972:152 (Czech Republic: Třeboň area); Scobiola-Palade, 1972a:150 (Romania: delta of Danube: Caraorman); Simon Thomas, 1972:183 (France: Landes); de Beaumont, Bytinski-Salz and Pulawski, 1973:20 (Israel); Erlandsson, 1974:75 (Italy, Spain); Kazenas, 1974b:110 (feeding on flowers of *Euphorbia* spp., Euphorbiaceae, in Kazakhstan), 111 (feeding on flowers of *Roripa brachycarpa* C.A.M., Brassicaceae, in Kazakhstan); Kofler, 1974:320 (Austria: Kärnten); Lefeber and Petit, 1974:163 (Belgium: Plombières); Levi, Sysoletina, and Shernin, 1974:269 (Russia: Kirov Oblast': Kirov); Simon Thomas, 1974:57 (Netherlands: Limburg: Tienray); Scobiola-Palade,

1974:144 (Romania: Sărăturile sandbank in Danube delta); Burn, 1975:144 (Great Britain: Yorkshire: Doncaster district); Frilli, and Pizzaghi, 1975:53 (Italy: Vernasca in Piacenza Province); Lefeber, 1975b:120 (Netherlands: Schiepersberg); Lomholdt, 1975b:31 (Denmark: Island of Anholt); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Haeseler, 1976b:72 (Germany: Friesian Islands: Island of Amrum); Leclercq, Gaspar, Delecluse and Thirion, 1976:149 (Belgium: Wallonian freeway median strip); Leclercq, Gaspar, Lajoinie, and Thirion, 1976:178 (Belgium: Chaumont-Gistoux); Lomholdt, 1976:266 (in Sphecid Fauna of Fennoscandia and Denmark); Simon Thomas and Wiering, 1976:109 (Netherlands: IJsselmeer Polders); Georghiou, 1977:193 (Cyprus); Guichard, 1977:252 (Great Britain: Surrey); Kolesnikov, 1977:319 (Russia: Bryansk Oblast'); Báez and Ortega, 1978:192 (Canary Islands); Haeseler, 1978b:63 (Germany: Niedersachsen: a bog near Oldenburg), 1978c:195 (Germany: Friesian Islands: Island of Borkum); Kazenas, 1978b:146, 147 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:253 (in key to Sphecidae of European part of USSR); Benedek, 1979:232 (Hungary: Bakony Hills); Haeseler, 1979:10 (Germany: Niedersachsen: 10 km south of Oldenburg); Leclercq, Gaspar and Verstraeten, 1979:map 1419 (Belgium); Lefeber, 1979:12 (in checklist of Sphecidae of Netherlands), 84 (Netherlands: distribution map); Marchal and Leclercq, 1979:9 (Belgium: Gembloux); Radović and Krunić, 1979:unpaginated foldout (nesting in wood, foreleg structure); Richards, 1979:398 (British Channel Islands); Schwammberger, 1979:115 (Germany: Nordrhein-Westfalen: Gildehauser Venn Nature Reserve); Tsuneki, 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Jacob-Remacle and Leclercq, 1980:193 (Belgium: gardens in Liège); Pagliano, 1980:129 (Italy: Piemonte); Richards, 1980:45 (in key to Sphecidae of British Isles); Westrich, 1980:630 (Germany: Baden-Württemberg: Tübingen area); Dollfuss and Ressl, 1981:322 (Austria: Niederösterreich: Scheibbs District); Józan, 1981:305 (Hungary: Hortobágy National Park); Haeseler, 1981:52 (Germany: Friesian Island: Island of Amrum); Skibińska, 1981:358 (Poland: Warszawa-Białołęka); Tsuneki, 1981d:86 (Russia: Daghestan), 1981e:84 (redescription of European specimens), 1981f:71 (single member of *Trypoxylon attenuatum* species group); Woydak, 1981:41 (Germany: Westfalen: Hamm); Abrahamsen, 1982:138-146 (yearly and daily flight periods); Donath, 1982:214 (Germany: Cottbus Bezirk); Gayubo, 1982a:112 (northern Spain: Sierra de Béjar), 1982f:257 (Spain: Cádiz Province: Conil de la Frontera, Los Naveros, Tahivilla, Torrre de Melgarejo); Leclercq, 1982a:124 (Belgium: Liège); Silvestre de Sacy, 1982:4 (France: Côtes-du-Nord: Paimpol area); Skibińska, 1982:119, 123 (Poland: Mazovian Voivodship: Białołęka, Łomna, Warszawa, Wola Mrokowska); Dollfuss, 1983b:12 (in catalog of Sphecidae of Austria); Lefeber, 1983a:85 (Netherlands: Waddendistrict: northern coast sand dunes); Riemann, 1983:86 (Germany: Bremen-Daverden area); Chevin and Silvestre de Sacy, 1984:7 (France: Yvelines Department); Gayubo, 1984b:89 (Spain: Salamanca Province), 1984c:372 (Portugal: El Algarve Province); Gayubo and Tormos, 1984:17 (Spain: Valencia); Haack, Tscharntke, and Vidal, 1984:133 (Germany: Hamburg area); Jacob-Remacle, 1984:260 (Belgium: urban center of Liège); Lefeber, 1984:29 (Netherlands: Maastricht); Nilsson, 1984:104 (Sweden: Västmanland Province); K. Schmidt, 1984:293 (Germany: Baden-Württemberg); K. Schmidt and Westrich, 1984:240 (Germany: Rheinland-Pfalz: Bad Münster); Eiroa and Novoa, 1985:24 (Spain: Pontevedra: Barra beach near Cangas); Gayubo, 1985c:169 (Spain: Valladolid: Quintanilla de Abajo); Haeseler, 1985a:350 (Germany: Schleswig-Holstein), 355 (prey), 1985c:571 (Germany: Friesian Islands); Józan, 1985b:57 (Hungary south of Lake Balaton), 78 (floral records), 84 (ecological and zoogeographic characteristics); Lefeber, 1985:87 (Netherlands: southern Limburg); Scobiola-Palade, 1985:97 (Romania: delta of Danube); Tyrner, 1985:9 (Czech Republic: Jezerka Nature Reserve in Krušné Hory = Erzgebirge); Brechtel, 1986:62 (Germany: Südpfalz); Gayubo, 1986c:34 (Spain: Zamora Province); Gayubo and Heras, 1986:47 (Spain: Segovia and Valladolid Provinces; floral records); Gayubo and Sanza, 1986:54 (Spain: Burgos, Soria); Gayubo and Tormos, 1986a:18 (Spain: Castellón de la Plana); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast'); Józan, 1986:371 (Hungary: Kiskunság National Park); Meyer-Holzapfel, 1986:103 (nest parasite: *Pachyophthalmus signatus* Meigen, Sarcophagidae); Skibińska, 1986b:151, 154 (Poland: suburbs of Warszawa), 160 (gardens), 162 (urban parks), 164 (streetside green), 174 (various green urban habitats); Steiner, 1986:104 (references to publications on

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2000:248 (in Sphecid Fauna of Germany); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Grace, Yates, and Triplet, 2000:20 (Great Britain: East Sussex: Rye Bay area); Jacobs, 2000:12 (Germany: Land Mecklenburg-Vorpommern: not endangered); Józan, 2000:108 (Hungary: Bakony Mountains); Ljubomirov, 2000:10 (Bulgaria, specimens in N. Nedelkov collection); M. Mader and Chalwatzis, 2000:60 (Germany: Hessen: Oderwald Mountains); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Antropov *in* Bitsch et al., 2001:367 (in Sphecid Fauna of Western Europe); Archer, 2001a:107 (Great Britain: Watsonian Yorkshire), 2001b:14 (Great Britain: Watsonian Yorkshire); Basset, 2001:84 (France: Département de Gironde); Cungs and Jakubzik, 2001:122, 123 (Luxemburg); Deván, 2001:165 (Slovakia: Krasin Nature Reserve in Biele Karpaty Mountains); Dillier and Neumeyer, 2001:29, 33 (Switzerland: delta of Reuss River on Lake Uri); Dorow, 2001:136 (Germany: Hessen: Schönbuche Forest Reserve); Haeseler, 2001:266 (Germany: Niedersachsen: Brookdeich near Oldenburg); Józan, 2001:279 (Hungary: Somogy County); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia); Ljubomirov, 2001b:50 (Bulgaria: Mount Vitosha near Sofia); Ohl et al., 2001:142 (distribution in Germany by provinces); Reemer and van der Meer, 2001:16 (Netherlands: along Almelo-Nordhorn canal); Shlyakhtenok and Agunovich, 2001:144 (Belorussia: Berezinskiy Nature Reserve); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:188 (Poland: Kampinos National Park near Warszawa); van der Smissen, 2001:64 (Germany: Schleswig-Holstein: not endangered); Wolf, 2001a:172 (Germany: Bayern: Lech valley from Augsburg to Donau); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Archer, 2002b:112 (Great Britain: Watsonian Yorkshire: distribution map), 2002e:41 (Great Britain: Watsonian Yorkshire); Archer and Edwards, 2002:102 (Great Britain: West Sussex: Ambersham and Iping commons); Bieri, 2002:79 (Liechtenstein); Deván, 2002a:200 (Slovakia: Kobela Nature Reserve near Nové Mesto), 2002b:204 (Slovakia: Pekelná dolina and Prepadlisko); Dorow, 2002:16 (Germany: Hessen: Weiherskopf Forest Reserve); Herrmann and Zinnert, 2002:26 (Germany: Baden-Württemberg: Bettenberg near Konstanz); Józan, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:84 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Kruess and Tscharntke, 2002:1576 (Germany: Schleswig Holstein: number of specimens higher on ungrazed and extensively grazed grassland); Reemer and van der Meer, 2002:Bijlage 5 (Netherlands: Gelderland: Zaltbommel area); C. Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shlyakhtenok and Skibinska, 2002:33 (Belorussia: no specific locality); Söderman and Vikberg, 2002:51 (in list of Aculeata of Finland); Vischer, 2002:289 (Germany: Sachsen-Anhalt: vineyards in Saale-Unstrut area); Wiśniowski, 2002:70 (Poland: Ojców National Park); Ziska, 2002:9 (Germany: Berlin-Köpenick: Krumme Lake); Antropov, 2003:437 (first record from North America: Ontario and Vermont), 438 (in key to North American species of *Trypoxylon figulus* species group); Archer, 2003a:58 (Great Britain: Watsonian Yorkshire); Bergsten, Ekerholm, Hellquist, Hilszczanski, Nilsson, Pettersson, and Werner, 2003:71 (Sweden: Västerbotten: Island of Romelsön); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Cölln, Esser, and Jakubzik, 2003:63 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); de Bruyn and Sinning, 203:9 (Germany: Niedersachsen: Wümme-Nordarm northeast of Bremen); Esser and Jakubzik, 2003:291 (Germany: Nordrhein-Westfalen: Niederrheinisches Tiefland); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Artvin: Usufeli; Bilecik: Bilecik; Erzurum: Pasinler); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Haeseler, 2003:340 (Germany: Niedersachsen: Island of Harriersand near Bremen); Józan, 2003:227 (Hungary: Látrányi Puszta Nature Conservation Area); Kula and Tyrner, 2003a:150 (Czech Republic: Děčin Sandstone Uplands: forest district Snežnik: birch stands in air-polluted area); Lukáš, 2003:73 (Slovakia: Bratislava: old fruit orchard); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:70 (Germany: in catalog of wasps and bees of Bayern); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Ma-

drid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Reemer, 2003:62 (Netherlands: Gelderland: Zaltbommel area); Schmid-Egger, 2003:759 (Italy: Sicilia: Castelammare, Madonie, Randazzo; Malta: Busket, Mgarr); Steffan-Dewenter and Leschke, 2003:1966 (Germany: Niedersachsen: orchard meadows); von der Heide and Metscher, 2003:103 (Germany: Niedersachsen: Emsland area); Wiśniowski *in* Dylewska and Wiśniowski, 2003:153 (Poland: Ojców National Park); Wiśniowski and Werstak, 2003:77 (Poland: Pieniny National Park); Wolf, 2003:260 (Germany: Nordrhein-Westfalen: Bommecketal Nature Reserve in Plettenberg); Abenius, 2004:40 (Sweden: Norrbottens: Luleå area); Buck, 2004:25 (Canada: in checklist of Crabronidae of Ontario), 30 (distribution within Ontario), 52 (first records from Canada: Ontario and Quebec: list of localities, the female from Guelph, collected in 1960, is the oldest known specimen from the Nearctic Region); Deván, 2004:148 (western Slovakia); Dorow, 2004a:127 (Germany: Hessen: Schönbuche Nature Reserve); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Gayubo**,** Nieves-Aldrey, González, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Gorobchishin, 2004:34 (Ukraine: Zaporiz'ka Oblast': Obitichna Kosa Nature Reserve); Jakubzik and Cölln, 2004:271 (in key to nests of Hymenoptera nesting in stems of *Rubus*); Jakubzik, Niehuis, and Cölln, 2004:458 (Germany: Rheinland-Pfalz: Roβstein in Rhein valley at 50°06'42"N 7°43'87"E); Klein and Lefeber *in* Peeters, van Achterberg, et al., 2004:428 (in Wasp and Ant Fauna of Netherlands); Majzlan and Deván, 2004:31 (Slovakia: Sekule); Salzmann-Wandeler and Rezbanyai-Reser, 2004:27 (central Switzerland); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Shkuratov, 2004a:78 (Russia: Rostov Oblast': Rostov on Don); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:357 (in catalog of Polish Crabronidae); Szczepko and Kowalczyk, 2004:126 (Poland: Kampinos National Park near Warszawa); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:45 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:94 (in key to *Trypoxylon* of Poland); Beavis, 2005:194 (Great Britain: Island of Scilly); Bergsten, Ekerholm, Gabrielsson, Hellquist, Petersson, Werner, Ström, Chauvet, and Dalecky, 2005:16 (Sweden: Västerbotten: Bjuröklubbs Nature Reserve); Burger, 2005:36 (Germany: Thüringen); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Ebrahimi, 2005:127 (in key to selected Iranian Sphecidae); Fuhrmann, 2005:89 (Germany: Nordrhein-Westfalen: Grubengelände Littfeld Nature Reserve); Gathmann, 2005:109 (Germany: Niedersachsen: agricultural landscape near Göttingen; nest parasite: *Melittobia acasta* (Walker), Eulophidae); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Hallin, 2005:16 (Sweden: Örebro County: Hällefors); Kofler, 2005:173 (Austria: Tirol: Lienz District: several localities); Pagliano and Negrisolo, 2005:417 (in Sphecid Fauna of Italy); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Riemann and Hohmann, 2005:566 (Germany: Niedersachsen: city of Bremen and adjacent area); Robinson, 2005:34 (Great Britain: Cumbria County); Saure, 2005:19 (Germany: Berlin); Theunert, 2005a:19 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Tormos, Asís, Gayubo, Calvo, and Martin, 2005:281 (nest occupancy, preimaginal mortality); Venne and Bleidorn, 2005:44 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Yildirim and Ljubomirov, 2005:1799 (Turkey: Erzurum: Pasinler); Ziska and Saure, 2005:82 (Germany: Berlin: Biesenhorster Sand); Archer, 2006d:76 (Great Britain: Watsonian Yorkshire: Pollington Quarry); U. Frommer, 2006:37 (Germany: Hessen: Runkel area); U. Frommer and Tischendorf, 2006:89 (Germany: Hessen: Schlüchterner Becken); Gorobchishin, 2006:115 (Ukraine: Cherkasy Oblast': Kaniv Nature Reserve; Kyiv Oblast': Kyiv); Kadas, 2006:85 (Great Britain: London, on green roofs); Kroupa, 2006b:26 (Germany: Bayern: Oberfranken Region); Liebig, 2006:40 (Germany: Sachsen: Muskauer Heide); Liška, 2006:89 (Slovakia: Váh river valley near Trenčin); Magdalou, 2006a:7, 10 (France: Pyrénées-Orientales: Réserve Naturelle de la Massane), 2006b:109 (France: Pyrénées-Orientales: Mas-Larrieu Nature Reserve near Argelès-sur-Mer), 2006c:7 (France: Pyrénées-Orientales: Réserve Naturelle du Mas-Larrieu); N. Schneider, 2006:141, 142 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:111 (Belorussia: Polesye Radiological Nature Reserve); Standfuss and Standfuss,

2006a:86 (Germany: Nordrhein-Westfalen: Dortmund), 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Vepřek, 2006:512 (Czech Republic: Kokořínsko area); Asís, Benéitez, Tormos, Gayubo, and Martín Tomé, 2007:289 (presence of vestibular cell in nest initially reduces mortality, but does not effect mortality due to chrysidids; intercalary cells do not effect mortality); Baños-Picón, Gayubo, Asís, and González, 2007:257, 259 (Spain: Zamora: Cabañas de Aliste); Beavis, 2007:92 (Great Britain: Tunbridge Wells and Central High Weald); Burguet, 2007:unnumbered p. 27 (France: Puy-de-Dôme: sands Girauds-Faures in Orléat commune); Cungs, Jakubzik, and Cölln, 2007:141 (Luxemburg: Haardt Nature Reserve); Dorow, 2007:263 (Germany: Hessen: Niddahänge and Schönbuche Forest Reserves); Jacobs, 2007:110, 113 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:26 (Germany: northwestern Sachsen); Józan, 2007:179 (Hungary: Zselic hills); Jacobs and Kroupa, 2007:325 (first record from Azores: Island of São Miguel: Ginetes, Mosteiros and Salga); Kowalczyk and Nadolski, 2007:284 (Łódź: railway areas); Lee and Scott, 2007:21 (Great Britain: East Anglian wetlands); T. Li and Q. Li, 2007:8 (China: Xinjiang: Pishan and Shache); Roche, 2007a:100 and 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae, as *attenuatum attenuatum*); Saure, 2007:83 (Germany: in checklist of Aculeata of Land Brandenburg); Shlyakhtenok, 2007a:300 (Belorussia: Berezinsky Nature Reserve), 2007b:364 (Ukraine: Chernobyl area); Vago, 2007:175 (France: départements d'Aisne, Nord, Pas-de-Calais, and Somme); Venne, Bleidorn, and Lauterbach, 2007:303 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia); Winkler, 2007:30 (Germany: Niedersachsen: eastern Friesland); Gayubo, González, Tormos, and Asís, 2008:139 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Haeseler, 2008:309 (Germany: Friesian Islands); Ljubomirov and Yildirim, 2008:239 (in catalog of Crabronidae of Turkey); Theunert, 2008:87 (Germany: map of distribution in Niedersachsen and Bremen); Archer, 2009a:24 (Great Britain: Yorkshire: Sheffield); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Belkheir, 2009:17 (France: Pyrénées-Orientales: commune d'Eyne); Debuyser and Vago, 2009:5 (in list of Sphecidae *sensu lato* of northern France); Donie, 2009:10 (Germany: Niedersachsen: Oldenburg); U. Frommer, 2009a:29 (Germany: in checklist of Sphecidae of Hessen); Gayubo, González, Tormos, and Asís, 2009:364 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Hessling, 2009:104 (Germany: Niedersachsen: Hunte River valley south of Oldenburg); Livory, Chevin, Lair, Sagot, and Baldock, 2009:31 (France: Département de la Manche); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:72 (Norway: locality records); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Straka, Dvořak, and Bogusch, 2009:265 (Czech Republic: Jizerské Mountains and Frýdlant region); Szczepko and Wiśniowski, 2009:71 (Poland: Spała Landscape Park); Baghirov, 2010:678 (Russia: Altai Territories: villages Chemal, Chike-Taman, and Savvushka); Burguet *in* Durand and Burguet, 2010:57 (France Département d'Ardèche: Ardèche Gorges); Esser, Fuhrmann, and Venne, 2010:38 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Falk, 2010:94 (Great Britain: heathland sites in West Midlands region); Hable, Krauss, von der Dunk, and Wickl, 2010:29 (Germany: Bayern: Sulz- and Ottmaringer Tal); Jakubzik and Cölln, 2010:1188 (Germany: Rheinland-Pfalz: Bruchertseifen near Altenkirchen); Johansson, 2010:121 (Sweden: Småland: upper Emå river valley); Mokrousov, 2010a:62 (Russia: Nizhniy Novgorod Oblast', Chuvash Republic: no specific localities); Rudoiskatel', 2010:155 (Russia: central and southern Ural Mountains); Saure, 2010a:88 (Germany: Berlin-Reinickendorf: Baumberge), 2010b:175 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: relatively common); K. Schmidt, 2010:140 (Germany: Bayern: collected along Main-Donau canal); Shorenko and Konovalov, 2010:23 (Ukraine); Treiber, 2010:136 (France: département du Bas-Rhin); van der Smissen, 2010a:354 (Germany: Schleswig-Holstein: locality records), 2010b:388 (France: Ardèche: Saint-Thomé); Archer, 2011c:43 (Great Britain: Watsonian Yorkshire: Lindrick area), 2011d:187 (Great Britain: Watsonian Yorkshire: Hatfield Moor and Thorne Moor); Baghirov, 2011b:149 (Russia: Altayskiy Kray: Savvushka; Altay Republic: Chemal,

Chike-Taman); Falk, 2011:69 (Great Britain: Sussex: South Downs); Józan, 2011:181 (in checklist of Sphecidae *sensu lato* of Hungary); Mokrousov, Berezin, and Egorov, 2011:77 (Russia: Chuvash Republic); Rudoiskatel', 2011d:242 (Russia: central Ural Mountains); Saure, 2011a:7 (Germany: Berlin: former airport Tempelhof), 2011c:199 (Germany: Berlin-Spandau: Fort Hahneberg), 2011d:200 (Germany: Sachsen-Anstalt: conservation area "Heide südlich Burg"); Schmid-Egger, 2011a:39 (France: Parc National du Mercantour: Saorge); Theunert, 2011a:21 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:177 (Germany: Hessen: not endangered); Ziska and Saure, 2011:110 (Germany: Berlin: Tegeler Flieβ valley); Archer, 2012a:130 (Great Britain: Watsonian Yorkshire: Allerthorpe Common), 2012b:182 (Great Britain: urban York); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Burguet *in* Durand and Burguet, 2012:4 (France: Puy-de-Dôme: sands Girauts-Faures in Orléat commune); Cölln, Jakubzik, and Kinkler, 2012:25 (Germany: Nordrhein-Westfalen: Leverkusen); Franzén, Molander, Norén, and Nilsson, 2012:27 (Sweden: Skäne: Kullaberg Peninsula); Gerth, Mayer, Hering, Wolf, Schaffer, and Bleidorn, 2012:9 (Germany: Sachsen: Bienitz in Leipzig); Prisniy, 2012:48 (Russia: Belgorod Oblast'); Saure, 2012b:230 (Germany: Berlin-Spandau: Spandauer Forst); Shlyakhtenok, 2012a:172 (Belorussia, and Russia: Krasnaya Polana near Sochi: collected in private plots); Standfuss and Standfuss, 2012:428 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E: addition to flight period); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); Archer, 2013b:117 (Great Britain: Leicestershire: suburban garden in Leicester); Flügel, 2013a:120 (Germany: Brandenburg: Pimpinellenberg near Oderberg); Saure, 2013:22 (Berlin: Treptow-Köpenick: Gosener Wiesen); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:174 (in annotated catalog of aculeate wasps of Belorussia); Vieira, Oliveira, Brewster, and Gayubo, 2013:18 (Portugal: Douro International Natural Park, Serras de Aire e Candeeiros Natural Park, and Paúl do Boquilobo Nature Reserve); Wiśniowski and Szczepko, 2013:54 (Poland: Kampinos National Park near Warszawa); Archer, 2014b:178 (Great Britain: urban and suburban gardens); Baldock, 2014:357 (Spain: Island of Mallorca); Bitsch, 2014:405 (France: Hautes-Alpes: Embrun, Gap); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Ebrahimi, 2014:42 (Iran: Alborz, Āzarbāijān-e Sharghi, and Ilām provinces); U. Frommer, 2014:28 (Germany: Hessen: Lorch); Hellqvist, Abenius, and Norén, 2014:92 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Jakovlev, Polevoi, and Humala, 2014:301 (Russia: Republic of Karelia: Zaonezhye Peninsula in Lake Onega);Olszewski and Pawlikowski, 2014:193 (in key to Polish *Trypoxylon*); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Archer, 2015:202 (Great Britain: English coastal sand dunes); Koçak and Kemal, 2015:153 (in checklist of Hymenoptera of Turkey); Lett, 2015:5 (France: Loir-et-Cher: Gièvre); P. Rosa and Pagliano, 2015:106 (Italy: Lombardia and Piemonte: Parco del Ticino); Saure, 2015:15 (Germany: Berlin-Lichterfelde); Shorenko, 2015:329 (in list of Sphecidae *sensu lato* of Crimea); Simon, Lorthiois, and Macé, 2015:55 (France: alluvial terraces in Seine-Maritime Department: Anneville-Ambourville); Blažej, Macek, and Trýzna, 2016:128 (Czech Republic: České Švýcarsko = Bohemian Switzerland National Park); Cölln and Jakubzik, 2016:18 (Germany: Rheinland-Pfalz: Vulkaneifel District); Le Divelec, Chapelin-Viscardi, and Larivière, 2016:109 (northern France: in agricultural landscapes); Mokrousov and Popov, 2016:584 (Russia: Krasnodarskiy Kray); Saure, 2016b:50 (Germany: Sachsen-Anhalt: fruit orchards), 1916c:205 (Germany: center of Berlin: Groβer Tiergarten Park); Schmid-Egger, Dandria, and Xuereb, 2016:80 (in checklist of Crabronidae of Maltese Islands); A. Scholz, 2016:72 (Germany: Sachsen: Kleinraschützer Heide); Stolle and Saure, 2016:925 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Vas, Szöllősi-Tóth, and Muskovits, 2016:154 (Romania: Sălaj County); Wiśniowski, 2016:130 (Poland: Ojców National Park); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:39 (Turkey: Bayburt, Erzurum, Kars, and Tunceli provinces); Antropov, 2017b:244 (in catalog of Crabroninae of Russia); Burguet and Durand, 2017:9 (France: Puy-de-Dôme: basin of river Crouël); Duranet and Burguet, 2017:2 (France: Puy-de-Dôme: Réserve Naturelle Nationale Chastreix-Sancy); Flügel, 2017:6 (Germany: Hessen: Doline and Eschkopf near Rockensüß); Jahantigh, Rakhshani; Mokhtari, and Ramroodi,

2017:69 (Iran: known from Alborz, East Azerbaijan, Ilam, and Tehran provinces); Jansen, 2017:10 (Germany: Sachsen: Leipzig); Johansson, 2017:105 (photograph of male genitalia); Magdalou, 2017:17 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Forêt de la Massane, Mas Larrieu, Vallée d'Eyne); Říha, 2017:175 (Czech Republic: Brno); Shorenko, 2017:78 (in Crimea collected in June and July); Twerd, Krzyżyński, Waldon-Rudzionek, and Olszewski, 2017:7 (Poland: Inowroclaw: nesting in postindustrial soda ash dumping sites); Franken and Berg, 2018:67 (Netherlands: North Holland: sand dunes); Shorenko, 2018:128 (Crimea, including localities, habitats, and number of specimens); Akulov, 2019:44 (Russia: first record from Krasnoyarskiy Kray: no specific locality); Carminati, Mora, and Cretin, 2019:20 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Akulov, Proshchalykin, and Mokrousov, 2020:50 (Russia: central Krasnoyarsk Kray); Kejval, Blažej, and Erhart, 2020:107 (western Czech Republic); Saure, 2020:277 (Germany: Sachsen-Anhalt: sand dunes); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:382 (in revision of Sphecidae *sensu lato* of Europe); Cross, Baldock, and Wood, 2021:56 (in catalog of Sphecidae *sensu lato* of Portugal); Herb and Schmid-Egger, 2021:9 (Germany: Bayern: Kaufbeuren area); Kaplan and Yildirim, 2021:78 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland); Saure, 2021:82 (Germany: Brandenburg: Nature Reserve Ferbitzer Bruch near Potsdam); Saure and Marten, 2021:136 (Germany: Sachsen-Anhalt: Nationalpark Harz); Japoshvili and Ljubomirov, 2022:277 (Georgia: Lagodekhi Protected Areas); U. Frommer and Bahmer, 2023:195 (Germany: Hessen: Giessen University Botanical Garden and city gardens); Kaplan and Yildirim, 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

As *Trypoxylon figulus*: Blades and Marshall, 1994:276 (Canada: southern Ontario), corrected to *Trypoxylon attenuatum* by Buck, 2004:77.

As *Trypoxylon pennsylvanicum*: Blades and Marshall, 1994:276 (Canada: southern Ontario), corrected to *Trypoxylon attenuatum* by Buck, 2004:77.

Trypoxylon hannibalis Gribodo, 1894b, 23, ♀, ♂ (as *Hannibalis*, incorrect original capitalization). Lectotype: ♀, "Algeria: Boghari, Biskra", but actually Tunisia: Tunis area (MSNG), designated by de Beaumont, 1950e:263 (MSNG). Unnecessary designation of neotype: ♀ lectotype of de Beaumont, by Antropov, 1991b:682. Synonymized with *Trypoxylon attenuatum* F. Smith, 1851 by Antropov, 1991b:682. – Zavattari, 1913a:4 (omitted from Dalla Torre's catalog, 1897); Penati and Mariotti, 2015:12 (reference to unpublished manuscript by G. Gribodo), 64 (in list of Hymenoptera described by G. Gribodo). – **As *Trypoxylon attenuatum hannibalis***: de Beaumont, 1950e:263 (new status); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

29. *auropilosum* Tsuneki

Trypoxylon auropilosum Tsuneki, 1976b:79, ♀. Holotype: ♀, Philippines: Tawi Tawi: Tarawakan (ZMUC). – Tsuneki, 1976b:94 (in key to female *Trypoxylon* of Philippines),1980a:8 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 59 (Malaysia: northern Borneo; redescription), 1980b:7 (in key to *Trypoxylon* of Philippines, 67 (Philippines; additional description), 1981f:63 (single member of *Trypoxylon auropilosum* species group).

30. *bakeri* Tsuneki

Trypoxylon bakeri Tsuneki, 1978a:66, ♀. Holotype: ♀, Philippines: Mindanao: Dapitan (USNM). – Tsuneki, 1978a:5 (in key to *Trypoxylon scutatum* species group), 1980b:4 (in key to *Trypoxylon* of Philippines), 13 (Philippines; description of ♂), 1981f:15 (single member of *Trypoxylon bakeri* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

31. *balabacense* Tsuneki

Trypoxylon balabacense Tsuneki, 1976b:89, ♀. Holotype: ♀, Philippines: Balabac: Dalawan Bay (ZMUC). – Tsuneki, 1976:94 (in key to female *Trypoxylon* of Philippines),1980b:11 (in key to *Trypoxylon* of Philippines), 114 (Philippines; additional description), 1981f:58 (member of *Trypoxylon coloratum* species group).

ssp. *ovatum* Tsuneki

Trypoxylon balabacense ovatum Tsuneki, 1980a:81, ♀, ♂. Holotype: ♀, Malaysia: northern Borneo: Forest Camp 19 km north of Kalabakan (Bishop Mus.). – Tsuneki, 1980a:10, 11 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

32. *balteatum* Cameron

Trypoxylon balteatum Cameron, 1889a:43,♀. Holotype or syntypes: ♀, Mexico: Veracruz: Atoyac (BMNH). – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:306 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

33. *banahao* Tsuneki

Trypoxylon banahao Tsuneki, 1980b:95, ♀. Holotype: ♀, Philippines: Luzon: Mount Banahao (USNM). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines), 1981f:69 (member of *Trypoxylon tawitawiense* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

34. *banoense* Tsuneki

Trypoxylon banoense Tsuneki, 1980b:122, ♀. Holotype: ♀, Philippines: Luzon: Los Baños (USNM). – Tsuneki, 1980b:12 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:25 (holotype in USNM).

35. *banvaneum* Tsuneki

Trypoxylon banvaneum Tsuneki, 1979a:47, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:6 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

36. *barberi* Richards

Trypoxylon barberi Richards, 1934:327, ♀. Holotype: ♀, Guatemala: Livingston (USNM). – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

37. *basilanense* Tsuneki

Trypoxylon basilanense Tsuneki, 1980b:38, ♂, ♀. Holotype: ♂, Philippines: Island of Basilan: no specific locality (USNM). – Tsuneki, 1980b:5, 6 (in key to *Trypoxylon* of Philippines), 1981f:23 (member of *Trypoxylon appendiculatum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

38. *basilanum* Tsuneki

Trypoxylon basilanum Tsuneki, 1980b:100, ♀. Holotype: ♀, Philippines: Island of Basilan: no specific locality (USNM). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:25 (holotype in USNM).

39. *basirufum* Muniz and Melo

Trypoxylon basirufum Muniz and Melo, 2021:2, ♀ , ♂. Holotype: ♀, Brazil: Paraná: Antonina at 25.3050°S 48.6609°W (Coleção Entomológica Padre Jesus Santiago Moure, Universidade Federal do Paraná, Brazil).

40. *beaumonti* Antropov

Trypoxylon beaumonti Antropov, 1991b:678, ♀, ♂. Holotype: ♂, Italy: Liguria: San Bartolomeo Mare (G. Pagliano coll., Torino, Italy). Paratypes: Austria, France, Germany, Portugal, Switzerland. – Mochi and Luchetti, 1994:15 (Italy: Lazio, Toscana); Pagliano, 1994:16 (Italy: Piemonte, Liguria, Basilicata, Sicilia: France: Corsica); Schmid-Egger, 1994a:688 (Germany: Rheinland-Pfalz: Höllenberg near Grünstadt); Gusenleitner, 1995:162 (Austria: many localities); Negrisolo, 1995a:23 (Italy: Veneto); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Schmid-Egger, 1995:65 (Germany: northwestern Baden-Württemberg); Schmid-Egger, Risch, and Niehuis, 1995:214 (Germany: summary of records from Rheinland-Pfalz); K. Schmidt, Schmid-Egger, and Doczkal, 1995:8 (distribution in Germany should be clarified);

Schmid-Egger, K. Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: may be endangered); Tormos, Asís, Gayubo, and Mingo, 1996: 61 (nest parasite: *Trichrysis cyanea* (Linnaeus), Chrysididae); K. Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); W. Klein, 1999:19, 21 (in improved key to *Trypoxylon* of Benelux); Ljubomirov, 1999b:51 (Bulgaria: Mount Vitosha near Sofia); Pagliano and Scaramozzino, 1999:163 (Italy: Piemonte: Borgomale); Blösch, 2000:249 (in Sphecid Fauna of Germany); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); M. Mader and Chalwatzis, 2000:60 (Germany: Hessen: Oderwald Mountains); Neumeyer, 2000:99 (Switzerland: Basel); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Antropov *in* Bitsch et al., 2001:367 (in Sphecid Fauna of Western Europe); Ohl et al., 2001:142 (distribution in Germany by provinces); Schmid-Egger, 2001:17 (France: Alsace: Bollenbergs, erroneously listed under *Tachysphex*); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:70 (Germany: in catalog of wasps and bees of Bayern); Wiśniowski and Szczepko, 2004:94 (in key to *Trypoxylon* of Poland, unknown from Poland); Deván, 2004:148 (western Slovakia); Burger, 2005:36 (Germany: Thüringen); Pagliano and Negrisolo, 2005:417 (in Sphecid Fauna of Italy); Straka, 2005a:402 (endangered in Czech Republic); Tormos, Asís, Gayubo, Calvo, and Martin, 2005:281 (nest occupancy, preimaginal mortality); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Jacobs, 2007:109, 112 (in key to Crabronidae of Germany); Vago, 2007:175 (France: département de Somme); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia), 224 (first records from Czech Republic and Slovakia: several localities); Dvořák, Bogusch, Malenovský, Bezděčka, Bezděčková, Holý, Liška, Macek, Roller, Říha, Smetana, Straka, and Šima, 2008:67 (Czech Republic: Hády Hill near Brno); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Burguet, 2009:15 (France: Département de Puy-de-Dôme: Bois de la Comté); Debuyser and Vago, 2009: 5 (in list of Sphecidae *sensu lato* of northern France, as *beaumonty*); U. Frommer, 2009a:29 (Germany: in ch5ecklist of Sphecidae of Hessen), 42 (locality records from Hessen), 43 (distribution map in Hessen), 2009b:41 (review of all known records, diagnostic characters, phenology, habitats, records from Germany, first record from Hungary: Opuszaszer 25 km north of Szeged); Guéorguiev and Ljubomirov, 2009:264 (Bulgaria: Maleshevska Planina); Pagliano, 2009:185 (Italy: Sardegna: Island of San Antioco); Burguet *in* Durand and Burguet, 2010:57 (France Département d'Ardèche: Ardèche Gorges); Hable, Krauss, von der Dunk, and Wickl, 2010:29 (Germany: Bayern: Sulz- and Ottmaringer Tal); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: relatively common); van der Smissen, 2010b:388 (France: Ardèche: Saint-Maurice-d'Ibie, Saint-Thomé, Valvignères, Valvignères-Intras, Vogüé; Vaucluse: Bedoin); Gogala, 2011:17 (Slovenia: Movraž); Schmid-Egger, 2011a:39 (France: Parc National du Mercantour: La Brigue); Tischendorf, Frommer, Flügel et al., 2011:178 (Germany: Hessen: not endangered); Standfuss and Standfuss, 2012:428 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E: addition to flight period); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Zettel, Zimmermann, and Wiesbauer, 2013:12 (Austria: Wien: Donaupark), 16 (taxonomic history and review of nesting habits); Bitsch, 2014:405 (records by Ljubomirov, 1999b and Frommer, 2009b; France: Hautes-Alpes: Gap; Loiret: Ardon); U. Frommer, 2014:28 (Germany: Hessen: Lorch); Zettel, Ockermüller, and Wiesbauer, 2014:168 (Austria: Niederösterreich, diagnostic characters); Antropov and Mokrousov, 2016:265 (first record from Russia: Krasnodaskiy Kray: Krinitsa at 44.400°N 38316°E; diagnosic characters); Le Divelec, Chapelin-Viscardi, and Larivière, 2016:109 (northern France: in agricultural landscapes); Stolle and Saure, 2016:925 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Antropov, 2017b:244 (in catalog of Crabroninae of Russia); Burguet and Durand, 2017:9 (France: Puy-de-Dôme: basin of river Crouël); Jansen, 2017:10 (Germany: Sachsen: Leipzig); Magdalou, 2017:17 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Julols); Říha, 2017:175 (Czech Republic: Brno); Carminati, Mora, and Cretin, 2019:20 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Ljubomirov, 2019:101 (Bulgaria: Vratchanska Planina); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:383 (in revision of Sphecidae *sensu lato* of Europe); Cross, Baldock, and Wood,

2021:56 (in catalog of Sphecidae *sensu lato* of Portugal); Mokrousov and Proshchalykin, 2021a:327 (Russia: Dagestan, and Ukraine: Zakarpatskaya Oblast'); Pétremand, Salzman-Wandeler, and Castella, 2021:89 (Switzerland: canton de Genève); Japoshvili and Ljubomirov, 2022:277 (Georgia: Lagodekhi Protected Areas); U. Frommer and Bahmer, 2023:195 (Germany: Hessen: Giessen University Botanical Garden and city gardens).

41. *bellardi* Richards

Trypoxylon bellardi Richards, 1934:331, ♂. Holotype: ♂, Venezuela: Valera (USNM). – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

42. *bellum* Tsuneki

Trypoxylon bellum Tsuneki, 1979a:103, ♀. Holotype: ♀, Malaysia: Pahang: Fraser's Hills (BMNH). – Tsuneki, 1979a:12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

43. *benten* Tsuneki

Trypoxylon benten Tsuneki, 1979b:15, ♀. Holotype: ♀, Sri Lanka: Southern Province: Galle District: Kanneliya Jungle (USNM). – Tsuneki, 1979b:4 (in key to *Trypoxylon* of Sri Lanka), 1981d:20 (in new key to *Trypoxylon* of Sri Lanka); Nuhn and Menke, 1994:25 (holotype in USNM).

44. *betremi* Tsuneki

Trypoxylon betremi Tsuneki, 1979c:63, ♂. Holotype: ♂, Indonesia: West Java: Malang (RMNH). – Tsuneki, 1979c:10 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 1981f:65 (member of *Trypoxylon vardyi* species group).

45. *bettotan* Tsuneki

Trypoxylon bettotan Tsuneki, 1980a:101, ♀. Holotype: ♀, Malaysia: northern Borneo: Bettotan near Sandakan (BMNH). – Tsuneki, 1980a:13 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

46. *biarti* Richards

Trypoxylon biarti Richards, 1934:338, ♂. Holotype: ♂, Mexico: Veracruz: Orizaba (MNHN). – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

47. *bibou* Tsuneki

Trypoxylon bibou Tsuneki, 1981a:64, ♀. Holotype: ♀, Papua New Guinea: Mamai Plantation east of Port Glasgow (Bishop Mus.). – Tsuneki, 1981a:8 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:76 (member of *Trypoxylon sacinasium* species group).

48. *bicolor* F. Smith

Trypoxylon bicolor F. Smith, 1856:377, ♀. Lectotype: ♀, Singapore (BMNH), designated by Tsuneki, 1978b:3. – F. Smith, 1858a:105 (Singapore), 1863b:135 (known from India and Singapore), 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cameron, 1889c:118 (in list of Oriental Sphecidae); Bingham, 1897:227 (redescription); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1904d:150 (Philippines); Bingham, 1905:44 (Malaysia: Biserat); R. Brown, 1906:687 (in catalog of Philippine Hymenoptera); R. Perkins, 1910:606 (Hawaiian Islands: Hawaii, Oahu); Bridwell, 1914:17 (currently common in Hawaii), 1917a:273 (nesting in rotten wood), 1920c:329 (cocoon); Swezey, 1921a:488 (Hawaiian Islands: Maui); Maidl, 1925a:390 (Indonesia: Sumatra); Matsumura and Uchida, 1926:41 (Okinawa); F. Williams, 1927:437 (nesting in hollow twigs and wood), 1931:236 (nesting in hollow twigs); Pagden, 1934a:458 (Malay Peninsula; nest construction, prey consists entirely of Attidae); Richards, 1934:315 (member of *Trypoxylon figulus* species group), 343 (nesting habits summary); Gussakovskij, 1938:4 (China: Kiangsu

Province); Krauss, 1944:93 (Hawaii: Island of Molokai); Yoshimoto, 1960:333 (Hawaiian Islands), 1964:517 (nesting, description of larva); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1978b:3 (redescription), 80 (in key to Oriental *Trypoxylon*), 81 (variation), 1979a:16 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 152 (separation of *Trypoxylon bicolor* and *T. petiolatum*), 158 (redescription; Singapore, Malaysia, Thailand), 1979c:7 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 38 (Sumatra, Java), 1980a:14 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 109 (Borneo), 1980b:8, 9 (in key to *Trypoxylon* of Philippines), 84 (Philippines; additional description), 1981f:75 (member of *Trypoxylon bicolor* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands); Pu, 1986:8 (China); Steiner, 1986:104 (references to publications on nesting habits); Hua, 1989:117 (China); Wu and Zhou, 1996a:102 (in revision in Economic Insect Fauna of China); Q. Li and He, 1998b:398 (China: Longwangshan Nature Reserve), 2004:1103 (in hymenopterous fauna of Zhejiang Province, China); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Munasinghe and Edirisinghe, 2007:78 (Sri Lanka: Meewathura Agriculture Farm, as *bicolour*); T. Li and Q. Li, 2010a:242 (in key to *Trypoxylon* of southwestern China); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 61 (first record from Vietnam: many localities; recognition characters for males).

Trypoxylon bicolor marginatum Tsuneki, 1976b:76, ♀, junior primary homonym of *Trypoxylon marginatum* Cameron, 1912. Holotype: ♀, Philippines: Balabac: Dalawan Bay (ZMUC). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1980a:2. – Tsuneki, 1976b:94 (in key to female *Trypoxylon* of Philippines).

Trypoxylon bicolor dorsale Tsuneki, 1977i:4, junior primary homonym of *Trypoxylon dorsale* Tsuneki, 1977h:5 (= *Trypoxylon eximium*). Substitute name for *Trypoxylon bicolor marginatum* Tsuneki, 1976. Synonymized with *Trypoxylon bicolor* by Tsuneki, 1980a:2.

ssp. *ceylonicum* Tsuneki

Trypoxylon bicolor ceylonicum Tsuneki, 1979a:158, ♀, ♂. Holotype: ♂, Sri Lanka: Ambacotta (Basel). – Tsuneki, 1979a:16 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979b:4 (in key to *Trypoxylon* of Sri Lanka), 16 (Sri Lanka), 1981d:16 (Sri Lanka), 19 (in new key to *Trypoxylon* of Sri Lanka).

49. *bidentatum* W. Fox

Trypoxylon bidentatum W. Fox, 1891c:143, ♀, ♂. Lectotype: ♀, USA: Oregon: Mount Hood (ANSP), designated by Cresson, 1928:52. – Peckham, 1892:78 and 86 (nesting habits); W. Fox, 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); J. Smith, 1900:520 (in list of insects of New Jersey: "probable in New Jersey"); Peckham and Peckham, 1905:194 (preying on spiders, cocoon); Rohwer, 1909g:378 (Colorado: Boulder); J. Smith, 1910:685 (in new list of insects of New Jersey: "probable in New Jersey"); Rohwer, 1916b:676, 677 (in catalog of Hymenoptera of Connecticut); Rohwer *in* Viereck, 1925:676, 677 (in key to Sphecidae of Connecticut, not yet found in the State); J.Ch. Bradley, 1926:175 (New York: Lloyd-Cornell Reservation near McLean), 1928:1010 (in catalog of New York Crabronidae); Richards, 1934:316 (in revision of New World *Trypoxylon*), 342 (nesting habits summary); Sandhouse, 1940:162 (in revision of Nearctic *Trypoxylon*); Krombein *in* Muesebeck, Krombein, and Townes, 1951:955 (in catalog of North American Hymenoptera); F. Parker and R. Bohart, 1966:95 (California: Boca in Nevada County, Davis; Nevada: Mustang, Verdi; nest parasite: *Trichrysis doriae* Gribodo, Chrysididae); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Krombein, 1979b:1642 (in catalog of North American Hymenoptera); Steiner, 1986:105 (references to publications on nesting habits); Antropov, 2003:438 (in key to North American species of *Trypoxylon figulus* species group); Buck, 2004:25 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 54 (first record from Canada: Ontario: Smith Bay near Picton); Ratzlaff, 2016:26 (Canada: British Columbia: from Buck, 2004).

Trypoxylon morrisoni Richards, 1934:319, ♀. Holotype: ♀, USA: Nevada: no specific locality (ZMHU). Synonymized with *Trypoxylon bidentatum* by Sandhouse, 1940:162.

50. *bidenticulatum* Tsuneki

Trypoxylon bidenticulatum Tsuneki, 1979a:65, ♀. Holotype: ♀, Vietnam: Fyan (Bishop Mus.). – Tsuneki, 1979a:8 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Pham, Kumar and Danilov, 2015:1593 (in list of Sphecidae *sensu lato* of Vietnam).

51. *bifoveatum* Tsuneki

Trypoxylon bifoveatum Tsuneki, 1979a:20, ♀, ♂. Holotype: ♀, Malay Peninsula: Pahang in Frazer's Hills (BMNH). – Tsuneki, 1979a:3 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:33 (India: Sikkim), 61 (in key to *Trypoxylon* of Myanmar), 1981f:44 (member of *Trypoxylon bifoveatum* species group); T. Li and Q. Li, 2007:9 (China: Yunnan: Xishuangbanna), 2010:241 (in key to *Trypoxylon* of southwestern China).

52. *bilobatum* Tsuneki

Trypoxylon bilobatum Tsuneki, 1961b:385, ♂. Holotype: ♂, Thailand: Mae Hoi (Osaka Univ.). – Tsuneki, 1974b:630 (Thailand); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1979a:16 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 163 (Laos; redescription); T. Li and Q. Li, 2010:243 (in key to *Trypoxylon* of southwestern China), 246 (first record from China: Yunnan: Xishuangbanna City).

53. *biputeolum* Tsuneki

Trypoxylon biputeolum Tsuneki, 1979a:22, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:3 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:44 (member of *Trypoxylon bifoveatum* species group).

54. *bishopi* Tsuneki

Trypoxylon bishopi Tsuneki, 1979a:55, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Ma, Q. Li, Wang, Jiang, and Lu, 2018:830 (China: Shanxi: Qinling Mountains).

55. *bismarckianum* Tsuneki

Trypoxylon bismarckianum Tsuneki, 1977h:7, ♀, ♂ (♂ = *Trypoxylon kalilicum*). Holotype: ♀, Bismarck Islands: New Britain: Vaisisi (ZMUC). – Tsuneki, 1981a:9 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 26 (additional description; ♂ described in 1977 is a different species), 1982a:46 (Bismarck Archipelago).

56. *bituberculatum* Tsuneki

Trypoxylon bituberculatum Tsuneki, 1977h:17, ♀. Holotype: ♀, New Guinea: Huon Gulf: Sattelberg (TMB). – Tsuneki, 1978b:28 (Indonesia: Island of Misool), 1981a:5 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 23 (New Guinea; additional description), 1981b:100 (in key to *Trypoxylon* of Australia), 104 (Australia: Queensland); Cardale, 1985:264 (in catalog of Australian Sphecidae); Naumann, 1993:184 (Australia: Queensland: Heathlands area in Cape York).

ssp. *biroi* Tsuneki

Trypoxylon bituberculatum biroi Tsuneki, 1977b:18, ♀. Holotype: ♀, New Guinea: Friedrich-Wilhelm-Hafen, now Madang (TMB). – Tsuneki, 1980a:114 (comparison with *Trypoxylon bituberculatum mysolense*), 1981a:5 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 27 (same locality; additional description).

ssp. *mysolense* Tsuneki

Trypoxylon bituberculatum mysolense Tsuneki, 1980a:114, ♀. Holotype: ♀, Indonesia: Island of Misool: no specific locality (OXUM). – Tsuneki, 1980a:116 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1981a:97 (additional description).

As *Trypoxylon gracillimum*: Tsuneki, 1978:26 (♀ only), corrected to *Trypoxylon bituberculatum mysolense* by Tsuneki, 1980a:2

57. *borneanum* Tsuneki

Trypoxylon borneanum Tsuneki, 1980a:19, ♀. Holotype: ♀, Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:4 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

58. *bourgeoisi* Strand

Trypoxylon bourgeoisi Strand, 1911a:155, ♀. Holotype: ♀, Ecuador: Loja (MNHN). – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

59. *brasilianum* de Saussure

Trypoxylon brasilianum de Saussure, 1867:84, ♀. Holotype or syntypes: ♀, Brazil: Bahia (MHNG). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:281 (member of *Trypoxylon fabricator* species group); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

60. *braunsi* Arnold

Trypoxylon braunsi Arnold, 1924:22, ♂ as *Braunsi*, incorrect original capitalization). Holotype: ♂, South Africa: Eastern Cape Province: Willowmore (TMP). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:96 (in key to Afrotropical *Trypoxylon*), 122 (in revision of Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

61. *breviclypeatum* Tsuneki

Trypoxylon breviclypeatum Tsuneki, 1979a:172, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:18 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

62. *brevipenne* de Saussure

Trypoxylon brevipenne de Saussure, 1867:85, ♀. Holotype or syntypes: ♀, Guinea: no specific locality (NHMW or MHNG). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Arnold, 1924:16 (in revision of southern African *Trypoxylon*), 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:340 (member of *Trypoxylon brevipenne* species group); Leclercq, 1965a:82 (in key to Afrotropical *Trypoxylon*), 101 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Antropov, 1993b:53 (Central African Republic); Simon Thomas and Wiering, 1993:406 (Cape Verde Islands: Island of Santiago).

63. *breviventre* Arnold

Trypoxylon breviventre Arnold, 1959:319, ♀. Holotype: ♀, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:86 (in key to Afrotropical *Trypoxylon*), 108 (not examined); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

64. *bridwelli* Sandhouse

Trypoxylon bridwelli Sandhouse, 1940:169, ♂. Holotype: ♂, USA: Texas: Brownsville (USNM). – Krombein *in* Muesebeck, Krombein, and Townes, 1951:955 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Coville, 1990:2 (status of species uncertain); Falcón-Brindis, Rodríguez-Estrella, and Jiménez, 2019:4 (Mexico: Baja California peninsula: body size and prey spectrum allow avoiding competition with congeneric species).

65. *brunneimaculatum* T. Li and Q. Li

Trypoxylon brunneimaculatum T. Li and Q. Li, 2007:5, ♀, ♂. Holotype: ♀, China: Zhejiang: Tianmushan (Yunnan Agricultural University, Kunming).

66. *buddha* Cameron

Trypoxylon buddha Cameron, 1889c:119, sex not stated. Syntypes: ♀, India: Westa Bengal: Barrackpore 20 km north of Calcutta (OXUM). – Cameron, 1889c:118 (in list of Oriental Sphecidae); Bingham, 1897:225 (redescription); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Richards, 1934:338 (member of *Trypoxylon brevipenne* species group); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1978b:33 (redescription), 76 (in key to Oriental *Trypoxylon*), 1979a:3 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 19 (bibliographic reference), 1979b:3 (in key to *Trypoxylon* of Sri Lanka), 8 (Sri Lanka), 1980b:4 (in key to *Trypoxylon* of Philippines), 16 (relationships to *Trypoxylon propinquum*), 21 (Philippines; additional description), 1981d:18 (in new key to *Trypoxylon* of Sri Lanka), 22 (India), 1981f:41 (member of *Trypoxylon buddha* species group); Haneda, 2011:46 (Philippines: Palawan); Mawadda and Girish Kumar, 2023:104 (India: Uttarakhand: Rajaji National Park), 115 (in checklist of Crabroninae of Northern India).

Trypoxylon monstruosum Tsuneki, 1974b:633, ♂. Holotype: ♂, Thailand: Bangkok (T. Tano coll., Fukui). Synonymized with *Trypoxylon buddha* by Tsuneki, 1978b:36. – R. Bohart and Menke, 1976:630 (in checklist of world Sphecidae).

Trypoxylon buddhae [sic] *tarawakanum* Tsuneki, 1976b:92, ♀. Holotype: ♀, Philippines: Tawi Tawi: Tarawakan (ZMUC). Synonymized with *Trypoxylon buddha* by Tsuneki, 1978b:36. – Tsuneki, 1977i:4 (corrected to *buddha tarawakanum*).

67. *buehleri* Tsuneki

Trypoxylon buehleri Tsuneki, 1979c:45, ♀. Holotype: ♀, Indonesia: Island of Sumba: Central District: Lindiwatju (Basel Mus.). – Tsuneki, 1979c:8 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

68. *bukidnon* Tsuneki

Trypoxylon bukidnon Tsuneki, 1980b:103, ♀. Holotype: ♀, Philippines: Mindanao: Bukidnon: Mount Katanglad (Bishop Mus.). – Tsuneki, 1980b:11 (in key to *Trypoxylon* of Philippines).

69. *bum* Tsuneki

Trypoxylon bum Tsuneki, 1981d:59, ♀. Holotype: ♀, norheastern Myanmar: Kambaiti (NRS). – Tsuneki, 1981d:63 (in key to *Trypoxylon* of Myanmar).

70. *burmaense* Tsuneki

Trypoxylon burmaense Tsuneki, 1981d:38, ♂. Holotype: ♂, norheastern Myanmar: Kambaiti (NRS). – Tsuneki, 1981d:41, 61 (in key to *Trypoxylon* of Myanmar), 1981f:35 (member of *Trypoxylon vechti* species group).

71. *cagrum* Tsuneki

Trypoxylon cagrum Tsuneki, 1979a:91, ♀. Holotype: ♀, Thailand: Doi Suthep near Chieng Mai (Bishop Mus.). – Tsuneki, 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 62 (first record from Vietnam: Vinh Phuc: Tam Dao National Park).

72. *caldesianum* Richards

Trypoxylon caldesianum Richards, 1934:321, ♀, ♂. Holotype: ♀, Colombia: Caldes (BMNH). – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

73. *cameronii* Dalla Torre

Trypoxylon palliditarse Cameron, 1889a:48, ♂, junior primary homonym of *Trypoxylon palliditarse* de Saussure, 1867. Lectotype: ♂, Mexico: Tabasco: Teapa (BMNH), designated by Richards, 1934:297. – Bodkin, 1918:317 (British Guiana).

Trypoxylon cameronii Dalla Torre, 1897:702. Substitute name for *Trypoxylon palliditarse* Cameron, 1889. – Richards, 1934:297 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

Trypoxylon tabascense Strand, 1910a:169, footnote. Substitute name for *Trypoxylon palliditarse* Cameron, 1889. – Strand, 1927:255 (in list of species described by the author).

74. *cameroni* Tsuneki

Trypoxylon cameroni Tsuneki, 1980a:58, ♀. Holotype: ♀, Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:8 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

75. *canlaon* Tsuneki

Trypoxylon canlaon Tsuneki, 1980b:77, ♀. Holotype: ♀, Philippines: Negros: Mount Canlaon (AEI). – Tsuneki, 1980b:8 (in key to *Trypoxylon* of Philippines).

76. *capense* Cameron

Trypoxylon capense Cameron, 1905g:260, sex not stated. Holotype or syntypes: South Africa: Eastern Cape Province: Dunbrody (BMNH). – Arnold, 1924:18 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

77. *capillatum* Tsuneki

Trypoxylon capillatum Tsuneki, 1979b:9, ♀. Holotype: ♀, Sri Lanka: Trincomalee (USNM). – Tsuneki, 1979b:4 (in key to *Trypoxylon* of Sri Lanka), 1981d:8 (Sri Lanka), 19 (in new key to *Trypoxylon* of Sri Lanka), 1981f:28 (single member of *Trypoxylon capillatum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

78. *capitale* Richards

Trypoxylon capitale Richards, 1934:328, ♀, ♂. Holotype: ♂, Argentina: Salta: Salta (ZMHU). – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

79. *carcinum* Leclercq

Trypoxylon carcinum Leclercq, 1965a:104, ♀, ♂. Holotype: ♀, Zaire: Rwankwi north of Lake Kivu (MRAC). Paratypes: Rwanda. – Leclercq, 1965a:84 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains).

80. *carinatum* Say

Trypoxylon carinatum Say, 1837:374, ♂ (as *carinatus*, incorrect original termination). Holotype or syntypes: USA: Indiana (lost). – F. Smith, 1856:381 (in catalog of Hymenoptera in British Museum); Le Conte, 1859b:757 (original description copied); Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:418 (listed under Desiderata); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); W. Fox, 1891c:147 (in revision of North American *Trypoxylon*), 1894a:475 (in revision of North American Larrinae, description of ♀); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); J. Smith, 1900:520 (in list of insects of New Jersey), 1910:684 (in new list of insects of New Jersey); J.Ch. Bradley, 1928:1010 (in catalog of New York Crabronidae); Richards, 1934:329 (not examined), 1936:463 (member of *Trypoxylon scutatum* species group); Brimley, 1938:443 (North Carolina: Raleigh); Sandhouse, 1940:153 (in revision of Nearctic *Trypoxylon*); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck, Krombein, and Townes, 1951:955 (in catalog of North American Hymenoptera); Krombein, 1954a:5 (West Virginia: Lost River State Park), 1962b:13 (infestation by acarid *Lackerbaueria krombeini*

Baker), 1963f:273 (Maryland: Plummers Island near Washington, D.C.), 1967b:228 (nesting habits observed in artificial nests); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Buck, 2004:25 (Canada: in checklist of Crabronidae of Ontario30 (distribution within Ontario), 54 (first record from Canada: Ontario: list o localities); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas).

81. *cariosum* Arnold

Trypoxylon cariosum Arnold, 1959:316, ♀. Holotype: ♀, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:94 (in key to Afrotropical *Trypoxylon*), 119 (bibliographic reference); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

82. *carpenteri* Richards

Trypoxylon carpenteri Richards, 1933:215, ♂, ♀. Holotype: ♂, Uganda: Island of Nkosi in Lake Victoria (BMNH). – Richards, 1934:340 (member of *Trypoxylon carpenteri* species group); Leclercq, 1965a:91 (in key to Afrotropical *Trypoxylon*), 116 (in revision of Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

83. *castoris* Leclercq

Trypoxylon castoris Leclercq, 1965a:125, ♀, ♂. Holotype: ♂, Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:98 and 99 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

84. *cataractae* Arnold

Trypoxylon cataractae Arnold, 1924:13, ♂, ♀. Syntypes: Zimbabwe: Cloudlands in Vumbu Mountains, Salisbury, Victoria Falls (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:92 (in key to Afrotropical *Trypoxylon*), 116 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1981f:30 (single member of *Trypoxylon cataractae* species group; as *catalactae*); Antropov, 1993b:53 (Zimbabwe).

ssp. *madecassum* Arnold

Trypoxylon cataractae madecassum Arnold, 1945:9, ♀, ♂. Syntypes: Madagascar: Ranomafana (MNHN). – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1981d:83 (Madagascar; additional description); Madl, 1997:820 (Madagascar: Island of Nosy Boraha), 821 (in checklist of Nosy Boraha Sphecidae); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Madl, 2014a:988 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

85. *catinum* Leclercq

Trypoxylon catinum Leclercq, 1965a:126, ♂. Holotype: ♂: Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:98 and 99 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

86. *cavallum* Leclercq

Trypoxylon cavallum Leclercq, 1965a:125, ♂. Holotype: ♂, Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:98 and 99 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

87. *cavum* Tsuneki

As *Trypoxylon maculiventre*: Tsuneki, 1979c:6 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 29 (Indonesia: Java, Sumatra), corrected to *Trypoxylon cavum* by Tsuneki, 1980a:2 and 45.

Trypoxylon cavum Tsuneki, 1980a:44, ♀, ♂. Holotype: ♀, Indonesia: West Java: Middle Djampang: Mount Tijsoeroe (RMNH).

88. *centrale* W. Fox

Trypoxylon centrale W. Fox, 1895c:267, ♀. Syntypes: ♀, Mexico: Baja California Sur: San José del Cabo (depository?). – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:2821 (member of *Trypoxylon fabricator* species group); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

89. *cheesmanae* Tsuneki

Trypoxylon cheesmanae Tsuneki, 1979c:11, ♀. Holotype: ♀, Indonesia: Java: Tjibodas (BMNH). – Tsuneki, 1979c:4 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

90. *chichidzimaense* Tsuneki

Trypoxylon chichidzimaense Tsuneki, 1973a:12, ♀. Holotype: ♀, Japan: Bonin Islands: Island of Chichijima (Y. Haneda coll.). – Haneda, 1973:30 (Japan: Bonin Islands: Chichijimas Islands); Tsuneki, 1973e:33 (in key to *Trypoxylon* of Japan, in Japanese), 1981a:5, 7 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 52 (redescription); Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1981e:6, 7 (in key to *Trypoxylon* of Japan and northeastern Asia), 82 (redescription), 1984a:6 (description of ♂; member of *Trypoxylon vardyi* species group; Ogasawara = Bonin Islands); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Takahashi and Shimizu, 2001:13 (Japan: Ogasawara Islands: Chichi-Jima and Haha-Jima); Terayama and Nambu, 2009:6, 24 (in key to Trypoxylini of Japan); Takahashi, Shimizu, and Nambu, 2009:4 (Japan: Ogasawara Islands: Chichi-Jima and Haha-Jima); Takahashi, 2010:19 (Japan: in list of Hymenoptera of Ogasawara = Bonin Islands).

91. *chichimecum* de Saussure

Trypoxylon chichimecum de Saussure, 1867:83, ♀. Syntypes: Mexico: including one from Mexico City (MHNG). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cameron, 1889a:47 (in list of Mexican Sphecidae); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:314 (not examined); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

92. *chimbum* Tsuneki

Trypoxylon chimbum Tsuneki, 1981a:39, ♀. Holotype: ♀, Papua New Guinea: Chimbu District: Kundiawa (Bishop Mus.). – Tsuneki, 1981a:5 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

93. *chingi* Tsuneki

Trypoxylon chingi Tsuneki, 1971g:10, ♀, ♂. Holotype: ♂, Taiwan: Chiai Prefecture: Kansitaku, now Kuanghua (originally K. Tsuneki coll., now USNM). – Tsuneki, 1971g:16 (in additional key to females of *Trypoxylon* of Taiwan), 18 (in new key to males of *Trypoxylon* of Taiwan); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1981c:4, 7 (in key to *Trypoxylon* of Taiwan), 17 (Taiwan; additional description); Nuhn and Menke, 1994:25 (holotype transferred to USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

94. *chirindense* Arnold

Trypoxylon chirindense Arnold, 1936:35, ♂ (as *chirindensis*, incorrect original termination). Holotype: ♂, Zimbabwe: Chirinda Forest (SAM). – Arnold, 1943:71 (Zaire: Albert National Park); Leclercq, 1955:406 (Rwanda),

1965a:93 (in key to Afrotropical *Trypoxylon*), 117 (in revision of Afrotropical *Trypoxylon*; Burundi, Uganda, Zaire); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

95. *choiseulense* Tsuneki

Trypoxylon choiseulense Tsuneki, 1981a:20, ♀. Holotype: ♀, Solomon Islands: Island of Choiseul: Kolombangara River (Bishop Mus.). – Tsuneki, 1981a:4 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

96. *chosenense* Tsuneki

Trypoxylon chosenense Tsuneki, 1956g:25, ♀, ♂. Holotype: ♀, Korea: Shoyosan = Mount Shoyo (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956g:5, 10 (in key to *Trypoxylon* of northeastern Asia), 1981e:3 (in key to *Trypoxylon* of Japan and northeastern Asia), 13 (Japan; redescription), 1981f:30 (single member of *Trypoxylon chosenense* species group); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Paik, 1985:199 (in list of Sphecidae of Korea); Tano, 1995:43 (holotype in K. Tsuneki collection, as *chosennense*); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.); Lee and Shin, 2000:24, 25, 27 (Korea: Suwon and Kwangju-gun, as *chosense*); J.-K. Kim, 2014:438 (in catalog of Sphecidae *sensu lato* of Korean Peninsula).

97. *cidicum* Tsuneki

Trypoxylon cidicum Tsuneki, 1980b:75, ♀, Philippines: Luzon: Mount Makiling (USNM). – Tsuneki, 1980b:8 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:25 (holotype in USNM).

98. *cimmolum* Tsuneki

Trypoxylon cimmolum Tsuneki, 1980a:67, ♀. Holotype: ♀, Malaysia: northern Borneo: Forest Camp 19 km north of Kalabakan (Bishop Mus.). – Tsuneki, 1980a:8 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

99. *cinctellum* Richards

Trypoxylon cinctellum Richards, 1934:299, ♀. Holotype: ♀, Panama: Island of Barro Colorado (USNM). – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

100.*cindjun* Tsuneki

Trypoxylon cindjun Tsuneki, 1980a:89, ♀. Holotype: ♀, Malaysia: Sarawak (=northern Borneo): Mount Mulu (BMNH). – Tsuneki, 1980a:11 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

101. *clarkei* Krombein

Trypoxylon clarkei Krombein, 1962a:9, ♂, ♀. Holotype: ♂, USA: Virginia: Dunn Loring (USNM). – Krombein, 1963f:273 (Maryland: Plummers Island near Washington, D.C.), 1967b:229 (nesting habits observed in artificial nests); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Krombein, 1979b:1643 (in catalog of North American Hymenoptera); Buck, 2004:25 (Canada: in checklist of Crabronidae of Ontario,), 30 (distribution within Ontario), 54 (first record from Canada: Ontario: list of localities).

102. *clavicerum* Lepeletier de Saint Fargeau and Audinet-Serville

Trypoxylon clavicerum Lepeletier de Saint Fargeau and Audinet-Serville, 1828:750, ♀, ♂. Syntypes: France: Paris area (depository unknown). – Curtis, 1837:pl.652 (illustration of habitus and of various body parts); Shuckard, 1837a:118 (in revision of British Aculeata); von Siebold, 1839:50 (Germany: Danzig, now Poland: Gdańsk); Dahlbom, 1842a:13 (in review of Scandinavian aculeates), 1844:279 (in revision of Sphecidae and Pompilidae), 1845:509 (in key to world *Trypoxylon*); Lepeletier de Saint Fargeau, 1845:229 (in revision of world Hymenoptera); von Kiesenwetter, 1849:90 (Germany: Kingdom of Saxony); F. Smith, 1849a:2373 (Great Britain: Devonshire); Wissmann, 1849:14 (Germany: Kingdom of Hannover: Hannover, Harz Mountains, Münden, nest and prey); Tischbein, 1850:9 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); F. Smith, 1851c:24 (Great Britain: Camberwell, Darenth Wood, Hampstead); Wesmael, 1852:270 (Belgium:

Bruxelles); Kirschbaum, 1853:47 (Germany: Herzogtum Nassau: Weilburg and Wiesbaden, as *clavicorne*); F. Smith, 1853:63 (in checklist of British Hymenoptera), 1856:376 (in catalog of Hymenoptera in British Museum); Kawall, 1857:25 (Kurland, now Latvia); Ruthe and Stein, 1857:315 (Germany: Berlin area); Schenck, 1857:133 (Germany: in revision of fossorial wasps of Nassau Region); A. Costa, 1858:20 (Italy: Campania: Monti Partenii in Benevento Region); F. Smith, 1858c:118 (in review of British Aculeata, redescription); Taschenberg, 1858:99 (in key to Sphecidae of Germany); Assmuss, 1859:616 (Russia: Moscow Governorate); Funk, 1859:58 (Germany: Bayern: Bamberg); Schenck, 1860:147 (Germany: Nassau region); Brischke, 1862:105 (Germany: Preussen Province, now Poland: Pomorze Region); Taschenberg, 1866:184 (in revision of Hymenoptera of Germany); A. Costa, 1867c:117 (in revision of Italian Sphecidae); Kirchner, 1867:223 (in catalog of European Hymenoptera); Schenck, 1867a:353 (Germany: Nassau Region); Dietrich, 1868:362 (Switzerland: Zurich Canton); Wierzejski, 1868:117 (Poland: Kraków area; Ukraine: L'viv and Podole region; common everywhere); Palma, 1869:41 (Italy: Sicilia settentrionale); von Aichinger, 1870:315 (Austria: Tirol); Bold, 1870:148 (Great Britain: Northumberland and Durham); Thomson, 1870:251 (in revision of Swedish wasps); A. Costa, 1871b:46 (in revision of Italian Sphecidae); F. Smith, 1871b:13 (in catalog of British Aculeata); P. Ivanov, 1872:152 (Ukraine: Khar'kov Oblast': Kupyansk area); Schlechtendal, 1872:36 (Germany: Sachsen: Zwickau); Dours, 1874:151 (in catalog of Hymenoptera of France); Thomson, 1874:253 (in revision of Hymenoptera of Scandinavia); Wierzejski, 1874:261 (Ukraine: Podole Region: Kalinowce, Sinków, Skała, Tulin); Marquet, 1875:209 (France: Languedoc); Taschenberg, 1875:379 (Germany: Halle); Beuthin, 1876:230 (Germany: Hamburg area); Daly, 1878:45 (Great Britain: Dorset: Glanville's Wootton); Girard, 1879:932 (morphology and habits); Kohl, 1880:135 (Austria: Tirol, and Italy: Trentino–Alto Adige); E. Saunders, 1880:278 (in revision of British Aculeata); Siebke, 1880:67 (Norway); Marquet, 1881:184 (southern France); E. Saunders, 1881:165 (Portugal: road from Silves to Monchique); A. Costa, 1883:58 (Italy: Sardegna: Alghero); Kohl, 1883e:657 (Switzerland); Sickmann, 1883:76 (Germany: Niedersachsen: Wellingholthausen); Harwood, 1884:211 (Great Britain: Essex: Colchester area); von Heyden, 1884:121 (Germany: Frankfurt am Main area); Kohl, 1885a:193 (in key to European *Trypoxylon*), 198 (in revision of European *Trypoxylon*), 203 (in checklist of world *Trypoxylon*); De Stefani Perez, 1886:172 (Italy: Sicilia: monte di Renda near Palermo); Wüstnei, 1886:37 (Germany: Schleswig-Holstein); Gasperini, 1887:14 (Dalmatia: Spalato, now Croatia: Split); Ed. André, 1888:209 (in revision of Sphecidae of Europe and Algeria), 17* (bibliographic references); Brischke, 1888b:100 (Germany: Preussen Province, now Poland: Pomorze Region); Kohl, 1888b:723 (Austria: Tirol, now Italy: Alto Adige); Riggio and De Stefani Perez, 1888:149 (Italy: Island of Ustica); Brischke, 1889:204 (Germany: Steegen east of Danzig, now Poland: Stegna east of Gdańsk); Assmuss, 1892:53 (Russia: earlier record from Moscow Governorate repeated); V. Perkins, 1892:204 (Great Britain: Gloucestershire: Wotton-under-Edge); Kohl, 1893a:29 (Austria: Niederösterreich); Sickmann, 1893:81 (Germany: Niedersachsen: Iburg, list of prey); De Stefani Perez, 1894:216 (Italy: Sicilia); Krieger, 1894:10 (Germany: Kingdom of Saxony); De Stefani Perez, 1895:227 (in catalog of Sicilian Hymenoptera); E. Saunders, 1896:86 (in revision of British Aculeata); Acloque, 1897:92 (in Sphecid Fauna of France and Algeria); Borries, 1897:73 (nesting habits); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Mocsáry, 1897:77 (Hungary, some localities are in today's Slovakia); Strand, 1898b:95 (Norway); de Cobelli, 1903:108 (Italy: Province of Trentino, as *clavigerum*); Antiga and Bofill, 1904:13 (Spain: Cataluña Province); Aurivillius, 1904:278 (in revision of Swedish Sphecidae); W. Schulz, 1904b:102 (Czechoslovakia; Grece: Island of Corfu); Kubes, 1905:84 (Czech Republic: Obora, Sušice); Vángel, 1905:166 Hungary); Mercet, 1906c:465 (in key to Palearctic *Trypoxylon*); W. Schulz, 1906:212 (corrrection to Dalla Torre: Lepeletier de Saint Fargeau and Serville are authors of the name); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Morley, 1909:304 (Great Britain: Isle of Wight); Cavro, 1910:685 (France: Département du Nord); Dittrich, 1911b:26 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:45 (Italy: Trieste area); Birula, 1912:546 (Ukraine: Zhytomyr Oblast': Radomyshl'); Geyer, 1912:378 (structure of compound eyes); Hallett, 1912:94 (Great Britain: Glamorgan

County); Rudow, 1912:59 (nesting in wood or twigs, preying on small spiders, flies, mayflies, and psyllids, prey mostly in error); Schirmer, 1912:168 (Germany: Berlin area); Alfken, 1914:284 (northwestern Germany); Birula, 1914:390 (Belorussia: Ambrosovichi near Vitebsk); Szilády, 1914:88 (Hungary: Nagyenyed, Radnai havasok, Vihnye, Vizakna Dusmet y Alonso, 1915:87 (Spain: Aragón); Dubois, 1919:96 (Belgium: Bruxelles: Uccle); Kerenskiy, 1919:37 (Russia: Penza Governorate); O. Meyer, 1919:157 (Germany: Posen Province, now Poland: Poznań Region); Łoziński, 1920:122 (Poland: Kraków); Noskiewicz, 1920b:156 (Poland, now Ukraine: forest district Kopanki near Kałusz); Strand, 1920:23 (Germany: Berlin-Dahlem); A. Wagner, 1920:37 (Germany: Lower Elbe region); Berland, 1921:533 (Greece); Chevalier, 1922:46 (nest parasite: *Pachyophtalmus signatus* (Meigen), a calliphorid); Dubois, 1922:217 (in key to Belgian Sphecidae); Maidl, 1922:73 (Albania); Lauterborn, 1924:287 (Germany: Baden-Württemberg: Kaiserstuhl); R. Perkins, 1924:229 (Great Britain: Devon); Berland, 1925d:151 (in Sphecid Fauna of France); Bischoff, 1925:302 (Latvia: Jelowka, Tauerkalln, Wezkukkul; Poland: Białowieża and Grajewo area); Blüthgen, 1925:166 (Germany: Saale River valley: Roβbach); Coulon, 1925:126 (France: Evreux; Morocco: Tanger); R. Perkins, 1925:154 (Great Britain: Gloucestershire and Somersetshire); Schütze, 1925:114 (Germany: Lausitz Region); Bouwman, 1926:280 (in list of Sphecidae of Netherlands); Friese, 1926:151 (in key to Sphecidae of Central Europe, morphological and biological characteristics); Hémon, 1926:199 (France: Finistère: Fouesnant); F. Werner, 1927:67 (Austria: Niederösterreich: River Kamp valley); Berland, 1928b:179 (add Borries, 1897 to bibliography in Berland, 1925d); Bouwman, 1928a:387 (in revision of Sphecidae of Netherlands); Barovskij, 1929:148 (Russia: near Sankt Petersburg); Chevalier, 1929a:17 (nesting habits); Grandi, 1929:289 (Italy: Toscana: valle della Limentra); Stelfox, 1929:14 (first record from Ireland: Powerscourt deerpark); Hamm and Richards, 1930:120 (summary of nesting habits), 126 (list of prey); Schmiedeknecht, 1930:711 (in keys to Hymenoptera of North and Central Europe); Butterfield and Fordham, 1931:155 (Great Britain: Yorkshire); Grandi, 1931:57 (Italy: Toscana: Vallata delle Pozze near Le Mandriole); Pulkkinen, 1931:103 (in revision of Sphecidae of Finland); Spooner, 1931:15 (Great Britain: Cambridgeshire); Bondroit, 1932:39 (Belgium: Forêt de Soignes); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Jones, 1932a:82 (Great Britain: Nottinghamshire), 1932b:233 (Great Britain: Wicken Fen); Bondroit, 1933:32 (Belgium: Bruxelles); Merisuo, 1933a:60 (Finland: city of Turku; as *clavigerum*); E. Nielsen, 1933:278 (summary of nesting habits); Balles, 1934:29 (Germany: Baden-Württemberg: Fautenbach, Hopfengarten); Bondroit, 1934:60 (Belgium: Boendael); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Dusmet y Alonso, 1935:73 (Spain: Leon: Leon), 80 (Spain: Zaragoza: Ambel); Forsius *in* Forsius and Hellén, 1935:12 (in checklist of Hymenoptera of Finland); Marchand and Dulac, 1935:61 (France: Saône-et-Loire: Saint Laurent d'Andenay); Minkiewicz, 1935:216 (Poland: Lake Garbaś 20 km west of Suwałki); Vergne, 1935:119 (France: Auvergne: common); Crèvecoeur and Maréchal, 1936:252 (in catalog of Belgian Hymenoptera); Drogoszewski, 1936:130 (Poland: Łowicz, Opatów); Gussakovskij, 1936:661 (in revision of Palearctic *Trypoxylon*); Maréchal, 1936:384 (review of literature on nesting habits); Dulac, 1937:17 (France: Saône-et-Loire: Corchanu, Saint-Laurent d'Andenay); Richards, 1937b:104 (in checklist of British aculeates); Struve, 1937:150 (Germany: Island of Borkum); Zavadil, Šustera, and Bat'a, 1937:221 (in catalog of Sphecidae of Czechoslovakia); P. Freeman, 1938:5 (nest and prey); Hallett, 1938:73 (Great Britain: Herefordshire: Cusop, Tarrington, Woolhope); Móczár, 1938c:80 (Hungary: Kőszeg Hills); A. Wagner, 1938a:124 (northwestern Germany); Aerts, 1939:135 (Germany: Nordrhein-Westfalen: loess cliff at Weilerswist near Köln); Guichard, 1939a:42 (Great Britain: southern Cornwall: Polperro); Móczár, 1939:4 (Hungary: Jászberény); Stelfox, 1939b:205 (Ireland: Down County: Rostrevor); Balthasar, 1941b:114 (Czech Republic: eastern Moravia); de Graham, 1941:99 (Great Britain: Lincolnshire); Paul, 1941:50 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); Schneid, 1941:1053 (Germany: Bayern: Bamberg area); J. Perkins, 1942:199 (Sweden: Skåne: Kivik); Spooner, 1942:110 (Great Britain: Bedfordshire); Giner Marí, 1943a:217 (in Sphecid Fauna of Spain); Spooner, 1943:71 (Great Britain: G. Wootton); Guiglia, 1944b:33 (Italy); Šnoflák, 1944a:144 (Czech Repub-

