

Last updated: 30 May 2018

PASSALOECUS

Passaloecus Shuckard, 1837:188. Type species: *Pemphredon insignis* Vander Linden, 1829, by original designation.
Xyloecus Shuckard, 1837:Conspectus of the genera, no 25 (no species included). Junior homonym of *Xyloecus* Déjean, 1833 (name attributed to Serville).
Coeloecus C. Verhoeff, 1890:383. Type species: *Diodontus gracilis* Curtis, 1834, designated by Pate, 1937c:19.
Heroecus C. Verhoeff, 1890:383 (no species included). Type species: *Pemphredon insignis* Vander Linden, 1829, designated by Pate, 1937c:19 (first included species).

Revision: Tsuneki, 1955c (Japan); Vincent, 1979 (America north of Mexico); Westrich and Schmidt, 1983a (recognition of three European species).

Key: Yasumatsu, 1934d:111 (Oriental species, including *Polemistus*).

Review of biology: Kazenas, 2001b:131.

1. *annulatus* (Say)

Pemphredon annulatus Say, 1837:379, ♀, ♂. Syntypes: ♀, USA: Indiana: no specific locality (lost). Neotype: ♀, USA: Indiana: Parke County: Turkey Run Park (MCZ), designated by Vincent, 1979:157. – F. Smith, 1856:429 (in catalog of Hymenoptera in British Museum); Le Conte, 1859b:761 (original description copied); Cresson, 1862:236 (in catalog of North American Hymenoptera). – As *Passaloecus annulatus*: Packard, 1867:395 (new combination, in revision of North American *Passaloecus*); Cresson, 1873:227 (Texas), 1887:283 (in catalog of North American Hymenoptera); nec W. Fox, 1892h:318 (= *Passaloecus areolatus*); Dalla Torre, 1897:367 (in catalog of world Hymenoptera); Ashmead, 1899d:223 (in checklist of North American Crabronidae); Bridwell, 1899:209 (Kansas: no specific locality); J. Smith, 1900:516 (in list of insects of New Jersey); Harrington, 1902:220 (Canada: Ontario: Ottawa); Kohl, 1905d:527 (in checklist of world *Passaloecus*); G. Peckham and E. Peckham, 1905:87 (popular account of nesting habits); J. Smith, 1910:676 (in new list of insects of New Jersey); nec Rohwer, 1916b:689 (= *Passaloecus areolatus*); Mickel, 1918b:430 (in catalog of Nebraskan Sphecidae); Rohwer in Viereck, 1925:689 (in key to Sphecidae of Connecticut: New Haven); Brues, 1927:82 (Massachusetts: Petersham, nesting in wood); J.Ch. Bradley, 1928:1014 (in catalog of New York Sphecidae); Yasumatsu, 1934d:109 (in checklist of world *Passaloecus*); Brimley, 1938:445 (North Carolina: Aberdeen, Raleigh); Krombein, 1938b:124 (New York State); Strickland, 1947:129 (Canada: Alberta: Edmonton); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein in Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera); Krombein, 1952b:178 (USA: West Virginia: Lost River State Park), 1954a:6 (West Virginia: Lost River State Park), 1955a:16 (prey), 1960a:35 (nest), 1958b:24 (prey), 1961b:65 (prey), 1958f:190 (in supplement to catalog of North American Hymenoptera: prey: *Drepanaphis acerifoliae* (Thomas)); E. Baker, 1962:5 (parasite: *Lackerbaueria krombeini*, new species, an acarid); Krombein, 1962b:13 (infestation by acarid *Lackerbaueria krombeini* Baker), 1963f:275 (Maryland: Plummers Island near Washington, D.C.); Tsuneki, 1971n:87 (in key to Japanese *Passaloecus*); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Krombein, 1979b:1605 (in catalog of North American Hymenoptera); Vincent, 1979:132 (summary of nesting habits), 157 (in revision of North American *Passaloecus*); Finnamore, 1982:74 (in Sphecid Fauna of Southern Quebec); Steiner, 1986:100 (references to papers on nesting habits); Fricke, 1991b:124 (trap-nest bore diameter preferences); Finnamore, 1994:210 (Canada: Alberta: Wagner Natural Area 8 km W Edmonton); Ahlstrom, 1995:108 (in checklist of insects of North Carolina); Skevington et al., 2001:128 (Canada: Ontario: Lambton County); Buck, 2004:25 (in checklist of Sphecidae of Ontario, Canada).

Pemphredon marginata Say, 1837:379, sex not indicated (as *marginatus*, incorrect original termination). Holotype or syntypes: USA: Pennsylvania: no specific locality (lost). Synonymized with *Passaloecus annulatus* by Vincent, 1979:157. – F. Smith, 1856:429 (in catalog of Hymenoptera in British Museum); Le Conte, 1859b:760 (original description copied); Cresson, 1862:236 (in catalog of North American Hymenoptera), 1887:283 (in catalog of North American Hymenoptera); Kohl, 1890a:54 (in review of *Pemphredon*); W. Fox, 1892h:314 (original description copied); Dalla Torre, 1897:358 (in catalog of world Hymenoptera); Ashmead, 1899d:223 (in checklist of North American Crabronidae). – As *Passaloecus marginatus*: Krombein in Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera, generic assignment tentative); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Krombein, 1979b:1606 (in catalog of North American Hymenoptera).

Passalaccus [sic] *rivertonensis* Viereck, 1904c:243, ♂. Holotype: ♂, USA: New Jersey: Riverton (ANSP). Synonymized with *Passaloecus annulatus* by Krombein in Muesebeck et al., 1951:968. – Kohl, 1905d:529 (in checklist of world *Passaloecus*); J. Smith, 1910:676 (in new list of insects of New Jersey); Cresson, 1928:52 (holotype in ANSP); A. Brown, 1934:264 (Canada: Ontario: Timagami); Yasumatsu, 1934d:111 (in checklist of world *Passaloecus*); Krombein, 1938b:124 (a species different from *annulatus*).

Passalaeus [sic] *equalis* Viereck, 1906:212, ♀. Holotype: ♀, USA: Kansas: Douglas County: no specific locality (Kansas Univ.). Synonymized with *Passaloecus annulatus* by Vincent in Bohart and Menke, 1976:184. – Yasumatsu, 1934d:110 (in checklist of world *Passaloecus*); Krombein in Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera); LaBerge, 1956:527 (holotype in Snow Entomological Museum).

As *Passaloecus mandibularis*: Faull, 1913:384 (Canada: Toronto region), corrected to *Passaloecus annulatus* by Buck, 2004:77.

2. *areolatus* Vincent

Passaloecus areolatus Vincent, 1979:159, ♀, ♂. Holotype: ♂, USA: New York: Millwood (USNM). – Vincent, 1979:129 (summary of nesting habits); Fricke, 1991b:124 (trap-nest bore diameter preferences), 1992a:51 (preference for *Juglans* trap-nests), 1992b:107 (length of cell decreased and prey volume increased, as bore diameter increased); Sugar et al., 1998:15 (Canada: southern Ontario); Buck, 2004:25 (in checklist of Sphecidae of Ontario, Canada).

As *Passaloecus annulatus*: W. Fox, 1892h:318 (in revision of North American Pemphredonini) and Rohwer, 1916b:689 (in catalog of Hymenoptera of Connecticut), corrected to *Passaloecus areolatus* by Vincent, 1979:161.

As *Passaloecus relativus* (corrected to *Passaloecus areolatus* by Vincent, 1979:161): Krombein, 1938b:124 (New York State), 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein in Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera); Krombein, 1952b:178 (USA: West Virginia: Lost River State Park), 1954a:6 (West Virginia: Lost River State Park), 1958b:25 (prey: *Aphis* sp.), 1962b:13 (infestation by acarid *Lackerbaueria krombeini* Baker), 1963f:275 (Maryland: Plummers Island near Washington, D.C.); Krombein et al., 1967:398 (reference to Krombein, 1958b, prey: *Aphis* sp.).

3. *armeniaca* Cockerell

Passaloecus armeniacae Cockerell in Cockerell and W. Fox, 1897:141, ♀. Lectotype: ♀, USA: New Mexico: Santa Fé (ANSP), designated by Cresson, 1928:51. – Ashmead, 1899d:223 (in checklist of North American Crabronidae, as *armeniaca*); Kohl, 1905d:527 (in checklist of world *Passaloecus*); Yasumatsu, 1934d:109 (in checklist of world *Passaloecus*); Krombein in Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera); Evans, 1972:487 (as *Passaloecus relativus*) and 1973c:148 (Wyoming: Jackson Hole); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Krombein, 1979b:1605 (in catalog of North American Hymenoptera); Vincent, 1979:135 (summary of nesting habits), 167 (in revision of North American *Passaloecus*); Rust, Menke, and Miller, 1985:46 (California: Channel Islands); Ratzlaff, 2016:27 (Canada: British Columbia: from Krombein, 1979).

4. *australis* Merisuo

Passaloecus australis Merisuo, 1976d:144, ♀, ♂. Holotype: ♀, Spain: Toledo (RMNH). – Leclercq, 1991a:274 (should be added to Leclercq's, 1979, catalog of French and Benelux Sphecidae); Dollfuss and Bitsch *in* Bitsch et al., 2001:94 (in Sphecid Fauna of Western Europe); Dollfuss, 2004a:118 (Turkey: 20 km W Van); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:456 (according to Dollfuss, 2004, *Passaloecus australis* may be a simple variety of *singularis*); Gayubo, González, Tormos, and Asís, 2009:362 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); Yıldırım, Ljubomirov, and Lelej, 2014:10 (distribution in Turkey by biogeographic provinces).

5. *borealis* Dahlbom

Passaloecus borealis Dahlbom, 1844:247, ♀, ♂. Lectotype: ♀, Sweden: Asele (Lund), designated by Vincent, 1979:173. – Dahlbom, 1845:505 (in key to *Passaloecus* of Europe); Wissmann, 1849:14 (Germany: Kingdom of Hannover: Klausthal); Tischbein, 1850:6, 9 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); F. Smith, 1856:427 (in catalog of Hymenoptera in British Museum); Ruthe and Stein, 1857:315 (Germany: Berlin area); Taschenberg, 1858:96 (Germany); Schenck, 1861:159 (redescription, Germany: Herrstein, Harz); Brischke, 1862:103 (Germany: Prussen Province, now Poland: Pomorze Region); Giraud, 1863a:15 (France: Hautes-Alpes: Vallouise near Briançon); Brischke, 1864:209 (*Passaloecus borealis* is a variety of *insignis*); A. Morawitz, 1864:462, footnote (listed among species with three foveolate lines); Taschenberg, 1866:188 (in revision of Hymenoptera of Germany); Kirchner, 1867:222 (in catalog of European Hymenoptera); Schenck, 1867a:350 (known from Germany: Harz, Herrstein); Dietrich, 1868:363 (Switzerland: Zurich Canton); Thomson, 1870:237 (as synonym of *Passaloecus turionum*); Brischke, 1888b:99 (Germany: Prussen Province, now Poland: Pomorze Region); Taschenberg, 1875:387 (Germany: Halle); Westerlund, 1893:25 (Russia: Karelian Republic: northern shore of Lake Ladoga, as *turionum* var. *borealis*); Dalla Torre, 1897:367 (in catalog of world Hymenoptera); N. Arnold, 1902:88 (Russia: Mohilev Province, now Belarus); Antiga and Bofill, 1904:8 (Spain: Cataluña Province); Kohl, 1905d:522, 525 (in key to Palearctic *Passaloecus*); Schmiedeknecht, 1907:210 (in key to Hymenoptera of Central Europe); nec Dittrich, 1911b:22 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region = ???, see Noskiewicz and Chudoba, 1949:408); Schirmer, 1912:166 (Germany: Berlin area); Alfken, 1914:278 (northwest Germany); Zilahi Kiss, 1915:80 (Hungary: Nyírmézö); A. Wagner, 1920:41 (Germany: Lower Elbe region, not found but can be expected); Dubois, 1921c:197 (in key to Belgian Sphecidae); Lundblad, 1924:22 (Sweden: Lappland: Lycksele; determination tentative); Berland, 1925d:147 (in Sphecid Fauna of France); Coulon, 1925:114 (specimens in Mus. Elbeuf); Friese, 1926:153 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); Gaunitz, 1929:199 (Sweden: Lappland); Schmiedeknecht, 1930:672, 673 (in keys to Hymenoptera of North and Central Europe); Yasumatsu, 1934d:109 (in checklist of world *Passaloecus*); Giner Marí, 1943:41 (in Sphecid Fauna of Spain); Šnoflák *in* Zavadil and Šnoflák, 1948:46 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); Ribaut, 1952:27 (in revision of *Passaloecus* of France); Nouvel and Ribaut, 1953:181 (France: Haute-Garonne: Boutx, Hautes-Pyrénées: Orédon); Ceballos, 1956:356 (in catalog of Hymenoptera of Spain); Bajári, 1957a:88, 89 (in key to Hungarian Sphecidae, not yet found in Hungary); de Beaumont, 1958c:208 (Swiss National Park), 1959a:33 (Italy); Wolf, 1959b:27 (known from Germany, but not from Nassau); Noskiewicz and Puławski, 1960:64, 65 (in key to Polish Sphecidae, not yet found in Poland); Babiy, 1964:116 (Austria: Land Salzburg); de Beaumont, 1964a:297 (taxonomic problems), 1964c:110 (in Sphecid Fauna of Switzerland); Gauss, 1966a:66 and 1966b:308 (Germany: Baden-Württemberg: Hartheim near Breisach); Benno, 1967:37 (in checklist of Sphecidae of Netherlands); Gauss, 1967:556 (Germany: Baden-Württemberg); Scobiola-Palade, 1967b:46 (Romania); Babiy, 1970:20 (Austria: Land Salzburg); Oehlke, 1970:743 (German Democratic Republic); Yarrow, 1970:174 (affinities); Wolf, 1971:375 (Italy: Trentino–Alto Adige: Alpi Siusi); Balthasar, 1972:197 (in Sphecid Fauna of Czechoslovakia: may be expected in the country); Kofler, 1972:111 (Austria: eastern Tirol); Merisuo, 1972c:205 (tyloids on male antenna), 206 (in list of

Passaloecus of Finland, with bibliographic references); Lomholdt, 1973a:106 (first record from Denmark: North Funen: Enebærødde Peninsula; West Jutland: Blåbjerg and Sandfeld plantations; North Zealand: Tisvilde Hegn); Merisuo, 1973c:110 (in key to *Passaloecus* of Finland), 114 (locality records from Finland); Leclercq, 1974b:198 (locality records); Lefeber, 1974:76 (Netherlands: Ede, Grathem, Mossel); Merisuo, 1974a:14 (member of *borealis* species group); Lomholdt, 1975c:120 (in Sphecidae Fauna of Fennoscandia and Denmark); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Merisuo, 1976b:212 (specimen with two midtibial spurs); D. Peters, 1976:6 (Germany: Hessen: Bieber); Kolesnikov, 1977:319 (Russia: Bryansk Oblast'); van der Zanden, 1977a:18 (Netherlands); Guichard, 1978:271 (first record from Greece: Timfristos); Lefeber, 1978:137 (Belgium: Gruitrode); Pulawski, 1978:248 (in key to Sphecidae of European part of former USSR); Krombein, 1979b:1605 (in catalog of North American Hymenoptera); Vincent, 1979:135 (summary of nesting habits), 173 (in revision of North American *Passaloecus*); Dathe, 1980:209 (Russia: northern Caucasus: Teberda); Dollfuss and Ressler, 1981:321 (Austria: Niederösterreich: Scheibbs District); Thiede, 1981:46 (Germany: Baden-Württemberg: Ulm, reared from artificial nest with acrylic tubes); Axelsson, 1982:79 (Sweden); Schedl, 1982:101 (Austria: Tirol: Ötztaler Alps); Kvamme and Axelsson, 1983:57 (Norway); Dollfuss, 1983b:7 (in catalog of Sphecidae of Austria); Westrich and Schmidt, 1983a:213 (recognition characters, comparison with *Passaloecus gracilis* and *turionum*); Mingo and Gayubo, 1984:112 (recorded from Spain by Antiga y Bofill, 1904); Schmidt, 1984:252 (Germany: Baden-Württemberg); Lefeber, 1985:87 (Netherlands: southern Limburg); Nemkov, 1986:95 (Russia: Siberia: Irkutsk Oblast'); Vikberg, 1986b:75 (Finland); Tyrner, 1987:232 (first record from Czechoslovakia: Bohemia: Šumná Valley near Litvinov); Nilsson, 1989:47 (Sweden); Pádr in Šedivý, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Jacobs and Oehlke, 1990:126 (in key to *Passaloecus* of German Democratic Republic), 151 (new records from German Democratic Republic); Pagliano, 1990:114 (in catalog of Italian Sphecidae); Schwammberger and Priesner, 1990:537 (Austria: Kärnten); Day, 1991:xvii (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:72 (in key to Sphecidae of North and Central Europe); Sorg and Wolf, 1991:195 (Germany: Koppelstein Reserve SE Koblenz); Delarze, 1992:68 (Switzerland: Valais: Les Follatères); Gusenleitner, 1992:684 (Austria: Vorarlberg: Gargellen); Nilsson, 1992:54 (Sweden); Wolf, 1992c:22 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Kuhlmann, 1993:77 (Germany: known from Westfalen); Felton and Schneider, 1994:289 (Luxemburg); Budrys in Nemkov, Kazenas, Budrys, et Antropov, 1995:403 (in key to Sphecidae of Russian Far East); Negrisol in Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian fauna); Skibińska, 1995:423, 425, 426, 427 (Poland: pine forest in Białowieża Primeval Forest); Schmid-Egger, Risch, and Niehuis, 1995:201 (summary of records from Germany: Rheinland-Pfalz Province); Schmid-Egger, Schmidt, and Doczkal, 1996:377 (Germany: not endangered in Baden-Württemberg); Woydak, 1996:26 (Germany: Westfalen: summary of distribution and nesting habits); Esenbekova, 1997:143 (preying on aphids in southeastern Kazakhstan); Finnamore, 1997:894 (expected to occur in Yukon); Schmidt and Schmid-Egger, 1997:23 (in checklist of German Sphecidae); Blösch, 1998:168 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Celary, 1998a:106 (first record from Poland: Babia Góra National Park), 1998b:210 (Poland: Babia Góra National Park); Dollfuss, Gusenleitner, and Bregant, 1998:511 (Austria: summary of collecting records from Burgenland); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); Vepřek, 1998:118 (Czech Republic: first record from Moravia: Helenkov); Dorow, 1999:573 (Germany: Hessen: Niddahänge E Rudingshain Forest Reserve); Esenbekova, 1999:201 (southeastern Kazakhstan: nesting in artificial nests); Gusenleitner, 1999:598 (Austria: Vorarlberg: Steig); Kuhlmann, Wolf, and Woydak, 1999:568 (Germany: endangered in Nordrhein-Westfalen because of low population level); Ljubomirov, 1999b:47 (Bulgaria: Mount Vitoshka near Sofia); Majzlan, Rychlik, and Deván, 1999:146 (Slovakia: Čenkovská Step Nature Reserve); Neumayer, Schwarz, and Bregant, 1999:225 (Austria: in checklist of Sphecidae of Land Kärnten); Pauly, 1999:108 (in catalog of Belgian aculeates); M. Schwarz, 1999:85 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:182 (in Sphecidae Fauna of Germany); Esenbekova and Kazenas, 2000:20 (southeast Kazakhstan: 7 km

S Talgar); Kazenas, 2000e:146 (in Sphecidae Fauna of Kazakhstan); M. Mader and Chalwatzis, 2000:60 (Germany: Hessen: Oderwald Mountains); Vepřek, 2000:234 (Czech Republic: Banská Bystrica, Helenkov, Podjavorník); Wiśniowski, 2000:161 (Poland: Bieszczady Mountains); Dollfuss and Bitsch *in* Bitsch et al., 2001:95 (in Sphecidae Fauna of Western Europe); Dorow, 2001:136 (Germany: Hessen: Schönbuche Forest Reserve); Kazenas, 2001:22 (in checklist of Sphecidae of Kazakhstan and Central Asia), 134 (review of known biology); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:140 (distribution in Germany by provinces); Skibińska, 2001:219 (Poland: Białowieża Primeval Forest); van der Smitten, 2001:62 (Germany: Schleswig-Holstein: extremely rare); Bergsten, Hoffsten, and Hellqvist, 2002:38 (Sweden: Hälsingland: Övre Tälningån); Bieri, 2002:77 (Liechtenstein); Kazenas, 2002a:51 (geographic distribution, collecting localities in Kazakhstan); Mokrousov, 2002:148 (Russia: Nizhniy Novgorod Oblast': Kerzhenskiy Nature Reserve); Shlyakhtenok and Skibińska, 2002:32 (Belarus': no specific locality); Wiśniowski, 2002:69 (Poland: Ojców National Park); Bergsten, Ekerholm, Hellqvist, Hilszczanski, Nilsson, Pettersson, and Werner, 2003:71 (Sweden: Västerbotten: Island of Romelsön); Drewes, 2003:140 (Austria: Tirol: Patznauntal; Germany: Hessen, Gießen, Lahn/Lumda/Ohm); Esenbekova and Kazenas, 2003:6, 13, and 54 (Kazakhstan: foothills of Zailiyskiy Alatau: nesting in artificial nests), 64 (nest structure in artificial nest); Kula and Tyrner, 2003a:150 (Czech Republic: Děčín Sandstone Uplands: forest district Snežník: birch stands in air-polluted area), 2003b:203 (northern Czech Republic: spruce stands in air-pollution region); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:68 (Germany: in catalog of wasps and bees of Bayern); Wiśniowski *in* Dylewska and Wiśniowski, 2003:142 (Poland: Ojców National Park); Bergsten, Nilsson, and Hellqvist, 2004:7 (Sweden: Västerbotten: Nordmaling); Buck, 2004:25 (Canada: in checklist of Sphecidae of Ontario), 29 (distribution within Ontario), 42 (first records from Ontario: Prairie River 38 km E Terrace Bay, and Quebec: James Bay Route km 66); Dathe and Blank, 2004:181 (Germany: Nordrhein-Westfalen, addition to Ohl et al., 2001); Deván, 2004:147 (western Slovakia); Dollfuss, 2004a:118 (Kazakhstan: Medeo 15 km S Almaty); Dorow, 2004a:127 (Germany: Hessen: Schönbuche Nature Reserve); Esser, Jakubzik, and Sonnenburg, 2004:18 (Germany: Nordrhein-Westfalen); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Kazenas, 2004b:101 (Kazakhstan: western Tien Shan); Majzlan and Deván, 2004:30 (Slovakia: Sekule), 33 (Slovakia: Malacky-Široké); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Stolle et al., 2004:372 (Germany: Sachsen-Anhalt: in red list of Sphecidae); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Burger, 2005:34 (Germany: Thüringen); Jacobs, 2005a:449 (Bulgaria: Sandanski); Kofler, 2005:170 (Austria: Tirol: Lienz District: many localities); Nemkov, 2005a:146 (Russia: Island of Sakhalin); Pagliano and Negrisola, 2005:455 (in Sphecidae Fauna of Italy); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Wiśniowski, 2005b:340 (Poland: Ojców National Park, of secondary faunistic value); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); N. Schneider, 2006:134, 140 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:110 (Belarus': Polesye Radiological Nature Reserve); Vepřek, 2006:511 (Czech Republic: Kokořínsko area); Dorow, 2007:263 (Germany: Hessen: Niddahänge and Schönbuche Forest Reserves); Dvořák, Straka, Smetana, Halada, Vepřek, and Karas, 2007:169 (Czech Republic: Vyšenské Kopce National Nature Reserve); Jacobs, 2007:77, 80 (in key to Crabronidae of Germany); Pettersson, Hellqvist, and Gabrielsson, 2007:7 (Sweden: Västerbotten: Ammarnäs); Venne, Bleidorn, and Lauterbach, 2007:302 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:200 (in catalog of Sphecidae of Czech Republic and Slovakia), 217 (Vepřek, 2000, summarized records from Moravia and Slovakia); Nemkov, 2008b:18 (in catalog of Crabronidae of Asiatic Russia); Theunert, 2008:63 (Germany: map of distribution in Niedersachsen and Bremen); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen); Mokrousov, 2009:291 (Russia: Republic Mari El); Nemkov, 2009b:68 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Ermilov and Mokrousov: 2010:91

(phoretic mite *Probonomoia pini* in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Johansson, 2010:121 (Sweden: Småland: upper Emå River valley); Mokrousov, 2010a:63 (Russia: Nizhniy Novgorod Oblast', Mari El Republic, Tatarstan: no specific localities); Rudoiskatel', 2010:155 (Russia: central and southern Ural Mountains); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: relatively common); van der Smissen, 2010a:346 (Germany: Schleswig-Holstein: Aukrug); Baghirov, 2011b:151 (Russia: Altayskiy Kray: Lake Kanonerskoye); Gogala, 2011:12 (Slovenia); Schmid-Egger, 2011c:556 (Austria: Tirol: Tiroler Lech Nature Park); Shlyakhtenok, 2011:95 (Belarus': city of Minsk); Theunert, 2011a:20 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:153 (Germany: not endangered in Hessen); Boillat, 2012:228 (Switzerland: in checklist of insects of Canton de Genève); Nemkov, 2012c:436 (in catalog of Crabronidae of Russian Far East); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Mokrousov, Ruchin, and Egorov, 2013:203 (Russia: Mordovian Republic: Mordovian State Nature Reserve); Pankov, 2013:230 (Russia: Ivanovo Oblast'); Shlyakhtenok, 2013:153 (in annotated catalog of aculeate wasps of Belarus'); Wiśniowski and Szczepko, 2013:43 (Poland: Kampinos National Park near Warszawa); Bitsch, 2014:407 (France: Puy-de-Dôme: Orléat, Les Sables des Girauds-Faures; Vaucluse: Bonnieux); U. Frommer, 2014:27 (Germany: Hessen: Lorch); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Mokrousov and Vafin, 2014:59 (Russia: Republic of Tatarstan); Ratzlaff, 2016:27 (Canada: British Columbia: from Vincent, 1978); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Flügel, 2017:5 (Germany: Rheinland-Pfalz: Eschkopf and Doline near Rockensüß); Magdalou, 2017:16 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Julols); Mokrousov, 2017e:247 (in catalog of Pemphredoninae of Russia).

As *Passaloecus insignis*: Valkeila, 1961:145 (*Passaloecus borealis* not found yet in Finland), corrected to *Passaloecus borealis* by Vincent, 1979:174.