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Gorge at 41°48'N 23°10'E); Józan, 2001:279 (Hungary: Somogy County); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 176 (review of known biology); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:142 (distribution in Germany by provinces); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:188 (Poland: Kampinos National Park near Warszawa); van der Smissen, 2001:64 (Germany: Schleswig-Holstein: not endangered); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Archer, 2002b:112 (Great Britain: Watsonian Yorkshire: distribution map), 2002c:38 (Great Britain: Watsonian Yorkshire), 2002e:41 (Great Britain: Watsonian Yorkshire); Archer and Edwards, 2002:102 (Great Britain: West Sussex: Ambersham and Iping commons); Beavis, 2002:106 (Great Britain: Kent: Tunbridge Wells area, also East Sussex); Bieri, 2002:79 (Liechtenstein); Dorow, 2002:16 (Germany: Hessen: Weiherskopf Forest Reserve); Esser and Cölln, 2002:1137 (southwestern Germany: Eifel region); Józan, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:84 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Kuhlmann, 2002:66 (Germany: Bayern: National Park Bayerischer Wald); Litt, 2002:166 (Belgium); Martínez de Murguia, Vázquez, and Nieves Aldrey, 2002:202 (Spain: Navarra: Artikutza Forest Reserve at 43°09'28"–43°14'52"N 0°1'45'35" 01°49'30"E); C. Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shlyakhtenok and Skibinska, 2002:33 (Belorussia: no specific localities); Söderman and Vikberg, 2002:51 (in list of Aculeata of Finland); Steffan-Dewenter, 2002:634 (Germany: Niedersachsen: Göttingen area); Wiśniowski, 2002:70 (Poland: Ojców National Park); Archer, 2003a:58 (Great Britain: Watsonian Yorkshire); Cölln, Esser, and Jakubzik, 2003:63 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Esenbekova and Kazenas, 2003:6, 7, and 54 (Kazakhstan: foothills of Zailiyskiy Alatau: nesting in artificial nests, nest structure in artificial nest); Esser and Jakubzik, 2003:291 (Germany: Nordrhein-Westfalen: Niederrheinisches Tiefland); Flügel, 2003:9 (Germany: Hessen: Knüllwald); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); Haeseler, 2003:340 (Germany: Niedersachsen: Island of Harriersand near Bremen); Józan, 2003:227 (Hungary: Látrányi Puszta Nature Conservation Area); Kuhlmann and Quest, 2003:51 (Germany: Bayern: Bayerischer Wald National Park); Kula and Tyrner, 2003a:150 (Czech Republic: Děčin Sandstone Uplands: forest district Snežnik: birch stands in air-polluted area), 2003b:204 (northern Czech Republic: spruce stands in air-pollution region); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:70 (Germany: in catalog of wasps and bees of Bayern); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Pagliano, 2003b:132 (Italy: Island of Pantelleria); Steffan-Dewenter and Leschke, 2003:1966 (Germany: Niedersachsen: orchard meadows); von der Heide and Metscher, 2003:103 (Germany: Niedersachsen: Emsland area); Wiśniowski *in* Dylewska and Wiśniowski, 2003:153 (Poland: Ojców National Park); Wiśniowski and Werstak, 2003:77 (Poland: Pieniny National Park); Archer, 2004:47 (Great Britain: Worcestershire: Devils Spittleful Nature Reserve); Buck, 2004:25 (Canada: in checklist of Crabronidae of Ontario); Budrienė, Budrys, and Nevronytė, 2004:22 (Lithuania: nesting in trap nests); Deván, 2004:148 (western Slovakia); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Gayubo**,** Nieves-Aldrey, González, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Gorobchishin and Protsenko, 2004:40 (Ukraine: Kherson Oblast': Chernomorskiy Nature Reserve); Hellrigl, 2004a:175 (Italy: Trentino-Alto Adige, as Südtirol: Tschögglberg); Jakubzik, Niehuis, and Cölln, 2004:458 (Germany: Rheinland-Pfalz: Roβstein in Rhein valley at 50°06'42"N 7°43'87"E); Kazenas, 2004b:105 (Kazakhstan: western Tien Shan); Klein and Lefeber *in* Peeters, van Achterberg, et al., 2004:428 (in Wasp and Ant Fauna of Netherlands); Majzlan and Deván, 2004:31 (Slovakia: Sekule); Salzmann-Wandeler and Rezbanyai-Reser, 2004:27 (central Switzerland); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region, as *clavicerum clavicerum*); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and

Skibińska, 2004:357 (in catalog of Polish Crabronidae); Szczepko and Kowalczyk, 2004:126 (Poland: Kampinos National Park near Warszawa); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:45 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:93 (in key to *Trypoxylon* of Poland); Archer, 2005a:30 and 2005b: (Great Britain: Watsonian Yorkshire); Burger, 2005:36 (Germany: Thüringen); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Ebrahimi, 2005:127 (in key to selected Iranian Sphecidae); Gathmann, 2005:108 (Germany: Niedersachsen: agricultural landscape near Göttingen; nest parasite: *Chrysis cyanea* (Linnaeus), Chrysididae), 109 (nest parasites *Melittobia acasta* (Walker), Eulophidae, *Ephialtes manifestator* (Linnaeus), Ichneumonidae, and *Nematopodius debilis* (Ratzeburg), Ichneumonidae), 110 (nest parasite: *Megatoma undata* (Linnnaeus), Dermestidae; Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Jacobs, 2005a:453 (Bulgaria: Begovitsa in Pirin Mountains, Starosel near Hissarya); Jakubzik and Cölln, 2005:63 (Germany: Rheinland-Pfalz: Bausenberg near Niederzissen); Kofler, 2005:173 (Austria: Tirol: Lienz District: Lienzer Klause in Leisach Common, city of Lienz, Grafendorf in Gaimberg Common); Kowalczyk and Kurzac, 2005:106 (Poland: Botanical Garden in Łódź); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Pagliano and Negrisolo, 2005:418 (in Sphecid Fauna of Italy); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Riemann and Hohmann, 2005:566 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:19 (Germany: Berlin); Theunert, 2005a:19 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Wiśniowski, 2005a:312 (Poland: Ojców National Park; occurring only in forest and on wooden buildings); Yildirim and Ljubomirov, 2005:1799 (Turkey: Artvin: Yusufeli); Ziska and Saure, 2005:82 (Germany: Berlin: Biesenhorster Sand); Archer, 2006a:20 (Great Britain: Lincolnshire: Rauceby Warren Nature Reserve); U. Frommer, 2006:37 (Germany: Hessen: Runkel area); U. Frommer and Tischendorf, 2006:90 (Germany: Hessen: Schlüchterner Becken); Gorobchishin, 2006:115 (Ukraine: several localities); Humala, 2006:157 (Russia: Republic of Karelia: Kivach Nature Reserve); Liebig, 2006:40 (Germany: Sachsen: Muskauer Heide); Ljubomirov, 2006:54 (Bulgaria: Rhodope Mountains: Gornoslav and Yurukovo villages, as *clavicerum clavicerum*); Magdalou, 2006a:7, 10 (France: Pyrénées-Orientales: Réserve Naturelle de la Massane); Peeters, Krekels, and Megens, 2006:22 (Netherlands: Reichswald forest near Nijmegen); N. Schneider, 2006:136, 140, 142 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:111 (Belorussia: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund), 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Vepřek, 2006:512 (Czech Republic: Kokořínsko area); Baños-Picón, Gayubo, Asís, and González, 2007:257, 259 (Spain: Zamora: Cabañas de Aliste); Beavis, 2007:92 (Great Britain: Tunbridge Wells and Central High Weald); Burguet, 2007:unnumbered p. 27 (France: Puy-de-Dôme: sands Girauds-Faures in Orléat commune); Cungs, Jakubzik, and Cölln, 2007:141 (Luxemburg: Haardt Nature Reserve); Dvořák, Straka, Smetana, Halada, Vepřek, and Karas, 2007:169 (Czech Republic: Vyšenské Kopce National Nature Reserve); Flügel, 2007:40 (Germany: Hessen: Halberg near Neumorschen); Jacobs, 2007:111, 113 (in key to Crabronidae of Germany); Jacobs and Kroupa, 2007:325 (first record from Azores: São Miguel: Ginetes); Jansen and Kaluza, 2007:26 (Germany: northwestern Sachsen); Józan, 2007:179 (Hungary: Zselic hills); Saure, 2007:83 (Germany: in checklist of Aculeata of Land Brandenburg); Shlyakhtenok, 2007a:300 (Belorussia: Berezinsky Nature Reserve), 2007b:364 (Ukraine: Chernobyl area); Shorenko, 2007b:258 (Ukraine: Crimea: Otuzy valley); G. Turrisi and R. Turrisi, 2007:122 (Italy: Sicilia: Mount Etna: Botanical Garden Nuova Gussonea and vicinity); Vago, 2007:175 (France: départements d'Aisne, Nord, and Somme); Venne, Bleidorn, and Lauterbach, 2007:303 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia); Vicidomini and Pignataro, 2007:2 (Italy: Salerno: Paestum); Dvořák, Bogusch, Malenovský, Bezděčka, Bezděčková, Holý, Liška, Macek, Roller, Říha, Smetana, Straka, and Šima, 2008:67 (Czech Republic: Hády Hill near Brno); Gayubo, González, Tormos, and Asís, 2008:139 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Kazenas, 2008b:113 (Kazakhstan: foothills of Zailiskiy Alatau: found on loess cliffs); Ljubomirov and Ban-Calefariu, 2008:205 (Romania: recorded from

Maramureş District by Szilády, 1914); Ljubomirov and Yildirim, 2008:239 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); Sobek, Tscharntke, Scherber, Schiele, and Steffan-Dewenter, 2008:614 (Germany: Thüringen: Nationalpark Hainich: nesting mostly in canopy); Theunert, 2008:88 (Germany: map of distribution in Niedersachsen and Bremen); Zettel, Zimmermann, Sorger, and Wiesbauer, 2008:5 (Austria: Wien); Archer, 2009:24 (Great Britain: Yorkshire: Sheffield); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Burguet, 2009:15 (France: Département de Puy-de-Dôme: Bois de la Comté); Debuyser and Vago, 2009:5 (in list of Sphecidae *sensu lato* of northern France); Donie, 2009:10 (Germany: Niedersachsen: Oldenburg); Flügel, 2009b:63 (Germany: Hessen: Borken, in inactive open brown coal mine); U. Frommer, 2009a:29 (Germany: in checklist of Sphecidae of Hessen); Gayubo, González, Tormos, and Asís, 2009:364 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Holzschuh, Steffan-Deventer, and Tscharntke, 2009:127 (Germany: Niedersachsen: near Göttingen at 51°30'N 9°54'E, nesting in grass strip corridors in agricultural landscape); Humala and Polevoi, 2009:63 (Russia: Republic of Karelia east of Lake Onega); Józan, 2009:166 (Croatia: Pićan); Livory, Chevin, Lair, Sagot, and Baldock, 2009:31 (France: Département de la Manche); Mokrousov, 2009:289 (Russia: Republic Mariy El); Nemkov, 2009b:84 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:72 (Norway: locality records); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Straka, Dvořak, and Bogusch, 2009:265 (Czech Republic: Jizerské Mountains and Frýdlant region); Szczepko and Wiśniowski, 2009:72 (Poland: Spała Landscape Park); Venne, 2009:111 (Germany: Nordrhein-Westfalen: Holte-Stukenbrock, associated with *Frangula alnus* Miller, Rhamnaceae); Archer, 2010b:99 (Great Britain: Watsonian Staffordshire: Cannock Chase Country Park); Burguet *in* Durand and Burguet, 2010:57 (France Département d'Ardèche: Ardèche Gorges); Dorow, 2010:208 (Germany: Hessen: Nature Forest Reserves Goldbachsrück and Ziebachsrück); Ermilov and Mokrousov: 2010:90 (phoretic mites *Calvolia* sp. and *Schwiebea nova* in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:38 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Falk, 2010:94 (Great Britain: heathland sites in West Midlands region); Ghazi-Soltani, Ebrahimi, Iranipour, and Pour Abad, 2010:799 (Iran: East Azarbaijan: Mianeh: Gharechaman); Hable, von der Dunk, and Knipfer, 2010:66 (Germany: Bayern: vicinity of Dietfurt); Hable, Krauss, von der Dunk, and Wickl, 2010:29 (Germany: Bayern: Sulz- and Ottmaringer Tal); Jakubzik and Cölln, 2010:1188 (Germany: Rheinland-Pfalz: Bruchertseifen near Altenkirchen); Johansson, 2010:121 (Sweden: Småland: upper Emå river valley); Mokrousov, 2010a:62 (Russia: Nizhniy Novgorod Oblast', Chuvash Republic, Mariy El Republic: no specific localities), 2010c:108 (Russia: Chuvash Republic: State Nature Reserve "Prisurskiy"); Saure, 2010a:88 (Germany: Berlin- Reinickendorf: Baumberge), 2010b:175 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:140 (Germany: Bayern: collected along Main-Donau canal); Shorenko and Konovalov, 2010:23 (Ukraine); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:102 (western Slovakia: recorded from Borská Nížina); van der Smissen, 2010a:354 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records), 2010b:388 (France: Ardèche and Vaucluse: locality records); Archer, 2011a:42 (Great Britain: Yorkshire: Strensall Common), 2011d:187 (Great Britain: Watsonian Yorkshire: Thorne Moor); Baghirov, 2011b:150 (Russia: Altayskiy Kray: Biysk, Savvushka); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Falk, 2011:69 (Great Britain: Sussex: South Downs); Gogala, 2011:17 (Slovenia); Józan, 2011:181 (in checklist of Sphecidae *sensu lato* of Hungary); Mokrousov, Berezin, and Egorov, 2011:77 (Russia: Chuvash Republic); Schmid-Egger, 2011a:39 (France: Parc National du Mercantour: Saint Sauveur), 2011c:557 (Austria: Tirol: Tiroler Lech Nature Park); Shlyakhtenok, 2011:95 (Belorussia: city of Minsk); Theunert, 2011a:22 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen);

Tischendorf, Frommer, Flügel et al., 2011:97 (Germany: Hessen: insufficient data); Archer, 2012a:130 (Great Britain: Watsonian Yorkshire: Allerthorpe Common), 2012b:182 (Great Britain: urban York); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Burguet *in* Durand and Burguet, 2012:4 (France: Puy-de-Dôme: sands Girauts-Faures in Orléat commune); Franzén, Molander, Norén, and Nilsson, 2012:27 (Sweden: Skäne: Kullaberg Peninsula); Larivière, Chapelin-Viscardi, and Maillet-Mezeray, 2012:296 (France: Essonne: Boigneville and Maisse, and Loiret: Erceville, as *clavicerum clavicerum*); Prisniy, 2012:48 (Russia: Belgorod Oblast'); Shibayev and Polumordvinov, 2012:278 (Russia: Penza Oblast'); Shlyakhtenok, 2012a:172 (Belorussia, and Russia: Krasnaya Polana near Sochi: collected in private plots), 2012b:92 (Belorussia: Beresina National Reserve: overgrowing dry meadow); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); Archer, 2013a:148 (Great Britain: Watsonian Yorkshire: Manor Farm, 2013b:117 (Great Britain: Leicestershire: suburban garden in Leicester); Dyuzhaeva, 2013:117 (Russia: Samara Oblast': Zhiguli Nature Reserve); Kazenas, 2013a:77 (color photograph of male, short information on geographic distribution and nesting habits), 2013b:496 (southeastern Kazakhstan: 10 km norhwest of Chundzha); Pankov, 2013:230 (Russia: Ivanovo Oblast'); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:175 (in annotated catalog of aculeate wasps of Belorussia); Vieira, Oliveira, Brewster, and Gayubo, 2013:18 (Portugal: Douro International Natural Park, Serras de Aire e Candeeiros Natural Park, and Paúl do Boquilobo Nature Reserve); Wiśniowski and Szczepko, 2013:54 (Poland: Kampinos National Park near Warszawa); Archer, 2014b:178 (Great Britain: urban and suburban gardens); Ebrahimi, 2014:43 (Iran: Ilām and Tehrān provinces); U. Frommer, 2014:28 (Germany: Hessen: Lorch); U. Frommer, M. Niehuis, and O. Niehuis, 2014:1323 (Germany, Hessen: Roβstein); Hellqvist, Abenius, and Norén, 2014:92 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Mokrousov and Vafin, 2014:58 (Russia: Republic of Tatarstan); Olszewski and Pawlikowski, 2014:193 (in key to Polish *Trypoxylon*); Pagliano, 2014:84 (specimens in M. Spinola collection, Torino); Turčinavičienė, Radzevičiūtė, Budrienė, and Budrys, 2014:4 (in DNA analysis); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Pärn, Soon, Vallisoo, Hovi, and Luig, 2015:94 (Estonia: no specific locality); Peeters, Klein, van Kemenade, and Spijkers, 2015:59 (Netherlands: Noord-Brabant: Kaaistoep Nature Reserve); P. Rosa and Pagliano, 2015:106 (Italy: Lombardia and Piemonte: Parco del Ticino); Shorenko, 2015:329 (in list of Sphecidae *sensu lato* of Crimea); Simon, Lorthiois, and Macé, 2015:55 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine); Blažej, Macek, and Trýzna, 2016:128 (Czech Republic: České Švýcarsko = Bohemian Switzerland National Park); Bleidorn, Gerth, Hopfe, et al., 2016:11 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Cölln and Jakubzik, 2016:18 (Germany: Rheinland-Pfalz: Vulkaneifel District); Le Divelec, Chapelin-Viscardi, and Larivière, 2016:109 (northern France: in agricultural landscapes); Mokrousov and Popov, 2016:584 (Russia: Krasnodarskiy Kray); A. Scholz, 2016:72 (Germany: Sachsen: Kleinraschützer Heide); Stolle and Saure, 2016:925 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Wiśniowski, 2016:130 (Poland: Ojców National Park); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:39 (Turkey: Giresun: Keşap: Güneköy, as *clavicerum clavicerum*); Antropov, 2017b:244 (in catalog of Crabroninae of Russia); Di Giovanni, Mei, and Cerretti, 2017:73 (Italy: Lombardia: Riserva Naturale Bosco della Fontana 5 km from Mantova at 45°12'N 10°44'E, found in canopy and understory); Durand and Burguet, 2017:2 (France: Puy-de-Dôme: Réserve Naturelle Nationale Chastreix-Sancy); Flügel, 2017:6 (Germany: Hessen: Doline and Eschkopf near Rockensüß); Jahantigh, Rakhshani; Mokhtari, and Ramroodi, 2017:70 (Iran: known from East Azerbaijan, Ilam, and Tehran provinces); Jansen, 2017:10 (Germany: Sachsen: Leipzig); Johansson, 2017:105 (photograph of male genitalia); Magdalou, 2017:17 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Forêt de la Massane, Julols); Říha, 2017:175 (Czech Republic: Brno); Shorenko, 2017:78 (in Crimea collected in June); Tosser, Chapelin-Viscardi, and Le Divelec**,** 2017:30, 31 (France; most common sphecid in agricultural landscape); Lett, 2018:203 (France: Loir-et-Cher: Gièvres at 47°16'39"N 1°41'52"E); Shorenko, 2018:128 (Crimea, including localities, habitats, and number of specimens); Tosser, Le Divelec, Chapelin-

Viscardi, B. Laborie, and Larivière, 2018:2 (France; most common sphecid in agricultural landscape); Carminati, Mora, and Cretin, 2019:20 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Ljubomirov, 2019:101 (Bulgaria: Vratchanska Planina); Olszewski and Kowalczyk, 2019:112 (northern Poland: Pomorze Gdańskie = Gdańsk Pomerania); d Cretin, 2019:20 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Akulov, Proshchalykin, and Mokrousov, 2020:50 (Russia: central Krasnoyarsk Kray); Kejval, Blažej, and Erhart, 2020:107 (western Czech Republic); Rezaei, Fallahzadeh, Dousti, and Saghaei, 2020b:11 (Iran: Fars: Shiraz: Bustan-e Jannat at 29°36'52"N 52°28'09"E, and Shiraz: Zafar Abad at 29°24'06"N 52°35'01"E); Saure, 2020:277 (Germany: Sachsen-Anhalt: sand dunes); Shorenko, 2020:52 (Crimea: Karadag Nature Reserve); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:391 (in revision of Sphecidae *sensu lato* of Europe, as *clavicerum clavicerum*); Cross, Baldock, and Wood, 2021:56 (in catalog of Sphecidae *sensu lato* of Portugal); Herb and Schmid-Egger, 2021:9 (Germany: Bayern: Kaufbeuren area); Kaplan and Yildirim, 2021:78 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland); Saure, 2021:82 (Germany: Brandenburg: Nature Reserve Ferbitzer Bruch near Potsdam); Saure and Marten, 2021:136 (Germany: Sachsen-Anhalt: Nationalpark Harz); Jakubzik and Cölln, 2022:11 (Germany: Rheinland-Pfalz: Moselle River valley between Drohn and Kattenes); Japoshvili and Ljubomirov, 2022:277 (Georgia: Lagodekhi Protected Areas); U. Frommer and Bahmer, 2023:195 (Germany: Hessen: Giessen: city gardens); Kaplan and Yildirim, 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

Trypoxylon tibiale Zetterstedt, 1840:446, sex not stated. Syntypes: Sweden: Östergötland: no specific locality (Lund). Synonymized with *Trypoxylon clavicerum* by Dahlbom, 1842:13. – Gussakovskij, 1936:660 (in revision of Palearctic *Trypoxylon*); Šnoflák *in* Zavadil and Šnoflák, 1948:59 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); Balthasar, 1972:228 (in Sphecid Fauna of Czechoslovakia: may be expected in the country); Kolesnikov, 1977:319 (Russia: Bryansk Oblast').

Trypoxylon batumicum Antropov, 1985a:630, ♂. Holotype: ♂, Georgia: Batumi (ZMMU). Synonymized with *Trypoxylon clavicerum* by Antropov *in* Bitsch et al., 2001:377 (in Sphecid Fauna of Western Europe).

As *Trypoxylon kolazyi*: Bettag, 1989:... (Germany: Speyer area), corrected to *Trypoxylon clavicerum* by Schmid-Egger, Risch, and Niehuis, 1995:214.

ssp. *pullum* Antropov

Trypoxylon clavicerum pullum Antropov, 1989c:64, ♀. Holotype: ♀, Algeria: El Kseur: Forêt d'Akfadou (G. Pagliano coll., Torino, Italy).

ssp. *suifuense* Tsuneki

Trypoxylon clavicerum suifuense Tsuneki, 1981d:70, ♀, ♂. Holotype: ♀, China: Szechuan (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Ma, Q. Li, Wang, Jiang, and Lu, 2018:830 (China: Shanxi: Qinling Mountains).

103. *clypeatum* Tsuneki

Trypoxylon clypeatum Tsuneki, 1979c:32, ♀. Holotype: ♀, Indonesia: eastern Java: Idjen Plateau (RMNH). – Tsuneki, 1979c:4, 6 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

104. *clypeisinuatum* T. Li and Q. Li

Trypoxylon clypeisinuatum T. Li and Q. Li, 2010a: 244, ♀, ♂. Holotype: ♀, China: Yunnan: Dali City: Shimen Village (Yunnan Agricultural University, Kunming). – T. Li and Q. Li, 2010a:241, 242 (in key to *Trypoxylon* of southwestern China).

105. *cocorite* Richards

Trypoxylon cocorite Richards, 1934:312, ♀. Holotype: ♀, Trinidad: no specific locality (BMNH). – Vesey Fitzgerald, 1936:114 (the type emerged from the same nest as females of *Trypoxylon moraballi*); R. Bohart and

Menke, 1976:346 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

106. *collinsi* Tsuneki

Trypoxylon collinsi Tsuneki, 1980a:80. ♀. Holotype: ♀, Malaysia: Sarawak: Mount Malu (BMNH). – Tsuneki, 1980a:10 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

107. *coloratum* F. Smith

Trypoxylon coloratum F. Smith, 1858a:106, "♂" = ♀. Lectotype: ♀, Malaysia: Sarawak (BMNH), designated by Tsuneki, 1978b:8. – F. Smith, 1863b:135 (known from Borneo), 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cameron, 1889c:118 (in list or Oriental Sphecidae); Bingham, 1897:226 (redescription); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1978b:8 (redescription), 78 (in key to Oriental *Trypoxylon*), 1980a:8 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 61 (Borneo), 1981d:64 (Borneo: Brunei), 1981f:58 (member of *Trypoxylon coloratum* species group).

108. *compluvium* Tsuneki

Trypoxylon compluvium Tsuneki, 1980b:87,♀, ♂. Holotype: ♂, Philippines: Luzon: Mount Makiling (USNM). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines), 1981f:48 (member of *Trypoxylon apicatum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

ssp. *mindoronis* Tsuneki

Trypoxylon compluvium mindoronis Tsuneki, 1980b:90, ♀. Holotype: ♀, Philippines: Island of Mindoro: eastern Mindoro: Ilong: Mount Haloon (AEI). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines).

ssp. *panayanum* Tsuneki

Trypoxylon compluvium panayanum Tsuneki, 1980b:90, ♀. Holotype: ♀, Philippines: Island of Panay: no specific locality (USNM). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:26 (holotype in USNM).

ssp. *samarianum* Tsuneki

Trypoxylon compluvium samarianum Tsuneki, 1980b:91, ♀, ♂. Holotype: ♂, Philippines: Island of Samar: no specific locality (USNM). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:26 (holotype in USNM).

109. *concinnum* Tsuneki

Trypoxylon concinnum Tsuneki, 1979a:102, ♀. Holotype: ♀, Malaysia: Selangor: Bukit Kutu (BMNH). – Tsuneki, 1979a:12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1980a:7 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 48 (Borneo; description of ♂), 1981f:22 (single member of *Trypoxylon concinnum* species group).

110. *confrater* Kohl

Trypoxylon confrater Kohl, 1894:292, ♀. Holotype or syntypes: ♀, Liberia: Samlia Falls (Inst. Roy. Sci. Nat. Belgique). – Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Bingham, 1902:218 (Malawi); Arnold, 1924:19 (original description translated into English), 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:93 (in key to Afrotropical *Trypoxylon*), 118 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

111. *cornigerum* Cameron

Trypoxylon cornigerum Cameron, 1889a:47, ♀. Lectotype: ♀, Mexico: northern Yucatán: Temax (BMNH), designated by Richards, 1934:284. – Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Ashmead,

1899d:298 (in checklist of North American Crabronidae); Richards, 1934:283 (in revision of New World *Trypoxylon*); Vesey Fitzgerald, 1936:113 (Trinidad); Bischoff and von Schulthess, 1937:170 (Bolivia: San José); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 1993:19 (norheastern Brazil), 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae, as *comigerum*); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

As *Trypoxylon* sp. No. 7637: Rau, 1933:158 (Panama: Barro Colorado), corrected to *Trypoxylon cornigerum* by Rau, 1935b:188.

112. *crassifrons* Tsuneki

Trypoxylon crassifrons Tsuneki, 1963c:14, ♀. Holotype: ♀, Thailand: Bangkok (Sasayama). – Iwata, 1964b:373 (nesting habits in Thailand); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1981d:31 (relationship to *Trypoxylon maculipes*).

113. *crassipes* Tsuneki

Trypoxylon crassipes Tsuneki, 1981a:54, ♀. Holotype: ♀, Papua New Guinea: Sarwaged Mountains (AEI). – Tsuneki, 1981a:7 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

114. *crassipunctatum* Arnold

Trypoxylon crassipunctatum Arnold, 1946:74, ♀. Holotype: ♀, Malawi: Zomba (SAM). – Leclercq, 1965a:95 (in key to Afrotropical *Trypoxylon*), 122 (bibliographic reference); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

115. *crassiventre* Tsuneki

Trypoxylon crassiventre Tsuneki, 1979a:70, ♂, ♀. Holotype: Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:9 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:34 (single member of *Trypoxylon crassiventre* species group).

116. *cricetum* Leclercq

Trypoxylon cricetum Leclercq, 1965a:122, ♀. Holotype: ♀, Zaire: Upemba National Park (MRAC). – Leclercq, 1965a:96 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

117. *crudele* Richards

Trypoxylon crudele Richards, 1934:291, ♀. Holotype: ♀, Panama: Island of Tobogilla (USNM). – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

118. *cucurbitinum* Tsuneki

Trypoxylon cucurbitinum Tsuneki, 1978a:20, ♀. Holotype: ♀, India: Deesa (BMNH). – Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group), 1979a:19 (bibliographic reference), 1981d:21 (India: Hyderabad; additional description); Mawadda and Girish Kumar, 2023:115 (in checklist of Crabroninae of Northern India).

119. *culionum* Tsuneki

Trypoxylon culionum Tsuneki, 1980b:23, ♀. Holotype: ♀, Philippines: Island of Culion: 6 km west of Culion (Bishop Mus.). – Tsuneki, 1980b:5 (in key to *Trypoxylon* of Philippines; as *curionum*).

120. *curvicorne* Tsuneki

Trypoxylon curvicorne Tsuneki, 1979a:48, ♂, ♀. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (Bishop Mus.). – Tsuneki, 1979a:6 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:38

(insertion into key to Indo-Malaysian species), 1981f:16 (single member of *Trypoxylon curvicorne* species group).

121. *curvum* Tsuneki

Trypoxylon curvum Tsuneki, 1980b:126, ♂. Holotype: ♂, Philippines: Mindanao: Kolumbugan (USNM). – Tsuneki, 1980b:11 (in key to *Trypoxylon* of Philippines), 1981f:48 (member of *Trypoxylon apicatum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

122. *daicoccum* Tsuneki

Trypoxylon daicoccum Tsuneki, 1979a:148, ♂, ♀. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (Bishop Mus.). – Tsuneki, 1979a:13, 15 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:65 (member of *Trypoxylon vardyi* species group).

123. *darium* Leclercq

Trypoxylon darium Leclercq, 1965a:108, ♀. Holotype: ♀, Zaire: Garamba National Park: Aka (MRAC). – Leclercq, 1965a:86 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

124. *darjeeling* Tsuneki

Trypoxylon brevicarinatum Tsuneki, 1979a:65, ♀, junior primary homonym of *Trypoxylon brevicarinatum* Cameron, 1912. Holotype: ♀, India: Darjeeling (BMNH). – Tsuneki, 1979a:8 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:62 (in key to *Trypoxylon* of Myanmar).

Trypoxylon darjeeling Tsuneki, 1980a:2. Substitute name for *Trypoxylon brevicarinatum* Tsuneki. – Tsuneki, 1981d:45 (norheastern Myanmar: Kambaiti); Mawadda and Girish Kumar, 2023:104 (India: Jammu and Kashmir: Shopian district: Sugan), 115 (in checklist of Crabroninae of Northern India).

125. *deceptorium* Antropov

Trypoxylon deceptorium Antropov, 1991b:673, ♀, ♂. Holotype: ♂, Kazakhstan: Iliysk - Bakanas (ZMMU). Paratypes: Armenia, Austri, Kyrgyzstan, Lebanon, Lithuania, Mongolia, Poland, Romania, Russia (European), Spain, Switzerland, a, Azerbaijan, Belorussia, Cyprus, Egypt, Georgia, Germany, Greece, Hungary, Iran, Israel, Italy, KazakhstanSyria, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan, Yugoslavia. – Gusenleitner, 1991:646 (Austria: Burgenland: Hölle near Illmitz); Budrys, 1992:30 (in list of Sphecidae of Lithuania); Luig, 1993:45 (Estonia); Mochi and Luchetti, 1994:15 (Italy: Lazio, Veneto, Sardegna; Cyprus, Lebanon, Syria, Turkey); Pagliano, 1994:16 (Italy: Toscana; France: Corsica); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve, as *decertorium*); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Schmid-Egger, Risch, and Niehuis, 1995:214 (Germany: summary of records from Rheinland-Pfalz); K. Schmidt, Schmid-Egger, and Doczkal, 1995:8 (distribution in Germany should be clarified); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Schmid-Egger, K. Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: may be endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); K. Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); F. Burger, Saure, and Oehlke, 1998:30 (Germany: in list of Sphecidae of Brandenburg), 39 (may be associated with reed); Gorobchishin, 1998a:49 (Ukraine: Kiev and surroundings, as *desertorium*); K. Weber, 1998:150 (Germany: Bayern: Bamberg area); W. Klein, 1999:19, 21 (in improved key to *Trypoxylon* of Benelux); Ljubomirov, 1999b:51 (Bulgaria: Mount Vitosha near Sofia); Luig and Voolma, 1999:179 (Estonia); Blösch, 2000:251 (in Sphecid Fauna of Germany); Esenbekova and Kazenas, 2000:40 (southeastern Kazakhstan: five localities); Antropov *in* Bitsch et al., 2001:369 (in Sphecid Fauna of Western Europe); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 175 (nesting habits); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et

al., 2001:142 (distribution in Germany by provinces); van der Smissen, 2001:64 (Germany: Schleswig-Holstein: data on endangerment missing); Deván, 2002b:204 (first record from Slovakia: Pekelná dolina); Herrmann and Zinnert, 2002:26 (Germany: Baden-Württemberg: Bettenberg near Konstanz); Kazenas, 2002a:84 (geographic distribution, collecting localities in Kazakhstan); Wiśniowski, 2002:70 (Poland: Ojców National Park); Esenbekova and Kazenas, 2003:6, 9, and 54 (Kazakhstan: foothills of Zailiyskiy Alatau: nesting in artificial nests), 59 (nest structure in artificial nest); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Iğdır: Melekli; Kars: Sarıkamış); Gorobchishin, 2003:48 (Ukraine: Kiev: botanical garden); Gusenleitner, 2003:864 (Austria: Steiermark: Stein southwest of Loipersdorf near Fürstenfeld at 47°00' 16°05'E); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:71 (Germany: in catalog of wasps and bees of Bayern); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:197 (Germany: Bayern: probably endangered); Wiśniowski *in* Dylewska and Wiśniowski, 2003:153 (Poland: Ojców National Park); Deván, 2004:148 (western Slovakia); Gorobchishin and Protsenko, 2004:40 (Ukraine: Kherson Oblast': Chernomorskiy Nature Reserve, as *desertorium*); Kazenas, 2004b:105 (Kazakhstan: western Tien Shan); Shkuratov, 2004a:78 (Russia: Rostov Oblast'), 2004b:167 (Russia: Rostov Oblast': Gosudarstvennyi Muzey-Zapovednik M.A. Sholokhova); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:357 (in catalog of Polish Crabronidae); Stolle et al., 2004:373 (Germany: Sachsen-Anhalt: in red list of Sphecidae); Wiśniowski, 2004:45 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:94 (in key to *Trypoxylon* of Poland); Burger, 2005:36 (Germany: Thüringen); Jacobs, 2005b:150 (Germany: Mecklenburg-Vorpommern: Pentin); Pagliano and Negrisolo, 2005:418 (in Sphecid Fauna of Italy); Saure, 2005:19 (Germany: Berlin); Shorenko, 2005a:164 (Ukraine: Crimea), 2005b:98 (Ukraine: Crimea: Karadagh Nature Reserve); Yildirim and Ljubomirov, 2005:1799 (Turkey: Bilecik and Erzurum provinces); Gorobchishin, 2006:114 (Ukraine: several localities, as *desertorium*); Liebig, 2006:40 (Germany: Sachsen: Muskauer Heide); Magdalou, 2006b:109 (France: Pyrénées-Orientales: Mas-Larrieu Nature Reserve near Argelès-sur-Mer), 2006c:7 (France: Pyrénées-Orientales: Réserve Naturelle du Mas-Larrieu); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Tomarchio and Turrisi, 2006:957 (Italy: first record from Sicilia: Catania and Mount Etna); Vepřek, 2006:512 (Czech Republic: Kokořínsko area); Jacobs, 2007:110, 113 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:26 (Germany: northwestern Sachsen); Saure, 2007:83 (Germany: in checklist of Aculeata of Land Brandenburg); Theunert, 2007c:97 (Germany: Niedersachsen: Helstorfer Moor); Vago, 2007:175 (France: département du Nord); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia), 225 (first record from Czech Republic: many localities; additional records from Slovakia); Yildirim and Ljubomirov, 2007:120 (Turkey: İçel and Konya provinces); Ljubomirov and Yildirim, 2008:240 (in catalog of Crabronidae of Turkey); Theunert, 2008:88 (Germany: map of distribution in Niedersachsen and Bremen); Debuyser and Vago, 2009:5 (in list of Sphecidae *sensu lato* of northern France); Gayubo, González, Tormos, and Asís, 2009:364 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); Livory, Chevin, Lair, Sagot, and Baldock, 2009:31 (France: Département de la Manche); Pagliano, 2009:185 (Italy: Piemonte: San Benedetto Belbo); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Straka, Dvořak, and Bogusch, 2009:266 (Czech Republic: Jizerské Mountains and Frýdlant region); Baghirov, 2010:679 (Russia: Altai Territories: Biysk, village Savvushka); Mokrousov, 2010a:62 (Russia: Nizhniy Novgorod Oblast': no specific localities); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: relatively common); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:102 (Western Slovakia: recorded from Borská Nížina); Treiber, 2010:136 (France: Département du Bas-Rhin); van der Smissen, 2010a:354 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records); Burger, 2011a:288 (Germany: in red list of Sphecidae *sensu lato* of Thüringen); Gogala, 2011:17 (Slovenia); Protsenko and Drozdovskaya, 2011:91 (Ukraine: Mikolaiv Oblast': Bugskiy Guard National Park); Saure, 2011a:7 (Germany: Berlin: former airport Tempelhof); Theunert, 2011a:22 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:97 (Germany: Hessen: insufficient data to evaluate degree of

endangerment); Tripotin, 2011:24 (France: Seine-Maritime: artificial sand site near Sandouville); Saure, 2012b:230 (Germany: Berlin-Spandau: Spandauer Forst); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); Tripotin, 2012:24 (France: Seine-Maritime: estuary of Seine river); Yildirim, 2012:80 (Turkey: Erzurum and Kars provinces); Kazenas, 2013b:496 (southeastern Kazakhstan: foothills, low mountains, and Ili River valley); Mokrousov, Ruchin, and Egorov, 2013:202 (Russia: Republic of Mordovia: Mordovian State Nature Reserve); Saure, 2013:22 (Berlin: Treptow-Köpenick: Gosener Wiesen); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:175 (in annotated catalog of aculeate wasps of Belorussia); Tischendorf, 2013:12 (Germany: Hessen: Wiesbaden); Wiśniowski and Szczepko, 2013:55 (Poland: Kampinos National Park near Warszawa); Baldock, 2014:357 (Spain: Island of Mallorca); Bitsch, 2014:405 (recorded from Bulgaria by Ljubomirov, 1999b and from Sicily by Tomarchio and Turrisi, 2006; France: Hautes-Alpes: Saint-André-d'Embrun; Haut-Rhin: Munster); Olszewski and Pawlikowski, 2014:193 (in key to Polish *Trypoxylon*); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Bogusch, Astapenková, and Heneberg, 2015:6 (Czech Republic: reared from galls of *Lipara* sp., Chloropidae), 11 (nest structure), 13 (description of larva); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Shorenko, 2015:330 (in list of Sphecidae *sensu lato* of Crimea); Simon, Lorthiois, and Macé, 2015:55 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine and Seine-Maritime Department: Anneville-Ambourville); Blažej, Macek, and Trýzna, 2016:128 (Czech Republic: České Švýcarsko = Bohemian Switzerland National Park); Haris, 2016:35 (in list of species described by A. Antropov from Carpathian Basin); Mokrousov and Popov, 2016:584 (Russia: Krasnodarskiy Kray); Ruchin and Antropov, 2016:402 (Russia: Mordovian State Nature Reserve); Stolle and Saure, 2016:925 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Wiśniowski, 2016:131 (Poland: Ojców National Park); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:40 (Turkey: Bingöl, Kars, and Tunceli provinces); Antropov, 2017b:244 (in catalog of Crabroninae of Russia); Burguet and Durand, 2017:9 (France: Puy-de-Dôme: basin of river Crouël); Di Giovanni, Mei, and Cerretti, 2017:73 (Italy: Lombardia: Riserva Naturale Bosco della Fontana 5 km from Mantova at 45°12'N 10°44'E, found in understory); Durand and Burguet, 2017:2 (France: Puy-de-Dôme: Réserve Naturelle Nationale Chastreix-Sancy); Johansson, 2017:1003 (first record from Sweden: Småland: Östra Årena), 105 (photograph of male genitalia); Magdalou, 2017:17 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Julols); Shorenko, 2017:78 (in Crimea collected in July); Twerd, Krzyżyński, Waldon-Rudzionek, and Olszewski, 2017:7 (Poland: Inowroclaw and Janikowo: nesting in postindustrial soda ash dumping sites); Witt, 2017:37 (Germany: Niedersachsen: Steinhunder Meer); Kemal and Koçak, 2018:35 (Turkey: in list of pterygot insects of Van Province); Shorenko, 2018:128 (Crimea, including localities, habitats, and number of specimens); S. Ivanov, Fateryga, and Zhidkov, 2019:75 (Crimea: reared from trap nests); Mokrousov, Proshchalykin, Aliyev, and Maharramov, 2019:20 (Azerbaijan: Nakhichevan Autonomous Republic); Ruchin and Antropov, 2019a:13236 (Russia: Mordovia State Nature Reserve); Kejval, Blažej, and Erhart, 2020:107 (western Czech Republic); Shorenko, 2020:52 (Crimea: Karadag Nature Reserve); Wendzonka and Żurawlew, 2020:55 (Poland: Gołuchów Arboretum at 51°51'40"N 17°56'09"E); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:384 (in revision of Sphecidae *sensu lato* of Europe); Ben Khedher, Yildirim, and Braham, 2021:61 (first record from Tunisia: Kebili, Monastir, Sousse, and Zaghouan governorates); Cross, Baldock, and Wood, 2021:56 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2021:78 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland); Saure, 2021:83 (Germany: Brandenburg: Nature Reserve Ferbitzer Bruch near Potsdam); Saure and Marten, 2021:136 (Germany: Sachsen-Anhalt: Nationalpark Harz); Kaplan and Yildirim, 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

126. *dendrophilum* Arnold

Trypoxylon dendrophilum Arnold, 1959:321, ♂. Holotype: ♂, Tanzania: Kawanga in Rukwa Valley (BMNH). – Leclercq, 1965a:87 and 88 (in key to Afrotropical *Trypoxylon*), 110 (in revision of Afrotropical *Trypoxylon*; Burundi, Zaire); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Antropov, 1993b:54 (Central African Republic).

127. *dentatum* Tsuneki

Trypoxylon dentatum Tsuneki, 1981d:22, ♀. Holotype: ♀, India: Tamil Nadu: Shembaganur (BMNH).

128. *deuterium* Leclercq

Trypoxylon deuterium Leclercq, 1965a:109, ♂. Holotype: ♂, Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:87 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

129. *djampangense* Tsuneki

Trypoxylon djampangense Tsuneki, 1979c:48, ♀. Holotype: ♀, Indonesia: West Java: Middle Djampang (RMNH). – Tsuneki, 1979c:8 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

130. *djun* Tsuneki

Trypoxylon djun Tsuneki, 1980a:87, ♀. Holotype: ♀, Malaysia: Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:11 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

131. *duckei* Richards

Trypoxylon duckei Richards, 1934:327, ♀. Holotype: ♀, Brazil: Pará: Pará, now Belém (NHMW). – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Silvestre, Demétrio, Trad, de Oliveira Lima, Auko, and de Souza, 2014:69 (Brazil: Mato Grosso do Sul: dry forests in Bodoquena Mountain Range and Brazilian Chaco); Trad and Silvestre, 2017:5 (Brazil: Mato Grosso do Sul).

132. *dyeri* Richards

Trypoxylon dyeri Richards, 1934:295, ♂. Holotype: ♂, Honduras: La Ceiba (USNM). – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

133. *ebneri* Maidl

Trypoxylon ebneri Maidl, 1924:234, ♀. Holotype: ♀, Sudan: Dilling (NHMW). – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW).

134. *eburneipes* Tsuneki

Trypoxylon eburneipes Tsuneki, 1977h:11, ♀. Holotype: ♀, Papua New Guinea: New Ireland: Dana: Kalili Bay (ZMUC). – Tsuneki, 1981a:7 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 49 (New Guinea; additional description), 1982a:46 (Bismarck Archipelago).

135. *ecuadorium* Richards

Trypoxylon ecuadorium Richards, 1934:322, ♀, ♂. Holotype: ♀, Ecuador: Loja Province (BMNH). – Richards, 1934:343 (nesting in wood); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

ssp. *meridionale* Richards

Trypoxylon ecuadorium var. *meridionale* Richards, 1934:322, ♀. Holotype: ♀, Colombia: Vista Nieve in San Lorenzo Mountains (USNM). – **As *Trypoxylon ecuadorium meridionale***: R. Bohart and Menke, 1976:346 (new status, in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

136. *egregium* Arnold

Trypoxylon egregium Arnold, 1959:322, ♀. Holotype: ♀, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:81 (in key to Afrotropical *Trypoxylon*), 100 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

137. *elegantulum* F. Smith

Trypoxylon elegantulum F. Smith, 1860a:84, ♀. Lectotype: ♀, Indonesia: Sulawesi: Makasar: no specific locality (OXUM), designated by Tsuneki, 1978b:12. – F. Smith, 1863b:135 (known from Sulawesi), 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki,197: 8b 12 (redescription), 80 (in key to Oriental *Trypoxylon*), 1980a:8 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 63 (diagnostic characters).

138. *elgonense* Arnold

Trypoxylon elgonense Arnold, 1956:70, ♀ (as *elgonensis*, incorrect original termination). Syntypes: Kenya: Mount Elgon (SAM). – **As *Trypoxylon elgonense***: Leclercq, 1965a:90 (in key to Afrotropical *Trypoxylon*), 115 (bibliographic reference); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

139. *elongatum* F. Smith

Trypoxylon elongatum F. Smith, 1856:378, ♂. Holotype or syntypes: Sierra Leone (BMNH). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); F. Williams, 1919:143 (nesting habits); Arnold, 1924:19 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:340 (member of *Trypoxylon brevipenne* species group), 1934:343 (nesting habits summary); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Piek and Spanjer, 1986:191 (in list of Sphecidae with known prey); Steiner, 1986:105 (references to publications on nesting habits).

140. *emeritum* Leclercq

Trypoxylon emeritum Leclercq, 1965a:122, ♂. Holotype: ♂, Burundi: Usumbura (MRAC). – Leclercq, 1965a:95 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

141. *errans* de Saussure

Trypoxylon errans de Saussure, 1867:84, ♀. Holotype or syntypes: ♀, Island of Mauritius or Brazil: no specific locality, actually Mauritius (NHMW or MHNG). – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); de Saussure, 1892:527 (Island of Mauritius, redescription); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Friese, 1900:267 (Madagascar: Nosy-Be); R. Turner, 1911b:372 (Seychelles Islands); Bordage, 1912:58 (Isle of Réunion, nesting habits); Friederichs, 1918a:48 (Madagascar: Diego Suarez, now Antsiranana); Richards, 1934:338 (member of *Trypoxylon scutatum* species group), 344 (nesting habits summary); Arnold, 1945:7 (in key to *Trypoxylon* of Madagascar); Vesey-Fitzgerald, 1956b:362 (Seychelles); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1978b:79 and 81 (in key to Oriental *Trypoxylon*), 1979a:13, 15, 17 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 114 (Island of Mauritius, Island of Rodrigues, Seychelles, Cambodia, India, Nepal, Malaysia,m Myanmar, Sri Lanka, Thailand), 1979b:5 (in key to *Trypoxylon* of Sri Lanka), 20 (Sri Lanka), 1979c:5, 9 (in key to *Trypoxylon* of Java, Sumatra, and Lesser Sunda Islands), 28 (Indonesia: Java, Sumatra, Sumba), 1980a:11 (in key to *Trypoxylon* of Borneo, Moluccas, and Sulawesi), 87 (Sulawesi), 1980b:11, 12 (in key to *Trypoxylon* of Philippines), 115 (Philippines), 1981a:6 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 45 (Guam, Hawaii; additional description), 1981c:8, 9 (in key to *Trypoxylon* of Taiwan), 42 (Taiwan; additional description), 1981d:17 (Sri Lanka), 20 (in new key to *Trypoxylon* of Sri Lanka), 29 (India, Singapore, Thailand), 49 (Myanmar), 62 (in

key to *Trypoxylon* of Myanmar), 78 (Hong Kong), 85 (Tanzania: Zanzibar; additional description), 1981e:4, 6-8 (in key to *Trypoxylon* of Japan and northeastern Asia), 59 (Japan; additional description), 1981f:56 (member of *Trypoxylon errans* species group); Madl, Matyot, and Schödl, 1996:833 (Seychelles Islands); Wu and Zhou, 1996a:103 (in revision in Economic Insect Fauna of China); Yamane, Ikudome, and Terayama, 1999:526 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Tano, Kurokawa, Murota, and Nozaka, 2003:31 (Japan: Nagasaki Prefecture: Tsushima); Suda, 2004:40 (Japan: Yamanashi Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:65 (Japan: Fukui Prefecture: Mount Monju); Negoro, Haneda, and Tano, 2005:46 (Japan: Toyama Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2006a:23 (Japan: Toyama Prefecture); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Nambu, 2006:247 (Japan: Tokyo: Imperial Palace garden); Terayama and Nambu, 2009:7, 25 (in key to Trypoxylini of Japan); T. Li and Q. Li, 2010a:243 (in key to *Trypoxylon* of southwestern China); Haneda, 2011:46 (Philippines: Palawan: Puerto Princesa); Madl, 2014a:988 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records); Jeong and J.-K. Kim, 2020:247 (in key to Korean *Trypoxylon* with flask-shaped gastral segment I); Mawadda and Girish Kumar, 2023:115 (in checklist of Crabroninae of Northern India).

Trypoxylon intrudens F. Smith, 1870:188, ♀. Lectotype: ♀, India: North-West Provinces, now Uttar Pradesh: Mainpuri (BMNH), designated by Tsuneki, 1978b:28. Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:28. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889c:119 (in list or Oriental Sphecidae) and 123 (diagnostic characters); Bingham, 1896a:441 (Sri Lanka: Pundaloya; bibliographid references), 1897:224 (redescription); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Green, 1903:68 (nesting in all available holes); Paiva, 1907:15 (India: Uttar Pradesh: Mussoorie); Bingham, 1908:355 (India: Purneah); Maxwell-Lefroy, 1909:203 (India: nests in holes in walls and in crevices in books);Ramakrishna Aiyar, 1916:554 (reference to Green, 1903); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1978b:28 (redescription); Pu, 1986:8 (China); S. Gupta, 1995:86 (India: Uttar Pradesh).

Trypoxylon canaliculatum Cameron, 1889c:122, sex non indicated. Lectotype: ♀, India: Barrackpore or Tirhoot or Mussoorie Hills (OXUM), designated by Tsuneki, 1978b:38. Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:38. – Cameron, 1889c:118 (in list or Oriental Sphecidae); Bingham, 1897:225 (redescription); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Rothney, 1903:106 (India: West Bengal: Barrackpore); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); S. Gupta, 1995:86 (India: Uttar Pradesh).

Trypoxylon geniculatum Cameron, 1902f:313, ♀. Lectotype: ♀, India: Assam: Khasia Hills (BMNH), designated by Tsuneki, 1978b:46. Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:46. – Ramakrishna Aiyar,:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Begum, Bose, and Howlander, 1989:126 (nesting habits in Bangladesh); Gibson-Hill, 1950:161 (Cocos Islands); Begum, Khan, and Bose, 1995:176 (Bangladesh: Dhaka University Campus); Jonathan, Ray, and Kundu, 2000:201 (India: previously recorded from Meghalaya).

Trypoxylon philippinense Ashmead, 1904c:283, ♂ (as *Philippinense*, incorrect original capitalization). Holotype: ♂, Philippines: Luzon: Manila (USNM). Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:72. – R. Brown, 1906:687 (in catalog of Philippine Hymenoptera, as *philippinensis*); F. Williams, 1927:437 (nesting in hollow twigs), 1931:236 (nesting in hollow twigs); Richards, 1934:343 (nesting habits summary); Krombein, 1949b:381 (in key to Sphecidae of Micronesia), 400 (Marshall Islands); Yoshimoto, 1960:333 (Hawaiian Islands); Baltazar, 1966:335 (in catalog of Hymenoptera of Philippines).

Trypoxylon gardineri Cameron, 1907e:76, ♀. Syntypes: ♀, Seychelles Islands: Coetivy (BMNH). Synonymized with *Trypoxylon errans* by R. Turner, 1911b:372. – Tsuneki, 1978b:60 (study of syntypes).

Trypoxylon ornatipes Cameron, 1913:24, "♂" = ♀, junior primary homonym of *Trypoxylon ornatipes* Cameron, 1889, and of *Trypoxylon ornatipes* W. Fox, 1891. Holotype: ♀, India: Uttar Pradesh: Dehra Dun (BMNH). Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:60. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *Trypoxylon figulus* species group).

Trypoxylon pulawskii Tsuneki, 1956g:22, ♀, ♂. Holotype: ♀, Japan: Honshu: Utsunomiya (originally K. Tsuneki coll., now Hyogo Mus.). Synonymized with *Trypoxylon errans* by Tsuneki, 1981e:59. – Tsuneki, 1956f:121, 122 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:4, 8 (in key to *Trypoxylon* of northeastern Asia); Nambu, 1966:25-34 (nesting habits); Tsuneki, 1966a:22 (Japan: Osaka); Nambu, 1967:6-16 (nesting habits), 1968b:22 (Japan: Saitama Prefecture); Tsuneki, 1969e:25 (Japan: specimens in Osaka Museum of Natural History), 1970d:13 (nesting habits); Nambu, 1972e:90 (Japan: Saitama Prefecture), 1973a:150 (Japan: Saitama Prefecture); Tsuneki, 1973d:150 (Japan: Saitama Prefecture), 1973e:32, 36 (in key to *Trypoxylon* of Japan, in Japanese), 1975b:63 (Japan: Saitama Prefecture); Tano, 1994b:43 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.).

Trypoxylon tanoi Tsuneki, 1967d:13, ♂, ♀. Holotype: ♂, Taiwan: Pingtun Prefecture: Fenglian (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon errans* by Tsuneki, 1978b:72. – Tsuneki, 1967d:2 (in key to *Trypoxylon* of Taiwan); Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:7 (Taiwan), 17 (in new key to males of *Trypoxylon* of Taiwan); Haneda, 1972a:4 (Taiwan); Murota, 1973b:117 (Taiwan); Tsuneki, 1973f:44 (Taiwan), 1974b:630 (Thailand; it may be identical with *Trypoxylon canaliculatum* and *T. intrudens*); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).

Trypoxylon saitamaense Tsuneki, 1973a:13, ♂. Holotype: ♂, Japan: Saitama Prefecture: Kohnosu (originally T. Nambu coll., now Hyogo Mus.). Synonymized with *Trypoxylon errans* by Tsuneki, 1981e:59. – Nambu, 1973a:150 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 38 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:63 (Japan: Saitama Prefecture); Tano, 1995:41 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.).

Trypoxylon indicum Menke *in* R. Bohart and Menke, 1976:346. Substitute name for *Trypoxylon ornatipes* Cameron, 1913.

142. *eugeniae* Gussakovskij

Trypoxylon eugeniae Gussakovskij, 1936:658, ♀. Syntypes: ♀, Tajikistan: Ravat-Sai, headwaters of Dushanbinka River (ZIN). – Gussakovskij, 1935:421 (Tajikistan: Ravat-Sai; nomen nudum); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Kazenas, 1978b:146 (in key to Sphecidae of Kazakhstan and Central Asia), 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia).

143. *excellens* Strand

Trypoxylon excellens Strand, 1910a:172, ♀. Holotype: ♀, Paraguay: Asunción (ZMHU). – Strand, 1927:255 (in list of species described by the author, as *exellens*); Richards, 1934:329 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

144. *exiguum* Tsuneki

As *Trypoxylon pygmaeum* (corrected to *Trypoxylon clavicerum exiguum* by Tsuneki, 1956g:37): Yasumatsu, 1938g:451 and 453 (Japan); Masuda, 1943:1 (nesting habits).

Trypoxylon clavicerum exiguum Tsuneki, 1956g:37, ♀, ♂. Holotype: ♀, Japan: Fukui Prefecture: Yashirodani (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956f:121, 123 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:6, 12 (in key to *Trypoxylon* of northeastern Asia); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits); Tsuneki, 1967g:44

(western Japan: Mount Hyonosan); Haneda, 1968a:44 (Japan), 1968b:55 (Japan: Nagano Prefecture: Ina District); Minamikawa, 1968:45 (Japan: nesting in walls of wooden temple at Higashi Murayama City, Tokyo Province); Nambu, 1968b:23 (Japan: Saitama Prefecture); Tano, 1968:32 (Japan); Tsuneki, 1968l:50 (South Korea: Island of Quelpart, now Island of Cheju or Jeju); Haneda, 1969:68 (Japan: Yamanashi Prefecture); T. Iida, 1969a:276 (description of mature larva); Itami, 1969:50 (Japan: Niigata Prefecture); Tsuneki, 1969e:25 (Japan: specimens in Osaka Museum of Natural History), 1969i:59 (Japan: Fukui Prefecture: Taichôdzi temple; as *exguum*); Haneda, 1970:12 (Japan: Akita Prefecture); Tano, 1971:81 (Japan: Shikoku: Mount Tsurugi); Yamada, 1971:35 (Japan: Aichi Prefecture; as *exguum*); Nambu, 1972e:90 (Japan: Saitama Prefecture), 1973a:150 (Japan: Saitama Prefecture); Suda, 1973:122 (Japan: Yamanashi Prefecture); Tsuneki, 1973e:34, 38 (in key to *Trypoxylon* of Japan, in Japanese), 1973v:150 (prey; as *clavicerus exiguum*); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1981e:5, 6 (in key to *Trypoxylon* of Japan and northeastern Asia), 40 (Japan; redescription); Tano, 1994a:6 (holotype in K. Tsuneki collection); Miyatake, 1996:102 (specimens in Hiroshi Aoki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.). – **As *Trypoxylon exiguum exiguum***: Antropov, 1986b:627 (new status); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:420, 422 (in key to Sphecidae of Russian Far East); Togashi, 2001:19 (Japan: Ishikawa Prefecture: Shiramine); Haneda, 2003:4 (Japan: Nagasaki Prefecture: Tsushima); Haneda and Inoue, 2003:50 (Japan: Fukui Prefecture: Katsumi in City of Obama); Haneda and Tano, 2003:11 (Japan: Nagasaki Prefecture: Tsushima); Tano, Kurokawa, Murota, and Nozaka, 2003:31 (Japan: Nagasaki Prefecture: Tsushima); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:32 (Japan: Gifu Prefecture); Suda, 2004:41 (Japan: Yamanashi Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:65 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:47 (Japan: Gifu Prefecture), 2006a:22 (Japan: Toyama Prefecture); Nambu, 2006:247 (Japan: Tokyo: Imperial Palace garden); Ohkusa, 2006a:24 (Japan: Honshu: Gifu Prefecture); Nemkov, 2007b:70 (Russia: Kuril Islands: Island of Kunashir), 2008b:20 (in catalog of Crabronidae of Asiatic Russia); S. Tanaka, 2008:38 (Japan: Yamaguchi Prefecture); Nemkov, 2009b:84 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Saitoh, 2009:22 (Japan: Tokyo: Izu Islands: Island of Hachijo-jima, as *exiguum*); Terayama and Nambu, 2009:11, 25 (in key to Trypoxylini of Japan, as *exiguum*); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); N. Yamamoto, 2013:28 (Japan: mainland Nagasaki Prefecture); J.-K. Kim, 2014:438 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Antropov, 2017b:244 (in catalog of Crabroninae of Russia).

ssp. *gussakovskiji* Tsuneki

Trypoxylon pygmaeum Gussakovskij, 1933:13, ♀, junior primary homonym of *Trypoxylon pygmaeum* Cameron, 1900. Lectotype: ♀, Russia: Primorskiy Kray: Sedanka (NRS), designated by Tsuneki, 1981e:43. – Gussakovskij, 1936:663 (in revision of Palearctic *Trypoxylon*); nec Yasumatsu, 1938:453 and Masuda, 1943:1 (= *Trypoxylon clavicerum exiguum*). – **As *Trypoxylon clavicerum pygmaeum***: Tsuneki, 1956f:121, 123 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:6, 12 (in key to *Trypoxylon* of northeastern Asia), 36 (new status); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

Trypoxylon clavicerum gussakovskiji Tsuneki, 1974a:365. Substitute name for *Trypoxylon clavicerum pygmaeum* Gussakovskij, 1933. – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Kazenas, 1980e:91 (Russia: Primorskiy Kray); Tsuneki, 1981e:5, 6 (in key to *Trypoxylon* of Japan and northeastern Asia), 42 (redescription; South Korea: Island of Quelpart, now Island of Cheju or Jeju), Tsuneki, 1982b:16 (known from Korea); Paik, 1985:199 (in list of Sphecidae of Korea). – **As *Trypoxylon exiguum gussakovskiji***: Antropov, 1986b:627 (new subspecific combination); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:420, 422 (in key to Sphecidae of Russian Far East); Nemkov, 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve), 2009b:85 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:237 (Russia: Primorskiy Kray: Lazovsky Nature Reserve); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian

Far East); J.-K. Kim, 2014:438 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Antropov, 2017b:244 (in catalog of Crabroninae of Russia);.

Trypoxylon clavicerum gussakovskiji Tsuneki, 1991:200, as new subspecies. Nomen nudum.

145. *eximium* F. Smith

Trypoxylon eximium F. Smith, 1859a:161, ♀. Lectotype: ♀, Indonesia: Maluku: Island of Aru (OXUM), designated by Tsuneki, 1978b:9. – F. Smith, 1860a:84 (Islands of Key and Makasar), 1863b:135 (known from Sulawesi, Key, and Aru), 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1978b:9 (redescription), 80 (in key to Oriental *Trypoxylon*), 1980a:9, 13 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 104 (Sarawak), 1981a:9 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 67 (New Guinea, Bismarck Archipelago; additional description), 1981b:100 (in key to *Trypoxylon* of Australia), 105 (Australia: northern Queensland), 1981f:77 (member of *Trypoxylon eximium* species group), 1982a:45 (Bismarck Archipelago); Cardale, 1985:264 (in catalog of Australian Sphecidae); Naumann, 1993:184 (Australia: Queensland: Heathlands area in Cape York).

As *Trypoxylon dorsale*: Tsuneki, 1977h:5 (new status; redescription), corrected to *Trypoxylon eximium* by Tsuneki, 1980a:2.

ssp. *gracillimum* F. Smith

Trypoxylon gracillimum F. Smith, 1863a:35, ♂. Lectotype: ♂, Indonesia: Island of Misool: no specific locality (OXUM), designated by Tsuneki, 1978b:26. – F. Smith, 1863b:135 (known from Misool), 1865a:86 (Indonesia: Moluku: Island of Morotai), 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); R. Turner, 1912a:200 (Indonesian New Guinea: Mimika River); R. Turner *in* R. Turner, Meade-Waldo, and Morley, 1915:8 (New Guinea: Mimika River; redescription); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1978b:26 (redescription; ♀ = *Trypoxylon bituberculatum mysolense*), 79 (in key to Oriental *Trypoxylon*), 1980a:2 (synonymized with *Trypoxylon eximium*). – **As *Trypoxylon eximium gracillimum***: Tsuneki, 1981a:8, 9 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 70 (new status; additional description; description of ♂).

ssp. *obicola* Tsuneki

Trypoxylon eximium obicola Tsuneki, 1980a:105, ♀. Holotype: ♀, Indonesia: Island of Obi: Kali Telaga (RMNH). – Tsuneki, 1980a:14 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

146. *eyeni* Leclercq

Trypoxylon eyeni Leclercq, 1965a:109, ♀. Holotype: ♀, Zaire: Bas-Congo: Kimwenza (MRAC). – Leclercq, 1965a:86 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

147. *fabricator* F. Smith

Trypoxylon fabricator F. Smith, 1873b:101, ♀, ♂. Lectotype: ♀, Brazil: no specific locality, but Amazon: Ega, now Tefé; and Catagallo, listed in original description (BMNH), designated by Richards, 1934:310. – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); W. Fox, 1897b:384 (Brazil: Mato Grosso: Chapada do Guimaraes); Bristowe, 1925a:480 (nest and prey); F. Williams, 1928:153 (nest); Richards, 1934:309 (in revision of New World *Trypoxylon*); 345 (nesting habits summary); Vesey Fitzgerald, 1936:114 (Trinidad: nest structure); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Radović, 1985:65 (sting apparatus analyzed); Callan, 1991a:8 (Trinidad); Sakagami, Gobbi, and Zucchi, 1990:846 (nesting habits, quasisocial species); Gobbi, Sakagami, and Zucchi, 1991:37

(behavior on nests); Gomes, Pompolo, and Campos, 1995:174 (chromosome number n = 16); Melo, 2000:102 (redescription of known behavior); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

Trypoxylon gracile Taschenberg, 1875:377, ♀. Syntypes: ♀, Venezuela: no specific locality (Halle). Synonymized with *Trypoxylon fabricator* by Richards, 1934:309. – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera).

Trypoxylon brevicarinatum Cameron, 1912a:439, ♀. Holotype or syntypes: ♀, Guyana: Demerara: no specific locality (BMNH). Synonymized with *Trypoxylon fabricator* by Richards, 1934:309.

As *Trypoxylon rugifrons* Rau, 1933:151 (Panama: Barro Colorado, nest, mimicked by a fly, *Baccha* sp.), corrected to *Trypoxylon fabricator* by Rau, 1935b:188.

148. *fastigium* W. Fox

Trypoxylon carinifrons W. Fox, 1891c:142, ♀, ♂, junior primary homonym of *Trypoxylon carinifrons* Cameron, 1889. Lectotype: ♀, USA: Texas: no specific locality (ANSP), designated by Cresson, 1928:52.

Trypoxylon fastigium W. Fox, 1894a:476. Substitute name for *Trypoxylon carinifrons* W. Fox, 1891. – Dalla Torre, 1897:704 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Mickel, 1918b:394 (in catalog of Nebraskan Sphecidae); Richards, 1934:315 (not examined); Brimley, 1938:443 (North Carolina: Durham); Sandhouse, 1940:165 (in revision of Nearctic *Trypoxylon*); Brimley, 1942:36 (North Carolina: earlier records actually refer to *Trypoxylon backi*); Krombein *in* Muesebeck, Krombein, and Townes, 1951:955 (in catalog of North American Hymenoptera); Wray, 1967:125 (North Carolina); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Krombein, 1979b:1643 (in catalog of North American Hymenoptera).

Trypoxylon subfrigidum Rohwer, 1909g:378, ♂. Holotype: ♂, USA: Texas: Lee County: Fedor (USNM). Synonymized with *Trypoxylon fastigium* by Sandhouse, 1940:166. – Richards, 1934:314 (not examined).

Trypoxylon nigrellum Rohwer, 1909g:379, ♀. Holotype: ♀, USA: Texas: Lee County: no specific locality (USNM). Synonymized with *Trypoxylon subfrigidum* by Richards, 1936b:463 and with *Trypoxylon fastigium* by Sandhouse, 1940:166. – Rau, 1926:211 (Missouri: Wickes: sheltered clay bank); Richards, 1934:320 (in revision of New World *Trypoxylon*).

149. *fenchihuense* Tsuneki

Trypoxylon fenchihuense Tsuneki, 1967d:16, ♂. Holotype: ♂, Taiwan: Chiayi Prefecture: Fenchihu (originally K. Tsuneki coll., now USNM). – Tsuneki, 1967d:2 (in key to *Trypoxylon* of Taiwan), 1971g:8 (Taiwan), 15 (in additional key to females of *Trypoxylon* of Taiwan), 18 (in new key to males of *Trypoxylon* of Taiwan); Haneda, 1972a:5 (Taiwan); Tsuneki, 1972c:2 (Taiwan); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); nec Tsuneki, 1977j:272 (= *Trypoxylon sauteri*), 1981c:4, 6 (in key to *Trypoxylon* of Taiwan), 24 (Taiwan; additional description), 1981f:37 (member of *Trypoxylon pacificum* species group); Nuhn and Menke, 1994:25 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution); T. Li and Q. Li, 2010a:242 (in key to *Trypoxylon* of southwestern China).

150. *ferox* F. Smith

Trypoxylon ferox F. Smith, 1860a:84, ♀. Lectotype: ♀, Indonesia: Sulawesi: Makasar: no specific locality (OXUM), designated by Tsuneki, 1978b:13. – F. Smith, 1863b:135 (known from Sulawesi), 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1978b:13

(redescription; also ♂ which = *wallacei*), 79 and 81 (in key to Oriental *Trypoxylon*), 1980a:7 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 2 (♂ described in 1978b = *wallacei*), 56 (bibliographic reference).

151. *ferrugatum* Tsuneki

Trypoxylon ferrugatum Tsuneki, 1979a:45, ♀. Holotype: Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:6 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

152. *ferrugiabdominale* T. Li and Q. Li

Trypoxylon ferrugiabdominale T. Li and Q. Li, 2007:2, ♀. Holotype: ♀, China: Zhejiang Province: Qilting in Tianmushen (Zhejiang University, Hangzhou).

153. *ferrugineum* Tsuneki

Trypoxylon ferrugineum Tsuneki, 1979a:50, ♀, ♂. Holotype: ♀, Thailand: Chiang Mai: Doi Suthep (Bishop Mus.). – Tsuneki, 1979a:6 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:34 (Myanmar), 38, 61 (in key to *Trypoxylon* of Myanmar).

154. *fiebrigi* Richards

Trypoxylon fiebrigi Richards, 1934:339, ♀. Holotype: ♀, Paraguay: San Bernardino (ZMHU). – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Amarante, 1993:19 (norheastern Brazil), 2002:48 (in catalog of Neotropical Crabronidae); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

155. *figulus* (Linnaeus)

Sphex figulus Linnaeus, 1758:570. Holotype: ♀, Sweden: Uppsala (Linnean Society, London). – Fabricius, 1775:347 (redescription); O. Müller, 1776:160 (redescription; Denmark and Norway); Fabricius, 1781:444 (redescription), 1787:274 (redescription); de Villers, 1789:221 (redescription); Gmelin, 1790:2727 (redescription); Rossi, 1790:61 (in revision of insects of Etruria, now Toscana, Italy); Christ, 1791:291 (redescription); Fabricius, 1793:203 (redescription), 1796:155 (in Index to his Entomologia Systematica, 1793); Panzer, 1801, Heft 80:16 (in revision of German insects, illustration of habitus); Turton, 1801:486 (redescription); Roth von Schreckenstein, 1802:30 (Germany: Baden-Württemberg); Schrank, 1802:322 (Germany: in revision of insects of Bayern = Bavaria); Illiger, 1807b:93 (synonymy, redescription); Gistel, 1837:15 (Germany: Bavaria = Bayern); Nördlinger, 1848:270 (overwintering larvae); Peets, 1909-1911:68 (*Sphex figulus* of Panzer = *Trypoxylon figulus*); Day, 1979:62 (discussion of holotype); Day and Fitton, 1978:193 (recuration of Linnean type material). – **As *Apius figulus***: Jurine, 1807:142 (new combination, in checklist of species of *Apius*) and pl. 9, Fig. 8 (illustration of habitus); Frei-Gessner, Kohl, and Kriechbaumer, 1882:393 (Jurine's specimens are *Trypoxylon figulus*). – **As *Tachysphex figulus***: Dressler, 2000:34 (erroneous new combination, Germany: Hessen: Darmstadt area). – **As *Trypoxylon figulus***: Latreille, 1802:79 (new combination); Fabricius, 1804:181 (redescription); Latreille, [1805]:310 (redescription); Panzer, 1806:107 (in critical review of his earlier work); Spinola, 1806:65 (Italy: Liguria); Billberg, 1820:105 (specimens from Sweden in collection Billberg); Lepeletier de Saint Fargeau and Audinet-Serville, 1828:750 (in list of known *Trypoxylon*); Stephens, 1829a:364 (in catalog of British insects), 1829b:33 (in checklist of British insects); Vander Linden, 1829:42 (bibliographic references, Belgium: Bruxelles, all Europe); Guérin-Méneville, 1830:416 (in Dictionnaire classique d'histoire naturelle), 1835:pl. 71, Fig. 3 (illustration of habitus); Shuckard, 1837a:115 (in revision of British Aculeata), 252 (prey: a spider); Zetterstedt, 1838:445 (in revision of insects of Lapland); von Siebold, 1839:49 (Germany: Danzig, now Poland: Gdańsk); Dufour and Perris, 1840 (28 (nesting in stems of *Rubus*, description of larva); Herrich-Schaeffer, 1840:295 (Germany: Bayern: Regensburg area); Dufour, 1841a:497 and 1841b:236 (digestive tract), 1841a:503 and 1841b:239 (male reproductive system), 1841a:507 and 1841b:243 (female reproductive system); Dahlbom, 1842a:13 (in review of Scandinavian aculeates); Ghiliani, 1842:25 (listed from Italy: Sicilia); Dahlbom, 1844:280 (in revision of Sphecidae and Pompilidae); Guérin-Méneville, 1844:441

(bibliographic references); Dahlbom, 1845:509 (in key to world *Trypoxylon*); Lepeletier de Saint Fargeau, 1845:228 (in revision of world Hymenoptera); Gistel, 1848:142 (Germany, description); F. Smith, 1848:57 (preying on aphids [*sic*], in error); Eversmann, 1849:414 (Russia: Ural foothills and Kazan' province); von Kiesenwetter, 1849:90 (Germany: Kingdom of Saxony); Wissmann, 1849:15 (Germany: Kingdom of Hannover: nesting in wood and clay cliffs); Tischbein, 1850:9 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); F. Smith, 1851c:23 (Great Britain: no specific locality); Wesmael, 1852:269 (Belgium: Bruxelles); Belke, 1853:433 (Ukraine: Kamieniec Podolski); Kirschbaum, 1853:47 (Germany: Herzogtum Nassau: Weilburg and Wiesbaden); F. Smith, 1853:63 (in checklist of British Hymenoptera); Kirchner, 1854:313 (Czechoslovakia: Kaplitz in Budweiser District, now České Budějovice); F. Smith, 1856:376 (in catalog of Hymenoptera in British Museum); Kawall, 1857:25 (Kurland, now Latvia); Ruthe and Stein, 1857:315 (Germany: Berlin area); Schenck, 1857:132 (Germany: in revision of fossorial wasps of Nassau Region); A. Costa, 1858:20 (Italy: Campania: Monti Partenii in Benevento Region); F. Smith, 1858c:117 (in review of British Aculeata, redescription); Taschenberg, 1858:99 (in key to Sphecidae of Germany); Assmuss, 1859:616 (Russia: Moscow Governorate); Funk, 1859:58 (Germany: Bayern: Bamberg); Schenck, 1860:147 (Germany: Nassau region); Brischke, 1862:105 (Germany: Preussen Province, now Poland: Pomorze Region); Brown, 1863:181 (Great Britain: Burton-on-Trent); A. Costa, 1863:66 (Italy: Calabria Ulteriore: no specific locality); Brischke, 1864:209 (Germany: Preussen Province, now Poland: Pomorze Region); Siła-Nowicki, 1864:54 (Ukraine: L'viv), 1865:54 (western Ukraine: Galicia region: no specific locality); Giraud, 1866:474 (nests in plant stems including *Rubus*, preys on small spiders); Taschenberg, 1866:184 (in revision of Hymenoptera of Germany); A. Costa, 1867c:117 (in revision of Italian Sphecidae); Jaennicke, 1867:147 (Germany: Hessen: Frankfurt area); Schenck, 1867a:353 (Germany: Nassau Region); Dietrich, 1868:362 (Switzerland: Zurich Canton); Jaennicke, 1868:8 (Germany: Hessen: Frankfurt and Offenbach area); Wierzejski, 1868:117 (Poland: Kraków area; Ukraine: L'viv and Podole region; common everywhere); Palma, 1869:41 (Italy: Sicilia settentrionale); von Aichinger, 1870:315 (Austria: Tirol); Thomson, 1870:250 (in revision of Swedish wasps); A. Costa, 1871b:46 (in revision of Italian Sphecidae); F. Smith, 1871b:13 (in catalog of British Aculeata); P. Ivanov, 1872:152 (Ukraine: Khar'kov Oblast': Kupyansk area); Schlechtendal, 1872:36 (Germany: Sachsen: Zwickau); Dours, 1874:151 (in catalog of Hymenoptera of France); Mocsáry, 1874:120 (Siebenbürgen: Hermannstadt, now Romania: Transylvania: Sibiu); Thomson, 1874:252 (in revision of Hymenoptera of Scandinavia); Wierzejski, 1874:261 (Poland: Kraków area; Ukraine: Podole Region; common); Marquet, 1875:209 (France: Languedoc); Taschenberg, 1875:379 (Germany: Halle; USA: Illinois); Beuthin, 1876:230 (Germany: Hamburg area); Radoszkowski, 1877:68 (Uzbekistan: Zaravshan valley; Kyrghyzstan: Gulcha); Daly, 1878:45 (Great Britain: Dorset: Glanville's Wootton); Roebuck, 1878:48 (Great Britain: recorded from Yorkshire county: Wakefield, by F. Smith, 1858); Girard, 1879:929 (morphology and habits); Becker, 1880:153 (Russia: Sarepta, now Krasnoarmeysk south of Volgograd); Kohl, 1880:135 (Austria: Tirol, and Italy: Trentino–Alto Adige); E. Saunders, 1880:278 (in revision of British Aculeata); Siebke, 1880:67 (Norway); Magretti, 1881:122 (Italy: Lombardia), 271 (in list of species discussed in this paper); Marquet, 1881:184 (southern France); Schøyen, 1881:12 (correction to Siebke, 1880); Yaroshevskiy, 1881:123 (Ukraine: Khar'kiv Oblast': Khar'kiv, Kupyansk); Fabre, 1882:227 (nesting in bramble stems, nest parasite: *Cryptus gyrator* Dufour, an ichneumonid); A. Costa, 1883:58 (Italy: Sardegna); Kohl, 1883e:657 (Switzerland); Sickmann, 1883:76 (Germany: Niedersachsen: Wellingholthausen); Harwood, 1884:211 (Great Britain: Essex: Colchester area); von Heyden, 1884:121 (Germany: Frankfurt am Main area); Kohl, 1885a:193 (in key to European *Trypoxylon*), 194 (in revision of European species), 204 (in checklist of world *Trypoxylon*); De Stefani Perez, 1886:172 (Italy: Sicilia: monte di Renda near Palermo); Wüstnei, 1886:37 (Germany: Schleswig-Holstein); Ed. André, 1888:210 (in revision of Sphecidae of Europe and Algeria), 18* (bibliographic references); Brischke, 1888a:54 (Germany: Hela Peninsula, now Poland: Hel Peninsula), 1888b:100 (Germany: Preussen Province, now Poland: Pomorze Region); Cuní y Martorell, 1888:164 (Spain: Barcelona); C. Verhoeff, 1891b:18, 37 (nesting habits); Assmuss, 1892:53 (Russia: earlier record from Moscow Governorate repeated); V. Perkins, 1892:204

(Great Britain: Gloucestershire: Wotton-under-Edge); Radoszkowski, 1892:591 (male genitalia); Kohl, 1893a:29 (Austria: Niederösterreich); C. Verhoeff, 1892b:362 (male cocoons are closer to nest entrance), 365 (individuals of both sexes that emerge first are larger), 1892c:709, 725 (nesting habits); Alfken, 1893:120 (Germany: Friesian Islands: Island of Juist); F. Morawitz, 1893a:113 (Russia: Karelian Isthmus), 1993b:409 (Tajikistan: Iskander-kul in Zeravshan River valley); Sickmann, 1893:81 (Germany: Niedersachsen: Iburg); Westerlund, 1893:26 (Russia: Karelian Republic: northern shore of Lake Ladoga); Baldini, 1894:54 (Italy: Modena area); Brischke, 1894:54 (Germany: Brösen west of Danzig, now Poland: Gdańsk-Brzeźno); De Stefani Perez, 1894:216 (Italy: Sicilia); Krieger, 1894:9 (Germany: Kingdom of Saxony); Medina, 1894a:260 (Spain: Sevilla and Pozuelo de Calatrava); Schletterer, 1894:34 (Istria Peninsula, now part of Croatia, Slovenia, and Italy); De Stefani Perez, 1895:227 (in catalog of Sicilian Hymenoptera); Meunier, 1896:271 (Belgium: Bruxelles area); E. Saunders, 1896:80 (in revision of British Aculeata); Acloque, 1897:92 (in Sphecid Fauna of France and Algeria); Borries, 1897:70 (review of nesting habits); Cuní y Martorell, 1897:332 (Spain: Cataluña: villa de Calella); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); Mocsáry, 1897:77 (common in all parts of Hungarian kingdom); Flamary, 1898:38 (France: Saône-et-Loire: Mâcon area); O. Schneider, 1898:102 (Germany: Island of Borkum); Strand, 1898b:95 (Norway); Gardner, 1901:376 (Great Britain: Cheshire: Bowden); J. Nielsen, 1901a:268 (nesting habits); N. Arnold, 1902:88 (Russia: Mohilev Province, now Belorussia); Chyzer, 1902:34 (Hungary); Friese, 1902:478 (occurring in Swedish Lapland according to Zetterstedt, 1838); Nevinson, 1902:12 (Great Britain: Cornwall: Newquay); Pigeot, 1902:63 (nesting habits); Antiga and Bofill, 1904:13 (Spain: Cataluña Province); Aurivillius, 1904:277 (in revision of Swedish Sphecidae); Höppner, 1904:164, 168 (nest parasite: *Eurytoma rubicola* Gir.); Jourdain 1904:221 (Great Britain: Derbyshire: Burton); Martineau, 1904:46 (Great Britain: Budleigh Salterton); E. Saunders, 1904c:635 (Spain); W. Schulz, 1904b:102 (Czechoslovakia); Zilahi Kiss, 1904:77 (Hungary: Tasnád, Peér); Kubes, 1905:84 (Czech Republic: Kolín, Obora, Sušice, Veltruby); Vángel, 1905:166 Hungary); Adlerz, 1906:25 (Sweden; nesting habits); Dusmet y Alonso, 1906:7 (Spain); Graeffe, 1906:455 (Tunisia: Tunis area); Mercet, 1906c:466 (in key to Palearctic *Trypoxylon*); Strand, 1906:101 (Norway: Aal); Móczár and Henter, 1907:205 (Hungary: Pécs); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); W. Wagner, 1907:131 (nesting in old galls of *Lipara lucens* Meigen, Chloropidae); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Höppner, 1908:177 (mixed nest of *Chevrieria unicolor = Pemphredon unicolor* and of *Trypoxylon figulus*), 369 (mixed nest of *Osmia leucomelaena* K. and *Trypoxylon figulus*); Malyshev, 1908:9 (homing); Morley, 1909:304 (Great Britain: Isle of Wight); Sparre Schneider, 1909:110 (Zetterstedt's record from Norway); Cavro, 1910:685 (France: Département du Nord); Höppner, 1910b:93 (mixed nest of *Trypoxylon figulus* and of *Prosopis brevicornis* Nylander), 95 (mixed nest of *Trypoxylon figulus*, *Odynerus exilis* Herrich-Schaeffer, and of *Chevrieria unicolor = Pemphredon unicolor*), 133 (mixed nest of *Trypoxylon figulus* and *Crabro vagus = Ectemnius continuus*), 161 (mixed nest of *Trypoxylon figulus* and of *Odynerus laevipes* Shuckard); Kleine, 1910:24 (nesting in barkbeetles galleries); Dittrich, 1911b:26 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:45 (Italy: Trieste area); M. Müller, 1911:114 (Germany: Brandenburg: no specific locality, nesting in galls of *Lipara*); Popovici-Baznosanu, 1911:XCIII (nesting habits); Birula, 1912:546 (Ukraine: Zhytomyr Oblast': Radomyshl'); Rudow, 1912:59 (nesting in wood or twigs, preying on small spiders, flies, mayflies, and psyllids, prey mostly in error); Schirmer, 1912:168 (Germany: Berlin area); Kohl, 1913b:15 (Russia: Voronezh Oblast': Valuyki at 50°14'N 38°08'E); Alfken, 1914:284 (northwestern Germany); Birula, 1914:390 (Belorussia: Ambrosovichi and Luskinopol' near Vitebsk); Szilády, 1914:88 (Hungary: Miriszló, Nagyenyed, Topánfalva, Verespatak); Dusmet y Alonso, 1915:87 (Spain: Aragón); Haverhorst, 1916a:370 (*Chrysis cyanea* L. is a nest parasite), 1916b:448 (nesting habits); Schütze, 1916:42 (Germany: Sachsen: Rachlau, visiting flowers of parseley, *Petroselinum crispum* (Mill.) Fuss, Apiaceae); J. Ch. Bradley, 1919a:60 (*Trypoxylon figulus*, the first included species, becomes type species of *Trypoxylon*);Dubois, 1919:96 (Belgium: Bruxelles: Uccle); Kerenskiy, 1919:37 (Russia: Penza Governorate); O. Meyer, 1919:157 (Germany: Posen Province, now Poland: Poznań Region); Noskiewicz, 1920a:155 (Poland: Tatry