6. *brevilabris* Wolf

Passaloecus brevilabris Wolf, 1958:15, ♀ (authorship attributed to de Beaumont). Syntypes: Germany: Hessen: Weimarer Kopf near Marburg; and Switzerland: Neuchâtel: Auvernier (Lausanne). – Babiy, 1970:20 (Austria: Land Salzburg); D. Peters, 1973b:164 (Germany: reared from artificial nests); Balthasar, 1972:198 (in Sphecidae Fauna of Czechoslovakia: may be expected in the country); Merisuo, 1972c:204 (tyloids on male antenna), 206 (in list of *Passaloecus* of Finland, with bibliographic references; incorrectly treated *Passaloecus brevilabris* Wolf, 1958 as a nomen nudum), 1974a:14 (member of *borealis* species group); Lomholdt, 1975c:120 (in Sphecidae Fauna of Fennoscandia and Denmark); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); D. Peters, 1976:6 (Germany: Hessen: Bieber); Pulawski, 1978:248 (in key to Sphecidae of European part of former USSR); Schwammberger, 1978:418 (Germany: Württemberg); Westrich, 1980:631 (Germany: Baden-Württemberg: Tübingen area); Dollfuss and Ressler, 1981:321 (Austria: Niederösterreich: Scheibbs District); Thiede, 1981:46 (Germany: Baden-Württemberg: Ulm, reared from artificial nest with acrylic tubes); Axelsson, 1982:79 (Sweden); Dollfuss, 1983b:7 (in catalog of Sphecidae of Austria); Schmidt, 1984:285 (Germany: Baden-Württemberg); Vikberg, 1986b:75 (Finland); Schmidt and Westrich, 1987:368 (Germany: Mainz area); Jacobs and Oehlke, 1990:122 and 152 (not collected in German Democratic Republic after 1960), 126 (in key to *Passaloecus* of German Democratic Republic); Pagliano, 1990:114 (in catalog of Italian Sphecidae: first record from Italy); Rohe, 1990:1049 (Germany: Rheinland-Pfalz: Lenneberg forest); Day, 1991:xvii (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:72 (in key to Sphecidae of North and Central Europe); Kowalczyk, 1991b:120 (Poland: Augustów Forest); Budrys, 1992:23 (in list of Sphecidae of Lithuania); Halada, 1992:72 (first record from Czechoslovakia: Bohemia: Chlum u Třeboně, České Budějovice, Hluboká nad Vltavou, Suchdol nad Lužnicí, Vyšenské kopce, Zliv); Theunert, 1994a:47 (Germany: Niedersachsen: Burgdorfer Holz in Landkreis Hannover), 1994c:46 (Germany: summary of records from Niedersachsen and Bremen); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian

fauna); Schmid-Egger, Risch, and Niehuis, 1995:201 (summary of records from Germany: Rheinland-Pfalz Land); Skibińska, 1995:423, 426, 427 (Poland: pine forest in Białowieża Primeval Forest); Arens, 1996:440 (Germany: Bayern: Bayreuth area); Jakubzik and Cölln, 1996b:400 (Germany: Rheinland-Pfalz); Woydak, 1996:26 (Germany: Westfalen: summary of distribution and nesting habits); Celary, 1997:57 (in checklist of Animals of Poland); Schmidt and Schmid-Egger, 1997:23 (in checklist of German Sphecidae); Dollfuss, Gusenleitner, and Bregant, 1998:511 (Austria: summary of collecting records from Burgenland); Tschardtke, Gathmann, and Steffan-Deventer, 1998:718 (trap-nesting in Germany); van der Smissen, 1998:64 (Germany: Schleswig-Holstein: Segrahner Berg); K. Weber, 1998:146 (Germany: Bayern: Bamberg area); Cölln and Jakubzik, 1999:29 (Germany: Rheinland-Pfalz: Keuper-Scharren SW Hungerburg); Kuhlmann, Wolf, and Woydak, 1999:568 (Germany: endangered in Nordrhein-Westfalen because of low population level); Ljubomirov, 1999b:48 (Bulgaria: Mount Vitoshka near Sofia); Luig and Voolma, 1999:177 (first record from Estonia: Karja, Päätsa, Pamma); Neumayer, Schwarz, and Bregant, 1999:225 (Austria: in checklist of Sphecidae of Land Kärnten); Pauly, 1999:108 (in catalog of Belgian aculeates); M. Schwarz, 1999:85 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:182 (in Sphecidae Fauna of Germany); Vepřek, 2000:235 (Czech Republic: Bzenec, Fryšták, Prácheň, Štípa); Dollfuss and Bitsch *in* Bitsch et al., 2001:97 (in Sphecidae Fauna of Western Europe); Ohl et al., 2001:141 (distribution in Germany by provinces); Skibińska, 2001:219 (Poland: Białowieża Primeval Forest); van der Smissen, 2001:62 (Germany: Schleswig-Holstein: extremely rare); Bieri, 2002:77 (Liechtenstein); Szczepko and Kowalczyk, 2002:187 (Poland: Kampinos National Park near Warszawa); Gayubo, González, Tormos, and Asís, 2002:90 (first records from Iberian Peninsula: Andorra: Santa Coloma, and Spain: Madrid); Shlyakhtenok and Skibinska, 2002:32 (Belarus: no specific locality); de Rond, 2003:89 (first record from Netherlands: minicamping t'Halder N Herkenbosch); Feitz, Schneider, and Pauly, 2003:81 (first record from Luxemburg: Remich); Kula and Tyrner, 2003a:150 (Czech Republic: Děčín Sandstone Uplands: forest district Snežník: birch stands in air-polluted area), 2003b:203 (Northern Czech Republic: spruce stands in air-pollution region); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:68 (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); Dollfuss, 2004a:118 (France: Corse: Porto Vecchio Muratello); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo et al. 2004:132 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Georgiev et al., 2004:237 (Bulgaria: nesting in old galleries of cerambycid *Saperda populnea* (L.)); Kuhlmann, 2004:230 (Germany is responsible for preservation of this species on its territory); Salzmann-Wandeler and Rezban-yai-Reser, 2004:27 (central Switzerland); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Stolle et al., 2004:372 (Germany: Sachsen-Anhalt: last collected before 1910); Szczepko and Kowalczyk, 2004:125 (Poland: Kampinos National Park near Warszawa); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Burger, 2005:34 (Germany: Thüringen); Kofler, 2005:170 (Austria: Tirol: Lienz District: Thal Aue in Assling Common, Panzerdorf in Heinfels Common, Lavant, Lengberg in Nikolsdorf Common; Oblas in Sankt Johann Common); Pagliano and Negrisolò, 2005:455 (in Sphecidae Fauna of Italy); Saure, 2005:17 (Germany: Berlin); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); N. Schneider, 2006:133 (Luxemburg: anthropogenic habitats); Vepřek, 2006:511 (Czech Republic: Kokořínsko area); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:456 (recorded from Spain and Andorra by Gayubo et al., 2002, 2004a, from Luxemburg by Feitz et al., 2003, and from Corsica by Dollfuss, 2004); Dvořák, Straka, Smetana, Halada, Vepřek, and Karas, 2007:169 (Czech Republic: Vyšenské Kopce National Nature Reserve); Jacobs, 2007:76, 79 (in key to Crabronidae of Germany); Saure, 2007:83 (Germany: in checklist of Aculeata of Brandenburg); Shlyakhtenok, 2007a:299 (Belarus: Berezinsky Nature Reserve); Vepřek and Straka, 2007:200 (in catalog of Sphecidae of Czech Republic and Slovakia, known only from Bohemia and Moravia), 217 (Vepřek, 2000, summarized records from Czech Republic); Theunert,

2008:63 (Germany: map of distribution in Niedersachsen and Bremen); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen); Straka, Dvořák, and Bogusch, 2009:263 (Czech Republic: Rašeliniště Jizerky National Nature Reserve); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Hable, von der Dunk, and Knipfer, 2010:66 (Germany: Bayern: vicinity of Dietfurt); Johansson, 2010:121 (Sweden: Småland: upper Emå River valley); Saure, 2010b:176 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:137 (Germany: Bayern: collected along Main-Donau canal); Shorenko and Kononov, 2010:25 (Ukraine: Crimea: Evpatoriya, Karadag Nature Reserve); van der Smissen, 2010a:346 (Germany: Schleswig-Holstein: locality records); Theunert, 2011a:21 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:153 (Germany: not endangered in Hessen); Shibayev and Polunov, 2012:278 (Russia: Penza Oblast'); Saure, 2013:20 (Berlin: Treptow-Köpenick: Gosener Wiesen); Shlyakhtenok, 2013:153 (in annotated catalog of aculeate wasps of Belarus'); Bitsch, 2014:407 (France: Puy-de-Dôme: Orléat, les Sables des Girauds-Faures); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Flügel, 2017:5 (Germany: Rheinland-Pfalz: Eschkopf and Doline near Rockensüß); Mokrousov, 2017e:247 (in catalog of Pemphredoninae of Russia); Shorenko, 2017:78 (in Crimea collected in July and August). – **As *Passaloecus brevilabris* de Beaumont**: Wolf, 1959a:14 (Germany: Cappel near Marburg; description of ♂); 1959b:27 (Germany: Nassau); de Beaumont, 1964a:298 (authorship of species attributed to de Beaumont; redescription), 1964c:110 (in Sphecidae Fauna of Switzerland); Gauss, 1967:556 (Germany: Baden-Württemberg); J. Heinrich, 1967:78 (Germany: Bayern: Karlstadt); Schmidt, 1969:165 (Germany: Rhein-Main area: Mainz, Mainzer Sand); Oehlke, 1970:743 (German Democratic Republic); Schmidt, 1971b:43 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mainzer Sand); Kofler, 1972:111 (Austria: eastern Tirol); Merisuo, 1973c:111 (in key to *Passaloecus* of Finland), 114 (locality records from Finland); Leclercq, 1974b:198 (Belgium: Liège, and France: Peyresq); Peters, 1976:6 (Germany); Guichard, 1978:271 (first record from Greece: Aspropotomos).

7. *clypealis* Faester

Passaloecus clypealis Faester, 1947:204, ♀, ♂. Holotype: ♂: Denmark: Basnæs (ZMUC). – Abrahamsen, 1951:115 (recorded from Denmark after J.C. Nielsen, 1907); Ribaut, 1952:28 (in revision of *Passaloecus* of France: Pyrénées-Orientales: Salses); Kjellander, 1954b:246 (first record from Sweden); Morel, Nouvel, and Ribaut, 1956:339 (France: département des Pyrénées-Orientales); Wolf, 1958:16 (listed); Valkeila, 1959b:228 (first record from Finland: Flaka, Lemland); Noskiewicz and Puławski, 1960:62, 64 (in key to Polish Sphecidae, can be expected in Poland); Janvier, 1961b:882 (nesting habits); Valkeila, 1962b:67 (southwestern Finland); de Beaumont, 1964c:109 (in Sphecidae Fauna of Switzerland); Evans, 1964b:251 (discussion of Janvier's, 1961, description of larva); Benedek, 1966b:294 (first record from Hungary), 296 (in key including *Passaloecus roettgeni*, *tenuis*, and *clypealis*), 1968:74 (Hungary, visiting flowers of *Angelica silvestris* L. and *Pastinaca sativa* L.), 1969a:84 (Hungary; marshy meadow), 1970:100 (Hungary: Tapolca); Oehlke, 1970:744 (German Democratic Republic); Yarrow, 1970:179 (in list of British *Passaloecus*, with bibliographic references), 182 (Great Britain: Cambridgeshire: Wicken Fen); Schmidt, 1971c:75 (Germany: Schleswig-Holstein); Haeseler, 1972:156 (Germany: Schleswig-Holstein; anthropogenic habitats); Merisuo, 1972c:204 (tyloids on male antenna), 206 (in list of *Passaloecus* of Finland, with bibliographic references); Oehlke, 1972:138 (Germany: Island of Hiddensee); Haeseler, 1973:55 (Germany: Schleswig-Holstein: Brenner Moor W Bad Oldesloe, Rodenäs 45 km W Flensburg); Lomholdt, 1973a:107 (Denmark: North Funen: Enebærøde Peninsula; West Jutland: Tipperne in Ringkøbing Fjord); Merisuo, 1973b:103 (nesting habits), 1973c:109 (in key to *Passaloecus* of Finland), 113 (locality records from Finland); Suda, 1973:122 (Japan: Yamanashi Prefecture); Lefeber, 1974:77 (first record from Netherlands: Asperen); Merisuo, 1974a:14 (member of *singularis* species group); Tsuneki, 1974a:368 (Korea); Lefeber, 1975a:37 (Netherlands:

Asperen); Lomholdt, 1975c:127 (in Sphecid Fauna of Fennoscandia and Denmark); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Haeseler, 1976b:72 (Germany: Friesian Islands: Island of Amrum); Eck, 1976:93 (German Democratic Republic); D. Peters, 1976:7 (cell partitions made of resin, but for nest closure small pieces of bark are also used); Haeseler, 1977a:26 (Germany: Friesian Islands: Island of Norderney); Koleznikov, 1977:319 (Russia: Bryansk Oblast'); Kazenas, 1978b:158 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:246 (in key to Sphecidae of European part of former USSR); Tsuneki, 1979d:10 (Japan); Dicker, 1979:129 (England: Kent: Burham and Higham); Preuss, 1980a:21 (nesting in stems of *Phragmites*); Richards, 1980:72 (in key to Sphecidae of British Isles); Haeseler, 1981:51 (Germany: Friesian Islands: Island of Amrum); Dollfuss, 1983a:76 (Austria: endangered in Niederösterreich.), 80 (Austria: endangered in Steiermark), 1983b:7 (in catalog of Sphecidae of Austria); Veenendaal, 1983b:168 (Netherlands: Hooidammen, Nunspeet, Overveen, Pannerden); Haack, Tschardtke, and Vidal, 1984:131 (Germany: Hamburg area); Veenendaal, 1984:18 (Netherlands: Amsterdam); Mingo and Gayubo, 1984:111 (Spain); Schmidt, 1984:285 (Germany: Baden-Württemberg); Haeseler, 1985c:571 (Germany: Friesian Islands); Józán, 1985b:56 (Hungary S Lake Balaton: Mernye), 83 (ecological and zoogeographic characteristics); Paik, 1985:198 (in list of Sphecidae of Korea); Westrich and Schmidt, 1985a:117 (Germany: Baden-Württemberg), 1985b:111 (Germany: endangered in Baden-Württemberg); Islamov, 1985:530 (Uzbekistan: Tashkent Oblast'); Brechtel, 1986:64 (Germany: Südpfalz); Józán, 1986:369 (Hungary: Kiskunság National Park); Vikberg, 1986b:75 (Finland); Dollfuss, 1987:19 (Austria); Haeseler, 1988:211 (Germany: Friesean Islands); Jacobs, 1989:8 (Germany: Mecklenburg-Vorpommern); Jacobs and Oehlke, 1990:152 (new records from German Democratic Republic); Day, 1991:xvii (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:73 (in key to Sphecidae of North and Central Europe); Jakubzik, 1991:74 (Germany: Köln); van der Smissen, 1991:97 (northwest Germany); Tsuneki, 1991:201 (Korea); Gusenleitner, 1992:684 (Austria: Kärnten: Aaich SW Maria Rojach); Józán, 1992b:172 (Hungary: Boronka-melléki Protected Area); Haeseler, 1992:355 (nests in stems of *Phragmites*); Nemkov, 1992b:244 (Russia: Far East: Khingan Nature Reserve); Luig, 1993:43 (Estonia); Dollfuss, 1994:102 (endangered in Austria); Theunert, 1994c:47 (Germany: summary of records from Niedersachsen and Bremen); Budrys in Nemkov, Kazenas, Budrys, et Antropov, 1995:403 (in key to Sphecidae of Russian Far East); Schmid-Egger, Risch, and Niehuis, 1995:201 (summary of records from Germany: Rheinland-Pfalz Province); Skibińska, 1995:423, 426, 427 (Poland: pine forest in Białowieża Primeval Forest); Harvey, 1996:25 (Great Britain: Essex); Harvey and Plant, 1996:77 (Great Britain: summary of records from Essex); Jakubzik, 1996:253 (Germany: Köln); Schmid-Egger, Schmidt, and Doczkal, 1996:377 (Germany: endangered in Baden-Württemberg); Schmidt and Schmid-Egger, 1997:23 (in checklist of German Sphecidae); Dollfuss, Gusenleitner, and Bregant, 1998:511 (Austria: summary of collecting records from Burgenland); van der Smissen, 1998:64 (Germany: Schleswig-Holstein: Walkenkrug); Luig and Voolma, 1999:177 (Estonia); Neumayer, Schwarz, and Bregant, 1999:225 (Austria: in checklist of Sphecidae of Land Kärnten); Skibińska, 1999:96 (Poland: Białowieża Primeval Forest); Blösch, 2000:183 (in Sphecid Fauna of Germany); Esenbekova and Kazenas, 2000:21 (southeast Kazakhstan: 3 km S Alma Ata, near Bakanas); Jacobs, 2000:9, 17 (Germany: probably endangered in Mecklenburg-Vorpommern.); Józán, 2000:106 (Hungary: Bakony Mountains); Kazenas, 2000e:147 (in Sphecid Fauna of Kazakhstan); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River, as *clypearis*); Vepřek, 2000:235 (Czech Republic: Moravský Písek); Zettel, 2000:26 (Austria: Wien); Dollfuss and Bitsch in Bitsch et al., 2001:97 (in Sphecid Fauna of Western Europe); Haeseler, 2001:266 (Germany: Niedersachsen: Brookdeich near Oldenburg); Józán, 2001:278 (Hungary: Somogy County); Kazenas, 2001:22 (in checklist of Sphecidae of Kazakhstan and Central Asia), 134 (review of known biology); Ohl et al., 2001:141 (distribution in Germany by provinces); Skibińska, 2001:219 (Poland: Białowieża Primeval Forest); van der Smissen, 2001:62 (Germany: endangered in Schleswig-Holstein.); Zettel, Gross, and Mazzucco,

2001:70 (Austria: Wien); Deván, 2002b:204 (first record from Slovakia: Pekelná dolina); Kazenas, 2002a:51 (geographic distribution, collecting localities in Kazakhstan); Shlyakhtenok and Skibinska, 2002:32 (Belarus': no specific locality); Drewes, 2003:140 (Germany Schleswig-Holstein: Sylt); Haeseler, 2003:340, 346 (Germany: Niedersachsen: Island of Harriersand near Bremen); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:68 (Germany: in catalog of wasps and bees of Bayern); Kula and Tyrner, 2003a:150 (Czech Republic: Děčín Sandstone Uplands: forest district Snežník: birch stands in air-polluted area); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:197 (Germany: probably endangered in Bayern); Dollfuss, 2004a:119 (Bulgaria, China, Czech Republic, France, Italy, Kazakhstan, Kyrgyzstan, Slovakia); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Kazenas, 2004b:101 (Kazakhstan: western Tien Shan); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Stolle et al., 2004:372 (Germany: Sachsen-Anhalt: last collected in 1953); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Burger, 2005:34 (Germany: Thüringen); Nemkov, 2005a:147 (Russia: Island of Sakhalin); Riemann and Hohmann, 2005:562 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:18 (Germany: Berlin); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Nemkov, 2006c:247 (Russia: Island of Moneron south of Sakhalin); Shlyakhtenok, 2006:110 (Belarus': Polesye Radiological Nature Reserve); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:456 (correction to key to *Passaloecus*), 456 (recorded from France: département de l'Hérault by Dollfuss, 2004); Budrys, 2007:63 (first records from Lithuania: Kaišiadorys District: Žiezmariai at 54°49'N 24°25'E; Vilnius District: Airėnai at 54°50'51"N 24°57'21"E, Rusėnai at 54°49'50"N 24°57'45"E); Jacobs, 2007:77, 80 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:25 (Germany: northwestern Sachsen); Józán, 2007:173, 179 (Hungary: Zselic hills); Kowalczyk and Nadolski, 2007:284 (Poland: Łódź: railway areas); Nemkov, 2007b:69 (Russia: Kuril Islands: Island of Kunashir); Saure, 2007:83 (Germany: in checklist of Aculeata of Brandenburg.); Shlyakhtenok, 2007a:299 (Belarus': Berezinsky Nature Reserve), 2007b:364 (Ukraine: Chernobyl area); Vago, 2007:174 (France: département de Pas-de-Calais); Vepřek and Straka, 2007:201 (in catalog of Sphecidae of Czech Republic and Slovakia), 217 (Vepřek, 2000, summarized records from Czech; first recorded from Slovakia by Deván, 2002b); Haeseler, 2008:308 (Germany: Friesian Islands); Nemkov, 2008b:18 (in catalog of Crabronidae of Asiatic Russia); Theunert, 2008:64 (Germany: map of distribution in Niedersachsen and Bremen); Nemkov, 2009b:68 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Straka, Dvořák, and Bogusch, 2009:263 (Czech Republic: Černá Hora Nature Reserve); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); J. Kim and Yang, 2010:146 (in checklist of Korean Pemphredoninae); Mokrousov, 2010a:63 (Russia: Nizhny Novgorod Oblast': no specific localities), 2010b:100 (Russia: Nizhny Novgorod Oblast': no specific localities); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: rare); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:102 (western Slovakia: recorded from Borská nížina); van der Smitsen, 2010a:346 (Germany: Schleswig-Holstein: Am Stay, Walkenkrug); Baghirov, 2011b:151 (Russia: recorded from Altay by Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995); U. Frommer, 2011:3 (Germany: first record from Hessen: Gießen); Józán, 2011:179 (in checklist of Sphecidae s.l. of Hungary); Tischendorf, Frommer, Flügel et al., 2011:91 (Germany: Hessen: insufficient data); Theunert, 2011a:21 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Ma and Q. Li, 2012:42 (in key to Oriental *Passaloecus*), 48 (China: Fujian: Fuzhou: Dehua: Mount Daiyunshan at 25°40'N 118°11'E; Zhejiang: Mount West Tianmushan at 30°20'N 119°24'E; Zhejiang: Hangzhou at 30°16'N 120°09'E); Nemkov, 2012c:436 (in catalog of Crabronidae of Russian Far East); Saure, 2012b:230 (Germany: Berlin-Spandau: Spandauer Forst); Shlyakhtenok, 2012a:171 (Belarus' and Russia: Kirov Oblast': Arkhangelskoye: collected in

private plots); Terayama, 2012:3 (in key to Pemphredonini of Japan), 10 (description), 18 (in checklist of Pemphredonini of Japan); Pankov, 2013:230 (Russia: Ivanovo Oblast'); Shlyakhtenok, 2013:153 (in annotated catalog of aculeate wasps of Belarus'); Wiśniowski and Szczepko, 2013:43 (Poland: Kampinos National Park near Warszawa); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); J.-K. Kim, 2014:441 (in catalog of Sphecidae s.l. of Korean Peninsula); Else, Bolton, and Broad, 2016:36 (in checklist of Aculeata of Great Britain and Ireland: England); Saure, 2016a:8 (Germany: Brandenburg: Uckermark District: dry slopes near Altgalow-Stützkow); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Astapenková, Heneberg, and Bogusch, 2017: 7 (reared from galls of *Lipara* sp., Chloropidae, collected in Czech Republic and Poland); Mokrousov, 2017e:247 (in catalog of Pemphredoninae of Russia).

Passaloecus angustus Gussakovskij, 1952:215, ♀, ♂. Syntypes: Tajikistan: Djilikul; Uzbekistan: Tashkent area, Katta-Kurgan, Ravat near Khiva; Russia: Dagestan: Terekli-Mekteb in Karanogay step (ZIN). Synonymized with *Passaloecus clypealis* by Kazenas, 1978b:158. – R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae).

ssp. *yamato* Tsuneki

Passaloecus gracilis yamato Tsuneki, 1955b:9. ♀, ♂. Holotype: ♂, Japan: Hokkaido: Jozankei (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1955c:4, 5 (in key to *Passaloecus* of Japan), 10 (nesting habits); R. Bohart and Menke, 1976:184 (as synonym of *Passaloecus clypealis*); Hashimoto and Nakanishi, 1997:25 (holotype transferred to Hyogo Mus., as *guracilis yamato*). – **As *Passaloecus tenuis yamato***: Haneda, 1968b:56 (new subspecific combination, Japan: Nagano Prefecture: Ina District); Tano, 1968:33 (Japan); Haneda, 1969:69 (Japan: Yamanashi Prefecture); Itami, 1969:50 (Japan: Niigata Prefecture); Tsuneki, 1969e:26 (Japan), 1971n:86, 87 (in key to Japanese *Passaloecus*), 1973a:21 (as new synonym of *Passaloecus clypealis*); Nambu, 1975b:68 (Japan: Saitama Prefecture). – **As *Passaloecus clypealis yamato***: Tano, 1994a:4 (new subspecific combination, holotype in K. Tsuneki collection); Nozaka and Kurokawa, 2003:56 (Japan: town of Awara: lake side of Kitagata); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:31 (Japan: Gifu Prefecture); Suda, 2004:37 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:45 (Japan: Gifu Prefecture); Negoro, Haneda, and Tano, 2005:45 (Japan: Toyama Prefecture).

8. *columnaris* Ma and Q. Li

Passaloecus columnaris Ma and Q. Li, 2012:42, ♀, ♂. Holotype: ♀, China: Yunnan: Simao: Jingdong: Taizhong: Xujiaba at 24°29'S 100°56'E (Yunnan Agricultural University, Kunming, China) – Ma and Q. Li, 2012:42 (in key to Oriental *Passaloecus*).

9. *corniger* Shuckard

Passaloecus corniger Shuckard, 1837:191, ♀, ♂ (♂ = *Passaloecus gracilis*). Lectotype: ♀, Great Britain: Battersea Fields (BMNH), designated by Yarrow, 1970:177. – Dahlbom, 1842a:12 (in review of Scandinavian aculeates), 1844:245 (in revision of Sphecidae and Pompilidae), 1845:505 (in key to *Passaloecus* of Europe); Wissmann, 1849:14 (Germany: Kingdom of Hannover: Münden); Tischbein, 1850:6, 9 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); F. Smith, 1851c:34 (Great Britain: no specific locality), 1853:64 (in checklist of British Hymenoptera, as *cornigera*), 1856:426 (in catalog of Hymenoptera in British Museum); Ruthe and Stein, 1857:315 (Germany: Berlin area); Schenck, 1857:140 (Germany: in revision of fossorial wasps of Nassau Region); F. Smith, 1858c:174 (in review of British Aculeata, redescription, as *cornigera*, ♀ only, ♂ = *Passaloecus gracilis*); Taschenberg, 1858:96 (Germany); Funk, 1859:58 (Germany: Bayern: Bamberg); Brischke, 1862:103 (Germany: Preussen Province, now Poland: Pomorze Region); A. Morawitz, 1864:462, footnote (listed among species with three foveolate lines); Schenck, 1867a:353 (Germany: Nassau Region); Jaenicke, 1868:9 (Germany: Hessen: Offenbach); Wierzejski, 1868:117 (Ukraine: Podole Region); Schenck, 1860:147 (Germany: Nassau Region); Taschenberg,

1866:188 (in revision of Hymenoptera of Germany); A. Costa, 1867c:114 (in revision of Italian Sphecidae); Kirchner, 1867:222 (in catalog of European Hymenoptera); von Aichinger, 1870:316 (Austria: Tirol); Thomson, 1870:237 (in revision of Swedish wasps); A. Costa, 1871b:43 (in revision of Italian Sphecidae); F. Smith, 1871b:18 (in catalog of British Aculeata, as *cornigera*); Schlechtendal, 1872:37 (Germany: Sachsen: Zwickau); Dours, 1874:145 (in catalog of Hymenoptera of France); Wierzejski, 1874:260 (Ukraine: Podole Region: Bucyki); Kohl, 1880:139 (Austria: Tirol, and Italy: Trentino–Alto Adige); Thomson, 1874:197 (in revision of Hymenoptera of Scandinavia); Beuthin, 1876:230 (Germany: Hamburg area); Daly, 1878:46 (Great Britain: Dorset: Glanville's Wootton, as *cornigera*); Girard, 1879:942 (morphology and habits); E. Saunders, 1880:257 (in revision of British Aculeata, as *cornigera*); Siebke, 1880:63 (Norway); Kohl, 1883e:660 (Switzerland); Sickmann, 1883:79 (Germany: Niedersachsen: Wellingholthausen); Harwood, 1884:211 (Great Britain: Essex: Colchester area); von Heyden, 1884:120 (Germany: Frankfurt am Main area); Wüstnei, 1886:39 (Germany: Schleswig-Holstein: Husum); Ed. André, 1888:202 (in revision of Sphecidae of Europe and Algeria), 17* (bibliographic references); Brischke, 1888b:99 (Germany: Preussen Province, now Poland: Pomorze Region); Kohl, 1888b:726 (Austria: Tirol, now Italy: Alto Adige); V. Perkins, 1892:202 (Great Britain: Gloucestershire: Wotton-under-Edge, as *cornigera*); Kohl, 1893a:37 (Austria: Niederösterreich); F. Morawitz, 1893a:111 (Russia: Karelian Isthmus); Sickmann, 1893:78 (Germany: Niedersachsen: Iburg); Krieger, 1894:15 (Germany: Kingdom of Saxony); E. Saunders, 1896:97 (in revision of aculeates of British Islands); Westerlund, 1896:28 (Finland: no specific locality); Dalla Torre, 1897:368 (in catalog of world Hymenoptera); Lange, 1898:70 (Germany: Sachsen: Annaberg-Buchholz); Strand, 1898b:93 (Norway); Hocking, 1901:68 (Great Britain: Surrey county); N. Arnold, 1902:88 (Russia: Mohilev Province, now Belarus); Aurivillius, 1904:262 (in revision of Swedish Sphecidae); W. Schulz, 1904b:92 (Czechoslovakia); Arnold, 1905:262 (Great Britain: Hampshire: Brockenhurst); Kohl, 1905d:520, 525 (in key to Palearctic *Passaloecus*); Kubes, 1905:83 (Czech Republic: Obora); Adlerz, 1906:36 (Sweden; nesting habits); Schmiedeknecht, 1907:209, 210 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:103 (in catalog of French Hymenoptera); Morley, 1909:305 (Great Britain: Isle of Wight); Dittrich, 1911b:22 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:50 (Italy: Trieste area); M. Müller, 1911:114 (Germany: Brandenburg: no specific locality, nesting in galls of *Lipara*); Schirmer, 1912:166 (Germany: Berlin area); Birula, 1913:539 (Ukraine: Zhytomyr Oblast': Radomyshl'); Alfken, 1914:278 (northwest Germany); Birula, 1914:384 (Belarus: Ambrosovich and Luskinopol' near Vitebsk); Haines, 1914:129 (Great Britain: Dorset); Zilahi Kiss, 1915:80 (Hungary: Bethlen, Ferenczfalva, as *coniger*); O. Meyer, 1919:152 (Germany: Posen Province, now Poland: Poznań Region); Łoziński, 1920:121 (Poland: Kraków); A. Wagner, 1920:41 (Germany: Lower Elbe region); Dubois, 1921c:196, 197 (in key to Belgian Sphecidae); Maidl, 1922:65 (Croatia: Ragusa, now Dubrovnik); Chevalier, 1923d:68 (nesting habits); R. Perkins, 1924:222 (Great Britain: Devon); Berland, 1925d:146 (in Sphecid Fauna of France); Bischoff, 1925:299 (Latvia; Poland: Grajewo area); Coulon, 1925:114 (France: Evreux, Chatou); Koornneef, 1925:362 (Netherlands: Gelderland: Dieren); R. Perkins, 1925:150 (Great Britain: Gloucestershire and Somersetshire); Friese, 1926:153 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); Hémon, 1926:199 (France: Finistère: Fouesnant); Stelfox, 1927:293 (records from Ireland are erroneous); Berland, 1928b:179 (France: Finistère: Fouesnant); Bouwman, 1928b:208 (in revision of Sphecidae of Netherlands); Crèvecoeur and Maréchal, 1929:168 (Belgium: La Xhavée); Maneval, 1929b:292 (theft of prey; nest and prey); Richards, 1930:134 (Great Britain: nesting in rotten posts at Bagley Wood near Oxford); Schmiedeknecht, 1930:672, 673 (in keys to Hymenoptera of North and Central Europe); Pulkkinen, 1931:93 (in revision of Sphecidae of Finland); Spooner, 1931:14 (Great Britain: Cambridgeshire); Bondroit, 1932:35 (Belgium: Forêt de Soignes, Solbosch); Crèvecoeur and Maréchal, 1932:70 (in catalog of Belgian Hymenoptera); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Bondroit, 1933:30 (Belgium: Uccle); Merisuo, 1933a:60 (Finland: city of Turku); Balles, 1934:18 (Germany: Baden-Württemberg: Hopfengarten); Bondroit, 1934:61 (Belgium: Solbosch); Jansson, 1934:289 (Sweden); Yasumatsu, 1934d:109 (in checklist of world *Passaloecus*); Forsius *in* Forsius and Hellén, 1935:11 (in checklist

of Hymenoptera of Finland); Marchand and Dulac, 1935:61 (France: Saône-et-Loire: Saint Laurent d'Andenay); Crèvecoeur and Maréchal, 1936:251 (in catalog of Belgian Hymenoptera); Blüthgen, 1937:235 (Germany: Saale River valley: Naumburg, Schulpforta); Dulac, 1937:16 (France: Saône-et-Loire: Saint-Laurent d'Andenay); Goebel, 1937:40 (Poland: Poznań District: Poznań-Dębina); Hallett, 1937:72 (Great Britain: Herefordshire: Mathon); Richards, 1937b:105 (in checklist of British aculeates); Zavadil, Šusterka, and Bat'a, 1937:181 (in catalog of Sphecidae of Czechoslovakia); Móczár, 1938c:81 (Hungary: Kőszeg Hills); A. Wagner, 1938a:120 (northwestern Germany); Leclercq, 1939:60 (use of resin for both partition between cells and for nest closure), 1940:49, 50 (use of resin); de Graham, 1941:99 (Great Britain: Lincolnshire); Leclercq, 1941b:11 (Belgium: Liège area); Kloet, 1941:235 (Great Britain: Wales: Wilmslow); Paul, 1941:42 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); Schneid, 1941:1036 (Germany: Bayern: Bamberg area); Balthasar, 1942:4 (Czech Republic: Moravia); J. Perkins, 1942:198 (Sweden: Skåne: Kivik); Spooner, 1942:110 (Great Britain: Bedfordshire); Giner Marí, 1943:40 (in Sphecidae Fauna of Spain); Spooner, 1943:72 (Great Britain: Winfrith); Šnoflák, 1944a:143 (Czech Republic: serpentine steppe near Mohelno); T. Fletcher, 1945:53 (Great Britain: Gloucestershire: Wotton); Spooner, 1946:27 (Britain: Leicestershire: Charnwood Forest); Carl and de Beaumont, 1947:69 (Switzerland: Graubünden = Grisons Canton: Swiss National Park); Bristowe, 1948:36 (prey: aphids); de Hennin and Anciaux, 1948:76 (Belgium: between Sambre and Meuse Rivers); Guichard and Yarrow, 1948:90 (Great Britain: London: Hampstead Heath); Šnoflák in Zavadil and Šnoflák, 1948:48 (in key to Sphecidae of Czechoslovakia); Chambers, 1949:225 (Great Britain: Bedfordshire); Cavro, 1950:33 (France: département du Nord); Georgel, 1950:64 (France: Seine-et-Oise: Sucy-en-Brie); Szulczewski, 1950:106 (Poland: Wielkopolski National Park 15 km S Poznań); de Beaumont, 1951h:34 (Switzerland: Neuchâtel area); Ribaut, 1952:26 (in revision of *Passaloecus* of France); Cleu, 1953:51 (France: Ardèche River basin); Leclercq, 1953a:248 (Belgium: locality records); Nouvel and Ribaut, 1953:180 (France: Haute-Garonne: Saint-Béat, Hautes-Pyrénées: Cauterets); Bischoff and Stadler, 1954:126 (Germany: Bayern: Römberg); de Beaumont, 1954e:94 (Italy); Fahlander, 1954:251 (Sweden: Gästrikland Region); Tjeder, 1954:68 (Sweden: eastern Skåne: Bredarör); Tsuneki, 1955c:4, 5 (in key to *Passaloecus* of Japan, as *corniger corniger*); Vergne, 1955:5 (France: Auvergne); Vogrin, 1955:39 (Yugoslavia); Bytinski-Salz, 1956:227 (Turkey: Ulu Dag); Ceballos, 1956:356 (in catalog of Hymenoptera of Spain); Bajári, 1957a:88, 89 (in key to Hungarian Sphecidae); Yeo, 1957:19 (England: Middlesex, now in London); Zirngiebl, 1957:179 (Germany: Rheinland-Pfalz: Pfalz region); Benno, 1958b:12 (in review of Dutch Sphecidae); de Beaumont, 1958c:208 (Swiss National Park); Wolf, 1959b:27 (Germany: Nassau); Noskiewicz and Puławski, 1960:64, 65 (in key to Polish Sphecidae); Hoop, 1961:65 (Germany: Schleswig-Holstein: Rosenkranz); Janvier, 1961b:861 (nesting habits); Grandi, 1962:97 (Italy); Valkeila, 1962b:67 (southwestern Finland); Felton, 1963:177 (Great Britain: Kent County); Hoop, 1963b:7 (Germany: Schleswig-Holstein: Mannhagen); Valkeila, Brander, and Käpylä, 1963:41 (Finland: historical region Lounais-Hämeen = southwest Häme); Babiý, 1964:116 (Austria: Land Salzburg); de Beaumont, 1964c:109 (in Sphecidae Fauna of Switzerland); Evans, 1964b:251 (discussion of Janvier's, 1961, description of larva); Hüsing and Jäger, 1964:192 (Germany: Sachsen-Anhalt: Nietleben near Halle), 198 (found on cherry trees, probably nesting in wood, visiting flowers of umbellifers); Valkeila, Brander, and Käpylä, 1964:75 (Finland: southern Finland: Forssa); Fæster, 1965:192 (Denmark: Hansted Nature Reserve); B. Klug, 1965:134 (Germany: Baden-Württemberg: Freiburg im Breisgau area); Benno, 1967:37 (in checklist of Sphecidae of Netherlands); de Beaumont, 1967a:343 (Turkey); Gauss, 1967:556 (Germany: Baden-Württemberg); J. Heinrich, 1967:78 (Germany: Bayern: Aschaffenburg and Obernau); Lefeber, 1967c:219 (Netherlands: Sint Pietersberg); Niedl and Deneš, 1967:77 (Czech Republic: Třeboň area); Scobiola-Palade, 1967b:46 (Romania); Benedek, 1968:74 (Hungary, visiting flowers of *Angelica silvestris* L.); Haneda, 1968c:69 (a European species found in Japan); Leclercq, 1968b:39 (Great Britain: Kent); Benedek, 1969a:84 (Hungary: marshy meadow), 1969b:421 (Hungary: Csopak, collected in vicinity of aphid *Hyalopteritena pruni* (Geoffroy)); Bonelli, 1969a:151 (nesting habits); Lefeber, 1969b:99 (Netherlands: Bemelen; Belgium: Lanaye), 1969c:233 (Netherlands:

Sint Pietersberg = Montagne Saint Pierre); Benedek, 1970:100 (Hungary: Tapolca); Oehlke, 1970:744 (German Democratic Republic); Tumšs, 1970:75 (Latvia); Yarrow, 1970:177 (lectotype selection), 179 (in list of British *Passaloecus*, with bibliographic references), 182 (Great Britain: occurring in southern counties); Felton, 1971:213 (England: Kent: Sittingbourne); Lefeber, 1971a:18 (Netherlands: Borgharen, Mamelis, Nekem, Sint Pieter, Slavante); Petit, 1971:22 (Luxemburg: Bourscheid.); Schmidt, 1971b:42 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mombacher Feld), 1971c:75 (Germany: Schleswig-Holstein); Stritt, 1971a:105 (Germany: Baden-Württemberg: Karlsruhe); Tsuneki, 1971n:87 (in key to Japanese *Passaloecus*); Balthasar, 1972:196 (in Sphecidae Fauna of Czechoslovakia); Haeseler, 1972:156 (Germany: Schleswig-Holstein; anthropogenic habitats); Kofler, 1972:110 (Austria: eastern Tirol); Merisuo, 1972c:204 (tyloids on male antenna), 205 (in list of *Passaloecus* of Finland, with bibliographic references), 1973c:109 (in key to *Passaloecus* of Finland), 112 (locality records from Finland); Erlandsson, 1974:78 (Italy); Kofler, 1974:320 (Austria: Kärnten); Leclercq, 1974b:199 (miscellaneous locality records); Lefeber and Petit, 1974:163 (Belgium: Plombières); Merisuo, 1974a:14 (member of *corniger* species group); Corbet and Backhouse, 1975:11-30 (Great Britain; nesting habits; females do not hunt but steal prey from nests of other *Passaloecus* or from conspecific nests; feeding by adults); Lefeber, 1975b:154 (Belgium); Lomholdt, 1975b:32 (Denmark: Island of Anholt), 1975c:123 (in Sphecidae Fauna of Fennoscandia and Denmark); Mudd and Corbet, 1975:255-257 (use of pine resin stolen from nests of *Passaloecus gracilis* and *P. insignis*); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Cretin and Robert, 1976:47 (France: Doubs: Chassagne-Saint Denis); D. Peters, 1976:6 (Germany: Hessen: Bieber), 11 (use of gaster in cleaning thorax); Guichard, 1977:252 (Great Britain: Surrey); Kolesnikov, 1977:319 (Russia: Bryansk Oblast'); Schmidt, 1977:97 (Germany: Baden-Württemberg: Enzklösterle in Schwarzwald); Guichard, 1978:271 (first record from Greece: Aspropotomas); Haeseler, 1978b:63 (Germany: Niedersachsen: a bog near Oldenburg); Kazenas, 1978b:158 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:247 (in key to Sphecidae of European part of former USSR); Schwammberger, 1978:418 (Germany: Württemberg); Benedek, 1979:233 (Hungary: Bakony Hills); Schmidt, 1979a:55 (Germany: Ost-Holstein); Schwammberger, 1979:116 (Germany: Nordrhein-Westfalen: Gildehauser Venn Nature Reserve); Casolari and Casolari Moreno, 1980:119 (specimens in M. Spinola collection); Pagliano, 1980:131 (Italy: Piemonte); Richards, 1980:72 (in key to Sphecidae of British Isles); Westrich, 1980:631 (Germany: Baden-Württemberg: Tübingen area); Dollfuss and Ressler, 1981:321 (Austria: Niederösterreich: Scheibbs District); Józán, 1981:305 (Hungary: Hortobágy National Park); Thiede, 1981:46 (Germany: Baden-Württemberg: Ulm, reared from artificial nest with acrylic tubes); Woydak, 1981:38 (Germany: Westfalen: Hamm); Axelsson, 1982:79 (Sweden); Leclercq, 1982a:124 (Belgium: Liège); Skibińska, 1982:119, 122 (Poland: Mazovian Voivodship: Warszawa, Wola Mrokowska); Dollfuss, 1983b:7 (in catalog of Sphecidae of Austria); Gayubo, 1983d:202 (Spain: Salamanca); Riemann, 1983:82 (Germany: Bremen-Daverden area); Chevin and Silvestre de Sacy, 1984:7 (France: Yvelines Department); Haack, Tschardtke, and Vidal, 1984:131 (Germany: Hamburg area); Lefeber, 1984:29 (Netherlands: Maastricht); Mingo and Gayubo, 1984:111 (Spain); Schmidt, 1984:285 (Germany: Baden-Württemberg); Tormos, 1984:321 (Spain: Valencia); Haeseler, 1985a:350 (Germany: Schleswig Holstein), 1985c:571 (Germany: Friesian Islands); Jacob-Remacle, 1985:408 (Belgium; second occupant in a composite nest); Józán, 1985b:56 (Hungary S Lake Balaton), 77 (floral records), 83 (ecological and zoogeographic characteristics); Lefeber, 1985:87 (Netherlands: southern Limburg); Tyrner, 1985:9 (Czech Republic: Jezerka Nature Reserve in Krušné Hory = Erzgebirge); Brechtel, 1986:64 (Germany: Südpfalz); Jacob-Remacle, 1986:109 (Belgium; trap-nests); Gayubo and Sanza, 1986:38 (Spain: Burgos); Józán, 1986:369 (Hungary: Kiskunság National Park); Skibińska, 1986b:150 (Poland: suburbs of Warszawa), 157 (rural and suburban parks), 160 (gardens), 162 (urban parks), 164 (streetside green), 168 (green areas of housing estates), 173 (various green urban habitats); Vikberg, 1986b:75 (Finland); Archer, 1987:111 (Great Britain: Yorkshire); Schmidt and Westrich, 1987:368 (Germany: Mainz area); Archer, 1988b:27 (Great Britain: Yorkshire: Strensall Common); Dollfuss, 1988:11, 22 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Kowalczyk, 1988a:44 (Poland:

Rogów), 1988b:64 (Poland: environs of Łódź); Wolf, 1988b:142 (Germany: Rheinland-Westfalen); Balazy, Banaszak, and Michalski, 1989:118 (Poland: Wielkopolski National Park); Jacobs, 1989:8 (Germany: Mecklenburg-Vorpommern); Pádr *in* Šedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:97 (Belarus: Berezinskiy Nature Reserve); Weiffenbach, 1989:106 (Germany: Hessen: Gießen area); Archer, 1990b:136 (Great Britain: city of Leicester), 1990c:17 (Great Britain: Leicestershire); Jacobs and Oehlke, 1990:152 (new records from German Democratic Republic); Kowalczyk, 1990:290 (Poland: Góry Świętokrzyskie); Pádr, 1990:79 (Czech Republic: Praha area); Pagliano, 1990:114 (in catalog of Italian Sphecidae); Rohe, 1990:1049 (Germany: Rheinland-Pfalz: Lenneberg forest); Schwammbberger and Priesner, 1990:537 (Austria: Kärnten); von der Heide and Witt, 1990:64 (Germany: Niedersachsen); Yeo, 1990:102 (Great Britain: Cambridge); Dollfuss, 1991:73 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:399 (Italy: Emilia); Jacobs, 1991:46 (Germany: Mecklenburg-Vorpommern: Nature Reserve Elbtaldünen); Kowalczyk, 1991a:89, 104 (Poland: Łódź), 1991b:120 (Poland: Augustów Forest); Nilsson, 1991:83 (Sweden: Lake Mälaren); Sorg and Wolf, 1991:195 (Germany: Koppelstein Reserve SE Koblenz); Budrys, 1992:23 (in list of Sphecidae of Lithuania); Wiśniowski, 1993a:94 (Poland: Białowieża Primeval Forest); Archer, 1992a:56 (Great Britain: Leicestershire); Budrys, 1992:23 (in list of Sphecidae of Lithuania); Jakubzik and Cölln, 1992:121 (Germany: Rheinland-Pfalz; reared from artificial nests); Józán, 1992b:172 (Hungary: Boronka-melléki Protected Area); N. Schneider and Jacob-Remacle, 1992:43 (Luxemburg); Sorg and Cölln, 1992:132 (Germany: Rheinland-Pfalz: Gönnersdorf); K. Weber, 1992:88 (Germany: Bayern: Bamberg District); Wolf, 1992c:22 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Archer, 1993c:39 (Great Britain: Yorkshire); Jakubzik and Cölln, 1993:136 (Germany: Rheinland-Pfalz: Bernkastel-Kues; nesting in stems of *Rubus*); Kuhlmann, 1993:77 (Germany: known from Westfalen); Luig, 1993:43 (Estonia); Sorg, 1993:407 (Germany: Rheinland-Pfalz: Nature Reserve Ahrschleife bei Altenahr); Wiśniowski, 1993a:97 (Poland: in checklist of Sphecidae of Białowieża Primeval Forest); Kowalczyk, 1994:73 (Poland: Łagiewniki forest in Łódź); Theunert, 1994c:47 (Germany: summary of records from Niedersachsen and Bremen); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian fauna); Pagliano and Pesarini, 1995:85 (Italy: Ferrara Province); Riemann, 1995:52 (Germany: Bremen); Schmid-Egger, 1995:62 (Germany: northwest Baden-Württemberg); Schmid-Egger, Risch, and Niehuis, 1995:201 (Germany: summary of records from Rheinland-Pfalz Land); Shlyakhtenok, 1995:193 (Belarus: Berezinsky Nature Reserve); Skibińska, 1995:423, 427 (Poland: pine forest in Białowieża Primeval Forest); Archer, 1996b:37 (Great Britain: Nottinghamshire: Sherwood Forest), 1996b:121 (Great Britain: Yorkshire); Arens, 1996:440 (Germany: Bayern: Bayreuth area); Chaubet, 1996:115 (France: Bretagne: Corps-Nuds); Harvey and Plant, 1996:77 (Great Britain: summary of records from Essex); Jakubzik, 1996:253 (Germany: Köln); Jakubzik and Cölln, 1996a:323 (Germany: nesting in stems of *Rubus*), 334 (in keys to cocoons), 1996b:400 (Germany: Rheinland-Pfalz); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: not endangered in Baden-Württemberg); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg); Woydak, 1996:27 (Germany: Westfalen: summary of distribution and nesting habits); Celary, 1997:57 (in checklist of Animals of Poland); Esenbekova, 1997:143 (preying on aphids in southeastern Kazakhstan); Schmidt and Schmid-Egger, 1997:23 (in checklist of German Sphecidae); Stoyanov and Ljubomirov, 1997:26 (Bulgaria: Rila Mountains); Wolf, 1997a:3 (Germany: Bayern: Hirblinger Höhen near Augsburg); Blösch, 1998:168 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Budrys, 1998:82 (Russia: Belgorod Oblast': Borisovka at 50°36'N 36°04'E); Celary, 1998b:210 (Poland: Babia Góra National Park); Dollfuss, Gusenleitner, and Bregant, 1998:511 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km WSW Hamburg); González, Gayubo, and Torres, 1998:72, 73 (Spain: Valladolid Province); Haeseler and Ritzau, 1998:51 (Germany: Bremen: Island of Harriersand in Weser River); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Józán, 1998:311 (Hungary: Duna-Dráva National Park); Lefeber,

1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); N. Schneider and Wahis, 1998:22 (Luxemburg: sandstone quarries); Tscharnke, Gathmann, and Steffan-Deventer, 1998:718 (trap-nesting in Germany); van der Smissen, 1998:65 (Germany: Niedersachsen, Schleswig-Holstein); K. Weber, 1998:146 (Germany: Bayern: Bamberg area); Archer, 1999a:9 (Great Britain: Lancashire); Blösch, 1999:19 (male precopulatory behavior); Cölln and Jakubzik, 1999:29 (Germany: Rheinland-Pfalz: Keuper-Scharren SW Hungerburg); Dorow, 1999:573 (Germany: Hessen: Niddahänge E Rudingshain Forest Reserve); Gusenleitner, 1999:598 (Austria: Vorarlberg: Düns S Satteins); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); Löhr, 1999:62 (Germany: Hessen: Mücke-Merlau near Gemünden); Luig and Voolma, 1999:177 (Estonia); Majzlan, Rychlík, and Deván, 1999:146 (Slovakia: Čenkovská Step Nature Reserve); Mandery, 1999:105 (Germany: Bayern: Coburg area); Neumayer, Schwarz, and Bregant, 1999:225 (Austria: in checklist of Sphecidae of Land Kärnten); Pauly, 1999:108 (in catalog of Belgian aculeates); Riemann, 1999:835 (Germany: Niedersachsen: sand pits near Bremen); M. Schwarz, 1999:85 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:184 (in Sphecidae Fauna of Germany); Esenbekova and Kazenas, 2000:21 (southeast Kazakhstan: 2 km SW Alma Ata); Gonzáles, Gayubo, and Tormos, 2000:18 (Andorra: Santa Coloma); Jacobs, 2000:9 (Germany: not endangered in Mecklenburg-Vorpommern); Józán, 2000:106 (Hungary: Bakony Mountains); Kazenas, 2000e:148 (in Sphecidae Fauna of Kazakhstan); Ljubomirov, 2000:9 (Bulgaria, specimens in N. Nedelkov collection); M. Mader and Chalwatzis, 2000:60 (Germany: Hessen: Oderwald Mountains); Mokrousov, 2000b:30 (Russia: Nizhny Novgorod Oblast'); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Archer, 2001:107 (Great Britain: Watsonian Yorkshire); Dollfuss and Bitsch *in* Bitsch et al., 2001:98 (in Sphecidae Fauna of Western Europe); Dorow, 2001:136 (Germany: Hessen: Schönbuche Forest Reserve); Haeseler, 2001:266 (Germany: Niedersachsen: Brookdeich near Oldenburg); Ivanov and Ljubomirov, 2001:211 (Bulgaria: Kresna Gorge at 41°48'N 23°10'E); Józán, 2001:278 (Hungary: Somogy County); Ljubomirov, 2001b:47 (Bulgaria: Mount Vitoshka near Sofia); Ohl et al., 2001:141 (distribution in Germany by provinces); Skibińska, 2001:219 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:187 (Poland: Kampinos National Park near Warszawa); van der Smissen, 2001:62 (Germany: not endangered in Schleswig-Holstein); Wolf, 2001a:172 (Germany: Bayern: Lech valley from Augsburg to Donau); Zettel, Gross, and Mazzucco, 2001:70 (Austria: Wien); Archer, 2002b:125 (Great Britain: Watsonian Yorkshire: distribution map); Archer and Edwards, 2002:103 (Great Britain: West Sussex: Ambersham and Iping commons); Beavis, 2002:110 (Great Britain: Kent: Tunbridge Wells area); Bergsten, Hoffsten, and Hellqvist, 2002:38 (Sweden: Hälsingland: Övre Tälningån); Bieri, 2002:77 (Liechtenstein); Józán, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:52 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Kruess and Tscharnke, 2002:1576 (Germany: Schleswig Holstein: number of specimens higher on ungrazed and extensively grazed grassland); Martínez de Murguía, 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); Shlyakhtenok and Skibinska, 2002:32 (Belarus: no specific locality); Steffan-Dewenter, 2002:634 (Germany: Göttingen area); Wiśniowski, 2002:69 (Poland: Ojców National Park); Ziska, 2002:9 (Germany: Berlin-Köpenick: Krumme Lake); Bagnée, 2003:65 (Belgium: Namur: Ri d'Hôwisse); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Cölln, Esser, and Jakubzik, 2003:62 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Drewes, 2003:140 (Austria: Tirol: Kaunerberg; Germany: Hessen: Gießen); Esenbekova and Kazenas, 2003:6, 14, and 54 (Kazakhstan: foothills of Zailiyskiy Alatau: nesting in artificial nests), 65 (nest structure in artificial nest, stealing provision and building material from nests of other species); Flügel, 2003:8 (Germany: Hessen: Knüllwald); Haeseler, 2003:340 (Germany: Niedersachsen: Island of Harriersand near Bremen); Kuhlmann and Quest, 2003:51 (Germany: Bayern: Bayerischer Wald National Park); Kula and Turner, 2003a:150 (Czech Republic: Děčín Sandstone Uplands: forest district Snežník: birch stands in air-polluted area), 2003b:203 (Northern Czech Republic: spruce stands in air-pollution region); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke,

2003:68 (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); 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, 2003:142 (Poland: Ojców National Park); Wiśniowski and Werstak, 2003:77 (Poland: Pieniny National Park); Archer, 2004:47 (Great Britain: Worcestershire: Devils Spittleful Nature Reserve); Budrienė, Budrys, and Nevronytė, 2004:22 (Lithuania: nesting in trap nests); Deván, 2004:147 (western Slovakia); Dollfuss, 2004a:119 (Morocco: 12 km E Ifrane); Dorow, 2004a:127 (Germany: Hessen: Schönbuche Nature Reserve); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo et al. 2004:132 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Hellrigl, 2004a:173 (Italy: Trentino-Alto Adige, as Südtirol: Tschöggberg); Jakubzik and Cölln, 2004:272 (in key to nests of Hymenoptera nesting in stems of *Rubus*); Jakubzik, Niehuis, and Cölln, 2004:458 (Germany: Rheinland-Pfalz: Roßstein in Rhein valley at 50°06'42"N 7°43'87"E); Majzlan and Deván, 2004:30 (Slovakia: Sekule), 33 (Slovakia: Malacky-Široké); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Shkuratov, 2004a:79 (Russia: Rostov Oblast': village Nedvigovka); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Szczepko and Kowalczyk, 2004:125 (Poland: Kampinos National Park near Warszawa); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Archer, 2005:30 (Great Britain: Watsonian Yorkshire); Burger, 2005:34 (Germany: Thüringen); Gülmez and Tüzün, 2005:53 (Turkey: Ankara Province); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Hallin, 2005:16 (Sweden: Örebro County: Hällefors); Jacobs, 2005a:449 (Bulgaria: Melnik); Kofler, 2005:170 (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 Negrisola, 2005:456 (in Sphecid Fauna of Italy); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Riemann and Hohmann, 2005:562 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:18 (Germany: Berlin); Schmalz, 2005:57 (references to XIXth century authors); Shorenko, 2005a:166 (Ukraine: Crimea), 2005b:99 (Ukraine: Crimea: Karadagh Nature Reserve); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:43 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Archer, 2006a:21 (Great Britain: Lincolnshire: Rauceby Warren National Park); U. Frommer, 2006:37 (Germany: Hessen: Runkel area); U. Frommer and Tischendorf, 2006:89 (Germany: Hessen: Schlüchterner Becken); Józán, 2006a:286 (Hungary: Béda-Karapanca section of Duna-Drava National Park); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Magdalou, 2006a:6, 10 (France: Pyrénées-Orientales: Réserve Naturelle de la Massane); N. Schneider, 2006:133, 134, 135, 140, 142 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:110 (Belarus': Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund), 2006c:303 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Tomarchio and Turrisi, 2006:957 (Italy: first record from Sicilia: Mount Etna); Vepřek, 2006:511 (Czech Republic: Kokořinsko area); Archer, 2007a:151 (Great Britain: Norfolk: Thetford Warren Lodge); Beavis, 2007:96 (Great Britain: Tunbridge Wells and Central High Weald); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:456 (recorded from Spain by Tormos, 1984, and Gayubo et al., 2004); Dorow, 2007:263 (Germany: Hessen: Niddahänge and Schönbuche Forest Reserves); 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); Hallin, 2007b:24 (Sweden: Blekinge Province); Jacobs, 2007:75, 78 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:25 (Germany: northwestern Sachsen); Józán, 2007:173, 179 (Hungary: Zselic hills); Saure, 2007:83 (Germany: in checklist of Aculeata of Brandenburg); Shlyakhtenok, 2007b:364 (Ukraine: Chernobyl area); Sipos and Móczár, 2007:204