Mountains: Dolina Koscieliska, Toporowa Cyrhla), 1920b:156 (Poland, now Ukraine: forest district Kopanki near Kałusz); Strand, 1920:14 (Germany: Mecklenburg-Vorpommern: Rostock); A. Wagner, 1920:37 (Germany: Lower Elbe region); Fahringer and Friese, 1921:161 (Turkey: Erzurum: Iyarbashi in Amanus Mountains = Gavur Dağlari); Strand, 1921:33 (Germany: Bayern: Kulmbach); Chevalier, 1922:46 (nest parasite: *Pachyophtalmus signatus* (Meigen), a calliphorid); Dubois, 1922:217 (in key to Belgian Sphecidae); Fahringer, 1922:184 (Turkey); Gennerich, 1922:40 (cleaning apparatus); Jansson, 1922:24 (Sweden: Island of Öland); Maidl, 1922:73 (Albania, Croatia); Alfken, 1924:231 (northern Germany); Lundblad, 1924:22 (Sweden: Lappland: Lycksele); R. Perkins, 1924:229 (Great Britain: Devon); Berland, 1925d:150 (in Sphecid Fauna of France); Bischoff, 1925:302 (Latvia: Jelowka, Tauerkall, and Wezkukkul; Poland: Białowieża and Grajewo areas); Coulon, 1925:126 (France); R. Perkins, 1925:154 (Great Britain: Gloucestershire and Somersetshire); Schütze, 1925:114 (Germany: Lausitz Region); Strohm, 1925:212 (Germany: Baden-Württemberg: Achkarren in Kaiserstuhl); Bouwman, 1926:280 (in list of Sphecidae of Netherlands); Friese, 1926:151 (in key to Sphecidae of Central Europe, morphological and biological characteristics); Hémon, 1926:199 (France: Finistère: Fouesnant); Kokujev, 1927:72 (Russia: Siberia: Lake Baikal); F. Werner, 1927:67 (Austria: Niederösterreich: River Kamp valley); Wnukowskij, 1927:32 (Russia: western Siberia: village Kornilovo at 53°57'N 81°10'E); Berland, 1928b:179 (add Höppner, 1908, 1910 to bibliography in Berland, 1925d); Bouwman, 1928a:388 (in revision of Sphecidae of Netherlands); Chevalier, 1929a:11 (nesting habits); Grandi, 1929:288 (Italy: Toscana: valle della Limentra); Maneval, 1929b:292 (nesting habits); Micheli, 1929:40 (nesting habits, France); Hamm and Richards, 1930:118 (summary of nesting habits); A. Müller, 1930:181 (Romania: Brăila); Richards, 1930:134 (Great Britain: nesting in rotten posts at Bagley Wood near Oxford); Schmiedeknecht, 1930:711 (in keys to Hymenoptera of North and Central Europe); Bischoff, 1931:9 (Spain); Butterfield and Fordham, 1931:155 (Great Britain: Yorkshire); Dusmet y Alonso, 1931:6 (Portugal: Mitra); Grandi, 1931:57 (Italy: Toscana: Vallata delle Pozze near Le Mandriole); Pulkkinen, 1931:102 (in revision of Sphecidae of Finland); Spooner, 1931:15 (Great Britain: Cambridgeshire); Bondroit, 1932:39 (Belgium: common in Bruxelles area); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Jones, 1932b:233 (Great Britain: Wicken Fen); Haverhorst, 1933:474 (nest structure); Merisuo, 1933a:60 (Finland: city of Turku); E. Nielsen, 1933:273 (summary of nesting habits, description of nest); Balles, 1934:29 (Germany: Baden-Württemberg: Achern, Fautenbach, Sasbachwalden); Giner Marí, 1934:135 (Spain); Giordani Soika, 1934:342 (description of mature larva); Jansson, 1934:291 (Sweden); Forsius *in* Forsius and Hellén, 1935:12 (in checklist of Hymenoptera of Finland); Grandi, 1935a:111 (Italy); Marchand and Dulac, 1935:61 (France: Saône-et-Loire: Saint Laurent d'Andenay); Minkiewicz, 1935:209 (Poland: Kazimierz on Wisła), 216, 221 (Poland: Lake Garbaś 20 km west of Suwałki); Spooner, 1935:139 (Great Britain: Northamptonshire); Vergne, 1935:119 (France: Auvergne: common); Crèvecoeur and Maréchal, 1936:252 (in catalog of Belgian Hymenoptera); Drenowski, 1936:247 (Bulgaria: Sofia); Drogoszewski, 1936:130 (Poland: Łowicz, Opatów); Gussakovskij, 1936:655 (in revision of Palearctic *Trypoxylon*); Khramushin, 1936:3 (nesting habits); Maréchal, 1936:374 (review of literature on nesting habits); Roller, 1936:316 (Austria: loess cliffs at Bisamberg near Vienna); Dulac, 1937:17 (France: Saône-et-Loire: Bois des Gautherons, Saint-Laurent d'Andenay); Richards, 1937b:104 (in checklist of British aculeates); Zavadil, Šustera, and Bat'a, 1937:221 (in catalog of Sphecidae of Czechoslovakia); P. Freeman, 1938:5 (nest and prey); Hallett, 1938:73 (Great Britain: Herefordshire: Mathon); Móczár, 1938c:80 (Hungary: Kőszeg Hills); A. Wagner, 1938a:124 (northwestern Germany); Aerts, 1939:135 (Germany: Nordrhein-Westfalen: loess cliff at Weilerswist near Köln); Móczár, 1939:4 (Hungary: Jászberény); Dovnar-Zapolskiy, 1940:304 (Russia: Kursk Oblast'); Balthasar, 1941b:114 (Czech Republic: eastern Moravia); de Graham, 1941:99 (Great Britain: Lincolnshire); Guiglia, 1941c:160 (Italy: Calabria: Grande Sila); Leclercq, 1941a:68 (Belgium: Pays de Liège), 1941b:12 (Belgium: Liège area); Paul, 1941:50 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); Schneid, 1941:1052 (Germany: Bayern: Bamberg area); Alfken, 1942:231 (Germany: Niedersachsen: Lüneburger Heide); Audcent, 1942:25 (nest parasites: *Miltogramma punctatum* Meigen, *Amobia signata* Meigen, Sarcophagidae); J. Perkins, 1942:199 (Sweden: Skåne:

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at 50°06'42"N 7°43'87"E); Kazenas, 2004b:105 (Kazakhstan: western Tien Shan); Klein and Lefeber *in* Peeters, van Achterberg, et al., 2004:429 (in Wasp and Ant Fauna of Netherlands); Krivonogova and Rudoiskatel', 2004:109 (Russia: Sverdlovsk Oblast': near Gari village); Liška, 2004:89 (Slovakia: (Vah River valley near Trenčin); Majzlan and Deván, 2004:31 (Slovakia: Sekule), 33 (Slovakia: Malacky-Široké); Shkuratov, 2004a:78 (Russia: Rostov Oblast'), 2004b:167 (Russia: Rostov Oblast': Gosudarstvennyi Muzey-Zapovednik M.A. Sholokhova); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:357 (in catalog of Polish Crabronidae); Szczepko and Kowalczyk, 2004:126 (Poland: Kampinos National Park near Warszawa); Tannert and von der Dunk, 2004:135 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:94 (in key to *Trypoxylon* of Poland); Archer, 2005a:30 and 2005b:92 (Great Britain: Watsonian Yorkshire); Bergsten, Nilsson, and Hellquist, 2004:7 (Sweden: Västerbotten: Nordmaling); Blösch, 2005:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Burger, 2005:36 (Germany: Thüringen); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Dubitzky, Blank, and Schönitzer, 2005:276 (Germany: Bayern: area north of Dachau); Gathmann, 2005:108 (Germany: Niedersachsen: agricultural landscape near Göttingen; nest parasite: *Chrysis cyanea* (Linnaeus), Chrysididae), 109 (nest parasite: *Melittobia acasta* (Walker), Eulophidae, *Ephialtes manifestator* (Linnaeus), Ichneumonidae, and *Nematopodius debilis* (Ratzeburg), Ichneumonidae); Hallin, 2005:16 (Sweden: Örebro County: Hällefors, as *figulus* sensu lato), 29 (Sweden: Örebro County: Nydalen, as *figulus* sensu lato); Jacobs, 2005a:453 (Bulgaria); Kofler, 2005:173 (Austria: Tirol: Lienz District: several localities); Kowalczyk and Kurzac, 2005:106 (Poland: Botanical Garden in Łódź); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Pagliano and Negrisolo, 2005:419 (in Sphecid Fauna of Italy); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Riemann and Hohmann, 2005:566 (Germany: Niedersachsen: city of Bremen and adjacent area); Robinson, 2005:34 (Great Britain: Cumbria County); Saure, 2005:19 (Germany: Berlin); Schmalz, 2005:58 (references to Linnaeus, 1758); Shorenko, 2005a:164 (Ukraine: Crimea), 2005b:98 (Ukraine: Crimea: Karadagh Nature Reserve); Theunert, 2005a:19 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Yildirim and Ljubomirov, 2005:1799 (Turkey: Bayburt, Bingöl, Erzurum, and Konya provinces); Archer, 2006a:21 (Great Britain: Lincolnshire: Rauceby Warren Nature Reserve), 2006d:76 (Great Britain: Watsonian Yorkshire: Pollington Quarry); Dathe, 2006:37 (Germany: *Sphex figulus* recorded from Plauenscher Grund near Dresden by von Block, 1799, is now *Trypoxylon figulus*); Dvořák, Bogusch, and Smetana, 2006:103 (Czech Republic: Sumava = Bohemian Forest); Gorobchishin, 2006:113 (Ukraine: several localities); Liška, 2006:89 (Slovakia: Váh river valley near Trenčin); Ljubomirov, 2006:544 (Bulgaria: Rhodope Mountains: earlier records summarized, also: Yurukovo Village, as *figulus figulus*); Magdalou, 2006a:7, 10 (France: Pyrénées-Orientales: Réserve Naturelle de la Massane); Peeters, Krekels, and Megens, 2006:22 (Netherlands: Reichswald forest near Nijmegen); N. Schneider, 2006:139, 140, 141, 142 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:111 (Belorussia: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Vepřek, 2006:512 (Czech Republic: Kokořínsko area); Baghirov, 2007:93 (Russia: southwestern Siberia); Beavis, 2007:92 (Great Britain: Tunbridge Wells and Central High Weald); Bitsch, Dollfuss, Bouček, K. Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:461 (observations on nesting habits by De Groot, 1971 may refer to *Trypoxylon figulum, or medium,* or *minus*); Burguet, 2007:unnumbered p. 27 (France: Puy-de-Dôme: sands Girauds-Faures in Orléat commune); Dvořák, Straka, Smetana, Halada, Vepřek, and Karas, 2007:169 (Czech Republic: Vyšenské Kopce National Nature Reserve); Flügel, 2007:40 (Germany: Hessen: Halberg near Neumorschen); Guldemond, Pijfers, and den Belder, 2007:203 (Netherlands: Gelderland: dairy farm in de Graafschap); Jacobs, 2007:110, 112 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:26 (Germany: northwestern Sachsen); Józan, 2007:179 (Hungary: Zselic hills); Kowalczyk and Nadolski, 2007:284 (Łódź: railway areas); T. Li and Q. Li, 2007:9 (China: Beijing: Ximilin; Shanxi: Tiantaishan in Quinling and Zhenzi

in Zhouzhihou); Saure, 2007:83 (Germany: in checklist of Aculeata of Land Brandenburg); Shlyakhtenok, 2007a:300 (Belorussia: Berezinsky Nature Reserve), 2007b:364 (Ukraine: Chernobyl area); Vago, 2007:175 (France: départements d'Aisne, Nord, and Pas-de-Calais), 176 (France: département du Nord: Bugnicourt); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia); Vicidomini and Pignataro, 2007:2 (Italy: Provincia di Salerno: ubiquitous); Winkler, 2007:30 (Germany: Niedersachsen: eastern Friesland); Danilov, 2008:350 (Russia: Altayskiy Kray: Barnaul area); Danilov and Tshernyshev, 2008:43 (Russia: Novosibirsk Oblast': Karasuk area); Dvořák, Bogusch, Malenovský, Bezděčka, Bezděčková, Holý, Liška, Macek, Roller, Říha, Smetana, Straka, and Šima, 2008:67 (Czech Republic: Hády Hill near Brno); Gayubo, González, Tormos, and Asís, 2008:139 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Haeseler, 2008:309 (Germany: Friesian Islands); Heneberg, Bogusch, and Řehounek, 2008:unnumbered p. 7 (Czech Republic: sandpits); Ljubomirov and Ban-Calefariu, 2008:205 (Romania: Maramureş District: Bârsana, Ieud, Mara, Repedea, Săcel); Ljubomirov and Yildirim, 2008:240 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); Protsenko and Drozdovskaya, 2008:127 (Ukraine: Sumy Oblast': Mogritsa and Vakhalivshchina villages); Theunert, 2008:89 (Germany: map of distribution in Niedersachsen and Bremen); Zettel, Zimmermann, Sorger, and Wiesbauer, 2008:5 (Austria: Wien); Archer, 2009a24 (Great Britain: Yorkshire: Sheffield); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Belkheir, 2009:17 (France: Pyrénées-Orientales: commune d'Eyne); Burguet, 2009:15 (France: Département de Puy-de-Dôme: Bois de la Comté); Debuyser and Vago, 2009:5 (in list of Sphecidae *sensu lato* of northern France); Donie, 2009:10 (Germany: Niedersachsen: Oldenburg); Dvořák, Bogusch, and Smetana, 2009:82 (Czech Republic: Králický Sněžnik National Nature Reserve); Flügel, 2009a:67 (Germany: Thüringen: Weimar); U. Frommer, 2009a:29 (Germany: in checklist of Sphecidae of Hessen); Fuhrmann, 2009:6 (Germany: Nordrhein-Westfalen: montane beech forest in Rothaargebirge); Gayubo, González, Tormos, and Asís, 2009:364 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:264 (Bulgaria: Maleshevska Planina); Hessling, 2009:104 (Germany: Niedersachsen: Hunte River valley south of Oldenburg); Holzschuh, Steffan-Deventer, and Tscharntke, 2009:127 (Germany: Niedersachsen: near Göttingen at 51°30'N 9°54'E, nesting in grass strip corridors in agricultural landscape); Ivanov, Fateryga, and Zhidkov, 2009:218 (Ukraine: Crimea: Karadag Nature Reserve); Józan, 2009:166 (Croatia: Cerovica, Most-Raša); Kowalczyk, Kurzac, and Nadolski, 2009:63 (Poland: between Warta and Widawka rivers); Livory, Chevin, Lair, Sagot, and Baldock, 2009:32 (France: Département de la Manche); Mokrousov, 2009:289 (Russia: Republic Mariy El); Mokrousov, Antropov, Ruchin, and Bugayev, 2009:78 (Russia: Republic of Mordovia); Nemkov, 2009b:85 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:237 (Russia: Primorskiy Kray: Lazovsky Nature Reserve); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:72 (Norway: locality records); Ruchin, Antropov, and Shibayev, 2009:169 (Russia: Republic of Mordovia); Rudoiskatel', Nikolaenkova, and Fadeev, 2009b:196 (Russia: Sverdlovsk Oblast': near village Kluchi at 65°35'N 60°50'E); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Straka, Dvořak, and Bogusch, 2009:266 (Czech Republic: Jizerské Mountains and Frýdlant region); Szczepko and Wiśniowski, 2009:72 (Poland: Spała Landscape Park); Terayama and Nambu, 2009:9, 25 (in key to Trypoxylini of Japan); Burguet *in* Durand and Burguet, 2010:57 (France Département d'Ardèche: Ardèche Gorges); Ermilov and Mokrousov: 2010:90 (phoretic mites *Acarus psenuli*, *Calvolia* sp., *Histiogaster* sp., *Imparipes haeseleri*, *Parawinterschmidtia kneissi*, *Probonomoia pini*, *Schulzea caucasica*, *Tortonia intermedia*, and undetermined Gamasoidea and Uropodoidea in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:38 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Falk, 2010:94 (Great Britain: heathland sites in West Midlands region, as *figulus* sensu lato); Hable, von der Dunk, and Knipfer, 2010:66 (Germany: Bayern: vicinity of Dietfurt); Hable, Krauss, von der Dunk, and Wickl, 2010:29 (Germany: Bayern: Sulz- and

Ottmaringer Tal); Jakubzik and Cölln, 2010:1188 (Germany: Rheinland-Pfalz: Bruchertseifen near Altenkirchen); Johansson, 2010:121 (Sweden: Småland: upper Emå river valley); T. Li and Q. Li, 2010a:241, 242 (in key to *Trypoxylon* of southwestern China); Mokrousov, 2010a:62 (Russia: Kirov, Nizhniy Novgorod, and Vladimir Oblast's, Chuvash Republic, Mariy El Republic, Republic of Mordovia, Tatarstan: no specific localities); Rudoiskatel', 2010:155 (Russia: central and southern Ural Mountains); Rudoiskatel' and Fadeev, 2010:124 (Russia: Sverdlovsk Oblast'); Rudoiskatel', Fadeev, and Nikolaenkova, 2010:162 (Russia: Kluchi in vicinity of Ekaterinburg at 56°35'N 60°50'E); Rudoiskatel', Nikolaenkova, and Fadeev, 2010:314 (Russia: Sverdlovsk Oblast: near Ekaterinburg); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:140 (Germany: Bayern: collected along Main-Donau canal); Shorenko and Konovalov, 2010:24 (Ukraine); van der Smissen, 2010a:354 (Germany: Schleswig-Holstein: locality records; recognition characters), 2010b:388 (France: Ardèche: Les Reynauds, Saint-Thomé, Valvignères; Vaucluse: Bédoin); Archer, 2011a:42 (Great Britain: Yorkshire: Strensall Common), 2011c:43 (Great Britain: Watsonian Yorkshire: Lindrick area), 2011d:187 (Great Britain: Watsonian Yorkshire: Hatfield Moor and Thorne Moor); Baghirov, 2011b:150 (Russia: Altayskiy Kray: Savvushka); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire), 501 (exclusive species of burned areas); Falk, 2011:69 (Great Britain: Sussex: South Downs); Gogala, 2011:17 (Slovenia); Józan, 2011:181 (in checklist of Sphecidae *sensu lato* of Hungary); Mokrousov, Berezin, and Egorov, 2011:77 (Russia: Chuvash Republic); Novozhenov, Rudoiskatel', Kostromina, Katana, and Sibiryakov, 2011:221 (Russia: Tyumen' Oblast': Khanty Mansi Autonomous Okrug: Kondino Lakes Nature Reserve); Rudoiskatel', 2011a:66 (Russia: Perm Oblast': Tyuinsk village), 2011b:68 (Russia: Republic of Bashkortostan), 2011d:242 (Russia: central Ural Mountains); Rudoiskatel', Fadeev, and Nikolaenkova, 2011:29 Russia: Sverdlovsk Oblast': near Ekaterinburg); Saure, Bohrer, Venne, and Diestelhorst, 2011:224 (Germany: Rheinland-Westfalen: Nature Reserves Doberg and Eiberg, nesting in cliffs); Schmid-Egger, 2011c:557 (Austria: Tirol: Tiroler Lech Nature Park); Shlyakhtenok, 2011:95 (Belorussia: city of Minsk); Theunert, 2011a:22 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:179 (Germany: Hessen: not endangered); von der Dunk, 2011:184 (Germany: Bayern: Kaiserburg in Nürnberg); Ziska and Saure, 2011:110 (Germany: Berlin: Tegeler Flieβ valley); Archer, 2012a:130 (Great Britain: Watsonian Yorkshire: Allerthorpe Common), 2012b:182 (Great Britain: urban York); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Burguet *in* Durand and Burguet, 2012:4 (France: Puy-de-Dôme: sands Girauts-Faures in Orléat commune); Hellrigl, 2012:129 (Italy: Provincia Autonoma di Bolzano-Alto Adige, as Südtirol); Klimsa, 2012:69 (Germany: Bayern: Schwandorf District); Larivière, Chapelin-Viscardi, and Maillet-Mezeray, 2012:296 (France: Essonne: Maisse, as *figulus figulus*); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); Prisniy, 2012:48 (Russia: Belgorod Oblast'); Shibayev and Polumordvinov, 2012:278 (Russia: Penza Oblast'); Shlyakhtenok, 2012a:172 (Belorussia, and Russia: Kirov Oblast': Arkhangelskoye, and Krasnaya Polana near Sochi: collected in private plots), 2012b:92 (Belorussia: Beresina National Reserve: overgrowing dry meadow); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); Yildirim, 2012:80 (Turkey: Erzurum province: several localities); Akulov and Proshchalykin, 2013:114 (Russia: Siberia: Krasnoyarsk Kray: Krasnoyarsk); Archer, 2013b:117 (Great Britain: Leicestershire: suburban garden in Leicester); Coudrain, Herzog, and Entling, 2013:1 (effects of habitat fragmentation in Switzerland on abundance, larval food and parasitism); Danilov and Odintseva, 2013:332 (Russia: Western Siberia: 65 km north-northeast of Tobol'sk at 58°45'N 68°74'E); Dyuzhaeva, 2013:117 (Russia: Samara Oblast': Zhiguli Nature Reserve); Flügel, 2013a:120 (Germany: Brandenburg: Pimpinellenberg near Oderberg); Mokrousov, Ruchin, and Egorov, 2013:202 (Russia: Republic of Mordovia: Mordovian State Nature Reserve); Pankov, 2013:230 (Russia: Ivanovo Oblast'); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:175 (in annotated catalog of aculeate wasps of Belorussia); Vieira, Oliveira, Brewster, and Gayubo, 2013:18 (Portugal: Douro International Natural Park and Paúl do Boquilobo Nature Reserve); Wiśniowski and Piotrowski, 2013:22 (Poland: Poleski National

Park); Wiśniowski and Szczepko, 2013:55 (Poland: Kampinos National Park near Warszawa); Archer, 2014b:178 (Great Britain: urban and suburban gardens); Bitsch, 2014:405 (recognition characters by van der Smissen, 2010a noted; France: Meurthe-et-Moselle: Azerailles; Vosges: Relanges); U. Frommer, 2014:28 (Germany: Hessen: Lorch); Hellqvist, Abenius, and Norén, 2014:92 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Jakovlev, Polevoi, and Humala, 2014:301 (Russia: Republic of Karelia: Zaonezhye Peninsula in Lake Onega);Józan, 2014:133 (Croatia: Liganj: Lovran, Lovranska Draga); Mokrousov and Vafin, 2014:58 (Russia: Republic of Tatarstan); Olszewski and Pawlikowski, 2014:193 (in key to Polish *Trypoxylon*); Pagliano, 2014:84 (specimens in M. Spinola collection, Torino, are *Trypoxylon figulus*, *T. medium*, *T. minus*, and *T. deceptorium*); Ruchin and Antropov, 2014:35 (Russia: Republic of Mordovia); Turčinavičienė, Radzevičiūtė, Budrienė, and Budrys, 2014:4 (in DNA analysis); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Mokrousov and Egorov, 2015:425 (Russia: Republic of Mordovia: Nature State Reserve Prisurskiy); Pärn, Soon, Vallisoo, Hovi, and Luig, 2015:94 (Estonia: no specific locality), 95 (*Trichrysis cyanea* (Linnaeus) is nest parasite); Peeters, Klein, van Kemenade, and Spijkers, 2015:59 (Netherlands: Noord-Brabant: Kaaistoep Nature Reserve); P. Rosa and Pagliano, 2015:106 (Italy: Lombardia and Piemonte: Parco del Ticino); Saure, 2015:15 (Germany: Berlin-Lichterfelde); Shorenko, 2015:330 (in list of Sphecidae *sensu lato* of Crimea); Simon, Lorthiois, and Macé, 2015:55 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine and Seine-Maritime Department: Anneville-Ambourville); Blažej, Macek, and Trýzna, 2016:129 (Czech Republic: České Švýcarsko = Bohemian Switzerland National Park); Bleidorn, Gerth, Hopfe, et al., 2016:11 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Else, Bolton, and Broad, 2016:33 (in checklist of Aculeata of Great Britain and Ireland: England, Wales); Mokrousov and Popov, 2016:584 (Russia: Adygea, Krasnodarskiy Kray); Reemer and Peeters, 2016:10 (Netherlands: Hulshorsterzand); Samin and Bagriacik, 2016:497 (Iran: West Azarbaijan Province: Ourmieh); Saure, 1916c:205 (Germany: center of Berlin: Groβer Tiergarten Park); A. Scholz, 2016:72 (Germany: Sachsen: Kleinraschützer Heide); Stolle and Saure, 2016:925 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Vas, Szöllősi-Tóth, and Muskovits, 2016:154 (Romania: Sălaj County); Wiśniowski, 2016:131 (Poland: Ojców National Park); Antropov, 2017b:244 (in catalog of Crabroninae of Russia); Di Giovanni, Mei, and Cerretti, 2017:73 (Italy: Lombardia: Riserva Naturale Bosco della Fontana 5 km from Mantova at 45°12'N 10°44'E, found in canopy and understory); Jahantigh, Rakhshani; Mokhtari, and Ramroodi, 2017:70 (Iran: known from West Azerbaijan Province); Flügel, 2017:6 (Germany: Hessen: Eschkopf near Rockensüß); Hoffmann, Jauker, Lanzen, Warzecha, Wolters, and Diekötter, 2017:3 (Germany: Hessen: Marburg-Biedenkopf District: wildflower strips); Magdalou, 2017:17 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Forêt de la Massane, Julols, Vallée d'Eyne); Shorenko, 2017:78 (in Crimea collected in May through August); Tosser, Chapelin-Viscardi, and Le Divelec**,** 2017:31 (France; found in agricultural landscape); Twerd, Krzyżyński, Waldon-Rudzionek, and Olszewski, 2017:7 (Poland: Inowroclaw and Janikowo: nesting in postindustrial soda ash dumping sites); Creutzburg, Winter, Baumbach, and Ssymank, 2018:216 (Germany: Thüringen: Wachsenburg Nature Reserve); Jacobs and Liebig, 2018:145 (Russia: Buryat Republic: East Sayan: 30 km northwest of Mondy; Irkutsk Oblast': Bol'shoye Goloustnoye; Primorskiy Kray: Pohiga); Lett, 2018:203 (France: Loir-et-Cher: Gièvres at 47°16'39"N 1°41'52"E); Ma, Q. Li, Wang, Jiang, and Lu, 2018:831 (China: Shanxi: Qinling Mountains); Shorenko, 2018:128 (Crimea, including localities, habitats, and number of specimens); Carminati, Mora, and Cretin, 2019:21 (France: in list of Sphecidae *sensu lato* of Franche-Comté); S. Ivanov, Fateryga, and Zhidkov, 2019:75 (Crimea: reared from trap nests); Olszewski and Kowalczyk, 2019:112 (northern Poland: Pomorze Gdańskie = Gdańsk Pomerania); Ruchin and Antropov, 2019a:13236 (Russia: Mordovia State Nature Reserve); Shorenko, 2019:211 (among the most common sphecid species in Crimea); Kejval, Blažej, and Erhart, 2020:107 (western Czech Republic**)**; Shorenko, 2020:52 (Crimea: Karadag Nature Reserve); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:384 (in revision of Sphecidae *sensu lato* of Europe, as *figulus figulus*); Cross, Baldock, and Wood, 2021:56 (in catalog of

Sphecidae *sensu lato* of Portugal); Herb and Schmid-Egger, 2021:9 (Germany: Bayern: Kaufbeuren area); Kaplan and Yildirim, 2021:79 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland); Saure, 2021:83 (Germany: Brandenburg: Nature Reserve Ferbitzer Bruch near Potsdam); Saure and Marten, 2021:136 (Germany: Sachsen-Anhalt: Nationalpark Harz); U. Frommer and Bahmer, 2023:195 (Germany: Hessen: Giessen University Botanical Garden and city gardens); Kaplan and Yildirim, 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

Sphex fuliginosus Scopoli, 1763:292, sex not stated (as *fuliginosa*, incorrect original termination). Holotype or syntypes: Carniolia (formerly in Austria, since 1919 part of Italy and Yugoslavia), lost (Rogenhofer and Dalla Torre, 1882:599). Neotype: ♀, Austria: Kärnten: Ebriach (CAS), designated by Pulawski, 1984:126. – Synonymized with *Trypoxylon figulus* by Vander Linden, 1829:42 (tentatively) and Rogenhofer and Dalla Torre, 1892:599 (definitely).

As *Trypoxylon albitarse*: Belke, 1866:512 (Ukraine: Zhytomyr Oblast': Radomyshl'), corrected to ? *Trypoxylon figulus* by Birula, 1912:532.

Trypoxylon figulus var. *majus* Kohl, 1883:657, ♀, ♂ (as *major*, incorrect original termination). Holotype or syntypes: Switzerland, no specific locality (originally NHMW, now lost). Neotype: ♀, Switzerland, Peney near Genève (MHNG), designated by Pulawski, 1984:126. – de Beaumont, 1945:477 (Switzerland; diagnostic characters; as *figulus* v. *major*); de Andrade, 1949:20 (Portugal; as *figulus major* de Beaumont); Blüthgen, 1951:234 (is a valid species, probably a synonym of *figulus*); de Beaumont, 1951h:33 (Switzerland: Neuchâtel area; as *figulus* f. *major*); Leininger, 1953:17 (Germany: Baden-Württemberg, as *figulus* var. *major*); Grandi, 1954:238 (Italy; as *figulus* f. *major*), 1957:388 (Italy; as *figulus* f. *major*); de Beaumont, 1958c:206 (Swiss National Park; as *figulus major*), 1959a:30 (Italy: Alto Adige: Bolzano; as *figulus* f. *major*); Diniz, 1959:31 (Portugal: Lisboa); Wolf, 1959a:15, 16 (Germany, in key to *Trypoxylon figulus* species group, as *figulus majus*), 1959b:25 (Germany: Nassau); Hoop, 1961:66 (Germany: Schleswig-Holstein; as *figulus majus*); de Beaumont, 1964c:84 (in Sphecid Fauna of Switzerland, as *figulus* f. *major*), 1967a:338 (Turkey; as *figulus* f. *major*); Gauss, 1967:554 (Germany: Baden-Württemberg, as. f. *major*); K. Schmidt, 1971b:38 (Germany: Rheinland-Pfalz: Mainzer Sand; as *figulus* f. *major*), 1971c:74 (Germany: Schleswig-Holstein; as *figulus major*); Stritt, 1971a:104 (Baden-Württemberg: Germany: Karlsruhe; as *figulus major*); Kofler, 1972:108 (Austria: eastern Tirol; as *figulus* f. *major*), (1974:320 (Austria: Kärnten; as *figulus* f. *major*); R. Bohart and Menke, 1976:346 (as *figulus major*), 628 (is a synonym of *Trypoxylon figulus*); K. Schmidt, 1977:96 (Germany: Baden-Württemberg: Enzklösterle in Schwarzwald; as *figulus major*); Amarante 2005a:11 (correction to his 2002 catalog).

Trypoxylon apicale W. Fox, 1891c:142, ♀ (as *apicalis*, incorrect original termination). Lectotype: ♀, Canada: no specific locality (ANSP), designated by Cresson, 1928:52. Synonymized with *Trypoxylon figulus* by Pate, 1943c:16. – W. Fox, 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:700 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae). – **As *Trypoxylon apicale***: Rohwer, 1909g:379 ("occurs in Canada and at Beverly, Mass."); Richards, 1934:317 (in revision of New World *Trypoxylon*); Sandhouse, 1940:156 (in revision of Nearctic *Trypoxylon*).

Trypoxylon figulus yezo Tsuneki, 1956g:29, ♀, ♂. Holotype: ♀, Japan: Hokkaido (= Yezo): Jozankei (originally K. Tsuneki coll., now Hyogo Mus.). Synonymized with *Trypoxylon figulus* by Pulawski, 1984:127. – Tsuneki, 1956f:121, 123 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:5, 9 (in key to *Trypoxylon* of northeastern Asia); Haneda, 1968a:44 (Japan), 1968b:55 (Japan: Nagano Prefecture: Ina District); Nambu, 1968b:22 (Japan: Saitama Prefecture), 1972e:90 (Japan: Saitama Prefecture), 1973a:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 37 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:64 (Japan: Saitama Prefecture); Tsuneki, 1979d:9 (Japan), 1981e:4 (in key to *Trypoxylon* of Japan and northeastern Asia), 21 (Japan; redescription); Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:32 (Japan: Gifu Prefecture); Suda, 2004:41 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:47 (Japan: Gifu Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2006a:23 (Japan: Toyama Prefecture).

Trypoxylon figulus barbarum de Beaumont, 1957a:148, ♀, ♂. Holotype: ♂, Morocco: Marrakech (Lausanne). Synonymized with *Trypoxylon figulus* by Pulawski, 1984:127.

Trypoxylon fieuzeti Giner Marí, 1959:389, ♂. Holotype: ♂, Morocco: Fez (MNCN). Synonymized with *Trypoxylon figulus barbarum* by Suárez *in* Giner Marí, 1959:400.

As *Trypoxylon fronticorne* Tyrner, 1977:a25 (Czech Republic: Pisečný Vrch near Bečov), corrected to *Trypoxylon figulus* by Vepřek, 2000:235.

ssp. *breviatriculatum* Antropov

Trypoxylon figulus breviatriculatum Antropov, 1989c:65, ♂. Holotype: ♂, Algeria: El Kseur: Forêt d'Akfadou (G. Pagliano coll., Torino).

156. *fitzgeraldi* Richards

Trypoxylon fitzgeraldi Richards, 1934:282, ♀, ♂. Holotype: ♂, Trinidad: no specific locality (BMNH). – Vesey Fitzgerald, 1936:112 (Trinidad: nest); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

157. *flagellatum* Tsuneki

Trypoxylon flagellatum Tsuneki, 1980a:41, ♀. Holotype: ♀, Malaysia: northern Borneo: Sandakan (USNM). – Tsuneki, 1980a:6 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas y); Nuhn and Menke, 1994:25 (holotype in USNM).

158. *flavimanum* Arnold

Trypoxylon flavimanum Arnold, 1946:71, ♀. Syntypes: ♀, Malawi: Zomba (SAM). – Leclercq, 1965a:88 (in key to Afrotropical *Trypoxylon*), 110 (bibliographic reference); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Hancock, Chahwanda, and Mhlanga, 1995:40 (paratype in Bulawayo Museum).

159. *flavipes* Tsuneki

Trypoxylon flavipes Tsuneki, 1979a:24, ♀. Holotype: ♀, Laos: Vientiane Province: Gi Sion Vill.: de Tha Ngone (Bishop Mus.). – Tsuneki, 1979a:3 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979b:3 (in key to *Trypoxylon* of Sri Lanka), 8 (Sri Lanka), 1980a:4 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 17 (Borneo; description of ♂), 1981a:4 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 13 (New Guinea), 1981b:100 (in key to *Trypoxylon* of Australia), 103 (Australia: Queensland: Mount Tamborine), 1981d:18 (in new key to *Trypoxylon* of Sri Lanka), 1981f:43 (member of *Trypoxylon flavipes* species group); Cardale, 1985:264 (in catalog of Australian Sphecidae).

ssp. *breve* Tsuneki

Trypoxylon flavipes breve Tsuneki, 1980b:23, ♀. Holotype: ♀, Philippines: Island of Samar: no specific locality (USNM). – Tsuneki, 1980b:5 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:25 (holotype in USNM).

160. *flavofasciatum* Tsuneki

Trypoxylon flavofasciatum Tsuneki, 1980a:28, ♀. Holotype: ♀, Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:5 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

161. *fletcheri* R. Turner

Trypoxylon fletcheri R. Turner, 1918b:363, ♀. Holotype: ♀, India: Assam: Shillong (BMNH). – Richards, 1934:315 (member of *Trypoxylon figulus* species group); Tsuneki, 1978b:67 (redescription), 77 (in key to Oriental *Trypoxylon*), 1979a:4 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 31 (Malaysia; individual variation), 1979c:5 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 21 (Indonesia: Java),

1981d:35 (Myanmar: Kambaiti), 61 (in key to *Trypoxylon* of Myanmar), 1981f:19 (member of *Trypoxylon nodosicorne* species group); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

Trypoxylon taihorinsho Tsuneki, 1977j:274, ♀. Holotype: ♀, Taiwan: Taihorinsho (TMB). Synonymized with *Trypoxylon fletcheri* by Tsuneki, 1981f:99. – Tsuneki, 1981c:3, 6 (in key to *Trypoxylon* of Taiwan), 15 (Taiwan; additional description).

ssp. *baguionis* Tsuneki

Trypoxylon fletcheri baguionis Tsuneki, 1980b:43, ♀, ♂. Holotype: ♀, Philippines: Luzon: Baguio Benguet (USNM). – Tsuneki, 1980b:6 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:25 (holotype in USNM).

162. *florale* Richards

Trypoxylon florale Richards, 1934:294, ♀. Holotype: ♀, Brazil: Blumenau (NHMW). – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Perioto and Lara, 2018:298 (Brazil: São Paulo: São Sebastião at 23°46'03.53"S / 45°37'59.48"W; nesting habits, nest parasites: *Cenochrysis armata* (Mocsáry), Chrysididae, and *Ceyxia latilabra* Andrade and Tavares, Chalcididae).

163. *formosicola* Strand

Trypoxylon formosicola Strand, 1922b:148, ♀, ♂. Lectotype: ♀, Taiwan: Taihorin (DEI), designated by Oehlke and Wudowenz, 1974:422. – Strand, 1927:255 (in list of species described by the author); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Yasumatsu, 1938a:73 (Botel Tobago, now Island of Lang Hsu southeast of Taiwan); nec Yasumatsu, 1938f:447 (= *Trypoxylon formosicola inornatum*); Tsuneki, 1966b:2, 3 (in key to *Trypoxylon* of Ryukyu Islands and Taiwan), 6 (Taiwan; redescription), 1967d:2 (in key to *Trypoxylon* of Taiwan), 4 (Taiwan), 1968d:54 (Taiwan); Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:2 (Taiwan, redescription of ♂), 17 (in new key to males of *Trypoxylon* of Taiwan); Haneda, 1972a:4 (Taiwan); Murota, 1973b:117 (Taiwan); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1977j:272 (Taiwan), 1981c:7, 9, 11 (in key to *Trypoxylon* of Taiwan), 32 (Taiwan; additional description), 1981f:60 (single member of *Trypoxylon formosicola* species group), 1982d:10 (Taiwan); Yamane, Ikudome, and Terayama, 1999:527 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Barthélémy, 2012:5 (nest structure, prey, life history).

Trypoxylon formosicola aberratio *calcaralis* Strand, 1922b:150, ♂, incorrect original termination. Lectotype: ♂, Taiwan: Kankau, now Hengchun (DEI), designated by Oehlke and Wudowenz, 1974:422. Not available: infrasubspecific name (Articles 10.2 and 45.6.2). Synonymized with *Trypoxylon formosicola* by Tsuneki, 1981c:34. – Strand, 1927:255 (in list of species described by the author); – **As *Trypoxylon formosicola calcarale***: R. Bohart and Menke, 1976:346 (new status, in checklist of world Sphecidae); Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan).

ssp. *amamiense* Tsuneki

Trypoxylon amamiense Tsuneki, 1964b:2, ♀, ♂. Holotype: ♂, Ryukyu Islands: Island of Amami-Oshima: Akaogi (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1966b:7 (synonymized with *Trypoxylon formosicola inornatum*); Tano, 1994b:43 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.). – **As *Trypoxylon formosicola amamiense***: Tsuneki, 1981c:11 (in key to *Trypoxylon* of Taiwan), 35 (resurrected from synonymy, new status; additional description), 1981e:7, 8 (in key to *Trypoxylon* of Japan and northeastern Asia), 81 (bibliographic reference), 1982g:61 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); Haneda and Murota, 2009:1 (recognition characters); Nagase, 2016:13 (description of nest).

ssp. *inornatum* Matsumura

Trypoxylon inornatum Matsumura in Matsumura and Uchida, 1926:42, ♀. Syntypes: ♀, Japan: Okinawa: Okinawa-honto (Hokkaido Univ., Sapporo). – Yasumatsu, 1938f:447 (as new synonym of *Trypoxylon formosicola*); Tsuneki, 1966b:2, 3 (in key to *Trypoxylon of* Ryukyu Islands and Taiwan), 7 (redescription, synonymy), 1968d:54 (Ryukyus); Murota and Kurokawa, 2009:14 (Japan: Ryukyu Archipelago: Amami Oshima Islands); Terayama and Nambu, 2009:8, 27 (in key to Trypoxylini of Japan). – **As *Trypoxylon formosicola inornatum***: Tsuneki, 1967d:5 (new status, comparison with typical subspecies), 1973e:33, 36 (in key to *Trypoxylon* of Japan, in Japanese); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1981c:7, 9, 11 (in key to *Trypoxylon* of Taiwan), 34 (Okinawa; additional description), 1981d:81 (Hongkong), 1981e:7 (in key to *Trypoxylon* of Japan and northeastern Asia), 81 (bibliograpahic references), 1982g:61 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); Haneda and Murota, 2009:1 (recognition characters).

As *Trypoxylon formosicola*: Yasumatsu, 1938:447 (Taiwan), corrected to *Trypoxylon inornatum* by Tsuneki, 1966b:7.

164. *fortius* Tsuneki

Trypoxylon bakerianum fortius Tsuneki, 1979c:33, ♂, ♀. Holotype: ♂, Indonesia: West Java: Malang (RMNH). – Tsuneki, 1979c:6 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands). – **As *Trypoxylon mindanaonis fortius***: Tsuneki, 1980a: 2 and 72 (new subspecific combination; in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1980b:106 (Philippines: Luzon; additional description). – **As *Trypoxylon fortius***: Tsuneki, 1981f:99 (full species status), 1981f:54 (member of *Trypoxylon mindanaonis* species group).

ssp. *mulu* Tsuneki

Trypoxylon mindanaonis mulu Tsuneki, 1980a:72, ♀, ♂. Holotype: ♀, Sarawak, Mount Mulu (BMNH). – Tsuneki, 1980a:10 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas). – **As *Trypoxylon fortius mulu***: Tsuneki, 1981f:99 (new subspecific combination), 54 (member of *Trypoxylon mindanaonis* species group).

165. *foveatum* Cameron

Trypoxylon foveatum Cameron, 1904:139, ♀. Holotype or syntypes: ♀, South Africa: Eastern Cape Province: Dunbrody (Albany Museum Grahamstown? Transvaal Museum Pretoria?). – Arnold, 1924:26 (original description copied, type probably lost), 1930:10 (in checklist of Afrotropical Sphecidae). – Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

166. *freidbergi* Antropov

Trypoxylon freidbergi Antropov, 1989c:63, ♀. Holotype: ♀, Israel: Herzliya (Tel Aviv University).

167. *frigidum* F. Smith

Trypoxylon frigidum F. Smith, 1856:381, ♀. Holotype or syntypes: ♀, Canada: Hudson Bay (BMNH). – Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:415 (in revision of North American Crabroninae and Bembicinae); Cresson, 1873:226 (Texas), 1876:207 (Utah: Spring Lake); Glover, 1878:... (nest); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); Ashmead, 1890:32 (in checklist of Hymenoptera of Colorado); W. Fox, 1891c:143 (in revision of North American *Trypoxylon*), 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:705 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Bridwell, 1899:209 (Kansas: no specific locality); J. Smith, 1900:520 (in list of insects of New Jersey); Harrington, 1902:222 (Canada: Ontario: Ottawa); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); Rohwer, 1909g:377 (Colorado); J. Smith, 1910:684 (in new list of insects of New Jersey); Mickel, 1918b:393 (in catalog of Nebraskan Sphecidae); Rohwer, 1916b:676, 677 (in catalog of Hymenoptera of Connecticut), 1917a:246 (California: Oakland or Piedmont); Britton, 1920:339 (in checklist of insects of Connecticut); Rau, 1922:22

(USA: Missouri: Saint Louis, dead male found in stem of sumac); Blackman and Stage, 1924:196 (New York: Syracuse, nesting in dead wood of hickory); Rohwer *in* Viereck, 1925:676, 677 (in key to Sphecidae of Connecticut; Branford); J.Ch. Bradley, 1926:175 (New York: Lloyd-Cornell Reservation near McLean); Brues, 1927:82 (Massachusetts: Petersham, nesting in wood); J.Ch. Bradley, 1928:1010 (in catalog of New York Crabronidae); Taylor, 1928:... (nests in wood); Hendrickson, 1930:159 (Iowa); Richards, 1934:318 (in revision of New World *Trypoxylon*), 343 (nesting habits summary); Krombein, 1936:98 (New York: Buffalo; floral records); Richards, 1936b:463 (correction to geographic distribution); Strickland, 1947:128 (Canada: Alberta); Brimley, 1938:443 (North Carolina: Raleigh); Sandhouse, 1940:157 (in revision of Nearctic *Trypoxylon*); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck, Krombein, and Townes, 1951:955 (in catalog of North American Hymenoptera); Krombein, 1952b:177 (USA: West Virginia: Lost River State Park), 1954a:5 (West Virginia: Lost River State Park); Evans, 1957b:96 (description of larva); Koerber and Medler, 1958:55 (Wisconsin, nesting in trap-nests); Krombein, 1962b:13 (infestation by acarid *Lackerbaueria krombeini* Baker), 1963f:273 (Maryland: Plummers Island near Washington, D.C.); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); F. Parker and R. Bohart, 1966:95 (Nevada: Verdi); Krombein, 1967b:223 (nesting habits observed in artificial nests); Evans, 1970:489 (Wyoming: Jackson Hole); Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Krombein, 1979b:1643 (in catalog of North American Hymenoptera); Tsuneki, 1981f:80 (member of *Trypoxylon figulus* species group); Finnamore, 1982:116 (Canada: in Sphecid Fauna of Southern Quebec); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Finnamore, 1997:889 (Canada: Yukon); Sugar et al., 1998:15 (Canada: southern Ontario); Yamane, Ikudome, and Terayama, 1999:529 (Japan: in Identification Guide to Crabronidae of Nansei = Ryukyu Islands); Antropov, 2003:438 (in key to North American species of *Trypoxylon figulus* species group); Buck, 2004:25 (Canada: in checklist of Crabronidae of Ontario); Giles and Ascher, 2006:231 (New York: Black Rock Forest Preserve); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); Taki, Kevan, Viana, Silva, and Buck, 2008:227 (artificial protective cover of trap nests increases colonization rate); Taki, Viana, Kevan, Silva, and Buck, 2008:18 (Canada: Ontario: Norfolk County); Terayama and Nambu, 2009:9, 26 (in key to Trypoxylini of Japan); K. O'Neil and J. O'Neil, 2013:161 (New York State: Roy H. Park Preserve and Dorothy McIlroy Bird Sanctuary); Ratzlaff, 2016:26 (Canada: British Columbia: from Sandhouse, 1940 and Krombein, 1979). – **As *Trypoxylon figulus frigidum***: Blades and Marshall, 1994:276 (new status, Canada: southern Ontario).

Trypoxylon plesium Rohwer, 1920b:229, ♀. Holotype: ♀, USA: Missouri: St. Louis (USNM). Synonymized with *Trypoxylon frigidum* by Sandhouse, 1940:157. – Rau, 1926:197 (Missouri: Wickes: sheltered clay bank; female walking on spider's web), 1928b:439 (nesting in twigs, nest structure, preying on spiders); Richards, 1934:319 (in revision of New World *Trypoxylon*), 343 (nesting habits summary).

Trypoxylon aldrichi Sandhouse, 1940:158, ♀, ♂. Holotype: ♀, USA: Washington: Fishtrap Lake (USNM). Synonymized with *Trypoxylon frigidum* by Coville, 1986b:2. – Strickland, 1947:128 (Canada: Alberta: Waterton); Krombein *in* Muesebeck, Krombein, and Townes, 1951:955 (in catalog of North American Hymenoptera); F. Parker and R. Bohart, 1966:95 (California: Placer County: Carnelian Bay on Lake Tahoe); Evans, 1970:489 (Wyoming: Jackson Hole); Evans, 1973c:153 (nesting habits); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Krombein, 1979b:1642 (in catalog of North American Hymenoptera); Zack, 1984:38 (paratype in James Entomological Collection, Washington State University); Blades and Maier, 1996:72 (Canada: British Columbia: Osoyoos - Mount Kobau area at 119°40'W 49°05'N); Finnamore, 1997:888 (Canada: Yukon); Coville, 1990:2 (*Trypoxylon aldrichi* is a geographic form of *T. frigidum*); Finnamore, 1994:210 (Canada: Alberta: Wagner Natural Area 8 km west of Edmonton). – **As *Trypargilum aldrichi***: Spofford, Kurczewski, and Downes, 1989:255 (new combination, summary of previous records for nest parasite *Amobia distorta* (Allen), a miltogrammine fly).

As *Trypoxylon clavatum*: Faull, 1913:385 (Canada: Toronto region), corrected to *Trypoxylon frigidum* by Buck, 2004:77.

ssp. *cornutum* Gussakovskij

Trypoxylon cornutum Gussakovskij, 1932:11, ♀, ♂. Syntypes: Russia: Siberia: Kamchatka: Elisovo and Primorskiy Kray: Sedanka (NRS), also Khabarovsk (ZIL). – Gussakovskij, 1936:656 (in revision of Palearctic *Trypoxylon*). – **As *Trypoxylon frigidum cornutum***: Tsuneki, 1956f:121, 123 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:5, 10 (in key to *Trypoxylon* of northeastern Asia), 24 (new status, redescription); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits); Haneda, 1968a:44 (Japan), 1968b:55 (Japan: Nagano Prefecture: Ina District); Nambu, 1968b:22 (Japan: Saitama Prefecture); Tano, 1968:32 (Japan); Itami, 1969:50 (Japan: Niigata Prefecture); Tsuneki, 1969e:25 (Japan: specimens in Osaka Museum of Natural History), 1970b:10 (central Japan); Nambu, 1972e:90 (Japan: Saitama Prefecture), 1973a:150 (Japan: Saitama Prefecture); Tsuneki, 1973e:33, 36 (in key to *Trypoxylon* of Japan, in Japanese), 1973v:150 (prey), 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Kazenas, 1980e:90 (Russia: Far East); Tsuneki, 1981e:4 (in key to *Trypoxylon* of Japan and northeastern Asia), 1982b:16 (known from Korea); Paik, 1985:199 (in list of Sphecidae of Korea); Nemkov, 1992b:245 (Russia: Far East: Khingan Nature Reserve); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:419 (in key to Sphecidae of Russian Far East); Nemkov, 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve), 2007b:70 (Russia: Kuril Islands: Island of Kunashir), 2009b:85 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:237 (Russia: Primorskiy Kray: Lazovsky Nature Reserve); Baghirov, 2011b:150 (Russia: recorded from Altayskiy Kray by Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:438 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Antropov, 2017b:244 (in catalog of Crabroninae of Russia); Jacobs and Liebig, 2018:146 (Russia: Primorskiy Kray: Poshiga); Akulov, Proshchalykin, and Mokrousov, 2020:50 (Russia: central Krasnoyarsk Kray).

Trypoxylon frigidum chongar Tsuneki, 1956g:25, ♂. Holotype: ♂, North Korea: Nansetsu-rei (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon frigidum cornutum* by Tsuneki, 1981e:22. – Tsuneki, 1956g:10 (in key to *Trypoxylon* of northeastern Asia); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Nuhn and Menke, 1994:25 (holotype transferred to USNM).

Trypoxylon frigidum yamatonis Tsuneki, 1981e:23, ♀, ♂. Lectotype: ♂, Japan: Japanese Alps (originally K. Tsuneki coll., now Hyogo Mus.), designated by Hashimoto and Nakanishi, 1997:20 (as holotype, Article 74a). Synonymized with *Trypoxylon frigidum cornutum* by Antropov, 1987:60. – Tsuneki, 1981e:4 (in key to *Trypoxylon* of Japan and northeastern Asia); Antropov, 1986a:90 (Russia: Primorskiy Kray); Tano, 1994a:6 (holotype in K. Tsuneki collection). – **As *Trypoxylon cornutum yamatonis***: Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:32 (new subspecific combination, Japan: Gifu Prefecture); Suda, 2004:40 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:47 (Japan: Gifu Prefecture), 2006a:23 (Japan: Toyama Prefecture); N. Yamamoto, 2011:13 (Japan: Kyūshyū: mainland Nagasaki Prefecture).

168. *frioense* Richards

Trypoxylon frioense Richards, 1934:287, ♀, ♂. Holotype: ♂, Colombia: Magdalena: Río Frío (USNM). – Richards, 1934:346 (nest structure, nest parasite: *Brachymeria* sp.); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

169. *frontale* F. Smith

Trypoxylon frontale F. Smith, 1856:378, ♀. Holotype or syntypes: ♀, Africa: no specific locality (BMNH). – Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:705 (in catalog of world Hymenoptera); Arnold, 1924:20 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

170. *fronticorne* Gussakovskij

Trypoxylon fronticorne Gussakovskij, 1936:659, ♀, ♂. Syntypes: many localities between Germany and Primorskiy Kray of Russia (ZIL). – de Beaumont, 1945:478 (Switzerland); Šnoflák *in* Zavadil and Šnoflák, 1948:58 (in key to Sphecidae of Czechoslovakia); Blüthgen, 1951:234 (Germany: Bayern and Siethen near Berlin); Leininger, 1953:18 (Germany: Baden-Württemberg: Karlsruhe); Bajári, 1957a:67 (in key to Hungarian Sphecidae), 1957b:136 (first record from Hungary); Wolf, 1959b:25 (known from Germany but not from Nassau); Noskiewicz and Puławski, 1960:108 (in key to Polish Sphecidae, not yet found in Poland); Balthasar and Hrubant, 1961:13 (Czech Republic: Morava: Čejč; Slovakia: Belanské Kopce near Štúrovo); de Beaumont, 1964c:84 (in Sphecid Fauna of Switzerland); Gauss, 1966a:66 and 1966b:308 (Germany: Baden-Württemberg: Wutach); Gauss, 1967:555 (Germany: Baden-Württemberg); Benedek, 1969a:84 (Hungary; marshy meadow), 1969b:421 (Hungary: Csopak, collected in vicinity of aphid *Hyalopteritena pruni* (Geoffroy)); Babiy, 1970:20 (Austria: Land Salzburg); Hoop, 1970:61 and 1971:84 (Germany: Schleswig-Holstein: Hochwachte Bucht, misidentified *Trypoxylon figulus* according to W.J. Pulawski who studied vaucher specimens in early 1970s); Oehlke, 1970:725 (Democratic Germany: Potsdam area); Gauss, 1971b:418 (Germany: Baden-Württemberg: Wutach River area); Stritt, 1971a:104 (Baden-Württemberg: Germany: Karlsruhe); Balthasar, 1972:226 (in Sphecid Fauna of Czechoslovakia); Kazenas, 1972b:155 (Kazakhstan), 1974b: 112 (feeding on flowers of *Polygonum gracilius* Ldb., Polygonaceae, in Kazakhstan); R. Bohart and Menke, 1976:346 in checklist of world Sphecidae); Eck, 1976:91 (Democratic Germany); Kolesnikov, 1977:319 (Russia: Bryansk Oblast'); nec Tyrner, 1977 (= *Trypoxylon figulus*); Kazenas, 1978b:146, 147 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:252 (in key to Sphecidae of European part of USSR); Benedek, 1979:232 (Hungary: Bakony Hills); Tsuneki, 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 56 (India, Nepal; redescription), 1981c:3, 5 (in key to *Trypoxylon* of Taiwan), 13 (bibliographic reference), 1981e:4 (in key to *Trypoxylon* of Japan and northeastern Asia); Dollfuss, 1983b:12 (in catalog of Sphecidae of Austria: Salzburg: Parsch); Józan, 1985b:57 (recorded from Mecsek by Bajári, 1957), 84 (ecological and zoogeographic characteristics); K. Schmidt, 1984:294 (Germany: Baden-Württemberg); Westrich and K. Schmidt, 1985b:112 (Germany: endangered in Baden-Württemberg); Nemkov, 1986:99 (Russia: Siberia: Irkutsk Oblast'); Karsai, 1988:100 (Hungary: Kiskunság National Park); Jacobs, 1989:15 (Germany: Mecklenburg-Vorpommern); Pádr *in* Šedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Weiffenbach, 1989:108 (Germany: Hessen: Gießen area; as *franticorne*, identification tentative); Jacobs and Oehlke, 1990:172 (citation of Eck, 1976); Kuznetzova, 1990:22 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Day, 1991:xix (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:122 (in key to Sphecidae of North and Central Europe); Gusenleitner, 1991:646 (Austria: Oberösterreich: Kronau); Gorobchishin, 1993:47 (Ukraine: Kanev Nature Reserve), 1995:18 (Ukraine: Kanev Nature Reserve); Papp and Józan, 1995:147 (Hungary: Síkfőkút oak forest); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Gusenleitner, 1996a:8 (Austria: Burgenland); K. Schmidt, Schmid-Egger, and Doczkal, 1995:8 (Germany: many records are misdeterminations); Schmid-Egger, K. Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: may be endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Wu and Zhou, 1996a:103 (in revision in Economic Insect Fauna of China); K. Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); Schnee, 1997:99 (Germany: Sachsen); Shlyakhtenok, Blinov, and Belyavskaya, 1997:153 (Belorussia: Pripyatskiy National Park); F. Burger, Saure, and Oehlke, 1998:30 (Germany: in list of Sphecidae of Brandenburg), 37 (probably endangered); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); Majzlan, Rychlík, and Deván, 1999:146 (Slovakia: Čenkovská Step Nature Reserve); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:254 (in Sphecid Fauna of Germany); Esenbekova and Kazenas, 2000:40 (southeastern Kazakhstan: 2 km southwest, 6 km west and 2-3 km south of Alma Ata, 2 km southwest of El'tay, 10 km northwest of Chundzha); Jacobs, 2000:12, 17 (Germany: Land Mecklenburg-Vorpommern: data insufficient to evaluate how endangered); M. Mader and

Chalwatzis, 2000:60 (Germany: Hessen: Oderwald Mountains); M. Schwarz, 2000:11 (Austria: Oberösterreich: city of Linz area); Antropov *in* Bitsch et al., 2001:372 (in Sphecid Fauna of Western Europe); Józan, 2001:279 (Hungary: Somogy County); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia); Ljubomirov, 2001b:50 (Bulgaria: Mount Vitosha near Sofia); Ohl et al., 2001:142 (distribution in Germany by provinces); Amiet and Moretti, 2002:177, 178 (Switzerland: Tessin); Gusenleitner, 2002:1125 (Austria: Oberösterreich: Linz); Józan, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:85 (geographic distribution, collecting localities in Kazakhstan); Shlyakhtenok and Skibinska, 2002:33 (Belorussia: no specific locality); Józan, 2003:227 (Hungary: Látrányi Puszta Nature Conservation Area); Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:71 (Germany: in catalog of wasps and bees of Bayern); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:197 (Germany: Bayern: probably endangered); Deván, 2004:148 (western Slovakia); Georgiev et al., 2004:239 (nesting in old galleries of cerambycid *Saperda populnea* (Linnaeus) in Bulgaria); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:90 (first record from Poland: Kampinoski Park Narodowy = Kampinos National Park near Warszawa), 93 (in key to *Trypoxylon* of Poland); Straka, 2005a:399 (critically endangered in Czech Republic); Gorobchishin, 2006:114 (Ukraine: Cherkasy Oblast': Kaniv Nature Reserve); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Shlyakhtenok, 2006:111 (Belorussia: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Bitsch, Dollfuss, Bouček, K. Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:461 (first recorded from Poland by Wiśniowski and Szczepko, 2004); Burguet, 2007:unnumbered p. 27 (France: Puy-de-Dôme: sands Girauds-Faures in Orléat commune); Jacobs, 2007:109, 111 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:26 (Germany: northwestern Sachsen); Saure, 2007:83 (Germany: in checklist of Aculeata of Land Brandenburg); Shlyakhtenok, 2007a:300 (Belorussia: Berezinsky Nature Reserve), 2007b:364 (Ukraine: Chernobyl area); Sipos and Móczár, 2007:205 (Hungary: Bács-Kiskun megye: vicinity of Foktő); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia), 226 (record from Bohemia by Tyrner, 1977 was demonstrated misidentification by Vepřek, 2000; first true records from Bohemia: Hluboká on Vltava, Hoštka, Jimy, Kolin, Praha area, Veseli on Lužnic); Mei, 2008:179 (first record from Italy: Lazio: Roma: Tenuta di Castelporzione); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); Protsenko and Drozdovskaya, 2008:127 (Ukraine: Sumy Oblast': Vakhalivshchina village); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Nemkov, 2009b:86 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia, as *fronticorne fronticorne*); Szczepko and Wiśniowski, 2009:72 (Poland: Spała Landscape Park); Terayama and Nambu, 2009:9, 26 (in key to Trypoxylini of Japan); Burguet *in* Durand and Burguet, 2010:57 (France Département d'Ardèche: Ardèche Gorges); Mokrousov, 2010a:62 (Russia: Nizhniy Novgorod Oblast', Tatarstan: no specific localities), 2010b:100 (Russia: Nizhniy Novgorod Oblast', Tatarstan: no specific localities); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: very rare); van der Smissen, 2010b:388 (France: Ardèche: Saint-Thomé); Feoktistov, 2011:85 (Russia: Mordovian Nature Reserve); Józan, 2011:181 (in checklist of Sphecidae *sensu lato* of Hungary); Rudoiskatel', 2011d:242 (Russia: central Ural Mountains); Tischendorf, Frommer, Flügel et al., 2011:186 (Germany: records from Hessen are all misdeterminations); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Burguet *in* Durand and Burguet, 2012:4 (France: Puy-de-Dôme: sands Girauts-Faures in Orléat commune); Prisniy, 2012:48 (Russia: Belgorod Oblast'); Shlyakhtenok, 2012a:172 (Belorussia: collected in private plots); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:176 (in annotated catalog of aculeate wasps of Belorussia); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (first record from Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Wiśniowski and Szczepko, 2013:56 (Poland: Kampinos National Park near Warszawa); Bitsch, 2014:405 (record from Italy by Mei, 2008 noted: France: Puy-de-Dôme: Orléat, Les Sables des Girauds-Faures; Ardèche: Saint-Remèze, dunes of Gaud and of Gourmier); Mokrousov and Vafin, 2014:58 (Russia: Republic of Tatarstan); Olszewski and Pawlikowski, 2014:193 (in key to Polish *Trypoxylon*); Yıldırım,

Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Bleidorn, Gerth, Hopfe, et al., 2016:11 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Mokrousov and Popov, 2016:585 (Russia: Abkhazia, Krasnodarskiy Kray); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:40 (Turkey: Rize: Çamlıhemşin: Çat, as *fronticorne fronticorne*); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Creutzburg, Winter, Baumbach, and Ssymank, 2018:216 (Germany: Thüringen: Wachsenburg Nature Reserve); Budrys, Orlovskytė, Petrašiūnas, and Budrienė, 2019:119 (first record from Lithuania: three localities); Carminati, Mora, and Cretin, 2019:21 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Ljubomirov, 2019:101 (Bulgaria: Vratchanska Planina); Ruchin and Antropov, 2019a:13236 (Russia: Mordovia State Nature Reserve, occurrence needs confirmation); Kejval, Blažej, and Erhart, 2020:108 (western Czech Republic); Wendzonka and Żurawlew, 2020:55 (Poland: Gołuchów Arboretum at 51°51'40"N 17°56'09"E); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:386 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2021:79 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland); Japoshvili and Ljubomirov, 2022:277 (Georgia: Lagodekhi Protected Areas); Pytel-Huta, Skyrpan, Tsaryk, Shydlovskyy, and Khamar, 2022:54 (western Ukraine); Mawadda and Girish Kumar, 2023:115 (in checklist of Crabroninae of Northern India); Kaplan and Yildirim, 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

ssp. *assamense* Tsuneki

Trypoxylon fronticorne assamense Tsuneki, 1979a:58, ♀, ♂. Holotype: ♂, India: Assam: Shillong (BMNH). – Tsuneki, 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Mawadda and Girish Kumar, 2023:104 (India: Jammu and Kashmir: Bandipora district; Uttarakhand: Chamoli District: Bhyundar), 115 (in checklist of Crabroninae of Northern India).

ssp. *brevicorne* Tsuneki

Trypoxylon fronticorne brevicorne Tsuneki, 1979a:58, ♂. Holotype: ♂, India: Simla (BMNH). – Tsuneki, 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Mawadda and Girish Kumar, 2023:104 (India: Uttarakhand: Tehri Garhwal district: Kanatal), 115 (in checklist of Crabroninae of Northern India).

ssp. *burmanicum* Tsuneki

Trypoxylon fronticorne burmanicum Tsuneki, 1981d:41, ♂, ♀. Holotype: ♀, norheastern Myanmar: Kambaiti (NRS). – Tsuneki, 1981d:62 (in key to *Trypoxylon* of Myanmar).

ssp. *japonense* Tsuneki

Trypoxylon pennsylvanicum japonense Tsuneki, 1956g:29, ♀, ♂. Holotype: ♀, Japan: Fukui Prefecture (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956f:121, 123 (in key to *Trypoxylon* of Japan, in Japanese), Tsuneki, 1956g:6, 9 (in key to *Trypoxylon* of northeastern Asia); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Tsuneki, 1967g:44 (western Japan: Mount Hyonosen); Haneda, 1968a:44 (Japan); Nambu:1968b:22 (Japan: Saitama Prefecture); Tano, 1968:32 (Japan); Itami, 1969:50 (Japan: Niigata Prefecture); Tsuneki, 1969e:25 (Japan: specimens in Osaka Museum of Natural History), 1970b:9 (central Japan); Haneda, 1970:12 (Japan: Akita Prefecture); Nambu, 1971b:69 (nesting habits); Yamada, 1971:35 (Japan: Aichi Prefecture); Nambu, 1972e:90 (Japan: Saitama Prefecture); Suda, 1972b:40 (Japan: city of Sakura); Nambu, 1973a:150 (Japan: Saitama Prefecture); Tsuneki, 1973a:15 (diagnostic characters), 1973e:33, 37 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1976d:297 (China: Heilungkiang: Maoershan 100 km east of Harbin); Kazenas, 1980e:91 (Russia: Far East); Tano, 1995:41 (holotype in K. Tsuneki collection, as *pennsylvanicum japonicum*); Hashimoto and Nakanishi, 1997:21-23 (holotype and paratypes transferred to Hyogo Mus.). – **As *Trypoxylon fronticorne japonense***: Tsuneki, 1979a:58 (new subspecific combination), 1979d:9 (Japan), 1981e:4 (in key to *Trypoxylon* of Japan and northeastern Asia), 28 (Japan; relation to *Trypoxylon pennsylvanicum*); Paik, 1985:199 (in list of Sphecidae of Korea); Nemkov, 1992b:245 (Russia: Amur

area: Khingan Nature Reserve); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:419 (in key to Sphecidae of Russian Far East); Kurokawa, 2003:61 (Japan: city of Fukui: Egamichou); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:32 (Japan: Gifu Prefecture); Suda, 2004:40 (Japan: Yamanashi Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:65 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:47 (Japan: Gifu Prefecture); Negoro, Haneda, and Tano, 2005:46 (Japan: Toyama Prefecture); Nemkov, 2005a:148 (Russia: Island of Sakhalin); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2006a:23 (Japan: Toyama Prefecture); Nemkov, 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve), 2007b:70 (Russia: Kuril Islands: Islands of Ituri and Kunashir); Ohkusa and Tajima, 2008:75 (Japan: central Honshu: Aichi Prefecture); S. Tanaka, 2008:38 (Japan: Yamaguchi Prefecture); Nemkov, 2009b:86 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:237 (Russia: Primorskiy Kray: Lazovsky Nature Reserve, as *japanense*), 2012c:439 (in catalog of Crabronidae of Russian Far East, as *japanense*); J.-K. Kim, 2014:439 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Ohkusa, 2014a:31 (Japan: city of Toyota: Sizen-Kansatsu-no-Mori); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Ma, Q. Li, Wang, Jiang, and Lu, 2018:831 (China: Shanxi: Qinling Mountains); Ma, Zhang, Ch. Li, Ji, and Q. Li, 2018:487 (China: Shanxi: Lishan National Nature Reserve).

ssp. *obliquum* Tsuneki

Trypoxylon fronticorne obliquum Tsuneki, 1981c:13, ♀, ♂. Holotype: ♀, Taiwan: Chiayi Prefecture: Fenchihu (originally K. Tsuneki coll., now USNM). – Tsuneki, 1981c:4, 5 (in key to *Trypoxylon* of Taiwan); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution); T. Li and Q. Li, 2010a:241 (in key to *Trypoxylon* of southwestern China).

ssp. *seoulense* Tsuneki

Trypoxylon fronticorne seoulense Tsuneki, 1981e:30, ♀. Holotype: ♀, South Korea: northern suburb of Seoul (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1981e:4 (in key to *Trypoxylon* of Japan and northeastern Asia), 1982b:16 (known from Korea; as *seulense*); Paik, 1985:199 (in list of Sphecidae of Korea); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.); J.-K. Kim, 2014:439 (in catalog of Sphecidae *sensu lato* of Korean Peninsula, possibly a full species), 450 (subspecies status uncertain).

ssp. *shirozui* Tsuneki

Trypoxylon shirozui Tsuneki, 1966b:14, ♀. Holotype: ♀, Taiwan: Nantou Prefecture: Sungkang (Kyushu Univ.). – Tsuneki, 1966b:3 (in key to *Trypoxylon of* Ryukyu Islands and Taiwan), 1967d:2 (in key to *Trypoxylon* of Taiwan), 18 (Taiwan, description of ♂), 1968d:55 (Taiwan); Haneda, 1971b:31 (Taiwan); Tsuneki, 1971g:14 (Taiwan), 15 (in additional key to females of *Trypoxylon* of Taiwan), 18 (in new key to males of *Trypoxylon* of Taiwan); Haneda, 1972a:5 (Taiwan); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan). – **As *Trypoxylon fronticorne shirozui***: Tsuneki, 1981c:4, 5 (in key to *Trypoxylon* of Taiwan), 13 (new status, Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

171. *fruticicola* Tsuneki

Trypoxylon fruticicola Tsuneki, 1981d:14, ♀. Holotype: ♀, Sri Lanka: Sabaragamuwa Province: Ratnapura District: Gilimale, Induruwa Jungle (USNM). – Tsuneki, 1981d:20 (in new key to *Trypoxylon* of Sri Lanka); Nuhn and Menke, 1994:25 (holotype in USNM).

172. *fulviventre* Tsuneki

Trypoxylon fulviventre Tsuneki, 1979a:92, ♂. Holotype: ♂, Malaysia: Kedah: Kedah Peak, now Gunung Jerai (BMNH). – Tsuneki, 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:23 (single member of *Trypoxylon fulviventre* species group); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 62 (first record from Vietnam: Hoa Binh: Thuong Tien: Kim Boi).

173. *fulvocollare* Cameron

Trypoxylon fulvocollare Cameron, 1904d:217, ♀. Syntypes: ♀, India: Assam: Khasia Hills (OXUM). – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1978b:52 (redescription), 78 (in key to Oriental *Trypoxylon*), 1979a:12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 101 (Malaysia, Laos; geographic variation), 1979c:8 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 42 (Indonesia: Sumatra), 1980a:7 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 55 (Borneo; additional description), 1980b:8 (in key to *Trypoxylon* of Philippines), 70 (Philippines; geographic variation), 1981d:29 (India; additional description), 1981f:70 (single member of *Trypoxylon fulvocollare* species group).

174. *fumi* Tsuneki

Trypoxylon fumi Tsuneki, 1979a:107, ♂. Holotype: ♂, Malaysiaa: Kedah: Kedah Peak, now Gunung Jerai: Djeraj (RMNH). – Tsuneki, 1979a:10, 12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979c:7 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 40 (Indonesia: Sumatra; redescription of ♂, description of ♀), 1981f:58 (member of *Trypoxylon coloratum* species group).

175. *funatui* Tsuneki

Trypoxylon funatui Tsuneki, 1963c:13, ♂, ♀. Holotype: ♂, Thailand: Muaglek (Sasayama). – Iwata, 1964b:373 (prey and nest, as *fuatui*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1978a:76 (redescription), 5 (in key to *Trypoxylon scutatum* species group), 1979a:19 (bibliographic reference).

176. *gallopavo* Antropov

Trypoxylon gallopavo Antropov, 1994c:129, ♀. Holotype: ♀, Indonesia: Sulawesi: Dumoga Bone National Park (RMNH).

177. *gampahae* Tsuneki

Trypoxylon gampahae Tsuneki, 1981d:5, ♀. Holotype: ♀, Sri Lanka: Colombo District: Gampaha Botanical Garden (USNM). – Tsuneki, 1981d:19 (in new key to *Trypoxylon* of Sri Lanka); Nuhn and Menke, 1994:25 (holotype in USNM).

178. *gentingense* Tsuneki

Trypoxylon gentingense Tsuneki, 1981d:27, ♀. Holotype: ♀, Malaysia: Genting Highland (BMNH). – Tsuneki, 1981d:28 (in addition to key of *Trypoxylon* of Indo-Malaysian Region).

179. *giganteum* Tsuneki

Trypoxylon giganteum Tsuneki, 1980b:123, ♀, ♂. Holotype: ♂, Philippines: Island of Samar: no specific locality (USNM). – Tsuneki, 1980b:12 (in key to *Trypoxylon* of Philippines), 1981f:52 (single member of *Trypoxylon giganteum* species group); Nuhn and Menke, 1994:25 (holotype in USNM).

180. *gounellei* Richards

Trypoxylon gounellei Richards, 1934:310, ♀, ♂. Holotype: ♀, Brazil: São Paulo: Carqueira Cesar (MNHN). – Richards, 1934:345 (nesting habits); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

181. *gracilescens* F. Smith

Trypoxylon gracilescens F. Smith, 1860a:85, ♀. Lectotype: ♀, Indonesia: Sulawesi: Makasar: no specific locality (OXUM), designated by Tsuneki, 1978b:18. – F. Smith, 1863b:135 (known from Sulawesi), 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Bingham, 1897:227 (redescription); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Tsuneki, 1967d:2 (in key to *Trypoxylon* of Taiwan), 9 (redescription of ♂), 1971g:17 (in new key to males of *Trypoxylon* of Taiwan), 1973i:54 (correction to key to *Trypoxylon* of Taiwan), 1973j:54 (first record from Japan); R. Bohart and Menke, 1976:346

(in checklist of world Sphecidae); Tsuneki, 1978b:18 (redescription), 80 (in key to Oriental *Trypoxylon*), 1980a:9 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 63 (Sulawesi; additional description); Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan). – Nec following authors (= *Trypoxylon petioloides*): Tsuneki, 1966b:2, 3, 10, 1967d:9, 1968d:55; Haneda, 1971b:30; Tsuneki, 1971g:4; Haneda, 1972a:4; Murota, 1973b:117; Tsuneki, 1977j:272.

182. *gracilicorne* Arnold

Trypoxylon gracilicorne Arnold, 1946:68, ♂. Holotype: ♂, Malawi: Zomba (SAM). – Arnold, 1952:466 (Malawi, description of ♀); Leclercq, 1965a:88 (in key to Afrotropical *Trypoxylon*), 112 (bibliographic reference); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Hancock, Chahwanda, and Mhlanga, 1995:40 (specimen in Bulawayo Museum).

183. *grenadense* Richards

Trypoxylon grenadense Richards, 1934:300, ♀, ♂. Holotype: ♀, Caribbeans: country not stated: Beecher (BMNH). Paratype: Grenada. – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

184. *gressitti* Tsuneki

Trypoxylon gressitti Tsuneki, 1979a:23, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:3, 4 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

185. *guadalense* Tsuneki

Trypoxylon guadalense Tsuneki, 1981a:95, ♀. Holotype: ♀, Solomon Islands: Guadalcanal: Paripao (Bishop Mus.). – Tsuneki, 1981a:9 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

186. *guichardi* Antropov

Trypoxylon guichardi Antropov, 1994c:127, ♂. Holotype: ♂, Turkey: Karahana (originally K. Guichard coll., now BMNH). – Ljubomirov and Yildirim, 2008:241 (in catalog of Crabronidae of Turkey); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces), 19 (is an endemic of Turkey); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Kaplan and Yildirim, 2021:79 (in catalog of Crabronidae of Turkey), 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

187. *gussachaos* Menke

Trypoxylon carinifrons Gussakovskij, 1936:657, ♀, junior primary homonym of *Trypoxylon carinifrons* Cameron, 1889, and of *Trypoxylon carinifrons* W. Fox, 1891. Holotype: ♀, Kazakhstan: Alma-Ata (ZIL). – Kazenas, 1972b:156 (Kazakhstan), 1974b:110 (feeding on flowers of *Euphorbia* spp., Euphorbiaceae, in Kazakhstan), 1978b:146 (in key to Sphecidae of Kazakhstan and Central Asia).

Trypoxylon gussachaos Menke *in* R. Bohart and Menke, 1976:346. Substitute name for *Trypoxylon carinifrons* Gussakovskij, 1936. – Esenbekova and Kazenas, 2000:41 (southeastern Kazakhstan: no specific locality); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:85 (geographic distribution, collecting localities in Kazakhstan), 2008a:103 (southeastern Kazakhstan: near Alma Ata).

188. *gustatum* Leclercq

Trypoxylon gustatum Leclercq, 1965a:117, ♀. Holotype: ♀, Zaire: Upemba National Park (MRAC). – Leclercq, 1965a:92 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains).

189. *halcon* Tsuneki

Trypoxylon halcon Tsuneki, 1980b:119, ♀. Holotype: ♀, Philippines: Mindoro: Alcate Vict (AEI). – Tsuneki, 1980b:11 (in key to *Trypoxylon* of Philippines).

190. *himachalense* Tsuneki

Trypoxylon himachalense Tsuneki, 1979a:60, ♂, ♀. Holotype: ♂, India: Himachal Pradesh: Simla (BMNH). – Tsuneki, 1979a:8 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:37 (member of *Trypoxylon pacificum* species group); Mawadda and Girish Kumar, 2023:105 (India: Uttarakhand: Dehradun district: Chakrata), 116 (in checklist of Crabroninae of Northern India).

191. *hollandiae* Tsuneki

Trypoxylon hollandiae Tsuneki, 1981a:36, ♀. Holotype: ♀, Indonesia: Western Papua: Hollandia, now Jayapura (BMNH). – Tsuneki, 1981a:6 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

192. *hollisi* Tsuneki

Trypoxylon hollisi Tsuneki, 1980a:98, ♂. Holotype: ♂, Sarawak, Mount Mulu (BMNH). – Tsuneki, 1980a:13 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1981f:65 (member of *Trypoxylon vardyi* species group).

193. *hova* de Saussure

Trypoxylon hova de Saussure, 1892:525, ♀. Syntypes: ♀, Madagascar: Antananarivo (MHNG). – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Arnold, 1945:9 (Madagascar; description of ♂); Leclercq, 1960a:99 (Madagascar); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1981d:85 (Madagascar: Isalo, Mahajanga); Madl, 1997:820 (Madagascar: Island of Nosy Boraha), 821 (in checklist of Nosy Boraha Sphecidae); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Madl, 2014a:989 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

194. *hyperorientale* Strand

Trypoxylon hyperorientale Strand, 1922b:156, ♀, ♂. Holotype: ♂, Taiwan: Kankau, now Hengchun (DEI). – Strand, 1927:255 (in list of species described by the author); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Tsuneki, 1966b:10 (as new synonym of *Trypoxylon obsonator*); Oehlke and Wudowenz, 1974:423 (holotype and paratypes in DEI); Tsuneki, 1981c:8, 10 (in key to *Trypoxylon* of Taiwan), 38 (Taiwan; resurrected from synonymy; additional description), 1981f:74 (single member of *Trypoxylon hyperorientale* species group); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

Trypoxylon vallicola Tsuneki, 1971g:6, ♀, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Pempuchi (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon hyperorientale* by Tsuneki, 1981c:38. – Tsuneki, 1971g:15 (in additional key to females of *Trypoxylon* of Taiwan), 17 (in new key to males of *Trypoxylon* of Taiwan), 1973f:44 (Taiwan); Murota, 1973b:117 (Taiwan); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1977c:7 (Taiwan); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).