(Hungary: vicinity of Foktő); Vago, 2007:174 (France: départements du Nord and Somme); Venne, Bleidorn, and Lauterbach, 2007:302 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:201 (in catalog of Sphecidae of Czech Republic and Slovakia); Gayubo, González, Tormos, and Asís, 2008:140 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Haeseler, 2008:308 (Germany: Friesian Islands); Ljubomirov and Yildirim, 2008:177 (in catalog of Crabronidae of Turkey); Theunert, 2008:64 (Germany: map of distribution in Niedersachsen and Bremen); Donie, 2009:9 (Germany: Niedersachsen: Oldenburg); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen); Gayubo, González, Tormos, and Asís, 2009:362 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:622 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Holzschuh, Steffan-Deventer, and Tscharncke, 2009:127 (Germany: Niedersachsen: near Göttingen at 51°30'N 9°54'E, nesting in grass strip corridors in agricultural landscape); Józán, 2009:165 (Croatia: Reburići); Mokrousov, 2009:291 (Russia: Republic Mari El); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:71 (Norway: locality records); Pagliano, 2009:187 (Italy: recorded from Sicilia by Tomarchio and Turrisi, 2006; France: Corse: Pirio); Livory, Chevin, Lair, Sagot, and Baldock, 2009:15 (France: Département de la Manche: Montpinchon); Sobek, Tscharncke, Scherber, Schiele, and Steffan-Deventer, 2009:614 (Germany: Thüringen: Nationalpark Hainich: nesting mostly in canopy); Shorenko, 2009:368 (in list of Sphecidae s.l. of Crimea, as *corniger corniger*); Straka, Dvořák, and Bogusch, 2009:263 (Czech Republic: Jizerské Mountains and Frýdlant region); Venne, 2009:111 (Germany: Nordrhein-Westfalen: Holte-Stukenbrock, associated with *Frangula alnus* Miller, Rhamnaceae); van der Smissen, 2010a:346 (Germany: Schleswig-Holstein: locality records); Archer, 2010a:52 (Great Britain: Watsonian Nottinghamshire: Spalford Warren); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Falk, 2010:94 (Great Britain: heathland sites in West Midlands region); Jakubzik and Cölln, 2010:1187 (Germany: Rheinland-Pfalz: Bruchertseifen near Altenkirchen); Johansson, 2010:121 (Sweden: Småland: upper Emå River valley); Mokrousov, 2010a:63 (Russia: Kirov, Kostroma, Nizhniy Novgorod, and Vladimir Oblast's, Chuvash Republic, Mari El Republic: no specific localities), 2010c:108 (Russia: Chuvash Republic: State Nature Reserve “Prisurskiy”); J. Neumayer, 2010:334 (Austria: Niederösterreich: Thayatal National Park); Saure, 2010a:88 (Germany: Berlin-Reinickendorf: Baumberge), 2010b:176 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:137 (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:346 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records), 2010c:397 (Sweden: Öland: Byrums Sandvik; Södermanland: Ören, Rassa); Archer, 2011a:42 (Great Britain: Yorkshire: Strensall Common); Gogala, 2011:12 (Slovenia); Józán, 2011:179 (in checklist of Sphecidae s.l. of Hungary); Mokrousov, Berezin, and Egorov, 2011:78 (Russia: Chuvash Republic); Saure, 2011a:6 (Germany: Berlin: former airport Tempelhof); Schmid-Egger, 2011c:556 (Austria: Tirol: Tiroler Lech Nature Park); Schüepp, Herrmann, Herzog, and Schmidt-Engling, 2011:716 (Switzerland plateau between Bern, Fribourg, and Solothurn, habitat fragmentation); Shlyakhtenok, 2011:95 (Belarus: city of Minsk); Theunert, 2011a:21 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:154 (Germany: not endangered in Hessen); Ziska and Saure, 2011:109 (Germany: Berlin: Tegeler Fließ valley); Amolin, 2012:29 (Ukraine: Donetsk); Archer, 2012:183 (Great Britain: urban York); Boillat, 2012:228 (Switzerland: in checklist of insects of Canton de Genève); Franzén, Molander, Norén, and Nilsson, 2012:26 (Sweden: Skåne: Kullaberg Peninsula); Larivière, Chapelin-Viscardi, and Maillet-Mezeray, 2012:296 (France: Essonne: Boigneville); Shlyakhtenok, 2012a:171 (Belarus', and Russia: Kirov Oblast': Arkhangelskoye, and Krasnaya Polana near Sochi: collected in private plots), 2012b:92 (Belarus': Beresina National Reserve: overgrowing dry meadow); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di

San Rossore); Terayama, 2012:3 (in key to Pemphredonini of Japan), 10 (description), 18 (in checklist of Pemphredonini of Japan); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Bitsch, Grouet, and Savina, 2013:292 (France: Pyrénées centrales: département d'Ariège: Ascou-Pailhères); Pankov, 2013:230 (Russia: Ivanovo Oblast'); Saure, 2013:20 (Berlin: Treptow-Köpenick: Gosener Wiesen); Shlyakhtenok, 2013:154 (in annotated catalog of aculeate wasps of Belarus'); Vieira, Oliveira, Brewster, and Gayubo, 2013:19 (Portugal: Douro International Natural Park and Serras de Aire e Candeeiros Natural Park); Wiśniowski and Szczepko, 2013:43 (Poland: Kampinos National Park near Warszawa); Zettel, Zimmermann, and Wiesbauer, 2013:12 (Austria: Wien: Donaupark); Bitsch, 2014:407 (France: locality records from départements of Ariège, Essonne, Gironde, Haut-Rhin, Landes, Lot-et-Garonne, Meurthe-et-Moselle, Moselle, and Tarn); U. Frommer, 2014:27 (Germany: Hessen: Lorch); U. Frommer, M. Niehuis, and O. Niehuis, 2014:1322 (Germany, Hessen: Roßstein); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Pagliano, 2014:76 (specimens in Spinola collection, Torino); Yıldırım, Ljubomirov, and Lelej, 2014:10 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:149 (in checklist of Hymenoptera of Turkey); Saure, 2015:14 (Germany: Berlin-Lichterfelde); Else, Bolton, and Broad, 2016:36 (in checklist of Aculeata of Great Britain and Ireland: England, Wales); Mokrousov and Popov, 2016:586 (Russia: Krasnodarskiy Krai); Ruchin and Antropov, 2016:402 (Russia: Mordovian State Nature Reserve); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:31 (Turkey: Tunceli: Pülümür: Balpayam, as *corniger corniger*); Astapenková, Heneberg, and Bogusch, 2017: 7 (reared from galls of *Lipara* sp., Chloropidae) 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); Magdalou, 2017:16 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Forêt de la Massane, Julols); Mokrousov, 2017e:2478 (in catalog of Pemphredoninae of Russia); Shorenko, 2017:78 (in Crimea collected in September). – **As *Pemphredon corniger***: F. Werner, 1927:66 (new combination, Austria: Niederösterreich: River Kamp valley).

As *Passaloecus insignis*: Shuckard, 1837a:189 (in revision of British Aculeata, ♂ only) and F. Smith, 1858c:173 (in revision of British aculeate wasps, ♂ only), corrected to *Passaloecus corniger* by Yarrow, 1970:179; R. Perkins, 1924:223 (Great Britain: Devon).

ssp. *hakusanicus* Tsuneki

Passaloecus corniger hakusanicus Tsuneki, 1955c:19, ♀, ♂. Holotype: ♂, Japan: Fukui Prefecture: Koike (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1955c:4, 5 (in key to *Passaloecus* of Japan); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Haneda, 1968a:45 (Japan); T. Iida, 1968:21 (Japan); Tano, 1968:33 (Japan); Itami, 1969:50 (Japan: Niigata Prefecture); Tsuneki, 1971n:87, 88 (in key to Japanese *Passaloecus*); Nambu, 1973a:152 (Japan: Saitama Prefecture), 1975b:69 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Tano, 1994a:4 (holotype in K. Tsuneki collection); Budrys in Nemkov, Kazenas, Budrys, et Antropov, 1995:402 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:24 (holotype and allotype transferred to Hyogo Mus.); Suda, 2004:37 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:45 (Japan: Gifu Prefecture), 2006a:20 (Japan: Toyama Prefecture).

ssp. *anthrisci* Wolf

Passaloecus corniger var. *anthrisci* Wolf, 1958:14, ♂. Holotype: ♂, Germany: Hessen: Cappel near Marburg (H. Wolf coll.). – **As *Passaloecus corniger anthrisci***: R. Bohart and Menke, 1976:184 (new status, in checklist of world Sphecidae).

10. *cuspidatus* F. Smith

Passaloecus cuspidatus F. Smith, 1856:427, ♀. Holotype or syntypes: ♀, Canada: Hudson Bay: no specific locality (BMNH). – Cresson, 1862:236 (in catalog of North American Hymenoptera), 1887:283 (in catalog of North American Hymenoptera); Ashmead, 1890:32 (in checklist of Hymenoptera of Colorado); W. Fox, 1892h:321 (original description copied); Dalla Torre, 1897:367 (in catalog of world Hymenoptera); Ashmead, 1899d:223 (in checklist of North American Crabronidae), 1902:133 (Alaska: Wrangell); Kohl, 1905d:528 (in checklist of world *Passaloecus*); Ashmead, 1910:139 (Alaska: Wrangell); Yasumatsu, 1934d:109 (in checklist of world *Passaloecus*); Krombein *in* Muesebeck et al., 1951:968 (as tentative synonym of *Passaloecus mandibularis*); Krombein, 1967b:236 (nesting habits observed in artificial nests); Horning and Barr, 1970:103 (USA: Idaho: Craters of the Moon National Monument); Evans, 1972:487 (as *Passaloecus relativus*) and 1973c:148 (Wyoming: Jackson Hole), 154 (nesting habits); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Krombein, 1979b:1605 (in catalog of North American Hymenoptera); Vincent, 1979:129 (summary of nesting habits), 151 (in revision of North American *Passaloecus*); Finnamore, 1982:75 (in Sphecid Fauna of Southern Quebec); Radović, 1985:64 (sting apparatus analyzed, as *cuspidarius*); Fricke, 1992a:51 (preference for *Pinus* trap-nests), 1992b:107 (length of cell decreased and prey volume increased, as bore diameter increased), 1993:31 (aphid prey), 1994:210 (Canada: Alberta: Wagner Natural Area 8 km W Edmonton); Ahlstrom, 1995:108 (in checklist of insects of North Carolina); Finnamore, 1995:221 (economics of cell partitions and closures); Finnamore, 1997:887 (Canada: Yukon); Buck, 2004:25 (in checklist of Sphecidae of Ontario, Canada); K. O'Neil and J. O'Neil, 2013:161 (New York State: Roy H. Park Preserve and Dorothy McIlroy Bird Sanctuary); Ratzlaff, 2016:27 (Canada: British Columbia: from Vincent, 1978).

Pemphredon mandibularis Cresson, 1865b:487, ♀. Lectotype: ♀, USA: Colorado Territory: no specific locality (ANSP), designated by Cresson, 1916:102. Synonymized with *Passaloecus cuspidatus* by ... – **As *Passaloecus mandibularis***: Packard, 1867:395 (new combination, in revision of North American *Passaloecus*); Provancher, 1882:98 and 1883b:651 (in revision of Canadian Hymenoptera); Cresson, 1887:283 (in catalog of North American Hymenoptera); Ashmead, 1890:32 (in checklist of Hymenoptera of Colorado); W. Fox, 1892h:330 (in revision of North American Pemphredonini); Dalla Torre, 1897:369 (in catalog of world Hymenoptera); Ashmead, 1899d:223 (in checklist of North American Crabronidae); J. Smith, 1900:516 (in list of insects of New Jersey); Harrington, 1902:220 (Canada: Ontario: Ottawa); Viereck, 1903a:66 (New Mexico: Beulah); Kohl, 1905d:528 (in checklist of world *Passaloecus*); Cameron, 1908c:235 (California); H. Smith, 1908b:393 (in revision of Nebraskan Sphecidae); Rohwer, 1909a:100 (Colorado: Florissant); J. Smith, 1910:676 (in new list of insects of New Jersey); nec Faull, 1913:384 (= *Passaloecus annulatus*); Mickel, 1918b:430 (in catalog of Nebraskan Sphecidae); J.Ch. Bradley, 1928:1014 (in catalog of New York Sphecidae); Yasumatsu, 1934d:110 (in checklist of world *Passaloecus*); Brimley, 1938:445 (North Carolina: Grandfather Mountain, Pineola); Krombein, 1938b:123 (New York State); Strickland, 1947:129 (Canada: Alberta: Baff, Edmonton); Krombein *in* Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera); Krombein, 1952b:178 (USA: West Virginia: Lost River State Park), 1954a:6 (West Virginia: Lost River State Park), 1956a:42 (nesting site, prey), 1958b:24 (prey), 1958f:190 (in supplement to catalog of North American Hymenoptera: nesting site, prey); Fye, 1956:750 (trap nest; prey: aphids *Cinara* sp.; resin used for cell partitions); Krombein, 1956a:42 (nest, prey); Evans, 1958c:131 (description of larva), 1959b:167 (description of larva); Steiner, 1959:66 (Canada: British Columbia: Nanaimo); Krombein, 1962b:13 (infestation by acarid *Lackerbaueria krombeini* Baker), 1963f:275 (Maryland: Plummers Island near Washington, D.C.); Evans, 1964d:249 (additional description of larva); D. Evans, 1985:22 (Canada: British Columbia: southern Vancouver Island: associated with *Quercus garryana* Douglas); Fricke, 1991b:124 (trap-nest bore diameter preferences).

Passaloecus distinctus W. Fox, 1892h:319, ♂. Lectotype: ♂, USA: Massachusetts: Beverly (ANSP), designated by Cresson, 1928:51. Synonymized with *Passaloecus mandibularis* by Krombein *in* Muesebeck et al., 1951:968. – Dalla

Torre, 1897:368 (in catalog of world Hymenoptera); Ashmead, 1899d:223 (in checklist of North American Crabronidae); Kohl, 1905d:528 (in checklist of world *Passaloecus*); J.Ch. Bradley, 1928:1014 (in catalog of New York Sphecidae: Ithaca); Yasumatsu, 1934d:109 (in checklist of world *Passaloecus*); Krombein, 1938b:124 (previously listed from Ithaca, New York).

Passaloecus dispar W. Fox, 1892h:320, ♂. Lectotype: USA: Nevada: no specific locality (ANSP), designated by Cresson, 1928:51. Synonymized with *Passaloecus cuspidatus* by Vincent in R. Bohart and Menke, 1976:184. – Dalla Torre, 1897:368 (in catalog of world Hymenoptera); Ashmead, 1899d:223 (in checklist of North American Crabronidae); Kohl, 1905d:528 (in checklist of world *Passaloecus*); Yasumatsu, 1934d:109 (in checklist of world *Passaloecus*); Krombein in Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera).

11. *cuspidifrons* Merisuo

Passaloecus cuspidifrons Merisuo, 1976c:140, ♀, ♂. Holotype: ♀, Tajikistan: Hodzha-Obigarm (ZIN). – Kazenas, 2001:22 (in checklist of Sphecidae of Kazakhstan and Central Asia).

12. *dubius* Tsuneki

Passaloecus dubius Tsuneki, 1955c:17, ♀. Holotype: ♀, Japan: Ishikawa Prefecture: Misudani near Koike (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1955c:5 (in key to *Passaloecus* of Japan), 1959b:106 (description of ♂); Tano, 1968:33 (Japan); Tsuneki, 1971n:87 (in key to Japanese *Passaloecus*), 1973l:65, 68 (nesting habits); Nambu, 1973a:152 (Japan: Saitama Prefecture), 1975b:69 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Tano, 1994a:4 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:25 (holotype transferred to Hyogo Mus.); Togashi, 2001:19 (Japan: Ishikawa Prefecture: Shiramine); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:31 (Japan: Gifu Prefecture); Suda, 2004:37 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:45 (Japan: Gifu Prefecture), 2006a:20 (Japan: Toyama Prefecture); Terayama, 2012:3 (in key to Pemphredonini of Japan), 11 (description), 18 (in checklist of Pemphredonini of Japan).

13. *eremita* Kohl

Passaloecus eremita Kohl, 1893a:37, ♀. Syntypes: Austria: Niederösterreich: Piesting (NHMW). – Dalla Torre, 1897:368 (in catalog of world Hymenoptera); Kohl, 1905d:524 (in key to Palearctic *Passaloecus*); Schmiedeknecht, 1907:209, 210 (in key to Hymenoptera of Central Europe); Kohl, 1912a:63 (Austria: Tirol: Innsbruck; and Südtirol: Seiser Alpe, now in Italy: Trentino-Alto Adige Region: Alpe di Siusi); Noskiewicz, 1918:137 (Galicia, now western Ukraine: Brzuchowice near Lwów); Stöckert, 1919:40 (Germany: Franken); Bischoff, 1925:299 (Latvia); Hellén, 1926:93 (recorded from Finland); F. Werner, 1927:66 (Austria: Niederösterreich: River Kamp valley); Schmiedeknecht, 1930:672, 673 (in keys to Hymenoptera of North and Central Europe); Pulkkinen, 1931:94 (in revision of Sphecidae of Finland); Bondroit, 1932:35 (first record from Belgium: Forêt de Soignes), 1933:30 (Belgium: Bruxelles); Yasumatsu, 1934d:110 (in checklist of world *Passaloecus*); Forsius in Forsius and Hellén, 1935:11 (in checklist of Hymenoptera of Finland); Crèvecoeur and Maréchal, 1936:251 (in catalog of Belgian Hymenoptera); Kuntze and Noskiewicz, 1938:377 (in Poland known only from Podole region, now Ukraine); Móczár, 1938c:81 (Hungary: Kőszeg Hills); Šnoflák, 1944a:143 (Czech Republic: serpentine steppe near Mohelno); Šnoflák in Zavdil and Šnoflák, 1948:48 (in key to Sphecidae of Czechoslovakia); Ribaut, 1952:26 (in revision of *Passaloecus* of France); Blüthgen, 1951:232 (Germany: Dessau/Mulde); Nouvel and Ribaut, 1953:180 (France: Haute-Garonne: Saint-Béat); Fahlander, 1954:251 (Sweden: Gästrikland Region); Kjellander, 1954b:246 (Sweden); Vogrin, 1955:39 (Yugoslavia); Wolf, 1959b:27 (known from Germany, but not from Nassau); Noskiewicz and Puławski, 1960:64, 65 (in key to Polish Sphecidae, not yet found in Poland); Janvier, 1961b:867 (nesting habits); Stritt, 1962:50 (Germany: Baden-Württemberg: Wutach area); Valkeila, 1962b:67 (southwestern Finland); Valkeila, Brander, and Käpylä, 1963:41 (Finland: historical region Lounais-Hämeen = southwest Häme); Babiý, 1964:116 (Austria: Land Salzburg);

de Beaumont, 1964c:109 (in Sphecidae Fauna of Switzerland); Evans, 1964b:251 (discussion of Janvier's, 1961, description of larva); Bonelli, 1966c:219 (Italy: Trentino–Alto Adige: Alpe di Siusi); Gauss, 1966a:66 (Germany: Baden-Württemberg), 1967:556 (Germany: Baden-Württemberg); Niedl and Deneš, 1967:77 (Czech Republic: Třeboň area); Lefeber, 1969a:79 (Netherlands: Beetsterzwaag); Schmidt, 1969:165 (Germany: Rhein-Main area); Oehlke, 1970:745 (German Democratic Republic); Tumšs, 1970:75 (Latvia); Gauss, 1971:418 (Germany: Baden-Württemberg: Wutach River area); Lefeber, 1971a:18 (Belgium: Genk); Lomholdt, 1971:122 (first record from Denmark: Tibirke Sand); D. Peters, 1973b:164 (Germany: reared from artificial nests); Schmidt, 1971b:42 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mombacher Feld); Stritt, 1971a:105 (Germany: Baden-Württemberg: Karlsruhe); Balthasar, 1972:195 (in Sphecidae Fauna of Czechoslovakia); Merisuo, 1972c:204 (tyloids on male antenna), 205 (in list of *Passaloeucus* of Finland, with bibliographic references); Lomholdt, 1973b:29–41 (nesting habits); Merisuo, 1973c:109 (in key to *Passaloeucus* of Finland), 112 (locality records from Finland); Leclercq, 1974b:199 (distribution in Belgium; France and Czechoslovakia: locality records); Merisuo, 1974a:14 (member of *corniger* species group); Lefeber, 1975b:156 (Belgium); Lomholdt, 1975c:121 (in Sphecidae Fauna of Fennoscandia and Denmark); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Eck, 1976:93 (German Democratic Republic); D. Peters, 1976:6 (Germany: Hessen: Bieber); Haeseler, 1977a:26 (Germany: Niedersachsen: Haywiek 6 km W Bad Zwischenahn); Kolesnikov, 1977:319 (Russia: Bryansk Oblast); Schmidt, 1977:97 (Germany: Baden-Württemberg: Enzklösterle in Schwarzwald); van der Zanden, 1977a:18 (Netherlands: Markelo); Pulawski, 1978:248 (in key to Sphecidae of European part of former USSR); Schwammbberger, 1978:418 (Germany: Württemberg); Preuss, 1980a:21 (nesting in stems of *Phragmites*), 25 (nesting in artificial nests); Richards, 1980:72 (in key to Sphecidae of British Isles); Westrich, 1980:631 (Germany: Baden-Württemberg: Tübingen area); Dollfuss and Ressler, 1981:321 (Austria: Niederösterreich: Scheibbs District); Skibińska, 1981:357 (Poland: Warszawa-Białoleka); Woydak, 1981:38 (Germany: Westfalen: Hamm); Axelsson, 1982:79 (Sweden); Dicker, 1982:117 (Great Britain: Sussex: Crowborough, Midhurst, comparison with *Passaloeucus corniger*); Gauss, 1982:74 (nesting in old galleries of bark-beetles); Dollfuss, 1983a:76 (Austria: endangered in Niederösterreich), 78 (Austria: endangered in Oberösterreich), 79 (Austria: endangered in Salzburg area), 80 (Austria: endangered in Tirol), 1983b:7 (in catalog of Sphecidae of Austria); Lefeber, 1983a:84 (Netherlands: Waddendistrict: Island of Vlieland); Riemann, 1983:82 (Germany: Bremen-Daverden area); Haack, Tschardtke, and Vidal, 1984:131 (Germany: Hamburg area); Lefeber, 1984:29 (Netherlands: Maastricht); Schmidt, 1984:286 (Germany: Baden-Württemberg); Schmidt and Westrich, 1984:240 (Germany: Rheinland-Pfalz: Bad Münster); Haeseler, 1985c:571 (Germany: Friesian Islands); Lefeber, 1985:87 (Netherlands: southern Limburg); Brechtel, 1986:65 (Germany: Südpfalz); Piek and Spanjer, 1986:186 (in list of Sphecidae with known prey); Skibińska, 1986b:150, 153 (Poland: suburbs of Warszawa); Steiner, 1986:100 (references to papers on nesting habits); Vikberg, 1986b:75 (Finland); Kowalczyk and Watała, 1987:60 (Poland: Konewka Nature Reserve in Łódź Upland); Schmidt and Westrich, 1987:368 (Germany: Mainz area); Dollfuss, 1988:11 (Austria: Bismberg); Kowalczyk, 1988a:44 (Poland: Rogów), 1988b:64 (Poland: environs of Łódź); Dollfuss, 1989:11 (type material in NHMW); Jacobs, 1989:9 (Germany: Mecklenburg-Vorpommern); Nilsson, 1989:47 (Sweden); Pádr *in* Šedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Skibińska, 1989a:204 (Poland: Warszawa area); Weiffenbach, 1989:106 (Germany: Hessen: Gießen area); Jacobs and Oehlke, 1990:153 (new records from German Democratic Republic); Kowalczyk, 1990:290 (Poland: Góry Świętokrzyskie); Pádr, 1990:79 (Czech Republic: Praha area); Pagliano, 1990:114 (in catalog of Italian Sphecidae); Schwammbberger and Priesner, 1990:537 (Austria: Kärnten); Yeo, 1990:101 (Great Britain: Cambridge); Day, 1991:xvii (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:73 (in key to Sphecidae of North and Central Europe); Kowalczyk, 1991a:89, 104 (Poland: Łódź); Nilsson, 1991:83 (Sweden: Lake Mälaren); van der Smissen, 1991:97 (northwest Germany); Budrys, 1992:23 (in list of Sphecidae of Lithuania); Gusenleitner, 1992:684 (Austria: Steiermark); K. Weber, 1992:88 (Germany: Bayern: Bamberg District); Kuhlmann, 1993:77 (Germany: known from Westfalen); Luig, 1993:43 (Estonia);

Wiśniowski, 1993a:97 (Poland: in checklist of Sphecidae of Białowieża Primeval Forest); Kowalczyk, 1994:73 (Poland: Lagiewniki forest in Łódź); Theunert, 1994c:47 (Germany: summary of records from Niedersachsen and Bremen); Wickl and Wickl, 1994:194 (Germany: Bayern: Oberpfalz, list of chrysidid, ichneumonid, and chalcidid nest parasites); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian fauna); Schmid-Egger, 1995:62 (Germany: northwest Baden-Württemberg); Schmid-Egger, Risch, and Niehuis, 1995:201 (summary of records from Germany: Rheinland-Pfalz Province); Shlyakhtenok, 1995:193 (Belarus': Berezinsky Nature Reserve); Skibińska, 1995:423, 425, 426, 427 (Poland: pine forest in Białowieża Primeval Forest); Arens, 1996:440 (Germany: Bayern: Bayreuth area); Blösch, 1996:3 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Gusenleitner, 1996a:7 (Austria: Steiermark); Jakubzik, 1996:253 (Germany: Köln); Jakubzik and Cölln, 1996b:400 (Germany: Rheinland-Pfalz); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: not endangered in Baden-Württemberg); Shlyakhtenok, 1996:304 (Belarus': Berezinsky Nature Reserve); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Woydak, 1996:28 (Germany: Westfalen: summary of distribution and nesting habits); Celary, 1997:57 (in checklist of Animals of Poland); Else, 1997:13 (distribution in Great Britain, nesting habits); Schmidt and Schmid-Egger, 1997:23 (in checklist of German Sphecidae); Haeseler and Ritzau, 1998:51 (Germany: Bremen: Island of Harriersand in Weser River); Kulik, 1998:131 (northwest Germany); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); Tschardtke, Gathmann, and Steffan-Deventer, 1998:718 (trap-nesting in Germany); van der Smissen, 1998:65 (Germany: Schleswig-Holstein: NW Oldenburg, Wesloer Forst); Blösch, 1999:19 (male precopulatory behavior); Cölln and Jakubzik, 1999:29 (Germany: Rheinland-Pfalz: Keuper-Scharren SW Hungerburg); Gusenleitner, 1999:598 (Austria: Vorarlberg: Vandans NW Schruns); Ljubomirov, 1999b:48 (Bulgaria: Mount Vitosha near Sofia); Luig and Voolma, 1999:177 (Estonia); Majzlan, Rychlík, and Deván, 1999:146 (Slovakia: Čenkovská Step Nature Reserve); Pauly, 1999:108 (in catalog of Belgian aculeates); M. Schwarz, 1999:85 (Austria: Oberösterreich: city of Linz area); Theunert, 1999:138 (Germany: Niedersachsen); Zehnder and Zettel, 1999:131 (Switzerland: recolonization of flooded area in Valais Canton); Blösch, 2000:187 (in Sphecidae Fauna of Germany); Esenbekova and Kazenas, 2000:21 (southeast Kazakhstan: 2 km SW Alma Ata); Jacobs, 2000:9, 17 (Germany: probably endangered in Mecklenburg-Vorpommern); Kazenas, 2000e:150 (in Sphecidae Fauna of Kazakhstan); M. Mader and Chalwatzis, 2000:60 (Germany: Hessen: Oderwald Mountains); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Wiśniowski, 2000:161 (Poland: Bieszczady Mountains); Dollfuss and Bitsch *in* Bitsch et al., 2001:99 (in Sphecidae Fauna of Western Europe); Haeseler, 2001:266 (Germany: Niedersachsen: Brookdeich near Oldenburg); Ohl et al., 2001:141 (distribution in Germany by provinces); Skibińska, 2001:219 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:187 (Poland: Kampinos National Park near Warszawa); van der Smissen, 2001:62 (Germany: Schleswig-Holstein: extremely rare); Archer and Edwards, 2002:103 (Great Britain: West Sussex: Ambersham and Iping commons); Bergsten, Hoffsten, and Hellqvist, 2002:38 (Sweden: Hälsingland: Övre Tälningån); Bieri, 2002:77 (Liechtenstein); Gayubo, González, Tormos, and Asís, 2002:90 (distribution in Iberian Peninsula); Kazenas, 2002a:52 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Shlyakhtenok and Skibińska, 2002:32 (Belarus': no specific locality); Steffan-Deventer, 2002:634 (Germany: Göttingen area); Wiśniowski, 2002:69 (Poland: Ojców National Park); Bergsten, Ekerholm, Hellqvist, Hilszczanski, Nilsson, Pettersson, and Werner, 2003:71 (Sweden: Västerbotten: Island of Romelsön); Drewes, 2003:140 (Germany: Hessen: Gießen); Wiśniowski *in* Dylewska and Wiśniowski, 2003:143 (Poland: Ojców National Park); 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: Děčín Sandstone Uplands: forest district Snežnik: birch stands in air-polluted area), 2003b:203 (Northern Czech Republic: spruce stands in air-pollution region); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:68 (Germany: in catalog of wasps and bees of Bayern); von der Heide

and Metscher, 2003:103 (Germany: Niedersachsen: Emsland area); Wiśniowski and Werstak, 2003:77 (Poland: Pieniny National Park); Bergsten, Nilsson, and Hellqvist, 2004:7 (Sweden: Västerbotten: Nordmaling); Budrienė, Budrys, and Nevronytė, 2004:22 (Lithuania: nesting in trap nests); Deván, 2004:147 (western Slovakia); Dollfuss, 2004a:119 (Kazakhstan: Almaty); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Jakubzik, Niehuis, and Cölln, 2004:458 (Germany: Rheinland-Pfalz: Roßstein in Rhein valley at 50°06'42"N 7°43'87"E); Majzlan and Deván, 2004:30 (Slovakia: Sekule), 33 (Slovakia: Malacky-Široké); Skibińska in Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Blösch, 2005:3 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Burger, 2005:34 (Germany: Thüringen); Gülmez and Tüzün, 2005:54 (Turkey: Ankara Province); Hallin, 2005:16 (Sweden: Örebro County: Hällefors), 29 (Sweden: Örebro County: Nydalen); Kofler, 2005:170 (Austria: Tirol: Lienz District: Unterpeischlach in Kals Common, Ort in Leisach Common); Kowalczyk and Kurzac, 2005:106 (Poland: Botanical Garden in Łódź); Pagliano and Negrisola, 2005:456 (in Sphecid Fauna of Italy); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Riemann and Hohmann, 2005:563 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:18 (Germany: Berlin); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:43 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Wiśniowski, 2005a:312 (Poland: Ojców National Park; occurring only in forest and on wooden buildings); Archer, 2006b:84 (Great Britain: Yorkshire: Sand Hutton); U. Frommer and Tischendorf, 2006:89 (Germany: Hessen: Schlüchterner Becken); Gayubo, González, de la Nuez, Asís, and Tormos, 2006:210 (Spain: Huesca: Ainsa); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Shlyakhtenok, 2006:110 (Belarus: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund); Beavis, 2007:96 (Great Britain: Tunbridge Wells and Central High Weald); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:456 (recorded from Spain by Gayubo et al., 2002, 2006); Dvořák, Straka, Smetana, Halada, Vepřek, and Karas, 2007:169 (Czech Republic: Vyšenské Kopce National Nature Reserve); Jacobs, 2007:75, 78 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:25 (Germany: northwestern Sachsen); Saure, 2007:83 (Germany: in checklist of Aculeata of Brandenburg); Shlyakhtenok, 2007a:299 (Belarus: Berezinsky Nature Reserve); Venne, Bleidorn, and Lauterbach, 2007:302 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:201 (in catalog of Sphecidae of Czech Republic and Slovakia); Archer, 2008c:145 (Great Britain: Nottinghamshire: Spalford Warren); Gayubo, González, Tormos, and Asís, 2008:140 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia), 141 (Spain: Salamanca: Valle de Las Batuecas, the westernmost record from Spain); Haeseler, 2008:308 (Germany: Friesian Islands); Kazenas, 2008a:100 (southeastern Kazakhstan: near Alma Aata); Ljubomirov and Yildirim, 2008:178 (in catalog of Crabronidae of Turkey); Theunert, 2008:65 (Germany: map of distribution in Niedersachsen and Bremen); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen); Mokrousov, 2009:291 (Russia: Republic Mari El); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:71 (Norway: locality records); Pagliano, 2009:187 (Italy: Toscana: Fauglia); Straka, Dvořák, and Bogusch, 2009:263 (Czech Republic: Rašeliniště Jizerky National Nature Reserve); Venne, 2009:111 (Germany: Nordrhein-Westfalen: Holte-Stukenbrock, associated with *Frangula alnus* Miller, Rhamnaceae); Archer, 2010a:52 (Great Britain: Watsonian Nottinghamshire: Spalford Warren); Ermilov and Mokrousov, 2010:91 (phoretic mites *Calvolia* sp., *Lackerbaueria cribratissima*, *Parawinterschmidtia kneissi*, *Probonomoia pini*, *Schwiebea nova*, and *Schulzea caucasica* in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Johansson, 2010:121 (Sweden: Småland: upper Emå River valley); Mokrousov, 2010a:63 (Russia: Kirov and Nizhniy Novgorod Oblast's, Mari El Republic: no specific localities); Saure, 2010b:176 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: relatively common);

Schmidt, 2010:137 (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:346 (Germany: Schleswig-Holstein: locality records), 2010c:397 (Sweden: Öland: Byrums Sandvik); Schmid-Egger, 2011c:556 (Austria: Tirol: Tiroler Lech Nature Park); Schüepp, Herrmann, Herzog, and Schmidt-Engling, 2011:716 (Switzerland plateau between Bern, Fribourg, and Solothurn, habitat fragmentation); Shlyakhtenok, 2011:95 (Belarus: city of Minsk); Theunert, 2011a:21 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:154 (Germany: not endangered in Hessen); Boillat, 2012:228 (Switzerland: in checklist of insects of Canton de Genève); Cölln, Jakubzik, and Krinkler, 2012:25 (Germany: Nordrhein-Westfalen: Leverkusen); Larivière, Chapelin-Viscardi, and Maillot-Mezeray, 2012:296 (France: Essonne: Maise); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Pankov, 2013:230 (Russia: Ivanovo Oblast'); Saure, 2013:20 (Berlin: Treptow-Köpenick: Gosener Wiesen); Shlyakhtenok, 2013:155 (in annotated catalog of aculeate wasps of Belarus'); Vieira, Oliveira, Brewster, and Gayubo, 2013:19 (Portugal: Douro International Natural Park); Bitsch, 2014:407 (France: Aude: Belvianes; Essonne: Maise; Lot: Cahors, Lavercantière; Pyrénées-Orientales: Olette); U. Frommer, 2014:27 (Germany: Hessen: Lorch); U. Frommer, M. Niehuis, and O. Niehuis, 2014:1322 (Germany, Hessen: Roßstein); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Koçak and Kemal, 2015:149 (in checklist of Hymenoptera of Turkey) Else, Bolton, and Broad, 2016:37 (in checklist of Aculeata of Great Britain and Ireland: England); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Yıldırım, Ljubomirov, and Lelej, 2014:10 (distribution in Turkey by biogeographic provinces); Saure, 2015:14 (Germany: Berlin-Lichterfelde); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia).

14. *erugatus* Vincent

Passaloecus erugatus Vincent, 1979:176, ♀, ♂. Holotype: ♂, USA: California: Mono County: Lee Vining (USNM).

15. *gallicola* Vincent

Passaloecus gallicola Vincent, 1979:69, ♀, ♂. Holotype: ♀, USA: California: Los Angeles County: Camp Baldy (USNM). – Vincent, 1979:135 (summary of nesting habits).

16. *gracilis* (Curtis)

NOTE: Shuckard (1837) and subsequent authors incorrectly used the name *gracilis* for a different species (*Passaloecus singularis*) until the identity of *gracilis* was established by Yarrow (1970).

Diodontus gracilis Curtis, 1834:pl.496. Lectotype: ♂, Great Britain: Dorset County: Glanville Wooton (Curtis collection, Melbourne, Australia), designated by Yarrow, 1970:174. – **As *Passaloecus gracilis***: Kirchner, 1867:222 (new combination, in catalog of European Hymenoptera); Yarrow, 1970:173 (study of type), 179 (in list of British *Passaloecus*, with bibliographic references), 185 (Great Britain: most southern and midland counties as far north as Lancashire); Danks, 1971a:339 (nesting habits), 1971b:67-73 (Great Britain: Berkshire: Silwood Park), 1971c:80 (nest mortality); Dathe, 1971:234 (Germany: Berlin Zoological Garden; phenology); Felton, 1971:213 (England: Kent: Sittingbourne); Kofler, 1972:11 (= *turionum*, *brevicornis*, *insignis* of authors; Austria: eastern Tirol); Merisuo, 1972c:205 (tyloids on male antenna), 206 (in list of *Passaloecus* of Finland, with bibliographic references), 1973c:110 (in key to *Passaloecus* of Finland), 114 (locality records from Finland); Corbet and Backhouse, 1974:11-30 (= *insignis* of authors; nesting habits, feeding by adults); Kofler, 1974:320 (= *turionum*, *brevicornis*, *insignis* of authors; Austria: Kärnten); Lefeber, 1974:76 (Netherlands), 1975b:154 (Belgium); Merisuo, 1974a:14 (member of *borealis* species group); Lomholdt, 1975b:32 (Denmark: Island of Anholt), 1975c:117 (in Sphecid Fauna of Fennoscandia and Denmark); Mudd and Corbet, 1975:255-257 (use of pine resin for nest closures); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Cretin and Robert, 1976:47 (France: Doubs: Chassagne-Saint Denis); Eck, 1976:93 (German Democratic Republic); D.

Peters, 1976:6 (Germany; Hessen: Bieber; immobilizing aphid prey by stinging in flight), 9 (experiments about homing), 11 (use of gaster in cleaning thorax); Banaszak, 1977:112 (sensu Yarrow; Poland: Rogalin near Poznań); Guichard, 1977:252 (Great Britain: Surrey); Kolesnikov, 1977:319 (Ukraine: Bryansk Oblast'); Schmidt, 1977:97 (Germany: Baden-Württemberg: Enzklösterle in Schwarzwald), 1977/78:57 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mainzer Sand); Erlandsson, 1978a:205 (Canary Islands); Haeseler, 1978c:195 (Germany: Friesian Islands: Island of Borkum); Kazenas, 1978b:158 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:248 (in key to Sphecidae of European part of former USSR); Schwammberger, 1978:418 (Germany: Württemberg); Haeseler, 1979:10 (Germany: Niedersachsen: 10 km S Oldenburg); Krombein, 1979b:1606 (in catalog of North American Hymenoptera); Richards, 1979:400 (British Channel Islands); Vincent, 1979:136 (summary of nesting habits), 177 (in revision of North American *Passaloecus*); Pagliano, 1980:131 (Italy: Piemonte); Richards, 1980:72 (in key to Sphecidae of British Isles); Westrich, 1980:631 (Germany: Baden-Württemberg: Tübingen area); Dollfuss and Ressler, 1981:322 (Austria: Niederösterreich: Scheibbs District); Gayubo, 1981a:146 (northern Spain: Sierra de Béjar); Józán, 1981:305 (Hungary: Hortobágy National Park); Skibińska, 1981:357 (Poland: Warszawa-Białoleka); Thiede, 1981:46 (Germany: Baden-Württemberg: Ulm, reared from artificial nest with acrylic tubes); Finnamore, 1982:77 (in Sphecid Fauna of Southern Quebec); nec Gauss, 1982:76 (= *singularis* as demonstrated by simultaneous use of *turionum*); Gayubo and Nieves, 1982:191 (nesting in abandoned galls on oak); Leclercq, 1982a:124 (Belgium: Liège); Skibińska, 1982:119, 122 (Poland: Mazowian Voivodship: Białoleka, Warszawa, Wola Mrokowska); Dollfuss, 1983b:7 (in catalog of Sphecidae of Austria); Józán, 1983:100 (Hungary); Lefeber, 1983a:84 (Netherlands: Waddendistrict: northern coast sand dunes); Westrich and Schmidt, 1983a:213 (recognition characters, comparison with *Passaloecus borealis* and *turionum*); Gayubo, 1984a:168 (Spain: Salamanca Province); Jacob-Remacle, 1984:260 (Belgium: urban center of Liège); Lefeber, 1984:29 (Netherlands: Maastricht); Mingo and Gayubo, 1984:111 (Spain); Schmidt, 1984:286 (Germany: Baden-Württemberg); Schmidt and Westrich, 1984:240 (Germany: Rheinland-Pfalz: Bad Münster); Haeseler, 1985c:571 (Germany: Friesian Islands); Jacob-Remacle, 1985:408 (Belgium; second occupant in a composite nest); Józán, 1985b:56 (Hungary south of Lake Balaton), 77 (floral records), 83 (ecological and zoogeographic characteristics); Islamov, 1985:530 (Uzbekistan: Tashkent Oblast'); Lefeber, 1985:87 (Netherlands: southern Limburg); Gayubo, 1986c:31 (Spain: Zamora Province); Gayubo and Sanza, 1986:38 (Spain: Soria); Jacob-Remacle, 1986:109 (Belgium; trap-nests); Józán, 1986:369 (Hungary: Kiskunság National Park); Piek and Spanjer, 1986:187 (in list of Sphecidae with known prey); Skibińska, 1986b:150, 153 (Poland: suburbs of Warszawa), 160 (gardens), 162 (urban parks), 164 (streetside green), 168 (green areas of housing estates), 173 (various green urban habitats); Vikberg, 1986b:75 (Finland); Schmidt and Westrich, 1987:368 (Germany: Mainz area; = *turionum* auct. nec Dahlbom); Dollfuss, 1988:23 (Austria: Niederösterreich: Oberweiden); Karsai, 1988:99 (Hungary: Kiskunság National Park); Kowalczyk, 1988a:44 (Poland: Rogów); Bałazy, Banaszak, and Michalski, 1989:119 (Poland: Wielkopolski National Park); Jacobs, 1989:9 (Germany: Mecklenburg-Vorpommern); Józán, 1989:101 (Hungary: Tihany Nature Reserve); Kowalczyk, 1988b:64 (Poland: environs of Łódź); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:97 (Belarus: Berezinskiy Nature Reserve); Skibińska, 1989a:204 (Poland: Warszawa area); Archer, 1990b:136 (England: city of Leicester), 1990c:18 (Great Britain: Leicestershire); Gayubo, Asís, and Tormos, 1990a:14 (Spain); Jacobs and Oehlke, 1990:126 (in key to *Passaloecus* of German Democratic Republic), 153 (new records from German Democratic Republic); Kowalczyk, 1990:290 (Poland: Góry Świętokrzyskie); Pádr, 1990:80 (Czech Republic: Praha area); Pagliano, 1990:114 (in catalog of Italian Sphecidae); Rohe, 1990:1049 (Germany: Rheinland-Pfalz: Lenneberg forest); Schwammberger and Priesner, 1990:537 (Austria: Kärnten); von der Heide and Witt, 1990:64 (Germany: Niedersachsen); Gayubo, Borsato, and Osella, 1991:399 (Italy: Piemonte, Veneto); Dollfuss, 1991:73 (in key to Sphecidae of North and Central Europe); Gayubo and Torres, 1991:Table I and p. 81 (Spain:

Salamanca; effects of urban pressure); Jacobs, 1991:46 (Germany: Mecklenburg-Vorpommern: Nature Reserve Elbtaldünen); Jakubzik, 1991:74 (Germany: Köln); Józán, 1991:602 (Hungary: Bátorliget Nature Reserve); Kowalczyk, 1991a:89, 93 (Poland: Łódź), 1991b:120 (Poland: Augustów Forest); Kuhlmann et al., 1991:91 (Germany: Senne Region); Negrisolo, 1991:317 (Italy: Udine Province); N. Schneider, 1991:93 (Luxemburg), 107 (nest structure); van der Smissen, 1991:97 (northwest Germany); Archer, 1992a:56 (Great Britain: Leicestershire); Budrys, 1992:23 (in list of Sphecidae of Lithuania); Gayubo, Borsato, and Osella, 1992:280 (Greece); Józán, 1992b:172 (Hungary: Boronka-melléki Protected Area); K. Weber, 1992:88 (Germany: Bayern: Bamberg District); Wolf, 1992c:22 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Hohmann, La Roche, Ortega, and Barquín, 1993:213 (first record from Canary Islands: Tenerife); Kuhlmann, 1993:77 (Germany: known from Westfalen); Luig, 1993:42 (Estonia); Sorg, 1993:407 (Germany: Rheinland-Pfalz: Nature Reserve Ahrschleife bei Altenahr); Sorg and Wolf, 1993:60 (Germany: Rheinland-Westfalen: Nature Reserve Die Spey); Torregrosa, Gayubo, Tormos, and Asís, 1993:11 (Spain: Alicante Province); Kowalczyk, 1994:73 (Poland: Łagiewniki forest in Łódź); Theunert, 1994c:47 (Germany: summary of records from Niedersachsen and Bremen); Tormos, Asís, and Gayubo, 1994:187, 200 (Spain: Albacete Province); Ahlstrom, 1995:108 (in checklist of insects of North Carolina); Archer, 1995a:23 (Great Britain: Yorkshire: frequency); Gorobchishin, 1995:17 (Ukraine: Kanev Nature Reserve); Józán, 1995:104 (Hungary: projected Duna-Dráva National Park); Negrisolo, 1995a:23 (Italy: Veneto); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian fauna); Schmid-Egger, 1995:63 (Germany: northwest Baden-Württemberg); Schmid-Egger, Risch, and Niehuis, 1995:202 (Germany: summary of records from Rheinland-Pfalz Province); Shlyakhtenok, 1995:193 (Belarus: Berezinsky Nature Reserve); Skibińska, 1995:423, 425 (Poland: pine forest in Białowieża Primeval Forest); Archer, 1996b:121 (Great Britain: Yorkshire); Arens, 1996:440 (Germany: Bayern: Bayreuth area); Harvey and Plant, 1996:77 (Great Britain: summary of records from Essex); Jakubzik, 1996:253 (Germany: Köln); Jakubzik and Cölln, 1996b:400 (Germany: Rheinland-Pfalz); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: not endangered in Baden-Württemberg); Shlyakhtenok, 1996:304 (Belarus: Berezinsky Nature Reserve); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg); Woydak, 1996:29 (Germany: Westfalen: summary of distribution and nesting habits); Celary, 1997:57 (in checklist of Animals of Poland); Esenbekova, 1997:143 (preying on aphids in southeastern Kazakhstan); Schmidt and Schmid-Egger, 1997:23 (in checklist of German Sphecidae); Shlyakhtenok, Blinov, and Belyavskaya, 1997:153 (Belarus: Pripyatskiy National Park); Dollfuss, Gusenleitner, and Bregant, 1998:511 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km WSW Hamburg); González, Gayubo, and Torres, 1998:72, 73 (Spain: Valladolid Province); Haeseler and Ritzau, 1998:51 (Germany: Bremen: Steller Heide); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Józán, 1998:311 (Hungary: Duna-Dráva National Park); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); N. Schneider and Wahis, 1998:22 (Luxemburg: sandstone quarries); Tschardtke, Gathmann, and Steffan-Deventer, 1998:718 (trap-nesting in Germany); van der Smissen, 1998:65 (Germany: Niedersachsen, Schleswig-Holstein); K. Weber, 1998:146 (Germany: Bayern: Bamberg area); Archer, 1999a:9 (Great Britain: Lancashire); Cölln and Jakubzik, 1999:29 (Germany: Rheinland-Pfalz: Keuper-Scharren SW Hungerburg); Erhardt, 1999:75 (Germany: Niedersachsen: Ammerland area); Esenbekova, 1999:201 (southeastern Kazakhstan: nesting in artificial nests); Gayubo, García, Torres, and González, 1999:89 (Spain: Soria Province); González, Gayubo, and Torres, 1999:354 (Spain: Valladolid: Viana de Cega); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); Kuhlmann, Wolf, and Woydak, 1999:569 (Germany: strongly endangered in Nordrhein-Westfalen); Ljubomirov, 1999b:48 (Bulgaria: Mount Vitosha near Sofia); Luig and Voolma, 1999:177 (Estonia); Majzlan, Rychlík, and Deván, 1999:146 (Slovakia:

Čenkovská Step Nature Reserve); Neumayer, Schwarz, and Bregant, 1999:225 (Austria: in checklist of Sphecidae of Land Kärnten); Pauly, 1999:108 (in catalog of Belgian aculeates); M. Schwarz, 1999:85 (Austria: Oberösterreich: city of Linz area); Zehnder and Zettel, 1999:131 (Switzerland: recolonization of flooded area in Valais Canton); Blösch, 2000:191 (in Sphecidae Fauna of Germany); Esenbekova and Kazenas, 2000:21 (southeast Kazakhstan: Alma Ata, 2 km SW, 6 km W, and 3-8 km S Alma Ata); Gayubo, González, and Torres, 2000:184 (Spain: Salamanca Province); González, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Giachino, Grosso, Marchetti, Pagliano, Scaramozzino, and Vailati, 2000:105 (Greece); Jacobs, 2000:9 (Germany: not endangered in Mecklenburg-Vorpommern); Józán, 2000:106 (Hungary: Bakony Mountains); Kazenas, 2000e:151 (in Sphecidae Fauna of Kazakhstan); Ljubomirov, 2000:9 (Bulgaria, specimens in N. Nedelkov collection); Mokrousov, 2000b:30 (Russia: Nizhniy Novgorod Oblast'); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Smit, 2000:174 (Madeira); Archer, 2001:107 (Great Britain: Watsonian Yorkshire); Basset, 2001:80 (France: département de Gironde); Dollfuss and Bitsch *in* Bitsch et al., 2001:100 (in Sphecidae Fauna of Western Europe); Ivanov and Ljubomirov, 2001:211 (Bulgaria: Kresna Gorge at 41°48'N 23°10'E); Józán, 2001:278 (Hungary: Somogy County); Kazenas, 2001:22 (in checklist of Sphecidae of Kazakhstan and Central Asia), 134 (review of known biology); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:141 (distribution in Germany by provinces); Skibińska, 2001:219 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:187 (Poland: Kampinos National Park near Warszawa); van der Smissen, 2001:62 (Germany: not endangered in Schleswig-Holstein); Zettel, Gross, and Mazzucco, 2001:70 (Austria: Wien); Archer, 2002b:125 (Great Britain: Watsonian Yorkshire: distribution map); Archer and Edwards, 2002:103 (Great Britain: West Sussex: Ambersham and Iping commons); Beavis, 2002:110 (Great Britain: Kent: Tunbridge Wells area); Józán, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:52 (geographic distribution, collecting localities in Kazakhstan), Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Krüss and Tschardtke, 2002:1576 (Germany: Schleswig Holstein: number of specimens higher on ungrazed and extensively grazed grassland); Martínez de Murguía, 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, 2002:32 (Belarus: no specific locality); Stefan-Dewenter, 2002:634 (Germany: Göttingen area); Wiśniowski, 2002:69 (Poland: Ojców National Park); Ziska, 2002:9 (Germany: Berlin-Köpenick: Krumme Lake); Baugnée, 2003:65 (Belgium: Namur: Ri d'Hôwisse); Cölln, Esser, and Jakubzik, 2003:62 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); de Bruyn and Sinning, 2003:9 (Germany: Niedersachsen: Wümme-Nordarm northeast of Bremen); Drewes, 2003:140 (Germany: Hessen: Gießen); Esenbekova and Kazenas, 2003:6, 13, and 54 (Kazakhstan: foothills of Zailiyskiy Alatau: nesting in artificial nests), 65 (nest structure); Flügel, 2003:8 (Germany: Hessen: Knüllwald); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); González, Gayubo, Asís, Tormos, and García, 2003:62 (Spain: Soria: Chavaler); Haeseler, 2003:340 (Germany: Niedersachsen: Island of Harriersand near Bremen); Kula and Tyrner, 2003a:150 (Czech Republic: Děčín Sandstone Uplands: forest district Snežnik: birch stands in air-polluted area), 2003b:203 (northern Czech Republic: spruce stands in air-pollution region); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:68 (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); Schmid-Egger, 2003:756 (Italy: Sicilia: Amenta, Castelammare); 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, 2003:143 (Poland: Ojców National Park); Buck, 2004:25 (in checklist of Sphecidae of Ontario, Canada), 29 (distribution within Ontario), 42 (first records from Alberta and

Ontario: list of localities); Budrienė, Budrys, and Nevronytė, 2004:22 (Lithuania: nesting in trap nests); Deván, 2004:147 (western Slovakia); Dollfuss, 2004a:119 (locality records from France, Greece, Italy, Morocco, Turkey, and Ukraine); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 Germany: (in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo et al. 2004:132 (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); Georgiev et al., 2004:239 (Bulgaria: nesting in old galleries of cerambycid *Saperda populnea* (L.)); Jakubzik, Niehuis, and Cölln, 2004:458 (Germany: Rheinland-Pfalz: Roßstein in Rhein valley at 50°06'42"N 7°43'87"E); Majzlan and Deván, 2004:30 (Slovakia: Sekule), 33 (Slovakia: Malacky-Široké); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Shkuratov, 2004a:79 (Russia: Donetsk and Rostov Oblast's); Skibińska in Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Szczepko and Kowalczyk, 2004:125 (Poland: Kampinos National Park near Warszawa); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Burger, 2005:34 (Germany: Thüringen); Cruz-Sánchez, Gayubo, González, and Torres, 2005:221 (Spain: Salamanca: San Martín del Castañar); Ebrahimi, 2005:133 (in key to selected Iranian Sphecidae); Gayubo and Özbek, 2005:37 (Turkey: Erzurum: Đenkaya); Gülmez and Tüzün, 2005:54 (Turkey: Ankara Province); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Jacobs, 2005a:449 (Bulgaria: Begovitsa in Pirin Mountains, Primorsko); Kofler, 2005:170 (Austria: Tirol: Lienz District: several localities); Kowalczyk and Kurzac, 2005:106 (Poland: Botanical Garden in Łódź); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Mandery, 2005:174 (Germany: Bayern: Hainberg Nature Reserve near Nürnberg); Pagliano and Negrisola, 2005:457 (in Sphecid Fauna of Italy); Riemann and Hohmann, 2005:563 (Germany: Niedersachsen: city of Bremen and adjacent area); Robinson, 2005:38 (Great Britain: Cumbria County); Saure, 2005:18 (Germany: Berlin); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:43 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Ljubomirov, 2006:542 (Bulgaria: Rhodope Mountains: Polkovnik Serafimovo Village); N. Schneider, 2006:134, 140, 142 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:111 (Belarus: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006c:303 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Vepřek, 2006:511 (Czech Republic: Kokořínsko area); Baños-Picón, Gayubo, Asís, and González, 2007:257, 259 (Spain: Zamora: Cabañas de Aliste); Beavis, 2007:96 (Great Britain: Tunbridge Wells and Central High Weald); Guldmond, Pijfers, and den Belder, 2007:203 (Netherlands: Gelderland: dairy farm in de Graafschap); Jacobs, 2007:76, 79 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:25 (Germany: northwestern Sachsen); Józán, 2007:173, 179 (Hungary: Zselic hills); Kowalczyk and Nadolski, 2007:284 (Poland: Łódź: railway areas); Saure, 2007:83 (Germany: in checklist of Aculeata of Brandenburg); Vago, 2007:174 (France: départements du Nord, Pas-de-Calais, and Somme); Venne, Bleidorn, and Lauterbach, 2007:302 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:201 (in catalog of Sphecidae of Czech Republic and Slovakia); Blommers, 2008:171 (Netherlands: nesting in abandoned galls of *Andricus kollari*); Danilov, 2008:351 (Russia: Altayskiy Krai: Barnaul area); Gayubo, González, Tormos, and Asís, 2008:140 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Haeseler, 2008:308 (Germany: Friesian Islands); Ljubomirov and Yildirim, 2008:178 (in catalog of Crabronidae of Turkey); Protsenko and Drozdovskaya, 2008:126 (Ukraine: Sumy Oblast: Mogritsa village); Rudoiskatel' and Fadeev, 2008:255 (Russia: Ekaterinburg area, reared from trap nests); Theunert, 2008:65 (Germany: map of distribution in Niedersachsen and Bremen); Archer, 2009:24 (Great Britain: Yorkshire: Sheffield); Dvořák, Bogusch, and Smetana, 2009:81 (Czech Republic: Králický Sněžník National Nature Reserve); Flügel, 2009b:63 (Germany: Hessen: Borken, in inactive open brown coal mine); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen); Gayubo, González, Tormos, and Asís, 2009:362

(Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:622 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:263 (Bulgaria: Maleshevska Planina); Holzschuh, Steffan-Deventer, and Tschamtker, 2009:127 (Germany: Niedersachsen: near Göttingen at 51°30'N 9°54'E, nesting in grass strip corridors in agricultural landscape); Józán, 2009:165 (Croatia: Island of Krk); Livory, Chevin, Lair, Sagot, and Baldock, 2009:16 (France: Département de la Manche); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:71 (Norway: locality records); Pagliano, 2009:187 (Italy: Puglia: Noci; France: Corse: Curzi); Ruchin, Antropov, and Shibayev, 2009:169 (Russia: Republic of Mordovia); Ermilov and Mokrousov: 2010:91 (phoretic mite *Calvolia* sp. in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Johansson, 2010:121 (Sweden: Småland: upper Emå River valley); Mokrousov, 2010a:63 (Russia: Kirov, Nizhniy Novgorod, and Yaroslavl' Oblast's, Chuvash Republic, Mordovian Republic, Tatarstan: no specific localities); Rudoiskatel', 2010:155 (Russia: central and southern Ural Mountains); Rudoiskatel', Fadeev, and Nikolaenkova, 2010:162 (Russia: Kluchi in vicinity of Ekaterinburg at 56°35'N 60°50'E); Saure, 2010b:176 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:137 (Germany: Bayern: collected along Main-Donau canal); Shorenko and Konovalov, 2010:25 (Ukraine: Khar'kov Oblast': village Ekaterinovka); van der Smissen, 2010a:346 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records), 2010c:397 (Sweden: Öland: Rönnerum); Baghirov, 2011b:151 (Russia: Altayskiy Krai: Savvushka; Altay Republic: Kuray); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:497 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Gogala, 2011:12 (Slovenia); Józán, 2011:179 (in checklist of Sphecidae s.l. of Hungary); Mokrousov, Berezin, and Egorov, 2011:79 (Russia: Chuvash Republic); Schmid-Egger, 2011a:39 (France: Parc National du Mercantour: Col de Cayolle, Fontan, Tende; and Italy: Lago Rovine); Schüepp, Herrmann, Herzog, and Schmidt-Engling, 2011:716 (Switzerland plateau between Bern, Fribourg, and Solothurn, habitat fragmentation); Theunert, 2011a:21 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:155 (Germany: not endangered in Hessen); Archer, 2012:183 (Great Britain: urban York); Boillat, 2012:228 (Switzerland: in checklist of insects of Canton de Genève); Franzén, Molander, Norén, and Nilsson, 2012:26 (Sweden: Skåne: Kullaberg Peninsula); Larivière, Chapelin-Viscardi, and Maillat-Mezeray, 2012:296 (France: Essonne: Boigneville and Maise); Shlyakhtenok, 2012a:171 (Belarus', and Russia: Krasnaya Polana near Sochi: collected in private plots), 2012b:92 (Belarus': Beresina National Reserve: overgrowing dry meadow); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Bitsch, Grouet, and Savina, 2013:292 (France: Pyrénées-Orientales: col de Puymorens); Kazenas, 2013a:48, 49 (color photographs of adult wasps, short information on geographic distribution and nesting habits); Saure, 2013:20 (Berlin: Treptow-Köpenick: Gosener Wiesen); Shlyakhtenok, 2013:155 (in annotated catalog of aculeate wasps of Belarus'); Vieira, Oliveira, Brewster, and Gayubo, 2013:19 (Portugal: Douro International Natural Park and Serras de Aire e Candeeiros Natural Park); Wiśniowski and Szczepko, 2013:44 (Poland: Kampinos National Park near Warszawa); Baldock, 2014:358 (Spain: Island of Mallorca); Bitsch, 2014:407 (France: Essonne: Boigneville, Maise; Gard: Saint-Félix-de-Paillères; Haute-Vienne: Azat-le-Riz; Tarn: Vaour); Ebrahimi, 2014:44 (Iran: Tehrān: Shemirān: Darband); U. Frommer, 2014:27 (Germany: Hessen: Lorch); U. Frommer, M. Niehuis, and O. Niehuis, 2014:1322 (Germany, Hessen: Roßstein); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Mokrousov and Vafin, 2014:59 (Russia: Republic of Tatarstan); Pagliano, 2014:76 (specimens in Spinola collection, Torino); Yıldırım, Ljubomirov, and Lelej, 2014:10 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:149 (in

checklist of Hymenoptera of Turkey); MacIvor, 2015:4 (Canada: Ontario: Toronto: nesting on vegetated roofs); P. Rosa and Pagliano, 2015:104 (Italy: Lombardia and Piemonte: Parco del Ticino); Simon, Lorthiois, and Macé, 2015:54 (France: alluvial terraces in Seine-Maritime Department: Anneville-Ambourville); Else, Bolton, and Broad, 2016:37 (in checklist of Aculeata of Great Britain and Ireland: England); Mokrousov and Popov, 2016:587 (Russia: Abkhazia, Krasnodarskiy Krai); Sadeghi, Fallahzadeh, Ostovan, Ljubomirov, and Hesami, 2016:431 (Iran: Fars Province); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Vas, Szöllösi-Tóth, and Muskovits, 2016:154 (Romania: Sălaj County); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:31 (Turkey: Erzurum and Isparta provinces); Astapenková, Heneberg, and Bogusch, 2017: 7 (reared from galls of *Lipara* sp., Chloropidae); 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, 2017:5 (Germany: Rheinland-Pfalz: Eschkopf and Doline near Rockensüß); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:74 (Iran: known from Tehran Province); Magdalou, 2017:16 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Julols); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia); Shorenko, 2017:78 (in Crimea collected in June and July).