195. *imayoshii* Yasumatsu

Trypoxylon imayoshii Yasumatsu, 1938g:451 and 453, ♀. Holotype: ♀, Japan: Kyushu: Yoshiwara at the foot of Mount Inugadake (Kyushu Univ.). – Tsuneki, 1956f:120, 122 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:4, 8 (in key to *Trypoxylon* of northeastern Asia), 19 (in revision of *Trypoxylon* of northeastern Asia; description of ♂); Nambu, 1968b:22 (Japan: Saitama Prefecture); Tano, 1968:32 (Japan); Tsuneki, 1972b:8 (comparison with *Trypoxylon ambiguum*); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Itami, 1969:50 (Japan: Niigata Prefecture); Haneda, 1970:12 (Japan: Akita Prefecture); Nambu, 1972e:90 (Japan: Saitama Prefecture); Tsuneki, 1973e:32, 36 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1981e:6 (in key to *Trypoxylon* of Japan and northeastern Asia), 53 (Japan; redescription), 1981f:36 (single member of *Trypoxylon imayoshii* species group); Antropov, 1988:87 (description of ♂, Russia: Primorskiy Kray); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:416 (in key to Sphecidae of Russian Far

East); Togashi, 2001:19 (Japan: Ishikawa Prefecture: Shiramine); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:65 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:32 (Japan: Gifu Prefecture); Suda, 2004:40 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:47 (Japan: Gifu Prefecture), 2006a:23 (Japan: Toyama Prefecture); Ohkusa, 2006a:24 (Japan: Honshu: Gifu Prefecture); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); S. Tanaka, 2008:39 (Japan: Yamaguchi Prefecture); Nemkov, 2009b:86 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Terayama and Nambu, 2009:7, 26 (in key to Trypoxylini of Japan); Ohkusa and Tajima, 2010:12 (Japan: Island of Honshu: Shiga Prefecture); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Jeong and J.-K. Kim, 2020:246 (in key to Korean *Trypoxylon* with flask-shaped gastral segment I), 248 (in revision of Korean *Trypoxylon* with flask-shaped gastral segment I).

196. *inconstans* Arnold

Trypoxylon inconstans Arnold, 1946:70, ♀. Syntypes: ♀, Zimbabwe: Umtali (SAM). – Leclercq, 1965a:89 (in key to Afrotropical *Trypoxylon*), 114 (bibliographic reference); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

197. *indianum* Tsuneki

Trypoxylon indianum Tsuneki, 1979a:29, ♀. Holotype: ♀, India: Tamil Nadu: Tinnevelly District: Dohnavur (BMNH). – Tsuneki, 1979a:3 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979b:3 (in key to *Trypoxylon* of Sri Lanka), 9 (Sri Lanka), 1981d:5 (Sri Lanka), 22 (India), 18 (in new key to *Trypoxylon* of Sri Lanka).

198. *infimum* Arnold

Trypoxylon infimum Arnold, 1940:101, ♀, ♂. Syntypes: Zimbabwe: Chirinda Forest (SAM). – Leclercq, 1965a:84 (in key to Afrotropical *Trypoxylon*), 103 (in revision of Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

199. *infoveatum* T. Li and Q.Li

Trypoxylon infoveatum T. Li and Q. Li, 2007:4, ♂. Holotype: ♂, China: Yunnan: Kunming (Zhejiang University, Hangzhou). – T. Li and Q. Li, 2010a:242 (in key to *Trypoxylon* of southwestern China).

200. *inopinatum* Antropov

Trypoxylon inopinatum Antropov, 1986b:625, ♂. Holotype: ♂, Russia: Lazarevskoye north of Sochi (ZIL). – Antropov, 1991b:680 (in revision of *Trypoxylon attenuatum* species group); Antropov *in* Bitsch et al., 2001:370 (in Sphecid Fauna of Western Europe); Antropov and Mokrousov, 2016:266 (Russia: Krasnodarskiy Kray: 2 km southeast of Kuchugury at 45.381613°N, 37.022832°E; descripion of ♀); Mokrousov and Popov, 2016:585 (Russia: Krasnodarskiy Kray); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:387 (in revision of Sphecidae *sensu lato* of Europe).

201. *insolitum* W. Fox

Trypoxylon insolitum W. Fox, 1897b:384, ♀, ♂. Lectotype: ♀, Brazil: Pará: Santarém (Carnegie Mus.), designated by Menke *in* R. Bohart and Menke, 1976:346. – Richards, 1934:281 (member of *Trypoxylon fabricator* species group); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

202. *insulare* Tsuneki

Tropoxylon [sic] *insulare* Tsuneki, 1976b:88, ♀. Holotype: ♀, Philippines: Tawi Tawi: Tarawakan (ZMUC). – Tsuneki, 1976b:94 (in key to female *Trypoxylon* of Philippines),1980b:10 (in key to *Trypoxylon* of Philippines), 91 (Philippines; additional description), 1981f:48 (member of *Trypoxylon insulare* species group).

ssp. *rufomaculatum* Tsuneki

Trypoxylon insulare rufomaculatum Tsuneki, 1980b:94, ♀. Holotype: ♀, Philippines: Luzon: Camarines Sur: Mount Isalog (Bishop Mus.). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines).

203. *insulsum* Arnold

Trypoxylon insulsum Arnold, 1959:318, ♀. Holotype: ♀, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:120 (as tentative synonym of *Trypoxylon lacustre*); R. Bohart and Menke, 1976:347 (as tentative synonym of *Trypoxylon lacustre*).

204. *interruptum* Tsuneki

Trypoxylon interruptum Tsuneki, 1978a:68, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1978a:5 (in key to *Trypoxylon scutatum* species group), 1979a:19 (bibliographic reference), 1979b:3 (in key to *Trypoxylon* of Sri Lanka), 6 (Sri Lanka), 1979c:11 (bibliographic reference), 1980a:16 (Sarawak), 1981d:18 (in new key to *Trypoxylon* of Sri Lanka); T. Li and Q. Li, 2007:9 (China: Yunnan: Jingdongxian in Simao), 2010:241 (in key to *Trypoxylon* of southwestern China); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 63 (first record from Vietnam: Tuyen Qang: Na Hang, and Vinh Phuc: Me Linh Biodiversity Station).

205. *iriomotense* Tsuneki

Trypoxylon iriomotense Tsuneki, 1981c:3, 5 (in key to *Trypoxylon* of Taiwan), ♀. Holotype: ♀, Ryukyu Islands: Island of Iriomote: Komi (coll. T. Nambu). – Tsuneki, 1981e:3 (in key to *Trypoxylon* of Japan and northeastern Asia), 9 (Japan: Yaeyama Islands: Island of Iriomote), 1982g:62 (known from Ryukyu archipelago), 1986:30 (known from Ryukyu archipelago); Yamane, Ikudome, and Terayama, 1999:525 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); T. Li and Q. Li, 2007:9 (China: Zhejiang: Jiulongshan in Suichang); Terayama and Nambu, 2009:9, 27 (in key to Trypoxylini of Japan).

206. *jacobsoni* Tsuneki

Trypoxylon jacobsoni Tsuneki, 1979c:12, ♂, ♀. Holotype: ♂, Indonesia: Sumatra: Sungal Kumbang (RMNH). – Tsuneki, 1979c:4 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 1981f:26 (single member of *Trypoxylon jacobsoni* species group).

207. *javanense* Tsuneki

Trypoxylon javanense Tsuneki, 1979c:24, ♂, ♀. Holotype: ♂, Indonesia: West Java: Megamendoeng (RMNH). – Tsuneki, 1979c:5 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 1980a:5 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 31 (Sarawak; additional description), 1981f:35 (member of *Trypoxylon varipes* species group).

208. *javanicum* Tsuneki

Trypoxylon javanicum Tsuneki, 1979c:42, ♀, ♂. Holotype: ♀, Indonesia: West Java: Mount Gedeh: Sitoegoenoeng (RMNH). – Tsuneki, 1979c:8 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 1981f:58 (member of *Trypoxylon coloratum* species group).

209. *johnsoni* W. Fox

Trypoxylon johnsoni W. Fox, 1891c:147, ♀ (as *Johnsoni*, incorrect original capitalization). Holotype or syntypes: ♀, USA: Florida: no specific locality (USNM). – Viereck, 1893e:132 (New Jersey: Riverton); W. Fox,

1894a:501 (in revision of North American Larrinae); W. Fox, 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); J. Smith, 1910:685 (in new list of insects of New Jersey); Mickel, 1918b:394 (in catalog of Nebraskan Sphecidae); Rau and Rau, 1918:137 (nesting habits); Rau, 1922:22 (USA: Missouri: St. Louis, nesting habits); Richards, 1934:293 (in revision of New World *Trypoxylon*), 344 (nesting habits summary); Brimley, 1938:443 (North Carolina: Raleigh); Sandhouse, 1940:150 (in revision of Nearctic *Trypoxylon*); Krombein *in* Muesebeck, Krombein, and Townes, 1951:955 (in catalog of North American Hymenoptera); Krombein, 1959e:199 (USA: North Carolina: Kill Devil Hills), 1963f:273 (Maryland: Plummers Island near Washington, D.C.), 1967b:230 (nesting habits observed in artificial nests); Bohart and Menke, 1976:346 (in checklist of world Sphecidae); L. Davis, 1978:218 (North Carolina: Kill Devil Hills, data from Krombein, 1959e); Krombein, 1979b:1643 (in catalog of North American Hymenoptera); Sugar *et al*., 1998:15 (Canada: southern Ontario); Coville, 1990:20 (specimens currently regarded as *johnsoni* are two sympatric species); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas).

Trypoxylon ornatipes W. Fox, 1891c:148, ♂. Lectotype: ♂, USA: District of Columbia (ANSP), designated by Cresson, 1928:55. Synonymized with *Trypoxylon johnsoni* by Sandhouse, 1940:141. – W. Fox, 1891e:195 (additional description), 1894a:476 (in revision of North American Larrinae); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); J. Smith, 1900:520 (in list of insects of New Jersey); Richards, 1934:297 (in revision of New World *Trypoxylon*).

Trypoxylon adelphiae Sandhouse, 1940:151, ♂, ♀. Holotype: ♂, USA: Tennessee: Cedar Glade (USNM). Synonymized with *Trypoxylon johnsoni* by Krombein, 1962a:11. – Krombein *in* Muesebeck, Krombein, and Townes, 1951:955 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park); Krombein and Evans, 1954:233 (Florida: Paradise Key), 1955:232 (Florida: Paradise Key); Krombein, 1956b:154 (West Virginia: Lost River State Park); Evans, 1957b:97 (description of larva); Krombein, 1958f:189 (in supplement to catalog of North American Hymenoptera: West Virginia, North Carolina, Florida, prey).

210. *judicum* Leclercq

Trypoxylon judicum Leclercq, 1965a:112, ♀, ♂. Holotype: ♂, Zaire: Maniema: Kasongo (MRAC). – Leclercq, 1965a:89 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

211. *kabeyae* Leclercq

Trypoxylon kabeyae Leclercq, 1965a:107, ♀, ♂. Holotype: ♀, Zaire: Haut-Uele: Paulis (MRAC). – Leclercq, 1965a:84 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Antropov, 1993b:54 (Central African Republic).

212. *kachin* Tsuneki

Trypoxylon kachin Tsuneki, 1981d:46, ♀. Holotype: ♀, Myanmar: Myitkyina (NRS). – Tsuneki, 1981d:62 (in key to *Trypoxylon* of Myanmar).

213. *kaitum* Tsuneki

Trypoxylon kaitum Tsuneki, 1981a:40, ♀. Holotype: ♀, Papua New Guinea: New Ireland: "Camp Bishop" 12 km up Kait River (Bishop Mus.). – Tsuneki, 1981a:6 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

ssp. *kaitum umboiense* Tsuneki

Trypoxylon kaitum umboiense Tsuneki, 1981a:41, ♀. Holotype: ♀, Island of Umboi (between New Guinea and New Britain): 1 km north of Awelkom (Bishop Mus.). – Tsuneki, 1981a:6 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

214. *kalabakan* Tsuneki

Trypoxylon kalabakan Tsuneki, 1980a:29, ♀. Holotype: ♀, Malaysia: northern Borneo: Forest Camp 19 km north of Kalabakan (Bishop Mus.). – Tsuneki, 1980a:5, 6 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

215. *kalilicum* Tsuneki

As *Trypoxylon bismarckianum*: Tsuneki, 1977h:7, corrected to *Trypoxylon kalilicum* by Tsuneki, 1981a:90.

Trypoxylon kalilicum Tsuneki, 1981a:90, ♂, ♀. Holotype: ♂, Papua New Guinea: Bismarck Archipelago: New Ireland: Danu: Kalili Bay (ZMUC). – Tsuneki, 1981a:10 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:77 (member of *Trypoxylon sacinasium* species group), 1982a:46 (Bismarck Archipelago).

216. *kalimantan* Menke

Trypoxylon annulipes Cameron, 1903d:164, ♀, junior primary homonym of *Trypoxylon annulipes* Taschenberg, 1875. Holotype or syntypes: ♀, Malaysia: Borneo (Sarawak): Mount Matang (BMNH). – Tsuneki, 1978b:50 (redescription), 78 (in key to Oriental *Trypoxylon*).

Trypoxylon kalimantan Menke *in* R. Bohart and Menke, 1976:346. Substitute name for *Trypoxylon annulipes* Cameron, 1903. – Tsuneki, 1979c:8 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 47 (Indonesia: Java), 1980a:8 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 57 (Borneo).

217. *kambaitium* Tsuneki

Trypoxylon kambaitium Tsuneki, 1981d:35, ♀, ♂. Holotype: ♂, norheastern Myanmar: Kambaiti (NRS). – Tsuneki, 1981d:38, 61 (in key to *Trypoxylon* of Myanmar), 1981f:27 (single member of *Trypoxylon kambaitium* species group).

218. *kandyianum* Tsuneki

Trypoxylon kandyianum Tsuneki, 1979b:17, ♀. Holotype: ♀, Sri Lanka: Central Province: Kandy District: Udawattakele Sanctuary (USNM). – Tsuneki, 1979b:4 (in key to *Trypoxylon* of Sri Lanka), 1981d:19 (in new key to *Trypoxylon* of Sri Lanka); Nuhn and Menke, 1994:25 (holotype in USNM).

219. *kansitakum* Tsuneki

Trypoxylon kansitakum Tsuneki, 1971g:8, ♂. Holotype: ♂, Taiwan: Chiai Prefecture: Kansitaku, now Kuanghua (originally K. Tsuneki coll., now USNM). – Tsuneki, 1971g:15 (in additional key to females of *Trypoxylon* of Taiwan), 18 (in new key to males of *Trypoxylon* of Taiwan); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1981c:4, 6 (in key to *Trypoxylon* of Taiwan), 15 (Taiwan; additional description), 1981f:35 (member of *Trypoxylon varipes* species group); Nuhn and Menke, 1994:25 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution); T. Li and Q. Li, 2010a:242 (in key to *Trypoxylon* of southwestern China).

220. *kapiricum* Leclercq

Trypoxylon kapiricum Leclercq, 1965a:105, ♀, ♂. Holotype: ♀, Zaire: Kibali Ituri: Kilo (MRAC). Paratypes: Burundi, Rwanda. – Leclercq, 1965a:85 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Antropov, 1993b:54 (Central African Republic).

221. *karimui* Tsuneki

Trypoxylon karimui Tsuneki, 1981a:15, ♂. Holotype: ♂, Papua New Guinea: Simbu Province: Karimui (Bishop Mus.). – Tsuneki, 1981a:4 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:42 (member of *Trypoxylon kuchingense* species group).

222. *kashmirense* Tsuneki

Trypoxylon attenuatum kashmirense Tsuneki, 1979a:66, ♀. Holotype: ♀, India: Kashmir: no specific locality (BMNH). – Tsuneki, 1979a:8 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia). – **As *Trypoxylon kashmirense***: Antropov, 1991b:681 (full species status, in revision of *Trypoxylon attenuatum* species group); Mawadda and Girish Kumar, 2023:116 (in checklist of Crabroninae of Northern India, as *kashmierense*).

223. *katangae* Leclercq

Trypoxylon katangae Leclercq, 1965a:113, ♀. Holotype: ♀, Zaire: Elisabethville, now Lubumbashi (MRAC). – Leclercq, 1965a:89 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

224. *katsuuense* Tsuneki

Trypoxylon rufiventre Tsuneki, 1990a:85, ♀, junior primary homonym of *Trypoxylon rufiventre* Tsuneki, 1976. Holotype: ♀, Japan: Okinawa: Mount Katsu-u-dake (originally K. Tsuneki coll., now Hyogo Mus.). – Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.).

Trypoxylon katsuuense Tsuneki, 1992c:54. Substitute name for *Trypoxylon rufiventre* Tsuneki, 1990. – Murota and Kurokawa, 2009:14 (Japan: Ryukyu Archipelago: Amami Oshima Islands); Terayama and Nambu, 2009:9, 27 (in key to Trypoxylini of Japan).

225. *kedah* Tsuneki

Trypoxylon kedah Tsuneki, 1979a:33, ♀. Holotype: ♀, Malaysia (West): Kedah: Kedah Peak, now Gunung Jerai (BMNH). – Tsuneki, 1979a:4 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

226. *kepongianum* Tsuneki

Trypoxylon kepongianum Tsuneki, 1979a:139, ♂. Holotype: ♂, Malaysia: Kepong (Bishop Mus.). – Tsuneki, 1979a:14, 18 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:60 (member of *Trypoxylon kepongianum* species group).

ssp. *miserum* Tsuneki

Trypoxylon kepongianum miserum Tsuneki, 1980a:95, ♂. Holotype: ♂, Malaysia: Sabah (northern Borneo): Forest Camp 19 km north of Kalabakan (Bishop Mus.). – Tsuneki, 1980a:12 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

227. *khasiae* Cameron

Trypoxylon khasiae Cameron, 1904d:218, ♀. Holotype or syntypes: ♀, India: Assam: Khasia Hills (OXUM). – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Tsuneki, 1978b:54 (redescription), 80 (in key to Oriental *Trypoxylon*), 1979a:11, 12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 84 (India, Laos, Malaysia, Thailand; individual variation; Malaysian specimens = *Trypoxylon varipilosum*), nec 1979c:7, 8, 9, 36 (= *Trypoxylon varipilosum*), 1980a:2 (*Trypoxylon varipilosum* and *yumi* are possibly geographic forms of *khasiae*), 1981f:58 (member of *Trypoxylon coloratum* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands); Jonathan, Ray, and Kundu, 2000:201 (India: previously recorded from Meghalaya: Khasi Hills).

228. *kinabalum* Tsuneki

Trypoxylon kinabalum Tsuneki, 1980a:79, ♀. Holotype: ♀, Malaysia (East): Sabah: Mount Kinabalu: Lumu Lumu (BMNH). – Tsuneki, 1980a:6, 10 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

229. *kitulgalaense* Tsuneki

Trypoxylon kitulgalaense Tsuneki, 1981d:12, ♀. Holotype: ♀, Sri Lanka: Sabaragamuwa Province: Kegalla District: Kegalla: Kitulgala, Bandarakale Jungle (USNM). – Tsuneki, 1981d:18, 19 (in new key to *Trypoxylon* of Sri Lanka); Nuhn and Menke, 1994:26 (holotype in USNM).

230. *klapperichi* Balthasar

Trypoxylon klapperichi Balthasar, 1957b:198, ♀. Holotype: ♀, Afghanistan: Nuristan: Bashgul Valley: Ahmede Devane (originally V. Balthasar coll., now NMPC). – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan).

231. *kodamanum* Tsuneki

Trypoxylon kodamanum Tsuneki, 1972b:9, ♀, ♂. Holotype: ♂, Japan: Saitama Prefecture: Kodama (originally K. Tsuneki coll., now Hyogo Mus.). – Nambu, 1972e:90 (Japan: Saitama Prefecture), 1973a:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 37 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981e:4 (in key to *Trypoxylon* of Japan and northeastern Asia), 34 (Japan; additional description), 1981f:37 (member of *Trypoxylon pacificum* species group); Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.); Terayama and Nambu, 2009:10 (in key to Trypoxylini of Japan).

232. *kohli* Arnold

Trypoxylon kohli Arnold, 1924:24, ♂, ♀ (as *Kohli*, incorrect original capitalization). Syntypes: South Africa: Gauteng: Pretoria; and Zimbabwe: Bulawayo (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:338 (member of *Trypoxylon scutatum* species group); Leclercq, 1965a:96, 98, and 100 (in key to Afrotropical *Trypoxylon*), 123 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Antropov, 1993b:54 (Central African Republic); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntypes in Bulawayo Museum).

233. *koikense* Tsuneki

Trypoxylon koikense Tsuneki, 1956g:35, ♀, ♂. Holotype: ♀, Japan: Fukui Prefecture: Koike (originally K. Tsuneki coll., now Hyogo Mus.). –Tsuneki, 1956f:121, 123 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:6, 10 (in key to *Trypoxylon* of northeastern Asia); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Itami, 1969:50 (Japan: Niigata Prefecture); Tano, 1971:81 (Japan: Shikoku: Mount Tsurugi); Haneda, 1968a:44 (Japan); Nambu, 1972e:90 (Japan: Saitama Prefecture), 1973a:150 (Japan: Saitama Prefecture); Tsuneki, 1973e:35, 37 (in key to *Trypoxylon* of Japan, in Japanese); Tsuneki, 1973v:150 (prey); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981e:5 (in key to *Trypoxylon* of Japan and northeastern Asia), 43 (Japan; redescription), 1981f:33 (single member of *Trypoxylon koikense* species group); Antropov, 1986a:90 (Russia: Primorskiy Kray); Tano, 1994a:6 (holotype in K. Tsuneki collection); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:420, 421 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:20 (holotype and allotype transferred to Hyogo Mus.); Togashi, 2001:19 (Japan: Ishikawa Prefecture: Shiramine); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:32 (Japan: Gifu Prefecture); Suda, 2004:41 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:47 (Japan: Gifu Prefecture), 2006a:23 (Japan: Toyama Prefecture); Nemkov, 2007b:70 (Russia: Kuril Islands: Island of Kunashir), 2008b:20 (in catalog of Crabronidae of Asiatic Russia); S. Tanaka, 2008:39 (Japan: Yamaguchi Prefecture); Nemkov, 2009b:86 (in new catalog of

Sphecidae and Crabronidae of Asiatic Russia); Terayama and Nambu, 2009:11, 28 (in key to Trypoxylini of Japan), 2011:95 (known only from Kuril Islands and Japan); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); Antropov, 2017b:245 (in catalog of Crabroninae of Russia).

234. *kokodaense* Tsuneki

Trypoxylon kokodaense Tsuneki, 1981a:66, ♂. Holotype: ♂, Papua New Guinea: Northern (= Oro) Province: Kokoda (BMNH). – Tsuneki, 1981a:8 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:76 (member of *Trypoxylon sacinasium* species group).

235. *kolambuganum* Tsuneki

Trypoxylon kolambuganum Tsuneki, 1980b:52, ♂. Holotype: ♂, Philippines: Mindanao: Kolambugan (USNM). – Tsuneki, 1980b:6 (in key to *Trypoxylon* of Philippines), 1981f:48 (member of *Trypoxylon insulare* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

236. *kolazyi* Kohl

Trypoxylon kolazyi Kohl, 1893a:29, ♂, ♀ (as *Kolazyi*, incorrect original capitalization). Syntypes: Austria: Niederösterreich: Bühl; and Krain: Wippach, now Slovenia: Vipava (NHMW). – Krieger, 1894:10 (Croatia: Dalmatia); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Mercet, 1906c:466 (in key to Palearctic *Trypoxylon*); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); Dusmet y Alonso, 1915:87 (Spain: Aragón); Schmiedeknecht, 1930:712 (in keys to Hymenoptera of North and Central Europe); Dusmet y Alonso, 1935:80 (Spain: Zaragoza: Ambel); Zavadil, Šustera, and Bat'a, 1937:222 (in catalog of Sphecidae of Czechoslovakia); Zavadil, 1939:121 (Czech Republic: Morava: Tišnov); Giner Marí, 1943a:217 (in Sphecid Fauna of Spain); Šnoflák, 1944a:144 (Czech Republic: serpentine steppe near Mohelno); de Beaumont, 1947b:396 (Cyprus); Šnoflák *in* Zavadil and Šnoflák, 1948:59 (in key to Sphecidae of Czechoslovakia); Pittioni, 1950:26 (Cyprus); de Beaumont, 1954e:92 (Italy); Grandi, 1954:238 (Italy); Vogrin, 1955:40 (Yugoslavia); Ceballos, 1956:392 (in catalog of Hymenoptera of Spain); Bajári, 1957a:67 (in key to Hungarian Sphecidae), 1957b:136 (first record from Hungary); Wolf, 1958:13 (Germany: Plettenberg), 1959b:25 (Germany: Nassau); de Beaumont, 1960a:21 (Greece: Island of Rhodes), 1960b:247 (Libya); Noskiewicz and Puławski, 1960:109 (in key to Polish Sphecidae); de Beaumont, 1964c:85 (in Sphecid Fauna of Switzerland), 1967a:338 (Turkey); Romanova, 1969:134 (Russia: northern Caucasus); Suárez, 1969:32 (Spain: Almería Province); Oehlke, 1970:725 (not recorded from Democratic Germany); Balthasar, 1972:229 (in Sphecid Fauna of Czechoslovakia); Kazenas, 1972b:156 (Kazakhstan); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Eck, 1976:91 (Democratic Germany); Georghiou, 1977:193 (Cyprus); Kazenas, 1978b:147 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:253 (in key to Sphecidae of European part of USSR); Benedek, 1979:232 (Hungary: Bakony Hills); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Pagliano, 1980:129 (Italy: Piemonte); Dollfuss and Ressl, 1981:322 (Austria: Niederösterreich: Scheibbs District); Skibińska, 1982:119, 123 (Poland: Mazovian Voivodship: Warszawa); Dollfuss, 1983b:12 (in catalog of Sphecidae of Austria); Coville, 1984:256 (comparison with *Trypoxylon clavicerum*); Józan, 1985b:57 (recorded from Simontornya by Bajári, 1957); Islamov, 1986:528 (Uzbekstan: Tashkent Oblast'); Dollfuss, 1988:13 (Austria: Bisamberg); Gayubo and Mingo, 1988:88 (Spain); Dollfuss, 1989:13 (lectotype in NHMW); Pádr *in* Šedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Jacobs and Oehlke, 1990:123 (citation of Eck, 1976); Pagliano, 1990:110 (in catalog of Italian Sphecidae); Day, 1991:xix (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:123 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:404 (Italy: Veneto); Gayubo and Torres, 1991:Table I (Spain: Salamanca; effects of urban pressure); Schembri, 1991:181 (first record from Malta); Kuhlmann, 1993:76 (Germany: recorded from Westfalen by Wolf, 1959); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Jansen and Kaluza, 1995:8 (Germany: endangered in Sachsen); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:87 (Italy: Ferrara Province);

Schmid-Egger, Risch, and Niehuis, 1995:214 (Bettag's record from Germany actually is *Trypoxylon clavicerum*); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Schmid-Egger, K. Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: may be endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Celary, 1997:58 (in checklist of Animals of Poland); K. Schmidt and Schmid-Egger, 1997:31 (in checklist of German Sphecidae); F. Burger, Saure, and Oehlke, 1998:30 (Germany: in list of Sphecidae of Brandenburg), (39 (data insufficient to evaluate the endangerment); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); Wiśniowski and Kowalczyk, 1998:221 (Poland: Sandomierz Lowland: Wojnicz); Ljubomirov, 1999b:51 (Bulgaria: Mount Vitosha near Sofia); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:254 (in Sphecid Fauna of Germany); Esenbekova and Kazenas, 2000:41 (southeastern Kazakhstan: 2 km southwest and 3 km south of Alma Ata); Ljubomirov, 2000:10 (Bulgaria, specimens in N. Nedelkov collection); Vicidomini, 2000b:28 (Italy: previously recorded from Campania); Zettel, 2000:28 (Austria: Wien); Antropov *in* Bitsch et al., 2001:379 (in Sphecid Fauna of Western Europe); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:142 (distribution in Germany by provinces); Skevington et al., 2001:128 (Canada: Ontario: Lambton County); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Deván, 2002a:200 (Slovakia: Kobela Nature Reserve near Nové Mesto); Kazenas, 2002a:85 (geographic distribution, collecting localities in Kazakhstan); Wiśniowski, 2002:70 (Poland: Ojców National Park); Esenbekova and Kazenas, 2003:6, 7, and 54 (Kazakhstan: foothills of Zailiyskiy Alatau: nesting in artificial nests), 56 (nest structure in artificial nest); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Erzurum: İspir); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Pagliano, 2003b:132 (Italy: Island of Lampedusa); Schmid-Egger, 2003:759 (Italy: Sicilia: Castelammare, Umbria: Montefalco; Malta: Mgarr, Ramla); Wiśniowski *in* Dylewska and Wiśniowski, 2003:154 (Poland: Ojców National Park); Buck, 2004:26 (Canada: in checklist of Crabronidae of Ontario), 30 (distribution within Ontario), 55 (Canada: first record from Ontario: list of localities; earlier records by Romel and Dykstra, 1991b, and Sugar et al., 1998, as *Trypoxylon backi*, are questionable); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Gorobchishin and Protsenko, 2004:40 (Ukraine: Kherson Oblast': Chernomorskiy Nature Reserve); Shkuratov, 2004a:78 (Russia: Rostov Oblast': village Nedvigovka, Rostov-on-Don); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:357 (in catalog of Polish Crabronidae); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:93 (in key to *Trypoxylon* of Poland); Pagliano and Negrisolo, 2005:419 (in Sphecid Fauna of Italy); Saure, 2005:19 (Germany: Berlin); Shorenko, 2005a:164 (Ukraine: Crimea), 2005b:98 (Ukraine: Crimea: Karadagh Nature Reserve); Straka, 2005a:402 (endangered in Czech Republic); Wiśniowski, 2005a:312 (Poland: Ojców National Park; found only on wooden buildings), 2005b:340 (Poland: Ojców National Park, of primary faunistic value); Yildirim and Ljubomirov, 2005:1799 (Turkey: Erzurum: Oltu); Gorobchishin, 2006:115 (Ukraine: Kyiv Oblast': Brovary, Svityl'ne; Vinnitsa Oblast': Vinnitsa); Magdalou, 2006b:109 (France: Pyrénées-Orientales: Mas-Larrieu Nature Reserve near Argelès-sur-Mer), 2006c:7 (France: Pyrénées-Orientales: Réserve Naturelle du Mas-Larrieu); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Tomarchio and Turrisi, 2006:957 (Italy: Sicilia: Catania and Mount Etna); Bitsch, Dollfuss, Bouček, K. Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:461 (first recorded from Sicily by Schmid-Egger, 2003, also commonly found in Germany); Jacobs, 2007:109, 111 (in key to Crabronidae of Germany); Saure, 2007:83 (Germany: in checklist of Aculeata of Land Brandenburg); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia); Ljubomirov and Yildirim, 2008:241 (in catalog of Crabronidae of Turkey); Protsenko and Drozdovskaya, 2008:127 (Ukraine: Sumy Oblast': Mogritsa village); Wiśniowski, 2008:635 (Poland: Ojców National Park,

collected in 1991 and1998); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Gayubo, González, Tormos, and Asís, 2009:364 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:264 (Bulgaria: Maleshevska Planina); Pagliano, 2009:185 (Italy: Liguria: Casanova Lerrone; Sardegna: Cagliari; France: Corse: Pirio); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Esser, Fuhrmann, and Venne, 2010:38 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: very rare); Shorenko and Konovalov, 2010:24 (Ukraine: Crimea: village Shchebetovka near Feodosiya; Lugansk Oblast': village D'yakovo); van der Smissen, 2010b:388 (France: Vaucluse: Le Beaucet-Venasque); Gogala, 2011:17 (Slovenia); Józan, 2011:181 (in checklist of Sphecidae *sensu lato* of Hungary); Tischendorf, Frommer, Flügel et al., 2011:186 (Germany: occurrence in Hessen possible); Amolin, 2012:29 (Ukraine: Donetsk); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Saure, 2012:30 (Germany: Berlin-Dahlem); Shlyakhtenok, 2012a:172 (Russia: Krasnaya Polana near Sochi: collected in private plots); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Kazenas, 2013b:496 (southeastern Kazakhstan: 10 km northwest of Chundza on Sharyn River); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Vieira, Oliveira, Brewster, and Gayubo, 2013:18 (Portugal: Paúl do Boquilobo Nature Reserve); Bitsch, 2014:406 (France: Loiret: Orléans); Olszewski and Pawlikowski, 2014:193 (in key to Polish *Trypoxylon*); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Shorenko, 2015:330 (in list of Sphecidae *sensu lato* of Crimea); U. Frommer, 2016:1 (Germany: first record from Hessen: Giessen); Haris, 2016:15 (in list of species described by F. Kohl from Carpathian Basin); Le Divelec, Chapelin-Viscardi, and Larivière, 2016:109 (northern France: in agricultural landscapes); Mokrousov and Popov, 2016:585 (Russia: Krasnodarskiy Kray); Schmid-Egger, Dandria, and Xuereb, 2016:80 (in checklist of Crabronidae of Maltese Islands); Wiśniowski, 2016:131 (Poland: Ojców National Park); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:40 (Turkey: Erzurum: Oltu); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Magdalou, 2017:17 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Mas Larrieu); Shorenko, 2017:78 (in Crimea collected in May and August), 2018:128 (Crimea, including localities, habitats, and number of specimens); S. Ivanov, Fateryga, and Zhidkov, 2019:75 (Crimea: reared from trap nests); Rezaei, Fallahzadeh, Dousti, and Saghaei, 2020b:11 (Iran: Fars: Dalin at 30°02'15"N 52°07'54"E), and Shiraz: Zafar Abad at 29°24'06"N 52°35'01"E); Shorenko, 2020:52 (Crimea: Karadag Nature Reserve); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:393 (in revision of Sphecidae *sensu lato* of Europe); Cross, Baldock, and Wood, 2021:56 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2021:79 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland); Pétremand, Salzman-Wandeler, and Castella, 2021: 91 (Switzerland: canton de Genève); Japoshvili and Ljubomirov, 2022:277 (Georgia: Lagodekhi Protected Areas); U. Frommer and Bahmer, 2023:195 (Germany: Hessen: Giessen: city gardens); Kaplan and Yildirim, 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

Trypoxylon backi Sandhouse, 1940:164, ♂, ♀. Holotype: ♂, USA: Maryland: Baltimore (USNM). Synonymized with *Trypoxylon kolazyi* by Coville *in* Krombein et al., 1979:1644. – Brimley, 1942:36 (North Carolina: Durham, Morganton, Raleigh); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck, Krombein, and Townes, 1951:955 (in catalog of North American Hymenoptera); Krombein, 1956a:42 (prey), 1956b:154 (West Virginia: Lost River State Park), 1958b:21 (prey), 1958f:189 (in supplement to catalog of North American Hymenoptera:West Virginia; prey); 1962b:13 (infestation by acarid *Lackerbaueria krombeini* Baker), 1963f:273 (Maryland: Plummers Island near Washington, D.C.; prey); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); Krombein, 1967b:227

(nesting habits observed in artificial nests); Wray, 1967:125 (North Carolina: Durham, Morganton, Raleigh); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Romel and Dykstra, 1991b:39 (Canada: Ontario: Milton; nesting in antique farm equipment); Sugar *et al*., 1998:16 (Canada: southern Ontario).

237. *kolthoffi* Gussakovskij

Trypoxylon kolthoffi Gussakovskij, 1938:4, ♀ (as *Kolthoffi*, incorrect original capitalization). Holotype: ♀, China: Kiangsu Province: no specific locality (NRS). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

238. *koma* Tsuneki

Trypoxylon figulus koma Tsuneki, 1956g:28, ♀, ♂. Holotype: ♀, North Korea: Mount Kodai, near 38°N (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956g:5, 9 (in key to *Trypoxylon* of northeastern Asia); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae); Kazenas, 1980e:90 (Russia: Primorskiy Kray); Tsuneki, 1981e:3 (in key to *Trypoxylon* of Japan and northeastern Asia), 20 (Korea: Mount Sambo, Seul; redescription), Tsuneki, 1982b:6 (Korea), 1982b:16 (known from Korea); Pulawski, 1984:132 (as synonym of *Trypoxylon minus*); Paik, 1985:199 (in list of Sphecidae of Korea); Tano, 1995:43 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.). – **As *Trypoxylon koma***: Antropov, 1987:58 (full species status, diagnostic characters; Russia: Primorskiy Kray); Nemkov, 1992b:245 (Russia: Far East: Khingan Nature Reserve); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:419 (in key to Sphecidae of Russian Far East); Nemkov, 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve), 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:87 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:237 (Russia: Primorskiy Kray: Lazovsky Nature Reserve), 2012c:439 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:439 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Antropov, 2017b:245 (in catalog of Crabroninae of Russia).

239. *konosuense* Tsuneki

Trypoxylon konosuense Tsuneki, 1968a:3, ♀. Holotype: ♀, Japan: Saitama Prefecture: Konosu (originally K. Tsuneki coll., now Hyogo Mus.). – Nambu, 1968b:23 (Japan: Saitama Prefecture); Tsuneki, 1968o:66 (recognition characters), 1973e:32 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:65 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981e:6 (in key to *Trypoxylon* of Japan and northeastern Asia), 61 (Japan; additional description); Antropov, 1986a:89 (Russia: Primorskiy Kray), 1988:85 (description of ♂, Russia: Primorskiy Kray); Tano, 1994a:6 (holotype in K. Tsuneki collection); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:416 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:87 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Terayama and Nambu, 2009:7 (in key to Trypoxylini of Japan); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); Antropov, 2017b:245 (in catalog of Crabroninae of Russia).

240. *koreanum* Tsuneki

As *Trypoxylon varipes*: Gussakovskij, 1932:12 (Ussuri Region) and 1936:664 (in revision of Palearctic *Trypoxylon*), corrected to *Trypoxylon koreanum* by Antropov, 1994c:124.

Trypoxylon koreanum Tsuneki, 1956g:32, ♂. Holotype: ♂, Korea: Keijo (originally K. Tsuneki coll., now USNM). – Tsuneki, 1956g:11 (in key to *Trypoxylon* of northeastern Asia); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Kazenas, 1980e (Russia: Primorskiy Kray); Tsuneki, 1981e:38 (Japan; additional description), 1981f:37 (member of *Trypoxylon pacificum* species group), 1982b:16 (known from Korea); Paik, 1985:199 (in list of Sphecidae of Korea); Antropov, 1986a:90 (Russia: Primorskiy Kray), 1994c:124 (synonymy, faunal records from China and Russian Far East, diagnostic characters); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:420, 422 (in key to Sphecidae of Russian Far East); Nuhn and Menke, 1994:26

(holotype transferred to USNM); Nemkov, 2005a:148 (Russia: Island of Sakhalin), 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:87 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); T. Li and Q. Li, 2010a:241, 242 (in key to *Trypoxylon* of southwestern China); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:439 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Antropov and Mokrousov, 2016:266 (first record from European Russia: Belgorod Oblast': village Pulyaevka); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Jacobs and Liebig, 2018:146 (Russia: Primorskiy Kray: Novonezhino); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:396 (in revision of Sphecidae *sensu lato* of Europe).

Trypoxylon mowchowense Tsuneki, 1981d:71, ♀. Holotype: ♀, China: Szechuan: Mowchow (USNM). Synonymized with *Trypoxylon koreanum* by Antropov, 1994c:124. – Nuhn and Menke, 1994:26 (holotype in USNM).

Trypoxylon okeanskayanum Tsuneki, 1981d:86, ♂, ♀. Holotype: ♂, Russia: Primorskiy Kray: Okeanskaya (USNM). Synonymized with *Trypoxylon koreanum* by Antropov, 1986a:90. – Tsuneki, 1981f:37 (member of *Trypoxylon pacificum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

241. *koshunicon* Strand

Trypoxylon koshunicon Strand, 1922b:149, ♂. Holotype: ♂, Taiwan:: Kankau, now Hengchun (DEI). – Strand, 1927:255 (in list of species described by the author); Tsuneki, 1966b:3 (in key to *Trypoxylon* of Ryukyu Islands and Taiwan; also as *koshunicon koshunicon*), 16 (Taiwan; redescription; description of ♀ which actually = *Trypoxylon quadriceps*), 1967d:2 (in key to *Trypoxylon* of Taiwan), 1968d:55 (Taiwan), nec 1971g:16 (♀, in key to *Trypoxylon* of Taiwan = *Trypoxylon quadriceps*); Oehlke and Wudowenz, 1974:424 (holotype in DEI); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981c:6 (in key to *Trypoxylon* of Taiwan), 18 (Taiwan; additional description); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

242. *kostylevi* Antropov

Trypoxylon kostylevi Antropov, 1985a:632, ♂. Holotype: ♂, Georgia: Sukhumi area (ZMMU). – Gusenleitner, 1991:646 (Austria: Niederösterreich: Sankt Ulrich); Antropov *in* Bitsch et al., 2001:379 (in Sphecid Fauna of Western Europe); Baugnée, 2003:63 (Belgium: Namur: Ri d'Hôwisse); Gorobchishin, 2006:115 (Ukraine: Kyiv Oblast': Svityl'ne, Volodarka); Bitsch, Dollfuss, Bouček, K. Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:462 (recorded from Belgium by Baugnée, 2003); Burger, 2007:59, 60 (Germany: first record fromThüringen: several localities); Jacobs, 2007:111, 113 (in key to Crabronidae of Germany); Jacobs and Burger, 2007:15 (Germany: locality records from Lands of Brandenburg, Mecklenburg-Vorpommern, Sachsen, and Thüringen, also from Bulgaria: Starosel near Hisariya, Czech Republic: Luhačovice and Tabor, Slovakia: Galanta, and Ukraine: Kyiv); Jansen and Kaluza, 2007:26 (Germany: northwestern Sachsen); Saure, 2007:83 (Germany: in checklist of Aculeata of Land Brandenburg); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia), 226 (records from the area published by Jacoba and Burger, 2007); U. Frommer, 2009a:29 (Germany: in checklist of Sphecidae of Hessen), 44 (Friedberg, Lorch); Guéorguiev and Ljubomirov, 2009:265 (Bulgaria: Maleshevska Planina); Straka, Dvořak, and Bogusch, 2009:266 (Czech Republic: Černousy-V Poli); Esser, Fuhrmann, and Venne, 2010:38 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Saure, 2010b:175 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: relatively common); Tischendorf, Frommer, Flügel et al., 2011:98 (Germany: Hessen: data insufficient to evaluate degree of endangerment); Ziska and Saure, 2011:110 (Germany: Berlin: Tegeler Flieβ valley); Gerth, Mayer, Hering, Wolf, Schaffer, and Bleidorn, 2012:9 (Germany: Sachsen: Bienitz in Leipzig); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Saure, 2013:22 (Berlin: Treptow-Köpenick: Gosener Wiesen); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*);

U. Frommer, 2014:28 (Germany: Hessen: Lorch); Olszewski and Pawlikowski, 2014:190 (first record from Poland: Sierakowo), 193 (in key to Polish *Trypoxylon*); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Le Divelec, Chapelin-Viscardi, and Larivière, 2015:287 (first record from France: départements of Eure-et-Loir, Loiret, and Somme); Saure, 2015:15 (Germany: Berlin-Lichterfelde); Blažej, Macek, and Trýzna, 2016:129 (Czech Republic: České Švýcarsko = Bohemian Switzerland National Park); Bleidorn, Gerth, Hopfe, et al., 2016:11 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Le Divelec, Chapelin-Viscardi, and Larivière, 2016:109 (northern France: in agricultural landscapes); Saure, 2016b:50 (Germany: Sachsen-Anhalt: fruit orchards); A. Scholz, 2016:72 (Germany: Sachsen: Kleinraschützer Heide); Stolle and Saure, 2016:925 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:40 (Turkey: Erzurum: Oltu: Subatık); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Flügel, 2017:6 (Germany: Hessen: Doline and Eschkopf near Rockensüß); Jansen, 2017:10 (Germany: Sachsen: Leipzig); Johanssen, 2017:105 (probably occurring in Sweden, photograph of male genitalia); Le Divelec, Chapelin-Viscardi, Laborie, Larivière, and Tosser, 2016:40 (France: found in agricultural habitats); Laborie, Chapelin-Viscard, Le Divelec, and Tosser, 2017:2 (France: found in agricultural habitats); Kejval, Blažej, and Erhart, 2020:108 (western Czech Republic); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:394 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2021:79 (in catalog of Crabronidae of Turkey).

243. *krombeini* Tsuneki

Trypoxylon krombeini Tsuneki, 1979b:13, ♂, ♀. Holotype: ♂, Sri Lanka: Savaragamuwa Province: Ratnapura District: Sinharaja Forest: Weddagala (USNM). – Tsuneki, 1979b:4 (in key to *Trypoxylon* of Sri Lanka), 1981d:11 (Sri Lanka; additional description), 18, 19, 20 (in new key to *Trypoxylon* of Sri Lanka), 1981f:15 (single member of *Trypoxylon krombeini* species group); Nuhn and Menke, 1994:26 (holotype in USNM); Munasinghe and Edirisinghe, 2007:78 (Sri Lanka: Meewathura Agriculture Farm).

244. *kuchingense* Tsuneki

Trypoxylon kuchingense Tsuneki, 1980a:24, ♂, ♀. Holotype: ♂, Malaysia: Sarawak: Kuching: Santubong (Bishop Mus.). – Tsuneki, 1980a:5 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1981f:42 (member of *Trypoxylon kuchingense* species group).

245. *kuncheriai* Tsuneki

Trypoxylon kuncheriai Tsuneki, 1980a:42, ♀. Holotype: ♀, Malaysia (East): Sabah: Forest Camp 19 km north of Kalabakan (Bishop Mus.). – Tsuneki, 1980a:6 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

246. *kunzui* Tsuneki

Trypoxylon kunzui Tsuneki, 1981d:73, ♀. Holotype: ♀, southern China: Loh Fan Shaan (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

247. *kutuense* Tsuneki

Trypoxylon kutuense Tsuneki, 1979a:171, ♀. Holotype: Malaysia: Selangor: Bukit Kutu (BMNH). – Tsuneki, 1979a:17 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

248. *kyotoense* Tsuneki

Trypoxylon kyotoense Tsuneki, 1966a:22, ♀. Holotype: ♀, Japan: Kyoto Prefecture: Kibune (Osaka). – Tsuneki, 1968o:66 (recognition characters), 1969e:25 (Japan: specimens in Osaka Museum of Natural History), 1973e:33 (in key to *Trypoxylon* of Japan, in Japanese); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981e:7 (in key to *Trypoxylon* of Japan and northeastern Asia), 75 (Japan; redescription); Terayama and Nambu, 2009:8, 28 (in key to Trypoxylini of Japan).

249. *lacustre* Arnold

Trypoxylon lacustre Arnold, 1956:76, ♂ (as *lacustris*, incorrect original termination). Syntypes: ♂, Uganda: Jinja on Lake Victoria (SAM). – **As *Trypoxylon lacustre***: Leclercq, 1965a:94 (in key to Afrotropical *Trypoxylon*), 120 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Antropov, 1993b:54 (Central African Republic).

250. *lae* Tsuneki

Trypoxylon lae Tsuneki, 1981a:75, ♀, ♂. Holotype: ♂, Papua New Guinea: Morobe Province: Zeng-Lae road (Bishop Mus.). – Tsuneki, 1981a:9 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:77 (member of *Trypoxylon eximium* species group).

ssp. *baiyerum* Tsuneki

Trypoxylon lae baiyerum Tsuneki, 1981a:79, ♂. Holotype: ♂, Papua New Guinea: Western Highland District: Baiyer River (AEI). – Tsuneki, 1981a:9 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

251. *laeviceps* Tsuneki

Trypoxylon laeviceps Tsuneki, 1976b:83, ♂. Holotype: ♂, Philippines: Tawi Tawi: Tarawakan (ZMUC). – Tsuneki, 1980a:5, 9 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 22 (Borneo; ♀), 1980b:5, 6 (in key to *Trypoxylon* of Philippines), 35 (Philippines; additional description), 1981f:23 (member of *Trypoxylon appendiculatum* species group).

252. *laevidorsum* Tsuneki

Trypoxylon laevidorsum Tsuneki, 1979a:88, ♀. Holotype: ♀, Malaysia (West): Kedah: Kedah Peak, now Gunung Jerai (BMNH). – Tsuneki, 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

253. *lagunaense* Tsuneki

Trypoxylon lagunaense Tsuneki, 1980b:78, ♀. Holotype: ♀, Philippines: Luzon: Los Baños (AEI). – Tsuneki, 1980b:8 (in key to *Trypoxylon* of Philippines).

254. *lamellatum* Tsuneki

Trypoxylon lamellatum Tsuneki, 1979a:136, ♀. Holotype: ♀, India: Kerala: Waldyar forests (USNM). – Tsuneki, 1979a:14 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Nuhn and Menke, 1994:26 (holotype in USNM).

255. *langkawiense* Tsuneki

Trypoxylon langkawiense Tsuneki, 1979a:118, ♀. Holotype: ♀, Malaysia: Kedah: Island of Langkawi (BMNH). – Tsuneki, 1979a:13 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

256. *laosense* Tsuneki

Trypoxylon laosense Tsuneki, 1979a:90, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

257. *laosianum* Tsuneki

Trypoxylon laosianum Tsuneki, 1979a:95, ♀, ♂. Holotype: Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:10, 11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:32 (single member of *Trypoxylon laosianum* species group).

258. *latilobatum* Antropov

Trypoxylon latilobatum Antropov, 1991b:678, ♀, ♂. Holotype: ♂, Spain: Cadiz: Conil de la Frontera (ZMMU). Paratypes: France. – Mochi and Luchetti, 1994:15 (Italy: Lazio, Toscana); Pagliano, 1994:16 (Italy: Piemonte; France: Corsica); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Scaramozzino, 1999:164 (Italy: Piemonte: Borgomale); Gonzáles, Gayubo, and Torres, 1999:355 (Spain:

Valladolid: Viana de Cega); Ljubomirov, 2000:10 (Bulgaria, specimens in N. Nedelkov collection); Antropov *in* Bitsch et al., 2001:370 (in Sphecid Fauna of Western Europe); Gayubo, Özbek, and Yıldırım, 2003:91 (first record from Turkey: Bilecik and Erzurum Provinces); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); Pagliano and Negrisolo, 2005:420 (in Sphecid Fauna of Italy); Yildirim and Ljubomirov, 2005:1800 (Turkey: Erzurum: Aşkale); Ljubomirov and Yildirim, 2008:242 (in catalog of Crabronidae of Turkey); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia), 226 (record from Slovakia by Deván, 2005, is a misidentification); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Gayubo, González, Tormos, and Asís, 2009:364 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); Sakenin, Samin, and Bagriacik, 2010:16 (Iran: West Azarbaijan: Ourmieh, Salmas); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); Bitsch, 2014:406 (record from Bulgaria by Ljubomirov, 2000 noted); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:40 (Turkey: Kars: Sarıkamış: Karakurt); Jahantigh, Rakhshani; Mokhtari, and Ramroodi, 2017:70 (Iran: known from West Azerbaijan Province) ; Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:388 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2021:79 (in catalog of Crabronidae of Turkey), 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

259. *latiscutatum* Arnold

Trypoxylon latiscutatum Arnold, 1946:72, ♀. Syntypes: ♀, Malawi: Zomba (SAM). – Leclercq, 1965a:97 and 100 (in key to Afrotropical *Trypoxylon*), 124 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Antropov, 1993b:54 (Central African Republic).

ssp. *rectirugosum* Arnold

Trypoxylon latiscutatum rectirugosum Arnold, 1959:316, sex not stated. Syntypes: Tanzania: Rukwa Valley (BMNH). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains).

260. *latro* Menke and Richards

Trypoxylon latro Menke and Richards *in* Matthews, 1983a:152, ♀, ♂. Holotype: ♂, Costa Rica: Puntarenas Province: Corcovado National Park (USNM). – Matthews, 1983:156 (nesting habits: utilizing nests of *Microstigmus comes*); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandãoo, 2019:4 (paratype in Mus. Zool. Univ. São Paulo).

261. *layouanum* Evans

Trypoxylon layouanum Evans, 1972b:16, ♂. Holotype: ♂, Caribbeans: Island of Dominica: Clarke Hall in Layou Valley (USNM). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

262. *leptogaster* Kohl

Trypoxylon leptogaster Kohl, 1894:291, ♂. Holotype: ♂, "West Africa: Eloby" (TMP). – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Arnold, 1924:14 (in revision of southern African *Trypoxylon*), 1930:10 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:93 (Zaire, determination tentative); Leclercq, 1965a:87 and 88 (in key to Afrotropical *Trypoxylon*), 109 (in revision of Afrotropical *Trypoxylon*, Zaire); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains); Antropov, 1993b:54 (Central African Republic).

263. *letiferum* Arnold

Trypoxylon letiferum Arnold, 1946:68, ♀. Holotype: ♀, Zimbabwe: Umtali (SAM). – Leclercq, 1965a:88 (in key to Afrotropical *Trypoxylon*), 111 (bibliographic reference); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains).

264. *leucarthrum* Richards

Trypoxylon leucarthrum Richards, 1934:304, ♀. Holotype: ♀, Trinidad: no specific locality (BMNH). – Vesey Fitzgerald, 1936:114 (the type female was taken collecting mud); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

265. *licimum* Tsuneki

Trypoxylon licimum Tsuneki, 1980b:121, ♀. Holotype: ♀, Philippines: Luzon: Mount Makiling (USNM). – Tsuneki, 1980b:12 (in key to *Trypoxylon* of Philippines; as *licinum*); Nuhn and Menke, 1994:26 (holotype in USNM).

266. *lieftincki* Tsuneki

Trypoxylon lieftincki Tsuneki, 1981a:73, ♀. Holotype: ♀, Indonesia: West Papua (= New Guinea): Vogel Kop: Sorong (RMNH). – Tsuneki, 1981a:8 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

267. *lissonotum* Cameron

Trypoxylon lissonotum Cameron, 1910:152, ♀. Holotype or syntypes: ♀, South Africa: Gauteng: Pretoria (TMP). – Brauns, 1917:241 (type in TMP); Arnold, 1924:19 (in revision of southern African *Trypoxylon*), 1930:10 (in checklist of Afrotropical Sphecidae); de Meillon, 1935:51 (nesting in glass tube of fountain-pen-filler); Leclercq, 1965a:89 (in key to Afrotropical *Trypoxylon*), 115 (bibliographic reference); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

268. *lobatifrons* Tsuneki

Trypoxylon lobatifrons Tsuneki, 1979a:131, ♀. Holotype: ♀, Laos: Wapikhamthong Province: Wapi (Bishop Mus.). – Tsuneki, 1979a:13 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1980b:10 (in key to *Trypoxylon* of Philippines), 103 (Philippines; additional description), 1981d:78 (Hong Kong).

269. *longicorne* Tsuneki

Trypoxylon longicorne Tsuneki, 1977h:18, 20, ♀. Holotype: ♀, Papua New Guinea: Madang Province: Astrolabe Bay: Erima (TMB). – Tsuneki, 1981a:7 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 56 (New Guinea; additional description; description of ♂), 1981f:48 (member of *Trypoxylon apicatum* species group).

270. *longipes* Tsuneki

Trypoxylon longipes Tsuneki, 1979a:42, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:5 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

271. *longipilosum* Tsuneki

Trypoxylon longipilosum Tsuneki, 1979a:77, ♀. Holotype: ♀, India: Madras: Anamalai Hills: Kadamparai (BMNH). – Tsuneki, 1979a:10 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

272. *longiscute*Tsuneki

Trypoxylon longiscute Tsuneki, 1978a:85, ♀ (as *longiscutis*, incorrect original termination). Holotype: ♀, Madagascar in original description, corrected to Makassar in Errata (BMNH). – Tsuneki, 1978a:5 (in key to *Trypoxylon scutatum* species group), 86 (relationships to other species), 1980a:16 (bibliographic reference).

273. *lucidipes* Tsuneki

Trypoxylon naviforme lucidipes Tsuneki, 1980a:17, ♀. Holotype: ♀, Malaysia (East): Sarawak: Semongoh Forest Research Station at 1°25'N, 110°17'E (BMNH). – Tsuneki, 1980a:4 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas); Haneda, Nozaka, Tano, Kurokawa, Murota, and Murota, 2007:53 (Japan: Ryukyu Archipelago: Amami Oshima Islands); Murota and Kurokawa, 2009:14 (Japan: Ryukyu Archipelago: Amami Oshima Islands). – **As *Trypoxylon lucidipes***: Tsuneki, 1981d:4 (full species status); Terayama and Nambu, 2009:9, 29 (in key to Trypoxylini of Japan).

274. *lucidum* Arnold

Trypoxylon lucidum Arnold, 1959:317, ♂. Holotype: ♂, Tanzania: Rukwa Valley (BMNH). – Leclercq, 1965a:95 (in key to Afrotropical *Trypoxylon*), 121 (in revision of Afrotropical *Trypoxylon*; Burundi, Zaire); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

275. *lumpurense* Tsuneki

Trypoxylon lumpurense Tsuneki, 1979a:161, ♀. Holotype: ♀, Malaysia: Kuala Lumpur (BMNH). – Tsuneki, 1979a:15, 16 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1980a:9, 13 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 70 (Borneo; additional description; description of ♂), 1981f:33 (single member of *Trypoxylon lumpurense* species group).

276. *lusingum* Leclercq

Trypoxylon lusingum Leclercq, 1965a:117, ♀. Holotype: ♀, Zaire: Upemba National Park (MRAC). – Leclercq, 1965a:93 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains).

277. *luteocollare* Tsuneki

Trypoxylon luteocollare Tsuneki, 1980b:73, ♀, ♂. Holotype: ♂, Philippines: Mindanao: Butuan (USNM). – Tsuneki, 1980b:8 (in key to *Trypoxylon* of Philippines), 1981f:52 (single member of *Trypoxylon luteocollare* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

278. *luteosignatum* Arnold

Trypoxylon luteosignatum Arnold, 1945:11, ♂, ♀. Syntypes: Madagascar: Behara and Bekily (MNHN). – Leclercq, 1960a:99 (Madagascar); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntype in Bulawayo Museum); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Madl, 2014a:989 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

279. *luzonense* Tsuneki

Trypoxylon luzonense Tsuneki, 1980b:47, ♀, ♂. Holotype: ♂, Philippines: Luzon: Baguio: Mines View Park (originally K. Tsuneki coll., now USNM). – Tsuneki, 1981f:6, 9 (in key to *Trypoxylon* of Philippines), 35 (member of *Trypoxylon varipes* species group); Tano, 1995:45 (holotype in K. Tsuneki collection), 2020:26 (holotype in USNM).

ssp. *nigrum* Tsuneki

Trypoxylon luzonense nigrum Tsuneki, 1980b:50, ♀. Holotype: ♀, Philippines: Mindanao: Zamboanga del Norte: Masawan-Gundawan (Bishop Mus.).

280. *maai* Tsuneki

Trypoxylon maai Tsuneki, 1979a:33, ♂. Holotype: ♂, Malaysia: Pahang: King George V National Park: Kuala Tranggan (Bishop Mus.). – Tsuneki, 1979a:4 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:27 (single member of *Trypoxylon maai* species group).

281. *mabwense* Leclercq

Trypoxylon mabwense Leclercq, 1965a:116, ♀. Holotype: ♀, Zaire: Upemba National Park (MRAC). – Leclercq, 1965a:92 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

282. *maculipes* Tsuneki

Trypoxylon maculipes Tsuneki, 1979a:25, ♀, ♂. Holotype: ♂, Laos: Wapikhamthong Province: Wapi (Bishop Mus.). – Tsuneki, 1979a:3, 4 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:27 (single member of *Trypoxylon maculipes* species group); T. Li and Q. Li, 2010a:241 (in key to *Trypoxylon* of southwestern China), 246 (first record from China: Yunnan: Dehong City: Zhedao Town); Pham and Antropov, 2021:320 (recorded from Vietnam by Tsuneki, 1979a).

283. *maculiventre* Tsuneki

Trypoxylon maculiventre Tsuneki, 1979a:73, ♀, ♂. Holotype: ♀, Malaysia: Penang: Batu Feringgi: Catchment area (BMNH). – Tsuneki, 1979a:9, 10 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), nec Tsuneki, 1979c:6 and 29 (= *Trypoxylon cavum*), 1980a:7 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 44 (Sarawak; additional description), 1981d:64 (Sarawak), 28 (in addition to key of *Trypoxylon* of Indo-Malaysian Region), 1981f:54 (single member of *Trypoxylon maculiventre* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands).

ssp. *sayabouryicum* Tsuneki

Trypoxylon maculiventre sayabouryicum Tsuneki, 1979a:75, ♀. Holotype: ♀, Laos: Sayaboury Province: Sayaboury (Bishop Mus.). – Tsuneki, 1979a:9 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

284. *mafuluense* Tsuneki

Trypoxylon mafuluense Tsuneki, 1981a:40, ♀. Holotype: ♀, Papua New Guinea: Central Province: Mafulu at about 8°30′ S and 147°E (BMNH). – Tsuneki, 1981a:6 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

285. *magrettii* Gribodo

Trypoxylon magrettii Gribodo, 1884b:280, ♂ (as *Magrettii*, incorrect original capitalization). Holotype: ♂, Ethiopia: Metemma (MSNG). – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Kohl, 1906a:201 (species with frontal shield, may be a synonym of *scutigerum* Taschenberg); Arnold, 1924:26 (original description copied); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Penati and Mariotti, 2015:81 (in list of Hymenoptera described by G. Gribodo).

286. *maidli* Richards

Trypoxylon maidli Richards, 1934:285, ♀. Holotype: ♀, Brazil: Pará: Pará, now Belém (NHMW). – Richards, 1936b:458 (Trinidad, variation); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies), Buys, 2003:447 (description of larva, nest, prey); Aguiar and Santos, 2009:51 (nest parasite in Trinidad: *Photocryptus concinnus* (Brullé), an ichneumonid); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

ssp. *bodkini* Richards

Trypoxylon maidli var. *bodkini* Richards, 1934:286, ♀, ♂ (*as Bodkini*, incorrect original capitalization). Holotype: ♀, Guyana: Northwest District, now Barima Waini (BMNH). – Vesey Fitzgerald, 1936:113 (Trinidad: gregarious nesting, nest structure, egg and pupa). – **As *Trypoxylon maidli bodkini***: R. Bohart and Menke, 1976:347 (new status, in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

287. *makassarense* Tsuneki

Trypoxylon makassarense Tsuneki, 1980a:94, ♀. Holotype: ♀, Indonesia: Sulawesi: Makassar (Bishop Mus.). – Tsuneki, 1980a:12 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

288. *makiling* Tsuneki

Trypoxylon makiling Tsuneki, 1980b:29, ♀. Holotype: ♀, Philippines: Luzon: Mount Makiling (USNM). – Tsuneki, 1981b:5 (in key to *Trypoxylon* of Philippines, as *markiling*); Nuhn and Menke, 1994:26 (holotype in USNM).

289. *malaisei* Gussakovskij

Trypoxylon malaisei Gussakovskij, 1932:10, ♀. Syntypes: ♀, Russia: Primorskiy Kray: Sutshan, Sedanka near Vladivostok, and Tigrovaya (NRS). – Gussakovskij, 1936:653 (in revision of Palearctic *Trypoxylon*), 1938:4 (China: Kiangsu Province); Tsuneki, 1956f:120, 122 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:4, 7 (in key to *Trypoxylon* of northeastern Asia), 14 (in revision of *Trypoxylon* of northeastern Asia); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits); Tsuneki, 1967g:44 (Taiwan); Haneda, 1968a:44 (Japan); Itami, 1968a:15 (Japan: Yamagata Prefecture: foot of Mount Iide); Nambu, 1968b:22 (Japan: Saitama Prefecture); Tano, 1968:32 (Japan); Itami, 1969:50 (Japan: Niigata Prefecture); Tsuneki, 1970d:11, 17 (nesting habits), 1970b:9 (central Japan); T. Iida, 1969a:275 (description of mature larva); Nambu, 1972e:90 (Japan: Saitama Prefecture); Suda, 1972b:39 (Japan), 1973:121 (Japan: Yamanashi Prefecture); Nambu, 1973a:150 (Japan: Saitama Prefecture); Tsuneki, 1973e:33, 36 (in key to *Trypoxylon* of Japan, in Japanese), 1973v:150 (prey); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:31 (paralectotype of *Trypoxylon obsonator*); Kazenas, 1980e:90 (Russia: Primorskiy Kray); Tsuneki, 1981d:53 (norheastern Myanmar: Kambaiti), 63 (in key to *Trypoxylon* of Myanmar), 1981e:7, 8 (in key to *Trypoxylon* of Japan and northeastern Asia), 73 (Japan; additional description), 1981f:77 (single member of *Trypoxylon malaisei* species group), 1982b:16 (known from Korea); Paik, 1985:199 (in list of Sphecidae of Korea); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:416 (in key to Sphecidae of Russian Far East); Miyatake, 1996:102 (specimens in Hiroshi Aoki collection); Oku and Nishida, 1999:169 (factors affecting female-biased sex ratio), 2001:550 (30% of nests produced females only, 50% of nests produced males only); Yamane, Ikudome, and Terayama, 1999:526 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Lee and Shin, 2000:24, 25, 27 (Korea: Suwon and Kwangju-gun); Haneda and Inoue, 2003:50 (Japan: Fukui Prefecture: Katsumi in City of Obama); Haneda and Tano, 2003:11 (Japan: Nagasaki Prefecture: Tsushima); Tano, Kurokawa, Murota, and Nozaka, 2003:31 (Japan: Nagasaki Prefecture: Tsushima); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:32 (Japan: Gifu Prefecture); Suda, 2004:40 (Japan: Yamanashi Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:65 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:47 (Japan: Gifu Prefecture); Negoro, Haneda, and Tano, 2005:46 (Japan: Toyama Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2006a:23 (Japan: Toyama Prefecture), 2006b:48 (Japan: Nagasaki Prefecture: Tsushima); Nambu, 2006:247 (Japan: Tokyo: Imperial Palace garden); Nemkov, 2006b:167 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve), 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:87 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Terayama and Nambu, 2009:8, 29 (in key to Trypoxylini of Japan); Ohkusa and Tajima, 2010:12 (Japan: Island of Honshu: Shiga Prefecture); Matsumoto and Makino, 2011:158 (Japan: suburbs of Tokyo; prefers nesting in artificial nests of curtain type rather than bundle type); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); N. Yamamoto, 2013:28 (Japan: mainland Nagasaki Prefecture); J.-K. Kim, 2014:439 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Jeong and J.-K. Kim, 2020:248 (in key to Korean *Trypoxylon* with flask-shaped gastral segment I), 250 (in revision of Korean *Trypoxylon* with flask-shaped gastral segment I).

ssp. *arakanum* Tsuneki

Trypoxylon malaisei arakanum Tsuneki, 1981d:55, ♀. Holotype: ♀, norheastern Myanmar: Kambaiti (NRS). – Tsuneki, 1981d:62 (in key to *Trypoxylon* of Myanmar).

290. *malaiseiellum* Tsuneki

Trypoxylon malaiseiellum Tsuneki, 1981d:43, ♀. Holotype: ♀, norheastern Myanmar: Kambaiti (NRS). – Tsuneki, 1981d:62 (in key to *Trypoxylon* of Myanmar).

291. *malaitae* Tsuneki

Trypoxylon malaitae Tsuneki, 1981a:92, ♀. Holotype: ♀, Solomon Islands: Island of Malaita: northwestern area: Dala (Bishop Mus.). – Tsuneki, 1981a:7 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

292. *malaysianum* Tsuneki

Trypoxylon malaysianum Tsuneki, 1979a:37, ♀. Holotype: ♀, Malaysia: Kedah: Kedah Peak, now Gunung Jerai (BMNH). – Tsuneki, 1979a:5 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

293. *mandibulatum* Richards

Trypoxylon mandibulatum Richards, 1933:214, ♀, ♂. Holotype: ♀, Sri Lanka: Colombo (BMNH). – Richards, 1934:340 (member of *Trypoxylon mandibulatum* species group); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:42 (comparison with *Trypoxylon pygmaeum*), 73 (redescription), 76 (in key to Oriental *Trypoxylon*), 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 53 (India; recognition characters), 1979b:4 (in key to *Trypoxylon* of Sri Lanka), 10 (Sri Lanka), 1981d:7 (Sri Lanka), 24 (India), 19 (in new key to *Trypoxylon* of Sri Lanka), 1981f:32 (member of *Trypoxylon pygmaeum* species group); Mawadda and Girish Kumar, 2023:116 (in checklist of Crabroninae of Northern India).

294. *manni* Richards

Trypoxylon manni Richards, 1934:304, ♀. Holotype: ♀, Brazil: Pará: Pará, now Belém. Paratype: Trinidad (USNM). – Richards, 1936b:462 (corrections to original description); Vesey Fitzgerald, 1936:114 (Trinidad: nest structure); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Hook, Oswald, and Neff, 2010:77 (*Plega hagenella*, a mantispid, feeding on *Hylaeus* (*Hylaeopsis*) sp., a colletid bee that reused empty nest of *Trypoxylon manni*); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

295. *marginatum* Cameron

Trypoxylon marginatum Cameron, 1912a:439, ♂. Holotype or syntypes: ♂, Guyana: Demerara: no specific locality (BMNH). – Richards, 1934:336 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Silvestre, Demétrio, Trad, de Oliveira Lima, Auko, and de Souza, 2014:69 (Brazil: Mato Grosso do Sul: dry forests in Bodoquena Mountain Range and Brazilian Chaco); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro-Alberto, and Delfín-González, 2015:994 (Mexico: in list of Sphecidae *sensu lato* of Yucatán); Trad and Silvestre, 2017:5 (Brazil: Mato Grosso do Sul); Vanoye-Eligio, Meléndez-Ramírez, Ayala-Barajas, Delfin-González, and Horta-Vega, 2019:8 (Mexico: Yucatán).

296. *marginifrons* Cameron

Trypoxylon marginifrons Cameron, 1912b:399, ♀. Holotype: ♀, Zaire: Congo da Lemba (MRAC). – Arnold, 1924:25 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:93 (Zaire); Leclercq, 1965a:90 (in key to Afrotropical *Trypoxylon*), 114 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Antropov, 1993b:54 (Central African Republic).

297. *martium* Tsuneki

Trypoxylon martium Tsuneki, 1979a:111, ♀. Holotype: ♀, Malaysia: Kedah: Kedah Kedah Peak, now Gunung Jerai (BMNH). – Tsuneki, 1979a:12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

298. *massaicum* Cameron

Trypoxylon massaicum Cameron, 1908a:290, ♀. Holotype or syntypes: ♀, Tanzania: Mount Kilimanjaro: Kibonoto (NRS). – Arnold, 1924:25 (original description copied), 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

299. *matheranicum* Tsuneki

Trypoxylon matheranicum Tsuneki, 1979a:126, ♀. Holotype: ♀, India: Maharashtra: Matheran (BMNH). – Tsuneki, 1979a:14 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

300. *mazaruni* Richards

Trypoxylon mazaruni Richards, 1934:308, ♀, ♂. Holotype: ♀, Guyana: Mazaruni River at Tutruba (Guyana Department of Agriculture). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

301. *medipolitum* Tsuneki

Trypoxylon medipolitum Tsuneki, 1979a:54, ♀. Holotype: ♀, Malaysia: Perak: Larut Hills (BMNH). – Tsuneki, 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

302. *medium* de Beaumont

Trypoxylon figulus var. *medium* de Beaumont, 1945:477, ♀, ♂ (as *media*, incorrect original termination). Holotype: ♀, Switzerland: Martigny (Lausanne). – de Beaumont, 1951h:33 (Switzerland: Neuchâtel area; as *figulus* f. *media*); Blüthgen, 1951:234 (is a valid species); Leininger, 1953:17 (Germany: Baden-Württemberg, as *figulus* var. *media*); Grandi, 1954:238 (Italy; as *figulus* f. *media*); Bytinski-Salz, 1956:226 (Turkey: İzmit, Seki, as *figulus* f. *media*); de Beaumont, 1957:388 (Italy: Abruzzi; as *figulus* f. *media*); Zirngiebl, 1957:185 (Germany: Rheinland-Pfalz: Birkenheide); de Beaumont, 1958c:206 (Swiss National Park; as *figulus medium*), 1959a:30 (Italy; as *figulus* f. *media*); Wolf, 1959a:15, 16 (Germany, in key to *Trypoxylon figulus* species group, as *figulus medium*), 1959b:25 (Germany: Nassau); Hoop, 1961:66 (Germany: Schleswig-Holstein; as *figulus medius*); Grandi, 1962:96 (Italy; as *figulus* f. *medium*); de Beaumont, 1964c:84 (in Sphecid Fauna of Switzerland, as *figulus* f. *media*), 1965a:56 (Greece; as *figulus* f. *media*), 1967a:338 (Turkey; as *figulus* f. *media*); Gauss, 1967:554 (Germany: Baden-Württemberg, as f. *media*); de Beaumont, 1969:92 (Turkey; as *figulus* forma *media*); K. Schmidt, 1971b:38 (Germany: Rheinland-Pfalz: Mainzer Sand; as *figulus* f. *media*); Stritt, 1971a:104 (Germany: Baden-Württemberg: Karlsruhe; as *figulus media*); Simon Thomas, 1972:183 (France: Gironde, Lot-et-Garonne; as *figulus* f. *media*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae, as *figulus medium*); Schwammberger, 1979:115 (Germany: Nordrhein-Westfalen: Gildehauser Venn Nature Reserve; as *figulus* form *media*). – **As *Trypoxylon medium***: Tsuneki, 1981e:19 (full species status; additional description), 1981f:80 (member of *Trypoxylon figulus* species group); Leclercq, 1982e:100 (Norway: Hedmark: Osen); Haack, Tscharntke, and Vidal, 1984:133 (Germany: Hamburg area); Lefeber, 1984:29 (Netherlands: Maastricht); Pulawski, 1984:136 (in revision of *Trypoxylon figulus* species group); K. Schmidt, 1984:295 (Germany: Baden-Württemberg); Lefeber, 1985:87 (Netherlands: southern Limburg); Scobiola-Palade, 1985:97 (first record from Romania: delta of Danube); Brechtel, 1986:62 (Germany: Südpfalz, as *Trypoxylon media*); Vikberg, 1986:76 (Finland); Haeseler, 1986b:668 (Germany: Ipweger Moor near Oldenburg); Fitton, Shaw, and Austin, 1987:79 (in list of European Hymenoptera that prey on spiders); K. Schmidt and Westrich, 1987:366 (Germany: Mainz area); Tyrner, 1987:232 (Czechoslovakia: Moravy); Dollfuss, 1988:13, 25 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Felton, 1988:221 (Great Britain: Kent

County; population dynamics); Nilsson, 1988:98 (Sweden); Haeseler, 1988:211 (Germany: Friesian Islands); Riemann, 1988:223 (Germany: Bremen area); Jacobs, 1989:15 (Germany: Mecklenburg-Vorpommern); Pádr *in* Šedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Jacobs and Oehlke, 1990:131 (in key to *Trypoxylon figulus* species group), 1990:173 (new records from Democratic Germany); Kuznetzova, 1990:22 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pagliano, 1990:110 (in catalog of Italian Sphecidae); Schwammberger and Priesner, 1990:541 (Austria: Kärnten); Dollfuss, 1991:123 (in key to Sphecidae of North and Central Europe); Leclercq, 1991a:274 (correction to Leclercq's, 1979, catalog of French and Benelux Sphecidae: *medium* is the correct name); Sorg and Wolf, 1991:195 (Germany: Koppelstein Reserve southeast of Koblenz); Budrys, 1992:30 (in list of Sphecidae of Lithuania); Nilsson, 1992:54 (Sweden); K. Weber, 1992:89 (Germany: Bayern: Bamberg District); Wolf, 1992c:24 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Kuhlmann, 1993:76 (Germany: known from Westfalen); Luig, 1993:45 (Estonia); Negrisolo and Pagliano, 1993:95 (Italy: Sardegna); Felton and Schneider, 1994:290 (Luxemburg); Gathman, Greiler, and Tscharntke, 1994:10 (Germany: colonization of set-aside fields); Theunert, 1994c:52 (Germany: summary of records from Niedersachsen and Bremen); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:87 (Italy: Ferrara Province); Schmid-Egger, 1995:65 (Germany: northwestern Baden-Württemberg); Schmid-Egger, Risch, and Niehuis, 1995:215 (summary of records from Germany: Rheinland-Pfalz Province); Skibińska, 1995:423, 427 (Poland: pine forest in Białowieża Primeval Forest); Arens, 1996:441 (Germany: Bayern: Bayreuth area); Blösch, 1996:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Gusenleitner, 1996a:8 (Austria: Steiermark); Harvey and Plant, 1996:69 (Great Britain: summary of records from Essex); Jakubzik and Cölln, 1996b:401 (Germany: Rheinland-Pfalz); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Saure, 1996:503 (Germany: Berlin-Pankow: sewage irrigation field); Schmid-Egger, K. Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: not endangered); Shlyakhtenok, 1996:304 (Belorussia: Berezinsky Nature Reserve); Tischendorf, 1996:47 (Germany: Hessen: near Bensheim); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg), 111 (locality records); Woydak, 1996:45 (Germany: Westfalen: summary of distribution and nesting habits); Celary, 1997:58 (in checklist of Animals of Poland); K. Schmidt and Schmid-Egger, 1997:32 (in checklist of German Sphecidae); Shlyakhtenok, Blinov, and Belyavskaya, 1997:154 (Belorussia: Pripyatskiy National Park); F. Burger, Saure, and Oehlke, 1998:30 (Germany: in list of Sphecidae of Brandenburg); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km west-southwest of Hamburg); Flügel, 1998:61 (Germany: Brandenburg: Unteres Odertal National Park); Gorobchishin, 1998a:49 (Ukraine: Kiev and surroundings); Haeseler and Ritzau, 1998:51 (Germany: Bremen: Steller Heide); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Lefeber, 1998:182 (Netherlands: Limburg: Sint Pietersberg near Maastricht at 50°50'N 5°41'E); N. Schneider and Wahis, 1998:23 (Luxemburg: sandstone quarries); Tscharntke, Gathmann, and Steffan-Deventer, 1998:719 (trap-nesting in Germany); van der Smissen, 1998:70 (Germany: Niedersachsen, Schleswig-Holstein); K. Weber, 1998:150 (Germany: Bayern: Bamberg area); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); W. Klein, 1999:20, 21 (in improved key to *Trypoxylon* of Benelux); Ljubomirov, 1999b:51 (Bulgaria: Mount Vitosha near Sofia); Luig and Voolma, 1999:179 (Estonia); Majzlan, Rychlík, and Deván, 1999:146 (Slovakia: Čenkovská Step Nature Reserve); Mandery, 1999:106 (Germany: Bayern: Coburg area); Pauly, 1999:109 (in catalog of Belgian aculeates); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:254 (in Sphecid Fauna of Germany); Esenbekova and Kazenas, 2000:41 (southeastern Kazakhstan: seven localities); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Jacobs, 2000:12 (Germany: Land Mecklenburg-Vorpommern: not endangered); M. Mader and Chalwatzis, 2000:61 (Germany: Hessen: Oderwald Mountains); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Vepřek, 2000:235 (Slovakia: Levice, Štúrovo); Zettel, 2000:28

(Austria: Hundsheimer Kogel, Winden am See); Antropov *in* Bitsch et al., 2001:374 (in Sphecid Fauna of Western Europe); Deván, 2001:165 (Slovakia: Krasin Nature Reserve in Biele Karpaty Mountains); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:142 (distribution in Germany by provinces); Schmid-Egger, 2001:17 (France: Alsace: Bollenbergs, erroneously listed under *Tachysphex*); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); van der Smissen, 2001:64 (Germany: Schleswig-Holstein: not endangered); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Beavis, 2002:106 (Great Britain: Kent: Tunbridge Wells area); Archer and Edwards, 2002:102 (Great Britain: West Sussex: Ambersham and Iping commons, as *medidus*); Deván, 2002a:200 (Slovakia: Kobela Nature Reserve near Nové Mesto); Herrmann and Zinnert, 2002:26 (Germany: Baden-Württemberg: Bettenberg near Konstanz); Kazenas, 2002a:85 (geographic distribution, collecting localities in Kazakhstan); Lukáš, 2002:191 (Slovakia: Hájnica hill near Trenčianske Bohuslavice); Mokrousov, 2002:148 (Russia: Nizhniy Novgorod Oblast': Kerzhenskiy Nature Reserve); Shlyakhtenok and Skibinska, 2002:33 (Belorussia: no specific locality); Söderman and Vikberg, 2002:51 (in list of Aculeata of Finland); Steffan-Dewenter, 2002:634 (Germany: Göttingen area); Vischer, 2002:289 (Germany: Sachsen-Anhalt: vineyards in Saale-Unstrut area); Wiśniowski, 2002:70 (Poland: Ojców National Park); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Cölln, Esser, and Jakubzik, 2003:63 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Esenbekova and Kazenas, 2003:6, 8, and 54 (Kazakhstan: foothills of Zailiyskiy Alatau: nesting in artificial nests), 57 (nest structure in artificial nest); Esser and Jakubzik, 2003:291 (Germany: Nordrhein-Westfalen: Niederrheinisches Tiefland); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Erzurum: Pasinler); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Haeseler, 2003:340 (Germany: Niedersachsen: Island of Harriersand near Bremen); Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:71 (Germany: in catalog of wasps and bees of Bayern); Lukáš, 2003:73 (Slovakia: Bratislava: old fruit orchard); Schmid-Egger, 2003:759 (Italy: Sicilia: Amenta, Armerina, Randazzo); von der Heide and Metscher, 2003:103 (Germany: Niedersachsen: Emsland area); Wiśniowski *in* Dylewska and Wiśniowski, 2003:154 (Poland: Ojców National Park); Wolf, 2003:260 (Germany: Nordrhein-Westfalen: Bommecketal Nature Reserve in Plettenberg); Archer, 2004h:44 (Great Britain: Watsonian West Norfolk: Roydon Common); Bergsten, Nilsson, and Hellquist, 2004:7 (Sweden: Västerbotten: Nordmaling); Burger, 2005:36 (Germany: Thüringen); Deván, 2004:148 (western Slovakia); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Kazenas, 2004b:105 (Kazakhstan: western Tien Shan); Klein and Lefeber *in* Peeters, van Achterberg, et al., 2004:429 (in Wasp and Ant Fauna of Netherlands); Majzlan and Deván, 2004:31 (Slovakia: Sekule), 33 (Slovakia: Malacky-Široké); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Shkuratov, 2004a:78 (Russia: Rostov Oblast': village Nedvigovka); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:357 (in catalog of Polish Crabronidae); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:94 (in key to *Trypoxylon* of Poland); Blösch, 2005:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Fuhrmann, 2005:89 (Germany: Nordrhein-Westfalen: Grubengelände Littfeld Nature Reserve); Gathmann, 2005:109 (Germany: Niedersachsen: agricultural landscape near Göttingen; nest parasite: *Melittobia acasta* Walker), Eulophidae); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Jacobs, 2005a:453 (Bulgaria: Krasnovo and Zvechen near Hissarya); Kofler, 2005:174 (Austria: Tirol: Lienz District: Burgertal Pfleger Alm in Assling Common, Aguntum in Dölsach Common, Lavant); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Pagliano and Negrisolo, 2005:420 (in Sphecid Fauna of Italy); Riemann and Hohmann, 2005:567 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:19 (Germany: Berlin); Schmalz, 2005:58 (references to de Beaumont, 1945); Theunert, 2005a:19 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:44 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Ziska and Saure, 2005:82 (Germany: Berlin: Biesenhorster Sand); Gorobchishin, 2006:114

(Ukraine: several localities); Liebig, 2006:40 (Germany: Sachsen: Muskauer Heide); Liška, 2006:89 (Slovakia: Váh river valley near Trenčin); N. Schneider, 2006:140, 142 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:111 (Belorussia: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Vepřek, 2006:512 (Czech Republic: Kokořínsko area); Archer, 2007b:151 (Great Britain: Dorset: Isle of Portland), 2007c:152 (Great Britain: South Devon coast); Beavis, 2007:92 (Great Britain: Tunbridge Wells and Central High Weald); Bitsch, Dollfuss, Bouček, K. Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:461 (first recorded from Sicily by Schmid-Egger, 2003); Cungs, Jakubzik, and Cölln, 2007:141 (Luxemburg: Haardt Nature Reserve); Dvořák, Straka, Smetana, Halada, Vepřek, and Karas, 2007:169 (Czech Republic: Vyšenské Kopce National Nature Reserve); Jacobs, 2007:110, 112 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:26 (Germany: northwestern Sachsen); Saure, 2007:83 (Germany: in checklist of Aculeata of Land Brandenburg); Shlyakhtenok, 2007a:300 (Belorussia: Berezinsky Nature Reserve), 2007b:364 (Ukraine: Chernobyl area); Smit, 2007:653 (first record from Canary Islands: La Gomera: near Vallehermoso); Vago, 2007:175 (France: départements d'Aisne, Nord, Pas-de-Calais, and Somme); Venne, Bleidorn, and Lauterbach, 2007:303 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia), 226 (records from Bohemia and Slovakia were summarized by Vepřek, 2000); Winkler, 2007:30 (Germany: Niedersachsen: eastern Friesland); Dvořák, Bogusch, Malenovský, Bezděčka, Bezděčková, Holý, Liška, Macek, Roller, Říha, Smetana, Straka, and Šima, 2008:67 (Czech Republic: Hády Hill near Brno); Haeseler, 2008:309 (Germany: Friesian Islands); Ljubomirov and Yildirim, 2008:242 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); Protsenko and Drozdovskaya, 2008:127 (Ukraine: Sumy Oblast': Mogritsa and Vakhalivshchina villages); Theunert, 2008:89 (Germany: map of distribution in Niedersachsen and Bremen); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Belkheir, 2009:17 (France: Pyrénées-Orientales: commune d'Eyne); Debuyser and Vago, 2009:5 (in list of Sphecidae *sensu lato* of northern France); Flügel, 2009b:63 (Germany: Hessen: Borken, in inactive open brown coal mine); U. Frommer, 2009a:29 (Germany: in checklist of Sphecidae of Hessen); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:265 (Bulgaria: Maleshevska Planina); Livory, Chevin, Lair, Sagot, and Baldock, 2009:33 (France: Département de la Manche: Fontenay-sur-Mer, Quinévile); Mokrousov, 2009:289 (Russia: Republic Mariy El); Nemkov, 2009b:87 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Pagliano, 2009:185 (Italy: recorded from Sicilia by Schmid-Egger, 2003; France: Corse: La Marana); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Straka, Dvořak, and Bogusch, 2009:266 (Czech Republic: Meandry Smědé Nature Reserve); Archer, 2010a:52 (Great Britain: Watsonian Nottinghamshire: Spalford Warren); Ermilov and Mokrousov: 2010:90 (phoretic mites *Probonomoia pini* and *Schwiebea nova* in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:38 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Hable, Krauss, von der Dunk, and Wickl, 2010:29 (Germany: Bayern: Sulz- and Ottmaringer Tal); Johansson, 2010:121 (Sweden: Småland: upper Emå river valley); Mokrousov, 2010a:62 (Russia: Kirov and Nizhniy Novgorod Oblast's, Mariy El Republic: no specific localities); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:140 (Germany: Bayern: collected along Main-Donau canal); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:102 (Western Slovakia: recorded from Borská Nížina); van der Smissen, 2010a:354 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records; recognition characters), 2010b:388 (France: Ardèche, Drôme, Vaucluse: locality records), 2010c:398 (Sweden: Öland: Gårdby; Södermanland: Jordbro, Ören); Baghirov, 2011b:150 (Russia: Altayskiy Kray: Savvushka; Altay Republic: Kuray); Gogala, 2011:17 (Slovenia); Józan, 2011:181 (in checklist of Sphecidae *sensu lato* of Hungary); Saure, 2011c:199 (Germany: Berlin-Spandau: Fort Hahneberg), 2011d:200 (Germany: Sachsen-Anstalt: conservation area "Heide südlich Burg"); Schmid-Egger, 2011a:40 (France: Parc National du Mercantour: Col de Cayolle, La Foux-d'Allos,

Millefonts, Saorge, Tende, Valmasque); Shlyakhtenok, 2011:95 (Belorussia: city of Minsk); Theunert, 2011a:22 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:179 (Germany: Hessen: not endangered); Ziska and Saure, 2011:110 (Germany: Berlin: Tegeler Flieβ valley); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Burguet *in* Durand and Burguet, 2012:4, fiche 23 (France: Puy-de-Dôme: sands Girauts-Faures in Orléat commune); Franzén, Molander, Norén, and Nilsson, 2012:27 (Sweden: Skäne: Kullaberg Peninsula); Shlyakhtenok, 2012a:172 (Belorussia, and Russia: Kirov Oblast': Arkhangelskoye: collected in private plots), 2012b:92 (Belorussia: Beresina National Reserve: overgrowing dry meadow); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); Johansson, 2013:22 (Sweden: Gotland: Island of Stora Karlsö); Kazenas, 2013:78 (color photograph of female, short information on geographic distribution and nesting habits); Mokrousov, Ruchin, and Egorov, 2013:202 (Russia: Republic of Mordovia: Mordovian State Nature Reserve); Saure, 2013:22 (Berlin: Treptow-Köpenick: Gosener Wiesen); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:177 (in annotated catalog of aculeate wasps of Belorussia); Wiśniowski and Szczepko, 2013:56 (Poland: Kampinos National Park near Warszawa); U. Frommer, 2014:28 (Germany: Hessen: Lorch); Hellqvist, Abenius, and Norén, 2014:92 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Józan, 2014:133 (Croatia: Baške Oštarie); Mokrousov and Vafin, 2014:58 (Russia: Republic of Tatarstan); Olszewski and Pawlikowski, 2014:193 (in key to Polish *Trypoxylon*); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Atbaei, Fallahzadeh, and Ljubomirov, 2015:27 (Iran: Fars Province); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Paukkunen and Kozlov, 2015:63 (Russia: Murmansk Oblast'); P. Rosa and Pagliano, 2015:106 (Italy: Lombardia and Piemonte: Parco del Ticino); Saure, 2015:15 (Germany: Berlin-Lichterfelde); Shorenko, 2015:330 (in list of Sphecidae *sensu lato* of Crimea); Simon, Lorthiois, and Macé, 2015:55 (France: alluvial terraces in Seine-Maritime Department: Anneville-Ambourville); Bleidorn, Gerth, Hopfe, et al., 2016:11 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Else, Bolton, and Broad, 2016:33 (in checklist of Aculeata of Great Britain and Ireland: England, Scotland, Wales); Le Divelec, Chapelin-Viscardi, and Larivière, 2016:109 (northern France: in agricultural landscapes); Mokrousov and Popov, 2016:585 (Russia: Krasnodarskiy Kray); Saure, 2016a:8 (Germany: Brandenburg: Uckermark District: dry slopes near Altgalow-Stützkow), 2016b:50 (Germany: Sachsen-Anhalt: fruit orchards); A. Scholz, 2016:72 (Germany: Sachsen: Kleinraschützer Heide); Stolle and Saure, 2016:925 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Wiśniowski, 2016:131 (Poland: Ojców National Park); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:40 (Turkey: Erzurum and Isparta provinces); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Durand and Burguet, 2017:2 (France: Puy-de-Dôme: Réserve Naturelle Nationale Chastreix-Sancy); Flügel, 2017:6 (Germany: Hessen: Doline and Eschkopf near Rockensüß); Fresno, 2017:151 (Spain: León: Rodiezmo); Jahantigh, Rakhshani; Mokhtari, and Ramroodi, 2017:70 (Iran: known from Fars Province); Jansen, 2017:10 (Germany: Sachsen: Leipzig); Magdalou, 2017:17 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Vallée d'Eyne); Shorenko, 2017:78 (in Crimea collected in May); Nicolas and Vago, 2018:14 (France: Pas-de-Calais: Mont Saint-Frieux); Shorenko, 2018:128 (Crimea, including localities, habitats, and number of specimens); Carminati, Mora, and Cretin, 2019:21 (France: in list of Sphecidae *sensu lato* of Franche-Comté); S. Ivanov, Fateryga, and Zhidkov, 2019:75 (Crimea: reared from trap nests); Ruchin and Antropov, 2019a:1337 (Russia: Mordovia State Nature Reserve); Akulov, Proshchalykin, and Mokrousov, 2020:50 (Russia: central Krasnoyarsk Kray); Kejval, Blažej, and Erhart, 2020:108 (western Czech Republic); Poláček, 2020:59 (Czech Republic: Opava District: Jakartovice: occurring on mine spoil heaps); Saure, 2020:277 (Germany: Sachsen-Anhalt: sand dunes); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:388 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2021:79 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland);

Saure, 2021:83 (Germany: Brandenburg: Nature Reserve Ferbitzer Bruch near Potsdam); Kaplan and Yildirim, 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

Trypoxylon figulus minus var. *rubi* Wolf, 1959a:15, ♂. Lectotype: ♂, Germany: Plettenberg (coll. H. Wolf), designated by Pulawski, 1984:136. Synonymized with *Trypoxylon figulus* forme *media* by de Beaumont, 1964a:291.