Passaloecus brevicornis A. Morawitz, 1864:462, footnote, ♀, ♂. Syntypes: origin not specified (ZIN). Synonymized with ... – Brischke, 1864:209 (Germany: Preussen Province, now Poland: Pomorze Region); Thomson, 1870:237 (in revision of Swedish wasps; = *insignis*), 1874:199 (in revision of Hymenoptera of Scandinavia; = *insignis*); Kohl, 1880:139 (Austria: Tirol and Italy: Trentino-Alto Adige), 1883e:660 (Switzerland); Sickmann, 1883:79 (Germany: Niedersachsen: Wellingholthausen); von Heyden, 1884:120 (Germany: Frankfurt am Main area); Wüstnei, 1886:39 (= *insignis*; Germany: Schleswig-Holstein: Husum); Kohl, 1888b:726 (Austria: Tirol, now Italy: Alto Adige); Verhoeff, 1891:8 (= *insignis*; nesting habits); Kohl, 1893a:38 (Austria: Niederösterreich); F. Morawitz, 1893a:111 (Russia: Karelian Isthmus); Sickmann, 1893:79 (Germany: Niedersachsen: Iburg); Krieger, 1894:15 (Germany: Kingdom of Saxony); Dalla Torre, 1897:367 (in catalog of world Hymenoptera); Mocsáry, 1897:78 (Kingdom of Hungary, some localities are in today's Romania); Lange, 1898:70 (Germany: Sachsen: Annaberg-Buchholz; as *brevicornis*); Kohl, 1905d:521, 526 (in key to Palearctic *Passaloecus*); Schmiedeknecht, 1907:210 (in key to Hymenoptera of Central Europe); Morice, 1911:70 (Algeria: Alger, Bône); de Gaulle, 1908:103 (in catalog of French Hymenoptera); Dittrich, 1911b:22 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:50 (Italy: Trieste area, as *brevicornis* Kohl); Mantero, 1911:71 (Italy: Sardegna: Isola dell'Asinara); M. Müller, 1911:114 (Germany: Hamburg, nesting in galls of *Lipara*); Schirmer, 1912:166 (Germany: Berlin area); Birula, 1913:539 (Ukraine: Zhytomyr Oblast: Radomyshl, as *brevicornis* Shuck.); Smits van Burgst, 1913a:319 and 1913b:5 (Tunisia: no specific locality); Alfken, 1914:278 (northwest Germany); Birula, 1914:384 (Belarus: Ambrosovich near Vitebsk); O. Meyer, 1919:152 (Germany: Posen Province, now Poland: Poznań Region); A. Wagner, 1920:41 (Germany: Lower Elbe region); Dubois, 1921c:197 (in key to Belgian Sphecidae); Maidl, 1922:65 (Croatia: Arbe); Bischoff, 1925:299 (Latvia; Lithuania: Dolny near Vilnius; Poland: Grajewo area); Carpentier, Crèvecoeur and Maréchal, 1926:354 (Belgium: Kinkempois); Friese, 1926:153 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); Bouwman, 1928b:207 (in revision of Sphecidae of Netherlands); Crèvecoeur and Maréchal, 1928:172 (Belgium: between Hony and Avister); Gussakovskij, 1930b:75 (Uzbekistan: Osh area in Fergana Valley); Schmiedeknecht, 1930:672, 673 (in keys to Hymenoptera of North and Central Europe); Crèvecoeur and Maréchal, 1932:70 (in catalog of Belgian Hymenoptera); Hoffmeyer, 1932:60 (number and position of forewing sensillae); Drogoszewski, 1933:118 (Poland: Łowicz); Enslin, 1933:140 (in key to Hymenoptera nesting in stems of *Rubus*); Balles, 1934:19 (Germany: Baden-Württemberg: Achern); Bondroit, 1934:61 (Belgium: Boendael, Uccle, Watermael); Grandi, 1934:36 (nesting habits), 42 (description of mature larva), 128 (Italy: Toscana: San Vincenzo); Yasumatsu, 1934d:109 (in checklist of world *Passaloecus*); Goebel, 1937:40 (Poland: Poznań District: Puszczy-

kowo); Grandi, 1937:283 (two generations per year); A. Wagner, 1938a:120 (northwestern Germany); Dovnar-Zapolskiy, 1940:303 (Russia: Kursk Oblast'); Struve, 1940:823 (Germany: Island of Borkum); Hoop, 1941a:69 (Germany: Schleswig-Holstein: Kiel-Wik); Paul, 1941:42 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); van Lith, 1947:105 (Netherlands); Aerts, 1950b:23 (Germany: Rheinland-Pfalz: Lorelei); Szulczewski, 1950:106 (Poland: Wielkopolski National Park 15 km S Poznań); de Beaumont, 1951h:34 (Switzerland: Neuchâtel area); Leininger, 1951:117 (Germany: Baden-Württemberg: Kaiserstuhl); Fahlander, 1954:251 (Sweden: Gästrikland Region); Tjeder, 1954:68 (Sweden: eastern Skåne: Mölleån); Vogrin, 1955:39 (Yugoslavia); Evans, 1958c:132 (larval description by Grandi, 1934); Grandi, 1961:233 (nesting habits), 521 (description of larva); Romanova, 1969:134 (Russia: North Caucasus).

As *Passaloecus corniger* (♂ only, corrected to *Passaloecus gracilis* by Yarrow, 1970:179): Shuckard, 1837a:191 (in revision of British Aculeata); F. Smith, 1858c:174 (in revision of British aculeate wasps).

As *Passaloecus insignis* (corrected to *Passaloecus gracilis* by Yarrow, 1970:179): Vander Linden, 1829:81 (♂ only); Curtis, 1834:...; Shuckard, 1837a:189 (in revision of British Aculeata, ♀ only); Dahlbom, 1842a:12 (in review of Scandinavian aculeates), 1844:245 (in revision of Sphecidae and Pompilidae), 1845:505 (in key to *Passaloecus* of Europe); Kiesenwetter, 1849:90 (Germany: Kingdom of Saxony: Bautzen); F. Smith, 1858c:173 (♀ only, in revision of British aculeate wasps); Brischke, 1862:103 (Germany: Preussen Province, now Poland: Pomorze Region); E. Saunders, 1880:258 and 1896:98 (in revision of aculeate Hymenoptera of British Isles); Richards, 1935a:165 (identity of species), 1937b:105 (in checklist of British aculeates); nec Spooner, 1943:72 (Great Britain: G. Wootton). **Also** (present correction): **As *Pemphredon insignis***: Nördlander, 1848:269 (nesting in galleries of barkbeetle *Hylesinus poligraphus*, now *Polygraphus poligraphus* (Linnaeus)); P. Ivanov, 1872:152 (Ukraine: Khar'kov Oblast': Kupyansk area); Yaroshevskiy, 1881:123 (Ukraine: Khar'kiv Oblast': Kupyansk); Acloque, 1897:85 (in Sphecid Fauna of France and Algeria). – **As *Passaloecus insignis***: Wesmael, 1852:285 (Belgium: Bruxelles); Schenck, 1857:140 (Germany: in revision of fossorial wasps of Nassau Region); Taschenberg, 1858:96 (Germany); Schenck, 1860:147 (Germany: Nassau Region); A. Morawitz, 1864:462 (Russia: Sankt Petersburg); Schenck, 1867a:353 (Germany: Nassau Region); Marquet, 1875:206 (France: Haute-Garonne: Toulouse), 1881:183 (southern France); Harwood, 1884:211 (Great Britain: Essex: Colchester); Brischke, 1888b:99 (Germany: Preussen Province, now Poland: Pomorze Region); V. Perkins, 1892:202 (Great Britain: Gloucestershire: Wotton-under-Edge); Mocsáry, 1897:78 (Kingdom of Hungary: Trencsén, now in Slovakia); E. Saunders, 1902b:143 (British Channel Islands: Island of Jersey); Aurivillius, 1904:262 (in revision of Swedish Sphecidae, *brevicornis* as synonym); E. Saunders, 1904c:606 (Spain: Mayorca); Morley, 1909:305 (Great Britain: Isle of Wight); Hallett, 1912:94 (Great Britain: Glamorgan County); Chambers, 1933:188 (Great Britain: Bedfordshire); Boyd, 1943:163 (Great Britain: eastern Dorset); Spooner, 1943:72 (Great Britain); Chambers, 1949:226 (Great Britain: Bedfordshire); de Beaumont, 1950f:411 (Algeria); Yeo, 1957:19 (England: Middlesex, now part of London); Puławski, 1958a:187 (Bulgaria: Sozopol); Noskiewicz and Puławski, 1960:64, 65 (in key to Polish Sphecidae); Wengris, 1962:204 (Lithuania: Vilnius area); Valkeila, Brander, and Käpylä, 1963:41 (Finland: historical region Lounais-Hämeen = southwest Häme); Lefebvre, 1966:210 (Netherlands: Sint Pietersberg); Niedl and Deneš, 1967:77 (= *brevicornis*, = *turionum*; Czechoslovakia); Scobiola-Palade, 1967b:46 (= *brevicornis*, *turionum*; Romania), 1968c:385 (= *brevicornis*; Romania: București, Tigănești); Lefebvre and Petit, 1974:163 (= *gracilis* sensu Yarrow; Belgium: Plombières); Casolari and Casolari Moreno, 1980:119 (specimens in M. Spinola collection).

17. *hinganicus* Merisuo

Passaloecus hinganicus Merisuo, 1976e:174, ♀. Holotype: ♀, Russia: Siberia: Chita Oblast': Bylyra (ZIN). – Budrys in Nemkov, Kazenas, Budrys, et Antropov, 1995:403 (in key to Sphecidae of Russian Far East); Nemkov, 2008b:19 (in catalog of Crabronidae of Asiatic Russia), 2009a:64 (is an endemic of Transbaikalia), 2009b:69 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia).

18. *insignis* (Vander Linden)

Pemphredon insignis Vander Linden, 1829:81, ♀, ♂ (♂ = *Passaloecus gracilis*). Syntypes: Belgium: Bruxelles (Inst. Roy. Sci. Nat. Belgique, Bruxelles). – Shuckard, 1836:56 (is probably a parasite); Lepeletier de Saint Fargeau, 1845:96 (in revision of world Hymenoptera); Coulon, 1925:113 (France: Martin-Église). – **As *Cemonus insignis***: Herrich-Schaeffer, 1840:291 (new combination, Germany: Bayern: Regensburg area). – **As *Passaloecus insignis***: Shuckard, 1837:189 (new combination, redescription, ♀ = *Passaloecus gracilis*, ♂ = *Passaloecus corniger*); von Siebold, 1839:51 (Germany: Danzig, now Poland: Gdańsk); nec Dahlbom, 1842a:12, 1844:245, and 1845:505 (= *Passaloecus gracilis*); Tischbein, 1850:6 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); F. Smith, 1851c:34 (Great Britain: no specific locality); Kirschbaum, 1853:47 (Germany: Herzogtum Nassau: Mom-bach and Weilburg); F. Smith, 1853:64 (in checklist of British Hymenoptera), 1856:426 (in catalog of Hymenoptera in British Museum); Ruthe and Stein, 1857:315 (Germany: Berlin area); F. Smith, 1858c:173 (in review of British Aculeata, redescription, ♂ = *Passaloecus corniger*); Assmuss, 1859:614 (Russia: Moscow Oblast'); Taschenberg, 1866:189 (in revision of Hymenoptera of Germany); Kirchner, 1867:222 (in catalog of European Hymenoptera); F. Smith, 1871b:18 (in catalog of British Aculeata); Dours, 1874:145 (in catalog of Hymenoptera of France); Roebuck, 1878:48 (Great Britain: recorded from Yorkshire county: Wakefield, by F. Smith, 1858); nec E. Saunders, 1880:258 (= *Passaloecus gracilis*); F. Morawitz, 1893a:111 (Russia: Karelian Isthmus); nec E. Saunders, 1896 (= *Passaloecus gracilis*); Borries, 1897:review of known nesting habits); Dalla Torre, 1897:368 (in catalog of world Hymenoptera); R. Bradley, 1900:13 (Great Britain: Birmingham); Antiga and Bofill, 1904:8 (Spain: Cataluña Province); Morley, 1909:305 (Great Britain: Isle of Wight); Zilahi Kiss, 1915:80 (Hungary: Dunaörs); Coulon, 1925:114 (France: Elbeuf, Evreux; Tanger); R. Perkins, 1925:150 (Great Britain: Gloucestershire and Somersetshire); Stelfox, 1927:293 (records from Ireland are erroneous); Bondroit, 1934:61 (Belgium: Solbosch); Jansson, 1934:289 (Sweden); nec Richards, 1935a:165 (= *Passaloecus gracilis*); Hallett, 1937:72 (Great Britain: Herefordshire: Mathon, Tram Inn); nec Richards, 1937b:105 (= *Passaloecus gracilis*); de Graham, 1941:99 (Great Britain: Lincolnshire); Kloet, 1941:235 (Great Britain: Wales: Wilmslow); Schneid, 1941:1037 (Germany: Bayern: Bamberg area); nec Spooner, 1943:72 (= *Passaloecus gracilis*); Yasumatsu, 1943:24 (China: Shanghai area); T. Fletcher, 1945:53 (Great Britain: Gloucestershire: Olveston, Rodborough, Wotton); R. Perkins, 1945:147 (Great Britain: Devon: moorland near Lydford); Spooner, 1946:27 (Britain: Leicestershire: Charnwood Forest); Guichard and Yarrow, 1948:90 (Great Britain: London: Hampstead Heath); Leclercq, 1948:205 (*Passaloecus insignis* is the valid name, not *tenuis*); Šnoflák in Zavadič and Šnoflák, 1948:48 (in key to Sphecidae of Czechoslovakia); Cavo, 1950:33 (France: département du Nord); Fæster, 1951:452 (discussion of identity); Leclercq, 1954a:290 (identity of species), 291 (locality records from Belgium); Benno, 1958b:12 (in review of Dutch Sphecidae); Leclercq, 1961f:157 (Belgium: entering room through open window after temperature raised to 31°C); nec Valkeila, 1961a:145 (= *Passaloecus borealis*); Valkeila, 1962b:67 (southwestern Finland); Felton, 1963:178 (Great Britain: Kent County); de Beaumont, 1964a:299 (identity of species); Valkeila, Brander, and Käpylä, 1964:75 (Finland: southern Finland: Forssa); Benno, 1967:37 (in checklist of Sphecidae of Netherlands); Leclercq, Simon, and Verstraeten, 1967:261 (France: Landes: Seignosse, collected in resin pot); Leclercq, 1968b:39 (Great Britain: Kent); Lefeber, 1969a:79 (Netherlands: Egmond-Binnen, Hilversum, s'Graveland; Belgium: Rekem), 1969b:99 (Netherlands: Sint Pietersberg); Tumšs, 1970:75 (Latvia); Yarrow, 1970:170 (study of type), 178 (in list of British *Passaloecus*, with bibliographic references), 181 (Great Britain: locality records); Danks, 1971a:341 (nesting habits); Felton, 1971:213 (England: Kent: Sittingbourne); Balthasar, 1972:196 (in Sphecidae Fauna of Czechoslovakia); Kofler, 1972:110 (= *roettgeni*, *monilicornis*; Austria: eastern Tirol); Merisuo, 1972c:204 (tyloids on male antenna), 206 (in list of *Passaloecus* of Finland, with bibliographic references), 1973c:109 (in key to *Passaloecus* of Finland), 114 (locality records from Finland); D. Peters, 1973b:163 (an example of species nesting in artificial nests); Erlandsson, 1974:79 (= *roettgeni*; Italy);

Felton, 1974:408 (map of distribution in Great Britain); Gauss, 1974:199 (= *roettgeni*; Germany: Baden-Württemberg: Wittental; a dwarf ♂ with incompletely developed diagnostic characters); Leclercq, 1974b:199 (locality records); Merisuo, 1974a:14 (member of *monilicornis* species group); Corbet and Backhouse, 1975:11-30 (nesting habits, feeding by adults); Mudd and Corbet, 1975:255-257 (use of pine resin for nest closure); Lefeber, 1975b:154 (Belgium); Lomholdt, 1975b:32 (Denmark: Island of Anholt), 1975c:124 (in Sphecidae Fauna of Fennoscandia and Denmark); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Haeseler, 1976b:72 (Germany: Friesian Islands: Island of Amrum); Jacob-Remacle, 1976:238 (Belgium: Liège, nest structure and mortality); Merisuo, 1976a:24 (comparison with *Passaloecus iwatai*); D. Peters, 1976:6 (Germany: Hessen: Bieber); Guichard, 1977:252 (Great Britain: Surrey); Kolesnikov, 1977:319 (Russia: Bryansk Oblast'); Schmidt, 1977:97 (= *roettgeni*; Germany: Baden-Württemberg: Enzklösterle in Schwarzwald); Guichard, 1978:371 (first record from Greece); Pulawski, 1978:247 (in key to Sphecidae of European part of former USSR); Schwammberger, 1978:418 (Germany: Württemberg); Marchal and Leclercq, 1979:9 (Belgium: Gembloux); Schmidt, 1979a:55 (= *roettgeni*; Germany: Ost-Holstein); Jacob-Remacle and Leclercq, 1980:193 (Belgium: gardens in Liège); Richards, 1980:72 (in key to Sphecidae of British Isles); Westrich, 1980:632 (Germany: Baden-Württemberg: Tübingen area); Dollfuss and Ressler, 1981:322 (Austria: Niederösterreich: Scheibbs District); Haeseler, 1981:51 (Germany: Friesian Island: Island of Amrum); Skibińska, 1981:357 (Poland: Warszawa-Białoleka); Thiede, 1981:46 (Germany: Baden-Württemberg: Ulm, reared from artificial nest with acrylic tubes); Woydak, 1981:38 (Germany: Westfalen: Hamm); Axelsson, 1982:79 (Sweden); Leclercq, 1982a:124 (Belgium: Liège); Skibińska, 1982:122 (Poland: Warszawa area); Dollfuss, 1983b:7 (in catalog of Sphecidae of Austria); Riemann, 1983:82 (Germany: Bremen-Daverden area); Chevin and Silvestre de Sacy, 1984:7 (France: Yvelines Department); Haack, Tschamtko, and Vidal, 1984:131 (Germany: Hamburg area); Jacob-Remacle, 1984:260 (Belgium: urban center of Liège); Lefeber, 1984:29 (Netherlands: Maastricht); Schmidt, 1984:286 (Germany: Baden-Württemberg); Schmidt and Westrich, 1984:240 (Germany: Rheinland Pfalz: Bad Münster); Archer, 1985:96 (Great Britain: Suffolk); Haeseler, 1985a:350 (Germany: Schleswig Holstein); Jacob-Remacle, 1985:408 (Belgium; second occupant in a composite nest); Józán, 1985b:56 (Hungary south of Lake Balaton), 69 (map of distribution in Hungary), 83 (ecological and zoogeographic characteristics); Lefeber, 1985:87 (Netherlands: southern Limburg); Tyrner, 1985:9 (Czech Republic: Jezerka Nature Reserve in Krušné Hory = Erzgebirge); Brechtel, 1986:65 (Germany: Südpfalz); Jacob-Remacle, 1986:109 (Belgium; trap nests); Nilsson, 1985:43 (Sweden); Piek and Spanjer, 1986:187 (in list of Sphecidae with known prey, as *isignis*); Skibińska, 1986b:150, 156 (Poland: suburbs of Warszawa), 157 (rural and suburban parks), 160 (gardens), 162 (urban parks), 164 (streetside green), 168 (green areas of housing estates), 173 (various green urban habitats); Vikberg, 1986b:75 (Finland); Riemann, 1987b:42 (Germany: Niedersachsen: Nature Reserve Voßberge); Schmidt and Westrich, 1987:369 (Germany: Mainz area; = *roettgeni*); Tormos and Jiménez, 1987a:123 (Spain: Valencia); Archer, 1988a:33 (Great Britain: Bernwood Forest near Oxford); Düweke, 1988:689 (Germany: Baden-Württemberg: Kaiserstuhl); Riemann, 1988:223 (Germany: Bremen area); Wolf, 1988b:142 (Germany: Rheinland-Westfalen); Archer, 1989a:131 (Great Britain: York: found before coniferization); Jacobs, 1989:9 (Germany: Mecklenburg-Vorpommern); Skibińska, 1989a:204 (Poland: Warszawa area); Archer, 1990:137 (England: city of Leicester), 1990c:18 (Great Britain: Leicestershire); Jacobs and Oehlke, 1990:154 (new records from German Democratic Republic); Kowalczyk, 1990:290 (Poland: Góry Świętokrzyskie); Pádr, 1990:80 (Czech Republic: Praha area); Pagliano, 1990:114 (in catalog of Italian Sphecidae); Schwammberger and Priesner, 1990:537 (Austria: Kärnten); Day, 1991:xvii (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:73 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:399 (Italy: Piemonte); Jakubzik, 1991:74 (Germany: Köln); Jakubzik and Cölln, 1992:121 (Germany: Rheinland-Pfalz; reared from artificial nests); Kowalczyk, 1991a:89, 93 (Poland: Łódź), 1991b:120 (Poland: Augustów Forest); Nilsson, 1991:83 (Sweden: Lake Mälaren); N. Schneider, 1991:93 (Luxemburg), 108 (nest structure); Archer, 1992a:56 (Great Britain: Leicestershire); Budrys, 1992:23 (in

list of Sphecidae of Lithuania); Nilsson, 1992:54 (Sweden); N. Schneider and Jacob-Remacle, 1992:43 (Luxemburg), 52 (nest structure); Sorg and Cölln, 1992:132 (Germany: Rheinland-Pfalz: Gönnersdorf); Wolf, 1992c:23 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); K. Weber, 1992:88 (Germany: Bayern: Bamberg District); Józán, 1993:412 (Hungary: Bükk National Park); Kuhlmann, 1993:77 (Germany: known from Westfalen); Luig, 1993:43 (Estonia); Wiśniowski, 1993a:97 (Poland: in checklist of Sphecidae of Białowieża Primeval Forest); Pádr and Lukáš, 1994:894 (Slovakia: High Tatra Mountains); Theunert, 1994c:47 (Germany: summary of records from Niedersachsen and Bremen); Budrys *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:403 (in key to Sphecidae of Russian Far East); Gorobchishin, 1995:17 (Ukraine: Kanev Nature Reserve); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian fauna); Riemann, 1995:52 (Germany: Bremen); Schmid-Egger, 1995:63 (Germany: northwest Baden-Württemberg); Schmid-Egger, Risch, and Niehuis, 1995:202 (summary of records from Germany: Rheinland-Pfalz Province); Shlyakhtenok, 1995:193 (Belarus': Berezinsky Nature Reserve); Skibińska, 1995:423, 425, 426, 427 (Poland: pine forest in Białowieża Primeval Forest); Archer, 1996b:121 (Great Britain: Yorkshire); Arens, 1996:440 (Germany: Bayern: Bayreuth area); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Harvey and Plant, 1996:78 (Great Britain: summary of records from Essex); Jakubzik, 1996:253 (Germany: Köln); Jakubzik and Cölln, 1996b:400 (Germany: Rheinland-Pfalz); Pawlikowski and Kruszyński, 1996:87 (Poland: Toruń Basin); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: not endangered in Baden-Württemberg); Shlyakhtenok, 1996:304 (Belarus': Berezinsky Nature Reserve); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg), 110 (locality records); Woydak, 1996:29 (Germany: Westfalen: summary of distribution and nesting habits); Archer, 1997a:48 (Great Britain: Yorkshire: Burton Leonard Lime Quarries); Celary, 1997:57 (in checklist of Animals of Poland); Schmidt and Schmid-Egger, 1997:23 (in checklist of German Sphecidae); Budrys, 1998:82 (Russia: Belgorod Oblast': Borisovka at 50°36'N 36°04'E); Dollfuss, Gusenleitner, and Bregant, 1998:511 (Austria: summary of collecting records from Burgenland); Haeseler and Ritzau, 1998:51 (Germany: Bremen: Steller Heide); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Józán, 1998:306, 311 (Hungary: Duna-Dráva National Park); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); N. Schneider and Wahis, 1998:22 (Luxemburg: sandstone quarries); Tscharnkte, Gathmann, and Steffan-Deventer, 1998:718 (trap-nesting in Germany); van der Smissen, 1998:65 (Germany: Niedersachsen, Schleswig-Holstein); Archer, 1999a:9 (Great Britain: Lancashire); Blösch, 1999:20 (male precopulatory behavior); Cölln and Jakubzik, 1999:29 (Germany: Rheinland-Pfalz: Keuper-Scharren SW Hungerburg); Dorow, 1999:532, 573 (Germany: Hessen: Niddahänge east of Rudingshain Forest Reserve); Gusenleitner, 1999:598 (Austria: Vorarlberg: Düns south of Satteins); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); Ljubomirov, 1999b:48 (Bulgaria: Mount Vitosha near Sofia); Löhr, 1999:62 (Germany: Hessen: Mücke-Merlau near Gemünden); Luig and Voolma, 1999:177 (Estonia); Majzlan, Rychlík, and Deván, 1999:146 (Slovakia: Čenkovská Step Nature Reserve); Neumayer, Schwarz, and Bregant, 1999:225 (Austria: in checklist of Sphecidae of Land Kärnten); Pauly, 1999:108 (in catalog of Belgian aculeates); Porter, Stange, and Wang, 1999:7 (in checklist of Sphecidae of Taiwan); M. Schwarz, 1999:85 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:192 (in Sphecid Fauna of Germany); Esenbekova and Kazenas, 2000:21 (southeast Kazakhstan: 7 km S Talgar); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Jacobs, 2000:9 (Germany: not endangered in Mecklenburg-Vorpommern); Kazenas, 2000e:153 (in Sphecid Fauna of Kazakhstan); M. Mader and Chalwatzis, 2000:60 (Germany: Hessen: Oderwald Mountains); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhine River); Wiśniowski, 2000:161 (Poland: Bieszczady Mountains); Dollfuss and Bitsch *in* Bitsch et al., 2001:101 (in Sphecid Fauna of Western Europe); Dorow, 2001:136 (Germany: Hessen: Schönbuche Forest Reserve); Haeseler, 2001:266 (Germany: Niedersachsen: Brookdeich near Oldenburg); Ivanov and Ljubomirov, 2001:211 (Bulgaria: Kresna Gorge at 41°48'N 23°10'E); Józán, 2001:278 (Hungary: Somogy County); Kazenas, 2001:22 (in checklist of Sphecidae of