As *Trypoxylon figulus minus*: Wolf, 1959a:fig. c, corrected to *Trypoxylon figulus* forme *media* by de Beaumont, 1964a:291.

303. *megriense* Antropov

Trypoxylon megriense Antropov, 1985a:633, ♂. Holotype: ♂, Armenia: Megri (ZMMU). – Antropov, 1991b:681 (in revision of *Trypoxylon attenuatum* species group); Antropov *in* Bitsch et al., 2001:371 (in Sphecid Fauna of Western Europe); Yildirim and Ljubomirov, 2005:1800 (Turkey: Elaziğ: Halköy); Ljubomirov and Yildirim, 2008:242 (in catalog of Crabronidae of Turkey); Guéorguiev and Ljubomirov, 2009:265 (Bulgaria: Maleshevska Planina); Bitsch, 2014:406 (record from Bulgaria noted); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Mokrousov, Proshchalykin, Aliyev, and Maharramov, 2019:20 (Azerbaijan: Nakhichevan Autonomous Republic); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:389 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2021:80 (in catalog of Crabronidae of Turkey), 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

304. *melanocorne* Strand

Trypoxylon melanocorne Strand, 1922b:157, ♀, ♂ (♂ = *Trypoxylon taiwanum*). Syntypes: Taiwan: Kankau (now Hengchun), Tainan, Taihorin, Taihorinsho (DEI). – Strand, 1927:255 (in list of species described by the author); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Tsuneki, 1966b:2, 3 (in key to *Trypoxylon of* Ryukyu Islands and Taiwan), 11 (recognition character based on original description), 1967d:2 (in key to *Trypoxylon* of Taiwan), 11 (Taiwan, redescription), 1971g:5 (Taiwan; recognition characters), 15 (in additional key to females of *Trypoxylon* of Taiwan); Oehlke and Wudowenz, 1974:424 (syntypes in DEI); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1977c:7 (Taiwan: Nantou Prefecture: Pempuchi), 1977j:272 (Taiwan: Taihorinsho), 1981c:9, 10 (in key to *Trypoxylon* of Taiwan), 44 (paratype of *Trypoxylon melanocorne* in BMNH actually is *Trypoxylon taiwanum*; Tsuneki, 1971, correctly interpreted *Trypoxylon melanocorne*), 50 (Taiwan; additional description), 1981f:64 (single member of *Trypoxylon melanocorne* species group); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).

305. *melanurum* Cameron

Trypoxylon melanurum Cameron, 1901d:54, ♂. Lectotype: ♂, India: Maldives Archipelago: Mahlos Atoll: Mamaduwari (BMNH), designated by Tsuneki, 1978b:46. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:338 (member of *Trypoxylon scutatum* species group); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978a:6 (in key to *Trypoxylon scutatum* species group), 41 (redescription, description of ♀), 86 (relationships to other species), 1979a:19 (bibliographic reference), 1979b:3 (in key to *Trypoxylon* of Sri Lanka), 5 (Sri Lanka), 1981d:18 (in new key to *Trypoxylon* of Sri Lanka), 21 (India), 1981f:47 (member of *Trypoxylon melanurum* species group).

Trypoxylon nigricans Cameron, 1889c:267 (nomen nudum; India: Barrackpore). Synonymized with *Trypoxylon pileatum* by Bingham, 1897:224, and with *Trypoxylon melanurum* by Tsuneki, 1978a:41 and 49. – W. Schulz, 1906:212 (not listed by Dalla Torre, 1897); Richards, 1934:338 (member of *Trypoxylon scutatum* species group).

As *Trypoxylon piliatum* [sic]: Cameron, 1889c:119 (in list of Oriental Sphecidae) and 122 (redescription), corrected to *Trypoxylon melanurum* by Tsuneki, 1978a:41 and 49.

306. *membranaceum* Tsuneki

Trypoxylon membranaceum Tsuneki, 1979a:121, ♀, ♂. Holotype: ♀, Singapore (USNM). – Tsuneki, 1979a:13, 15, 17 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979c:9, 11 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 56 (Indonesia: Java, Sumatra), 1980a:12 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 95 (Borneo; additional description), 1981d:30 (first record from Sri Lanka), 1981f:65 (single member of *Trypoxylon membranaceum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

307. *menkei* Tsuneki

Trypoxylon menkei Tsuneki, 1979a:138, ♂. Holotype: ♂, Singapore (USNM). – Tsuneki, 1979a:15 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:63 (single member of *Trypoxylon menkei* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

308. *mico* Tsuneki

Trypoxylon mico Tsuneki, 1979a:94, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:10 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

309. *mindanaonis* Tsuneki

Trypoxylon mindanaonis Tsuneki, 1976b:84, ♀. Holotype: ♀, Philippines: Mindanao: Sapamoro (ZMUC). – Tsuneki, 1976b:94 (in key to female *Trypoxylon* of Philippines),1980b:11 (in key to *Trypoxylon* of Philippines), 105 (Philippines; additional description), 1981a:5 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 21 (New Guinea), 1981b:100 (in key to *Trypoxylon* of Australia), 104 (Australia: Brisbane), 1981d:68 (Australia: Brisbane), 69 (Philippines: Mindanao), 80 (Hong Kong), 1981f:54 (member of *Trypoxylon mindanaonis* species group); Cardale, 1985:265 (in catalog of Australian Sphecidae).

ssp. *bakerianum* Tsuneki

Trypoxylon bakerianum Tsuneki, 1979a:135, ♀. Holotype: ♀, Singapore (USNM). – Tsuneki, 1979a:13 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Nuhn and Menke, 1994:25 (holotype in USNM) – **As *Trypoxylon mindanaonis bakerianum***: Tsuneki, 1980a:2 and 72 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1980b:108 (new status, Philippines, additional description).

310. *miniovatum* Tsuneki

Trypoxylon miniovatum Tsuneki, 1980a:83, ♀, ♂. Holotype: ♀, Sarawak, Mount Mulu (BMNH). – Tsuneki, 1980a:10, 11, 13, 14 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1981f:56 (member of *Trypoxylon errans* species group).

311. *minus* de Beaumont

Trypoxylon figulus var. *minor* de Beaumont, 1945:478, ♀, ♂, incorrect original termination. Holotype: ♀, Switzerland: Cologny near Genève (Lausanne). – de Beaumont, 1951h:33 (Switzerland: Neuchâtel area; as *figulus* f. *minor*); Blüthgen, 1951:234 (as valid species); Leininger, 1953:18 (Germany: Baden-Württemberg, as *figulus* var. *minor)* Bischoff and Stadler, 1954:126 (Germany: Bayern: Romberg; as *figulus minor*); Grandi, 1954:238 (Italy; as *figulus* f. *minor*); Leclercq, 1956i:132 (Luxemburg); Grandi, 1957:388 (Italy: Abruzzi; as *figulus* f. *minor*); de Beaumont, 1959a:30 (Italy; as *figulus* f. *minor*); Wolf, 1959a:15 (Germany, in key to *Trypoxylon figulus* species group, as *figulus minus*), 1959b:25 (Germany: Nassau); Hoop, 1961:66 (Germany: Schleswig-Holstein: Steinfurth; as *figulus minus*); de Beaumont, 1964c:84 (in Sphecid Fauna of Switzerland, as *figulus* f. *minor*), 1967a:338 (Turkey; as *figulus* f. *minor*); Gauss, 1967:554 (Germany: Baden-Württemberg, as f. *minor*); K. Schmidt, 1971b:38 (Germany: Rheinland-Pfalz: Wald, Mainzer Sand; as *figulus* f. *minor*), 1971c:74 (Germany: Schleswig-Holstein; as *figulus minor*); Kofler, 1972:108 (Austria: eastern Tirol; as *figulus* var. *minor*); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae, as *figulus minor*), 628 (is a synonym of *Trypoxylon figulus*); K. Schmidt, 1977:96 (Germany: Baden-Württemberg: Enzklösterle in Schwarzwald;

as *figulus minor*); Schwammberger, 1979:115 (Germany: Nordrhein-Westfalen: Gildehauser Venn Nature Reserve; as *figulus* form *minor*); Salzmann-Wandeler, 1998b:102 (Switzerland: Schwyz Canton: Gersau-Oberholz, as f. *minor*). – **As *Trypoxylon minus***: Leclercq, 1982e:100 (full species status, Norway: Nord-Trøndelag: Røra); Haack, Tscharntke, and Vidal, 1984:134 (Germany: Hamburg area); Lefeber, 1984:29 (Netherlands: Maastricht, as *minor*); Pulawski, 1984:132 (in revision of *Trypoxylon figulus* species group); Jacob-Remacle, 1984:260 (Belgium: urban center of Liège); K. Schmidt, 1984:295 (Germany: Baden-Württemberg); K. Schmidt and Westrich, 1984:240 (Germany: Rheinland-Pfalz: Bad Münster); Haeseler, 1985:351 (Germany: Schleswig-Holstein), 355 (prey); Jacob-Remacle, 1985:408 (Belgium; second occupant in a composite nest); Lefeber, 1985:87 (Netherlands: southern Limburg); Tyrner, 1985:9 (Czech Republic: Jezerka Nature Reserve in Krušné Hory = Erzgebirge); Brechtel, 1986:62 (Germany: Südpfalz, as *Trypoxylon minor*); Jacob-Remacle, 1986:110 (Belgium; trap-nests); Gayubo and Sanza, 1986:55 (Spain: Burgos, Soria); Vikberg, 1986:76 (Finland); Riemann, 1987b:45 (Germany: Niedersachsen: Nature Reserve Voßberge); K. Schmidt and Westrich, 1987:366 (Germany: Mainz area); Tyrner, 1987:232 (Czechoslovakia: first record from Bohemia); Dollfuss, 1988:13, 25 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Düweke, 1988:689 (Germany: Baden-Württemberg: Kaiserstuhl); Felton, 1988:223 (first record from Britain: Kent County: Sittingbourne); Jacobs, 1989:15 (Germany: Mecklenburg-Vorpommern); Pádr *in* Šedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Barbier, Rasmont, and Wahis, 1990:32 (Belgium: Hainaut); Jacobs and Oehlke, 1990:131 (in key to *Trypoxylon figulus* species group), 173 (new records from Democratic Germany); Kuznetzova, 1990:22 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pagliano, 1990:110 (in catalog of Italian Sphecidae); Rohe, 1990:1050 (Germany: Rheinland-Pfalz: Lenneberg forest); Dollfuss, 1991:123 (in key to Sphecidae of North and Central Europe); Leclercq, 1991a:274 (correction to Leclercq's, 1979, catalog of French and Benelux Sphecidae: *minus* is the correct name); Schwammberger and Priesner, 1990:541 (Austria: Kärnten); von der Heide and Witt, 1990:64 (Germany: Niedersachsen); Negrisolo, 1991:319 (Italy: Gorizia and Treviso provinces); Nilsson, 1991:83 (Sweden: Lake Mälaren); N. Schneider, 1991:93 (Luxemburg), 108 (nest structure); Sorg and Wolf, 1991:195 (Germany: Koppelstein Reserve southeast of Koblenz); Budrys, 1992:30 (in list of Sphecidae of Lithuania); Cölln and Jakubzik, 1992:87 (nest parasite: ichneumonid *Perithous divinator* Rossi), 89 (Germany: Rheinland; reared from twigs of *Rubus*); Nilsson, 1992:54 (Sweden); N. Schneider and Jacob-Remacle, 1992:44 (Luxemburg), 54 (nest structure); K. Weber, 1992:89 (Germany: Bayern: Bamberg District); Wolf, 1992c:24 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Gorobchishin, 1993:47 (Ukraine: Kanev Nature Reserve); Jakubzik and Cölln, 1993b:92 (Germany: Nordrhein-Westfalen: raised from artificial nests); Kuhlmann, 1993:76 (Germany: known from Westfalen); Luig, 1993:44 (Estonia); Sorg, 1993:407 (Germany: Rheinland-Pfalz: Nature Reserve Ahrschleife bei Altenahr); Sorg and Wolf, 1993:61 (Germany: Rheinland-Westfalen: Nature Reserve Die Spey); Wiśniowski, 1993a:97 (Poland: in checklist of Sphecidae of Białowieża Primeval Forest); Gayubo and Borsato, 1994:210 (Italy: Veneto); Junck, Schoos, and Schoos, 1994:96 (Luxemburg: Bettendorf); U. Peters, Sohmen, Stuke, and Prüter, 1994:66 (Germany: Schleswig-Holstein: gardens in Hof Möhr); Schmid-Egger, 1994a:688 (Germany: Rheinland-Pfalz: Höllenberg near Grünstadt); Theunert, 1994c:52 (Germany: summary of records from Niedersachsen and Bremen); Tormos, Asís, and Gayubo, 1994:188, 211 (Spain: Albacete Province); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:87 (Italy: Ferrara Province); Schmid-Egger, 1995:65 (Germany: northwestern Baden-Württemberg); Schmid-Egger, Risch, and Niehuis, 1995:215 (summary of records from Germany: Rheinland-Pfalz Province); Shlyakhtenok, 1995:194 (Belorussia: Berezinsky Nature Reserve); Skibińska, 1995:423, 427 (Poland: pine forest in Białowieża Primeval Forest); Arens, 1996:441 (Germany: Bayern: Bayreuth area); Blösch, 1996:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Jakubzik and Cölln, 1996b:401 (Germany: Rheinland-Pfalz); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Schmid-Egger, K. Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: not endangered); Tischendorf, 1996:47

(Germany: Hessen: near Bensheim); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg); Woydak, 1996:45 (Germany: Westfalen: summary of distribution and nesting habits); Celary, 1997:58 (in checklist of Animals of Poland, as *minor*); K. Schmidt and Schmid-Egger, 1997:32 (in checklist of German Sphecidae); Shlyakhtenok, Blinov, and Belyavskaya, 1997:154 (Belorussia: Pripyatskiy National Park); Blösch, 1998:169 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); F. Burger, Saure, and Oehlke, 1998:30 (Germany: in list of Sphecidae of Brandenburg); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km west-southwest of Hamburg); Flügel, 1998:61 (Germany: Brandenburg: Unteres Odertal National Park); Gorobchishin, 1998a:49 (Ukraine: Kiev and surroundings), 1998b:54 (Ukraine: Sumy Oblast': Vakalivshchina); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Kuhlmann, 1998:71 (nest parasite: *Histiogaster* sp., an acarid), 73 (nest parasite: *Uroobovella flagelliger* (Berlese, 1910), an urodinychid acarid); Lefeber, 1998:182 (Netherlands: Limburg: Sint Pietersberg near Maastricht at 50°50'N 5°41'E); N. Schneider and Wahis, 1998:23 (Luxemburg: sandstone quarries); H.-J. Schulz, 1998c:113 (Germany: Lausitz: former military training area near Mücka); Tscharntke, Gathmann, and Steffan-Deventer, 1998:719 (trap-nesting in Germany); van der Smissen, 1998:71 (Germany: Mecklenburg-Vorpommern, Niedersachsen, Schleswig-Holstein); K. Weber, 1998:150 (Germany: Bayern: Bamberg area); Cölln and Jakubzik, 1999:29 (Germany: Rheinland-Pfalz: Keuper-Scharren southwest of Hungerburg); Dorow, 1999:573 (Germany: Hessen: Niddahänge east of Rudingshain Forest Reserve); Erhardt, 1999:75 (Germany: Niedersachsen: Ammerland area); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Gusenleitner, 1999:599.(Austria: Vorarlberg); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); W. Klein, 1999:20, 21 (in improved key to *Trypoxylon* of Benelux); Ljubomirov, 1999b:52 (Bulgaria: Mount Vitosha near Sofia); Löhr, 1999:62 (Germany: Hessen: Mücke-Merlau near Gemünden); Luig and Voolma, 1999:179 (Estonia); Mandery, 1999:106 (Germany: Bayern: Coburg area); Neumayer, Schwarz, and Bregant, 1999:226 (Austria: in checklist of Sphecidae of Land Kärnten); Pauly, 1999:109 (in catalog of Belgian aculeates); Salzmann-Wandeler and Rezbanyai-Reser, 1999:101 (Switzerland: Tessin: Monte Generoso); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:256 (in Sphecid Fauna of Germany); Flügel, 2000:46 (Germany: Hessen: Halberg near Neumorschen); Gibbs, 2000:13 (Great Britain: Bristol: Troopers Hill); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Jacobs, 2000:12 (Germany: Land Mecklenburg-Vorpommern: not endangered); M. Mader and Chalwatzis, 2000:61 (Germany: Hessen: Oderwald Mountains); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); M. Schwarz, 2000:11 (Austria: Oberösterreich: city of Linz area); Shkuratov, 2000:59 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Vepřek, 2000:235 (Czech Republic: several localities); Wiśniowski, 2000:161 (Poland: Bieszczady Mountains); Antropov *in* Bitsch et al., 2001:374 (in Sphecid Fauna of Western Europe); Cungs and Jakubzik, 2001:122, 123 (Luxemburg); Deván, 2001:165 (Slovakia: Krasin Nature Reserve in Biele Karpaty Mountains); Dillier and Neumeyer, 2001:29, 33 (Switzerland: delta of Reuss River on Lake Uri); Dorow, 2001:136 (Germany: Hessen: Schönbuche Forest Reserve); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia, as *minor*); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:142 (distribution in Germany by provinces); Salzmann-Wandeler and Rezbanyai-Reser, 2001:157 (Switzerland: Tessin Canton: Meride area); Schmid-Egger, 2001:17 (France: Alsace: Bollenbergs, erroneously listed under *Tachysphex*); Shlyakhtenok and Agunovich, 2001:144 (Belorussia: Berezinskiy Nature Reserve); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); van der Smissen, 2001:64 (Germany: Schleswig-Holstein: not endangered); Zettel, Gross, and Mazzucco, 2001:73 (Austria: Wien); Bergsten, Hoffsten, and Hellqvist, 2002:38 (Sweden: Hälsingland: Övre Tälningsån); Bieri, 2002:79 (Liechtenstein); Deván, 2002a:200 (Slovakia: Kobela Nature Reserve near Nové Mesto), 2002b:204 (Slovakia: Prepadlisko); Dorow, 2002:16 (Germany: Hessen: Weiherskopf Forest Reserve); Esser and Cölln, 2002:1137 (southwestern Germany: Eifel region); Kazenas, 2002a:85 (geographic distribution, collecting localities in Kazakhstan);

Kuhlmann, 2002:66 (Germany: Bayern: National Park Bayerischer Wald); Lukáš, 2002:191 (Slovakia: Hájnica hill near Trenčianske Bohuslavice); Martínez de Murguia, Vázquez, and Nieves Aldrey, 2002:202 (Spain: Navarra: Artikutza Forest Reserve at 43°09'28"–43°14'52"N 0°1'45'35"–01°49'30"E); C. Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shlyakhtenok and Skibinska, 2002:33 (Belorussia: no specific locality); Söderman and Vikberg, 2002:51 (in list of Aculeata of Finland); Vischer, 2002:289 (Germany: Sachsen-Anhalt: vineyards in Saale-Unstrut area); Wiśniowski, 2002:70 (Poland: Ojców National Park); Wurst and Schweigert, 2002:70 (France: Cevennes); Ziska, 2002:9 (Germany: Berlin-Köpenick: Krumme Lake); Baugnée, 2003:64 (Belgium: Namur: Ri d'Hôwisse); Bergsten, Ekerholm, Hellquist, Hilszczanski, Nilsson, Pettersson, and Werner, 2003:71 (Sweden: Västerbotten: Romelsön Island); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Cölln, Esser, and Jakubzik, 2003:63 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Flügel, 2003:9 (Germany: Hessen: Knüllwald); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Haeseler, 2003:340 (Germany: Niedersachsen: Island of Harriersand near Bremen); Kuhlmann and Quest, 2003:51 (Germany: Bayern: Bayerischer Wald National Park); Kula and Tyrner, 2003a:150 (Czech Republic: Děčin Sandstone Uplands: forest district Snežnik: birch stands in air-polluted area), 2003b:204 (Northern Czech Republic: spruce stands in air-polluted region); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Steffan-Dewenter and Leschke, 2003:1966 (Germany: Niedersachsen: orchard meadows); Wiśniowski *in* Dylewska and Wiśniowski, 2003:154 (Poland: Ojców National Park); Wiśniowski and Werstak, 2003:77 (Poland: Pieniny National Park); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:71 (Germany: in catalog of wasps and bees of Bayern); Schmid-Egger, 2003:759 (Italy: Sicilia: Milo); von der Heide and Metscher, 2003:103 (Germany: Niedersachsen: Emsland area); Budrienė, Budrys, and Nevronytė, 2004:22 (Lithuania: nesting in trap nests); Deván, 2004:148 (western Slovakia); Dorow, 2004a:127 (Germany: Hessen: Schönbuche Nature Reserve); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:264 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gorobchishin and Protsenko, 2004:40 (Ukraine: Kherson Oblast': Chernomorskiy Nature Reserve); Hellrigl, 2004a:173 (Italy: first record from Trentino-Alto Adige, as Südtirol: Tschögglberg); Jakubzik, Niehuis, and Cölln, 2004:458 (Germany: Rheinland-Pfalz: Roβstein in Rhein valley at 50°06'42"N 7°43'87"E); Kazenas, 2004b:105 (Kazakhstan: western Tien Shan); Klein and Lefeber *in* Peeters, van Achterberg, et al., 2004:430 (in Wasp and Ant Fauna of Netherlands); Salzmann-Wandeler and Rezbanyai-Reser, 2004:27 (central Switzerland); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Shkuratov, 2004a:78 (Russia: Rostov Oblast'), 2004b:167 (Russia: Rostov Oblast': Gosudarstvennyi Muzey-Zapovednik M.A. Sholokhova); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:357 (in catalog of Polish Crabronidae); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:46 and 61 (in checklist of Polish Sphecidae); Wiśniowski and Szczepko, 2004:95 (in key to *Trypoxylon* of Poland); Bergsten, Ekerholm, Gabrielsson, Hellquist, Petersson, Werner, Ström, Chauvet, and Dalecky, 2005:16 (Sweden: Västerbotten: Bjuröklubbs Nature Reserve); Blösch, 2005:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Burger, 2005:36 (Germany: Thüringen); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Gathmann, 2005:108 (Germany: Niedersachsen: agricultural landscape near Göttingen; nest parasite: *Chrysis cyanea* Linnaeus), Chrysididae), 109 (nest parasite: *Melittobia acasta* Walker), Eulophidae), 110 (nest parasite: *Nematopodius debilis* (Ratzeburg), Ichneumonidae); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Jacobs, 2005a:453 (Bulgaria: Banderitsa in Pirin Mountains, Sandanski); Kofler, 2005:174 (Austria: Tirol: Lienz District: several localities); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Pagliano and Negrisolo, 2005:421 (in Sphecid Fauna of Italy); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Riemann and Hohmann, 2005:567 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:19 (Germany: Berlin); Schmalz,

2005:58 (references to de Beaumont, 1945); Shorenko, 2005a:164 (Ukraine: Crimea); Theunert, 2005a:19 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:44 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Wiśniowski, 2005a:312 (Poland: Ojców National Park; occurring in all biotopes); Ziska and Saure, 2005:82 (Germany: Berlin: Biesenhorster Sand); Dvořák, Bogusch, and Smetana, 2006:103 (Czech Republic: Sumava = Bohemian Forest); U. Frommer, 2006:37 (Germany: Hessen: Runkel area); U. Frommer and Tischendorf, 2006:90 (Germany: Hessen: Schlüchterner Becken); Gorobchishin, 2006:114 (Ukraine: several localities); Kroupa, 2006b:26 (Germany: Bayern: Oberfranken Region); Liebig, 2006:40 (Germany: Sachsen: Muskauer Heide); Liška, 2006:89 (Slovakia: Váh river valley near Trenčin); Ljubomirov, 2006:54 (Bulgaria: Rhodope Mountains: earlier records summarized); Magdalou, 2006a:7, 10 (France: Pyrénées-Orientales: Réserve Naturelle de la Massane); N. Schneider, 2006:140, 142 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:111 (Belorussia: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund), 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Vepřek, 2006:512 (Czech Republic: Kokořínsko area); Baños-Picón, Gayubo, Asís, and González, 2007:257, 259 (Spain: Zamora: Cabañas de Aliste); Burguet, 2007:unnumbered p. 27 (France: Puy-de-Dôme: sands Girauds-Faures in Orléat commune); Cungs, Jakubzik, and Cölln, 2007:141 (Luxemburg: Haardt Nature Reserve); Dorow, 2007:263 (Germany: Hessen: Niddahänge and Schönbuche Forest Reserves); Flügel, 2007:40 (Germany: Hessen: Halberg near Neumorschen); Hallin, 2007b:25 (Sweden: Blekinge County); Herrmann, 2007b:96 (Germany: Baden-Württemberg: Fürstenberg in Konstanz); Jacobs, 2007:110, 112 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:26 (Germany: northwestern Sachsen); Kowalczyk and Nadolski, 2007:284 (Łódź: railway areas); Shlyakhtenok, 2007a:300 (Belorussia: Berezinsky Nature Reserve), 2007b:364 (Ukraine: Chernobyl area); G. Turrisi and R. Turrisi, 2007:122 (Italy: Sicilia: Mount Etna: Botanical Garden Nuova Gussonea and vicinity); Vago, 2007:175 (France: départements du Nord and Pas-de-Calais); Venne, Bleidorn, and Lauterbach, 2007:303 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia), 226 (records from Moravia and Slovakia were summarized by Vepřek, 2000); Yildirim and Ljubomirov, 2007:120 (Turkey: Artvin: Borçka: Karagöl); Bogusch, 2008:7 (Czech Republic: Buzice); Dvořák, Bogusch, Malenovský, Bezděčka, Bezděčková, Holý, Liška, Macek, Roller, Říha, Smetana, Straka, and Šima, 2008:67 (Czech Republic: Hády Hill near Brno); Gayubo, González, Tormos, and Asís, 2008:139 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Heneberg, Bogusch, and Řehounek, 2008:unnumbered p. 7 (Czech Republic: sandpits); Ljubomirov and Yildirim, 2008:243 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); Protsenko and Drozdovskaya, 2008:127 (Ukraine: Sumy Oblast': Vakhalivshchina village); Theunert, 2008:90 (Germany: map of distribution in Niedersachsen and Bremen); Zettel, Zimmermann, Sorger, and Wiesbauer, 2008:5 (Austria: Wien); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Belkheir, 2009:17 (France: Pyrénées-Orientales: commune d'Eyne); Burguet, 2009:15 (France: Département de Puy-de-Dôme: Bois de la Comté); Debuyser and Vago, 2009:5 (in list of Sphecidae *sensu lato* of northern France); Donie, 2009:10 (Germany: Niedersachsen: Oldenburg); Dvořák, Bogusch, and Smetana, 2009:82 (Czech Republic: Králický Sněžnik National Nature Reserve); Flügel, 2009b:63 (Germany: Hessen: Borken, in inactive open brown coal mine); U. Frommer, 2009a:29 (Germany: in checklist of Sphecidae of Hessen); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:265 (Bulgaria: Maleshevska Planina); Józan, 2009:166 (Croatia: Baške Oštarie); Livory, Chevin, Lair, Sagot, and Baldock, 2009:33 (France: Département de la Manche); Mokrousov, 2009:289 (Russia: Republic Mariy El); Nemkov, 2009b:88 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Pagliano, 2009:185 (Italy: Molise: Campolieto); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Straka, Dvořak, and Bogusch, 2009:266 (Czech Republic: Jizerské Mountains and Frýdlant region); Szczepko and Wiśniowski, 2009:72 (Po-

land: Spała Landscape Park); Burguet *in* Durand and Burguet, 2010:57 (France Département d'Ardèche: Ardèche Gorges); Hable, von der Dunk, and Knipfer, 2010:66 (Germany: Bayern: vicinity of Dietfurt); Johansson, 2010:121 (Sweden: Småland: upper Emå river valley); J. Neumayer, 2010:335 (Austria: Niederösterreich: Thayatal National Park); Saure, 2010a:88 (Germany: Berlin-Reinickendorf: Baumberge), 2010b:175 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: relatively common); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:102 (Western Slovakia: recorded from Borská Nížina); Baghirov, 2011b:150 (Russia: Altay Republic: Kuray); Ermilov and Mokrousov: 2010:91 (phoretic mites *Acarus psenuli*, *Copronomoia recondite*, and *Schwiebea nova* in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:38 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Hable, Krauss, von der Dunk, and Wickl, 2010:29 (Germany: Bayern: Sulz- and Ottmaringer Tal); Jakubzik and Cölln, 2010:1188 (Germany: Rheinland-Pfalz: Bruchertseifen near Altenkirchen); Mokrousov, 2010a:62 (Russia: Kirov and Nizhniy Novgorod Oblast's, Chuvash Republic, Mariy El Republic, Republic of Mordovia, Tatarstan: no specific localities); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:141 (Germany: Bayern: collected along Main-Donau canal); Treiber, 2010:136 (France: Département du Bas-Rhin); van der Smissen, 2010a:355 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern), 2010b:388 (France: Ardèche, Drôme, Gard, and Vaucluse), 2010c:398 (Sweden: Öland: Rönnerum; Södermanland: Rassa); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire), 501 (exclusive species of burned areas); Gogala, 2011:17 (Slovenia); Józan, 2011:181 (in checklist of Sphecidae *sensu lato* of Hungary); Mokrousov, Berezin, and Egorov, 2011:77 (Russia: Chuvash Republic); Saure, 2011a:7 (Germany: Berlin: former airport Tempelhof), 2011c:199 (Germany: Berlin-Spandau: Fort Hahneberg), 2011d:200 (Germany: Sachsen-Anstalt: conservation area “Heide südlich Burg”); Schmid-Egger, 2011a:40 (France: Parc National du Mercantour: Col de Cayolle, Fontan, Isola, La Bollène, L’Authion, Le Pra, Saint Sauveur; and Italy: Parco delle Alpi Marittime: Brignola, Lago Rovine), 2011c:557 (Austria: Tirol: Tiroler Lech Nature Park); Shlyakhtenok, 2011:95 (Belorussia: city of Minsk); Theunert, 2011a:22 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:180 (Germany: Hessen: not endangered); Ziska and Saure, 2011:110 (Germany: Berlin: Tegeler Flieβ valley); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Burguet *in* Durand and Burguet, 2012:4 (France: Puy-de-Dôme: sands Girauts-Faures in Orléat commune); Cölln, Jakubzik, and Kinkler, 2012:25 (Germany: Nordrhein-Westfalen: Leverkusen); Franzén, Molander, Norén, and Nilsson, 2012:27 (Sweden: Skäne: Kullaberg Peninsula); Gerth, Mayer, Hering, Wolf, Schaffer, and Bleidorn, 2012:9 (Germany: Sachsen: Bienitz in Leipzig); Hellrigl, 2012:129 (Italy: Provincia Autonoma di Bolzano-Alto Adige, as Südtirol); Larivière, Chapelin-Viscardi, and Maillet-Mezeray, 2012:296 (France: Essonne: Boigneville and Maisse, and Loiret: Erceville); Saure, 2012b:230 (Germany: Berlin-Spandau: Spandauer Forst); Shlyakhtenok, 2012a:172 (Belorussia, and Russia: Kirov Oblast': Arkhangelskoye, and Krasnaya Polana near Sochi: collected in private plots); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Flügel, 2013a:120 (Germany: Brandenburg: Pimpinellenberg near Oderberg), 2013c:303 (Germany: Hessen: Kassel); Johansson, 2013:22 (Sweden: Gotland: Island of Stora Karlsö); Mokrousov, Ruchin, and Egorov, 2013:202 (Russia: Republic of Mordovia: Mordovian State Nature Reserve); Saure, 2013:22 (Berlin: Treptow-Köpenick: Gosener Wiesen); A. Scholz and Liebig, 2013:28 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:178 (in annotated catalog of aculeate wasps of Belorussia); Vieira, Oliveira, Brewster, and Gayubo, 2013:18 (Portugal: Douro International Natural Park and Serras de Aire e Candeeiros Natural Park); Wiśniowski and Szczepko, 2013:57 (Poland: Kampinos National Park near Warszawa); Zettel, Zimmermann, and Wiesbauer, 2013:12 (Austria: Wien: Donaupark); Bitsch, 2014:406 (France: Vaucluse: Lourmarin, mont Ventoux, Villelaure); Flügel, 2014:255 (Brandenburg: Hangelsberger Heide); U. Frommer, 2014:28 (Germany: Hessen: Lorch); U.

Frommer, M. Niehuis, and O. Niehuis, 2014:1323 (Germany, Hessen: Roβstein); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Józan, 2014:133 (Croatia: Rovini: Mošćenice); Mokrousov and Vafin, 2014:58 (Russia: Republic of Tatarstan); Olszewski and Pawlikowski, 2014:193 (in key to Polish *Trypoxylon*); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Bogusch, Astapenková, and Heneberg, 2015:6 (Czech Republic: reared from galls of *Lipara* sp., Chloropidae), 11 (nest structure); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Mokrousov and Egorov, 2015:425 (Russia: Republic of Mordovia: Nature State Reserve Prisurskiy); Pärn, Soon, Vallisoo, Hovi, and Luig, 2015:94 (Estonia: no specific locality), 95 (*Trichrysis cyanea* (Linnaeus) is nest parasite); Saure, 2015:15 (Germany: Berlin-Lichterfelde); Shorenko, 2015:330 (in list of Sphecidae *sensu lato* of Crimea); Simon, Lorthiois, and Macé, 2015:55 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine and Seine-Maritime Department: Anneville-Ambourville); Blažej, Macek, and Trýzna, 2016:129 (Czech Republic: České Švýcarsko = Bohemian Switzerland National Park); Bleidorn, Gerth, Hopfe, et al., 2016:11 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Else, Bolton, and Broad, 2016:34 (in checklist of Aculeata of Great Britain and Ireland: England); Le Divelec, Chapelin-Viscardi, and Larivière, 2016:109 (northern France: in agricultural landscapes); Mokrousov and Popov, 2016:585 (Russia: Abkhazia, Krasnodarskiy Kray); Saure, 2016a:8 (Germany: Brandenburg: Uckermark District: dry slopes near Altgalow-Stützkow), 2016b:50 (Germany: Sachsen-Anhalt: fruit orchards), 1916c:205 (Germany: center of Berlin: Groβer Tiergarten Park); A. Scholz, 2016:72 (Germany: Sachsen: Kleinraschützer Heide); Stolle and Saure, 2016:925 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Wiśniowski, 2016:131 (Poland: Ojców National Park); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:40 (Turkey: Tunceli: Mazgirt: Kalaycı); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Burguet and Durand, 2017:9 (France: Puy-de-Dôme: basin of river Crouël); Di Giovanni, Mei, and Cerretti, 2017:73 (Italy: Lombardia: Riserva Naturale Bosco della Fontana 5 km from Mantova at 45°12'N 10°44'E, found in canopy and understory); Flügel, 2017:6 (Germany: Hessen: Doline near Rockensüß); Jansen, 2017:10 (Germany: Sachsen: Leipzig); Magdalou, 2017:17 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Forêt de la Massane, Julols, Vallée d'Eyne); Říha, 2017:175 (Czech Republic: Brno); Shorenko, 2017:78 (in Crimea collected in July); Tosser, Chapelin-Viscardi, and Le Divelec**,** 2017:31 (France; found in agricultural landscape); Twerd, Krzyżyński, Waldon-Rudzionek, and Olszewski, 2017:7 (Poland: Inowroclaw and Janikowo: nesting in postindustrial soda ash dumping sites); Creutzburg, Winter, Baumbach, and Ssymank, 2018:216 (Germany: Thüringen: Wachsenburg Nature Reserve); Kraus and Wickl, 2018: (Germany: Bayern: Nürnberg); Lett, 2018:203 (France: Loir-et-Cher: Gièvres at 47°16'39"N 1°41'52"E); Shorenko, 2018:128 (Crimea, including localities, habitats, and number of specimens); Carminati, Mora, and Cretin, 2019:21 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Olszewski and Kowalczyk, 2019:112 (northern Poland: Pomorze Gdańskie = Gdańsk Pomerania); Ruchin and Antropov, 2019a:13237 (Russia: Mordovia State Nature Reserve); Kejval, Blažej, and Erhart, 2020:108 (western Czech Republic); Poláček, 2020:59 (Czech Republic: Opava District: Jakartovice: occurring on mine spoil heaps); Saure, 2020:277 (Germany: Sachsen-Anhalt: sand dunes); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:390 (in revision of Sphecidae *sensu lato* of Europe); Cross, Baldock, and Wood, 2021:56 (in catalog of Sphecidae *sensu lato* of Portugal); Herb and Schmid-Egger, 2021:9 (Germany: Bayern: Kaufbeuren area); Kaplan and Yildirim, 2021:80 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland); Saure, 2021:83 (Germany: Brandenburg: Nature Reserve Ferbitzer Bruch near Potsdam); Saure and Marten, 2021:136 (Germany: Sachsen-Anhalt: Nationalpark Harz); Jakubzik and Cölln, 2022:11 (Germany: Rheinland-Pfalz: Moselle River valley between Drohn and Kattenes); Bogusch and Heneberg, 2022:985 (reared from artificial *Lipara* nests in Czech Republic); Japoshvili and Ljubomirov, 2022:277 (Georgia: Lagodekhi Protected Areas); U. Frommer and Bahmer, 2023:195 (Germany: Hessen: Giessen University Botanical Garden and city gardens); Kaplan and Yildirim, 2023:1688 (in checklist

of Sphecidae *sensu lato* of Turkey); Langfeld, 2023:61 (Germany: Mecklenburg-Vorpommern: Baltic island Greifswalder Oie).

312. *minutum* Tsuneki

Trypoxylon minutum Tsuneki, 1979a:67, ♀. Holotype: ♀, Laos: Sayaboury Province: Sayaboury (Bishop Mus.). – Tsuneki, 1979a:8 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

313. *mishimaense* Tsuneki

Trypoxylon mishimaense Tsuneki, 1986:28, ♂ (as *mishimaensis*, incorrect original spelling). Holotype: ♂, Japan: Shizuoka Prefecture: Mishima (originally K. Tsuneki coll., now Hyogo Mus.). – Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.); Terayama and Nambu, 2009:10, 29 (in key to Trypoxylini of Japan).

314. *mojuba* Amarante

Trypoxylon mojuba Amarante, 1995:157, ♀. Holotype: ♀, Brasil: Amazonas: Manaus: Fazenda Esteio at 2°24'S 59°44'W (Mus. Zool. Univ. São Paulo). – Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:4 (holotype in Mus. Zool. Univ. São Paulo).

315. *moluccanum* Tsuneki

Trypoxylon moluccanum Tsuneki, 1980a:73, ♀. Holotype: ♀, Indonesia: South Moluccas: Island of Ambon (RMNH). – Tsuneki, 1980a:10 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

316. *montivagum* Arnold

Trypoxylon montivagum Arnold, 1940:102, ♀. Holotype: ♀, Zimbabwe: Vumbu Mountains: no specific locality (SAM). – Leclercq, 1965a:93 (in key to Afrotropical *Trypoxylon*), 118 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

317. *moraballi* Richards

Trypoxylon moraballi Richards, 1934:313, ♀. Holotype: ♀, Guyana: Essequibo River at Moraballi Creek (BMNH). Paratype: Brazil. – Richards, 1934:346 (nest site and structure); Vesey Fitzgerald, 1936:114 (the type female emerged from the same nest as this of *Trupoxylon cocorite*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

ssp. *boliviense* Richards

Trypoxylon moraballi var. *boliviense* Richards, 1934:314, ♀ (as *Boliviense*, incorrect original capitalization). Holotype: ♀, Bolivia: Santa Cruz (NHMW). – **As *Trypoxylon moraballi boliviense***: R. Bohart and Menke, 1976:347 (new status, in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

318. *morobense* Tsuneki

Trypoxylon morobense Tsuneki, 1981a:59, ♀. Holotype: ♀, New Guinea: Morobe District: Wau (Bishop Mus.). – Tsuneki, 1981a:8 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

319. *mulusanum* Tsuneki

Trypoxylon mulusanum Tsuneki, 1980a:32, ♀. Holotype: ♀, Sarawak, Mount Mulu (BMNH). – Tsuneki, 1980a:5, 6 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

320. *mutilatum* Richards

Trypoxylon mutilatum Richards, 1934:296, ♀. Holotype: ♀, Bolivia: no specific locality (NHMW). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

321. *myitkyinae* Tsuneki

Trypoxylon myitkyinae Tsuneki, 1981d:49, ♂. Holotype: ♂, Myanmar: Myitkyina (NRS). – Tsuneki, 1981d:62 (in key to *Trypoxylon* of Myanmar), 1981f:76 (single member of *Trypoxylon myitkyinae* species group).

322. *nambui* Tsuneki

Trypoxylon nambui Tsuneki, 1966f:1, ♀, ♂. Holotype: ♂, Japan: Saitama Prefecture: Hodosan (originally K. Tsuneki coll., now USNM). – Haneda, 1968b:55 (Japan: Nagano Prefecture: Ina District); Nambu, 1968b:23 (Japan: Saitama Prefecture), 1972a:9 (nesting habits), 1972e:90 (Japan: Saitama Prefecture), 1973a:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 37 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981e:4, 5 (in key to *Trypoxylon* of Japan and northeastern Asia), 32 (Japan; additional description), 1981f:37 (member of *Trypoxylon pacificum* species group); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Suda, 2004:41 (Japan: Yamanashi Prefecture); T. Li and Q. Li, 2007:9 (China: Zhejiang: Moganshan, Songyyang, and Xitianmushan; Guangxi: Shaluobaohuqu and Zhiwuyuan); Ohkusa, 2007:34 (Japan: central Honshu: Aichi Prefecture); Terayama and Nambu, 2009:10, 30 (in key to Trypoxylini of Japan).

Trypoxylon kinkadzanense Tsuneki, 1971c:16, ♂. Holotype: ♂: Japan: Gifu: Mount Kinkadzan (Ent. Lab. Univ. Medijo, Nagoya). Synonymized with *Trypoxylon nambui* by Tsuneki, 1972b:19. – Tsuneki, 1973e:37 (in key to *Trypoxylon* of Japan, in Japanese).

323. *nasale* Tsuneki

Trypoxylon nasutum Tsuneki, 1979a:37, ♀, junior primary homonym of *Trypoxylon varipes nasutum* Tsuneki, 1974. Holotype: ♀, Malaysia: Cameron's Highlands (BMNH). – Tsuneki, 1979a:5 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Antropov, 1995c:125 (synonymy).

Trypoxylon nasale Tsuneki, 1980a:2. Substitute name for *Trypoxylon nasutum* Tsuneki, 1979.

Trypoxylon minahime Tsuneki, 1992c:54. Unnecessary substitute name for *Trypoxylon nasutum* Tsuneki, 1979.

324. *nathani* Tsuneki

Trypoxylon nathani Tsuneki, 1979a:46, ♀. Holotype: ♀, India: Madras: Anamalai Hills: Cinchona (RMNH). – Tsuneki, 1979a:6 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

325. *naviforme* Tsuneki

Trypoxylon naviforme Tsuneki, 1979c:14, ♀. Holotype: ♀, Indonesia: Java: Nongkodjadjar (BMNH). – Tsuneki, 1979c:4 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands); T. Li and Q. Li, 2007:9 (China: Zhejiang: Hangzhou).

326. *nesianum* Tsuneki

Trypoxylon nesianum Tsuneki, 1979c:60, ♂, ♀. Holotype: ♂, Indonesia: West Java: Tjibarangbang Djasinga (RMNH). – Tsuneki, 1979c:10, 11 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 1981f:65 (member of *Trypoxylon vardyi* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands).

327. *ngum* Tsuneki

Trypoxylon ngum Tsuneki, 1979a:111, ♀. Indian Holotype: ♀, Laos: Vientiane: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:13, 15 (in key to *Trypoxylon* of subcontinent and southeastern Asia), 1979c:9 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 54 (Indonesia: northern Sumatra), 1981f:69 (member of *Trypoxylon tawitawiense* species group).

328. *nigricorne* Tsuneki

Trypoxylon nigricorne Tsuneki, 1979a:119, ♀. Holotype: ♀, Singapore (originally K. Tsuneki coll., now USNM). – Tsuneki, 1979a:14 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Nuhn and Menke, 1994:26 (holotype in USNM).

329. *nigrifemur* Tsuneki

Trypoxylon nigrifemur Tsuneki, 1979a:87, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:48 (Myanmar), 62 (in key to *Trypoxylon* of Myanmar).

330. *nigripes* Tsuneki

Trypoxylon nigripes Tsuneki, 1979a:132, ♀, ♂. Holotype: sex not stated, India: Bombay (TMB). – Tsuneki, 1979a:13, 15 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979b:5 (in key to *Trypoxylon* of Sri Lanka), 18 (Sri Lanka), 1981d:16 (Sri Lanka), 20 (in new key to *Trypoxylon* of Sri Lanka), 1981f:54 (member of *Trypoxylon mindanaonis* species group).

331. *nigrispine* Cameron

Trypoxylon nigrispine Cameron, 1905l:373, ♀ (as *nigrispinis*, incorrect original termination). Holotype or syntypes: ♀, Mexico: no specific locality (BMNH). – Richards, 1934:315 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae, as *nigrispine*); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

332. *nilgiriense* Tsuneki

Trypoxylon nilgiriense Tsuneki, 1979a:38, ♀, ♂. Holotype: ♀, India: Kerala: Nilgiri Hills: Gudalur (RMNH). – Tsuneki, 1979a:5 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:22 (India), 1981f:31 (single member of *Trypoxylon nilgiriense* species group).

ssp. *shan* Tsuneki

Trypoxylon nilgiriense shan Tsuneki, 1981d:34, ♀. Holotype: ♀, norheastern Myanmar: Kambaiti (NRS). – Tsuneki, 1981d:61 (in key to *Trypoxylon* of Myanmar).

333. *nipponicum* Tsuneki

Trypoxylon nipponicum Tsuneki, 1956g:18, ♀, ♂. Holotype: ♀, Japan: Fukui Prefecture: Fudodo (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956f:121, 122 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:4, 8 (in key to *Trypoxylon* of northeastern Asia); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Haneda, 1968a:44 (Japan); Nambu, 1968b:22 (Japan: Saitama Prefecture); Tano, 1968:32 (Japan); Haneda, 1970:12 (Japan: Akita Prefecture); Tsuneki, 1970b:9 (Central Japan); Nambu, 1972e:90 (Japan: Saitama Prefecture); Suda, 1973:122 (Japan: Yamanashi Prefecture); Tano, 1973b:77 (nest); Tsuneki, 1973a:15 (diagnostic characters), 1973e:33, 36 (in key to *Trypoxylon* of Japan, in Japanese), 1973v:150 (arachnid prey); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981e:7, 8 (in key to *Trypoxylon* of Japan and northeastern Asia), 70 (Japan; additional description), 1981f:57 (single member of *Trypoxylon nipponicum* species group); Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:21 (holotype transferred to Hyogo Mus.); Togashi, 2001:19 (Japan: Ishikawa Prefecture: Shiramine); Haneda and Inoue, 2003:50 (Japan: Fukui Prefecture: Katsumi in City of Obama); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:33 (Japan: Gifu Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:66 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:47 (Japan: Gifu Prefecture); Negoro, Haneda, and Tano, 2005:46 (Japan: Toyama Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2006a:23 (Japan: Toyama Prefecture); Terayama and Nambu, 2009:7, 8, 30 (in key to Trypoxylini of Japan); Ohkusa and Tajima,

2010:12 (Japan: Island of Honshu: Shiga Prefecture); Jeong and J.-K. Kim, 2020:247 (in key to Korean *Trypoxylon* with flask-shaped gaastral segment I), 251 (in revision of Korean *Trypoxylon* with flask-shaped gastral segment I); Terayama, 2021:18 (Japan: Port of Tokyo Wild Bird Park).

ssp. *puliense* Tsuneki

Trypoxylon puliense Tsuneki, 1967d:15, ♀. Holotype: ♀, Taiwan: Nantou Prefecture: Puli (originally K. Tsuneki coll., now USNM). – Tsuneki, 1967d:2 (in key to *Trypoxylon* of Taiwan); Haneda, 1971b:31 (Taiwan; as *puliensis*); Tsuneki, 1971g:8 (Taiwan); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981c:8, 10 (in key to *Trypoxylon* of Taiwan), 43 (Taiwan; additional description), 1981e:70 (Japan; additional description; synonym of *Trypoxylon nipponicum*). – **As *Trypoxylon nipponicum puliense***: Tsuneki, 1981e:73 (new status, justification of synonymy with *T. murotai*); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

Trypoxylon murotai Tsuneki, 1973f:44, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Puli (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon puliense* by Tsuneki, 1981c:44. – Murota, 1973b:117 (Taiwan); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Nuhn and Menke, 1994:26 (holotype in USNM); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).

334. *nishidai* Tsuneki

Trypoxylon nishidai Tsuneki, 1979a:134, ♂. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (Bishop Mus.). – Tsuneki, 1979a:13, 15 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:30 (India: Kerala), 1981f:54 (member of *Trypoxylon mindanaonis* species group).

335. *nitidissimum* Richards

Trypoxylon nitidissimum Richards, 1934:301, ♂. Holotype: ♂, Brazil: Pará: Pará, now Belém (BMNH). Paratype: Bolivia. – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Silvestre, Demétrio, Trad, de Oliveira Lima, Auko, and de Souza, 2014:69 (Brazil: Mato Grosso do Sul: dry forests in Bodoquena Mountain Range and Brazilian Chaco); Trad and Silvestre, 2017:5 (Brazil: Mato Grosso do Sul).

336. *nodosicorne* R. Turner

Trypoxylon nodosicorne R. Turner, 1917:203, ♂ (as *nodosicornis*, incorrect original termination). Holotype: ♂, Pakistan: Hazara District: Dungagali (BMNH). – **As *Trypoxylon nodosicorne***: Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:62 (description of ♀), 66 (study of holotype, redescription), 77 (in key to Oriental *Trypoxylon*), 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 56 (Pakistan: Dungagali, India: Simla); Mawadda and Girish Kumar, 2023:116 (in checklist of Crabroninae of Northern India).

Trypoxylon simlaense Cameron (nomen nudum). – R. Turner, 1917:203 (cited); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Tsuneki, 1978b:61 (discussion of the name *simlaense*), 1981f:19 (member of *Trypoxylon nodosicorne* species group).

337. *nodosum* Arnold

Trypoxylon chirindensis Arnold race *nodosum* Arnold, 1944:18, ♀. Holotype: ♀, Zimbabwe: Vumba Mountains (SAM). – **As *Trypoxylon nodosum***: Arnold, 1946:70 (full species status); Leclercq, 1965a:91 (in key to Afrotropical *Trypoxylon*), 115 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:347.

338. *novaguineae* Tsuneki

Trypoxylon novaguineae Tsuneki, 1981a:80, ♀. Holotype: ♀, New Guinea: Morobe Province: Markham River Valley: Nadzhab (USNM). – Tsuneki, 1981a:9 (in key to *Trypoxylon* of New Guinea and South Pacific Islands); Nuhn and Menke, 1994:26 (holotype in USNM).

339. *obiense* Tsuneki

Trypoxylon obiense Tsuneki, 1980a:96, ♀. Holotype: ♀, Indonesia: Island of Obi: Kali Telaga (RMNH). – Tsuneki, 1980a:12 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

340. *oculare* Menke

Trypoxylon oculare Menke, 1968b:312, ♀. Holotype: ♀, Brazil: Pará: Santarém (UCD). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae; Brazil, Peru); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Rasmussen and Asenjo, 2009:12 (in checklist of Crabronidae of Peru); Silvestre, Demétrio, Trad, de Oliveira Lima, Auko, and de Souza, 2014:69 (Brazil: Mato Grosso do Sul: dry forests in Bodoquena Mountain Range and Brazilian Chaco); Trad and Silvestre, 2017:5 (Brazil: Mato Grosso do Sul).

341. *okinawanum* Tsuneki

Trypoxylon koshunicon okinawanum Tsuneki, 1966b:18, ♀. Holotype: ♀, Ryukyu Islands: Island of Ishigaki: Karayama (Bishop Mus.). – Tsuneki, 1966b:3 (in key to *Trypoxylon of* Ryukyu Islands and Taiwan). – **As *Trypoxylon okinawanum***: Tsuneki, 1971g:14 (full species status), 16 (in additional key to females of *Trypoxylon* of Taiwan), 18 (in new key to males of *Trypoxylon* of Taiwan), 1973e:34 (in key to *Trypoxylon* of Japan, in Japanese); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981c:4, 6 (in key to *Trypoxylon* of Taiwan), 19 (Taiwan; additional description), 1981e:4 (in key to *Trypoxylon* of Japan and northeastern Asia), 38 (Ryukyu Islands: Island of Ishigaki), 1982g:62 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); Yamane, Ikudome, and Terayama, 1999:528 (Japan: in Identification Guide to Crabronidae of Nansei = Ryukyu Islands,); Haneda, Nozaka, Tano, Kurokawa, H.Murota, and T. Murota, 2007:54 (Japan: Ryukyu Archipelago: Amami Oshima Islands); Murota and Kurokawa, 2009:14 (Japan: Ryukyu Archipelago: Amami Oshima Islands); Terayama and Nambu, 2009:10, 30 (in key to Trypoxylini of Japan); T. Li and Q. Li, 2010a:242 (in key to *Trypoxylon* of southwestern China).

342. *olthofi* Tsuneki

Trypoxylon olthofi Tsuneki, 1981a:38, ♀. Holotype: ♀, Indonesia: Papua (New Guinea): Bernhard Camp at Indenburg (now Taritatu) River valley (RMNH). – Tsuneki, 1981a:6 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

343. *operculum* Tsuneki

Trypoxylon operculum Tsuneki, 1979a:117, ♀. Holotype: ♀, India: Madras: Anamalai Hills: Cinchona (RMNH). – Tsuneki, 1979a:13 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

344. *ordinarium* Richards

Trypoxylon ordinarium Richards, 1934:316, ♀. Holotype: ♀, Brazil: no specific locality (NHMW). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

345. *orientale* Cameron

Trypoxylon placidum Cameron, 1904d:216, ♀, ♂, junior primary homonym of *Trypoxylon placidum* F. Smith, 1864. Lectotype: ♂, India: Assam: Khasia Hills (OXUM), designated by Tsuneki, 1978b:51. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1947:53 (Myanmar: Rangoon, comparison with *Trypoxylon intrudens*); Tsuneki, 1978b:78 and 79 (in key to Oriental *Trypoxylon*).

Trypoxylon orientale Cameron, 1904d:218, ♀. Lectotype: ♀, India: Assam: Khasia Hills (OXUM), designated by Tsuneki, 1978b:56. Synonymized with *Trypoxylon placidum* Cameron by Tsuneki, 1978b:51 and 52. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:56 (redescription), 1979a:14, 18 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 128 (India, Nepal, Malaysia; redescription), 1979c:56 (northern India; Indonesia: Java), 1981d:58 (Myanmar), 63 (in key to *Trypoxylon* of Myanmar), 76 (China:

Szechuan; additional description), 1981f:71 (single member of *Trypoxylon orientale* species group); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Mawadda and Girish Kumar, 2023:105 (India: Himachal Pradesh: Chamba district: Kalatop), 116 (in checklist of Crabroninae of northern India); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 63 (first record from Vietnam: Son La: Copia Natural Reserve and Vinh Phuc: Tam Dao National Park).

Trypoxylon montanum W. Schulz, 1906:212. Substitute name for *Trypoxylon placidum* Cameron, 1904. – Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

ssp. *ardjuno* Tsuneki

Trypoxylon orientale ardjuno Tsuneki, 1979c:56, ♀. Holotype: ♀, Indonesia: Java: Mount Ardjuno: Soemoer Brantas (RMNH). – Tsuneki, 1979c:10 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

ssp. *gedeh* Tsuneki

Trypoxylon orientale gedeh Tsuneki, 1979c:56, ♀. Holotype: ♀, Indonesia: West Java: Mount Gedeh: Sitoenoegoeng (RMNH). – Tsuneki, 1979c:9 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

ssp. *keralense* Tsuneki

Trypoxylon orientale keralense Tsuneki, 1979a:130, ♀. Holotype: ♀, India: Kerala: Nilgiri Hills (RMNH).

346. *orientinum* Richards

Trypoxylon orientinum Richards, 1969:123, ♀, ♂. Holotype: ♀, Cuba: Oriente: Cuabitas (Acad. Cienc. Cuba). – Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:8 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Reyes and Hernández, 1995:3 (holotype in Inst. Ecol. Sist., La Havana, Cuba); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Hidalgo-Gato González, Reyes Sánchez, Mestre Novoa, Fernández García, Rodriguez-León Merino, Rodríguez Velázquez, Genaro Artola, and Fontenla Rizo, 2002:30 (holotype deposited at IZAC); Portuondo and Fernández, 2004:135 (Cuba: Sierra Maestra and Nipe-Sagua-Baracoa mountains); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae; also: first record from Jamaica, first record from Hispaniola, first record from Island of Mona); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola).

347. *oriomonis* Tsuneki

Trypoxylon oriomonis Tsuneki, 1981a:43, ♀. Holotype: ♀, Papua New Guinea: Western District: Oriomo Government Station (Bishop Mus.). – Tsuneki, 1981a:5 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

348. *ornatigaster* Tsuneki

Trypoxylon ornatigaster Tsuneki, 1979a:105, ♀. Holotype: ♀, Malaysia: Pahang: Frazer's Hills (BMNH). – Tsuneki, 1979a:12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979c:8 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 50 (Indonesia: Sumatra), 1980a:7 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 56 (Borneo; additional description), 1981d:65 (Sarawak), 1981f:71 (single member of *Trypoxylon ornatigaster* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands).

349. *outang* Tsuneki

Trypoxylon outang Tsuneki, 1980a:107, ♀. Holotype: ♀, Malaysia: Sabah (northern Borneo): Sandakan (USNM). – Tsuneki, 1980a:11, 14 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas); Nuhn and Menke, 1994:26 (holotype in USNM).

350. *owrichardsi* Tsuneki

Trypoxylon owrichardsi Tsuneki, 1981a:19, ♀. Holotype: ♀, Papua New Guinea: Morobe District: Wau (BMNH). – Tsuneki, 1981a:4 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

351. *pachygaster* Richards

Trypoxylon pachygaster Richards, 1934:289, ♂. Holotype: ♂, Trinidad: no specific locality (BMNH). – Richards, 1934:347 (cocoon), 1936b:458 (description of ♀), 462 (corrections to original description); Vesey Fitzgerald, 1936:113 (Trinidad: nest); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

352. *pacificum* Gussakovskij

Trypoxylon pacificum Gussakovskij, 1932:12, ♀, ♂. Syntypes: Russia: Primorskiy Kray: Tigrovaya, Sedanka, Island of Putyatin (NRS). – Gussakovskij, 1936:665 (in revision of Palearctic *Trypoxylon*); Tsuneki, 1956f:121, 122, 123 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:6, 7, 11 (in key to *Trypoxylon* of northeastern Asia), 33 (in revision of *Trypoxylon* of northeastern Asia); Iwata, 1960:210 (number of ovarioles and oocytes, egg size); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Tsuneki, 1964c:10 (Japan: Kyushu); Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits), 1968b:23 (Japan: Saitama Prefecture); Tsuneki, 1967g:44 (western Japan: Mount Hyonosen), 1968l:50 (South Korea: Island of Quelpart, now Island of Cheju or Jeju); Haneda, 1969:68 (Japan: Yamanashi Prefecture); Itami, 1969:50 (Japan: Niigata Prefecture); Tsuneki, 1969e:25 (Japan: specimens in Osaka Museum of Natural History), 1969i:59 (Japan: Fukui Prefecture: Taichôdzi temple), 1970b:9 (central Japan); Nambu, 1972d:6 (list of spider prey), 1972e:90 (Japan: Saitama Prefecture), 1973a:151 (Japan: Saitama Prefecture); Suda, 1973:122 (Japan: Yamanashi Prefecture); Tsuneki, 1973e:35, 37 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Kazenas, 1980e:90 (Russia: Primorskiy Kray); Tsuneki, 1981d:86 (Russia: Primorskiy Kray: Okeanskaya), 1981e:5 (in key to *Trypoxylon* of Japan and northeastern Asia), 45 (redescription of syntypes and of Japanese population), 1981f:37 (member of *Trypoxylon pacificum* species group), 1982b:16 (known from Korea); Paik, 1985:199 (in list of Sphecidae of Korea); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:420, 421 (in key to Sphecidae of Russian Far East); Miyatake, 1996:102 (specimens in Hiroshi Aoki collection); Haneda and Inoue, 2003:50 (Japan: Fukui Prefecture: Katsumi in City of Obama); Haneda and Tano, 2003:11 (Japan: Nagasaki Prefecture: Tsushima); Tano, Kurokawa, Murota, and Nozaka, 2003:31 (Japan: Nagasaki Prefecture: Tsushima); Ohl and Linde, 2003:151 (number of ovarioles); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:33 (Japan: Gifu Prefecture); Suda, 2004:41 (Japan: Yamanashi Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:66 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:48 (Japan: Gifu Prefecture); Kinota, Haneda, and Tano, 2005:30 (Japan: Hokkaido); Negoro, Haneda, and Tano, 2005:46 (Japan: Toyama Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2006a:24 (Japan: Toyama Prefecture); Nagase, 2006a:54 (Japan: Kanagawa Prefecture: Mount Komagatake near Hakone); Nambu, 2006:247 (Japan: Tokyo: Imperial Palace garden); Nemkov, 2006b:168 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve); Ohkusa, 2006a:24 (Japan: Honshu: Gifu Prefecture); T. Li and Q. Li, 2007:9 (China: Henan: Jiyuan and Ludai); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:88 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Terayama and Nambu, 2009:11, 30 (in key to Trypoxylini of Japan); Matsumoto and Makino, 2011:158 (Japan: suburbs of Tokyo; prefers nesting in artificial nests of curtain type rather than bundle type); N. Yamamoto, 2011:13 (Japan: Kyūshyū: mainland Nagasaki Prefecture); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:439 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Terayama, 2021:18 (Japan: Port of Tokyo Wild Bird Park).

353. *paeninsulicola* Tsuneki

Trypoxylon paeninsulicola Tsuneki, 1979a:96, ♀. Holotype: ♀, Malaysia: Selangor: Bukit Kutu (BMNH). – Tsuneki, 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam); 63 (first record from Vietnam:Tuyen Quang: Na Hang).

354. *pagdeni* Tsuneki

Trypoxylon pagdeni Tsuneki, 1979a:51, ♀. Holotype: ♀, Malaysia: Pahang: Tanah, Rata (BMNH). – Tsuneki, 1979a:6 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

355. *paglianoi* Antropov

Trypoxylon paglianoi Antropov, 1991b:679, ♀, ♂. Holotype: ♂, Algeria: Petite Kabylie: Forêt de Guerrouche (G. Pagliano coll.). Paratype: Tunisia.

356. *pahangense* Tsuneki

Trypoxylon pahangense Tsuneki, 1979a:51, ♀. Holotype: ♀, Malaysia: Pahang: Cameron's Highlands (BMNH). – Tsuneki, 1979a:6 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:26 (Malaysia: Pahang), 38 (in insertion to key to Indo-Malaysian *Trypoxylon*).

357. *palawanum* Tsuneki

Trypoxylon palawanum Tsuneki, 1976b:90, ♀. Holotype: ♀, Philippines: Palawan: Pinigisan (ZMUC). – Tsuneki, 1976b:93 (in key to female *Trypoxylon* of Philippines), 1980b:6 (in key to *Trypoxylon* of Philippines), 41 (Philippines; additional description).

358. *pan* Arnold

Trypoxylon pan Arnold, 1956:74, ♀. Holotype: ♀, Zimbabwe: Chirinda Forest (SAM). – Leclercq, 1965a:99 (in key to Afrotropical *Trypoxylon*), 127 (in revision of Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

359. *panitianum* Tsuneki

Trypoxylon panitianum Tsuneki, 1980b:27, ♂. Holotype: ♂, Philippines: Palawan Island: Panitian (Bishop Mus.). – Tsuneki, 1980b:5 (in key to *Trypoxylon* of Philippines), 1981f:43 (member of *Trypoxylon flavipes* species group).

360. *papa* Antropov

Trypoxylon papa Antropov, 1994c:132, ♀. Holotype: ♀, Indonesia: Sulawesi: Dumoga Bone National Park (RMNH).

361. *papuanum* Tsuneki

Trypoxylon papuanum Tsuneki1981f:, 1977h:2, ♀. Holotype: ♀, Papua New Guinea: Huon Golf: Simbang (TMB). – Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group), 12 (redescription; Australia, Solomon Islands, New Guinea, Philippine Islands), 86 (relationships to other species), 1981a:4 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 19 (New Guinea, Solomon Islands), 1981b:100 (in key to *Trypoxylon* of Australia), 101 (Australia: locality records), 47 (member of *Trypoxylon scutatum* species group); Cardale, 1985:265 (in catalog of Australian Sphecidae); Naumann, 1993:184 (Australia: Queensland: Heathlands area in Cape York).

362. *parvulum* Tsuneki

Trypoxylon parvulum Tsuneki, 1979a:62, ♂. Holotype: ♂, Malaysia: Taiping Hill (BMNH). – Tsuneki, 1979a:8 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:37 (member of *Trypoxylon pacificum* species group).

363. *parvum* Schrottky

Trypoxylon parvum Schrottky, 1902b:114, ♀, ♂. Syntypes: Argentina: Buenos Aires (depository?). – Schrottky, 1903b:178 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay), 1913a:228 (Argentina: Buenos Aires); Richards, 1934:286 (possibly the valid name for *Trypoxylon maidli*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

364. *patruele* Arnold

Trypoxylon patruele Arnold, 1924:20, ♀ (as *patruelis*, incorrect original termination). Holotype: ♀, South Africa: Eastern Cape Province: Willomwore (TMP). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:93 (in key to Afrotropical *Trypoxylon*), 118 (bibliographic reference). – **As *Trypoxylon patruele***: R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

365. *paulisum* Leclercq

Trypoxylon paulisum Leclercq, 1965a:102, ♀. Holotype: ♀, Zaire: Haut-Uele: Paulis (MRAC). – Leclercq, 1965a:83 (in key to Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

366. *paulum* Tsuneki

Trypoxylon paulum Tsuneki, 1980a:33, ♂. Holotype: ♂, Sarawak: Semongoh Forest Research Station at 1°25'N 110°17'E (BMNH). – Tsuneki, 1980a:6 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1981f:16 (single member of *Trypoxylon paulum* species group).

367. *peltopse* Kohl

Trypoxylon peltopse Kohl, 1906a:201, ♀ (as *peltopsis*, incorrect original termination). Syntypes: ♀, Brazil: Rio Grande do Sul: Rio Grande do Sul (NHMW). – Richards, 1934:332 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

368. *pendleburyi* Tsuneki

Trypoxylon pendleburyi Tsuneki, 1979a:36, ♀. Holotype: ♀, Malaysia: Pahang: Cameron's Highland (BMNH). – Tsuneki, 1979a:5 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Antropov, 1994c:125 (description of ♂, Nepal).

369. *pennsylvanicum* de Saussure

Trypoxylon pennsylvanicum de Saussure, 1867:82, ♀. Holotype or syntypes: USA: Pennsylvania: no specific locality (MHNG). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); W. Fox, 1891c:148 (unrecognizable species), 1894a:476 (original description copied); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); J. Smith, 1900:520 (in list of insects of New Jersey), 1910:684 (in new list of insects of New Jersey: Camden County); Richards, 1934:314 (not examined); Sandhouse, 1940:159 (in revision of Nearctic *Trypoxylon*); Brimley, 1942:36 (North Carolina: Raleigh); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park), 1952b:177 (USA: West Virginia: Lost River State Park); Krombein and Evans, 1954:233 (Florida: Arcadia); Krombein, 1958f:189 (in supplement to catalog of North American Hymenoptera: Florida), 1961b:64 (prey: an araneid), 1963f:274 (Maryland: Plummers Island near Washington, D.C.); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); Wray, 1967:125 (North Carolina: Raleigh); Horning and Barr, 1970:103 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Tsuneki,

1979a:58 (comparison with *Trypoxylon fronticorne*); Finnamore, 1982:117 (in Sphecid Fauna of southern Quebec); Coville, 1990:2 (may be a complex of species); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County); nec Blades and Marshall, 1994:276 (= *Trypoxylon attenuatum*); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Sugar et al., 1998:15 (Canada: southern Ontario); Skevington et al., 2001:128 (Canada: Ontario: Lambton County); Antropov, 2003:438 (in key to North American species of *Trypoxylon figulus* species group); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Giles and Ascher, 2006:231 (New York: Black Rock Forest Preserve).

370. *pentheri* Richards

Trypoxylon pentheri Richards, 1934:322, ♀. Holotype: ♀, Brazil: Joazeiro (NHMW). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

371. *petiolatum* F. Smith

Trypoxylon petiolatum F. Smith, 1858a:105, ♀. Lectotype: ♀, Malaysia: Sarawak (OXUM), designated by Tsuneki, 1978b:6. – F. Smith, 1863b:135 (known from Borneo), 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889c:119 (in list or Oriental Sphecidae); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Cameron, 1904b:119 (Singapore), 1905k:64 (Java); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:6 (as synonym of *Trypoxylon bicolor*), 1979a:15, 16 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 152 (resurrected from synonymy), 160 (Singapore, Malaysia, Thailand, Vietnam, Laos, southern China, Nepal, Maldive Islands; junior synonyms), 1979c:7, 10 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 39 (Indonesia: Flores, Java, Simalur; description of selected characters), 1980a:11, 14 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 110 (Indonesia: Ambon, Binongko, Sulawesi, Sarawak, Borneo; description of selected characters), 1980b:9 (in key to *Trypoxylon* of Philippines), 82 (Philippines; additional description), 1981a:8, 9 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 75 (Ogasawara and Chichidzima Islands, Hawaii), 1981c:7 (in key to *Trypoxylon* of Taiwan), 30 (Taiwan; additional description; Taiwanese specimens are intermediate between nominate subspecies and ssp. *obsonator*), 1981d:29 (India, Malaysia, Singapore, Java; additional description), 45 (Myanmar), 62 (in key), 67 (Brunei, Sulawesi), 73 (China), 77 (Hong Kong), 1981e:6 (in key to *Trypoxylon* of Japan and northeastern Asia), 63 (Japan; additional description), 1981f:75 (member of *Trypoxylon bicolor* species group), 1982b:16 (known from Korea), 1982d:11 (Taiwan), 1982g:61 (known from the Ryukyu archipelago); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands); Tsuneki, 1984a:11 (known from Ogasawara = Bonin Islands); Paik, 1985:199 (in list of Sphecidae of Korea); Tsuneki, 1986:30 (known from the Ryukyu archipelago); Hoshiba and Imai, 1993:467 (chromosome number n = 14); Takahashi 1993:3 (Japan: Island of Hachijo-Jima); Wu and Zhou, 1996a:104 (in revision in Economic Insect Fauna of China); Yamane, Ikudome, and Terayama, 1999:525 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Miyano and Yamaguchi, 2001:244 (reduction of nest building activities by ants); Haneda, 2003:4 (Japan: Nagasaki Prefecture: Tsushima); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:66 (Japan: Fukui Prefecture: Mount Monju); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Haneda, Nozaka, Tano, Kurokawa, Murota, and Murota, 2007:54 (Japan: Kagoshima Prefecture: Amami Oshima Islands); Terayama and Nambu, 2009:6, 31 (in key to Trypoxylini of Japan); Barthélémy, 2010a:3 (nesting habits); T. Li and Q. Li, 2010a:242 (in key to *Trypoxylon* of southwestern China); Takahashi, 2010:19 (Japan: in list of Hymenoptera of Ogasawara = Bonin Islands); Haneda, 2011:46 (Philippines: Palawan); N. Yamamoto, 2011:13 (Japan: Kyūshyū: mainland Nagasaki Prefecture); Barthélémy, 2012:5 (nest structure, prey, life history); J.-K. Kim, 2014:439 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Pham, Kumar and Danilov, 2015:1593 (in list of Sphecidae *sensu lato* of Vietnam); Ma, Q. Li, Wang, Jiang, and Lu, 2018:832 (China: Shanxi: Qinling Mountains); Ma, Zhang, Ch. Li, Ji, and Q. Li, 2018:487 (China: Shanxi: Lishan National Nature Reserve); Jeong and J.-K. Kim, 2020:247 (in key to Korean

Trypoxylon with flask-shaped gastral segment I), 251 (in revision of Korean *Trypoxylon* with flask-shaped gastral segment I); Pham and Antropov, 2021:320 (recorded from Vietnam: Dak Nong in Dak Song Districtby Tsuneki, 1979a); Terayama, 2021:18 (Japan: Port of Tokyo Wild Bird Park); Vicens, Carbonell, Antropov, and Bosch, 2022:154 (first record from Spain: Catalonia: Gerona; nesting habits); Mawadda and Girish Kumar, 2023:116 (in checklist of Crabroninae of northern India); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 63 (Vietnam: many localities).

Trypoxylon rejector F. Smith, 1870:189, ♀. Holotype or syntypes: ♀, India: North-West Provinces, now Uttar Pradesh: Mainpuri (lost?). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:30 and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Horne, 1870:164 (nesting habits); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Cameron, 1889c:119 (in list or Oriental Sphecidae, Horne's observations reported); Bingham, 1897:226 (original description copied); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Rudow, 1904:197 (building nests out of mud), 1912:60 (nest structure); Richards, 1934:344 (nesting habits summary); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

Trypoxylon obsonator F. Smith, 1873a:194, ♀, ♂. Syntypes: Japan: Hyogo (BMNH). Synonymized with *Trypoxylon petiolatum* by Tsuneki, 1981e:65 (not recognized as subspecies). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Matsumura, 1911:120 (in Thousand insects of Japan); Yasumatsu, 1929:107 (nesting habits); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Gussakovskij, 1936:652 (original description copied); T. Ma, 1936b:67 (nesting habits); Iwata, 1955:29 (egg size, number of oocytes); Tsuneki, 1956f:120, 122 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:4, 9 (in key to *Trypoxylon* of northeastern Asia), 12 (in revision of *Trypoxylon* of northeastern Asia); Iwata, 1960:210 (number of ovarioles and oocytes, egg size); Tsuneki, 1962a:5 (Japan: Ryukyus Islands: Island of Amami-Oshima); Iwata, 1963a:116 (nest parasitized by *Melittobia*); Nambu, 1966:25-34 (nesting habits); Tsuneki, 1966b:2, 3 (in key to *Trypoxylon of* Ryukyu Islands and Taiwan), 10 (Taiwan; redescription); Nambu, 1967:6-16 (nesting habits); Tsuneki, 1967d:2 (in key to *Trypoxylon* of Taiwan), 10 (Taiwan); Itami, 1968a:15 (Japan: Yamagata Prefecture: foot of Mount Iide); Nambu, 1968b:22 (Japan: Saitama Prefecture); Tsuneki, 1968d:55 (Ryukyus), 1968l:50 (South Korea: Island of Quelpart, now Island of Cheju or Jeju); Itami, 1969:50 (Japan: Niigata Prefecture); Tsuneki, 1969e:25 (Japan: specimens in Osaka Museum of Natural History), 1970d:13 (nesting habits); Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:5 (Taiwan, description of aberrant specimens), 17 (in new key to males of *Trypoxylon* of Taiwan); Yamada, 1971:35 (Japan: Aichi Prefecture); Haneda, 1972a:4 (Taiwan); Tano, 1972:24 (Japan: Ryukyus Islands); Haneda, 1973:30 (Japan: Bonin Islands: Chichijimas Islands); Murota, 1973a:101 (Ryukyu Islands: Amami group); Nambu, 1973a:150 (Japan: Saitama Prefecture); Suda, 1973:122 (Japan: Yamanashi Prefecture); Tsuneki, 1973e:32, 35 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1976b:94 (in key to female *Trypoxylon* of Philippines),1977j:271 (Taiwan); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan). – **As *Trypoxylon bicolor obsonator***: Tsuneki, 1978b:31 (new status, syntypes examined and redescribed, but lectotype not designated); Hoshiba and Imai, 1993:467 (chromosome number 2n = 28). – **As *Trypoxylon petiolatum obsonator***: Tsuneki, 1979a:160 (new subspecific combination).

Trypoxylon accumulator F. Smith, 1875:38, ♀. Lectotype: ♀, India: no specific locality (OXUM), designated by Tsuneki, 1978b:32. Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:32 and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Cameron, 1889c:118 (India: Barrackpore, 120 (redescription); Bingham, 1897:227 (as synonym of *Trypoxylon bicolor*); Dalla Torre, 1897:700 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1978b:32 (redescription).

Trypoxylon javanum Taschenberg, 1875:378, ♂. Holotype: ♂, Indonesia: Java: no specific locality (Halle). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:41 and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160.

– Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889c:119 (in list or Oriental Sphecidae); Dalla Torre, 1897:706 (in catalog of world Hymenoptera).

Trypoxylon tinctipenne Cameron, 1889c:121, "♀", actually ♀, ♂. Lectotype: ♂, India: West Bengal: Barrackpore 20 km north of Calcutta (OXUM), designated by Tsuneki, 1978b:37. Synonymized with *Trypoxylon bicolor* by Bingham, 1897:227 (synonymy confirmed by Tsuneki, 1978b:36), and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Dalla Torre, 1897:709 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae).

Trypoxylon tricolor Sickmann, 1894:209, ♀. Holotype or syntypes: ♀, China, Hopei Province: Tientsin (Münster). Synonymized with *Trypoxylon petiolatum* by Tsuneki, 1981e:63. – Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Gussakovskij, 1936:651 (in revision of Palearctic *Trypoxylon*); Tsuneki, 1956g:4, 9 (in key to *Trypoxylon* of northeastern Asia), 14 (in revision of *Trypoxylon* of northeastern Asia), 1971m:12 (China: Beijing: Sietang); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae).

Trypoxylon cognatum Cameron, 1897C:26, ♀. Holotype: ♀, India: Himalaya: no specific localitiy (OXUM). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:40, and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Rothney, 1903:106 (India: West Bengal: Barrackpore); Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:338 (member of *Trypoxylon scutatum* species group); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae)..

Trypoxylon erythrozonatum Cameron, 1901d:54, ♀. Lectotype: ♀, Maldives Islands: Male Atoll: Hulule (BMNH), designated by Tsuneki, 1978b:46. Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:45, and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae).

Trypoxylon responsum Nurse, 1903a:518, ♀. Syntypes: India: Radjasthan: Mount Abu (BMNH). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:66 and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Tsuneki, 1967d:6 (Taiwan; also as *responsum responsum*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

Trypoxylon obsonator tropicale Tsuneki, 1961b:383, ♀, ♂. Holotype: ♂, Thailand: Chiang Mai (Osaka Univ.). Synonymized with *Trypoxylon bicolor* by Tsuneki, 1978b:31 and with *Trypoxylon petiolatum* by Tsuneki, 1979a:160. – Tsuneki, 1963c:12 (Thailand), 1974b:630 (Thailand), 1976b:75 (Philippines; relationships to *Trypoxylon* elongatum).

372. *petioloides* Strand

Trypoxylon gracilescens Smith var. *petioloides* Strand, 1922b:150, ♀, ♂. Lectotype: ♀, Taiwan: Kankau, now Hengchun (DEI), designated by Oehlke and Wudowenz, 1974:424. – Strand, 1927:255 (in list of species described by the author). – **As *Trypoxylon petioloides***: Yasumatsu, 1938a:74 (new status, Botel Tobago, now Island of Lang Hsu southeast of Taiwan); R. Bohart and Menke, 1976:347 (as synonym of *Trypoxylon gracilescens*); Tsuneki, 1981c:8, 10 (in key to *Trypoxylon* of Taiwan), 40 (Taiwan; new status; redescription); Yamane, Ikudome, and Terayama, 1999:526 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Terayama and Nambu, 2009:6, 31 (in key to Trypoxylini of Japan).

As *Trypoxylon gracilenscens* (corrected to *Trypoxylon petioloides* by Tsuneki, 1981c:40): Tsuneki, 1966b:2, 3 (in key to *Trypoxylon of* Ryukyu Islands and Taiwan), 10 (Taiwan; redescription), 1967d:9 (Taiwan), 1968d:55 (Taiwan); Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:4 (Taiwan); Haneda, 1972a:4 (Taiwan); Murota, 1973b:117 (Taiwan); Tsuneki, 1977j:272 (Taiwan).

ssp. *isigakiense* Tsuneki

Trypoxylon isigakiense Tsuneki, 1973a:11, ♀. Holotype: ♀, Ryukyus Islands: Island of Ishigaki: Mount Omoto (T. Nambu coll.). – Tsuneki, 1973e:32, 35 (in key to *Trypoxylon* of Japan, in Japanese). – **As *Trypoxylon***

petioloides isigakiense: Tsuneki, 1981c:8, 10 (in key to *Trypoxylon* of Taiwan), 42 (new status, Taiwan, additional description), 1981e:7 (in key to *Trypoxylon* of Japan and northeastern Asia), 70 (Japan; additional description), 1982f:48 (Ryukyu Islands: Island of Ishigaki), 1982g:61 (known from Ryukyu archipelago), 1986:30 (known from Ryukyu archipelago); as *ishigakiense*).

373. *pileatum* F. Smith

Trypoxylon pileatum F. Smith, 1856:377, ♀, Holotype: ♀, India: : no specific locality (BMNH or OXUM). – F. Smith, 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); nec Cameron, 1889c:119 and 122 (= *Trypoxylon melanurum*); Bingham, 1896a:441 (Sri Lanka: Pundaluoya), 1897:222 (redescription); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Rothney, 1903:106 (India: West Bengal: Barrackpore); Kohl, 1906a:200 (a species with frontal shield); Maxwell-Lefroy, 1909:202 (nesting habits); Dutt, 1912:200 (nesting habits); Richards, 1934:338 (member of *Trypoxylon scutatum* species group), 344 (nesting habits summary); Begum and Bose, 1976:26 (Bangladesh: Dakka); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978a:6 (in key to *Trypoxylon scutatum* species group), 8 (redescription), 1979a:19 (bibliographic reference), 1979b:3 (in key to *Trypoxylon* of Sri Lanka), 6 (Sri Lanka), 1981d:2 (Sri Lanka; additional description), 18 (in new key to *Trypoxylon* of Sri Lanka), 1981f:47 (member of *Trypoxylon scutatum* species group); Pu, 1986:8 (China); Begum, Khan, and Bose, 1995:176 (Bangladesh: Dhaka University Campus); S. Gupta, 1995:86 (India: Uttar Pradesh); Jonathan, Ray, and Kundu, 2000:201 (India: Meghalaya: East Garo Hills: Darugiri); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Mawadda and Girish Kumar, 2023:105 (India: Rajasthan: Mount Abu), 116 (in checklist of Crabroninae of Northern India); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 64 (first record from Vietnam: Son La city).

374. *pilosum* Tsuneki

Trypoxylon pilosum Tsuneki, 1979a:97, ♀. Holotype: ♀, Malaysia: Kedah: Kedah Peak, now Gunung Jerai (BMNH). – Tsuneki, 1979a:9, 10 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

375. *pinguiceps* Tsuneki

Trypoxylon pinguiceps Tsuneki, 1977h:12, ♀, Holotype: ♀, Bismarck Islands: Lavongai: Banatam (ZMUC). – Tsuneki, 1981a:4 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 14 (additional description), 1982a:46 (Bismarck Archipelago).

376. *placidum* F. Smith

Trypoxylon placidum F. Smith, 1863a:35, ♀. Lectotype: ♀, Indonesia: Island of Misool: no specific locality (OXUM), designated by Tsuneki, 1978b:23. – F. Smith, 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); R. Turner, 1908:523 (Australia: Cairns); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:23 (redescription), 77 and 81 (in key to Oriental *Trypoxylon*), 1980a:10 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 90 (bibliographic reference, gastral petiol), 1981a:5 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 21 (New Guinea; additional description).

377. *planifrons* Tsuneki

Trypoxylon planifrons Tsuneki, 1977c:9, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Wushe-Pihu (originally K. Tsuneki coll., now USNM). – Tsuneki, 1981c:3, 5 (in key to *Trypoxylon* of Taiwan), 26 (Taiwan; additional description), 1981f:44 (single member of *Trypoxylon planifrons* species group); Nuhn and Menke, 1994:26 holotype transferred to USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution); T. Li and Q. Li, 2010a:242 (in key to *Trypoxylon* of southwestern China).

378. *popondettae* Tsuneki

Trypoxylon popondettae Tsuneki, 1981a:30, ♂, ♀. Holotype: ♂, Papua New Guinea: Northern District: Popondetta (Bishop Mus.). – Tsuneki, 1981a:5, 6 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:20 (one of three members of *Trypoxylon angoramum* species group).

ssp. *woodlarkense* Tsuneki

Trypoxylon popondettae woodlarkense Tsuneki, 1981a:33, ♀. Holotype: ♀, Papua New Guinea: Milne Bay District: Island of Woodlark (Murua): Kulumadon Hill (Bishop Mus.). – Tsuneki, 1981a:5 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

379. *posterorubrum* Richards

Trypoxylon posterorubrum Richards, 1934:290, ♀. Holotype: ♀, Mexico: Veracruz: Orizaba (MNHN). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

380. *prominens* Tsuneki

Trypoxylon prominens Tsuneki, 1979a:149, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Gi Sion Vill. de Tha Ngone (Bishop Mus.). – Tsuneki, 1979a:15, 16 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979c:7 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 38 (Indonesia: Java), 1980a:13 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 107 (Borneo), 1981f:13 (single member of *Trypoxylon prominens* species group); Pham and Antropov, 2021:321 (recorded from Vietnam by Tsuneki, 1979a, but without specific locality); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 64 (Vietnam: Vinh Phuc: Me Linh).

381. *propinquum* Tsuneki

Trypoxylon propinquum Tsuneki, 1980b:22, ♀, ♂. Holotype: ♂, Philippines: Manila (AEI). – Tsuneki, 1980b:4, 5 (in key to *Trypoxylon* of Philippines), 1981f:42 (member of *Trypoxylon buddha* species group).

382. *providum* F. Smith

Trypoxylon providum F. Smith, 1860b:125, ♀. Lectotype: ♀, Indonesia: Moluccas: Batjan: no specific locality (OXUM), designated by Tsuneki, 1978b:20. – F. Smith, 1862:55 (Indonesia), 1863b:135 (known from Gilolo and Batjan), 1865a:85 (New Guinea), 1871a:368 (in catalog of Oriental Aculeata); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Kohl, 1908b:309 (Papua New Guinea: Bougainville Province: Island of Buka); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:21 (redescription), 79 (in key to Oriental *Trypoxylon*), 1980a:13, 14 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 102 (Sulawesi; description of ♂), 1981f:75 (member of *Trypoxylon bicolor* species group).

383. *pseudoclavicerum* Antropov

Trypoxylon pseudoclavicerum Antropov, 1994c:128, ♀. Holotype: ♀, Morocco: Tizi Mil. (originally K. Guichard coll., now BMNH).

384. *pulchellum* Tsuneki

Trypoxylon pulchellum Tsuneki, 1979a:76, ♀. Holotype: ♀, Malaysia: Selangor: Bukit Kutu (BMNH). – Tsuneki, 1979a:10 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

385. *pullatum* Tsuneki

Trypoxylon pullatum Tsuneki, 1979a:170, ♀. Holotype: ♀, Malaysia: Selangor: Frazer's Hill (BMNH). – Tsuneki, 1979a:17 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

386. *pumilio* Arnold

Trypoxylon pumilio Arnold, 1959:321, ♂. Holotype: ♂, Lesotho: Mamathes (BMNH). – Leclercq, 1965a:84 (in key to Afrotropical *Trypoxylon*), 104 (not examined); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

387. *punctatissimum* Arnold

Trypoxylon punctatissimum Arnold, 1924:20, ♀. Holotype: ♀, South Africa: Eastern Cape Province: Algoa Bay near Port Elizabeth (TMP). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:338 (member of *Trypoxylon scutatum* species group; as *punctatissimum* Gribodo); Arnold, 1945:11 (Madagascar; description of ♂); Leclercq, 1960a:99 (Madagascar, nesting in twigs), 1965a:93 (in key to Afrotropical *Trypoxylon*), 119 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978a:5 (in key to *Trypoxylon scutatum* species group); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Madl, 2014a:989 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

388. *punctivertex* Richards

Trypoxylon punctivertex Richards, 1934:333, ♀. Holotype: ♀, Guyana: no specific locality (BMNH). – Richards, 1936b:460 (description of ♂, variation, Costa Rica); Sandhouse, 1940:155 (in revision of Nearctic *Trypoxylon*, description of ♂, USA: Texas: Brownsville and Victoria); Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae, Brazil to Texas); Krombein, 1979b:1645 (in catalog of North American Hymenoptera); Assis and Camillo, 1997:338-344 (observations in trap nests); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Morato, 2001:740 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); von Boroski Borges and Blochtein, 2002:56 (sex ratio, nest parasites, nest structure, cocoon); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas).

389. *punjabense* Tsuneki

Trypoxylon punjabense Tsuneki, 1979a:40, ♀, ♂. Holotype: ♀, India: Himachal Pradesh: Kangra Valley (BMNH). – Tsuneki, 1979a:5 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:37 (member of *Trypoxylon pacificum* species group); Mawadda and Girish Kumar, 2023:105 (India: Jammu and Kashmir and Uttarakhand), 116 (in checklist of Crabroninae of Northern India).

390. *pusillum* Tsuneki

Trypoxylon pusillum Tsuneki, 1979a:66, ♀. Holotype: ♀, Malaysia: Pahang: Cameron's Highlands (BMNH). – Tsuneki, 1979a:8 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

391. *puttalamum* Strand

Trypoxylon puttalamum Strand, 1922b:197, ♀. Lectotype¨♀, Sri Lanka: Puttalam (DEI), designated by Oehlke and Wudowenz, 1974:425. – Strand, 1927:255 (in list of species described by the author); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

392. *pygmaeum* Cameron

Trypoxylon pygmaeum Cameron, 1900b:79, "♀" = ♂. Holotype: ♂, India: Bengal: Barrackpore (OXUM). – Rothney, 1903:106 (India: West Bengal: Barrackpore); Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897, as *pygmoeum*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:41 (redescription), 76 (in key to Oriental *Trypoxylon*), 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 52 (Vietnam, Laos; ♀), 1979b:4 (in key to *Trypoxylon* of Sri Lanka), 10 (Sri Lanka), 1981d:5 (Sri Lanka; additional description), 19 (in new key to *Trypoxylon* of Sri

Lanka), 24 (India), 1981f:32 (member of *Trypoxylon pygmaeum* species group); Pham, Kumar and Danilov, 2015:1593 (in list of Sphecidae *sensu lato* of Vietnam); Pham and Antropov, 2021:321 (recorded from Vietnam: 30 km northwest of Pleiku by Tsuneki, 1979a).

393. *quadriceps* Tsuneki

As *Trypoxylon koshunicon*: Tsuneki, 1966b:16 (♀ only) and 1971g:16 (♀, in key to *Trypoxylon* of Taiwan), 19 (in new key to males of *Trypoxylon* of Taiwan), corrected to *Trypoxylon quadriceps* by Tsuneki, 1981c:20.

Trypoxylon quadriceps Tsuneki, 1971g:12, ♀. Holotype: ♀, Taiwan: Nantou Prefecture: Pempuchi (originally K. Tsuneki coll., now USNM). – Tsuneki, 1971g:16 (in additional key to females of *Trypoxylon* of Taiwan); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1977c:7 (Taiwan: Nantou Prefecture: Pempuchi), 1981c:5, 7 (in key to *Trypoxylon* of Taiwan), 20 (Taiwan; additional description), 1981f:37 (member of *Trypoxylon pacificum* species group); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Ma, Q. Li, Wang, Jiang, and Lu, 2018:832 (China: Shanxi: Qinling Mountains).

Trypoxylon chihpense Tsuneki, 1971g:13, ♀. Holotype: ♀, Taiwan: Taitung Prefecture: Chihpenchi (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon quadriceps* by Tsuneki, 1981c:20. – Tsuneki, 1971g:16 (in additional key to females of *Trypoxylon* of Taiwan); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Nuhn and Menke, 1994:25 (holotype transferred to USNM).

Trypoxylon venustum Tsuneki, 1977c:8, ♀, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Pempuchi (originally K. Tsuneki coll., now USNM). Synonymized with *Trypoxylon quadriceps* by Tsuneki, 1981c:20 – Nuhn and Menke, 1994:26 (holotype transferred to USNM).

394. *rajang* Tsuneki

Trypoxylon rajang Tsuneki, 1980a:56, ♀. Holotype: ♀, Malaysia (East): Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:8 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

395. *regium* Gussakovskij

Trypoxylon regium Gussakovskij, 1932:11, ♀. Holotype: ♀, Russia: Primorskiy Kray: Sutshan (ZIL). – Gussakovskij, 1936:652 (in revision of Palearctic *Trypoxylon*); Tsuneki, 1956g:5 (in key to *Trypoxylon* of northeastern Asia), 16 (in revision of *Trypoxylon* of northeastern Asia), Tsuneki, 1978b:66 (reversed to full species status); Kazenas, 1980e:90 (Russia: Primorskiy Kray); Tsuneki, 1981e:7 (in key to *Trypoxylon* of Japan and northeastern Asia), 77 (interpretation of the species is easy), 1981f:13 (member of *Trypoxylon regium* species group); Antropov, 1986a:89 (Russia: Primorskiy Kray; description of ♂); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:419 (in key to Sphecidae of Russian Far East, as *regium regium*); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:88 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Terayama and Nambu, 2009:8, 31 (in key to Trypoxylini of Japan); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:440 (in catalog of Sphecidae *sensu lato* of Korean Peninsula), 451 (recorded from Korea but not occurring there); Antropov, 2017b:245 (in catalog of Crabroninae of Russia, as *regium regium*);); Jeong and J.-K. Kim, 2020:248 (in key to Korean *Trypoxylon* with flask-shaped gastral segment I), 252 (in revision of Korean *Trypoxylon* with flask-shaped gastral segment I). – **As *Trypoxylon responum regium***: Tsuneki, 1967d:6 (new status, Taiwan); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

ssp. *hatogayuum* Tsuneki

Trypoxylon regium hatogayuum Tsuneki, 1956g:17, ♀. Holotype: ♀, Japan: Fukui Prefecture: Hatogayu (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1956f:121, 122 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:5, 9 (in key to *Trypoxylon* of northeastern Asia), 40 (description of ♂); Nambu, 1968b:22 (Japan:

Saitama Prefecture), 1971a:1 (nesting habits); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978b:66 (the correct name is *Trypoxylon regium hatogayuum*), 1981c:48 (relations to *Trypoxylon taiwanum*), 1981e:7, 8 (in key to *Trypoxylon* of Japan and northeastern Asia), 77 (Japan; additional description); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.); Suda, 2004:40 (Japan: Yamanashi Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:66 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:48 (Japan: Gifu Prefecture); Kinota, Haneda, and Tano, 2005:30 (Japan: Hokkaido); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2006a:24 (Japan: Toyama Prefecture). – **As *Trypoxylon responsum hatogayuum***: Tsuneki, 1967d:7 (Taiwan; new subspecific combination); Haneda, 1968a:44 (Japan); Nambu, 1968:22 (Japan); Haneda, 1969:68 (Japan: Yamanashi Prefecture); Tsuneki, 1970d:9 (nesting habits); Nambu, 1971:1 (nesting habits); Nambu, 1973a:150 (Japan: Saitama Prefecture); Tsuneki, 1973e:33, 36 (in key to *Trypoxylon* of Japan, in Japanese); Tsuneki and Moriyama, 1973:15 (orientation during emerging from nest); Nambu, 1975b:65 (Japan: Saitama Prefecture); Steiner, 1986:105 (references to publications on nesting habits); Tano, 1994a:6 (holotype in K. Tsuneki collection); Matsumoto and Makino, 2011:158 (Japan: suburbs of Tokyo; prefers nesting in artificial nests of bundle type rather than courtain type).

396. *regulare* Viereck

Trypoxylon regulare Viereck, 1906:205, "♀" but actually ♂ (as *regularis*, incorrect original termination). Holotype: ♂, USA: Kansas: Douglas County: no specific locality (KU). – Rohwer, 1909g:379 (Kansas: Douglas County); Richards, 1934:315 (not examined); Sandhouse, 1940:163 (in revision of Nearctic *Trypoxylon*); Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); LaBerge, 1956:528 (holotype in Snow Entomological Museum); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Krombein, 1979b:1644 (in catalog of North American Hymenoptera).

397. *rekabum* Tsuneki

Trypoxylon rekabum Tsuneki, 1980b:101, ♀ (reversed Baker + um). Holotype: ♀, Philippines: Mindanao: Surigao (USNM). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:26 (holotype in USNM).

398. *richardsi* Sandhouse

Trypoxylon richardsi Sandhouse, 1940:167, ♂, ♀. Holotype: ♂, USA: Maryland: Chavy Chase (USNM). – Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park), 1952b:177 (USA: West Virginia: Lost River State Park), 1954a:5 (West Virginia: Lost River State Park), 1959b:101 (nest in twig), 1963f:274 (Maryland: Plummers Island near Washington, D.C.); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Buck, 2004:26 (Canada: in checklist of Crabronidae of Ontario).

399. *ridleyi* Tsuneki

Trypoxylon ridleyi Tsuneki, 1979a:166, ♀. Holotype: ♀, Singapore (USNM). – Tsuneki, 1979a:17 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

400. *rohweriellum* Tsuneki

Trypoxylon rohweriellum Tsuneki, 1980b:77, ♀. Holotype: ♀, Philippines: Luzon: Los Baños (USNM). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines), 1981d:69 (Philippines: Luzon); Nuhn and Menke, 1994:26 (holotype in USNM).

401. *rubiginosum* Gussakovskij

Trypoxylon rubiginosum Gussakovskij, 1936:662, ♀. Lectotype: ♀, Russia: Krasnodar Kray: Sochi (ZIL), designated by Antropov, 1989a:55. – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Antropov

in Bitsch et al., 2001:380 (in Sphecid Fauna of Western Europe); Shorenko, 2015:330 (in list of Sphecidae *sensu lato* of Crimea); Antropov and Mokrousov, 2016:267 (Russia: Krasnodarskiy Kray: near Krinitsa at 44.400°N 38.316°E; diagnostic characters); Mokrousov and Popov, 2016:585 (Russia: Krasnodarskiy Kray); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Shorenko, 2017:78 (in Crimea collected in September), 2018:128 (Crimea, including localities, habitats, and number of specimens); Mokrousov, Shorenko, and Shlyakhtenok, 2019:14 (Russia: Dagestan Republic: locality records); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:394 (in revision of Sphecidae *sensu lato* of Europe); Japoshvili and Ljubomirov, 2022:277 (Georgia: Lagodekhi Protected Areas).

Trypoxylon adzharicum Antropov, 1984:626, ♂. Holotype: ♂, Georgia: Batumi (ZMMU). Synonymized with *Trypoxylon rubiginosum* by Antropov, 1989a:56.

402. *rubrifemoratum* Richards

Trypoxylon rubrifemoratum Richards, 1934:303, ♀. Holotype: ♀, Panama: Paraiso (USNM). Paratype: Trinidad. – Vesey Fitzgerald, 1936:114 (Trinidad: on flowers of *Bidens* sp.); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

ssp. *rubellum* Richards

Trypoxylon rubrifemoratum var. *rubellum* Richards, 1934:303, ♀. Holotype: ♀, Argentina: Salta: Salta (ZMHU). – **As *Trypoxylon rubrifemoratum rubellum***: R. Bohart and Menke, 1976:347 (new status, in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

403. *rubrocaudatum* Tsuneki

Trypoxylon rubrocaudatum Tsuneki, 1979a:34, ♀, ♂. Holotype: ♀, India: Madras: Anamalai Hills: Kadamparai (RMNH). – Tsuneki, 1979a:4, 8, 9 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:37 (member of *Trypoxylon pacificum* species group).

404. *rufidens* Cameron

Trypoxylon rufidens Cameron, 1905l:374, sex not stated. Holotype or syntypes: Mexico: no specific locality (BMNH). – Richards, 1934:325 (in revision of New World *Trypoxylon);* R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro-Alberto, and Delfín-González, 2015:994 (Mexico: in list of Sphecidae *sensu lato* of Yucatán); Vanoye-Eligio, Meléndez-Ramírez, Ayala-Barajas, Delfin-González, and Horta-Vega, 2019:8 (Mexico: Yucatán).

ssp. *trinidadianum* Richards

Trypoxylon rufidens var. *trinidadianum* Richards, 1934:326, ♂. Holotype: ♂, Trinidad: no specific locality (BMNH). – Vesey Fitzgerald, 1936:115 (type was collected in rice fields). – **As *Trypoxylon rufidens trinidadianum***: R. Bohart and Menke, 1976:347 (new status, in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:48 (in catalog of Neotropical Crabronidae).

405. *rufigaster* Tsuneki

Trypoxylon rufigaster Tsuneki, 1979a:78, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop.). – Tsuneki, 1979a:10, 11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:41 (single member of *Trypoxylon rufigaster* species group); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 65 (first record from Vietnam: Tuyen Quang: Na Hang and Vinh Phuc: Tam Dao National Park).

ssp. *cavatum* Tsuneki

Trypoxylon rufigaster cavatum Tsuneki, 1980a:30, ♀. Holotype: ♀, Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:5, 10 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

406. *rufimaculatum* Antropov

Trypoxylon varipes rufimaculatum Antropov, 1987:57, ♀. Holotype: ♀, Russia: Primorskiy Kray: 40 km southeast of Ussuriysk (ZMMU). – Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:420 (in key to Sphecidae of Russian Far East). – **As *Trypoxylon rufimaculatum***: Antropov, 1994c:124 (full species status, locality records from Japan and Russian Far East); Nemkov, 1998c:685 (in supplementary key to Russian Far East *Trypoxylon*); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:33 (Japan: Gifu Prefecture); Suda, 2004:41 (Japan: Yamanashi Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:66 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:48 (Japan: Gifu Prefecture), 2006a:24 (Japan: Toyama Prefecture), 2006b:48 (Japan: Nagasaki Prefecture: Tsushima, as *rufomaculatum*); Ohkusa, 2006a:24 (Japan: Honshu: Gifu Prefecture); Haneda, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2007:54 (Japan: Kagoshima Prefecture: Amami Oshima Islands); Nemkov, 2007b:70 (Russia: Kuril Islands: Island of Kunashir); Ohkusa and Tajima, 2008:75 (Japan: central Honshu: Aichi Prefecture); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); S. Tanaka, 2008:39 (Japan: Yamaguchi Prefecture); Nemkov, 2009b:88 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Terayama and Nambu, 2009:10, 32 (in key to Trypoxylini of Japan); Ohkusa and Tajima, 2010:12 (Japan: Island of Honshu: Shiga Prefecture); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:440 (in catalog of Sphecidae *sensu lato* of Korean Peninsula), 451 (recorded from Korea but not occurring there); Antropov, 2017b:245 (in catalog of Crabroninae of Russia).

407. *rufimanum* Spinola

Trypoxylon rufimanum Spinola, 1851:43, ♂. Syntypes: ♂, Brazil: Pará: Belém (M. Spinola collection, Torino). – F. Smith, 1856:378 (in catalog of Hymenoptera in British Museum); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Richards, 1934:281 (member of *Trypoxylon fabricator* species group); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:121 (specimens in M. Spinola collection, Torino); Amarante, 2002:48 (in catalog of Neotropical Crabronidae); Pagliano, 2014:85 (specimens in M. Spinola collection, Torino, are *Trypoxylon rufimanum*).

Trypoxylon rufimanum Spinola, 1853:59. Objective synonym of *Trypoxylon rufimanum* Spinola, 1851.

408. *rufiventre* Tsuneki

Trypoxylon rufiventre Tsuneki, 1976b:81, ♂, ♀. Holotype: ♂, Philippines: Tawi Tawi: Tarawakan (ZMUC). – Tsuneki,1976b: 93 (in key to female *Trypoxylon* of Philippines), 1980a:7 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 49 (Sarawak; comparison with *Trypoxylon penangense*.), 1980b:7 (in key to *Trypoxylon* of Philippines), 65 (Philippines; additional description), 1981d:28 (Western Java), 1981f:51 (single member of *Trypoxylon rufiventre* species group).

Trypoxylon penangense Tsuneki, 1979a:99, ♀, ♂ (♂ = *Trypoxylon rutilans*). Holotype: ♀, Malaysia: Island of Penang: Sengei Keihil Catchment area (BMNH). Synonymized with *Trypoxylon rufiventre* by Tsuneki, 1980a:2 and 50. – Tsuneki, 1979a:10 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), nec 11 (= *Trypoxylon rutilans)*, 1979c:9 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands, ♀ only; ♂ = *Trypoxylon rutilans*), 51 (Indonesia: Java; redescription).

ssp. *sutteri* Tsuneki

Trypoxylon penangense sutteri Tsuneki, 1979c:52, ♀. Holotype: ♀, Indonesia: Central Sumba: Lindiwatju (Basel Mus.). – Tsuneki, 1979c:8 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

409. *rugiceps* Dalla Torre

Trypoxylon rugifrons Cameron, 1888a:48, ♂, junior primary homonym of *Trypoxylon rugifrons* F. Smith, 1873. Holotype or syntypes: ♂, Mexico: Veracruz: Veracruz (BMNH). – Ashmead, 1899d:298 (in checklist of North American Crabronidae); Cameron, 1905l:373 (comparison with *Trypoxylon nigrispine*).

Trypoxylon rugiceps Dalla Torre, 1897:708. Substitute name for *Trypoxylon rugifrons* Cameron, 1889. – Rau, 1934:151-156 (nesting habits); Richards, 1934:281 (in revision of New World *Trypoxylon*), 346 (nesting habits summary), 1936b:457 (description of ♀, Costa Rica); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Steiner, 1986:105 (references to publications on nesting habits); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

410. *rugifrons* F. Smith

Trypoxylon rugifrons F. Smith, 1873b:100, ♀. Lectotype: ♀, Brazil: Amazonas: Ega, now Tefé (BMNH), designated by Richards, 1934:307. – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); nec Rau, 1933:151 (= *Trypoxylon fabricator*); Richards, 1934:306 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Menezes, Carvalho, Silva, and Costa, 2011:72 (molecular characterization of constitutive heterochromatin).

411. *rutilans* Tsuneki

As *Trypoxylon penangense* (corrected to *Trypoxylon rutilans* by Tsuneki, 1980a:2 and 52): Tsuneki, 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 99 (♂ only), 1979c:9 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands, ♂ only), 51 (♂ from Laos only).

Trypoxylon rutilans Tsuneki, 1980a:52, ♂. Holotype: ♂, Laos, Vientiane Province: Van Ban Eue (Bishop Mus.), 1981f:48 (single member of *Trypoxylon rutilans* species group).

412. *ryukyuense* Tsuneki

Trypoxylon ryukyuense Tsuneki, 1966b:9, ♀. Holotype: ♀, Ryukyu Islands: Island of Amami Oshima: Santaro-toge (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1966b:3 (in key to *Trypoxylon* of Ryukyu Islands and Taiwan), 1968d:54 (Ryukyu Islands), 1973e:33 (in key to *Trypoxylon* of Japan, in Japanese), 1981e:7 (in key to *Trypoxylon* of Japan and northeastern Asia), 80 (reverted to full species status), 1982f:47 (Okinawa), 1982g:61 (known from Ryukyu archipelago), 1986:30 (known from Ryukyu archipelago); Tano, 1994a:6 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.); Yamane, Ikudome, and Terayama, 1999:527 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Haneda, Nozaka, Tano, Kurokawa, Murota, and Murota, 2007:54 (Japan: Ryukyu Archipelago: Amami Oshima Islands); Murota and Kurokawa, 2009:14 (Japan: Ryukyu Archipelago: Amami Oshima Islands); Terayama and Nambu, 2009:8, 32 (in key to Trypoxylini of Japan). – **As *Trypoxylon responsum ryukyuense***: Tsuneki, 1967d:7 (new status, Taiwan); Murota, 1973a:101 (Ryukyu Islands: Amami Group); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae). – **As *Trypoxylon regium ryukyuense***: Tsuneki, 1978b:66 (new subspecific combination), 1981c:7 (in key to *Trypoxylon* of Taiwan), 49 (Taiwan; additional description).

413. *sacinasium* Tsuneki

Trypoxylon sacinasium Tsuneki, 1981a:61, ♂. Holotype: ♂, New Guinea: no specific locality (BMNH). – Tsuneki, 1981a:8 (in key to *Trypoxylon* of New Guinea and South), 1981f:76 (member of *Trypoxylon sacinasium* species group). Pacific Islands

414. *salween* Tsuneki

Trypoxylon salween Tsuneki, 1981d:55, ♀, ♂. Holotype: ♀, norheastern Myanmar: Kambaiti (NRS). – Tsuneki, 1981d:63 (in key to *Trypoxylon* of Myanmar), 1981f:73 (single member of *Trypoxylon salween* species group).

415. *samarense* Tsuneki

Trypoxylon samarense Tsuneki, 1980b:85, ♀, 116 (♂). Holotype: ♀, Philippines: Samar: no specific locality (USNM). – Tsuneki, 1980b:9, 11 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:26 (holotype in USNM).

416.*sanctum* Richards

Trypoxylon sanctum Richards, 1934:323, ♀, ♂. Holotype: ♀, Brazil: Santos (NHMW). – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

417. *sandakanum* Tsuneki

Trypoxylon sandakanum Tsuneki, 1980a:35, ♀. Holotype: ♀, Malaysia (East): Sandakan: Sandakan (USNM). – Tsuneki, 1980a:6 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1981d:65 (Brunei); Nuhn and Menke, 1994:26 (holotype in USNM).

418. *sapporoense* Tsuneki

Trypoxylon sapporoense Tsuneki, 1960d:241, ♂. Holotype: ♂, Japan: Hokkaido: Sapporo (originally K. Tsuneki coll., now Hyogo Mus.). – Nambu, 1972e:90 (Japan: Saitama Prefecture); Suda, 1972c:52 (Japan); Tsuneki, 1973a:15 (diagnostic characters), 16 (description of ♀), 1973e:34, 36 (in key to *Trypoxylon* of Japan, in Japanese), 1973o:113 (Japan: Fukui Prefecture); Nambu, 1975b:65 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981e:3 (in key to *Trypoxylon* of Japan and northeastern Asia), 9 (Japan; additional description), 1981f:72 (single member of *Trypoxylon sapporoense* species group), 1982b:16 (as *Pison sapporoense*; known from Korea); Paik, 1985:199 (in list of Sphecidae of Korea); Tano, 1994a:6 (holotype in K. Tsuneki collection); K. Schmidt and Schmid-Egger, 1997:19 (in checklist of German Sphecidae); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:33 (Japan: Gifu Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:66 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:48 (Japan: Gifu Prefecture), 2006a:24 (Japan: Toyama Prefecture); S. Tanaka, 2008:39 (Japan: Yamaguchi Prefecture); Terayama and Nambu, 2009:9, 32 (in key to Trypoxylini of Japan); Matsumoto and Makino, 2011:158 (Japan: suburbs of Tokyo; prefers nesting in artificial nests of bundle type rather than courtain type); J.-K. Kim, 2014:440 (in catalog of Sphecidae *sensu lato* of Korean Peninsula).

Trypoxylon pappi Tsuneki, 1974a:363, ♀. Holotype: ♀, Korea, 20 km northeast of Kaesong, Pakyon Mountains (TMB). Synonymized with *Trypoxylon sapporoense* by Tsuneki, 1981e:9. – R. Bohart and Menke, 1976:630 (in checklist of world Sphecidae).

Trypoxylon pappi Tsuneki, 1991:200, as new species. Nomen nudum.

419. *sarum* Tsuneki

Trypoxylon sarum Tsuneki, 1980b:86, ♀. Holotype: ♀, Philippines: Mindanao: Surigao (USNM). – Tsuneki, 1980b:9 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:26 (holotype in USNM).

420. *sauteri* Tsuneki

As *Trypoxylon fenchihuense*: Tsuneki, 1977j:272 (Taiwan: Teraso; description of ♀), corrected to *Trypoxylon sauteri* by Tsuneki, 1981c:25.

Trypoxylon sauteri Tsuneki, 1981c:25, ♀. Holotype: ♀, Taiwan: Pingtung Prefecture: Teraso, now Manchou (Basel Mus.). – Tsuneki, 1981c:4, 6 (in key to *Trypoxylon* of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Ma, Q. Li, Wang, Jiang, and Lu, 2018:833 (China: Shanxi: Qinling Mountains).

421. *sayabouryense* Tsuneki

Trypoxylon sayabouryense Tsuneki, 1979a:175, ♂. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (Bishop Mus.). – Tsuneki, 1979a:18 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:64 (single member of *Trypoxylon sayabouryense* species group).

422. *scaposum* Tsuneki

Trypoxylon scaposum Tsuneki, 1980b:51, ♀. Holotype: ♀, Philippines: Negros: Mount Canlaon (AEI). – Tsuneki, 1980b:6 (in key to *Trypoxylon* of Philippines).

423. *schmidti* Richards

Trypoxylon schmidti Richards, 1936b:460, ♂, ♀. Holotype: ♂, Costa Rica (originally von Schulthess coll., now Zurich). – Vesey-FitzGerald, 1938:191 (Trinidad); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

424. *schmiedeknechtii* Kohl

Trypoxylon schmiedeknechtii Kohl, 1906a:202, ♂ (as *Schmiedeknechtii*, incorrect original capitalization). Syntypes: Indonesia: Java: no specific locality (NHMW). – Tsuneki, 1974b:627 (Thailand); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1976b:74 (Philippines; diagnostic characters), 93 (in key to female *Trypoxylon* of Philippines), 1977h:4 (Singapore; comparison with *Trypoxylon subpileatum*), 1978a:6 (in key to *Trypoxylon scutatum* species group), 21 (redescription), 86 (relationships to other species), 1979a:19 (bibliographic reference), 1979b:3 (in key to *Trypoxylon* of Sri Lanka), 5 (Sri Lanka), 1979c:11 (bibliographic reference), 1980a:15 (Sarawak), 1980b:4 (in key to *Trypoxylon* of Philippines), 13 (Philippines), 1981c:3 (in key to *Trypoxylon* of Taiwan), 12 (Taiwan; additional description), 1981d:2 (Sri Lanka), 18 (in new key to *Trypoxylon* of Sri Lanka), 21 (India), 33 (Myanmar), 61 (in key to *Trypoxylon* of Myanmar), 64 (Brunei), 68 (Philippines: Luzon), 1981e:3 (in key to *Trypoxylon* of Japan and northeastern Asia), 9 (Ryukyu Islands: Island of Iriomote; bibliographic reference), 1981f:47 (member of *Trypoxylon melanurum* species group), 1982d:10 (Taiwan), 1982g:61 (known from the Ryukyu archipelago); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands); Cardale, 1985:265 (in catalog of Australian Sphecidae); Tsuneki, 1986:30 (known from the Ryukyu archipelago); Dollfuss, 1989:13 (type material in NHMW); Yamane, Ikudome, and Terayama, 1999:525 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan, as *schmiekecknechti*); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Terayama and Nambu, 2009:6 (in key to Trypoxylini of Japan); T. Li and Q. Li, 2010a:241 (in key to *Trypoxylon* of southwestern China); Haneda, 2011:46 (Philippines: Palawan); Ma, Q. Li, Wang, Jiang, and Lu, 2018:833pli (China: Shanxi: Qinling Mountains); Pham and Antropov, 2021:321 (recorded from Vietnam by Tsuneki, 1978a and 1979a); Mawadda and Girish Kumar, 2023:106 (India: Madhya Pradesh: Kanha National Park, as *schmiedeknechti schmiedeknechti*), 116 (in checklist of Crabroninae of Northern India).

Trypoxylon pileatum var. *subpileatum* Strand, 1922b:163, ♀, ♂. Lectotype: ♀, Taiwan: Kankau, now Hengchun (DEI), designated by Oehlke and Wudowenz, 1974:425. Synonymized with *Trypoxylon schmiedeknechti* by Tsuneki, 1978a:21. – Strand, 1927:255 (in list of species described by the author). – **As *Trypoxylon subpileatum***: Tsuneki, 1966b:2 (in key to *Trypoxylon of* Ryukyu Islands and Taiwan), 4 (full species status, Taiwan, redescription), 1967d:2 (in key to *Trypoxylon* of Taiwan), 3 (Taiwan, redescription of ♂), 1968d:54 (Taiwan); Haneda, 1971b:30 (Taiwan); Tsuneki, 1971g:1 (Taiwan), 16 (in new key to males of *Trypoxylon* of Taiwan), 1972c:1 (Taiwan; variation); Haneda, 1972a:4 (Taiwan); Murota, 1973b:117 (Taiwan); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1977c:7 (Island of Botel Tobago, now Lan-hsu), 1977j:270 (Taiwan); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan).

Trypoxylon chinense Gussakovskij, 1936:648, ♀. Holotype: ♀, China: Tientsin (ZIL). Synonymized with *Trypoxylon schmiedeknechti* by Antropov, 1987:61. – R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae); Tsuneki, 1978a:21 and 40 (tentative synonym of *Trypoxylon schmiedeknechti*).

ssp. *connexum* R. Turner

Trypoxylon connexum R. Turner, 1908:522, ♀, ♂. Lectotype: ♀, Australia: Queensland: Mackay (BMNH), designated by Tsuneki, 1978b:70. – **As *Trypoxylon schmiedeknechti connexum***: Tsuneki, 1978a:6 (in key to *Trypoxylon scutatum* species group), 21 and 40 (new status), 1981a:4 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 13 (New Guinea), 1981b:100 (in key to *Trypoxylon* of Australia), 101 (Australia: locality records, variation), 1982a:45 (Bismarck Archipelago); Cardale, 1985:265 (in catalog of Australian Sphecidae); Naumann, 1993:184 (Australia: Queensland: Heathlands area in Cape York); Mawadda and Girish Kumar, 2023:106 (India: Uttarakhand: Dehradun district), 116 (in checklist of Crabroninae of Northern India).

Trypoxylon lavongaianum Tsuneki, 1977h:1, 19, ♀. Holotype: ♀, Bismarck Islands: Lavongai: Banatam (ZMUC). Synonymized with *Trypoxylon schmiedeknechti connexum* by Tsuneki, 1978a:21 and 40. – Tsuneki, 1977h19 (additional description)

ssp. *hungtouense* Tsuneki

Trypoxylon subpileatum hungtouense Tsuneki, 1977c:7, ♀. Holotype: ♀, Island of Botel Tobago, now Lan-hsu: Hungtou (T. Murota coll.). – Hua, 2006:283 (in list of Chinese insects, geographic distribution).

425. *scitulum* Tsuneki

Trypoxylon venustum Tsuneki, 1979a:63, ♂, junior primary homonym of *Trypoxylon venustum* Tsuneki, 1977. Holotype: ♂, Laos: Bolouens Plateau: 1 km south of Thateng (Bishop Mus.). – Tsuneki, 1979a:8 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia); Antropov, 1994c:125 (synonymy).

Trypoxylon scitulum Tsuneki, 1980a:2. Substitute name for *Trypoxylon venustum* Tsuneki, 1979. – Tsuneki, 1981f:37 (member of *Trypoxylon pacificum* species group).

Trypoxylon bolouense Tsuneki, 1992c:54. Unnecessary substitute name for *Trypoxylon venustum* Tsuneki, 1979.

426. *sculleni* Sandhouse

Trypoxylon sculleni Sandhouse, 1940:160, ♂, ♀. Holotype: ♂, USA: Oregon: Corvallis (USNM). – Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); LaBerge, 1956:528 (paratype in Snow Entomological Museum); F. Parker and R. Bohart, 1966:95 (California: Davis, Nevada: Mustang, Patrick, Verdi; nest parasites: *Aprostocetus* sp., Ichneumonidae, *Eurytoma stigma* Ashmead, Eurytomidae, *Trichrysis doriae* Gribodo, Chrysididae, *Anthrax irrorata* Say, Bombyliidae, *Amobia floridensis* Townsend, Sarcophagidae, *Dibrachys* sp., Pteromalidae); G. Bohart, Nye, and Hawthorn, 1970:48 (Utah: Logan, onion pollinator); Horning and Barr, 1970:103 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Zack, 1984:38 (paratypes in James Entomological Collection, Washington State University); Frohlich, Clark, Parker, and Griswold, 1988:268 (Oregon: Malheur County: Leslie Gulch); Spofford, Kurczewski, and Downes, 1989:255 (summary of previous records for nest parasite *Amobia floridensis* (Townsend), miltogrammine fly); Coville, 1990:2 (may be a complex of species); Finnamore, 1994:210 (Canada: Alberta: Wagner Natural Area 8 km west of Edmonton); Antropov, 2003:438 (in key to North American species of *Trypoxylon figulus* species group); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 55 (first record from Ontario: Saint Lawrence National Park); Ratzlaff, 2016:26 (Canada: British Columbia: from Sandhouse, 1940 and Krombein, 1979).

427. *scutatum* Chevrier

Trypoxylon scutatum Chevrier, 1867a:231, ♀ (as *scutatus*, incorrect original termination). Holotype: ♀, Switzerland: Genève (MHNG). – Girard, 1879:932 (recognition characters); Kohl, 1883e:657 (Switzerland, as *scutatus*), 1885a:193 (in key to European *Trypoxylon*), 199 (in revision of European species) 206 (in checklist of world *Trypoxylon*); Gasperini, 1887:15 (Dalmatia: Spalato and San Giorgio, now Croatia: Split and Sućuraj on Island of Hvar); Ed. André, 1888:208 (in revision of Sphecidae of Europe and Algeria), 17* (bibliographic references); Baldini, 1894:54 (Italy: Modena area); Medina, 1894a:260 (Spain); Dalla Torre, 1897:708 (in

catalog of world Hymenoptera); Flamary, 1898:38 (France: Saône-et-Loire: Mâcon area); Ferton, 1899:344 (prey, *Uloborus walkenaerius* Latreille, lived paralyzed for two months); de Cobelli, 1900b:188 (Italy: Rovereto, nesting in abandoned nests of *Chalicodoma muraria* Ratz.); Schletterer, 1901:219 (Croatia: southern Istria Peninsula); Pigeot, 1902:63 (nesting habits); de Cobelli, 1903:107 (Italy: Province of Trentino); Antiga and Bofill, 1904:13 (Spain: Cataluña Province); E. Saunders, 1904c:635 (Spain); W. Schulz, 1904b:102 (Greece: Island of Syros, as Syra); Kohl, 1906a:200 (a species with frontal shield), 202 (in key to *Trypoxylon scutatum* species group); Mercet, 1906c:464 (in key to Palearctic species); Schmiedeknecht, 1907:251 (in key to Hymenoptera of Central Europe); Zavattari, 1910:4 (Italy: Isola d'Elba: Portoferraio); Morice, 1911:131 (Algeria: Biskra); Berland, 1921:533 (Greece); Maidl, 1922:73 (Croatia); Noskiewicz, 1924b:181 (Poland: Podole Region: Mielnica and Sinków, now Ukraine); Berland, 1925d:151 (in Sphecid Fauna of France); Strohm, 1925:212 (Germany: Baden-Württemberg: Kaiserstuhl); von Schulthess, 1926b:219 (Tunisia); Berland, 1928b:179 (France: Alpes-Maritimes: Cagnes); Micheli, 1929:41 (nest and prey); Schmiedeknecht, 1930:711 (in keys to Hymenoptera of North and Central Europe); Grandi, 1931:50 (Micheli's observations reported); K. Strohm, 1933:337 (Germany: Baden: Württemberg: Kaiserstuhl); Grandi, 1934:131 (Italy: Toscana: San Vincenzo); Giner Marí, 1934:135 (Spain); Guiglia, 1934b:305 (Libya: bibliography and summary of locality records); Richards, 1934:338 (member of *Trypoxylon scutatum* species group), 344 (nesting habits summary); Grandi, 1935a:111 (Italy); Gussakovskij, 1935:421 (Tajikistan: Kulab; nesting in loess cliffs, hence common in treeless areas); Vergne, 1935:119 (France: Auvergne: Les Martres-d'Artières); Gussakovskij, 1936:646 (in revision of Palearctic *Trypoxylon*); Maréchal, 1936:393 (review of literature on nesting habits); Kuntze and Noskiewicz, 1938:379 (in Poland known only from Podole region, now Ukraine); Guiglia, 1941c:160 (Italy: Calabria: Grande Sila); Giner Marí, 1943a:216 (in Sphecid Fauna of Spain); Guiglia, 1943b:72 (Albania: Kopliku), 1944a:149 (Cyprus: Limassol), 1944b:33 (Italy); Giner Marí, 1945b:360 (e. Morocco: Muley Rechid); de Beaumont, 1947b:396 (Cyprus); Guiglia, 1948c:202 (Italy: Sardegna: Villasalto); Šnoflák *in* Zavadil and Šnoflák, 1948:58 (in key to Sphecidae of Czechoslovakia); de Andrade, 1949:20 (Portugal); Cavro, 1950:37 (France: Département du Nord); de Beaumont, 1950f:409 (Algeria); Pittioni, 1950:26 (Cyprus); Cleu, 1953:51 (France: Ardèche River basin; as *scutatus*); Guiglia, 1953b:10 (Italy: Lucania-Calabria: Santicelli); Leininger, 1953:18 (Germany: Baden-Württemberg: Ettlingen); de Beaumont, 1954e:92 (Italy); Grandi, 1954:238 (Italy); Lehrer, 1955:265 (Romania: Moldova: Iaşi); Vogrin, 1955:40 (Yugoslavia); Bytinski-Salz, 1956:226 (Turkey: Kalkan, Konya); Ceballos, 1956:392 (in catalog of Hymenoptera of Spain); Bajári, 1957a:66 (in key to Hungarian Sphecidae), 1957b:136 (first record from Hungary); de Beaumont, 1957a:148 (Morocco), 1957b:137 (northern Iran); Grandi, 1957:388 (Italy); Guiglia, 1957:146 (Italy: Isole Pelagie); Nouvel and Ribaut, 1958:16 (France: Pyrénées-Orientales: Banyuls-sur-Mer); Pulawski, 1958a:186 (Bulgaria: Aitos); Compte Sart, 1959:137 (Spain: Mayorca); de Beaumont, 1959a:30 (Italy); Diniz, 1959:31 (Portugal: Cascais, S. João do Estoril, Vale de Gaio); Grandi, 1959b:287 (Italy: Livorno: Quercianella); Suárez, 1959:59 (Spain: Almería Province); de Beaumont, 1960a:21 (Greece: Island of Rhodes), 1960b:247 (Libya); Guiglia, 1960:361 (Italy: Isole Pelagie: Lampedusa); Noskiewicz and Puławski, 1960:107 (in key to Polish Sphecidae, not yet found in Poland); de Beaumont, 1961c:51 (Greece: Island of Crete); Grandi, 1961:184 (nesting habits), 1962:96 (Italy); Myartseva, 1963b:58 (Turkmenistan: lower Murgab River); Ceballos, 1964:94 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964c:85 (in Sphecid Fauna of Switzerland), 1965a:55 (Greece); Myartseva, 1965:80 (Turkmenistan: Akibay; Bayram-Ali district); Balthasar, Hrubant, and Hrubant, 1967:170 (Bulgaria: Sozopol); de Beaumont, 1967a:338 (Turkey); Gauss, 1967:554 (Germany: Baden-Württemberg: Kaiserstuhl, Nördliches Rheinvorland); Scobiola-Palade, 1967b:44 (Romania); Benedek, 1968:73 (Hungary, visiting flowers of *Pastinaca sativa* L.); de Beaumont, 1970a:401 (Afghanistan); Benedek, 1969a:84 (Hungary; marshy meadow); Zangheri, 1969:1704 (Italy: in catalog of flora and fauna of Romagna Region); Benedek, 1970:99 (Hungary: Tapolca); Oehlke, 1970:726 (not recorded from Democratic Germany); Balthasar, 1972:227 (in Sphecid Fauna of Czechoslovakia); Kazenas, 1972b:156 (Kazakhstan); Myartseva, 1972a:82 (Turkmenistan); de Beaumont, Bytinski-Salz and Pulawski, 1973:20 (Israel); Erlandson, 1974:76 (Spain);

Gauss, 1974:199 (Germany: Baden-Württemberg: Schelingen in Kaiserstuhl); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Georghiou, 1977:193 (Cyprus); Kazenas, 1978b:145 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:252 (in key to Sphecidae of European part of USSR); Tsuneki, 1978a:86 (relationships to other species); Benedek, 1979:232 (Hungary: Bakony Hills: Fenyőfő); Radović and Krunić, 1979:unpaginated foldout (nesting in wood, foreleg structure); Pagliano, 1980:129 (Italy: Sardegna); Tsuneki, 1981f:46 (member of *Trypoxylon scutatum* species group; the group consists of 7 species, of which 4 are listed); Gayubo, 1982a:113 (northern Spain: Sierra de Béjar), 1982f:258 (Spain: Cádiz Province); Józan, 1983:100 (Hungary); K. Schmidt and Westrich, 1983:123 (Greece); Gayubo, 1984b:90 (Spain: Salamanca Province), 1984c:373 (Portugal: El Algarve Province); K Schmidt, 1984:295 (Germany: Baden-Württemberg); Józan, 1985b:57 (Hungary south of Lake Balaton), 84 (ecological and zoogeographic characteristics); Radović, 1985:65 (sting apparatus analyzed); Westrich and K. Schmidt, 1985b:112 (Germany: endangered in Baden-Württemberg); Gayubo, 1986c:35 (Spain: Zamora Province); Gayubo and Sanza, 1986:56 (Spain: Burgos, Segovia); Gayubo and Tormos, 1986a:15 (Spain: Castellón de la Plana); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast'); Józan, 1986:370 (Hungary: Kiskunság National Park); Dollfuss, 1987:21 (first record from Austria: Bisamberg near Wien); Gayubo, 1987a:117 (Spain: Ciudad Real Province); Dollfuss, 1988:13 (Austria: Bisamberg); Gayubo and Mingo, 1988:88 (Spain); Karsai, 1988:100 (Hungary: Kiskunság National Park); Pádr *in* Šedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Gayubo, Asís, and Tormos, 1990a:20 (Spain); Jacobs and Oehlke, 1990:174 (unknown from Democratic Germany); Pagliano, 1990:110 (in catalog of Italian Sphecidae); Day, 1991:xix (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:123 (in key to Sphecidae of North and Central Europe); Gayubo and Torres, 1991:Table I (Spain: Salamanca; effects of urban pressure); Negrisolo, 1991:319 (Italy: Treviso and Udine Provinces); Gayubo, Borsato, and Osella, 1992:284 (Turkey); Józan, 1992c:289 (Hungary: Zselic Hills); Kazenas, 1992c:27 (Turkmenistan: Repetek Nature Reserve); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Dollfuss, 1994:98 (endangered in Austria); Tormos, Asís, and Gayubo, 1994:188, 212 (Spain: Albacete Province); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Józan, 1995:105 (Hungary: projected Duna-Dráva National Park); Negrisolo, 1995a:23 (Italy: Veneto); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:88 (Italy: Ferrara Province); Pagliano and Scaramozzino, 1995:732 (Italy: Island of Lampedusa); Scharrer, 1995:25 (Croatia: Island of Krk); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Schmid-Egger, K. Schmidt, and Doczkal, 1996:378 (Germany: Baden-Württemberg: endangered); Nazarova and Shomirsaidov, 1997:24 (Tajikistan: fruit tree orchards in Vakhsh River valley); K. Schmidt and Schmid-Egger, 1997:32 (in checklist of German Sphecidae); Józan, 1998:311 (Hungary: Duna-Dráva National Park); Shkuratov, 1998:98 (Russia: Rostov Oblast'); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Gonzáles, Gayubo, and Torres, 1999:355 (Spain: Valladolid: Viana de Cega); Zehnder and Zettel, 1999:131 (Switzerland: recolonization of flooded area in Valais Canton); Blösch, 2000:256 (in Sphecid Fauna of Germany); Esenbekova and Kazenas, 2000:41 (southeastern Kazakhstan: nine localities); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Józan, 2000:108 (Hungary: Bakony Mountains); Shkuratov, 2000:59 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Antropov *in* Bitsch et al., 2001:383 (in Sphecid Fauna of Western Europe); Józan, 2001:279 (Hungary: Somogy County); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia), 176 (review of known biology); Ohl et al., 2001:142 (distribution in Germany by provinces); Józan, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:86 (geographic distribution, collecting localities in Kazakhstan); Shkuratov, 2002b:142 (Russia: Rostov Oblast': Rostovskiy Nature Reserve at 46°27'N 42°41'E); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Erzurum: Palandöken); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); Pagliano, 2003b:132 (Italy: islands of Lampedusa and Pantelleria); Schmid-Egger, 2003:759 (Italy: Sicilia: Amenta, Agrigento, Castelammare); Gayubo**,** Nieves-Aldrey, González, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Kazenas, 2004b:105 (Kazakhstan: western Tien Shan), 2004d:32 (Kazakhstan: northern

Caspian region); Nazarova, 2004:107 (Tajikistan: Badakhshan Region: Rushan District: villages Siponch and Visav in Bartang River valley); Shkuratov, 2004a:78 (Russia: Rostov Oblast'), 2004b:167 (Russia: Rostov Oblast': Gosudarstvennyi Muzey-Zapovednik M.A. Sholokhova); Wiśniowski and Szczepko, 2004:92 (in key to *Trypoxylon* of Poland, not known from Poland); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Ebrahimi, 2005:127 (in key to selected Iranian Sphecidae); Nazarova, 2005:94 (alfalfa fields in southwestern Tajikistan); Pagliano and Negrisolo, 2005:421 (in Sphecid Fauna of Italy); Shorenko, 2005a:164 (Ukraine: Crimea), 2005b:98 (Ukraine: Crimea: Karadagh Nature Reserve); Straka, 2005a:399 (critically endangered in Czech Republic); Yildirim and Ljubomirov, 2005:1800 (Turkey: Erzurum and Şanlıurfa provinces); Gorobchishin, 2006:114 (Ukraine: Cherkasy Oblast': Kaniv Nature Reserve); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Baños-Picón, Gayubo, Asís, and González, 2007:257, 259 (Spain: Zamora: Cabañas de Aliste); Jacobs, 2007:108, 111 (in key to Crabronidae of Germany); Józan, 2007:179 (Hungary: Zselic hills); Roche, 2007a:100 and 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); G. Turrisi and R. Turrisi, 2007:122 (Italy: Sicilia: Mount Etna: Botanical Garden Nuova Gussonea and vicinity); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia, known only from Moravia and Slovakia); Gayubo, González, Tormos, and Asís, 2008:139 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Kazenas, 2008b:113 (Kazakhstan: foothills of Zailiskiy Alatau: usually found on loess cliffs); Ljubomirov and Yildirim, 2008:244 (in catalog of Crabronidae of Turkey); Protsenko and Drozdovskaya, 2008:127 (Ukraine: Sumy Oblast': Mogritsa village); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Gayubo, González, Tormos, and Asís, 2009:364 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Burguet *in* Durand and Burguet, 2010:57 (France Département d'Ardèche: Ardèche Gorges); Ghazi-Soltani, Ebrahimi, Iranipour, and Pour Abad, 2010:799 (Iran: East Azarbaijan: Marand: Yam, Tabriz: Khosrow-Shahr); Rudoiskatel', 2010:155 (Russia: southern Ural Mountains); Schmid-Egger, 2010a:19 (in red list of Aculeata of Germany: extinct, last collected in 1970); Shorenko and Konovalov, 2010:24 (Ukraine: Crimea: Feodosiya); van der Smissen, 2010b:388 (France: Ardèche and Vaucluse: locality records); Antropov, 2011a:615 (in key to *Trypoxylon scutatum* species group of eastern Mediterranean Region and southwestern Asia); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Józan, 2011:181 (in checklist of Sphecidae *sensu lato* of Hungary); Murai and Amr, 2011:112 (Syria: Al Thawrah Nature Reserve at 35°51'N 28°38'E); Amolin, 2012:29 (Ukraine: Donetsk); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Strumia, Pagliano, and Gayubo, 2012:57 (Italy: Toscana: Riserva di San Rossore); Kazenas, 2013b:496 (southeastern Kazakhstan: many localities in foothills and river valleys); Vieira, Oliveira, Brewster, and Gayubo, 2013:18 (Portugal: Douro International Natural Park, Serras de Aire e Candeeiros Natural Park, and Paúl do Boquilobo Nature Reserve); Baldock, 2014:357 (Spain: Island of Mallorca); Bitsch, 2014:406 (France: Gard: Alès; Loir-et-Cher: Muides-sur-Loirep); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Ebrahimi, 2014:43 (Iran: Alborz, Ardebil, and Māzandarān provinces); Kazenas, 2014a:136 (Kazakhstan: Karatau Mountain Range); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Atbaei, Fallahzadeh, and Ljubomirov, 2015:27 (Iran: Fars Province, as *scutatum scutatum*); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Rezaei and Fallahzadeh, 2015:11 (Iran: Fars: several localities, as *scutatum scutatum*); Shorenko, 2015:330 (in list of Sphecidae *sensu lato* of Crimea); Simon, Lorthiois, and Macé, 2015:55 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro-Alberto, and Delfín-González, 2015:994 (Mexico: in list of Sphecidae *sensu lato* of Yucatán); Mokrousov and Popov, 2016:586 (Russia: Krasnodarskiy Kray); Sadeghi, Fallahzadeh, Ostovan, Ljubomirov, and Hesami, 2016:431 (Iran: Fars Province, as *scutatum scutatum*); Vas,

Szöllősi-Tóth, and Muskovits, 2016:154 (Romania: Sălaj County); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:41 (Turkey: Kars and Tunceli provinces, as *scutatum scutatum*); Antropov, 2017b:245 (in catalog of Crabroninae of Russia, as *scutatum scutatum*); Jahantigh, Rakhshani; Mokhtari, and Ramroodi, 2017:70 (Iran: known from Alborz, Ardabil, East Azerbaijan, Fars, Kermanshah, Mazandaran, and Tehran provinces); Shorenko, 2017:78 (in Crimea collected in July and August), 2018:128 (Crimea, including localities, habitats, and number of specimens); Ben Khedher, Yildirim, Braham, Ben Chaaban, 2019:193 (first record from Tunisia: Tozeur Province: Tibebsa oasis at 33°55'27.3"N 8°08'44.5", redescription); Carminati, Mora, and Cretin, 2019:21 (France: in list of Sphecidae *sensu lato* of Franche-Comté); S. Ivanov, Fateryga, and Zhidkov, 2019:75 (Crimea: reared from trap nests); Mokrousov, Proshchalykin, Aliyev, and Maharramov, 2019:20 (Azerbaijan: Nakhichevan Autonomous Republic); Sadeghi, Fallahzadeh, Ostovan, Ljubomirov, and Hesami, 2019a:272 (Iran: Fars: Dehno, and Sarvestan: Kamal Abad); Vanoye-Eligio, Meléndez-Ramírez, Ayala-Barajas, Delfin-González, and Horta-Vega, 2019:8 (Mexico: Yucatán); Cassar, Mifsud, and Schmid-Egger, 2020a:76 (Malta: Fawwara and Mellieħa); Gadallah, 2020b:58 (in list of aculeate wasps of Arabian Peninsula); Shorenko, 2020:52 (Crimea: Karadag Nature Reserve); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:399 (in revision of Sphecidae *sensu lato* of Europe); Ben Khedher, Yildirim, and Braham, 2021:61 (Tunisia: Kebili and Sidi Bouzid governorates); Cross, Baldock, and Wood, 2021:57 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2021:80 (in catalog of Crabronidae of Turkey), 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

Trypoxylon ammophiloides A. Costa, 1867c:118 and 1871b:47, ♂. Holotype: ♂, Italy: Sardinia: no specific locality (Napoli). Synonymized with *Trypoxylon scutatum* by Antropov, 1989b:55. – Kohl, 1885a:194 (in key to European *Trypoxylon*), 201 (original description copied), 202 (in checklist of world *Trypoxylon*); Ed. André, 1888:206 (in revision of Sphecidae of Europe and Algeria), 17* (bibliographic references); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Mercet, 1906c:463 (in key to Palearctic species); Gussakovskij, 1936:663 (original description copied); R. Bohart and Menke, 1976:345 (in checklist of world Sphecidae).

Trypoxylon scutigerum Taschenberg, 1881:780, ♂. Holotype: ♂, Ethiopia: no specific locality (HALLE). Synonymized with *Trypoxylon scutatum* by Kohl, 1884:206. – Kohl, 1906a:200 (a species with frontal shield).

Trypoxylon quartinae Gribodo, 1884b:278, ♀ (as *Quartinae*, incorrect original capitalization). Syntypes: ♀, Italy: Piemonte: Moncalieri near Torino (MSNG). Synonymized with *Trypoxylon scutatum* by Ed. André, 1888:17*. – Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Kohl, 1906a:200 (a species with frontal shield, synonym of *scutatum* Chevrier); Penati and Mariotti, 2015:107 (in list of Hymenoptera described by G. Gribodo).

ssp. *kaszabi* Tsuneki

Trypoxylon kaszabi Tsuneki, 1971l:409, ♂, ♀. Holotype: ♂, Mongolia: Middle Gobi aymag: Somon Delgerzogt (TMB). – R. Bohart and Menke, 1976:346 (in checklist of world Sphecidae). – **As *Trypoxylon scutatum kaszabi***: Antropov, 1989a:56 (new status).

ssp. *nursei* Tsuneki

Trypoxylon scutatum nursei Tsuneki, 1978a:63, ♀, ♂. Holotype: ♂, Pakistan: Quetta (BMNH). – Tsuneki, 1978a:6 (in key to *Trypoxylon scutatum* species group), 1979a:19 (bibliographic reference).

428. *scutiferum* Taschenberg

Trypoxylon scutiferum Taschenberg, 1875:379, ♀. Syntypes: ♀, Brazil: no specific locality (Halle). – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Richards, 1934:286 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 1993:19 (norheastern Brazil), 2002:49 (in catalog of Neotropical Crabronidae).

429. *scutifrons* de Saussure

Trypoxylon scutifrons de Saussure, 1892:523, ♀, ♂. Syntypes: Madagascar: Andrangoloaka, Anosibé (MHNG). – Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Kohl, 1906a:201 (species with frontal shield), 203 (in key to *Trypoxylon scutatum* species group); Kohl, 1909:373 (Madagascar: Toamasina); R. Turner, 1911b:373 (Seychelles Islands); Bordage, 1912:58 (Isle of Réunion: nesting habits); von Schulthess *in* Friederichs, 1918a:48 (Madagascar: Ilôt Prune); Richards, 1934:338 (member of *Trypoxylon scutatum* species group), 344 (nesting habits summary); Arnold, 1945:14 (Madagascar); Vesey-Fitzgerald, 1950:75 (first record from Seychelles Islands, as *saitifrons*); Leclercq, 1960a:99 (Madagascar, nesting in old nests of *Icaria*, a vespid; variation), 1961d:101 (Madagascar); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1978a:6, 7 (in key to *Trypoxylon scutatum* species group), 76 (redescription), 86 (relationships to other species), 1981f:47 (single member of *Trypoxylon scutifrons* species group); Madl, Matyot, and Schödl, 1996:833 (Seychelles Islands); Madl, 1997:820 (Madagascar: Island of Nosy Boraha), 821 (in checklist of Nosy Boraha Sphecidae); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Madl, 2014a:989 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

ssp. *aldabranum* Tsuneki

Trypoxylon scutifrons aldabranum Tsuneki, 1978a:80, ♀, ♂. Holotype: ♀, Seychelles Islands: Island of Aldabra (BMNH). – Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group).

ssp. *mauritinum* Tsuneki

Trypoxylon scutifrons mauritinum Tsuneki, 1978a:83, ♀. Holotype: ♀, Mauritius (BMNH). – Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group).

ssp. *seychellense* Tsuneki

Trypoxylon scutifrons seychellense Tsuneki, 1978a:84, ♀, ♂. Holotype: ♂, Seychelles Islands: Island of Mahe (BMNH). – Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group), 1979a:19 (bibliographic reference).

430. *sectum* Tsuneki

Trypoxylon sectum Tsuneki, 1980a:86, ♀. Holotype: ♀, Sarawak, Mount Mulu (BMNH). – Tsuneki, 1980a:10 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

431. *sedlaceki* Tsuneki

Trypoxylon sedlaceki Tsuneki, 1981a:52, ♀. Holotype: ♀, New Guinea: Morobe District: Bulolo (AEI). – Tsuneki, 1981a:7 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

432. *sedonense* Tsuneki

Trypoxylon sedonense Tsuneki, 1979a:120, ♀. Holotype: ♀, Laos: Sedone Province: Pacse (Bishop Mus.). – Tsuneki, 1979a:14 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

433. *segregatum* Richards

Trypoxylon segregatum Richards, 1934:331, ♀. Holotype: ♀, Paraguay: Asunción (ZMHU). Paratypes: Argentina. – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

434. *selangor* Tsuneki

Trypoxylon selangor Tsuneki, 1979a:72, ♀. Holotype: ♀, Malaysia (West): Selangor: Ulu Langat (Bishop Mus.). – Tsuneki, 1979a:9 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:28 (in addition to key of *Trypoxylon* of Indo-Malaysian Region).

435. *semicompluvium* Tsuneki

Trypoxylon semicompluvium Tsuneki, 1980b:98, ♂. Holotype: ♂, Philippines: Island of Panay: northwest of Panay (USNM). – Tsuneki, 1980b:10 (in key to *Trypoxylon* of Philippines), 1981f:48 (member of *Trypoxylon apicatum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

436. *semongoh* Tsuneki

Trypoxylon semongoh Tsuneki, 1980a:100, ♀. Holotype: ♀, Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:13 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

437. *semperi* Tsuneki

Trypoxylon semperi Tsuneki, 1980b:30, ♂. Holotype: ♂, Philippines: Luzon: no specific locality (NRS). – Tsuneki, 1980b:5 (in key to *Trypoxylon* of Philippines), 1981f:57 (single member of *Trypoxylon semperi* species group).

438. *senegambicum* Kohl

Trypoxylon senegambicum Kohl, 1906a:202, ♀. Syntypes: ♀, Senegal: no specific locality (NHMW). – W. Schulz, 1906:312 (Fernando Po, now Bioko, comparison with *Trypoxylon scutatum*); Leclercq, 1965a:127 (unrecognizable species); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Dollfuss, 1989:13 (lectotype in NHMW).

Trypoxylum [sic] *scutatum palaeotropicum* W. Schulz, 1906:272, sex not stated, nomen nudum. Holotype or syntypes: Africa: no specific locality, corrected to Upper Guinea (= Siera Leone, Togo, Cameroon) on p. 356. Synonymized with *Trypoxylon senegambicum* by W. Schulz, 1906:356.

439. *seyrigi* Arnold

Trypoxylon seyrigi Arnold, 1945:12, ♀ (as *Seyrigi*, incorrect original capitalization). Syntypes: Madagascar: Bekily, Ivondro, Ranomafana, Roget (MNHN). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Madl, 2014a:990 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

440. *sextum* Tsuneki

Trypoxylon sextum Tsuneki, 1979a:59, ♂. Holotype: ♂, Malaysia: Perak: Larut Hills (BMNH). – Tsuneki, 1979a:7 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:37 (member of *Trypoxylon pacificum* species group); Pham and Antropov, 2021:321 (recorded from Vietnam by Tsuneki, 1979a).

441. *shakha* Tsuneki

Trypoxylon shakha Tsuneki, 1979a:106, ♀. Holotype: ♀, Malaysia: Penang: Batu Feringgi (BMNH). – Tsuneki, 1979a:12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1980a:7, 8 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 53 (Borneo; additional description; description of ♂), 1981f:58 (member of *Trypoxylon coloratum* species group).

442. *shannoni* Richards

Trypoxylon shannoni Richards, 1934:334, ♂. Holotype: ♂, Peru: Chosica (USNM). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Rasmussen and Asenjo, 2009:12 (in checklist of Crabronidae of Peru).

443. *shanshan* Tsuneki

Trypoxylon shanshan Tsuneki, 1981d:52, ♀. Holotype: ♀, Myanmar: South Shan State: 40 km east of Taunggyi (NRS). – Tsuneki, 1981d:62 (in key to *Trypoxylon* of Myanmar).

444. *shimoyamai* Tsuneki

Trypoxylon shimoyamai Tsuneki, 1958b:7, ♀. Holotype: ♀, Japan: Towada (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1958d:53 (description of ♂); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture);

Nambu, 1966:25-34 (nesting habits), 1967:6-16 (nesting habits); Tsuneki, 1973e:34, 37 (in key to *Trypoxylon* of Japan, in Japanese); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1981e:8 (in key to *Trypoxylon* of Japan and northeastern Asia), 30 (Japan; redescription), 1981f:19 (member of *Trypoxylon nodosicorne* species group); Antropov, 1986a:90 (Russia: Primorskiy Kray); Tano, 1994a:6 (holotype in K. Tsuneki collection); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:420, 421 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:33 (Japan: Gifu Prefecture); Suda, 2004:41 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:48 (Japan: Gifu Prefecture), 2006a:24 (Japan: Toyama Prefecture); Nagase, 2006a:54 (Japan: Kanagawa Prefecture: Mount Komagatake near Hakone); Ohkusa, 2006a:24 (Japan: Honshu: Gifu Prefecture); T. Li and Q. Li, 2007:9 (China: Guizhou: Fanjinshan); Ohkusa, 2007:34 (Japan: central Honshu: Aichi Prefecture); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:89 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:237 (Russia: Primorskiy Kray: Lazovsky Nature Reserve); Terayama and Nambu, 2009:10, 33 (in key to Trypoxylini of Japan); T. Li and Q. Li, 2010a:241, 242 (in key to *Trypoxylon* of southwestern China); Matsumoto and Makino, 2011:158 (Japan: suburbs of Tokyo); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); Antropov, 2017b:245 (in catalog of Crabroninae of Russia).

445. *sibolangitum* Tsuneki

Trypoxylon sibolangitum Tsuneki, 1979c:52, ♀. Holotype: ♀, Indonesia: northern Sumatra: Sibolangit (RMNH). – Tsuneki, 1979c:9 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

446. *sibuyanense* Tsuneki

Trypoxylon sibuyanense Tsuneki, 1980b:41, ♂. Holotype: ♂, Philippines: Island of Sibuyan: no specific locality (USNM). – Tsuneki, 1980b:6 (in key to *Trypoxylon* of Philippines), 1981f:23 (member of *Trypoxylon appendiculatum* species group; as *subuyanese*); Nuhn and Menke, 1994:26 (holotype in USNM).

447. *silvestre* Richards

Trypoxylon silvestre Richards, 1934:305, ♀. Syntypes: ♀, Guyana: Essequibo River at Moraballi Creek, Kalacoon, and Kartabo (BMNH, USNM). – Richards, 1934:345 (nest site and structure); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

448. *silvicola* Tsuneki

Trypoxylon silvicola Tsuneki, 1980a:37, ♀, ♂. Holotype: ♂, Malaysia: northern Borneo: Forest Camp 19 km north of Kalabakan (Bishop Mus.). – Tsuneki, 1980a:6 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1981f:48 (member of *Trypoxylon apicatum* species group).

449. *simile* Tsuneki

Trypoxylon simile Tsuneki, 1979a:86, ♂. Holotype: ♂, Singapore (USNM). – Tsuneki, 1979a:12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:58 (member of *Trypoxylon coloratum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

450. *similichingi* T. Li and Q. Li

Trypoxylon similichingi T. Li and Q. Li, 2010a:243, ♂. Holotype: ♂, China: Yunnan: Simao City: Jingping Town (Yunnan Agricultural University, Kunming). – T. Li and Q. Li, 2010a:242 (in key to *Trypoxylon* of southwestern China).

451. *simpliceincrassatum* T. Li and Q. Li

Trypoxylon simpliceincrassatum T. Li and Q. Li, 2007:7, ♂. Holotype: ♂, China: Shanxi: Tiantaishan in Quinling (Yunnan Agricultural University, Kunming). – Ma, Q. Li, Wang, Jiang, and Lu, 2018:834 (China: Shanxi: Qinling Mountains).

452. *singaporense* Tsuneki

Trypoxylon singaporense Tsuneki, 1979a:29, ♂. Holotype: ♂, Singapore (USNM). – Tsuneki, 1979a:4 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1980a:4 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 19 (Borneo; additional description), 1981d:64 (Sarawak; additional description), 1981f:25 (single member of *Trypoxylon singaporensis* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

ssp. *surigaonis* Tsuneki

Trypoxylon singaporense surigaonis Tsuneki, 1980b:23, ♀. Holotype: ♀, Philippines: Surigao: no specific locality (USNM). – Tsuneki, 1980b:5 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:26 (holotype in USNM).

453. *singator* Tsuneki

Trypoxylon singator Tsuneki, 1981d:24, ♀. Holotype: ♀, Singapore (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM).

454. *sinuosiscute* Arnold

Trypoxylon sinuosiscute Arnold, 1945:13, ♀, ♂ (as *sinuosiscutis*, incorrect original termination). Syntypes: Madagascar: Behara, Bekily (MNHN). – Leclercq, 1961d:101 (Madagascar); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1978a:6 (in key to *Trypoxylon scutatum* species group), 84 (redescription), 86 (relationships to other species), 1981f:17 (single member of *Trypoxylon sinuosiscute* species group); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntype in Bulawayo Museum); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Madl, 2014a:991 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

455. *smithi* Tsuneki

Trypoxylon smithi Tsuneki, 1979a:109, ♀. Holotype: ♀, Malaysia (West): Selangor: Bukit Kutu (BMNH). – Tsuneki, 1979a:12 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

456. *sogdianum* Gussakovskij

Trypoxylon sogdianum Gussakovskij, 1940:84 . Nomen nudum.

Trypoxylon sogdianum Gussakovskij, 1952:253, ♀, ♂. Syntypes: Tajikistan: Kondara 35 km north of Dushanbe (ZIL). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Kazenas, 1978b:147 (in key to Sphecidae of Kazakhstan and Central Asia), 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia).