Kazakhstan and Central Asia), 134 (review of known biology); Ohl et al., 2001:141 (distribution in Germany by provinces); Salzmänn-Wandeler and Rezbanyai-Reser, 2001:157 (Switzerland: Tessin Canton: Meride area); Skibińska, 2001:219 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:187 (Poland: Kampinos National Park near Warszawa); van der Smissen, 2001:62 (Germany: not endangered in Schleswig-Holstein); Zettel, Gross, and Mazzucco, 2001:70 (Austria: Wien); Archer, 2002b:126 (Great Britain: Watsonian Yorkshire: distribution map); Bieri, 2002:77 (Liechtenstein); Deván, 2002b:204 (Slovakia: Prepadlisko); Esser and Cölln, 2002:1136 (southwest Germany: Eifel region); Gayubo, González, Tormos, and Asís, 2002:90 (distribution in Iberian Peninsula); Hisamatsu and Satô, 2002:47 (Japan: Hokkaido: Island of Rishiri); Józán, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:52 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Kraus and Floren, 2002:100 (Germany: Bayern: Steigerwald); Krüss and Tscharnke, 2002:1576 (Germany: Schleswig Holstein: number of specimens higher on ungrazed and extensively grazed grassland); Martínez de Murguía, 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); Shlyakhtenok and Skibinska, 2002:32 (Belarus: no specific locality); Wiśniowski, 2002:69 (Poland: Ojców National Park); Blösch, 2003b:82 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Cölln, Esser, and Jakubzik, 2003:62 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Drewes, 2003:140 (Germany: Bayern: Achenpass, Hessen: lower Lumda valley, Schleswig-Holstein: Birk); Esser and Jakubzik, 2003:291 (Germany: Nordrhein-Westfalen: Niederrheinisches Tiefland); Flügel, 2003:8 (Germany: Hessen: Knüllwald); Haeseler, 2003:340 (Germany: Niedersachsen: Island of Harriersand near Bremen); Józán, 2003:227 (Hungary: Látványi Puszta Nature Conservation Area); Kula and Tyrner, 2003a:150 (Czech Republic: Děčín Sandstone Uplands: forest district Snežnik: birch stands in air-polluted area), 2003b:203 (Northern Czech Republic: spruce stands in air-pollution region); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:68 (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); 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, 2003:143 (Poland: Ojców National Park); Wiśniowski and Werstak, 2003:77 (Poland: Pieniny National Park); Deván, 2004:147 (western Slovakia); Dollfuss, 2004a:119 (locality records from Austria, Bulgaria, Czech Republic, Germany, Romania, Slovakia); Dorow, 2004a:127 (Germany: Hessen: Schönbuche Nature Reserve); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo et al. 2004:132 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Hellrigl, 2004a:173 (Italy: Trentino-Alto Adige, as Südtirol: Tschöggelberg); Jakubzik, Niehuis, and Cölln, 2004:458 (Germany: Rheinland-Pfalz: Roßstein in Rhein valley at 50°06'42"N 7°43'87"E); Salzmänn-Wandeler and Rezbanyai-Reser, 2004:27 (central Switzerland); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Skibińska *in* Bogdanowicz, Chudzička, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Suda, 2004:37 (Japan: Yamanashi Prefecture); Szczepko and Kowalczyk, 2004:125 (Poland: Kampinos National Park near Warszawa); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Burger, 2005:34 (Germany: Thüringen); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Haneda, Inoue, Nozaka, Tano, Kurokawa, and H. and T. Murota, 2005:65 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:45 (Japan: Gifu Prefecture); Kofler, 2005:171 (Austria: Tirol: Lienz District: several localities); Kowalczyk and Kurzac, 2005:106 (Poland: Botanical Garden in Łódź); Pagliano and Negrisoló, 2005:457 (in Sphecid Fauna of Italy); Quest and Kuhlmann, 2005:33 (Germany: Bayern: Bayerischer Wald National Park); Riemann and Hohmann, 2005:563 (Germany: Niedersachsen: city of Bremen and adjacent area); Robinson, 2005:38 (Great Britain: Cumbria County); Saure, 2005:18 (Germany: Berlin);

Schmalz, 2005:58 (references to XIXth century authors); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:43 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Feitz, Gloden, Melchior, and Schneider, 2006:82 (Luxemburg: Baggerweieren area in Haff Réimech Nature Reserve); Hua, 2006:281 (in list of Chinese insects, geographic distribution); Humala, 2006:157 (Russia: Republic of Karelia: Kivach Nature Reserve); Kroupa, 2006b:25 (Germany: Bayern: Oberfranken Region); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Petit, 2006:476 (Belgium: Liège Province: Bassenge); N. Schneider, 2006:140, 142 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:111 (Belarus': Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund); Tomarchio and Turrisi, 2006:957 (Italy: first record from Sicilia: Mount Etna); Vepřek, 2006:511 (Czech Republic: Kokořínsko area); Beavis, 2007:96 (Great Britain: Tunbridge Wells and Central High Weald); Dorow, 2007:263 (Germany: Hessen: Hohestein, Niddahänge, and Schönbuche Forest Reserves); Guldemon, Pijfers, and den Belder, 2007:203 (Netherlands: Gelderland: dairy farm in de Graafschap); Herrmann, 2007b:95 (Germany: Baden-Württemberg: Fürstenberg in Konstanz); Jacobs, 2007:77, 81 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:25 (Germany: northwestern Sachsen); Saure, 2007:83 (Germany: in checklist of Aculeata of Brandenburg); Shlyakhtenok, 2007a:299 (Belarus': Berezinsky Nature Reserve); Vago, 2007:174 (France: départements du Nord and Somme); Venne, Bleidorn, and Lauterbach, 2007:302 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:201 (in catalog of Sphecidae of Czech Republic and Slovakia); Vicidomini and Pignataro, 2007:15 (Italy: Salerno Province including Parco Nazionale del Cilento e Vallo di Diano); Danilov, 2008:351 (Russia: Altayskiy Krai: Barnaul area); Haeseler, 2008:308 (Germany: Friesian Islands); Ljubomirov and Yildirim, 2008:179 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:19 (in catalog of Crabronidae of Asiatic Russia); Takahashi and Haneda, 2008b:43 (Japan: Hokkaido: Sapporo); Theunert, 2008:66 (Germany: map of distribution in Niedersachsen and Bremen); Archer, 2009:24 (Great Britain: Yorkshire: Sheffield); Donie, 2009:9 (Germany: Niedersachsen: Oldenburg); Dvořák, Bogusch, and Smetana, 2009:82 (Czech Republic: Králický Sněžník National Nature Reserve); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen); Guéorguiev and Ljubomirov, 2009:263 (Bulgaria: Maleshevska Planina); Józán, 2009:165 (Croatia: Mošćenice); Livory, Chevin, Lair, Sagot, and Baldock, 2009:16 (France: Département de la Manche); Nemkov, 2009b:69 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:71 (Norway: locality records); Pagliano, 2009:187 (Italy: recorded from Sicilia by Tomarchio and Turrisi, 2006); ; Sobek, Tschartke, Scherber, Schiele, and Steffan-Dewenter, 2009:614 (Germany: Thüringen: Nationalpark Hainich: nesting mostly in canopy); Straka, Dvořák, and Bogusch, 2009:263 (Czech Republic: Jizerské Mountains and Frýdlant region); van Diemen, 2009:49 (Netherlands: airbase Gilze-Rijen); Venne, 2009:111 (Germany: Nordrhein-Westfalen: Holte-Stukenbrock, associated with *Frangula alnus* Miller, Rhamnaceae); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Jakubzik and Cölln, 2010:1187 (Germany: Rheinland-Pfalz: Bruchertseifen near Altenkirchen); Johansson, 2010:121 (Sweden: Småland: upper Emå River valley); J. Kim and Yang, 2010:146 (in checklist of Korean Pemphredoninae); Schmid-Egger, 2010a:18 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:138 (Germany: Bayern: collected along Main-Donau canal); Shoreenko and Konovalov, 2010:25 (Ukraine: Crimea: Feodosiya); van der Smissen, 2010a:346 (Germany: Schleswig-Holstein: locality records); Baghirov, 2011b:151 (Russia: Altay Republic: Chemal); Gogala, 2011:12 (Slovenia); Józán, 2011:179 (in checklist of Sphecidae s.l. of Hungary); Shlyakhtenok, 2011:95 (Belarus': city of Minsk); Theunert, 2011a:21 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:155 (Germany: not endangered in Hessen); Boillat, 2012:228 (Switzerland: in checklist of insects of Canton de Genève); Ma and Q. Li, 2012:42 (in key to Oriental *Passaloecus*), 48 (China: Zhejiang: Mount Qingliangfeng: Baibuling at 30°05'N 118°52'E, Zhejiang: Qinguyan: Baishanzu at 27°45'N 119°12'E, and Zhejiang: Mount West Tianmushan at 30°20'N 98°37'E; Yunnan: Qujing: Qilin: village Wangantun

at 25°32'N 103°42'E); Nemkov, 2012c:437 (in catalog of Crabronidae of Russian Far East); Shlyakhtenok, 2012a:171 (Belarus', and Russia: Kirov Oblast': Arkhangelskoye, and Krasnaya Polana near Sochi: collected in private plots), 2012b:92 (Belarus': Beresina National Reserve: overgrowing dry meadow); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Y. Tanaka, 2012:32 (hunting behavior); Terayama, 2012:3 (in key to Pemphredonini of Japan), 11 (description), 18 (in checklist of Pemphredonini of Japan); Flügel, 2013a:120 (Germany: Brandenburg: Pimpinellenberg near Oderberg); Pankov, 2013:230 (Russia: Ivanovo Oblast'); Saure, 2013:20 (Berlin: Treptow-Köpenick: Gosener Wiesen); Shlyakhtenok, 2013:156 (in annotated catalog of aculeate wasps of Belarus'); Wiśniowski and Szczepko, 2013:44 (Poland: Kampinos National Park near Warszawa); Baldock, 2014:358 (Spain: Island of Mallorca); Bitsch, 2014:407 (France: locality records from départements of Hautes-Alpes, Haut-Rhin, Hérault, Isère, Pyrénées-Orientales, Tarn-et-Garonne, and Vosges); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Turčinavičienė, Radzevičiūtė, Budrienė, and Budrys, 2014:4 (in DNA analysis); U. Frommer, 2014:27 (Germany: Hessen: Lorch); U. Frommer, M. Niehuis, and O. Niehuis, 2014:1322 (Germany, Hessen: Roßstein); J.-K. Kim, 2014:441 (in catalog of Sphecidae s.l. of Korean Peninsula); Okhusa, 2014a:31 (Japan: city of Toyota: Sizen-Kansatsu-no-Mori); Mokrousov and Vafin, 2014:59 (Russia: Republic of Tatarstan); Pagliano, 2014:76 (specimens in Spinola collection, Torino are *Passaloecus* sp.); Yıldırım, Ljubomirov, and Lelej, 2014:10 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:149 (in checklist of Hymenoptera of Turkey); Schedl, 2015:948 (Austria: Tirol: Innsbruck Botanical Garden); Simon, Lorthiois, and Macé, 2015:54 (France: alluvial terraces in Seine-Maritime Department: Anneville-Ambourville); Else, Bolton, and Broad, 2016:37 (in checklist of Aculeata of Great Britain and Ireland: England, Wales); Mokrousov and Popov, 2016:587 (Russia: Abkhazia); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Flügel, 2017:5 (Germany: Rheinland-Pfalz: Eschkopf and Doline near Rockensüß); Fresno, 2017:147 (Spain: Asturias and León provinces); Magdalou, 2017:16 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Julols); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia).

Nec *Passaloecus insignis* (= *Passaloecus gracilis*): Dahlbom, 1842a:12, 1844:245, 1845:505; Kiesenwetter, 1849:90; Taschenberg, 1858:96; Brischke, 1862:103; Marquet, 1875:206; Brischke, 1888b:99; E. Saunders, 1896:98, 1902b:143; Chambers, 1933:188; Richards, 1935a:165, 1937b:105; Boyd, 1943:163; Chambers, 1949:226; de Beaumont, 1950f:411; Pulawski, 1958a:187; Niedl and Deneš, 1967:77; Scobiola-Palade, 1967b:46, 1968c:385; Lefeber and Petit, 1974:163.

Nec *Pemphredon insigne* (= *Passaloecus gracilis*): Ivanov, 1872:152.

Nec *Passaloecus insignis* (♀ = *Passaloecus gracilis*; ♂ = *Passaloecus corniger*): Shuckard, 1837a:189; F. Smith, 1858c:173.

Passaloecus roettgeni C. Verhoeff, 1890b:383, ♂ (as *Roettgeni*, incorrect original capitalization). Holotype or syntypes: ♂, Germany: Rheinland-Pfalz: Remagen (depository?). Synonymized with ... – Dalla Torre, 1897:369 (in catalog of world Hymenoptera); Yasumatsu, 1934d:111 (in checklist of world *Passaloecus*); Fæster, 1951:451 (description of ♀); Ribaut, 1952:26 (in revision of *Passaloecus* of France); Nouvel and Ribaut, 1953:180 (France: Haute-Garonne: Saint-Béat); de Beaumont, 1954e:94 (Italy); Kjellander, 1954b:246 (first record from Sweden); Leclercq, 1954a:292 (locality records from Belgium); Tsuneki, 1955c:3, 5 (in key to *Passaloecus* of Japan), 9 (Japan: Hokkaido; Honshu; in revision of *Passaloecus* of Japan); de Beaumont, 1958c:208 (Swiss National Park); Wolf, 1958:16 (Germany: Siegen and Plettenberg), 1959b:27 (Germany: Nassau), 1960:98 (Sweden); Hoop, 1961:65 (Germany: Schleswig-Holstein: Rosenkranz); Janvier, 1961b:854 (nesting habits); Stritt, 1962:50 (Germany: Baden-Württemberg: Wutach area); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); de Beaumont, 1964c:109 (in Sphecid Fauna of Switzerland); Evans, 1964b:251 (discussion to Janvier's, 1961, description of larva); Benedek, 1966b:295 (in key including *Passaloecus roettgeni*, *tenuis*, and *clypealis*); Bonelli, 1967:293 (nesting habits); de Beaumont, 1967a:343

(Turkey); Gauss, 1967:556 (Germany: Baden-Württemberg); Bonelli, 1968b:50 (Italy: Trentino–Alto Adige: Cavalese); Haneda, 1968c:69 (a European species found in Japan); Tano, 1968:33 (Japan); Bonelli, 1969a:152 (pupation); Haneda, 1969:69 (Japan: Yamanashi Prefecture); Schmidt, 1969:165 (Germany: Rhein-Main area: Frankfurt am Main, Königsforst near Köln); Tsuneki, 1969i:60 (Japan: Fukui Prefecture: Taichôdzi temple); Babiy, 1970:20 (Austria: Land Salzburg); Gauss and Perraudin, 1970:360 (Germany: Baden-Württemberg: Bodensee area), 361 (is a subspecies of *monilicornis* Dahlbom); Oehlke, 1970:746 (German Democratic Republic); Schmidt, 1971b:42 (Germany: Rheinland-Pfalz: Mainzer Sand), 1971c:74 (Germany: Schleswig-Holstein); Stritt, 1971a:105 (Germany: Baden-Württemberg: Karlsruhe); Tsuneki, 1971n:86, 88 (in key to Japanese *Passaloecus*); Yamada, 1971:36 (Japan: Aichi Prefecture); Haeseler, 1972:156 (Germany: Schleswig-Holstein: anthropogenic habitats); Lomholdt, 1972:122 (Denmark: Island of Læsø), 1973c:109 (= *insignis*; Denmark: Island of Læsø); Oehlke, 1972:138 (Germany: Island of Hiddensee); Nambu, 1973a:152 (Japan: Saitama Prefecture); Suda, 1973:122 (Japan: Yamanashi Prefecture); Nambu, 1975b:68 (Japan: Saitama Prefecture); Hoop, 1977:73 (Germany: Schleswig-Holstein: Kronshagen); Benedek, 1979:233 (Hungary: Bakony Hills); Kazenas, 1980e:86 (Russia: Primorskiy Krai).

Passaloecus shuckardi Yasumatsu, 1934b:36, ♀. Holotype: Korea: Kôgendo: Kongôsan, current name unknown (depository?). Synonymized with *Passaloecus monilicornis* var. *dahlbomi* by Yasumatsu, 1934d:113. – Matsuda, 1934:41 (nesting habits).

As *Passaloecus monilicornis* (collectively corrected to *Passaloecus insignis* by Yarrow, 1970:178): Eversmann, 1849:411 (Russia: Ural Mountains foothills and Kazan' province, as *monilicornis*); Kiesenwetter, 1849:90 (Germany: Kingdom of Saxony: Oberlausitz area); Wesmael, 1852:285 (Belgium); F. Smith, 1856:427 (in catalog of Hymenoptera in British Museum); Kawall, 1857:25 (Kurland, now Latvia); Brischke, 1862:103 (Germany: Preussen Province, now Poland: Pomorze Region); Bold, 1870:151 (Great Britain: Northumberland and Durham); Thomson, 1870:238 (in revision of Swedish wasps), 1874:200 (in revision of Hymenoptera of Scandinavia; Marquet, 1875:206 (France: Haute-Garonne: Toulouse); Siebke, 1880:63 (Norway); Ed. André, 1888:201 (in revision of Sphecidae of Europe and Algeria), 17* (bibliographic references); Kohl, 1888b:726 (Austria: Tirol, now Italy: Alto Adige); C. Verhoeff, 1890b:383 (comparison with *Passaloecus gracilis* and *roettgeni*); Freke, 1896:40 (Ireland); Aurivillius, 1904:262 (in revision of Swedish Sphecidae); Kohl, 1905d:522, 527 (in key to Palearctic *Passaloecus*); Schmiedeknecht, 1907:209, 210 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:103 (in catalog of French Hymenoptera); Ferton, 1908:563 (nest parasite: *Psilothrix viridicyanea* Fourcroy, a beetle); Schirmer, 1912:166 (Germany: Berlin area); Berland, 1925:146 (in Sphecid Fauna of France). **Also:** Kirchner, 1854:312 (Czechoslovakia: Kaplitz in Budweiser District, now České Budějovice); Schenck, 1857:139 (Germany: in revision of fossorial wasps of Nassau Region); Taschenberg, 1858:96 (Germany); Schenck, 1860:147 (Germany: Nassau Region), 1867a:353 (Germany: Nassau Region); Wierzejski, 1868:117 (Poland: Tatry Mountains; Ukraine: L'viv); von Aichinger, 1870:316 (Austria: Tirol); Schlechtendal, 1872:37 (Germany: Sachsen: Zwickau, as *moniliformis*); Wierzejski, 1874:260 (Poland: Tatry; Ukraine: Zubrza near Lviv, Kalinowce); Kohl, 1880:140 (Austria: Tirol, and Italy: Trentino–Alto Adige); Marquet, 1881:183 (southern France); Kohl, 1883e:660 (Switzerland); von Heyden, 1884:120 (Germany: Frankfurt am Main area); Wüstnei, 1886:39 (Germany: Schleswig-Holstein V. Perkins, 1892:202 (Great Britain: Gloucestershire: Wotton-under-Edge); Emmelsbüll, Sonderburg); Brischke, 1888b:99 (Germany: Preussen Province, now Poland: Pomorze Region); Kohl, 1893a:38 (Austria: Niederösterreich); Sickmann, 1893:78 (Germany: Niedersachsen: Iburg); Lange, 1898:70 (Germany: Sachsen: Annaberg-Buchholz); E. Saunders, 1900a:266 (Great Britain: Scotland: Inver-shin); J. Nielsen, 1901a:269 (nesting habits); E. Saunders, 1902a:53 (SW Ireland), 1906:153 (male recognition characters); J. Nielsen, 1903:112 (nesting habits); Antiga and Bofill, 1904:8 (Spain: Cataluña Province); E. Saunders, 1904b:249 (Great Britain: Scotland: Nairn); Kubes, 1905:83 (Czech Republic: Kolín); Schmiedeknecht, 1907:209 (in key to Hymenoptera of Central Europe); Orr, 1909a:25 (Ireland: Antrim County); Dittrich, 1911b:22 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Alfken, 1914:277 (northwest Germany); O. Meyer,

1919:152 (Germany: Posen Province, now Poland: Poznań Region); A. Wagner, 1920:41 (Germany: Lower Elbe region); Dubois, 1921c:196, 197 (in key to Belgian Sphecidae); R. Perkins, 1924:223 (Great Britain: Devon); Bischoff, 1925:299 (Poland: Białowieża); Friese, 1926:153 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); F. Werner, 1927:66 (Austria: Niederösterreich: River Kamp valley); Schmiedeknecht, 1930:672, 673 (in keys to Hymenoptera of North and Central Europe); Dusmet y Alonso, 1931:6 (Portugal: Mitra); Spooner, 1931:14 (Great Britain: Cambridgeshire); Gussakovskij, 1932:9 (Russia: Primorskiy Kray and Kamchatka); Crèvecoeur and Maréchal, 1932:70 (in catalog of Belgian Hymenoptera); Bondroit, 1933:30 (Belgium: Uccle); Routledge, 1933:87 (England: Cumberland); Guiglia, 1934a:147 (Italy: Trentino: Madonna di Campiglio); Jansson, 1934:289 (Sweden); Bernard, 1935:66 (France: Var: Fréjus area); Minkiewicz, 1935:216 (Poland: Lake Garbaś 20 km W Suwałki); Crèvecoeur and Maréchal, 1936:251 (Belgium); Blüthgen, 1937:235 (Germany: Saale River valley: Naumburg); Zavadil, Šusterka, and Baťa, 1937:181 (in catalog of Sphecidae of Czechoslovakia); A. Wagner, 1938a:120 (northwestern Germany); Hartig, 1939:30 (list of prey); Balthasar, 1941b:112 (Czech Republic: eastern Moravia); de Graham, 1941:99 (Great Britain: Lincolnshire); Paul, 1941:42 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); J. Perkins, 1942:198 (Sweden: Skåne: Kivik); Giner Marí, 1943:40 (in Sphecid Fauna of Spain); Guiglia, 1944b:32 (Italy); Hallett, 1945:129 (Great Britain: Herefordshire: The Lea); Chambers, 1949:226 (Great Britain: Bedfordshire), distributional data corrected to *Passaloecus insignis* by Yarrow, 1970:181; Georgel, 1950:64 (France: Seine-et-Oise: Sucy-en-Brie); Szulczewski, 1950:106 (Poland: Wielkopolski National Park 15 km S Poznań); de Beaumont, 1951h:34 (Switzerland: Neuchâtel area); Fæster, 1951:451 (diagnostic characters of ♀); Móczár, 1953:310 (Hungary); Fahlander, 1954:251 (Sweden: Gästrikland Region); Hellén, 1955a:124 (Finland, the nominotypical form known only from Houtskär and Korpo); Vogrin, 1955:39 (Yugoslavia); Zirngiebl, 1957:179 (Germany: Rheinland-Pfalz: Landau, Leistadt); Wolf, 1958:16 (Germany: Rheinland-Westfalen: Siegen); Diniz, 1959:26 (Portugal: Mitra); Wolf, 1959b:27 (Germany: Nassau), 1960:98 (Sweden); Hoop, 1961:65 (Germany: Schleswig-Holstein: Rosenkranz); Babiy, 1964:116 (Austria: Land Salzburg); B. Klug, 1965:134 (Germany: Baden-Württemberg: Freiburg im Breisgau area); J. Heinrich, 1967:78 (Germany: Bayern: Aschaffenburg); Niedl and Deneš, 1967:77 (Czech Republic: Třeboň area, as *monilicornis*); Scobiola-Palade, 1967b:46 (Romania); Lefeber, 1968b:95 (Netherlands: Sint Pietersberg); Stritt, 1968:110 (Germany: Baden-Württemberg); Benedek, 1969a:84 (Hungary; marshy meadow); Babiy, 1970:20 (Austria: Land Salzburg); Tumšs, 1970:75 (Latvia); Balthasar, 1972:194 (in Sphecid Fauna of Czechoslovakia); Kofler, 1972:110 (Austria: eastern Tirol); Levi, Sysoletina, and Shernin, 1974:269 (Russia: Kirov Oblast: Kirov); Eck, 1976:93 (German Democratic Republic); Kolesnikov, 1977:319 (Russia: Bryansk Oblast); Casolari and Casolari Moreno, 1980:119 (specimens in M. Spinola collection); Kazenas, 1980e:87 (Russia: Primorskiy Kray); Pádr *in* Sedivy, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Scobiola-Palade, 1989:88 (Romania: delta of Danube); Weiffenbach, 1989:106 (Germany: Hessen: Gießen area).

As *Passaloecus monilicornis* partly (corrected by Yarrow, 1970:178): Dahlbom, 1844:243 (in revision of Sphecidae and Pompilidae), 1845:505 (in key to *Passaloecus* of Europe); Saunders, 1880:258 (in revision of British aculeates), 1896:98 (in revision of aculeates of British Islands); Richards, 1937b:105 (in checklist of British aculeates).

19. *labrinigratus* Ma and Q. Li

Passaloecus labrinigratus Ma and Q. Li, 2012:44, ♀. Holotype: ♀, China: Yunnan: Lijiang: Ninglang: Laduhe River at 27°13'N 100°51'E (Yunnan Agricultural University, Kunming, China). – Ma and Q. Li, 2012:42 (in key to Oriental *Passaloecus*).

20. *lineatus* Vincent

Passaloecus lineatus Vincent, 1979:162, ♀, ♂. Holotype: ♂, USA: West Virginia: Hardy County: Lost River State Park (USNM). – Finnamore, 1982:78 (in Sphecid Fauna of Southern Quebec); Sugar *et al.*, 1998:15 (Canada: southern

Ontario); Buck, 2004:25 (in checklist of Sphecidae of Ontario, Canada); Packer, 2004:134 (structure of female gastral sterna); Ratzlaff, 2016:27 (Canada: British Columbia: from Vincent, 1978).

21. *koreanus* Tsuneki

Passaloecus annulatus koreanus Tsuneki, 1974a:368, ♀, ♂. Holotype: ♂, Korea: Ryang-gang Province: Hyesan (TMB). – R. Bohart and Menke, 1976:629 (in checklist of world Sphecidae); Merisuo, 1976a:25 (taxonomy). – **As *Passaloecus koreanus***: Tsuneki, 1982b:15 (full species status, in checklist of Sphecidae known from Korean Peninsula); Paik, 1985:198 (in list of Sphecidae of Korea); Budrys *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:404 (in key to Sphecidae of Russian Far East); Haneda, Nozaka, Tano, Kurokawa and Murota, 2006a:20 (Japan: Toyama Prefecture); Okusa and Tajima, 2008:74 (Japan: central Honshu: Aichi Prefecture); Nemkov, 2008b:19 (in catalog of Crabronidae of Asiatic Russia); S. Takahashi and Haneda, 2008b:43 (Japan: Hokkaido: Sapporo); Nemkov, 2009b:69 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); J. Kim and Yang, 2010:146 (in checklist of Korean Pemphredoninae); Nemkov, 2012c:437 (in catalog of Crabronidae of Russian Far East); Terayama, 2012:3 (in key to Pemphredonini of Japan), 11 (description), 18 (in checklist of Pemphredonini of Japan); J.-K. Kim, 2014:441 (in catalog of Sphecidae s.l. of Korean Peninsula); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia).

Passaloecus iwatai Merisuo, 1976a:22, ♂, ♀. Holotype: ♂, Japan: Kobe, Arino Kita, or Karato, Arino (Zool. Mus. Tokyo). Synonymized with *Passaloecus koreanus* by Tsuneki, 1982b:15.

Passaloecus annulatus koreanus Tsuneki, 1991:201, as new subspecies. Nomen nudum.

22. *longiceps* Merisuo

Passaloecus longiceps Merisuo, 1973a:22, ♀. Holotype: ♀, Russia: Karelian Isthmus: Metsäpirtti, now Zaporozhskoye (Turku). – Merisuo, 1974a:14 (member of *singularis* species group); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia).

23. *melanocrus* Rohwer

Passaloecus melanocrus Rohwer, 1911b:560, ♂. Holotype: ♂, USA: Texas: Davis Mountains (USNM). – Yasumatsu, 1934d:110 (in checklist of world *Passaloecus*); Krombein *in* Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera); Evans, 1972:487 (as *Passaloecus relativus*) and 1973c:148 (Wyoming: Jackson Hole); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Krombein, 1979b:1606 (in catalog of North American Hymenoptera); Vincent, 1979:181 (in revision of North American *Passaloecus*); Ratzlaff, 2016:27 (Canada: British Columbia: from Vincent, 1978).

24. *melanognathus* Rohwer

Passaloecus melanognathus Rohwer, 1910c:104, ♀. Holotype: ♀, USA: Oregon: no specific locality (USNM). – Yasumatsu, 1934d:110 (in checklist of world *Passaloecus*); Krombein *in* Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Krombein, 1979b:1606 (in catalog of North American Hymenoptera); Vincent, 1979:152 (in revision of North American *Passaloecus*).

25. *mitoloma* Vincent

Passaloecus mitoloma Vincent, 1979:171, ♀, ♂. Holotype: ♀, USA, Arizona: Phoenix (USNM). Paratypes: California.

26. *mishimaensis* Tsuneki

Passaloecus mishimaensis Tsuneki, 1990c:102, ♂, ♀. Holotype: ♂, Japan: Shizuoka Prefecture: Mishima (originally K. Tsuneki coll., now Hyogo Mus.). – Tano, 1994a:4 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:25-26 (holotype and paratypes transferred to Hyogo Mus.).