457. *solivagum* Arnold

Trypoxylon solivagum Arnold, 1946:67,♀, ♂. Syntypes: Malawi: Zomba (SAM). – Leclercq, 1965a:89 (in key to Afrotropical *Trypoxylon*), 113 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Antropov, 1993b:54 (Central African Republic).

458. *solomonense* Tsuneki

Trypoxylon solomonense Tsuneki, 1981a:83, ♀, ♂. Holotype: ♀, Solomon Islands: Island of Florida: Tulagi (RMNH). – Tsuneki, 1981a:10 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:77 (member of *Trypoxylon eximium* species group).

459. *sonani* Tsuneki

Trypoxylon sonani Tsuneki, 1986:28, ♀. Holotype: ♀, Japan: Miyazaki Prefecture: Koyu-gun: Kawaminami-cho (Ent. Lab. Min. Agr. For. Japan at Tsukuba). – Terayama and Nambu, 2009:10, 33 (in key to Trypoxylini of Japan).

460. *spangleri* Tsuneki

Trypoxylon spangleri Tsuneki, 1979a:164, ♂. Holotype: ♂, Thailand: Nakhon Ratchasima Province: Nakhon Ratchasima, 60 km, Sakaerat Experimental Station at 14°30'N 101°55'E (USNM). – Tsuneki, 1979a:9, 17 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:62 (single member of *Trypoxylon spangleri* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

461. *speciosum* Tsuneki

Trypoxylon speciosum Tsuneki, 1979a:104, ♀. Holotype: ♀, Malaysia: Kedah: Kedah Peak, now Gunung Jerai (BMNH). – Tsuneki, 1979a:12 (i in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

462. *splendidum* Antropov

Trypoxylon splendidum Antropov, 2011a:610, ♀, ♂. Holotype: ♀, Saudi Arabia: Muhayl (BMNH). Paratypes: Israel, Lebanon, Palestine, Sinai Peninsula, United Arab Emirates. – Antropov, 2011a:615 (in key to *Trypoxylon scutatum* species group of eastern Mediterranean Region and southwestern Asia); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:357 (in new catalog of Sphecidae of Saudi Arabia); Schmid-Egger, 2014:615 (United Arab Emirates: Wadi Safad); Gadallah, 2020b:58 (in list of aculeate wasps of Arabian Peninsula); Gadallah, Abu el-Ghiet, and Edmardash, 2027:1705 (Saudi Arabia: Jazan Province); Abu el-Ghiet, Gadallah, Gasib, Al-Fifi, and Edmardash, 2023:172 (Saudi Arabia: Farasan Island); Kaplan and Yildirim, 2021:80 (in catalog of Crabronidae of Turkey), 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

463. *srilankum* Tsuneki

Trypoxylon srilankum Tsuneki, 1979b:18, ♀, ♂. Holotype: ♂, Sri Lanka: Amparai District: Ekgal Aru, Reservoir Jungle (USNM). – Tsuneki, 1979b:4 (in key to *Trypoxylon* of Sri Lanka), 1981d:16 (Sri Lanka; additional description), 20 (in new key to *Trypoxylon* of Sri Lanka), 1981f:67 (single member of *Trypoxylon srilankum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

464. *staudingeri* Richards

Trypoxylon staudingeri Richards, 1934:324, ♀. Holotype: ♀, Peru: Villoanota (ZMHU). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Rasmussen and Asenjo, 2009:12 (in checklist of Crabronidae of Peru).

465. *stevensoni* Arnold

Trypoxylon stevensoni Arnold, 1924:17, ♀, ♂ (as *Stevensoni*, incorrect original capitalization). Syntypes: Zimbabwe: Matopos and Umgusa River valley (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:93 (Zaire); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Leclercq, 1965a:82 (in key to Afrotropical *Trypoxylon*), 102 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Antropov, 1993b:54 (Zimbabwe); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntypes in Bulawayo Museum).

466. *stieglmayri* Richards

Trypoxylon stieglmayri Richards, 1934:335, ♀. Holotype: ♀, Brazil: Rio Grande do Sul: Rio Grande do Sul (NHMW). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

467. *straatmani* Tsuneki

Trypoxylon straatmani Tsuneki, 1981a:17, ♂. Holotype: ♂, Papua New Guinea: Central Province: Mamai Plantation east of Port Glasgow (Bishop Mus.). – Tsuneki, 1981a:4 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:42 (member of *Trypoxylon kuchingense* species group).

468. *striolatum* Tsuneki

As *Trypoxylon tawitawiense*: Tsuneki, 1976b:86 (♀ only); corrected to *Trypoxylon striolatum* by Tsuneki, 1980a:2 and 74.

Trypoxylon striolatum Tsuneki, 1979a:113, ♀. Holotype: ♀, Laos: Vientiane Province: Vill. de Tha Ngone (Bishop Mus.). – Tsuneki, 1979a:13 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979c:9 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 54 (Indonesia: Java, Sumatra; variation), 1980a:9, 10, 11, 12 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 74 (Borneo; additional description), 1980b:8, 9, 10 (in key to *Trypoxylon* of Philippines), 76 (Philippines), 1981d:31 (a headless specimen from India possibly belongs to this species), 66 (Brunei), 1981f:13 (single member of *Trypoxylon striolatum* species group).

469. *stroudi* Gribodo

Trypoxylon stroudi Gribodo, 1884b:279, ♀, ♂ (as *Stroudi*, incorrect original capitalization). Syntypes: South Africa: Eastern Cape Province: Port Elizabeth (MSNG). – Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Kohl, 1906a:200 (species with frontal shield), 203 (in key to *Trypoxylon scutatum* species group, as *Stroudii*); Arnold, 1924:23 (in revision of southern African *Trypoxylon*), 1930:10 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:94 (Zaire, determination tentative); Richards, 1934:338 (member of *Trypoxylon scutatum* species group); Guiglia, 1943c:75 (Ethiopia: Gamo Gofa: Sagan – Omo region), 1950:231 (Ethiopia: Gamo Gofa: Caschei); Arnold, 1959:324 (Valley); Leclercq, 1965a:96 and 100 (in key to Afrotropical *Trypoxylon*), 123 (in revision of Afrotropical *Trypoxylon*; Zimbabwe); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Antropov, 1993b:54 (Central African Republic, Zimbabwe); Penati and Mariotti, 2015:118 (in list of Hymenoptera described by G. Gribodo).

470. *succinctum* Cresson

Trypoxylon succinctum Cresson, 1865a:149, ♀. Holotype: Cuba: no specific locality (IZAC). – Packard, 1867:418 (listed under Desiderata); Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Cresson, 1916:103 (holotype in Gundlach collection); Richards, 1934:281 (member of *Trypoxylon fabricator* species group), 1969:123 (Cuba); Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:7 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Portuondo and Fernández, 2004:135 (Cuba: Sierra Maestra and Nipe-Sagua-Baracoa mountains); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae; also: Island of Grand Cayman).

471. *sulcatoides* Richards

Trypoxylon sulcatoides Richards, 1934:320, ♂. Holotype: ♂, Argentina: Mendoza: Mendoza (BMNH). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

472. *sumatraense* Tsuneki

Trypoxylon sumatraense Tsuneki, 1979c:30, ♀. Holotype: ♀, Indonesia: northern Sumatra: Sibolangit (RMNH). – Tsuneki, 1979c:6 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

ssp. *borneonis* Tsuneki

Trypoxylon sumatraense borneonis Tsuneki, 1980a:68, ♀. Holotype: ♀, Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:9 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

473. *sumbanicola* Tsuneki

Trypoxylon sumbanicola Tsuneki, 1979c:50, ♀. Holotype: ♀, Indonesia: Central Sumba: Lindiwatju (Basel Mus.). – Tsuneki, 1979c:8 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

474. *sumbanum* Tsuneki

Trypoxylon sumbanum Tsuneki, 1979c:20, ♂. Holotype: ♂, Indonesia: East Sumba: Baing: Wai Lekabe (Basel Mus.). – Tsuneki, 1979c:5, 10 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

475. *suumi* Tsuneki

Trypoxylon suumi Tsuneki, 1979a:27, ♂. Holotype: ♂, Laos: Sayaboury Province: Sayaboury (Bishop Mus.). – Tsuneki, 1979a:4 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:26 (single member of *Trypoxylon suumi* species group).

476. *syriacum* Mercet

Trypoxylon syriacum Mercet, 1906:464, ♀ (as *Syriacum*, incorrect original capitalization). Holotype or syntypes: ♀, Syria: Marache, maybe in today's Lebanon (MNCN). – Mercet, 1906c:464 (in key to Palearctic species); de Beaumont, 1965a:56 (Greece); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Guichard, 1978:271 (Greece); Mochi and Luchetti, 1974:14 (Italy: Lazio); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Antropov *in* Bitsch et al., 2001:381 (in Sphecid Fauna of Western Europe); Gayubo, Özbek, and Yıldırım, 2003:91 (Turkey: Erzurum: İspir); Pagliano and Negrisolo, 2005:422 (in Sphecid Fauna of Italy); Ljubomirov and Yildirim, 2008:244 (in catalog of Crabronidae of Turkey); Pagliano, 2009:186 (Italy: Sardegna: Lake Baratz); Sakenin, Samin, and Bagriacik, 2010:16 (Iran: East Azarbaijan: Arasbaran); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:154 (in checklist of Hymenoptera of Turkey); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:41 (Turkey: Erzurum: Oltu: Subatık); Jahantigh, Rakhshani; Mokhtari, and Ramroodi, 2017:70 (Iran: known from East Azerbaijan Province); Antropov *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:395 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2021:80 (in catalog of Crabronidae of Turkey), 2023:1688 (in checklist of Sphecidae *sensu lato* of Turkey).

477. *szechuen* Tsuneki

Trypoxylon szechuen Tsuneki, 1981d:75, ♀. Holotype: ♀, China: Szechuan: Ningyuenfu (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution); T. Li and Q. Li, 2010a:243 (in key to *Trypoxylon* of southwestern China).

478. *tadaonis* Tsuneki

Trypoxylon tadaonis Tsuneki, 1980b:25, ♂, ♀. Holotype: ♂, Philippines: Luzon: Los Baños (originally T. Murota coll., now USNM). – Tsuneki, 1980b:5 (in key to *Trypoxylon* of Philippines), 1981f:43 (member of *Trypoxylon flavipes* species group); Tano, 1995:45 (holotype in K. Tsuneki collection), Tano, 2020:26 (holotype in USNM).

479. *tainanense* Strand

Trypoxylon tainanense Strand, 1923:188, ♀. Lectotype: ♀, Taiwan: Tainan (DEI), designated by Oehlke and Wudowenz, 1974:425. – Strand, 1927:255 (in list of species described by the author); Tsuneki, 1966b:2 (in key to *Trypoxylon* of Taiwan and Ryukyu Islands; as *taiwanense*), 6 (Taiwan; as *taiwanense*), 1967d:2 (in key to *Trypoxylon* of Taiwan), 1971g:16 (in new key to males of *Trypoxylon* of Taiwan); Haneda, 1972a:4 (Taiwan); Tsuneki, 1972c:1 (Taiwan; redescription); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1977j:270 (Taiwan; description of ♂); Tsuneki, 1978a:5 (in key to *Trypoxylon scutatum* species group), 73 (redescription; Sumba, Sulawesi, Taiwan, Thailand), 86 (relationships to other species), 1979a:19 (bibliographic reference), 1980a:16 (Indonesia: Sulawesi), 1981c:12 (bibliographic refeence), 1981f:46 (single member of *Trypoxylon tainanense* species group); Porter, Stange, and Wang, 1999:10 (in checklist of Sphecidae of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

Trypoxylon nagamasae Tsuneki, 1963c:12, ♂. Holotype: ♂, Thailand: Chiang Mai (Sasayama Univ.). Synonymized with *Trypoxylon tainanense* by Tsuneki, 1978a:73. – R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae).

480. *taiwanum* Tsuneki

Trypoxylon responsum taiwanum Tsuneki, 1967d:8, ♀, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Penpuchi (originally K. Tsuneki coll., now USNM). – Tsuneki, 1967d:2 (in key to *Trypoxylon* of Taiwan), 1971g:4 (Taiwan), 15 (in additional key to females of *Trypoxylon* of Taiwan), 17 (in new key to males of *Trypoxylon* of Taiwan); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1977j:272 (Taiwan; Taihorinsho). – **As *Trypoxylon regium taiwanum***: Tsuneki, 1978b:66 (new subspecific combination). – **As *Trypoxylon taiwanum***: Tsuneki, 1981c:9, 10 (in key to *Trypoxylon* of Taiwan), 46 (full species status; Taiwan; additional description), 1981f:20 (single member of *Trypoxylon taiwanum* species group); Nuhn and Menke, 1994:26 (holotype in USNM); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

481. *takasago* Tsuneki

? *Trypoxylon formosicola* Strand var. *kankauense* Strand, 1922b:149. Holotype: ♀, Taiwan: Kankau, now Hengchun (DEI). – Strand, 1927:255 (in list of species described by the author); Oehlke and Wudowenz, 1974:423 (holotype in DEI); Tsuneki, 1981c:36 (probably a senior synonym of *Trypoxylon takasago*). – **As *Trypoxylon formosicola kankauense***: R. Bohart and Menke, 1976:346 (new status, in checklist of world Sphecidae,); Porter, Stange, and Wang, 1999:9 (in checklist of Sphecidae of Taiwan).

Trypoxylon takasago Tsuneki, 1966b:11, ♀. Holotype: ♀, Taiwan: Keeling Shih: Pinglin (originally K. Tsuneki coll., now?). – Tsuneki, 1966b:3 (in key to *Trypoxylon of* Ryukyu Islands and Taiwan), 1967d:2 (in key to *Trypoxylon* of Taiwan), 1968d:55 (Taiwan), 1971g:17 (in new key to males of *Trypoxylon* of Taiwan); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1977c:10 (Taiwan: Nantou Prefecture: Pempuchi; description of ♂), 1977j:275 (Taiwan; description of ♂), 1981c:8, 10 (in key to *Trypoxylon* of Taiwan), 35 (Taiwan; additional description), 1981f:60 (member of *Trypoxylon takasago* species group); Wu and Zhou, 1996a:104 (in revision in Economic Insect Fauna of China); Yamane, Ikudome, and Terayama, 1999:528 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Terayama and Nambu, 2009:6, 33 (in key to Trypoxylini of Japan); T. Li and Q. Li, 2010a:243 (in key to *Trypoxylon* of southwestern China)..

ssp. *hongkongense* Tsuneki

Trypoxylon takasago hongkongense Tsuneki, 1981d:81, ♀. Holotype: ♀, Hong Kong (Bishop Mus.). – Hua, 2006:283 (in list of Chinese insects, geographic distribution).

ssp. *kumaso* Tsuneki

Trypoxylon kumaso Tsuneki, 1966b:12, ♂. Holotype: ♂, Island of Okinawa: Nago (Bishop Mus.). – Tsuneki, 1966b:3 (in key to *Trypoxylon of* Ryukyu Islands and Taiwan), 1973e:32, 35 (in key to *Trypoxylon* of Japan, in Japanese). – **As *Trypoxylon takasago kumaso***: 1981c:8, 11 (in key to *Trypoxylon* of Taiwan), 37 (Okinawa; new status; additional description; description of ♀), 1981e:3 (in key to *Trypoxylon* of Japan and northeastern Asia), 82 (bibliographic reference), 1982g:62 (known from the Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); Haneda, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2007:54 (Japan: Kagoshima Prefecture: Amami Oshima Islands); Murota and Kurokawa, 2009:14 (Japan: Ryukyu Archipelago: Amami Oshima Islands).

482. *taros* Tsuneki

Trypoxylon taros Tsuneki, 1980b:69, ♀. Holotype: ♀, Philippines: Luzon: Mount Makiling (USNM). – Tsuneki, 1980b:7 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:26 (holotype in USNM).

483. *tawitawiense* Tsuneki

Trypoxylon tawitawiense Tsuneki, 1976b:86, ♂, ♀ (♀ = *Trypoxylon striolatum*). Holotype: ♂, Philippines: Tawi Tawi: Tarawakan (ZMUC). – Tsuneki, 1980a:77 (additional description), 1980b:11, 12 (in key to *Trypoxylon* of Philippines), 117 (Philippines; additional description, description of ♀), 1981f:69 (member of *Trypoxylon tawitawiense* species group).

484. *tekuense* Tsuneki

Trypoxylon tekuense Tsuneki, 1979a:75, ♂. Holotype: ♂, Malaysia: Pahang: Kuala Teku (BMNH). – Tsuneki, 1979a:9 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

485. *tengmen* Tsuneki

Trypoxylon tengmen Tsuneki, 1981c:27, ♂. Holotype: ♂, Taiwan: Nantou Prefecture: Pempuchi (coll. T. Nambu). – Tsuneki, 1981c:4, 6 (in key to *Trypoxylon* of Taiwan), 1981f:37 (member of *Trypoxylon pacificum* species group); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

486. *tengu* Tsuneki

Trypoxylon tengu Tsuneki, 1981a:42, ♀. Holotype: ♀, Papua New Guinea: Morobe District: Busu River 60 km east of Lae (AEI). – Tsuneki, 1981a:5 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

487. *terbakarinum* Tsuneki

Trypoxylon terbakarinum Tsuneki, 1979a:137, ♀. Holotype: ♀, Malaysia (West): Pahang: Cameron's Highland (BMNH). – Tsuneki, 1979a:14 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

488. *testaceicorne* Cameron

Trypoxylon testaceicorne Cameron, 1907a:1009, ♀. Holotype: ♀, India: Gujarat: Deesa (BMNH). – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1978b:57 (redescription), 77 (in key to Oriental *Trypoxylon*), 1979a:5 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 43 (redescription), 1981d:19 (in new key to *Trypoxylon* of Sri Lanka), 22 (India), 1981f:34 (single member of *Trypoxylon testaceicorne* species group); Mawadda and Girish Kumar, 2023:106 (India: Madhya Pradesh: Kanha National Park), 116 (in checklist of Crabroninae of Northern India).

Trypoxylon basiflavum Tsuneki, 1979b:11, ♂, ♀. Holotype: ♂, Sri Lanka: Trincomalee (USNM). Synonymized with *Trypoxylon testaceicorne* by Tsuneki, 1980a:2. – Tsuneki, 1979b:4 (in key to *Trypoxylon* of Sri Lanka); Nuhn and Menke, 1994:25 (holotype in USNM).

489. *testaceipes* Arnold

Trypoxylon testaceipes Arnold, 1924:18, ♀, ♂. Syntypes: Zimbabwe: Bulawayo (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Richards, 1934:315 (member of *Trypoxylon figulus* species group); Leclercq, 1965a:82 (in key to Afrotropical *Trypoxylon*), 102 (in revision of Afrotropical *Trypoxylon*, Zaire); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntypes in Bulawayo Museum).

490. *thaianum* Tsuneki

Trypoxylon thaianum Tsuneki, 1961b:384, ♀. Holotype: ♀, Thailand: Li (Osaka Univ.). – Tsuneki, 1974b:629 (Thailand), 1976b:75 (Philippines; description of ♂), 93 (in key to female *Trypoxylon* of Philippines); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1978a:6, 7 (in key to *Trypoxylon scutatum* species group), 86 (relationships to other species), 1979a:19 (bibliographic reference), 1979b:3 (in key to *Trypoxylon* of Sri Lanka), 6 (Sri Lanka), 1979c:11 (bibliographic reference), 1981d:2 (Sri Lanka), 18 (in new key to *Trypoxylon* of Sri Lanka), 1981f:47 (member of *Trypoxylon scutatum* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands); Takahashi 1993:3 (Japan: Island of Hachijo-Jima); Yamane, Ikudome,

and Terayama, 1999:525 (Japan: in Identification Guide to Crabronidae of Nansei = Ryukyu Islands); Terayama and Nambu, 2009:6 (in key to Trypoxylini of Japan); T. Li and Q. Li, 2010a:241 (in key to *Trypoxylon* of southwestern China), 246 (first record from China: Yunnan: four localities); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 65 (first record from Vietnam: Thai Nguyen: An Lac:mPhu Luong.

ssp. *ambonense* Tsuneki

Trypoxylon thaianum ambonense Tsuneki, 1978a:62, ♀, ♂. Holotype: ♂, Indonesia: Island of Ambon: Waai (CAS). – Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group), 1980a:15 (Indonesia: Island of Ambon); Pulawski, 1994:27 (CAS holotype no. 13705).

ssp. *borneoense* Tsuneki

Trypoxylon thaianum borneoense Tsuneki, 1978a:62, ♀, ♂. Holotype: ♂, Malaysia (East) (= northern Borneo): Sabah: Tawau: Quoin Hill (Bishop Mus.). – Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group), 1980a:16 (Sarawak; additional description).

ssp. *dubiosum* Tsuneki

Trypoxylon dubiosum Tsuneki, 1964b:4, ♀, ♂. Holotype: ♂, Japan: Island of Amami Oshima: Shimmura (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1966b:2 (in key to *Trypoxylon* of Ryukyu Islands and Taiwan), 6 (Ryukyu Islands: Amami-Oshima Islands; redescription), 1969e:25 (Japan: specimens in Osaka Museum of Natural History); Murota, 1973a:101 (Ryukyu Islands: Amami-Oshima Islands); Tsuneki, 1973e:32, 35 (in key to *Trypoxylon* of Japan, in Japanese); Tano, 1994b:43 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:20 (holotype transferred to Hyogo Mus.). – **As *Trypoxylon thaianum dubiosum***: Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group), 49 and 62 (new status), 1981c:3 (in key to *Trypoxylon* of Taiwan), 12 (Taiwan: bibliographic reference), 1981e:3 (in key to *Trypoxylon* of Japan and northeastern Asia), 9 (bibliographic reference), 1982g:60 (known from Ryukyu archipelago), 1986:30 (known from the Ryukyu archipelago); Tano, 1994a:6 (holotype in K. Tsuneki collection).

ssp. *philippinicum* Tsuneki

Trypoxylon thaianum philippinicum Tsuneki, 1978a:62, ♀, ♂. Holotype: ♂, Philippines: Luzon: Albany Province: Libon Caguscos (Bishop Mus.). – Tsuneki, 1978a:7 (in key to *Trypoxylon scutatum* species group), 1980b:4 (in key to *Trypoxylon* of Philippines), 13 (Philippines), 1981d:69 (Philippines: Luzon); Haneda, 2011:46 (Philippines: Palawan).

491. *timberlakei* Sandhouse

Trypoxylon timberlakei Sandhouse, 1940:169, ♀. Holotype: ♀, USA: California: 3 mi. east of Hesperia (USNM). – Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Krombein, 1979b:1644 (in catalog of North American Hymenoptera); Coville, 1990:2 (may be a complex of species).

492. *tirimen* Tsuneki

Trypoxylon tirimen Tsuneki, 1980a:46, ♀. Holotype: ♀, Malaysia (East) (= northern Borneo): Sabah: Forest Camp 19 km north of Kalabakan (Bishop Mus.). – Tsuneki, 1980a:7 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

493. *tjangkoedang* Tsuneki

Trypoxylon tjangkoedang Tsuneki, 1979c:26, ♀. Holotype: ♀, Indonesia: West Java: Djampang Area: Mount Tjankoedang (RMNH). – Tsuneki, 1979c:5 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

494. *tjiangsanum* Tsuneki

Trypoxylon tjiangsanum Tsuneki, 1979c:55, ♀. Holotype: ♀, Indonesia: West Java: Middle Djampang: Tjiangsana (RMNH). – Tsuneki, 1979c:9 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

495. *tobiasi* Antropov

Trypoxylon tobiasi Antropov, 1989b:309, ♂. Holotype: Armenia: 35 km north of Nakhichevan (ZIL). – Mokrousov, Proshchalykin, Aliyev, and Maharramov, 2019:20 (Azerbaijan: Nakhichevan Autonomous Republic).

496. *toltecum* de Saussure

Trypoxylon toltecum de Saussure, 1867:83, ♀. Syntypes: ♀, Mexico: Veracruz: Orizaba (MHNG). – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Cameron, 1889a:48 (listed); Dalla Torre, 1897:709 (in catalog of world Hymenoptera, as *tolticum*); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:314 (not examined); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

497. *tomi* Tsuneki

Trypoxylon tomi Tsuneki, 1979a:80, ♀. Holotype: ♀, Singapore (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam); 66 (first record from Vietnam: Vinh Phuc: Tam Dao National Park).

498. *townesi* Tsuneki

Trypoxylon townesi Tsuneki, 1981a:72, ♀. Holotype: ♀, Papua New Guinea: Morobe Province: Bulolo (AEI). – Tsuneki, 1981a:8 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

499. *townesorum* Tsuneki

Trypoxylon townesorum Tsuneki, 1980b:15, ♀. Holotype: ♀, Philippines: Luzon: Mountain Province: Kias area (AEI). – Tsuneki, 1980b:4 (in key to *Trypoxylon* of Philippines).

500. *tremulum* Arnold

Trypoxylon tremulum Arnold, 1946:65, ♀. Holotype: ♀, Malawi: Zomba (SAM). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae).

501. *triangulum* Tsuneki

Trypoxylon triangulum Tsuneki, 1981d:3, ♀. Holotype: ♀, Sri Lanka: Sabaragamuwa Province: Kegalla District: Kitulgala: Bandarakele Jungle (USNM). – Tsuneki, 1981d:18 (in new key to *Trypoxylon* of Sri Lanka); Nuhn and Menke, 1994:26 (holotype in USNM).

502. *trigeminum* Richards

Trypoxylon trigeminum Richards, 1934:311, ♀. Holotype: ♀, Brazil: Pará: Pará, now Belém (NHMW). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

503. *trinidadense* Richards

Trypoxylon trinidadense Richards, 1934:292, ♀. Holotype: ♀, Trinidad: 7 mi. northwest of Moruga village (USNM). Paratype: Paraguay. – Vesey-FitzGerald, 1936:114 (not collected by the author), 1938:191 (Trinidad); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

504. *triste* Arnold

Trypoxylon triste Arnold, 1924:24, ♂ (as *tristis*, incorrect original termination). Holotype: ♂, Zimbabwe: Sawmills (SAM). – Arnold, 1930:10 (in checklist of Afrotropical Sphecidae); Leclercq, 1965a:98 (in key to Afrotropical *Trypoxylon*), 126 (bibliographic reference); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Hancock, Chahwanda, and Mhlanga, 1995:40 (paratype in Bulawayo Museum).

505. *trituberculatum* Tsuneki

Trypoxylon trituberculatum Tsuneki, 1980b:111, ♂, ♀. Holotype: ♂, Philippines: Luzon: Mount Makiling (USNM). – Tsuneki, 1980b:11 (in key to *Trypoxylon* of Philippines), 1981d:69 (Philippines: Luzon), 1981f:68 (single member of *Trypoxylon trituberculatum* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

506. *trochanteratum* Cameron

Trypoxylon trochanteratum Cameron, 1902f:313, ♀. Lectotype: ♀, India: Assam: Khasia Hills (BMNH), designated by Tsuneki, 1978b:47. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1978b:47 (redescription), 77 (in key to Oriental *Trypoxylon*), 1979a:5 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 40 (additional description), 1981d:33 (Myanmar; additional description), 61 (in key to *Trypoxylon* of Myanmar), 1981e:50 (relationship to *Trypoxylon pacificum*); Jonathan, Ray, and Kundu, 2000:201 (India: previously recorded from Meghalaya: East Khasi Hills).

507. *truncatum* Tsuneki

Trypoxylon truncatum Tsuneki, 1979a:43, ♂, ♀. Holotype: ♂, Laos: Vientiane Province: Gi Sion Vill. de Tha Ngone (Bishop Mus.). – Tsuneki, 1979a:5, 6 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981d:41 (in addition to key to IndoMalaysian *Trypoxylon*), 1981f:29 (single member of *Trypoxylon truncatum* species group); T. Li and Q. Li, 2010a:242 (in key to *Trypoxylon* of southwestern China); 246 (first record from China: Yunnan: Xishuangbanna City: Mengyang Town).

508. *tuberculifrons* Arnold

Trypoxylon tuberculifrons Arnold, 1945:8, ♀. Holotype: ♀, Madagascar: Rogez (MNHN). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Pulawski, 2003b:798 (in checklist of Malagasy Sphecidae); Madl, 2014a:991 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

509. *turbulentum* Arnold

Trypoxylon turbulentum Arnold, 1946:75, ♂, ♀. Holotype: ♀, Malawi: Zomba (SAM). – Leclercq, 1965a:94 (in key to Afrotropical *Trypoxylon*), 119 (in revision of Afrotropical *Trypoxylon*; Zaire); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae, as *tubulentum*); Hancock, Chahwanda, and Mhlanga, 1995:40 (syntype in Bulawayo Museum).

510. *turkestanicum* Gussakovskij

Trypoxylon turkestanicum Gussakovskij, 1936:656, ♀, ♂. Syntypes: Uzbekistan: Tashkent, Osh (ZIL). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Kazenas, 1978b:146, 147 (in key to Sphecidae of Kazakhstan and Central Asia); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast'); Kazenas, 2001b:35 (in checklist of Sphecidae of Kazakhstan and Central Asia).

511. *undatum* Tsuneki

Trypoxylon undatum Tsuneki, 1979a:47, ♀. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:6, 8 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia).

512. *unguicorne* Richards

Trypoxylon unguicorne Richards, 1934:283, ♂. Holotype: ♂, Bolivia: no specific locality (NHMW). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

513. *urbanii* Tsuneki

Trypoxylon urbanii Tsuneki, 1979c:55, ♀. Holotype: ♀, Indonesia: East Sumba: Central District: Lindiwatju (Basel Mus.). – Tsuneki, 1979c:6 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 1980a:2 (may be a geographic race of *Trypoxylon mindanaonis*).

514. *urichi* Richards

Trypoxylon urichi Richards, 1934:302, ♂. Holotype: ♂, Trinidad: Maracas Falls (USNM). Paratypes: Panama. – Richards, 1936b:458 (description of ♀); Vesey-FitzGerald, 1936:114 (not collected by the author), 1938:191 (Trinidad); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

515. *ussuriense* Kazenas

Trypoxylon ussuriense Kazenas, 1980e:91, ♀. Holotype: ♀, Russia: Primorskiy Kray: Anisimovka (ZIL). – Antropov, 1986a:87 (Russia: Primorskiy Kray, description of ♂); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:416 (in key to Sphecidae of Russian Far East); Nemkov, 2006b:168 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve), 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009a:65 (is an endemic of Russian Far East), 2009b:89 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2012c:440 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:440 (in catalog of Sphecidae *sensu lato* of Korean Peninsula: recorded from Korea but not occurring there); Antropov, 2017b:245 (in catalog of Crabroninae of Russia); Jacobs and Liebig, 2018:146 (Russia: Primorskiy Kray: Kalinovka); Jeong and J.-K. Kim, 2020:247 (in key to Korean *Trypoxylon* with flask-shaped gastral segment I), 252 (in revision of Korean *Trypoxylon* with flask-shaped gastral segment I).

516. *vardyi* Tsuneki

Trypoxylon vardyi Tsuneki, 1979a:145, ♂, ♀. Holotype: India: Himachal Pradesh: Kangra Valley (BMNH). – Tsuneki, 1979a:13, 15 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1979c:9 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 56 (Indonesia: Java, Sumatra), 1981f:65 (member of *Trypoxylon vardyi* species group); Mawadda and Girish Kumar, 2023:116 (in checklist of Crabroninae of Northern India).

517. *varicolor* Tsuneki

Trypoxylon varicolor Tsuneki, 1980b:63, ♀, ♂. Holotype: ♀, Philippines: Mindanao: Butuan (USNM). – Tsuneki, 1980b:7 (in key to *Trypoxylon* of Philippines), 1981f:52 (single member of *Trypoxylon varicolor* species group); Nuhn and Menke, 1994:26 (holotype in USNM).

518. *varipes* Pérez

Trypoxylon varipes Pérez, 1905a:157, ♀. Syntypes: ♀, Japan: no specific locality but presumably Tokyo area (MNHN). – Pérez, 1905a:26 (listed); nec Gussakovskij, 1932:12 and 1936:664 (= *Trypoxylon koreanum*); Iwata, 1955:29 (egg size, number of oocytes); Tsuneki, 1956f:122, 123 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:6, 11 (in key to *Trypoxylon* of northeastern Asia), 30 (in revision of *Trypoxylon* of northeastern Asia); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Tsuneki, 1964c:10 (Japan: Kyushu); Nambu, 1966:25-34 (nesting habits); Haneda, 1968a:44 (Japan); T. Iida, 1968:21 (Japan); Minamikawa, 1968:45 (nesting in walls of wooden temple at Higashi Murayama City, Tokyo Province); Nambu, 1968b:23 (Japan: Saitama Prefecture); Tano, 1968:32 (Japan); Itami, 1969:50 (Japan: Niigata Prefecture);

Tsuneki, 1969i:59 (Japan: Fukui Prefecture: Taichôdzi temple); Nambu, 1972d:8 (list of spider prey), 1972e:90 (Japan: Saitama Prefecture), 1973a:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:34, 38 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:64 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1981e:4, 5 (in key to *Trypoxylon* of Japan and northeastern Asia), 36 (Japan; redescription), 1981f:35 (member of *Trypoxylon varipes* species group); Nemkov, 1986:100 (Russia: Siberia: Irkutsk Oblast': Irkutsk); Tsuneki, 1986:30 (Ryukyu archipelago); Antropov, 1994c:124 (synonymy, diagnostic characters); Nemkov, 1998c:685 (in supplementary key to Russian Far East *Trypoxylon*); Yamane, Ikudome, and Terayama, 1999:528 (in Identification Guide to Crabronidae of Nansei = Ryukyu Islands, Japan); Ohl and Linde, 2003:151 (number of ovarioles); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:33 (Japan: Gifu Prefecture); Suda, 2004:41 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:48 (Japan: Gifu Prefecture), 2006a:24 (Japan: Toyama Prefecture); Hua, 2006:283 (in list of Chinese insects, geographic distribution); Nagase, 2006a:54 (Japan: Kanagawa Prefecture: Mount Komagatake near Hakone); Ohkusa, 2006a:24 (Japan: Honshu: Gifu Prefecture); Nemkov, 2007b:70 (Russia: Kuril Islands: Island of Kunashir), 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:89 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Terayama and Nambu, 2009:11, 34 (in key to Trypoxylini of Japan); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:440 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Antropov, 2017b:245 (in catalog of Crabroninae of Russia).

Trypoxylon monticola Tsuneki, 1956g:34, ♀, ♂. Holotype: ♀, Japan: Nikko: Senjugahama (originally K. Tsuneki coll., now Hyogo Mus.). Synonymized with *Trypoxylon varipes* by Antropov, 1994c:124. –Tsuneki, 1956f:122, 123 (in key to *Trypoxylon* of Japan, in Japanese), 1956g:7, 11 (in key to *Trypoxylon* of northeastern Asia); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); T. Iida, 1968:21 (Japan); Nambu, 1973a:151 (Japan: Saitama Prefecture); Tsuneki, 1973e:35, 37 (in key to *Trypoxylon* of Japan, in Japanese); Nambu, 1975b:63 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:347 (in checklist of world Sphecidae); Tsuneki, 1981e:5 (in key to *Trypoxylon* of Japan and northeastern Asia), 51 (Japan; additional description), 1981f:37 (member of *Trypoxylon pacificum* species group); Antropov, 1986a:90 (Russia: Primorskiy Kray); Tano, 1994a:6 (holotype in K. Tsuneki collection); Antropov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:421 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:21 (holotype transferred to Hyogo Mus.).

Trypoxylon varipes nasutum Tsuneki, 1974a:365, ♀. Holotype: ♀, Nort Korea: 27 km NE Kaesong: Mountains Pakyon (TMB). Synonymized with *Trypoxylon varipes* by Antropov, 1994c:124. – R. Bohart and Menke, 1976:630 (in checklist of world Sphecidae); Tsuneki, 1981e:4 (in key to *Trypoxylon* of Japan and northeastern Asia), 38 (Korea; geographic variation), 1982b:16 (known from Korea; erroneously placed in *Pison*); Paik, 1985:199 (in list of Sphecidae of Korea, as *nastus*).

Trypoxylon varipes nasutum Tsuneki, 1991:200, as new subspecies. Nomen nudum.

519. *varipiloides* Tsuneki

Trypoxylon varipiloides Tsuneki, 1980a:65, ♀, ♂. Holotype: ♀, Malaysia (East) (= northern Borneo): Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:9 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1980b:7 (in key to *Trypoxylon* of Philippines), 55 (Philippines), 1981f:19 (single member of *Trypoxylon varipiloides* species group).

520. *varipilosum* Cameron

Trypoxylon varipilosum Cameron, 1901a:28, ♀. Holotype or syntypes: ♀, Singapore (BMNH). – Richards, 1934:315 (member of *Trypoxylon figulus* species group); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Tsuneki, 1978b:44 (redescription), 78 (in key to Oriental *Trypoxylon*), 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 91 (redescription), 1980a:9 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 64 (redescription), 1980b:7, 9 (in key to *Trypoxylon* of Philippines),

60 (Philippines; additional description); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam, as *varipilosum* Tsuneki), 66 (first record from Vietnam: Ninh Binh: Thung Den Tran: Trang An).

Trypoxylon aureohirtum Tsuneki, 1976b:77, ♀. Holotype: ♀, Philippines: Palawan: Pinigisan (ZMUC). Synonymized with *Trypoxylon varipilosum* by Tsuneki, 1980a:2. – Tsunek, 1976b:94 (in key to female *Trypoxylon* of Philippines),

As *Trypoxylon khasiae* (corrected to *Trypoxylon varipilosum* by Tsuneki, 1980a:2 and 64): Tsuneki, 1979a:84 (Malaysian specimens only), 1979c:7, 8, 9 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 36 (Indonesia: Java, Sumatra), 1980a:2 (*Trypoxylon varipilosum* possibly is a geographic form of *khasiae*).

521. *varipunctatum* Tsuneki

Trypoxylon varipunctatum Tsuneki, 1980b:54, ♀. Holotype: ♀, Philippines: Luzon: Mount Makiling (USNM). – Tsuneki, 1980b:7 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:26 (holotype in USNM).

ssp. *kiashi* Tsuneki

Trypoxylon varipunctatum kiashi Tsuneki, 1980b:55, ♀. Holotype: ♀, Philippines: Island of Basilan: no specific locality (USNM). – Nuhn and Menke, 1994:26 (holotype in USNM).

522. *vechti* Tsuneki

Trypoxylon vechti Tsuneki, 1979c:22, ♂, ♀. Holotype: ♂, Indonesia: West Java: Mount Gedeh: Poentjak (RMNH). – Tsuneki, 1979c:5 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 1981f:34 (member of *Trypoxylon vechti* species group).

523. *venaticum* Tsuneki

Trypoxylon venaticum Tsuneki, 1980a:69, ♀. Holotype: ♀, Sarawak: Mount Mulu (BMNH). – Tsuneki, 1980a:9 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

524. *vicinum* Tsuneki

Trypoxylon vicinum Tsuneki, 1979c:15, ♀, ♂. Holotype: ♀, Indonesia: West Java: Mount Gedeh: Tapas (RMNH). – Tsuneki, 1979c:4, 6, 10 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 1980a:2 and 24 (as *Trypoxylon laeviceps vicinum*, new status), 1980b:5, 6 (in key to *Trypoxylon* of Philippines), 38 (raised to full species status; additional description), 1981f:23 (member of *Trypoxylon appendiculatum* species group); Sk. Yamane, 1983:86 (Indonesia: Krakatau Islands).

525. *viduum* Arnold

Trypoxylon viduum Arnold, 1951:79, ♂. Holotype: ♂, Ethiopia: Jowaha north of Debra Sina (BMNH). – Leclercq, 1965a:96 (in key to Afrotropical *Trypoxylon*), 123 (in revision of Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae).

526. *vientianense* Tsuneki

Trypoxylon vientianense Tsuneki, 1979a:141, ♂ (as *vientianensis*, incorrect original termination). Holotype: ♂, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:15 18 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:61 (member of *Trypoxylon kepongianum* species group).

527. *viridaricola* Tsuneki

Trypoxylon viridaricola Tsuneki, 1979c:65, ♂. Holotype: ♀, Indonesia: West Java: Bogor: Dramaga (RMNH). – Tsuneki, 1979c:11 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands), 1981f:74 (single member of *Trypoxylon viridaricola* species group).

528. *volitans* Arnold

Trypoxylon volitans Arnold, 1956:71, ♂. Holotype: ♂, Uganda: Jinja (SAM). – Leclercq, 1965a:93 (in key to Afrotropical *Trypoxylon*), 118 (in revision of Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae).

529. *wallacei* Tsuneki

As *Trypoxylon ferox*: Tsuneki, 1978b:13, corrected to *Trypoxylon wallacei* by Tsuneki, 1980a:2 and 40.

Trypoxylon wallacei Tsuneki, 1980a:40, ♂. Holotype: ♂, Indonesia: Sulawesi: Makassar (OXUM). – Tsuneki, 1980a:6 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas), 1981f:48 (member of *apicatum* species goup).

530. *walshae* Tsuneki

Trypoxylon walshae Tsuneki, 1979c:67, ♀, ♂. Holotype: ♀, Indonesia: Island of Kangean: Petapan (RMNH). – Tsuneki, 1979c:4, 6, 10 (in key to *Trypoxylon* of Sumatra, Java, and Lesser Sunda Islands).

531. *warisum* Tsuneki

Trypoxylon warisum Tsuneki, 1981a:33, ♂, ♀. Holotype: ♂, Indonesia: Papua (New Guinea): Waris south of Holandia, now Jayapura (Bishop Mus.). – Tsuneki, 1981a:6 (in key to *Trypoxylon* of New Guinea and South Pacific Islands), 1981f:20 (one of three members of *Trypoxylon angoramum* species group).

532. *wauense* Tsuneki

Trypoxylon wauense Tsuneki, 1981a:62, ♀. Holotype: ♀, Papua New Guinea: Morobe Province: Wau (Bishop Mus.). – Tsuneki, 1981a:8 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

533. *wegneri* Tsuneki

Trypoxylon wegneri Tsuneki, 1980a:106, ♀. Holotype: ♀, Indonesia: Moluccas: Island of Ambon: Waai (CAS). – Tsuneki, 1980a:14 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas); Pulawski, 1994:27 (CAS holotype no. 13706).

534. *wheeleri* Richards

Trypoxylon wheeleri Richards, 1936b:459, ♀. Holotype: ♀, Panama: Ancon (BMNH). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

535. *williamsi* Tsuneki

Trypoxylon williamsi Tsuneki, 1980b:61, ♀. Holotype: ♀, Philippines: Luzon: Mount Makiling (USNM). – Tsuneki, 1980b:7 (in key to *Trypoxylon* of Philippines); Nuhn and Menke, 1994:26 (holotype in USNM).

536. *winthemi* Richards

Trypoxylon winthemi Richards, 1934:335, ♂. Holotype: ♂, Brazil: no specific locality (NHMW). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

537. *xenophon* Richards

Trypoxylon xenophon Richards, 1934:♀. Holotype: ♀, Panama: Portobello (USNM). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

538. *yanoi* Tsuneki

Trypoxylon yanoi Tsuneki, 1980a:92, ♀. Holotype: ♀, Malaysia (East) (= northern Borneo): Sabah: Forest Camp 19 km north of Kalabakan (Bishop Mus.). – Tsuneki, 1980a:11, 12 (in key to *Trypoxylon* of Borneo, Sulawesi, and Moluccas).

539. *yebissum* Tsuneki

Trypoxylon yebissum Tsuneki, 1979a:167, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:17 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:60 (member of *Trypoxylon takasago* species group).

540. *yogator* Tsuneki

Trypoxylon yogator Tsuneki, 1979a:142, ♂. Holotype: ♂, India: Maharashtra: Matheran (BMNH). – Tsuneki, 1979a:15 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1981f:22 (single member of *Trypoxylon yogator* species group).

541. *yoshimotoi* Tsuneki

Trypoxylon yoshimotoi Tsuneki, 1981c:52, ♀. Holotype: ♀, Taiwan: Pingtung Prefecture: Hengchun (Bishop Mus.). – Tsuneki, 1981c:9 (in key to *Trypoxylon* of Taiwan); Hua, 2006:283 (in list of Chinese insects, geographic distribution).

542. *yumi* Tsuneki

Trypoxylon yumi Tsuneki, 1979a:81, ♀, ♂. Holotype: ♀, Laos: Vientiane Province: Ban Van Eue (Bishop Mus.). – Tsuneki, 1979a:11 (in key to *Trypoxylon* of Indian subcontinent and southeastern Asia), 1980a:2 (*Trypoxylon yumi* is possibly a geographic form of *khasiae*), 1981f:58 (member of *Trypoxylon coloratum* species group); Pham, Nguyen, and Antropov, 2023:61 (in key to *Trypoxylon* of northern Vietnam), 66 (first record from Vietnam: Cao Bang: Ban Hau).

543. *zikae* Arnold

Trypoxylon zikae Arnold, 1956:72, ♀. Holotype: ♀, Uganda: Zika Forest 6 mi. north of Entebbe (SAM). – Leclercq, 1965a:90 (in key to Afrotropical *Trypoxylon*), 115 (in revision of Afrotropical *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae).

544. *zurki* Leclercq

Trypoxylon zurki Leclercq, 1965a:115, ♀. Holotype: ♀, Zaire: Garamba National Park (MRAC). – Leclercq, 1965a:911 (in key to African *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae).

Subgenus *Trypargilum*

545. *aestivale* Richards

Trypoxylon aestivale Richards, 1934:222, ♂, ♀. Holotype: ♂, Brazil: Rio Grande do Sul: Rio Grande do Sul (NHMW). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Coville, 1982b:43 (in revision of North American *Trypargilum*; southern Mexico to Brazil); Dollfuss, 1989:13 (type material in NHMW); Camillo, 1999:33 (nesting habits); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Buys, 2007d:143 (description of larva), 2008a:92 (nest parasite: *Anchieta fumosella* (Westwood, 1867), a mantispid); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro, and Delfín-González, 2014:638 (Mexico: Yucatán Peninsula).

546. *agamemnon* Richards

Trypoxylon agamemnon Richards, 1934:261, ♂. Holotype: ♂, Panama: Tabernilla (USNM). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Buschini and Woiski, 2008:355 (Brazil: Parana: Parque Municipal das Araucárias in municipality of Guarapuava); Buschini, Caldas, Borba, and Brescovit, 2010:170 (spider prey); Buschini and Fajardo, 2010:426 (nesting habits); Buschini and Donatti, 20012:353 (nesting behavior); Pitilin, Araújo, and Buschini,

2012:655 (differences between individuals in prey size and prey taxa); Buschini and Bergamaschi, 2014:231 (sex ratio and parental inventment).

547. *albitarse* Fabricius

NOTE: Records of *Trypoxylon albitarse* from USA are misidentification of *politum.*

Trypoxylon albitarse Fabricius, 1804:180, sex not stated. Lectotype: ♀, South America: no specific locality (Lund), designated by van der Vecht, 1961a:25. – nec Palisot de Beauvois, 1811:115 (= *Trypoxylon politum*); Lepeletier and Serville, 1828:750 (listed); Dahlbom, 1844:286 (in revision of Sphecidae and Pompilidae), 1845:509 (in key to world *Trypoxylon*); Lepeletier de Saint Fargeau, 1845:228 (in revision of world Hymenoptera); F. Smith, 1856:379 (in catalog of Hymenoptera in British Museum); Cresson, 1862:234 (in catalog of North American Hymenoptera); A. Costa, 1864a:61 (three specimens from Mexico in Napoli Museum); nec Belke, 1866 (= *Trypoxylon figulus*); Taschenberg, 1875:371 (diagnostic characters); de Saussure, 1867:76 (North America, Mexico; redescription); Sörensen, 1884:15 (nesting habits); Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Cameron, 1889a:40 (Mexico and Central America); W. Fox, 1891c:138 (in revision of North American *Trypoxylon*); Viereck, 1893e:132 (New Jersey: Del. Water Gap); W. Fox, 1894a:501 (in revision of North American Larrinae); C. Turner, 1912:353 (experiments about reaction to light, as *albotarsus*); W. Fox, 1894a:474 (in revision of North American Larrinae), 1895c:267 (Mexico: Baja California Sur); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); du Buysson, 1898b:84 (description of nest and larva); Holmberg, 1903:469 (Argentina, Paraguay); Rudow, 1904:197 (building nests out of mud); J. Smith, 1910:685 (in new list of insects of New Jersey); Cameron, 1912a:438 (Guiana); Rohwer, 1912:473 (interpretation of name and synonyms); Rudow, 1912:60 (nest structure); Rau and Rau, 1913:401 (feeding larva with additonal food supply), 1916:31 (nest and prey); Bodkin, 1918:317 (British Guiana, mud nest); Campos, 1922:64 (Ecuador: eight localities); Bristowe, 1925a:480 (nest and prey); Osborne, 1929:751 (nesting habits); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, Torino); Radović, 1985:65 (sting apparatus analyzed, as *albitarsae*); Maes, 1989:101 (in catalog of Nicaraguan Sphecidae); Callan, 1991a:8 (Trinidad); Amarante, 1993:19 (norheastern Brazil); Araújo, Pompolo, Dergam, and Campos, 2000:7 (B chromosome system); Araújo, Pompolo, Perfecti, and Camacho, 2001a:61 (nucleolar area relative to nuclear area adjusted to ploidy level), 2001b:1127 (integration of B chromosome into A genome); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Araújo, Pompolo, Perfecti, and Camacho, 2002:1475 (integration of B chromosome into A genome); Araújo, Silva, Pompolo, Perfectti, and Camacho, 2002 (variation in genetic load caused by differences in short (= heterochromatic) arm of chromosome 14); P. Moreira, Brito, and Lino-Neto, 2003:569 (morphology and number of spermatozoa per cyst); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Rocha-Sanchez and Pompolo, 2004:398 (integration of B chromosome); Peruquetti, 2005:84 (nesting in trap nests); Martins, Serrão, and Schmidt Furieri, 2005:121 (spermatheca long, coiled, with narrow reservoir); Araújo, Pompolo, Perfectti, and Camacho, 2002:1475 (integration of a B chromosome into A genome); Buys, 2005a:696 (description of larva); Costa de Almeida, and Del Lama, 2007:1 (number of generations per year); V. Araújo, Moreira, and Lino-Neto, 2009 (structure and ultrastructure of spermatozoa); Rasmussen and Asenjo, 2009:12 (in checklist of Crabronidae of Peru); da Costa Almeida, Bergamaschi, Sanches, Hatanaka, and del Lama, 2013:541 (described nine microsatellite markers); Pagliano, 2014:83 (specimen in M. Spinola collection,Torino); Bergamaschi, da Costa Almeida, de Oliveia Campos, and del Lama, 2015:722 (all offspring in 12 out of 29 nests derived from single couple, circa 9% resulted from extra-pair copulations); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro-Alberto, and Delfín-González, 2015:994 (Mexico: in list of Sphecidae *sensu lato* of Yucatán); Vanoye-Eligio, Meléndez-Ramírez, Ayala-Barajas, Delfin-González, and Horta-Vega, 2019:8 (Mexico: Yucatán). – Nec Du Byusson, 1898:353 (= *Trypoxylon mexicanum*) and the following authors (= *Trypoxylon politum*): Walsh and Riley, 1869:133; W. Fox, 1891:136, 1893:472;

Howard, 1904:pl.6, fig.6; H. Smith, 1908b:352; Rau and Rau, 1913:401, 1916:27; Richards, 1934:218. – **As *Apius albitarse***: Jurine, 1807:142 (new combination, in checklist of species of *Apius*).

Trypoxylon palliditarse de Saussure, 1867:77, ♀, ♂. Syntypes: Brazil: no specific locality; Argentina: Entre Ríos: no specific locality (NHMW). Synonymized with *Trypoxylon albitarse* by van der Vecht, 1961a:25. – Holmberg, 1884:218 (Uruguay); Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889a:48 (Mexico, redescription); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); W. Fox, 1897b:383 (Brazil: Pará: Santarém; as *pallitarse*); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Schrottky, 1903b:178 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay); Cameron, 1912a:438 (Guiana); Rohwer, 1912:473 (unrecognizable species); Schrottky, 1913a:228 (Argentina, Paraguay, Uruguay); Bruch, 1932a:49 and 1932b:174 (nesting habits); Gemignani, 1933:309 (redescription); Richards, 1934:213 (in revision of New World *Trypoxylon*), 351 (nesting habits summary), 1935d:212 (nest parasite: calliphorid fly *Pachyophthalmus floridensis antillarum* Richards); Vesey Fitzgerald, 1936:111 (Trinidad: nest, male guarding nest, immature stages); Bischoff and von Schulthess, 1937:169 (Argentina: San José); Callan, 1950:205 (constructs mud nests not infrequently on building walls); Freeman, 1981b:563 (population dynamics in Trinidad); Steiner, 1986:105 (references to publications on nesting habits).

Trypoxylon rostratum Taschenberg, 1875:371, ♀. Syntypes: ♀, Brazil: no specific locality (Halle). Synonymized with *Trypoxylon palliditarse* by Kohl, 1885a:205, Gemignani, 1933:310, and Richards, 1934:213. – Schrottky, 1910b:70 (description of ♂); Strand, 1910a:169 (Paraguay); Bertoni, 1911:134 (nest and prey); Strand, 1912:287 (nest structure); Schrottky, 1913a:228 (Argentina, Paraguay).

Trypoxylon leucotrichium Rohwer, 1912:477, ♂, ♀. Holotype: sex not stated, Peru: Chanchamayo (USNM). Synonymized with *Trypoxylon palliditarse* by Richards, 1934:213. – Rohwer, 1912:478 (in key to *Trypoxylon* discussed in this paper); nec F. Williams, 1928a:351 (= *Trypoxylon buchwaldi*); Rau, 1933:157 (Panama: Island of Barro Colorado: nest), 1935b (*Trypoxylon leucotrichium* is a synonym of *T. palliditarse* de Saussure).

548. *albonigrum* Richards

Trypoxylon albonigrum Richards, 1934:225, ♂. Holotype: ♂, Brazil: Blumenau (NHMW). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Gonzaga and Vasconcellos-Neto, 2005:2915 (Brazil: Saõ Paulo State: Parque Estadual Intervales; preying on spiders including list of prey); Araújo and Gonzaga, 2007:1855 (individual specialization on prey).

549. *alleni* Richards

Trypoxylon alleni Richards, 1934:259, ♂. Holotype: ♂, Colombia: Chiriguana District: Lake Sapatoza area (BMNH). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

550. *anapaike* Amarante

Trypoxylon anapaike Amarante, 1991:431, ♀. Holotype: ♀, Surinam: Marowije: Anapaike (Mus. Zool. Univ. São Paulo). – Amarante, 2002:49 (in catalog of Neotropical Crabronidae), 2005b:92 (description of ♂, additional description of ♀, first record from Brazil); Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:4 (holotype in Mus. Zool. Univ. São Paulo).

551. *annulatum* Brèthes

Trypoxylon annulatum Brèthes, 1913:156, ♀. Syntypes: ♀, Argentina: Misiones: no specific locality (MACN). – Richards, 1934:249 (member of *Trypoxylon nitidum* species group); Gemignani, 1940:438 (redescription of type); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Genise, 1990:27 (type material in MACN); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

552. *antropovi* Coville

Trypoxylon sp. near *palliditarsus*: Rau, 1943:650 (nest, natural enemies), corrected to *Trypoxylon giganteum* by Coville, 1982b:37.

Trypoxylon giganteum Coville, 1982b:37, ♀, ♂, junior primary homonym of *Trypoxylon giganteum* Tsuneki, 1980. Holotype: ♂, Mexico: Chiapas: El Zapotal 2 mi. south of Tuxtla Gutierrez (CAS). – Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

Trypoxylon antropovi Coville, 1985:267. Substitute name for *Trypoxylon giganteum* Coville, 1982. – Camillo, 1999:30 (nesting habits). – Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

553. *apicipenne* Cameron

Trypoxylon apicipenne Cameron, 1889a:44, ♀. Holotype: ♀, Mexico: Yucatan: Temax (BMNH). – Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:234 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Coville, 1982b:83 (in revision of North American *Trypargilum*, southern Arizona and Mexico); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Pitts and Parker, 2005:62 (nest parasite: mutillid *Sphaeropthalma jacala* Schuster); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro, and Delfín-González, 2014:638 (Mexico: Yucatán Peninsula).

Trypoxylon bicalcaratum Richards, 1934:235, ♂. Holotype: ♂, Mexico: no specific locality (USNM). Synonymized with *Trypoxylon apicipenne* by Coville, 1982b:83. – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae). – **As *Trypargilum bicalcaratum***: Krombein *in* Krombein et al., 1979:1645 (new combination, in catalog of North American Hymenoptera).

554. *armatum* Taschenberg

Trypoxylon armatum Taschenberg, 1875:373, ♂. Holotype: ♂, Venezuela: no specific locality (Halle). – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Richards, 1934:244 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

555. *atkinsoni* Richards

Trypoxylon atkinsoni Richards, 1934:225, ♂. Holotype: ♂, Colombia: Cincinnati (USNM). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

As *Trypoxylon niveitarse*: Rau, 1933:156 (Panama: Barro Colorado, nest), corrected to *Trypoxylon atkinsoni* by Rau, 1935b:188

556. *aureovestitum* Taschenberg

Trypoxylon aureovestitum Taschenberg, 1875:376, ♂. Syntypes: ♂, Argentina: Mendoza: Mendoza (Halle). – Holmberg, 1884:218 (Uruguay); Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Holmberg, 1903:469 (Argentina, Paraguay); Schrottky, 1903b:178 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay); Jörgensen, 1912:293 (Argentina: Mendoza Province); Schrottky, 1913a:228 (Argentina, Paraguay, Uruguay); Richards, 1934:253 (in revision of New World *Trypoxylon*); Bischoff and von Schulthess, 1937:170 (Argentina: Lapango); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

Trypoxylon tucumanum Brèthes, 1913:153, ♀. Holotype: ♀, Argentina: Tucumán (MACN). Tentatively synonymized with *Trypoxylon aureovestitum* by Richards, 1934:253, definitely synonymized by Gemignani, 1940:436. – Gemignani, 1940:436 (redescription of type); Genise, 1990:27 (type material in MACN); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

557. *aurifrons* Shuckard

Trypoxylon aurifrons Shuckard, 1837a:117, ♂. Holotype: ♂: origin doubtful, probably not British (BMNH). – Dahlbom, 1844:284 (in revision of Sphecidae and Pompilidae); F. Smith, 1856:379 (in catalog of Hymenoptera in British Museum); A. Costa, 1864a:61 (one specimens from Brazil in Napoli Museum); Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Bertoni, 1911:134 (nest and prey); Rudow, 1912:60 (nest structure); Richards, 1934:275 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 1993:19 (norheastern Brazil); D. Baker, 1998:172 (type origin and depository); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Santoni and Del Lama, 2007:369 (nesting habits); Moreira, Araújo, Zama, and Lino-Neto, 2008:430 (male reproductive organs); Santoni, Brescovit, and Del Lama, 2009:108 (Brazil: São Paulo State: Araras at 22°18'S 47°22'W, São Carlos at 22°01'S47°53'W, and Rifaina at 20°04'S 47°25'W; prey consists mainly of Araneidae).

Trypoxylon ornatum F. Smith, 1856:380, ♀. Holotype or syntypes: ♀, Brazil: no specific locality (BMNH). Synonymized with *Trypoxylon aurifrons* by Richards, 1934:275. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); W. Fox, 1899:200 (Brazil: São Paulo); Bertoni, 1911:134 (nest and prey); Schrottky, 1913a:228 (Paraguay); Campos, 1922:64 (Ecuador: Durán, El Salado, Guayaquil, identification tentative).

Trypoxylon latiornatum Cameron, 1912a:438, ♀. Holotype or syntypes: ♀, Guyana: Demerara: no specific locality (BMNH). Synonymized with *Trypoxylon aurifrons* by Richards, 1934:275.

558. *barticense* Richards

Trypoxylon barticense Richards, 1934:222, ♂. Holotype: ♂, Guyana: Bartica (NHMW). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

559. *bensoni* Richards

Trypoxylon bensoni Richards, 1934:246, ♂. Holotype: ♂, Nicaragua: no specific locality (BMNH). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae).

560. *bogotense* Richards

Trypoxylon bogotense Richards, 1934:263, ♀. Holotype: ♀, Colombia: Bogota (ZMHU). Paratype: Peru. – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); .

561. *brethesi* Gemignani

Trypoxylon brethesi Gemignani, 1941:42, ♂ (as *Brethesi*, incorrect original capitalization). Holotype: ♂, Argentina: La Rioja: no specific locality (MACN). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

562. *bryanti* Richards

Trypoxylon bryanti Richards, 1934:216, ♂. Holotype: ♂, Argentina: "Riv. San Javier, Santa Fe, Estancion la Noria" (BMNH). Paratype: Brazil. – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

563. *buchwaldi* Richards

As *Trypoxylon leucotrichum*: F. Williams, 1928a:153 (nests on rock), corrected to *Trypoxylon buchwaldi* by Richards, 1934:351.

Trypoxylon buchwaldi Richards, 1934:215, ♂, ♀. Holotype: ♂, Ecuador: Guayaquil (NHMW). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante,

2002:49 (in catalog of Neotropical Crabronidae); Rasmussen and Asenjo, 2009:12 (in checklist of Crabronidae of Peru).

564. *busckii* Richards

As *Trypoxylon* sp. No.7829 and 7373: Rau, 1933:158 (Panama: Barro Colorado), corrected to *Trypoxylon busckii* by Rau, 1935b:188.

Trypoxylon busckii Richards, 1934:221, ♂. Holotype: ♂, Panama: Tabernilla (USNM). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

565. *californicum* de Saussure

Trypoxylon californicum de Saussure, 1867:78, "♀", but actually ♂. Holotype or syntypes: ♂, USA: California: no specific locality (MHNG). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); W. Fox, 1891c:148 (unrecognizable species), 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:277 (probably a synonym of *Trypoxylon nitidum*); Sandhouse, 1940:141 (in revision of Nearctic *Trypoxylon*); Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Coville, 1982b:941 (in revision of North American *Trypargilum*; northern Mexico to Washington); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae). – **As *Trypargilum californicum***: Krombein *in* Krombein and Burks, 1967:395 (new combination, in supplement to Catalog of North American Hymenoptera); Krombein, 1979b:1645 (in catalog of North American Hymenoptera).

Trypoxylon sonorense Cameron, 1889a:45, ♀, ♂. Lectotype: ♀, Mexico: n. Sonora: no specific locality (BMNH), designated by Richards, 1934:241. Synonymized with *Trypoxylon californicum* by Coville, 1982b:94. – Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:241 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

Trypoxylon arizonense W. Fox, 1891c:145, ♀. Lectotype: ♀, USA: Arizona: no specific locality (ANSP), designated by Cresson, 1928:52. Synonymized with *Trypargilum californicum* by Coville *in* Krombein, 1979b:1645. – W. Fox, 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Snow, 1906:135 (Arizona); Rohwer, 1917a:246 (California: Calaveras County); Mickel, 1918a:329 (description of ♂); Richards, 1934:240 (in revision of New World *Trypoxylon*); Sandhouse, 1940:140 (in revision of Nearctic *Trypoxylon*); Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); Muma, 1952:23 (allotype in UNL); Evans, 1957b:92 (description of larva); Matthews and Matthews, 1968:285 (nesting habits, prey preference, cocoon structure); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Ohl and Linde, 2003:151 (number of ovarioles). – **As *Trypargilum arizonense***: Krombein *in* Krombein and Burks, 1967:395 (new combination, in supplement to Catalog of North American Hymenoptera); Matthews and Matthews, 1968:285 (nesting habits).

Trypoxylon campaspe Richards, 1934:239, ♀. Holotype: ♀, Mexico: Nogales (USNM), synonymized with *Trypoxylon californicum* by Coville, 1982b:94. – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

566. *cariniceps* Richards

Trypoxylon cariniceps Richards, 1934:226, ♀. Holotype: ♀, Bolivia: Coroico (ZMHU). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

567. *carinifrons* Cameron

Trypoxylon carinifrons Cameron, 1889a:41, ♀. Holotype or syntypes: ♀, Mexico: Veracruz: Atoyac (BMNH). – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:230 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Coville, 1982b:30 (in revision of North American *Trypargilum*; Mexico to Costa Rica); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 46 (Mexico: Tamaulipas).

568. *chichenitzae* Coville

Trypoxylon chichenitzae Coville, 1982b:85, ♂, ♀. Holotype: ♂, Mexico: Yucatan: Chichen Itza (BMNH). – Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro, and Delfín-González, 2014:638 (Mexico: Yucatán Peninsula).

569. *clavatum* Say

Trypoxylon clavatum Say, 1837:374, ♀, ♂ (as *clavatus*, incorrect original termination). Syntypes: USA: no specific locality (lost). – F. Smith, 1856:381 (in catalog of Hymenoptera in British Museum); Le Conte, 1859b:756 (original description copied); Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:414 (in revision of North American Bembicinae and Crabroninae); de Saussure, 1867:79 (eastern North America, redescription); Cresson, 1873:226 (Texas); Snow, 1881:96 (in checklist of Hymenoptera of Kansas: Douglas County: no specific locality); Provancher, 1882:135 and 1883b:670 (in revision of Canadian Hymenoptera); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); Ashmead, 1890:32 (in checklist of Hymenoptera of Colorado); W. Fox, 1891c:140 (in revision of North American *Trypoxylon*); Ashmead, 1894:45 (nesting in cells of *Chalybion caeruleum*, now *Ch. californicum*); W. Fox, 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Bridwell, 1899:209 (Kansas: Baldwin); J. Smith, 1900:520 (in list of insects of New Jersey); nec Faull, 1913:385 (= *Trypoxylon frigidum*); J. Smith, 1910:684 (in new list of insects of New Jersey); Rau and Rau, 1916:33 and 41 (nesting habits); Rohwer, 1916b:676, 677 (in catalog of Hymenoptera of Connecticut); Mickel, 1918b:393 (in catalog of Nebraskan Sphecidae); Rau and Rau, 1918:135 (nesting habits); Britton, 1920:339 (in checklist of insects of Connecticut); Rau and Rau, 1922:22 (USA: Missouri: Meramac Highlands, nesting in nest of *Polistes*); Blackman and Stage, 1924:196 (New York: Syracuse, nesting in dead wood of hickory); Rohwer *in* Viereck, 1925:676, 677 (in key to Sphecidae of Connecticut; New Haven); Rau, 1926:198 (Missouri: Wickes: sheltered clay bank; nesting habits); J.Ch. Bradley, 1928:1010 (in catalog of New York Crabronidae); Rau 1928a:26 (nesting in old nests of *Sceliphron caementarium*), 1928b:406 (nesting in clay bank, old nests of *Sceliphron*, holes in posts and logs; male guarding nest entrance; two generations per year; nest structure; list of spider prey), 1931:200 (homing); Richards, 1934:237 (in revision of New World *Trypoxylon*); Brimley, 1938:443 (North Carolina: statewide); Sandhouse, 1940:143 (in revision of Nearctic *Trypoxylon*); Muma and Jeffers, 1945:255 (nest, spider prey); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); Krombein, 1952a:94 (USA: Virginia: Westmoreland State Park), 1953a:331 (North Carolina), 331 (North Carolina), 1956b:154 (West Virginia: Lost River State Park); K. Cooper, 1956:601 (concave partition wall of larval cell indicates exit); Evans, 1957b:91 (description of larva), 1959b:160 (additional description of larva); Krombein, 1963f:274 (Maryland: Plummers Island near Washington, D.C.); Bitner, 1972:24 (predation in nest by larvae of *Lecontella cancellata*, a clerid); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); L. Davis, 1978:218 (North Carolina: Kill Devil Hills, data from Krombein, 1953a); Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, Torino, as *claratum*); Coville, 1982b:86 (in revision of North American *Trypargilum*;

eastern North America north to southeastern Canada, west to Rocky Mountains); Hermann and Gonzales, 1986:313 (venom apparatus; as *clavatum clavatum*); Beyer, Miller, and Fleming, 1987:480 (Tennessee: Humphreys County); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Jenkins and Matthews, 2004:209 (USA: Georgia, South Carolina nesting in trap nest, mud partition constructed prior to provisioning); Pagliano, 2014:83 (specimen in M. Spinola collection, Torino, as *claratum*). – **As *Trypargilum clavatum***: Krombein, 1967b:203 (new combination, nesting habits observed in artificial nests); Krombein *in* Krombein and Burks, 1967:395 (in supplement to Catalog of North American Hymenoptera); Krombein, 1979b:1646 (in catalog of North American Hymenoptera, as *clavatum clavatum*); Spofford, Kurczewski, and Downes, 1989:255, 261 (summary of previous records for nest parasites *Amobia distorta* (Allen) and *Amobia* sp., miltogrammine flies, and undetermined species of Miltogrammini); Horn and Hanula, 2004:467 (South Carolina: Savannah River Site near Aiken).

Trypoxylon annulare Dahlbom, 1844:282, ♀. Holotype: ♀, Brazil: no specific locality (Lund). Synonymized with *Trypoxylon clavatum* by Richards, 1934:238. – Dahlbom, 1845:509 (in key to world *Trypoxylon*); F. Smith, 1856:379 (in catalog of Hymenoptera in British Museum); Taschenberg, 1875:372 (specimen in Halle University collection); Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:700 (in catalog of world Hymenoptera).

Trypoxylon rufozonale W. Fox, 1891c:145, ♀, ♂ (as *rufozonalis*, incorrect original termination). Lectotype: ♀, USA: Colorado: no specific locality (ANSP), designated by Cresson, 1928:55. Synonymized with *Trypoxylon arizonense* by Sandhouse, 1940:140, and with *Trypoxylon clavatum* by Coville, 1982b:87. – W. Fox, 1894a:475 (in revision of North American Larrinae), Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); Mickel, 1918b:394 (in catalog of Nebraskan Sphecidae); Richards, 1934:231 (not examined), 349 (biological data of H. Smith, 1908:352).

*Trypoxylon quintile*Viereck, 1906:206, ♂ (as *quintilis*, incorrect original termination). Holotype: ♂, USA: Kansas: Douglas County (Kansas Univ.). Synonymized with *Trypoxylon clavatum* by Sandhouse, 1940:143. – Richards, 1934:231 (not examined); LaBerge, 1956:528 (holotype in Snow Entomological Museum).

Trypoxylon cockerellae Rohwer, 1909a:130, ♀. Holotype or syntypes: ♀, USA: Colorado: Boulder County: Boulder (USNM). Synonymized with *Trypoxylon clavatum* by Sandhouse, 1940:143. – Rau and Rau, 1916:42 (using nest of *Trypoxylon albitarse*). – **As *Trypoxylon clavatum* var. *cockerellae***: Richards, 1934:238 (new status, in revision of New World *Trypoxylon*).

ssp. *johannis* Richards

As *Trypoxylon collinum* (corrected to *Trypoxylon johannis* by Sandhouse, 1940:143): Packard, 1867:415 (revision, ♀ only); W. Fox, 1891c:146 (in revision of North American *Trypoxylon*), 1894a:475 (in revision of North American Larrinae).

Trypoxylon johannis Richards, 1934:238, ♀, ♂. Holotype: ♀, USA: Florida: Duval County: Saint John's Bluff in Jacksonville (BMNH). – Sandhouse, 1940:143 (in revision of Nearctic *Trypoxylon*); Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (in catalog of North American Hymenoptera); Krombein and Evans, 1954:233 (Florida), 1955:232 (Florida: Arcadia); Evans, 1957b:92 (description of larva) Evans, 1959b:161 (additional description of larva); Krombein, 1959d:153 (in key to Trypoxylon of Lake Placid, Florida); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae). – **As *Trypargilum johannis***: Krombein, 1967b:210 (new combination, nesting habits observed in artificial nests); Krombein *in* Krombein and Burks, 1967:395 (bibliographic references, in supplement to Catalog of North American Hymenoptera); Spofford, Kurczewski, and Downes, 1989:255 (summary of previous records for nest parasite *Amobia floridensis* (Townsend), a miltogrammine fly). – **As *Trypoxylon clavatum johannis***: Coville, 1982b:88 (new status, in revision of North American *Trypargilum*, southern Georgia and peninsular Florida). – **As *Trypargilum clavatum johannis***: Coville *in* Krombein, 1979b:1646 (new status); Krombein, 1979b:1646 (in catalog of North

American Hymenoptera); Deyrup and Eisner, 2003:521 (Florida; another northern subspecies lacking red or yellow markings).

570. *collinum* F. Smith

Trypoxylon collinum F. Smith, 1856:381, ♀. Lectotype: ♀, USA: Florida: Duval County: Saint John's Bluff, now Jacksonville (BMNH), designated by Richards, 1934:272. – Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:415 (in revision of North American Crabroninae and Bembicinae, ♂ only, ♀ = *Trypoxylon clavatum johannis*); Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); nec W. Fox, 1891c:146 and 1894a:475 (= *Trypoxylon clavatum johannis*); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:271 (in revision of New World *Trypoxylon*); Sandhouse, 1940:147 (in revision of Nearctic *Trypoxylon*); Krombein *in* Muesebeck, Krombein, and Townes, 1951:956 (listed); Krombein and Evans, 1954:233 (Florida: Paradise Key, Arcadia), 1955:232 (Florida); Evans, 1959b:150 (description of larva); Krombein, 1959d:153 (as *collinum collinumi*, a subspecies of *collinum rubrocinctum*, differences), 1964c:18 (nest), 1970:22 (nesting habits, as *collinum collinum*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Evans, 1979:160 (description of larva); Coville, 1982b:65 (in revision of North American *Trypargilum*, USA: southern Georgia and peninsular Florida); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Jenkins and Matthews, 2004:209 (USA: Georgia nesting in trap nest, mud partition constructed prior to provisioning). – **As *Trypargilum collinum***: Krombein, 1967b:185 (new combination, nesting habits observed in artificial nests, as *collinum collinum*); Krombein *in* Krombein and Burks, 1967:395 (listed, in supplement to Catalog of North American Hymenoptera, as *collinum collinum*); Krombein, 1970:22 (nesting habits, as *collinum collinum*); Krombein, 1979b:1648 (in catalog of North American Hymenoptera, as *collinum collinum*); Spofford, Kurczewski, and Downes, 1989:255, 261 (summary of previous records for nest parasites *Amobia aurifrons* (Townsend) and *Amobia* sp., miltogrammine flies, and undetermined species of Miltogrammini); Deyrup and Eisner, 2003:521 (Florida; another northern subspecies lacking red or yellow markings).

ssp. *rubrocinctum* Packard

Trypoxylon rubrocinctum Packard, 1867:416, ♀ (as *rubro-cinctum*, incorrect original hyphenation). Lectotype: ♀, USA: Delaware: no specific locality (ANSP), designated by Cresson, 1928:55. – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); W. Fox, 1891c:143 (in revision of North American *Trypoxylon*), 1894a:474 (in revision of North American Larrinae); G. Peckham and E. Peckham, 1895:303 (nesting habits), 1898:77 (nesting habits); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae, as *rubricinctum*); Bridwell, 1899:209 (Kansas: Baldwin); J. Smith, 1900:520 (in list of insects of New Jersey); G. Peckham and E. Peckham, 1905:178 (nesting habits); J. Smith, 1910:685 (in new list of insects of New Jersey); Mickel, 1918b:393 (in catalog of Nebraskan Sphecidae); Rau, 1922:22 (USA: Missouri: Saint Louis, twig nesting); Richards, 1934:274 (description of ♂, in revision of New World *Trypoxylon*), 348 (nesting habits summary); Brimley, 1938:443 (North Carolina: Bryson City, Hendersonville, Tarboro); Sandhouse, 1940:146 (in revision of Nearctic *Trypoxylon*); Krombein, 1950a:267 (North Carolina: Dare County); Krombein *in* Muesebeck, Krombein, and Townes, 1951:957 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park), 1953a:331 (North Carolina), 1954a:5 (nest and prey); Evans, 1957:94 (description of larva); Koerber and Medler, 1958:55 (Wisconsin, nesting in trap-nests); Krombein, 1958f:189 (in supplement to catalog of North American Hymenoptera: prey); Evans, 1959b:161 (additional description of larva); Krombein *in* Krombein et al., 1957:189 (listed); Medler, 1967:344 (nesting habits); nec Paetzel, 1973:26 (= *Trypoxylon tridentatum*); L. Davis, 1978:218 (South Carolina: Kill Devil Hills, data from Krombein, 1953a); Piek and Spanjer, 1986:191 (in list of Sphecidae with known prey, as *rubrocinctus*). – **As *Trypargilum collinum rubrocinctum***: Krombein *in* Krombein and Burks,

1967:395 (new combination, in supplement to Catalog of North American Hymenoptera); Krombein,1967b:187 (nesting habits observed in artificial nests); Krombein, 1979b:1648 (in catalog of North American Hymenoptera); Finnamore, 1982:118 (in Sphecid Fauna of southern Quebec); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County). – **As *Trypoxylon collinum rubrocinctum***: Krombein, 1959d:153 (new status), 1963f:265 (natural enemies), 274 (Maryland: Plummers Island near Washington, D.C.); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Coville, 1982b:67 (in revision of North American *Trypargilum*); Steiner, 1986:105 (references to publications on nesting habits); Beyer, Miller, and Fleming, 1987:480 (Tennessee: Humphreys County); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); K. O'Neil and J. O'Neil, 2013:161 (New York State: Roy H. Park Preserve and Dorothy McIlroy Bird Sanctuary).

571. *correntium* Brèthes

Trypoxylon correntium Brèthes, 1909b:67, ♀. Holotype: ♀, Argentina: Corrientes: no specific locality (Mus. Montevideo). – Schrottky, 1913a:228 (Argentina: Corrientes); Richards, 1934:226 (not examined); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Genise, 1990:27 (type material in Museo de Montevideo, as *correntinum*); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

572. *cubense* Richards

Trypoxylon cubense Richards, 1934:252, ♂. Holotype: ♂, Cuba: no specific locality (ZMHU). – Richards, 1969:122 (in key to *Trypargilum* of Greater Antilles); Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:8 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae).

573. *dubium* Coville

Trypoxylon dubium Coville, 1982b:68, ♂, ♀. Holotype: ♂, Mexico: Sinaloa: Culiacán (Univ. Calif. Riverside). Paratypes: Baja California Sur to Costa Rica. – Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Falcón-Brindis, Rodríguez-Estrella, and Jiménez, 2019:4 (Mexico: Baja California Peninsula: body size and prey spectrum allow avoiding competition with congeneric species).

574. *emdeni* Richards

Trypoxylon emdeni Richards, 1934. Holotype: ♀, Peru: no specific locality (Dresden). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Rasmussen and Asenjo, 2009:12 (in checklist of Crabronidae of Peru).

575. *evansi* Coville

Trypoxylon evansi Coville, 1982b:76, ♂, ♀. Holotype: ♂, USA: Arizona: Santa Cruz County: Madera Canyon in Santa Rita Mountains (Cornell Univ.). Paratypes: Mexico to Costa Rica. – Amarante, 2002:49 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro, and Delfín-González, 2014:638 (Mexico: Yucatán Peninsula).

576. *excavatum* F. Smith

Trypoxylon excavatum F. Smith, 1856:330, ♀. Holotype or syntypes: ♀, Jamaica: no specific locality (BMNH). – Cresson, 1862:235 (in catalog of North American Hymenoptera), 1865a:148 (Cuba); de Saussure, 1867:79 (Island of Saint Thomas, redescription); Packard, 1867:414 (Cuba); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Fox, 1891c:140 (in revision of North American *Trypoxylon*, specimens from Illinois and New York are possibly mislabeled according to Sandhouse, 1940:170), 1891d:343 (Jamaica), 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:704 (in catalog of world Hymenoptera); Ashmead,

1899d:298 (in checklist of North American Crabronidae); Bridwell, 1899:209 (Kansas: Baldwin); Ashmead, 1900:307 (in checklist of Caribbean Hymenoptera); J. Smith, 1900:520 (in list of insects of New Jersey), 1910:685 (in new list of insects of New Jersey); Rohwer, 1916b:676 (in catalog of Hymenoptera of Connecticut); Holland, 1917:295 (Cuba: Isla de Pinos, now Isla de la Juventud: Los Indios); Britton, 1920:339 (in checklist of insects of Connecticut); Rohwer *in* Viereck, 1925:676 (in key to Sphecidae of Connecticut); J.Ch. Bradley, 1928:1010 (in catalog of New York Crabronidae); Richards, 1934:250 (in revision of New World *Trypoxylon*); Krombein, 1953c:16 (Bahamas: Bimini Islands); Richards, 1969:121 (Cuba), 123 (in key to *Trypargilum* of Greater Antilles); Alayo Dalmau, 1973:180 (as synonym of *Trypoxylon subimpressum*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Jayasingh and Freeman, 1980a:69-78 (Jamaica: trap-nesting), 1980b:214-219 (population dynamics); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

577. *fractum* Richards

Trypoxylon fractum Richards, 1934:270, ♀. Holotype: ♀, Brazil: no specific locality (OXUM). – R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

578. *fugax* Fabricius

Trypoxylon fugax Fabricius, 1804:182, sex not stated. Syntypes: ♀, South America: no specific locality (ZMUC). – Dahlbom, 1844:284 (in revision of Sphecidae and Pompilidae), 1845:509 (in key to world *Trypoxylon*); F. Smith, 1856:379 (in catalog of Hymenoptera in British Museum), 1857b:77 (Brazil, reared from old nest of *Polistes* stopped with clay); Taschenberg, 1875:374 (specimen in Halle University collection); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); du Buysson and Marshall, 1892:56 (Venezuela: Caracas); Dalla Torre, 1897:705 (in catalog of world Hymenoptera); Strand, 1910a:170 (Paraguay), 1912:289 (nest structure); nec Bodkin, 1918:317 (= *Trypoxylon nitidum*); Richards, 1934:254 (in revision of New World *Trypoxylon*), 348 (citation of F. Smith, 1857:77); Vesey-FitzGerald, 1938:191 (Trinidad); van der Vecht, 1961a:26 (study of type material); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

? *Trypoxylon columbianum* de Saussure, 1867:80, ♀. Holotype or syntypes: ♀, Colombia: Caracas (NHMW). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:703 (in catalog of world Hymenoptera); Richards, 1934:212 (not examined), 255 (probable synonym of *Trypoxylon fugax*).

Trypoxylon medianum W. Fox, 1897b:385, ♂. Lectotype: ♂, Brazil: Corumbá (Carnegie Mus.), designated by Menke *in* R. Bohart and Menke, 1976:348. Synonymized with *Trypoxylon fugax* by Menke *in* R. Bohart and Menke, 1976:348. – Jörgensen, 1912:293 (Argentina: Mendoza Province, floral records); Richards, 1934:255 (probable synonym of *Trypoxylon fugax*).

ssp. *santamartae* Richards

Trypoxylon fugax var. *santamartae* Richards, 1934:255, ♂ (as *santa martae*, incorrect original division of word). Holotype: ♂, Colombia: Cartagena (USNM). – **As *Trypoxylon fugax santamartae***: R. Bohart and Menke, 1976:348 (new status, in checklist of world Sphecidae); Amarante, 2002:49 (in catalog of Neotropical Crabronidae).

579. *fuscipenne* Fabricius

Trypoxylon fuscipenne Fabricius, 1804:181, sex not stated (as *fuscipennis*, incorrect original termaination). Lectotype: ♂, South America: no specific locality (ZMUC), designated by van der Vecht, 1961a:26. – nec Palisot de Beauvois, 1811:115 (= *Trypoxylon striatum*); Dahlbom, 1844:283 (in revision of Sphecidae and Pompilidae), 1845:509 (in key to world *Trypoxylon*); F. Smith, 1856:379 (in catalog of Hymenoptera in British

Museum); Cresson, 1862:235 (in catalog of North American Hymenoptera); Taschenberg, 1875:372 (redescription); Kohl, 1885a:204 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); W. Fox, 1899:200 (Brazil: São Paulo); Strand, 1910a:170 (Paraguay); Rohwer, 1912:473 (unrecognizable species); Rudow, 1904:197 (building nests out of mud), 1912:60 (nest structure); Richards, 1934:224 (in revision of New World *Trypoxylon*), 352 (nesting habits); Vesey Fitzgerald, 1936:112 (Trinidad: nest); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, Torino); Callan, 1991a:8 (Trinidad); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Pagliano, 2014:83 (specimens in M. Spinola collection, Torino). – **As *Apius fuscipennis***: Jurine, 1807:142 (new combination, in checklist of species of *Apius*).

As *Trypoxylon cinereum*: Rau 1933:156 (Panama: Barro Colorado, nest), corrected to *Trypoxylon fabricator* by Rau, 1935b:188.

580. *guassu* Amarante

Trypoxylon majus Richards, 1934:280, ♀, junior primary homonym of *Trypoxylon majus* Kohl, 1883. Holotype: ♀, Brazil: Pará: Obidos (ZMHU). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders).

Trypoxylon guassu Amarante, 2002:50. Substitute name for *Trypoxylon major* Richards, 1934.

581. *joergenseni* Brèthes

Trypoxylon joergenseni Brèthes, 1910a:284, ♀ (as *Jörgenseni*, incorrect original capitalization and diacritic mark). Syntypes: Argentina: Mendoza: Chacras de Coria (MACN). – Jörgensen, 1912:293 (Argentina: Mendoza Province); Schrottky, 1913a:228 (Argentina: Mendoza); Richards, 1934:269 (possibly the valid name for *Trypoxylon melanopteron*); Gemignani, 1940:446 (redescription of type); Sielfeld, 1980b:73 (in checklist of Chilean Sphecidae, as *jorgenseni*); Genise, 1990:27 (type material in MACN); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

Trypoxylon melanopteron Richards, 1934:268, ♀, ♂. Holotype: ♀, Argentina: no specific locality (BMNH). Synonymized with *Trypoxylon joergenseni* by Gemignani, 1940:446. – Richards, 1934:349 (bred from empty cells of *Polistes*); Bischoff and von Schulthess, 1937:170 (Bolivia: Villa Montes, as *melanopterum*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae, as tentative synonym of *Trypoxylon jorgenseni*).

582. *lactitarse* de Saussure

Trypoxylon lactitarse de Saussure, 1867:81, ♂. Holotype: ♂, Mexico: Veracruz: Orizaba (MHNG). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889a:41 (listed); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Menke, 1974:418 (synonymy); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Coville, 1982a:335 (nesting habits), 1982b:77 (in revision of North American *Trypargilum*); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Beyer, Miller, and Fleming, 1987:480 (Tennessee: Humphreys County); Spofford, Kurczewski, and Downes, 1989:255 (summary of previous records for nest parasites *Amobia aurifrons* (Townsend) and *Amobia distorta* (Allen), miltogrammine flies);Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Camillo, Garófalo, Serrano, and Muccillo, 1995:466 (Brazil, highest nesting frequency in September to April); J.M. González and Terán, 1996:144 (nest parasite in Venezuela: *Melittobia australica* Girault, a eulophid); Assis and Camillo, 1997:338-344 (observations in trap nests); Gomes, Pompolo, and Campos, 1997:178 (study of karyotype, n = 15); Wcislo, 1998:181 (proportions of antennae in relations to parasitic/non-parasitic behavior); Camillo and Brescovit, 1999a:252 (nesting habits), 1999b:151 (spider prey); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Morato, 2001:740 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado

Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); von Boroski Borges and Blochtein, 2002:54 (sex ratio, nest parasites, nest structure, cocoon); Alves-dos-Santos, 2003:330 (Brazil: University of São Paulo campus); Culin and Robertson, 2003:321 (list of spider prey); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada), 2005:62 (nest parasite: mutillid *Sphaeropthalma jacala* Schuster); Álvares, Loyola, and De Maria, 2005:22 (prey: *Aculepeira angeloi*, new species); Gonzaga and Vasconcellos-Neto, 2005:2918 (Brazil: Saõ Paulo State: Parque Estadual Intervales; including list of prey, all of them Araneidae); Martins, Serrão, and Schmidt, 2005:121 (spermatheca long, coiled, with narrow reservoir); Buschini, Niesing, and Wolff, 2006:919 (nesting habits in trap nests); Giles and Ascher, 2006:231 (New York: Black Rock Forest Preserve); Loyola and Martins, 2006:43 (Brazil: Minas Gerais: Belo Horizonte: Estação Ecológica da Universidade Federal de Minas Gerais); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 46 (Mexico: Tamaulipas); Buschini, Borba, and Brescovit, 2008:519 (Brazil; Gurapuava, 53 species of prey spider recorded, the most abundant being *Eustala* sp.); Buschini and Woiski, 2008:355 (Brazil: Parana: Parque Municipal das Araucárias in municipality of Guarapuava); Moreira, Araújo, Zama, and Lino-Neto, 2008:430 (male reproductive organs); Taki, Kevan, Viana, Silva, and Buck, 2008:227 (artificial protective cover of trap nests increases colonization rate); Taki, Viana, Kevan, Silva, and Buck, 2008:18 (Canada: Ontario: Norfolk County); Berton, Castanho, and Buschini, 2009:419 (fuzzy rule-based system approach toward fertility, nest size, and survival); Loyola and Martins, 2009:127 (Brazil at 19°52'S 43°58'W, nesting in trap nests); Santoni, Brescovit, and Del Lama, 2009:108 (Brazil: São Paulo State: Araras at 22°18'S 47°22'W; prey consists mainly of Araneidae); Musicante and Salvo, 2010:1181 (nesting habits); Menezes, Carvalho, Silva, and Costa, 2011:72 (molecular characterization of constitutive heterochromatin); Pires, Pompeu, and Souza-Silva, 2012:304 (Brazil: Minas Gerais: biological reserve Boqueirão); K. O'Neil and J. O'Neil, 2013:161 (New York State: Roy H. Park Preserve and Dorothy McIlroy Bird Sanctuary); Horta-Vega, Vanoye-Eligio, García-Gutiérrez, Coronado-Blanco, and Barrientos-Lozano, 2013:384 (Mexico: Tamaulipas: Ciudad Victoria: Cañón del Novillo); R. Coville, Griswold, and P. Coville, 2015:258 (Costa Rica), 259 (illustrations of male genitalia and clypeus), 262 (nest structure), 267 (list of spider prey); de Araújo, Storck-Tonon, and Izzo, 2019:2 (Brazil: Mato Grosso: São Nicolau farm at 9°48'S 58°15'W; population levels were about equal in secondary forest and tropical forest, but lower in pasture and trees plantations); Nether, Dudek, and Buschini, 2019:110 (Brazil: Parana: Guarapuava and Turvo municipalities: Atlantic forest fragments and adjacent areas); Costa Oliveira, da Silva Elias, Lima Bergamini, and Villaron Franceschinelli, 2020:2 (Brazil: State of Goiás; difference of nesting frequency between small and large forest fragments). – **As *Trypargilum lactitarse***: Krombein, 1979b:1647 (new combination, in catalog of North American Hymenoptera); Maes, 1989:100 (in catalog of Nicaraguan Sphecidae); Spofford, Kurczewski, and Downes, 1989:255, 260 (summary of previous records for nest parasites *Amobia aurifrons* (Townsend), *Amobia distorta* (Allen), *Amobia* sp., and *Senotainia* sp. near *trilineata* (Wulp), miltogrammine flies); Amarante, 1993:19 (norheastern Brazil); Camillo, Garofalo, Muccillo, and Serrano, 1993:769 (nesting habits); E. Nielsen, 1993:10 (nest guarding by male); Morato, 1994:13 (nest parasite: *Xystromutilla asperiventris*).

Trypoxylon striatum Provancher, 1888:283, ♀. Holotype: ♀, Canada: Ontario: Ottawa (not located by Gahan and Rohwer, 1918:200, CNC according to Coville, 1982:79). Synonymized with *Trypoxylon lactitarse* by Menke, 1974e:418. – W. Fox, 1891c:148 (unrecognizable species), 1894a:476 (original description copied); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Harrington, 1902:222 (Canada: Ontario: Ottawa); Richards, 1934:247 (in revision of New World *Trypoxylon*); Sandhouse, 1940:144 (in revision of Nearctic *Trypoxylon*); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck, Krombein, and Townes, 1951:957 (in catalog of North American Hymenoptera); Krombein, 1952a:94 (USA: Virginia: Westmoreland State Park), 1952b:178 (USA: West Virginia: Lost River State Park), 1954a:6 (West Virginia: Lost River State Park); Krombein and Evans, 1954:233 (Florida, spider prey); Krombein, 1956a:155 (nest, prey, cocoon); Koerber and Medler, 1958:55 (Wisconsin, nesting in trap-nests); Krombein, 1958f:189 (in supplement

to catalog of North American Hymenoptera: prey); Evans, 1959b:161 (additional description of larva); Balduf, 1961:82 (nest); Krombein, 1963:265 (nesting habits); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); Medler, 1967:433 (nesting habits); Bitner, 1972:24 (predation in nest by larvae of *Lecontella cancellata*, a clerid); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae), 628 (junior synonym of *Trypoxylon lactitarse*); Sarazin, 1986:307 (holotype in CNC); Callan, 1991a:8 (Trinidad); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Jenkins and Matthews, 2004:205, 209, 212 (USA: Georgia nesting in trap nest, mud partition constructed prior to provisioning). – **As *Trypargilum striatum***: Krombein, 1967b:214 (new combination, nesting habits observed in artificial nests); Krombein *in* Krombein and Burks, 1967:395 (in supplement to Catalog of North American Hymenoptera).

Trypoxylon cinereum Cameron, 1889a:40, ♀, ♂. Lectotype: ♀, Mexico: Sinaloa: Presidio (BMNH), designated by Richards, 1934:247. Synonymized with *Trypoxylon striatum* by Sandhouse, 1940:144. – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Strand, 1910a:170 (possibly a synonym of *Trypoxylon fuscipenne*); Bodkin, 1918:317 (British Guiana); Richards, 1934:247 (in revision of New World *Trypoxylon*), 349 (nesting habits summary); Vesey Fitzgerald, 1936:112 (Trinidad).

Trypoxylon albopilosum W. Fox, 1891c:139, ♀, ♂. Lectotype: ♀, USA: Pennsylvania: no specific locality (ANSP), designated by Cresson, 1928:52. Synonymized with *Trypoxylon striatum* by Harrington, 1902:222. – W. Fox, 1894a:474 (in revision of North American Larrinae); G. Peckham and E. Peckham, 1895:303 (nesting habits), 1898:77 (nesting habits); Dalla Torre, 1897:701 (in catalog of world Hymenoptera); G. Peckham and E. Peckham, 1898:77 (nesting habits); Ashmead, 1899d:298 (in checklist of North American Crabronidae, as *albipilosum*); Bridwell, 1899:209 (Kansas: Baldwin); J. Smith, 1900:520 (in list of insects of New Jersey); G. Peckham and E. Peckham, 1905:178 (nesting habits); Rohwer, 1909g:380 (diagnostic characters, as *albopilosum albopilosum*); J. Smith, 1910:684 (in new list of insects of New Jersey); Mickel, 1917b:393 (in catalog of Nebraskan Sphecidae); Rau, 1926:199 (Missouri: Wickes: sheltered clay bank; nest), 1928b:423 (nesting in clay bank, males guard nest entrance, preying on spiders); J.Ch. Bradley, 1928:1110 (in catalog of New York Crabronidae); Rau, 1931:200 (homing experiments); Brimley, 1938:443 (North Carolina: Elkin, Raleigh); Piek and Spanjer, 1986:191 (in list of Sphecidae with known prey).

Trypoxylon albopilosum planoense Rohwer, 1909g:380, ♀. Holotype: ♀, USA: Texas: Plano (USNM). Synonymized with *Trypoxylon striatum* by Sandhouse, 1940:144.

As *Trypoxylon fuscipenne*: Palisot de Beauvois, 1811:115 (South Carolina), corrected to *Trypoxylon striatum* by Sandhouse, 1940:170.

583. *laeve* W. Fox

Trypoxylon laeve W. Fox, 1897b:384, ♀, ♂. Lectotype: ♂, Brazil: "Marurú" (Carnegie Mus.), designated by Menke *in* R. Bohart and Menke, 1976:348. – Richards, 1934:212 (not examined); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

584. *laevifrons* F. Smith

Trypoxylon laevifrons F. Smith, 1873b:101, ♀. Holotype or syntypes: ♀, Brazil: Amazonas: Ega, now Tefé (BMNH). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera, as *levifrons*); W. Fox, 1897b:384 (Brazil: Mato Grosso: Chapada do Guimaraes); Richards, 1934:265 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

585. *lenkoi* Amarante

Trypoxylon lenkoi Amarante, 1991:433, ♂. Holotype: ♂, Brazil: São Paulo: Boa Esperança do Sul: Fazenda Itaquêre (Mus. Zool. Univ. São Paulo). – Amarante, 1993:19 (norheastern Brazil), 2002:50 (in catalog of Neotropical

Crabronidae); Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:4 (holotype and paratype in Mus. Zool. Univ. São Paulo).

586. *luteitarse* de Saussure

Trypoxylon luteitarse de Saussure, 1867:82, ♀. Holotype: ♀, Mexico: Sierra Madre Oriental: Cordova (MHNG). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cameron, 1889a:41 (listed); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Menke, 1974:418 (specimens in de Saussure collection, Genève); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:44 (in revision of North American *Trypargilum*; eastern North America to Argentina); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

Trypoxylon spatulatum Richards, 1934:225, ♂. Holotype: ♂, Mexico: Tabasco (ZMHU). Synonymized with *Trypoxylon luteitarse* by Coville, 1982b:44. – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

587. *lynchi* Brèthes

Trypoxylon lynchi Brèthes, 1913:154, ♀, ♂ (as *Lynchi*, incorrect original capitalization). Syntypes: Argentina or Paraguay: Chaco: no specific locality (MACN). – Richards, 1934:268 (possibly the valid name for *Trypoxylon gaucho*); Gemignani, 1940:440 (redescription of type); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Genise, 1990:27 (type material in MACN); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

Trypoxylon gaucho Richards, 1934:267, ♀. Holotype: ♀, Argentina: Chaco de Santiago del Estero: near Icano (MNHN). Synonymized with *Trypoxylon lynchi* by Gemignani, 1940:439. – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae, as tentative synonym of *Trypoxylon lynchi*).

588. *mayri* Richards

Trypoxylon mayri Richards, 1934:252, ♀, ♂. Holotype: ♂, Cuba: no specific locality (NHMW). – Richards, 1969:121 (Cuba), 123 (in key to *Trypargilum* of Greater Antilles); Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:8 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Portuondo and Fernández, 2004:135 (Cuba: Sierra Maestra); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae).

589. *melanoleucum* Richards

Trypoxylon melanoleucum Richards, 1934:216, ♂. Holotype: ♂, Brazil: Espirito Santo (ZMHU). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

590. *menkeanum* Coville

Trypoxylon menkeanum Coville, 1982b:79, ♂, ♀. Holotype: ♂, Mexico: Morelos: Cuernavaca (USNM). – Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); R. Coville, Griswold, and P. Coville, 2015:258 (Costa Rica, Costa Rican females are indistinguishable from those of *T. lactitarse*, 259 (illustrations of male genitalia and clypeus), 262 (nest structure), 267 (list of spider prey).

591. *mexicanum* de Saussure

Trypoxylon albitarse var. *mexicana* de Saussure, 1867:77, ♀, ♂. Lectotype: ♂, Mexico: Veracruz: Orizaba (MHNG), designated by Coville, 1982b:40. – **As *Trypoxylon mexicanum***: Cameron, 1889a:41 (new status, listed); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Rohwer, 1912:476 (Mexico),

478 (in key to *Trypoxylon* treated in this paper), 1914:522 (Guatemala: Quirigua; redescription); Richards, 1934:217 (in revision of New World *Trypoxylon*), 352 (summary of nesting habits); Rau,1940:592 (Mexico: Hidalgo: Jacala, San Luis Potosí: Tamazunchale; making clay nests of parallel pipes; prey: *Eustalia fusco*, *Leucauge* sp.), 1943:649 (Mexico: Hidalgo: Jacala, flight period, prey: *Eustala anastera* Walckener, *Neoscona orizabensis* Cambridge); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:39 (in revision of North American *Trypargilum*; Mexico and Central America); Radović, 1985:65 (sting apparatus analyzed); Maes, 1989:101 (in catalog of Nicaraguan Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Amarante, 2005a:11 (correction to his 2002 catalog); Genaro, 2007b:1 (first record from Dominican Republic); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 46 (Mexico: Tamaulipas); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola); J.M. González, Acosta, Sormani, and Vinson 2010:215 (Mexico: nest parasites in Veracruz State: *Melittobia digitata* Dahms, a eulophid, and *Monodontomerus mexicanus* Gahan, a pteromalid)..

As *Trypoxylon albitarse*: Du Buysson, 1898:84 (Mexico, nesting habits), corrected to *Trypoxylon mexicanum* by Richards, 1934:352.

Trypoxylon gandarai Rohwer, 1912:476, ♂. Holotype: ♂, Mexico: Distrito Federál: no specific locality (USNM). Synonymized with *Trypoxylon mexicanum* by Coville, 1982b. – Rohwer, 1912:478 (in key to *Trypoxylon* discussed in this paper); Richards, 1934:212 (not examined); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

592. *monstrificum* Kohl

Trypoxylon monstrificum Kohl, 1905b:365, ♂. Holotype: ♂, Bolivia: Mapiri (NHMW). – Richards, 1934:229 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Dollfuss, 1989:13 (holotype in NHMW); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

593. *monteverdeae* Coville

Trypoxylon monteverdeae Coville, 1982b:46, ♂, ♀. Holotype: ♂, Costa Rica: Puntarenas Province: Monteverde (CAS). – Brockmann, 1992:66 (male behavior, coursthip, nesting); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

594. *mutatum* Kohl

Trypoxylon coloratum Taschenberg, 1875:375, ♀, ♂, junior primary homonym of *Trypoxylon coloratum* F. Smith, 1857. Syntypes: Argentina: Mendoza: Mendoza (Halle). – Kohl, 1885a:203 (in checklist of world *Trypoxylon*).

Trypoxylon mutatum Kohl, 1885a:203. Substitute name for *Trypoxylon coloratum* Taschenberg. Synonymized with *Trypoxylon coloratum* Taschenberg by Richards, 1934:256. – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Schrottky, 1903b:178 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay); Jörgensen, 1912:293 (Argentina: Mendoza Province); Schrottky, 1913a:228 (Paraguay); Richards, 1934:256 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 1993:19 (norheastern Brazil), 2002:50 (in catalog of Neotropical Crabronidae).

ssp. *confluens* Richards

Trypoxylon mutatum var. *confluens* Richards, 1934:257, ♀. Holotype: ♀, Uruguay: Montevideo (ZMHU). – **As *Trypoxylon mutatum confluens***: R. Bohart and Menke, 1976:349 (new status, in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

595. *nattereri* Richards

Trypoxylon nattereri Richards, 1934:236, ♀. Holotype: ♀: Brazil: no specific locality (NHMW). Paratype: Peru: Lima. – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Rasmussen and Asenjo, 2009:13 (in checklist of Crabronidae of Peru).

596. *nitidum* F. Smith

Trypoxylon nitidum F. Smith, 1856:379, "♀" = ♂. Holotype or syntypes: ♂, Brazil: Pará: Santarém (BMNH). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Bodkin, 1918:317 (Guiana: Issorroro); Richards, 1934:276 (in revision of New World *Trypoxylon*), 347 (nesting habits), 1935d:212 (nest parasite: calliphorid fly *Pachyophthalmus floridensis antillarum* Richards); Vesey Fitzgerald, 1936:112 (Trinidad; use of preexisting holes for nesting); Bischoff and von Schulthess, 1937:170 (Bolivia: San José); Callan, 1950:205 (nests in key-holes, nail-holes, book-backs that are plugged with mud), 1954:27 (Venezuela: Island of Patos), 23 (Venezuela: Paria Peninsula: Cristóbal Colón, Irapa); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Menke, 1979a:303 (Tahiti); Coville, 1982b:70 (in revision of North American *Trypargilum*); Callan, 1991a:8 (Trinidad); Amarante, 1993:19 (norheastern Brazil); Morato, 1994:13 (nest parasite: *Xystromutilla asperiventris*); Gomes, Pompolo, and Campos, 1997:178 (study of karyotype, n = 15); Starr, 1998:20 (nesting in old nests of *Polistes lanio* (Fabricius) and *Polistes versicolor* (Olivier)); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Morato, 2001:739, 740 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Amarante, 2002:50 (in catalog of Neotropical Crabronidae) Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); von Boroski Borges and Blochtein, 2002:55 (sex ratio, nest parasites, nest structure, cocoon); Scher and Pompolo, 2003:307 (two groups of karyotypes in population from Doce Park, Brazil: one with chromosome number n = 15, 2n = 30, and rich in acrocentric chromosomes; the other with n = 12 to 14, 2n = 25 to 28, and rich in pseudo-acrocentric chromosomes); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Santoni, Brescovit, and Del Lama, 2009:108 (Brazil: São Paulo State: Araras at 22°18'S 47°22'W, São Carlos at 22°01'S 47°53'W; prey consists mainly of Araneidae); Rasmussen and Asenjo, 2009:13 (in checklist of Crabronidae of Peru, as *nitidum nitidum*); Menezes, Carvalho, Silva, and Costa, 2011:72 (molecular characterization of constitutive heterochromatin); Pires, Pompeu, and Souza-Silva, 2012:304 (Brazil: Minas Gerais: biological reserve Boqueirão); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro-Alberto, and Delfín-González, 2015:994 (Mexico: in list of Sphecidae *sensu lato* of Yucatán); Nelson and Starr, 2016:163 (nesting success markedly higher in new trap nests than in previously used ones); Santos Murgas, Abrego, and Zúñiga, 2017:4 (Panamá: Los Santos: Llano Abajo at 7º47'0"N 80º25'0"W; nest parasites: *Messatoporus* sp., Ichneumonidae, and *Amobia erythrura* (Wulp), Muscidae); Vanoye-Eligio, Meléndez-Ramírez, Ayala-Barajas, Delfin-González, and Horta-Vega, 2019:8 (Mexico: Yucatán).

Trypoxylon bahiae de Saussure, 1867:80, ♀. Syntypes: ♀, Brazil: Bahia (MHNG). Synonymized with *Trypoxylon nitidum* by Richards, 1934:276. – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:702 (in catalog of world Hymenoptera).

Trypoxylon annulipes Taschenberg, 1875:377, ♂. Holotype: ♂, Venezuela: no specific locality (Halle). Synonymized with *Trypoxylon nitidum* by Richards, 1934:276. – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:701 (in catalog of world Hymenoptera).

Trypoxylon rufosignatum Taschenberg, 1875:374, ♂. Holotype: ♂, Brazil: Lagoa Santa (Halle). Synonymized with *Trypoxylon nitidum* by Richards, 1934:276. – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); W. Fox, 1897b:383 (Brazil: Mato Grosso: Chapada do Guimaraes); Dalla Torre, 1897:708 (in catalog of world Hymenoptera).

Trypoxylon fulvispina Cameron, 1889a:42, ♀. Holotype or syntypes: ♀, Mexico: Tabasco: Teapa (BMNH). Synonymized with *Trypoxylon nitidum* by Richards, 1934:276– Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae).

Trypoxylon fallax W. Fox, 1897b:386, ♀, ♂. Lectotype: ♂, Brazil: Marurú (Carnegie Mus.), designated by Menke *in* R. Bohart and Menke, 1976:349. Synonymized with *Trypoxylon nitidum* by Menke *in* R. Bohart and Menke, 1976:349. – Richards, 1934:277 (probable synonym of *Trypoxylon nitidum*).

As *Trypoxylon fugax*: Bodkin, 1918:317 (British Guiana, nesting in old cells of *Eumenes canaliculata* Ol.), corrected to *Trypoxylon nitidum* by Richards, 1934:347.

ssp. *aztecum* de Saussure

Trypoxylon aztecum de Saussure, 1867:80, ♂, ♀. Lectotype: ♀, Mexico: Pueblo Viejo near Tampico (MHNG), designated by Richards, 1934:277. – Kohl, 1885a:202 (in checklist of world *Trypoxylon*); nec Cameron, 1889a:41 (= *Trypoxylon tenoctitlan*); W. Fox, 1895c:266 (Mexico: Baja California Sur); Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Cameron, 1912a:438 (Guiana); Rohwer, 1914:522 (Guatemala: Quirigua); Richards, 1934:276 (as synonym of *Trypoxylon nitidum*). – **As *Trypoxylon nitidum aztecum***: Richards, 1936:457 (new status); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:71 (in revision of North American *Trypargilum*, southeastern Texas, Mexico); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas); Horta-Vega, Vanoye-Eligio, García-Gutiérrez, Coronado-Blanco, and Barrientos-Lozano, 2013:384 (Mexico: Tamaulipas: Ciudad Victoria: Cañón del Novillo).

ssp. *mooreaense* Tsuneki

Trypoxylon nitidum mooreaense Tsuneki, 1981a:11, ♀. Holotype: ♀, Tahiti Archipelago: Island of Moorea: Afareaitu (BMNH). – Tsuneki, 1981a:4 (in key to *Trypoxylon* of New Guinea and South Pacific Islands).

ssp. *schulthessi* Richards

Trypoxylon nitidum var. *schulthessi* Richards, 1936b:457, ♀. Holotype: ♀, Costa Rica: San José (originally von Schulthess coll., now Entomologisches Institut, E.T.H., Zurich, Switzerland). – **As *Trypoxylon nitidum schulthessi***: R. Bohart and Menke, 1976:349 (new status, in checklist of world Sphecidae); Coville, 1982a:332 (nesting habits); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

597. *niveitarse* de Saussure

Trypoxylon niveitarse de Saussure, 1867:81, ♂. Holotype or syntypes: ♂, Brazil: no specific locality (NHMW). – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Holmberg, 1903:469 (Argentina); nec Rau, 1933:156 (= *Trypoxylon atkinsoni*); Richards, 1934:212 (not examined); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

598. *oaxacae* Coville

Trypoxylon oaxacae Coville, 1982b:90, ♂. Holotype: ♂, Mexico: Oaxaca: 9 mi. north of La Ventosa (Univ. Kansas). – Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

599. *obidense* Richards

Trypoxylon obidense Richards, 1934:272, ♂. Holotype: ♂, Brazil: Amazonas: Obidos (NHMW). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

600. *occidentale* Coville

Trypoxylon occidentale Coville, 1982b:72, ♂, ♀. Holotype: ♂, USA: Arizona: Cochise County: Cave Creek 1 mi. southwest of Portal (CAS). Paratypes: Mexico: Chihuahua and Jalisco. – Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae, as *oxidentalis*).

601. *olfersi* Richards

Trypoxylon olfersi Richards, 1934:229, ♀. Holotype: ♀, Brazil: no specific locality (ZMHU). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

602. *opacum* Brèthes

Trypoxylon opacum Brèthes, 1913:155, ♀, ♂. Lectotype: Argentina: Jujuy (MACN), designated by Gemignani, 1940:442 (as holotype). – Richards, 1934:271 (possibly the valid name for *Trypoxylon alutaceum*); Gemignani, 1940:441 (redescription of type); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, Torino, almost certainly a species different from Brèthes's); Genise, 1990:27 (type material in MACN); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); von Boroski Borges and Blochtein, 2002:55 (sex ratio, nest parasites, nest structure, cocoon); Buschini and Wolff, 2006:907 (nesting habits); Buschini and Woiski, 2008:355 (Brazil: Parana: Parque Municipal das Araucárias in municipality of Guarapuava); Buschini, Borba, and Brescovit, 2010:529 (prey selection; the araneid genus *Eustala* was most commonly preyed upon); Nether, Dudek, and Buschini, 2019:110 (Brazil: Parana: Guarapuava and Turvo municipalities: Atlantic forest fragments and adjacent areas).

Trypoxylon alutaceum Richards, 1934:270, ♀, ♂. Holotype: ♀, Brazil: Biske (NHMW). Synonymized with *Trypoxylon opacum* by Gemignani, 1940:441. – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae, as tentative synonym of *Trypoxylon opacum*); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

603. *optimum* Richards

Trypoxylon optimum Richards, 1934:257, ♀, ♂. Holotype: ♂, Brazil: no specific locality (BMNH). Paratypes: Argentina. – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

ssp. *rugosum* Menke

Trypoxylon optimum var. *regium* Richards, 1934:258, ♀, junior primary homonym of *Trypoxylon regium* Gussakovskij, 1933. Holotype: ♀, Brazil: Minas Gerais: São João del Rei (ZMHU).

Trypoxylon optimum rugosum Menke *in* R. Bohart and Menke, 1976:349. Substitute name for *Trypoxylon optimum regium* Richards, 1934. – Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

604. *orizabense* Richards

Trypoxylon orizabense Richards, 1934:273, ♂, ♀. Holotype: ♀, Mexico: Veracruz: Orizaba (NHMW). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1979b:613 (nesting habits), 1982b:53 (in revision of North American *Trypargilum*, southern Arizona to southern Mexico); Dollfuss, 1989:13 (type material in NHMW; as *orizabese*); Hook, 1998:251 (Texas: Chisos Mountains, as first record); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae). – **As *Trypargilum orizabense***: Krombein, 1979b:1649 new combination, in catalog of North American Hymenoptera).

605. *pectorale* Richards

Trypoxylon pectorale Richards, 1934:248, ♀, ♂. Holotype: ♀, Mexico: Guerrero: La Venta (BMNH). – Vesey Fitzgerald, 1936:112 (Trinidad); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:55 (in revision of North American *Trypargilum*, southern Mexico, central America, Trinidad); Callan, 1991a:8 (Trinidad); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas); Horta-Vega, Vanoye-Eligio, García-Gutiérrez, Coronado-Blanco, and Barrientos-Lozano, 2013:384 (Mexico: Tamaulipas: Ciudad Victoria: Cañón del Novillo); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro, and Delfín-González, 2014:638 (Mexico: Yucatán Peninsula); Geerah and Starr, 2017:174 (Trinidad: Arima Valley).

606. *personatum* Amarante

Trypoxylon personatum Amarante, 1991:430, ♂. Holotype: ♂, Brazil: Amazonas: Remanso: Rio Madeira (Mus. Zool. Univ. São Paulo). – Amarante, 2002:50 (in catalog of Neotropical Crabronidae); Jesus, Onody, Ramos, Andrade, Santos, and Brandão, 2019:4 (holotype in Mus. Zool. Univ. São Paulo).

607. *platense* Brèthes

Trypoxylon platense Brèthes, 1913:155, ♀, ♂. Syntypes: Argentina: Buenos Aires (MACN). – Richards, 1934:275 (possibly the valid name for *Trypoxylon mendozanum*); Gemignani, 1940:439 (redescription of type); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Genise, 1990:27 (type material in MACN); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

Trypoxylon mendozanum Richards, 1934:274, ♀, ♂. Holotype: ♀, Argentina: Mendoza: no specific locality (BMNH). Synonymized with *Trypoxylon platense* by Gemignani, 1940:439. – Bischoff and von Schulthess, 1937:170 (northern Argentina: Junka viejo); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae, as tentative synonym of *Trypoxylon platense*).

608. *politum* Say

Trypoxylon politum Say, 1837:373, ♀ (as *politus*, incorrect original termination). Holotype or syntypes: USA: Indiana: no specific locality (lost). – Le Conte, 1859b:756 (original description copied); Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:413 (revision); Cresson, 1873:226 (Texas); Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); Townsend, 1893:165 (nest parasite: *Sarcomacronychia trypoxylonis* Townsend, a sarcophagid); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Bridwell, 1899:209 (Kansas: Baldwin); J. Smith, 1900:520 (in list of insects of New Jersey); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); J. Smith, 1910:684 (in new list of insects of New Jersey); Rohwer, 1912:473 (identity of species, synonymy), 478 (in key to *Trypoxylon* discussed in this paper), 1916b:676 (taxonomic history, in catalog of Hymenoptera of Connecticut); Mickel, 1918b:392 (in catalog of Nebraskan Sphecidae); Britton, 1920:339 (in checklist of insects of Connecticut); Rohwer *in* Viereck, 1925:676 (in key to Sphecidae of Connecticut; Hartford); Rau, 1926:187 (Missouri: Wickes: sheltered clay bank); Rau, 1928b:428 (nest mud daubed, method of nest construction, males guarding nest entrance, emerging from nests, parasites); Osborne, 1929:751 (behavior, nest); Dow, 1930a:98 (observations of nests by J. Bartram, 1745, probably refer to *Sceliphron caementarium* and *Trypoxylon politum*), 100 (*Sphex caerulea* of Latrobe, 1806, 1809, is obviously *Trypoxylon politum*), 1930c:14 (photograph of nest); Brimley, 1938:443 (North Carolina: Buncombe County); Rau, 1938b:541 (sleeping habits); Hartman, 1944:7 (nesting habits observed in glas tube); Muma and Jeffers, 1944:50 (unusual nests on abandoned window frames measuring up to 25 inches), 1954:246 (spider prey); Sandhouse, 1940:138 (in revision of Nearctic *Trypoxylon*); Rau, 1944:9 (hunting habits and prey); Muma and Jeffers, 1945:254 (spider prey, nest); Krombein, 1951a:143 (Virginia:

Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck, Krombein, and Townes, 1951:957 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park), 1952b:177 (USA: West Virginia: Lost River State Park), 1954a:5 (West Virginia: Lost River State Park); Evans, 1957:95 (description of larva), 1959b:161 (additional description of larva), 1963:93 (nesting habits); Krombein, 1963f:274 (Maryland: Plummers Island near Washington, D.C.); Shinn, 1966:112 (nest); M. Johnson, 1974:448 (nest parasite: *Trichrysis tridens* (Lepeletier)); Cross, Stith, and Bauman, 1975:901 (nesting habits); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae; subgenus *Trypargilum*); Bauman, Glenboski, Mostafa, and Cross, 1978:867 (respiratory rates); Cross, Mostafa, Bauman, and Lancaster, 1978:647 (energy transfer from spider prey); Brockmann, 1980c:53 (diversity in nesting habits); Coville, 1982b:40 (in revision of North American *Trypargilum*; southeastern Canada, eastern USA); Obin, 1983:321 (hunting spiders away from nesting sites); Brockmann, 1985:53 (diversity in nesting habits); Gonzales and Hermann, 1985:294 (venom apparatus); Piek and Spanjer, 1986:191 (in list of Sphecidae with known prey, as *politus*); Steiner, 1986:105 (references to publications on nesting habits); Bauman, Wilman, and Cross, 1987:990 (temperature effects on postdiapause development); Rehnberg, 1987:189 (prey selection); Wcislo, 1987:519 (facultative parasitic behavior within otherwise free-living species); Brockmann and Grafen, 1989:232 (mate conflict and male behavior); Brockmann and Grafen, 1992:7 (sex-ratio and life-history patterns); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Coward and Matthews, 1995:371 (predation on prepupae by tufted titmouse, *Parus bicolor*); Molumby, 1995:159 (dynamics of nest parasites); Downing, 1996:473 (emerging from clustered nests); Matthews, 1997a:152 (using nest in teaching ecological interactions), 1997b:51 (only males of nest parasite *Sphaerophthalma pensylvanica* (Lepeletier), a mutillid, develop in this species nests); Molumby, 1997:279 (maternal sex allocation and sex dependent selection for body size); Volkova, Matthews, and Barber, 1999:323 (list of spider prey); Brockmann, 2001:2 (individual variation in size of females and males); González and Matthews, 2003:85 (slightly shorter development times and slightly lower proportion of males of *Melittobia* developing in nests of *Trypoxylon politum*, as compared to *Megachile rotundata*, probably reflect better host nutritional quality); Buck, 2004:26 (Canada: in checklist of Crabronidae of Ontario); Brockmann, 2004:503 (facultative diapause); Kurczewski, 2004:241 (reuse of old nest by *Chalybion californicum*), González, Matthews, and Matthews, 2005:50 (nest parasite *Dibrachys pelos* (Grissell), a pteromalid, reared on prepupae in laboratory); Ardila-Garcia, Umphrey, and Gregory, 2010:339 (genome size dataset); Cusumano, González, Colazza, and Vinson, 2010:301 (nest parasite *Melittobia digitata* Dahms, Eulophidae, is attracted to odors of freshly build nest mud, empty cocoons, and meconia); J.M. González, Camino, Simon, and Cusumano, 2018:3 (nests frequently parasitized by *Melittobia acasta* (Walker), *M. australica* Girault, and *M. digitata* Dahms). – **As *Trypargilum politum***: Krombein *in* Krombein and Burks, 1967:395 (new combination, in supplement to Catalog of North American Hymenoptera); C. Lin, 1969:129 (nest, list of prey); Lindstrom and Strawn, 1971:245 (...); Johnson, 1974:448 (natural enemies); Barber and Matthews, 1979:260 (utilization of trap nests); Krombein, 1979b:1649 (in catalog of North American Hymenoptera); Spofford, Kurczewski, and Downes, 1989:255, 260 (summary of previous records for nest parasites *Amobia aurifrons* (Townsend), *Amobia distorta* (Allen), *Amobia floridensis* (Townsend), and *Senotainia* sp., miltogrammine flies).

Trypoxylon neglectum Kohl, 1884a:340, ♂. Syntypes: ♂, USA: South Carolina: no specific locality (NHMW). Synonymized with *Trypoxylon politum* by Rohwer, 1912:474. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); W. Fox, 1891c:138 (in revision of North American *Trypoxylon*), 1894a:474 (in revision of North American Larrinae); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Richards, 1934:220 (in revision of New World *Trypoxylon*); Dollfuss, 1989:13 (type material in NHMW).

Trypoxylon basale Rohwer, 1912:475, ♂, ♀ (also spelled *basile*, an error), junior primary homonym of *Trypoxylon basale* Stephens, 1829 (now in *Mimesa*). Holotype: ♂, USA: Florida: no specific locality (USNM). Synony-

mized with *Trypoxylon politum* by Sandhouse, 1940:138. – Rohwer, 1912:478 (in key *to Trypoxylon* discussed in this paper); Brimley, 1938:443 (North Carolina: Elkin, Raleigh), 1942:36 (North Carolina: earlier records actually refer to *Trypoxylon politum*); Wray, 1967:125 (North Carolina).

Trypoxylon politiforme Rohwer, 1912:476, ♂, ♀. Holotype: ♂, USA: Louisiana: Berwick (USNM). Synonymized with *Trypoxylon neglectum* by Richards, 1934:220 and with *Trypoxylon politum* by Sandhouse, 1940:138. – Rohwer, 1912:478 (in key to *Trypoxylon* discussed in this paper); Richards, 1934:219 (in revision of New World *Trypoxylon*), 1936b:462 (correction to geographic distribution); Fattig, 1936:44 (behavior, nest).

As *Trypoxylon albitarse* (corrected to *Trypoxylon politum* by Sandhouse, 1940:138, confirmed by van der Vecht, 1961a:26): Palisot de Beauvois, 1811:115 (United States: Philadelphia and Virginia); H. Smith, 1908:352 (in key); Rau and Rau, 1913:401 (nesting habits), 1916:27 (nesting habits, as *albitarsis*); Richards, 1934:218 (in revision of New World *Trypoxylon*), 351 (nesting habits summary); corrected by Rohwer, 1912:473: Walsh and Riley, 1869:133; W. Fox, 1891:136, 1893:472; Howard, 1904:pl.6, fig.6.

As Pipe-organ mud-daubing wasp: Brockmann, 1988:33 (nestsing habits, nest guarding by male).

609. *poultoni* Richards

Trypoxylon poultoni Richards, 1934:220, ♂. Holotype: ♂, South America: no specific locality (OXUM). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

610. *punctulatum* Taschenberg

Trypoxylon punctulatum Taschenberg, 1875:372, ♀. Holotype: ♀: Brazil: Nova Friburgo (Halle). – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Schrottky, 1910b:70 (first record from Paraguay: Puerto Bertoni); Bertoni, 1911:134 (nest and prey, as *punctatum*); Schrottky, 1913a:228 (Paraguay); Bertoni, 1929:224 (Paraguay; nesting in abandoned cells of other aculeates); Richards, 1934:245 (in revision of New World *Trypoxylon*, Brazil, Paraguay). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 1993:19 (norheastern Brazil); Amarante, 2002:50 (in catalog of Neotropical Crabronidae).

611. *rogenhoferi* Kohl

Trypoxylon rogenhoferi Kohl, 1884a:342, ♀, ♂ (as *Rogenhoferi*, incorrect original capitalization). Syntypes: Brazil: São Paulo: Ypanema (NHMW). – Kohl, 1885a:206 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Richards, 1934:246 (in revision of New World *Trypoxylon*, Brazil, Argentina), 349 (cocoon); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Fritz and Genise, 1980 (using nests of *Sceliphron asiaticum*, *fistularium*, and of *Trypoxylon albitarse*; cocoon); Dollfuss, 1989:13 (type material in NHMW); Camillo, Garófalo, and Serrano, 1994:299 (nesting habits); Camillo, Garófalo, Serrano, and Muccillo, 1995:466 (Brazil, highest nesting frequency in September to April); Garcia, 1995:12 (nesting habits); Garcia and Adis, 1995:259 (nesting habits); Assis and Camillo, 1997:338-344 (observations in trap nests); Camillo and Brescovit, 1999a:252 (nesting habits); Camillo, 2001:1009 (inquiline in unused nests of vespid *Brachymenes dyscherus* de Saussure); Amarante, 2002:50 (in catalog of Neotropical Crabronidae); von Boroski Borges and Blochtein, 2002:56 (sex ratio, nest parasites, nest structure, cocoon); Peruquetti and Del Lama, 2003b:581 (large females collect more spider prey and amass more prey per cell, spiders were heavier, daughters are larger); Moreira, Araújo, Zama, and Lino-Neto, 2008:430 (male reproductive organs); Santoni, Brescovit, and Del Lama, 2009:108 (Brazil: São Paulo State: Araras at 22°18'S 47°22'W, São Carlos at 22°01'S 47°53'W, and Rifaina at 20°04'S 47°25'W; prey consists mainly of Araneidae); Fox, Solis, Rossi, Feitosa, and Brescovit, 2012:47 (larval morphology studied under SEM; nesting habits).

? *Trypoxylon holoneurum* Schrottky, 1910b:69, ♀, ♂. Syntypes: Argentina: La Rioja and Mendoza Provinces; Paraguay: Encarnacion and Puerto Bertoni (depository?). Tentatively synonymized with *Trypoxylon rogenhoferi*

by Richards, 1934:246. – Schrottky, 1913a:228 (Argentina, Paraguay); Amarante, 2005a:11 (correction to his 2002 catalog).

Trypoxylon argentinum Brèthes, 1910a:284, ♀. Syntypes: ♀, Argentina: Mendoza: Chacras de Coria. Tentatively synonymized with *Trypoxylon rogenhoferi* by Richards, 1934:246, definitely synonymized by Gemignani, 1940:443. – Jörgensen, 1912:293 (Argentina: Mendoza Province); Brèthes, 1913:154 (description of ♂); Schrottky, 1913a:228 (Argentina: Mendoza); Frer, 1921:69 (nesting habits); Gemignani, 1933:312 (redescription), 1940:443 (redescription of type); Genise, 1990:27 (type material in MACN).

Trypoxylon festivum Brèthes, 1913:156, ♂. Holotype: ♂, Argentina: Misiones: no specific locality (MACN). Tentatively synonymized with *Trypoxylon rogenhoferi* by Richards, 1934:246, definitely synonymized by Gemignani, 1940:445, synonymy confirmed by Fritz and Genise, 1980:69. – Gemignani, 1933:311 (redescription), 1940:445 (redescription of type); Genise, 1990:27 (type material in MACN); Amarante, 2005a:11 (correction to his 2002 catalog).

Trypoxylon incognitum Brèthes, 1913:154, ♀. Holotype: ♀, South America: origin unknown (MACN). Tentatively synonymized with *Trypoxylon rogenhoferi* by Richards, 1934:246, definitely synonymized by Gemignani, 1940:442. – Gemignani, 1940:442 (redescription of type); Genise, 1990:27 (type material in MACN).

612. *rohweri* Richards

Trypoxylon rohweri Richards, 1934:251, ♀, ♂. Holotype: ♀, Haiti: Port-au-Prince (USNM). – Richards, 1969:122 (in key to *Trypargilum* of Greater Antilles); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola).

613. *roosevelti* Antropov

Pisoxylon roosevelti Antropov, 1998:907, ♀. Holotype: ♀, Bolivia: Santa Cruz Department: Río Mamore 2 km north of mouth Río Chapare (AMNH). – Amarante, 2002:47 (in catalog of Neotropical Crabronidae). – **As *Trypoxylon roosevelti***: Muniz and Melo, 2021:

614. *salti* Richards

Trypoxylon salti Richards, 1934:241, ♀, ♂. Holotype: ♀, Colombia: Río Frío (depository not stated). Paratypes: Ecuador to Mexico. – nec Rau, 1943:649 (= *Trypoxylon saussurei*); Richards, 1934:351 (nest in knot-hole of a window sill); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Maes, 1989:102 (in catalog of Nicaraguan Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

615. *saundersi* Richards

Trypoxylon saundersi Richards, 1934:227, ♀. Holotype: ♀, "Colum. Chart" = ? Colombia (OXUM). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

616. *saussurei* Rohwer

Trypoxylon mexicanum de Saussure, 1867:78, ♀, ♂, junior primary homonym of *Trypoxylon mexicanum* de Saussure, 1867:77. Lectotype: ♂, Mexico: Cordova (MHNG), designated by Coville, 1982b:97. – Kohl, 1885a:205 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Rohwer, 1912:478 (in key to *Trypoxylon* discussed in this paper); Amarante, 2005a:11 (correction to his 2002 catalog).

Trypoxylon saussurei Rohwer, 1912:478. Substitute name for *Trypoxylon mexicanum* de Saussure, 1867:78. – Richards, 1934:231 (not examined); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982a:337 (nesting habits), 1982b:96 (in revision of North American *Trypargilum*; Veracruz, Mexico to Costa Rica); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Maes, 1989:101

(in catalog of Nicaraguan Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae). – **As *Trypargilum saussurei***: Krombein, 1979b:1647 (new combination, in catalog of North American Hymenoptera).

As *Trypoxylon salti*: Rau, 1943:649 (Mexico: San Luis Potosí, reusing nests of *Sceliphron assimile*), corrected to *Trypoxylon saussurei* by Coville, 1982b:96.

As *Trypoxylon texense*: Genaro, 1995b:12 (Dominican Republic: Licey) and 1996c:243 (first record from Puerto Rico, inquiline in nests of *Sceliphron caementarium*), corrected to *Trypoxylon saussurei* by Genaro, 2008:49.

617. *schnusei* Richards

Trypoxylon schnusei Richards, 1934:218, ♂. Holotype: ♂, Peru: no specific locality (Dresden). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Rasmussen and Asenjo, 2009:13 (in checklist of Crabronidae of Peru).

618. *scrobiferum* Richards

Trypoxylon scrobiferum Richards, 1934:253, ♀. Holotype: ♀, Guyana: Essequibo River: Moraballi Creek (BMNH). – Richards, 1936b:462 (correction to original description); Vesey-FitzGerald, 1938:191 (Trinidad); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Morato, 2001:740 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); 2005b:93 (description of ♂, redescription of ♀).

619. *semiflavum* Richards

Trypoxylon semiflavum Richards, 1934:264, ♀. Holotype: ♀, Bolivia: no specific locality (NHMW). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Dollfuss, 1989:13 (type material in NHMW); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

620. *sinaloense* Coville

Trypoxylon sinaloense Coville, 1982b:72, ♂, ♀. Holotype: ♂, Mexico: Sinaloa: Mazatlán (CNC). – Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

621. *spinosum* Cameron

Trypoxylon spinosum Cameron, 1889a:46, ♀, ♂. Lectotype: ♀, Mexico: Sinaloa: Presidio (BMNH), designated by Richards, 1934:243. – W. Fox, 1891c:145 (in revision of North American *Trypoxylon*), 1894a:475 (in revision of North American Larrinae), 1895c:266 (Mexico: Baja California Sur); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Rohwer, 1909g:381 (Texas, variation); Beebe, Hartley, and Howes, 1917:350 (nesting habits); Howes, 1919:27 (nesting habits); Richards, 1934:242 (in revision of New World *Trypoxylon*), 350 (nesting habits summary); Sandhouse, 1940:139 (in revision of Nearctic *Trypoxylon*); Krombein *in* Muesebeck and al., 1951:957 (in catalog of North American Hymenoptera); Evans, 1957b:93 (description of larva); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:97 (in revision of North American *Trypargilum*; Texas to Panama); Hook, 1984:534 (nesting and mating); Steiner, 1986:105 (references to publications on nesting habits); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Pitt and Parker, 2005:62 (nest parasite: mutillid *Sphaeropthalma jacala* Schuster); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas); Horta-Vega, Vanoye-Eligio, García-Gutiérrez, Coronado-Blanco, and Barrientos-Lozano, 2013:384 (Mexico: Tamaulipas: Ciudad Victoria: Cañón del Novillo); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro-Alberto, and Delfín-González, 2015:994 (Mexico: in list of

Sphecidae *sensu lato* of Yucatán); Vanoye-Eligio, Meléndez-Ramírez, Ayala-Barajas, Delfin-González, and Horta-Vega, 2019:8 (Mexico: Yucatán). – **As *Trypargilum spinosum***: Krombein *in* Krombein and Burks, 1967:395 (new combination, in supplement to Catalog of North American Hymenoptera); C. Lin, 1967b:798 (nesting habits), 1969:125 (nesting habits); Krombein, 1979b:1647 (in catalog of North American Hymenoptera).

Trypoxylon cinereohirtum Cameron, 1889a:44, ♀ (as *cinereo-hirtum*, incorrect original hyphenation). Syntypes: Mexico: Teapa in Tabasco, Temax in Yucatan, and Veracruz; Guatemala: Guatemala City and Paraiso (BMNH). Synonymized with *Trypoxylon spinosum* by Richards, 1934:242. – Dalla Torre, 1897:702 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Richards, 1934:243 (invalid lectotype designation: lectotype locality not included in original description).

Trypoxylon fusciventre Cameron, 1889a:45. Lectotype: ♀, Mexico: Yucatán: Temax. (BMNH), designated by Richards, 1934:241. Synonymized with *Trypoxylon spinosum* by Coville, 1982b. – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae, as *fasciventre*); Richards, 1934:241 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:348 (in checklist of world Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Amarante, 2005a:11 (correction to his 2002 catalog).

622. *subimpressum* F. Smith

Trypoxylon subimpressum F. Smith, 1856:380, ♂. Holotype or syntypes: ♂, Dominican Republic: Santo Domingo (BMNH). – Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:418 (listed under Desiderata); Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Ashmead, 1900:227 (Lesser Antilles: Island of Grenada), 307 (in checklist of Caribbean Hymenoptera); W. Schulz, 1903:482 (Haiti, diagnostic characters); Richards, 1934:251 (in revision of New World *Trypoxylon*), 1969:121 (Cuba), 122 (in key to *Trypargilum* of Greater Antilles); Alayo Dalmau, 1973:180 (in catalog of Cuban Hymenoptera), 1976:8 (in key to Cuban *Trypoxylon*), 24 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); de Zayas, 1981:77 (Cuba, illustration of habitus); Genaro, Sánchez, and García, 1990:228 (nesting habits); Genaro and Alayón, 1994:353 (list of prey in Cuba), 1996b:240 (nest and cocoon structure); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Fernández, Saríol, Vega, Ricardo, González, and Portuondo, 2002:46 (Cuba: Provincia Granma); Portuondo and Fernández, 2004:135 (Cuba: Sierra Maestra); Genaro, 2006:56 (in checklist of Cuban Sphecidae and Crabronidae; also: Isla de la Juventud, Hispaniola; record from Grenada by Woodruff et al., 1998 needs confirmation); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola).

623. *superbum* F. Smith

Trypoxylon superbum F. Smith, 1873b:100, ♀. Holotype or syntypes: ♀, Brazil: Amazonas: Ega, now Tefé (BMNH). – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); W. Fox, 1897b:384 (Brazil: Mato Grosso: Chapada do Guimaraes); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Richards, 1934:227 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:32 (in revision of North American *Trypargilum*); Coville and Griswold, 1984:365 (nesting habits, extended guarding of brood by males); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro-Alberto, and Delfín-González, 2015:994 (Mexico: in list of Sphecidae *sensu lato* of Yucatán).

ssp. *fulvipes* Cameron

Trypoxylon fulvipes Cameron, 1889a:42, ♀. Holotype or syntypes: ♀, Panama: Bugaba (BMNH). – Dalla Torre, 1897:706 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae). – **As *Trypoxylon superbum fulvipes***: Richards, 1934:228 (new status, in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:32 (in revision of North American *Trypargilum*; Veracruz State of Mexico to Colombia); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

ssp. *superciliosum* Richards

Trypoxylon superbum superciliosum Richards, 1934:229, ♀. Holotype: ♀, Bolivia: Coroico (ZMHU). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

624. *surinamense* Richards

Trypoxylon surinamense Richards, 1934:247, ♀. Holotype: ♀, Guyana: Essequibo River, Morabelli Creek (BMNH). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:81 (in revision of North American *Trypargilum*; southern Mexico to Brazil); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Rasmussen and Asenjo, 2009:13 (in checklist of Crabronidae of Peru).

625. *tenoctitlan* Richards

As *Trypoxylon aztecum*: Cameron, 1889a:41 (Mexico), corrected to *Trypoxylon tenoctitlan* by Richards, 1934:200.

Trypoxylon tenoctitlan Richards, 1934:260, ♀, ♂. Holotype: ♀, Mexico: northern Yucatan: no specific locality (BMNH). – Rau, 1943:649 (Mexico: Guerrero: Mexcala, nesting in bamboo poles); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville and Coville, 1980:110 (nesting habits); Hall, 1981:161 (nest parasite: *Lepidophora trypoxylona* Hall, 1981, a bombyliid, Costa Rica); Coville, 1982b:57 (in revision of North American *Trypargilum*; Costa Rica north to Veracruz and Mazatlán in Mexico); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Pitt and Parker, 2005:62 (nest parasite: mutillid *Sphaeropthalma jacala* Schuster).

626. *texense* de Saussure

Trypoxylon texense de Saussure, 1867:77, ♀. Lectotype: ♀, USA, Texas, no specific locality (MHNG), designated by Coville, 1982b:92. – Cresson, 1873:226 (Texas); Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); Ashmead, 1890:32 (in checklist of Hymenoptera of Colorado); W. Fox, 1891c:146 (in revision of North American *Trypoxylon*), 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Bridwell, 1899:209 (Kansas: no specific locality); Cockerell, 1899a:143 (New Mexico); Hartman, 1905:57 (nesting habits); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); Hungerford and Williams, 1912:248 (nesting habits); Mickel, 1918b:394 (in catalog of Nebraskan Sphecidae); Rau, 1928b:441 (nesting in old nest of *Sceliphron caementarium*, nest parasite: eulophid *Melittobia* sp.); Richards, 1934:233 (in revision of New World *Trypoxylon*), 349 (nesting habits summary); Rau, 1940:592 (Illinois: Fish Lake; Oklahoma: Sapulpa, Texas: Franklin; Mexico: Hidalgo: Jacala; reusing nestis of other mud-daubers); Sandhouse, 1940:142 (in revision of Nearctic *Trypoxylon*); Rau, 1943:650 (Texas: Rio Grande City, Mexico: Tamaulipas: Santa Engracia, prey: *Ashya minuta* Cambridge, *Misumenops* sp.); Krombein *in* Muesebeck, Krombein, and Townes, 1951:957 (in catalog of North American Hymenoptera); Evans, 1959b:159 (description of larva); Kurczewski, 1963:243 (first Florida record, nesting

habits); Thorp, 1973:90 (used as prey by asilid *Saropogon dispar* Coquillett); Freeman, 1974:124, 118 (Jamaica: use of nests of *Sceliphron assimile*); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Kumar, Lavigne, Lloyd, and Pfadt, 1976:52 (USA: Colorado: Pawnee National Grassland); Jayasingh and Freeman, 1980a:69-78 (Jamaica: trap-nesting), 1980b:214-219 (population dynamics); Coville, 1982b:91 (in revision of North American *Trypargilum*; norheastern Mexico, southern and central USA, introduced into Jamaica); Piek and Spanjer, 1986:191 (in list of Sphecidae with known prey); Steiner, 1986:105 (references to publications on nesting habits); nec Genaro, 1995b:12 and 1996c:243 (= *Trypoxylon saussurei*); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Genaro, 2008:48 (correction of earlier identification; Dominican Republic, Puerto Rico); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola). – **As *Trypargilum texense***: Krombein *in* Krombein and Burks, 1967:395 (new combination, in supplement to Catalog of North American Hymenoptera); C. Lin, 1969:128 (nesting, list of prey); Krombein, 1979b:1647 (in catalog of North American Hymenoptera).

Trypoxylon sulcus La Munyon, 1877:page number not stated. Holotype or syntypes: USA: Nebraska: North Platte (lost). Synonymized with *Trypoxylon texense* by W. Fox, 1894a:477. – Cresson, 1887:284 (in catalog of North American Hymenoptera); W. Fox, 1891c:148 (unrecognizable species), 1894a:477 (original description copied); Dalla Torre, 1897:708 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae).

Trypoxylon aureolum Rohwer, 1909g:381, ♀, ♂. Syntypes: ♀, USA: Texas: Lee County: no specific locality (USNM). Synonymized with *Trypoxylon texense* by Sandhouse, 1940:142. – Richards, 1934:231 (not examined).

Trypoxylon relativum Rohwer, 1909g:382, ♀. Holotype: ♀, USA: Texas: Lee County: Fedor (USNM) Synonymized with *Trypoxylon texense* by Richards, 1934:233.

627. *transversistriatum* Strand

Trypoxylon transversistriatum Strand, 1910a:171, ♀, ♂. Lectotype: ♂, Paraguay: Asunción: Villa Morra (ZMHU), designated by Richards, 1934:256. – Strand, 1927:255 (in list of species described by the author); Richards, 1934:255 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

628. *tridentatum* Packard

Trypoxylon tridentatum Packard, 1867:417, ♀. Syntypes: USA: New Jersey and New York: no specific locality (depository?). – Cresson, 1873:226 (Texas); Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); W. Fox, 1891c:144 (in revision of North American *Trypoxylon*, description of ♂), 1892b (New Jersey: Jamesburg), 1894a:475 (in revision of North American Larrinae); Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Cockerell, 1899a:143 (New Mexico); J. Smith, 1900:520 (in list of insects of New Jersey); Viereck, 1903d:120 (Maryland: College Park); Snow, 1906:135 (Arizona); H. Smith, 1908b:352 (in revision of Nebraskan Sphecidae); J. Smith, 1910:685 (in new list of insects of New Jersey); Rohwer, 1916b:676, 677 (in catalog of Hymenoptera of Connecticut); Mickel, 1918b:393 (in catalog of Nebraskan Sphecidae); Rau and Rau, 1918:134 (nest in pith chamber of *Sambucus* twig); Britton, 1920:339 (in checklist of insects of Connecticut); Blackman and Stage, 1924:196 (New York: Syracuse, nesting in dead wood of hickory); Rohwer *in* Viereck, 1925:676, 677 (in key to Sphecidae of Connecticut); Richards, 1930c:127 (Mexico: stylopized specimen from Sonora State); Rau, 1934b:259 (twig nesting); Richards, 1934:232 (in revision of New World *Trypoxylon*), 349 (citation of Rau, 1918:134); Brimley, 1938:443 (North Carolina: Raleigh); Sandhouse, 1940:146 (in revision of Nearctic *Trypoxylon*); Krombein *in* Muesebeck et alii, 1951:957 (in catalog of North American Hymenoptera); Krombein, 1952a:94 (USA: Virginia: Westmoreland State Park); Evans, 1957b:93 (description of larva); Krombein, 1958a:52 (USA:

West Virginia: Lost River State Park); Evans, 1959b:161 (description of larva); Krombein, 1959:150 (taxonomy, as *tridentatum tridentatum*); W. Ferguson, 1962:82 (nest parasite: *Sphaeropthalma* (*Photopsioides*) sp., a mutillid); F. Parker, 1962b:140 (nest parasite: *Chrysis mucronata* Brullé); F. Parker and R. Bohart, 1966:95 (California: Borego Springs, Davis, Nevada: Verdi; nest parasites: *Amobia floridensis* Townsend, Sarcophagidae, *Epistenia coeruleata* Westwood, Pteromalidae, *Chrysis pellucidula* Aaron, *Trichrysis deversor* Bohart, and *Ceratochrysis antyga* Bohart, Chrysididae); Medler, 1967:344 (nest); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1979a:73 (extra midtibial spur), 1982:58 (in revision of North American *Trypargilum*, southern Canada to southern Mexico except peninsular Florida); Rust, Menke, and Miller, 1985:47 (California: Channel Islands); Coville, 1986a:119 (spider prey in Arizona and California); Frommer, 1988:96 (California: Riverside County: Deep Canyon; as *tridentatum tridentatum*); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Ohl and Linde, 2003:151 (number of ovarioles); Buck, 2004:26 (Canada: in checklist of Crabronidae of Ontario), 30 (distribution within Ontario), 55 (first record from Ontario: Fonthill, Harrow); Domínguez and Jiménez, 2008: 388 (Mexico: Baja California Sur; prey spectrum); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas); Falcón-Brindis, Rodríguez-Estrella, and Jiménez, 2019:4 (Mexico: Baja California Peninsula: body size and prey spectrum allow avoiding competition with congeneric species). – **As *Trypargilum tridentatum***: Krombein *in* Krombein and Burks, 1967:395 (new combination, bibliographic references, in supplement to Catalog of North American Hymenoptera); Krombein, 1967b:193 (nesting habits observed in artificial nests, as *tridentatum tridentatum*); Krombein, 1979b:1649 (in catalog of North American Hymenoptera); O'Brien, 1983c:288 (nesting habits); Spofford, Kurczewski, and Downes, 1989:255, 261 (summary of previous records for nest parasites *Amobia floridensis* (Townsend), *Amobia* sp., miltogrammine flies, and undetermined species of Miltogrammini); Jiménez and Tejas, 1994:173 (list of prey); Horn and Hanula, 2004:467 (South Carolina: Savannah River Site near Aiken); Ratzlaff, 2016:26 (Canada: British Columbia: from Sandhouse, 1940 and Krombein, 1979).

Trypoxylon projectum W. Fox, 1891c:141, ♀, ♂. Lectotype: ♀, USA: Louisiana: no specific locality (ANSP), designated by Cresson, 1928:55. Synonymized with *Trypoxylon tridentatum* by Sandhouse, 1940:146. – W. Fox, 1894a:474 (in revision of North American Larrinae), 1894c:104 (Mexico: Baja California); Dalla Torre, 1897:707 (in catalog of world Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); J. Smith, 1910:685 (in new list of insects of New Jersey); Richards, 1934:231 (in revision of New World *Trypoxylon*).

As *Trypoxylon rubrocinctum*: Paetzel, 1973:26 (male behavior), corrected to *Trypoxylon tridentatum* by Coville, 1982b:59.

ssp. *archboldi* Krombein

Trypoxylon tridentatum archboldi Krombein**,** 1959d:150, ♀, ♂. Holotype: ♀, Florida: Highlands County: Lake Placid (USNM). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:61 (in revision of North American *Trypargilum*, peninsular Florida). – **As *Trypargilum tridentatum archboldi***: Krombein *in* Krombein and Burks, 1967:395 (new combination, new status, in supplement to Catalog of North American Hymenoptera); Krombein, 1967b:200 (nesting habits observed in artificial nests); Krombein, 1979b:1649 (in catalog of North American Hymenoptera); Deyrup and Eisner, 2003:521 (Florida; another northern subspecies lacking red or yellow markings).

629. *triodon* Richards

Trypoxylon triodon Richards, 1934:259, ♀, ♂. Holotype: ♂, Argentina: no specific locality (USNM). – Bischoff and von Schulthess, 1937:170 (Argentina, Bolivia); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

630. *vagulum* Richards

Trypoxylon sp. near *aztecum*: Rau, 1933:169, corrected to *Trypoxylon vagulum* by Rau, 1935b:188.

Trypoxylon vagulum Richards, 1934:266, ♂, ♀. Holotype: ♂, Colombia: Magdalena: Río Frío (BMNH). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:63 (in revision of North American *Trypargilum*, southern Mexico to Brazil); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Amarante, 1993:20 (norheastern Brazil); Coville, Griswold, and Coville, 2000:28 (nesting habits); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae).

As *Trypoxylon* sp. near *aztecum*: Rau, 1933:169 (Panama: Barro Colorado, nest), corrected to *Trypoxylon vagulum* by Rau, 1935b:188.

631. *vagum* F. Smith

Trypoxylon vagum F. Smith, 1873b:99, ♀. Holotype: ♀, Brazil: Amazonas: São Paulo de Olivença (BMNH). – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Richards, 1934:266 (in revision of New World *Trypoxylon*); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

632. *xanthandrum* Richards

Trypoxylon xanthandrum Richards, 1934:262, ♂. Holotype: ♂, Panama: Tabernilla in Canal Zone (USNM). – R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville and Griswold, 1983:205 (nesting, prey); Piek and Spanjer, 1986:191 (in list of Sphecidae with known prey); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Morato, 2001:740 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Amarante, 2002:51 (in catalog of Neotropical Crabronidae).

633. *xantianum* de Saussure

Trypoxylon xantianum de Saussure, 1867:78, ♀, ♂. Lectotype: sex not stated, Mexico: Baja California Sur: Cabo San Lucas (MHNG), designated by Coville, 1982b:99. – Kohl, 1885a:207 (in checklist of world *Trypoxylon*); Cresson, 1887:284 (in catalog of North American Hymenoptera); W. Fox, 1891c:148 (unrecognizable species); Dalla Torre, 1897:709 (in catalog of world Hymenoptera); Richards, 1934:231 (not examined); Sandhouse, 1940:141 (in revision of Nearctic *Trypoxylon*); R. Bohart and Menke, 1976:349 (in checklist of world Sphecidae); Coville, 1982b:99 (in revision of North American *Trypargilum*, southern California to tip of Baja California); Cornett, 1986:224 (California: Palm Springs; on flowers of *Washingtonia filifera* (Wendl); Ch. Griswold and Coville, 1986:114-115 (Costa Rica, families of prey spiders); Frommer, 1988:96 (California: Riverside County: Deep Canyon); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:665 (in checklist of Mexican Sphecidae); Amarante, 2005a:5 (in addendum to his 2002 catalog of Neotropical Crabronidae and Sphecidae). – **As *Trypargilum xanthianum***: Krombein, 1979b:1647 (new combination, in catalog of North American Hymenoptera).

sp.

Osten-Sacken, 1862:411 (builds nests in abandoned nests of a *Sceliphron* sp., but also freestanding nests); Snow, 1881:96 (in checklist of Hymenoptera of Kansas: Wallace County: no specific locality); W. Fox, 1893d:10 (Mexico: Baja California); Rudow, 1899:141 (nest structure); Nurse, 1914:445 (India: Assam); von Schulthess, 1914:286 (Cameroon); Giffard, 1916:230 (California: Alameda or Santa Clara County); Storey, 1916:108 (Egypt: Maadi and Tura); Timberlake, 1918:458 (Hawaiian Islands: nest made in glass pipette); F. Williams, 1921:458 (a species introduced to Hawaii identical with specimens from Philippines and Hong Kong); Molitor, 1938:450 (color recognition); Rau, 1943:649 (sp. group *fabricator*, Mexico, making mud nests, sp. near *nitidum*, nesting in nests of *Polistes instabilis* de Saussure; sp. near *palliditarse*, nest construction, cocoon, nest parasites); Soukup, 1943:266 (Peru); H.O. Wagner (nest construction in Mexico); Iwata,

1955:29 (egg size, number of oocytes); Leclercq, 1955i:407 (Rwanda); Tsuneki, 1962a:5 (sp. No.1), 6 (sp. No. 2 and 3) (Ryukyu Islands: Island of Amami-Oshima); de Beaumont, 1967b:510, 511 (South Africa), 1970a:402 (Afghanistan); Dorris, 1970:10 (list of prey); Horning and Barr, 1970:103 (USA: Idaho: Craters of the Moon National Monument); Danks, 1971c:80 (nest mortality); Haneda, 1971b:31 (Taiwan); Evans, 1972b:16 (Caribbeans: Island of Dominica; sp. near *nitidum*); Gess, 1981:25 (South Africa: Hilton Farm 18 km west-northwest of Grahamstown; nesting in vertical banks), 30 (nesting in woody stems), 32 (in pithy stems), 34 (in old galleries of *Xylocopa caffrariae* in *Phragmites australis* (Cav.) Trin. ex Steud.), 60 and 66 (nesting both in vertical banks and plant tissue), 66 (nesting in three stem types), 70 (partition wall in the nest), 75 (member of a nesting community associated with *Aloe ferox* Mill.); A. Hutson, 1981:21 (Chagos Archipelago: Diego Garcia Atoll); Rodgers and Homewood, 1982:234 (Tanzania: Usambara Mountains); Rust, Menke, and Miller, 1985:47 (California: Channel Islands); Kingsley, Bailowitz, and Smith, 1987:18 (Arizona: Organ Pipe Cactus National Monument: Quitobaquito Springs area); F. Fernández, 1990:24 (Colombia: Meta: Parque Nacional Natural La Macarena); Quicke, Ingram, Baillie, and Gattens, 1992:386 (sperm structure and ultrastructure); Snelling, 1992:14 (Virgin Islands: Island of Mona); Amarante, 1993:19 (norheastern Brazil); Cambra, 1993:16 (Peru: Pakitza at 11°57'S 71°17'W); Hoshiba and Imai, 1993:467 (chromosome number n = 9 and 13); Simon Thomas and Wiering, 1993:406 (Cape Verde Islands); Snelling, 1993:19 (British Virgin Islands: Island of Mona); Morato, 1994:13 (nest parasite: *Xystromutilla asperiventris*); Camillo, Garófalo, Serrano, and Muccillo, 1995:466 (Brazil, highest nesting frequency in September to April); Gomes, Pompolo, and Campos, 1995:174 (chromosome number n = 16), 1997:179 (study of karyotypes); Rayor, 1996:69 (Mexico: Veracruz: Fortín de las Flore, preying on *Metepeira incrassata* F.O. Pickard-Cambridge, an araneid) D. Schneider, 1996:14 9 (reaction of immature spider prey to the venom of *Trypoxylon* sp.); Tormos, Asís, Gayubo, and Mingo, 1996: 61 (nest parasite: *Trichrysis cyanea* (Linnaeus), Chrysididae); Assis and Camillo, 1997:338-344 (observations in trap nests); Rayor, 1997:-70 (successful predator of colonial spider *Metepeira incrassata*); Orlopp, 1998:33 (the ichneumonid *Polysphincta tuberose* parasitizing a nest of a *Trypoxylon* sp.); Cambra and Santos, 2000:56 (18 species from Panama: Parque Nacional Coiba in Isla de Coiba, Pacific Ocean); Morato and O. Campos, 2000:434 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Nachtigall, 2000:6 (wing bending and foldering during flight without or with prey); Smit, 2000:176 (Madeira); Fernández, Garcés, Portuondo, Valdés and Expósito, 2001:1022 (Cuba: collected on weed flowers in Botanical Garden of Santiago de Cuba); Morato, 2001:740 (Brazil: Amazonas: 90 km north of Manaus; effects of habitat fragmentation); Beardsley and Perreira, 2002:13 (Hawaiian Islands); Klein, Steffan-Dewenter, Buchori, and Tscharntke, 2002:1008 (Indonesia: Sulawesi: Lore-Lindu National Park 60 km south of Palau); Fernández, Saríol, Vega, Ricardo, González, and Portuondo, 2002:46 (Cuba: Provincia Granma); Alves-dos-Santos, 2003:330 (Brazil: University of São Paulo campus); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Esenbekova and Kazenas, 2003:8 and 59 (Kazakhstan: foothills of Zailiyskiy Alatau: nest structure); Cambra and Quintero, 2004:471 (*Xystromutilla turrialba* Casal reared from nest of *Trypoxylon* sp.); Esenbekova and Kazenas, 2003:59 (Kazakhstan: foothills of Zailiyskiy Alatau: nest structure in artificial nests); Portuondo and Fernández, 2004:135 (Cuba: Nipe-Sagua-Baracoa mountains); Pitts and Mansley, 2004:10 (nest parasite: mutillid *Lomachaeta cirrhomeris* Pitts and Mansley); Gathmann, 2005:108 (Germany: Niedersachsen: agricultural landscape near Göttingen; nest parasite: *Chrysis cyanea* (Linaeus), Chrysididae), 109 (nest parasites: *Melittobia acasta* Walker), Eulophidae) and *Nematopodius debilis* (Ratzeburg, Ichneumonidae); Pitts and Parker, 2005:62 (subgenus *Trypargilum*, nest parasite: mutillid *Sphaeropthalma jacala* Schuster); Ruíz Cancino, Coronado Blanco, and Horta Vega, 2005:170 (Mexico: recorded from Tamaulipas State); Genaro, 2006:57 (in checklist of Cuban Sphecidae and Crabronidae); Loyola and Martins, 2006:43 (Brazil: Minas Gerais: Belo Horizonte: Estação Ecológica da Universidade Federal de Minas Gerais); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas, eight species); Kazenas, 2007:91 (Kazakhstan: Akmala Oblast': Kurgandzhin Nature Reserve and vicinity, sp. aff. *attenuatum*);

Buschini and Woiski, 2008:355 (Brazil: Parana: Parque Municipal das Araucárias in municipality of Guarapuava); Morato, Amarante, and Silveira, 2008:793, 794 (Brazil: Acre: Parque Nacional da Serra do Divisor, eight species); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola); Loyola and Martins, 2009:127 (Brazil at 19°52'S 43°58'W, nesting in trap nests); Musicante and Salvo, 2010:1181 (nesting habits); Haneda, 2011:46 (Philippines: Palawan: Calaucasan and Puerto Princesa); Bitsch, Grouet, and Savina, 2013:291 (France: Pyrénées centrales: département d'Ariège: col de Pailhères), 292 (France: Pyrénées centrales: département d'Ariège: Ascou-Pailhères); Horta-Vega, Vanoye-Eligio, García-Gutiérrez, Coronado-Blanco, and Barrientos-Lozano, 2013:384 (Mexico: Tamaulipas: Ciudad Victoria: Cañón del Novillo, seven species); Silvestre, Demétrio, Trad, de Oliveira Lima, Auko, and de Souza, 2014:69 (Brazil: Mato Grosso do Sul: dry forests in Bodoquena Mountain Range and Brazilian Chaco, eight species); Geerah and Starr, 2017:174 (Trinidad: Arima Valley, 20 species); Magdalou, 2017:17 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: (Julols and Vallée d'Eyne, two species); Trad and Silvestre, 2017:5 (Brazil: Mato Grosso do Sul, six species); Vardy, 2017:14 (Argentina; near *transversistriatum*); Jeong and J.-K. Kim, 2020:253 (in revision of Korean *Trypoxylon* with flask-shaped gastral segment I).

SPECIES DESCRIBED IN *TRYPOXYLON* AND TRANSFERRED TO OTHER GENERA

atratum Fabricius, 1804 = *Psenulus*
equestre Fabricius, 1804 = *Mimesa*

FOSSIL *TRYPOXYLON*

dominicanum Prentice and Poinar

Trypoxylon dominicanum Prentice and Poinar, 1993:281, ♂. Holotype: ♂, Dominican Republic: Cordillera Septentrional between Santiago and Puerto Plata, Late Eocene to Late Oligocene (Manuel Pérez personal coll., Dominican Republic). – Arillo and Ortuño, 2005:38 (in catalog of fossil insects from Dominican amber); Bennett and Engel, 2006:7 (in checklist of amber Sphecidae *sensu lato*); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola).

electrum Antropov

Trypoxylon electrum Antropov, 1995a:125, ♀. Holotype: ♀, Dominican Republic, Late Eocene to Lower Miocene (originally Brodzinski & Lopez Penha personal coll., Dominican Republic, now USNM). – Arillo and Ortuño, 2005:38 (in catalog of fossil insects from Dominican amber); Bennett and Engel, 2006:7 (in checklist of amber Sphecidae *sensu lato*); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola).

eucharis Prentice and Poinar

Trypoxylon eucharis Prentice and Poinar, 1993:286, ♀. Holotype: ♀, Dominican Republic: Cordillera Septentrional between Santiago and Puerto Plata, Late Eocene to Late Oligocene (Poinar Dominican amber coll., UCB). – Arillo and Ortuño, 2005:39 (in catalog of fossil insects from Dominican amber); Bennett and Engel, 2006:7 (in checklist of amber Sphecidae *sensu lato*); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola).

pallidiventre Prentice and Poinar

Trypoxylon pallidiventre Prentice and Poinar, 1993:288, ♀. Holotype: ♀, Dominican Republic: Cordillera Septentrional between Santiago and Puerto Plata, Late Eocene to Late Oligocene (Poinar Dominican amber coll., UCB). – Arillo and Ortuño, 2005:39 (in catalog of fossil insects from Dominican amber); Bennett and Engel, 2006:7 (in checklist of amber Sphecidae *sensu lato*); Perez-Gelabert, 2008:241 (in list of arthropods of Island of Hispaniola).

SPECIES DESCRIBED IN *TRYPOXYLON* OF CURRENTLY UNKNOWN PLACEMENT

Trypoxylon unicolor Palisot de Beauvois, 1811:116, sex not stated. Holotype or syntypes: USA: South Carolina: no specific locality (destroyed?) – Cresson, 1862:235 (in catalog of North American Hymenoptera), 1887:284 (in catalog of North American Hymenoptera); W. Fox, 1891c:148 (unrecognizable species), 1894a:477 (original description copied); Dalla Torre, 1897:709 (in catalog of World Hymenoptera); Ashmead, 1899d:298 (in checklist of North American Crabronidae); Sandhouse, 1940:170 (the illustration suggests the African vespoid genus *Belonogaster*).

NOMINA NUDA IN *TRYPOXYLON*

annulatum Cameron: Richards, 1934:315.

atritarse Harris, Catalog of the Insects of Massachusetts, 2nd edition. – Cresson, 1862:235 (in catalog of North American Hymenoptera)

aureosericeum Schrottky: Schrottky, 1913a:228; Bertoni, 1911:135 (nest and prey).

coriae Brèthes: Jörgensen, 1912:293 (Argentina: Mendoza Province).

dimiatifrons: Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, Torino), may be a misspelling; Pagliano, 2014:83 (specimens in M. Spinola collection, Torino, are *Trypoxylon* sp.).

funebre: Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, Torino); Pagliano, 2014:83 (specimens im M. Spinola collection, Torino are *Trypoxylon* sp.).

geniculatum Cameron, 1889c:118 (India: Barrackpore). – Begum and Bose, 1976:26 (Bangladesh: Dakka).

hispanicum Mercet: Richards, 1934:315.

hingstoni Richards: Dollfuss, 1989:13 (paratype in NHMW).

labiatum Pérez: Antiga and Bofill, 1904:13 (Spain: Cataluña Province); Ceballos, 1956:392 (in catalog of Hymenoptera of Spain).

meridionale Gussakovskij, 1936:663, nec Richards, 1934.

nigricans Cameron, 1889c:119 (India: Barrackpore).

ollarium: Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, Torino); Pagliano, 2014:83 (specimens in M. Spinola collection, Torino, are *Trypoxylon* sp.).

opacum Spinola: Pagliano, 2014:84 (specimens in M. Spinola collection, Torino, are *Trypoxylon opacum* Brèthes.)

quinquedentatum (as *5-dentatum*): Casolari and Casolari Moreno, 1980:120 (specimen in M. Spinola collection, Torino , possibly a misspelling of *Trypoxylon tridentatum*); Pagliano, 2014:83 (specimen in M. Spinola collection Torino, is *Trypoxylon* sp.).

pruinosum: Casolari and Casolari Moreno, 1980:120 (specimens in M. Spinola collection, Torino); Pagliano, 2014:83 (specimen in M. Spinola collection Torino, is *Trypoxylon* sp.).

pygmaeum Stephens, 1829:364 (in catalog of British insects, as *pygmaeus*, incorrect original termination). – Stephens, 1829b:33 (in checklist of British insects).

simlaense Cameron: R. Turner, 1917:203; Richards, 1934:315.