27. *mongolicus* Tsuneki

Passaloecus tenuis mongolicus Tsuneki, 1972a:187, ♂. Holotype: ♂, Mongolia: Central Aymag: 30 km E Somon Narkh (TMB). – *As Passaloecus singularis mongolicus*: R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae). – *As Passaloecus mongolicus*: Budrys *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:403 (new status, in key to Sphecidae of Russian Far East); Nemkov, 2005a:147 (Russia: Island of Sakhalin); Nemkov, 2008b:19 (in catalog of Crabronidae of Asiatic Russia), 2009b:69 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Baghirov, 2011b:151 (Russia: recorded from Altay by Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995); Nemkov, 2012c:437 (in catalog of Crabronidae of Russian Far East); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia).

Passaloecus altaicus Merisuo, 1976e:172, ♀, ♂. Holotype: ♀, Russia: Siberia: Altai Mountains: Kuyum River (Zoological Museum Moscow). Synonymized with *Passaloecus mongolicus* by Budrys *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:403. – Nemkov, 1986:95 (Russia: Siberia: Irkutsk Oblast').

28. *monilicornis* Dahlbom

NOTE: May be a synonym or a northern subspecies of *insignis*. Specimens recorded prior to Yarrow, 1970, mostly refer to *Passaloecus insignis*.

Passaloecus monilicornis Dahlbom, 1842:12, ♀, ♂. Lectotype: ♀: Sweden, Helsingland: Kårböle: Skansberget (Lund), designated by Yarrow, 1970:169. – Dahlbom, 1842a:12 (in review of Scandinavian aculeates), 1844:243 (in revision of Sphecidae and Pompilidae), 1845:505 (in key to *Passaloecus* of Europe); Wissmann, 1849:14 (Germany: Kingdom of Hannover: Klausthal, Münden); Tischbein, 1850:9 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); Kirschbaum, 1853:47 (Germany: Herzogtum Nassau: Weilburg and Wiesbaden); Ruthe and Stein, 1857:315 (Germany: Berlin area); Assmuss, 1859:614 (Russia: Moscow Oblast'); Taschenberg, 1866:188 (in revision of Hymenoptera of Germany); Kirchner, 1867:222 (in catalog of European Hymenoptera); Dietrich, 1868:363 (Switzerland: Zurich Canton); Jaenicke, 1868:9 (Germany: Hessen: Frankfurter Wald); Wierzejski, 1858 (Poland: Tatry Mountains; Ukraine: L'viv); F. Smith, 1871b:18 (in catalog of British Aculeata); Dours, 1874:145 (in catalog of Hymenoptera of France); Thomson, 1874:200 (in revision of Hymenoptera of Scandinavia); Wierzejski, 1974:260 (Poland: Tatry Mountains; Ukraine: Żubrza near L'viv, Kalinowce in Podole Region); E. Saunders, 1880:258 (in revision of British Aculeata); Sickmann, 1883:80 (Germany: Niedersachsen: Wellingholthausen); Krieger, 1894:16 (Germany: Kingdom of Saxony); E. Saunders, 1896:98 (in revision of British Aculeata); Borries, 1897:93 (nesting habits); Strand, 1898b:93 (Norway); A. Carter, 1901a:67 (Great Britain: Scotland: Perthshire: Comrie); E. Saunders, 1902a:52 (sw. Ireland); de Cobelli, 1903:107 (Italy: Province of Trentino); Morley, 1909:305 (Great Britain: Isle of Wight); Birula, 1914:384 (Belarus': Luskopol' near Vitebsk); Schütze, 1916:42 (Germany: Sachsen: Rachlau, visiting flowers of parseley, *Petroselinum crispum*); Lundblad, 1924:22 (Sweden: Lapland: Lycksele); Stelfox, 1924:16 (Ireland: Enniskerry, Glenasmole, Howth); Berland, 1925d:146 (in Sphecid Fauna of France); R. Perkins, 1925:150 (Great Britain: Gloucestershire and Somersetshire); Schütze, 1925:112 (Germany: Lausitz Region); Stelfox, 1927:293 (Ireland: list of localities); Bouwman, 1928b:208 (in revision of Sphecidae of Netherlands); Pulkkinen, 1931:95 (in revision of Sphecidae of Finland); Bondroit, 1932:34 (Belgium: recorded from Bruxelles area by Wesmael); Yasumatsu, 1934d:110 (in checklist of world *Passaloecus*); Forsius *in* Forsius and Hellén, 1935:11 (in checklist of Hymenoptera of Finland); Crèvecoeur and Maréchal, 1936:251 (in catalog of Belgian Hymenoptera); Wnukowskij, 1936:128 (Russia: Western Siberia: railroad station Mezheninovka at 56°21'38"N 85°22'4"E); Richards, 1937b:105 (in checklist of British aculeates); Schneid, 1941:1036 (Germany: Bayern: Bamberg area); Spooner, 1943:73 (Great Britain); Šnoflák, 1944a:143 (Czech Republic: serpentine steppe near Mohelno); T. Fletcher, 1945:53 (Great Britain: Gloucestershire: Chalford, Wotton); Spooner, 1946:27 (Britain: Leicestershire: Charnwood Forest); Carl and de Beaumont, 1947:69 (Switzerland: Graubünden = Grisons Canton: Swiss National Park); Móczár, 1947a:60 (Hungary: Bars comitatus: Körmöcbánya, now in Slovakia: historical region Tekov: Kremnica); de Hennin

and Anciaux, 1948:76 (Belgium: between Sambre and Meuse Rivers); Šnoflák *in* Zavadil and Šnoflák, 1948:47 (in key to Sphecidae of Czechoslovakia, as *monilicornis*); Cavo, 1950:33 (France: département du Nord); Faester, 1951:451 (diagnostic characters); Leininger, 1951:117 (Germany: Baden-Württemberg: Denzlingen, Karlsruhe, Michaelsberg); Blüthgen, 1954:140 (according to Faester, 1951, the species called *Passaloecus monilicornis* by Kohl and Schmiedeknecht, 1931 is actually *P. roettgeni*, while the true *monilicornis* corresponds to *monilicornis* var. *dahlbomi* Sparre-Schneider); Lehrer, 1955:264 (Romania: Moldova: Dealul Seaca in Iași District); Tsuneki, 1955c:3, 5 (in key to *Passaloecus* of Japan), 6 (sensu Faester; Korea, Honshu; in revision of *Passaloecus* of Japan, nesting habits); Ceballos, 1956:356 (in catalog of Hymenoptera of Spain); Bajári, 1957a:87 (in key to Hungarian Sphecidae); Benno, 1958b:12 (in review of Dutch Sphecidae); Noskiewicz and Puławski, 1960:64, 65 (in key to Polish Sphecidae); Hoop, 1961:65 (Germany: Schleswig-Holstein: Rosenkranz); Tolstova, 1962:287 (Russia: Pushkin, nesting in raspberry stems); Valkeila, 1962b:67 (southwestern Finland); Tsuneki and Shimoyama, 1963:49 (Japan: Towada Prefecture); Valkeila, Brander, and Käpylä, 1963:41 (Finland: historical region Lounais-Hämeen = southwest Häme); de Beaumont, 1964c:109 (in Sphecid Fauna of Switzerland, not recorded from Switzerland); Hüsing and Jäger, 1964:192 (Germany: Sachsen-Anhalt: Nietleben near Halle), 198 (found only on sand); Valkeila, Brander, and Käpylä, 1964:75 (Finland: southern Finland: Forssa); Benno, 1967:37 (in checklist of Sphecidae of Netherlands); Lefeber, 1967c:219 (Netherlands: Sint Pietersberg); Tsuneki, 1967e:10 (China: Heilongjiang: Harbin), 1967g:44 (w. Japan: Mount Hyonosen); Haneda, 1968a:45 (Japan); Tano, 1968:33 (Japan); Itami, 1969:50 (Japan: Niigata Prefecture); Lefeber, 1969b:99 (Netherlands: Bemelen, Sint Pietersberg), 1969c:233 (Netherlands: Sint Pietersberg = Montagne Saint Pierre); Schmidt, 1969:165 (Germany: Rhein-Main area: Birnstein, Königsforst near Köln); Tsuneki, 1969e:26 (Japan); Oehlke, 1970:745 (first record from German Democratic Republic); Tsuneki, 1970b:10 (central Japan); Yarrow, 1970:178 (in list of British *Passaloecus*, with bibliographic references), 168 (study of lectotype), 179 (Great Britain: locality records); Tsuneki, 1971n:86, 88 (in key to Japanese *Passaloecus*); Kofler, 1972:110 (Austria: eastern Tirol); Merisuo, 1972c:204 (tyloids on male antenna), 206 (in list of *Passaloecus* of Finland, with bibliographic references); Tsuneki, 1972a:187 (Mongolia); Merisuo, 1973:109 (in key to *Passaloecus* of Finland), 113 (Finland: distribution); Nambu, 1973a:152 (Japan: Saitama Prefecture); Suda, 1973:122 (Japan: Yamanashi Prefecture); Tsuneki, 1973l:63 (nesting habits); Felton, 1974:408 (map of distribution in Great Britain); Leclercq, 1974b:200 (locality records, recognition characters); Merisuo, 1974a:14 (member of *monilicornis* species group); Lomholdt, 1975c:125 (in Sphecid Fauna of Fennoscandia and Denmark); Nambu, 1975b:68 (Japan: Saitama Prefecture); Vincent *in* Bohart and Menke, 1976:184 (as synonym of *Passaloecus insignis*); Pulawski, 1978:247 (in key to Sphecidae of European part of former USSR); Vincent, 1979:131 (summary of nesting habits), 154 (in revision of North American *Passaloecus*); Richards, 1980:72 (in key to Sphecidae of British Isles); Dollfuss and Ressler, 1981:315, 322 (Austria: Niederösterreich: Scheibbs District); Skibińska, 1981:357 (Poland: Warszawa-Białoleka); Axelsson, 1982:79 (Sweden); Skibińska, 1982:119, 122 (Poland: Mazovian Voivodship: seven localities); Tsuneki, 1982b:3 (Korea; comments on species identity), 1982b:14 (known from Korea); Dollfuss, 1983b:7 (in catalog of Sphecidae of Austria); Schmidt, 1984:287 (Germany: Baden-Württemberg); Paik, 1985:198 (in list of Sphecidae of Korea); Westrich and Schmidt, 1985b:111 (Germany: endangered in Baden-Württemberg); Nemkov, 1986:96 (Russia: Siberia: Irkutsk Oblast'); Steiner, 1986:100 (references to papers on nesting habits); Vikberg, 1986b:75 (Finland); Tormos and Jiménez, 1987b:316 (Spain: Valencia Province: Dehesa de El Saler); Archer, 1988b:27 (Great Britain: Yorkshire: Strensall Common); Chevin, 1988:15 (France: La Manche Department); Kowalczyk, 1988a:44 (Poland: Rogów), 1988b:64 (Poland: environs of Łódź); Jacobs, 1989:9 (Germany: Mecklenburg-Vorpommern); Pádr *in* Šedivý, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:97 (Belarus: Berezinskiy Nature Reserve); Jacobs and Oehlke, 1990:154 (new records from German Democratic Republic); Kowalczyk, 1990:290 (Poland: Góry Świętokrzyskie); Kuznetzova, 1990:22 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pádr, 1990:80 (Czech Republic: Praha area); Schwammerger and

Priesner, 1990:537 (Austria: Kärnten); Dollfuss, 1991:73 (in key to Sphecidae of North and Central Europe); Fricke, 1991b:124 (trap-nest bore diameter preferences); Kowalczyk, 1991a:89, 104, 107 (Poland: Łódź), 1991b:120 (Poland: Augustów Forest); Scobiola-Palade, 1991:220 (Romania: delta of Danube); Budrys, 1992:23 (in list of Sphecidae of Lithuania); Fricke, 1992a:52 (preference for *Juglans* trap-nests); Gusenleitner, 1992:684 (Austria: Steiermark); Nilsson, 1992:54 (Sweden); K. Weber, 1992:88 (Germany: Bayern: Bamberg District); Kuhlmann, 1993:77 (Germany: known from Westfalen); Luig, 1993:43 (Estonia); Wiśniowski, 1993a:97 (Poland: in checklist of Sphecidae of Białowieża Primeval Forest); Finnamore, 1994:210 (Canada: Alberta: Wagner Natural Area 8 km W Edmonton); Kowalczyk, 1994:73 (Poland: Łagiewniki forest in Łódź); Budrys *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:403 (in key to Sphecidae of Russian Far East); Krasnobayev et al., 1995:139 (Russia: Zhiguli Hills northwest of Samara); Schmid-Egger, Risch, and Niehuis, 1995:202 (Germany: summary of records from Rheinland-Pfalz Land); Shlyakhtenok, 1995:193 (Belarus': Berezinsky Nature Reserve); Skibińska, 1995:423, 426, 427 (Poland: pine forest in Białowieża Primeval Forest); Archer, 1996b:121 (Great Britain: Yorkshire); Arens, 1996:440 (Germany: Bayern: Bayreuth area); Jakubzik, 1996:253 (Germany: Köln); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: probably endangered in Baden-Württemberg); Shlyakhtenok, 1996:304 (Belarus': Berezinsky Nature Reserve); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg), 110 (locality records); Woydak, 1996:30 (Germany: Westfalen: summary of distribution and nesting habits); Celary, 1997:57 (in checklist of Animals of Poland); Finnamore, 1997:887 (Canada: Yukon); Schmidt and Schmid-Egger, 1997:23 (in checklist of German Sphecidae); Shlyakhtenok, Blinov, and Belyavskaya, 1997:153 (Belarus': Pripyatskiy National Park); Blösch, 1998:168 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Celary, 1998b:210 (Poland: Babia Góra National Park); Dollfuss, Gusenleitner, and Bregant, 1998:511 (Austria: summary of collecting records from Burgenland); Sugar *et al.*, 1998:15 (Canada: southern Ontario); Tschardtke, Gathmann, and Steffan-Deventer, 1998:718 (trap-nesting in Germany); K. Weber, 1998:144 (Germany: Bayern: Bamberg area); Kuhlmann, Wolf, and Woydak, 1999:569 (Germany: threatened with extinction in Nordrhein-Westfalen); Luig and Voolma, 1999:177 (Estonia); Mandery, 1999:105 (Germany: Bayern: Coburg area); Pauly, 1999:108 (in catalog of Belgian aculeates); M. Schwarz, 1999:85 (Austria: Oberösterreich: city of Linz area); Skibińska, 1999:95, 96 (previously recorded from Białowieża Primeval Forest, Poland); Blösch, 2000:195 (in Sphecidae Fauna of Germany); Jacobs, 2000:9, 17 (Germany: probably endangered in Mecklenburg-Vorpommern); Kazenas, 2000e:154 (in Sphecidae Fauna of Kazakhstan); Mokrousov, 2000b:30 (Russia: Nizhniy Novgorod Oblast'); Dollfuss and Bitsch *in* Bitsch et al., 2001:102 (in Sphecidae Fauna of Western Europe); Jacobs, 2001:137 (Germany: endangered in Mecklenburg-Vorpommern); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:141 (distribution in Germany by provinces); Skibińska, 2001:219 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:187 (Poland: Kampinos National Park near Warszawa); Zettel, Gross, and Mazzucco, 2001:70 (Austria: Wien, last collected in 1886); Archer, 2002b:126 (Great Britain: Watsonian Yorkshire: distribution map); Bergsten, Hoffsten, and Hellqvist, 2002:38 (Sweden: Hälsingland: Övre Tälningån); Gayubo, González, Tormos, and Asís, 2002:90 (Portugal: Trás-os-Montes and Alto Douro: Portela de Santa Eulalia); Hisamatsu and Satô, 2002:47 (Japan: Hokkaido: Island of Rishiri); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Mokrousov, 2002:147 (Russia: Nizhniy Novgorod Oblast': Kerzhenskiy Nature Reserve); Shlyakhtenok and Skibinska, 2002:32 (Belarus': no specific locality); van der Smissen, 2002:212 (Germany: Mecklenburg-Vorpommern: Leisterförde); Venne and Bleidorn, 2002:10 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Wiśniowski, 2002:69 (Poland: Ojców National Park); Bergsten, Ekerholm, Hellqvist, Hilszczanski, Nilsson, Pettersson, and Werner, 2003:71 (Sweden: Västerbotten: Island of Romelsön); Blösch, 2003b:83 (Germany: Bayern: Erlangen area, nesting in rotten willow poles); Kuhlmann and Quest, 2003:51 (Germany: Bayern: Bayerischer Wald National Park); Kula and Turner, 2003a:150 (Czech Republic: Děčín Sandstone Uplands: forest district Snežnik: birch stands in air-polluted area), 2003b:203 (Northern Czech Republic:

spruce stands in air-pollution region); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:68 (Germany: in catalog of wasps and bees of Bayern); Tano, Kurokawa, Murota, and Nozaka, 2003:30 (Japan: Nagasaki Prefecture: Tsushima); Wiśniowski *in* Dylewska and Wiśniowski, 2003:144 (Poland: Ojców National Park); Buck, 2004:25 (in checklist of Sphecidae of Ontario, Canada); Bergsten, Nilsson, and Hellqvist, 2004:7 (Sweden: Västerbotten: Nordmaling); Budrienė, Budrys, and Nevronytė, 2004:22 (Lithuania: nesting in trap nests); Dathe and Blank, 2004:181 (Germany: Nordrhein-Westfalen, addition to Ohl et al., 2001); Deván, 2004:147 (western Slovakia); Dollfuss, 2004a:119 (Kazakhstan: Medeo 15 km S Almaty); Esser, Jakubzik, and Sonnenburg, 2004:18 (Germany: Nordrhein-Westfalen); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:31 (Japan: Gifu Prefecture); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Stolle et al., 2004:372 (Germany: Sachsen-Anhalt: last collected before 1910); Suda, 2004:37 (Japan: Yamanashi Prefecture); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Burger, 2005:34 (Germany: Thüringen); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:45 (Japan: Gifu Prefecture); Kofler, 2005:171 (Austria: Tirol: Lienz District: Lengberg in Nikolsdorf Common, Obernußdorf and Ort in Nußdorf-Debant Common); Nemkov, 2005a:147 (Russia: Island of Sakhalin); Robinson, 2005:38 (Great Britain: Cumbria County); Saure, 2005:18 (Germany: Berlin); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:43 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Haneda, Nozaka, Tano, Kurokawa and Murota, 2006a:20 (Japan: Toyama Prefecture); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Nagase, 2006a:54 (Japan: Kanagawa Prefecture: Mount Komagatake near Hakone); Shlyakhtenok, 2006:111 (Belarus': Polesye Radiological Nature Reserve); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:456 (recorded from Spain by Ceballos, 1956, from Portugal by Gayubo et al., 2002); Hallin, 2007b:24 (Sweden: Blekinge Province); Jacobs, 2007:77, 81 (in key to Crabronidae of Germany); Nemkov, 2007b:69 (Russia: Kuril Islands: Islands of Iturup and Kunashir); Pettersson, Hellqvist, and Gabrielsson, 2007:7 (Sweden: Västerbotten: Ammarnäs); Saure, 2007:83 (Germany: in checklist of Aculeata of Brandenburg); Shlyakhtenok, 2007a:299 (Belarus': Berezinsky Nature Reserve); Vepřek and Straka, 2007:201 (in catalog of Sphecidae of Czech Republic and Slovakia); Bogusch, 2008:3 (Czech Republic: Buzice; nesting habits in artificial nest); Kochetkov, Bol'shakova, Butenko, and Priklonskiy, 2008:263 (Russia: Ryazan' Oblast': Oka Nature Reserve); Nemkov, 2008b:19 (in catalog of Crabronidae of Asiatic Russia); Rudoiskatel' and Fadeev, 2008:255 (Russia: Ekaterinburg area, reared from trap nests); Shcherbakov, 2008:211 (Russia: Moscow Oblast': near Ramenskoye); S. Takahashi and Haneda, 2008b:43 (Japan: Hokkaido: Sapporo); Theunert, 2008:66 (Germany: map of distribution in Niedersachsen and Bremen); Archer, 2009:24 (Great Britain: Yorkshire: Sheffield); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen), 39 (no reliable records from central Hessen); Mokrousov, 2009:291 (Russia: Republic Mari El); Nemkov, 2009b:70 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:235 (Russia: Primorskiy Krai: Lazovsky Nature Reserve); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:71 (Norway: locality records); Ruchin, Antropov, and Shibayev, 2009:169 (Russia: Republic of Mordovia); Straka, Dvořák, and Bogusch, 2009:263 (Czech Republic: Jizerské Mountains and Frýdlant region); Venne, 2009:111 (Germany: Nordrhein-Westfalen: Holte-Stukenbrock, associated with *Frangula alnus* Miller, Rhamnaceae); Ermilov and Mokrousov: 2010:91 (phoretic mite *Probonamoia pini* in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Falk, 2010:94 (Great Britain: heathland sites in West Midlands region); Johansson, 2010:121 (Sweden: Småland: upper Emå River valley); J. Kim and Yang, 2010:146 (in checklist of Korean Pemphredoninae); Mokrousov, 2010a:63 (Russia: Kirov, Kostroma, Nizhniy Novgorod, and Yaroslavl' Oblast's, Chuvash Republic, Mari El Republic, Mordovian Republic, Tatarstan: no specific localities); Rudoiskatel', 2010:155 (Russia: central and southern Ural Mountains); Rudoiskatel', Fadeev, and Nikolaenkova, 2010:162 (Russia: Kluchi in

vicinity of Ekaterinburg at 56°35'N 60°50'E; nest parasites: chrysidids *Omalus auratus* (Linnaeus) and *O. sareptanus* Mocsáry and ichneumonids *Lochetica westoni* Bridgman and *Poemenia hectica* (Gravenhorst)); Schmidt-Egger, 2010a:18 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:138 (Germany: Bayern: collected along Main-Donau canal); Shorenko and Kononov, 2010:25 (Ukraine: Donetsk Oblast': N.G. Krupskaya Sovkhoz); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:89 (western Slovakia: Borská Nižina), 102 (western Slovakia: recorded from Borská Nižina); van der Smissen, 2010a:347 (Germany: Mecklenburg-Vorpommern: Bürgerhof); Archer, 2011a:42 (Great Britain: Yorkshire: Strensall Common); Baghirov, 2011b:151 (Russia: Altayskiy Kray: Savvushka; Altay Republic: Artybash, Chermal, Kosh-Agach); Mokrousov, Berezin, and Egorov, 2011:79 (Russia: Chuvash Republic); Shlyakhtenok, 2011:95 (Belarus': city of Minsk); Theunert, 2011a:21 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:92 (Germany: Hessen: insufficient data); Ma and Q. Li, 2012:42 (in key to Oriental *Passaloecus*), 48 (China: Yunnan: Baoshan: Tengchong: Gaoligongshan Mountains at 25°00'N 98°29'E; Tibet: Milin at 29°12'N 94°12'E; Yunnan: Tengchong: Jietou: village Datangcun at 25°37'N 98°40'E); Nemkov, 2012c:437 (in catalog of Crabronidae of Russian Far East); Shlyakhtenok, 2012a:171 (Belarus', and Russia: Kirov Oblast': Arkhangelskoye: collected in private plots), 2012b:92 (Belarus': Beresina National Reserve: overgrowing dry meadow); Terayama, 2012:3 (in key to Pempredonini of Japan), 12 (description), 18 (in checklist of Pempredonini of Japan); Akulov and Proshchalykin, 2013:113 (Russia: Siberia: Krasnoyarsk Kray); Dyuzhaeva, 2013:117 (Russia: Samara Oblast': Zhiguli Nature Reserve); K. O'Neil and J. O'Neil, 2013:161 (New York State: Roy H. Park Preserve and Dorothy McIlroy Bird Sanctuary); Shlyakhtenok, 2013:156 (in annotated catalog of aculeate wasps of Belarus'); Wiśniowski and Szczepko, 2013:44 (Poland: Kampinos National Park near Warszawa); Bitsch, 2014:407 (biological observations by Bogusch, 2008 reported); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); J.-K. Kim, 2014:441 (in catalog of Sphecidae s.l. of Korean Peninsula); Mokrousov and Vafin, 2014:59 (Russia: Republic of Tatarstan); Pagliano, 2014:75 (specimens in Spinola collection, Torino); Else, Bolton, and Broad, 2016:37 (in checklist of Aculeata of Great Britain and Ireland: England, Scotland, Wales, Ireland); Ratzlaff, 2016:27 (Canada: British Columbia: from Vincent, 1978 and Buck, 2004); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Mokrousov, 2017e:248 (in catalog of Pempredoninae of Russia).

Passaloecus monilicornis (partly = *Passaloecus gracilis*): Dahlbom, 1844:243 (in revision of Sphecidae and Pompilidae), 1845: 505 (in key to *Passaloecus* of Europe); Saunders, 1880: 258 (in revision of British aculeates), 1896:98 (in revision of aculeates of British Islands); Richards, 1937b:105 (in checklist of British aculeates).

Nec *Passaloecus monilicornis* (= *Passaloecus insignis*): Eversmann, 1849:441; Wesmael, 1852:285; Kirchner, 1854:312; Taschenberg, 1858:96; Wierzejski, 1868:117; von Aichinger, 1870:316; Thomson, 1870:238; Schlechtendal, 1872:37; Thomson, 1874:200; Wierzejski, 1874:260; Marquet, 1875:206; Wüstnei, 1886:39; Ed. André, 1888:201 and 17*; Brischke, 1888b:99; Lange, 1898:70; Nielsen, 1901a:269, 1903:112; Aurivillius, 1904:262; Kohl, 1905d:522, 527; Sparre Schneider, 1909:...; Berland, 1925:146; Friese, 1926:153; Crèvecoeur and Maréchal, 1936:251; Harttig, 1939:30; Balthasar, 1941b:112; Guiglia, 1944b:32; Giner Marí, 1943:40; Chambers, 1949:226; Szulczewski, 1950:106; de Beaumont, 1951h:34 (Switzerland: Neuchâtel area); Móczár, 1953:310; Wolf, 1959b:27; Hoop, 1961:65; B. Klug, 1965:134; J. Heinrich, 1967:78; Niedl and Deneš, 1967:77; Scobiola-Palade, 1967b:46; Stritt, 1968:110; Benedek, 1969a:84; Eck, 1976:93; Kolesnikov, 1977:319.

Passaloecus monilicornis Dahlbom var. *dahlbomi* Kohl, 1905d:523, ♀ (authorship attributed to Sparre Schneider). Syn-types: Norway, Germany, Russia (Sankt Petersburg), Czech Republic (NHMW). Synonymized with ... – Kohl, 1905d:523 (in key to Palearctic *Passaloecus*); Sparre Schneider, 1909:105 (Norway: Nordlands: Saltdalen; as *dahlbomi* Sparre Schneider); Noskiewicz, 1920a:154 (Poland: Tatry Mountains: Dolina Białego); Shestakov, 1925:36 (Russia: Yaroslavl' area); Merisuo, 1933a:60 (Finland: city of Turku); Iwata, 1938b:33 (nesting habits; as *dahlbomi*

Sparre-Schneider); Schneid, 1941:1036 (Germany: Bayern: Bamberg area); Leininger, 1951:117 (Germany: Baden-Württemberg: Karlsruhe); Bajári, 1957a:88 (in key to Hungarian Sphecidae); Babiý, 1964:116 (Austria: Land Salzburg).

Passaloecus sp.: Friese, 1902:477 (Norway: Saltadelen at 67°N, pers. comm. of Sparre Schneider).

ssp. *ithacae* Krombein

Passaloecus ithacae Krombein, 1938b:126, ♀, ♂. Holotype: ♀, New York: Ithaca (USNM). Synonymized with *Passaloecus insignis* by Vincent in Bohart and Menke, 1976:184, and with *Passaloecus monilicornis* by Vincent, 1979:154. – Krombein in Muesebeck et al., 1951:968 (in catalog of North American Hymenoptera); Evans, 1964d:249 (description of larva); Fye, 1965:737 (trap nest; prey: aphids *Cinara* spp.; resin used for cell partitions); Krombein, 1967b:234 (nesting habits observed in artificial nests). – **As *Passaloecus monilicornis ithacae***: Vincent in Krombein, 1979b:1606 (new status, listed); Finnamore, 1982:78 (in Sphecid Fauna of Southern Quebec).

ssp. *taiwanus* Tsuneki

Passaloecus monilicornis taiwanus Tsuneki, 1967f:10, ♀. Holotype: ♀, Taiwan: Chiayi Prefecture: Mount Ali (originally K. Tsuneki coll., now USNM). – R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae, as synonym of *Passaloecus insignis*); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Hua, 2006:281 (in list of Chinese insects, geographic distribution); Ma and Q. Li, 2012:42 (in key to Oriental *Passaloecus*).

29. *multituberculatus* Ma and Q. Li

Passaloecus multituberculatus Ma and Q. Li, 2012: 45, ♂. Holotype: ♂, China: Zhejiang: Songyang at 28°26'N 119°28' (Zhejiang University, Hangzhou, China). – Ma and Q. Li, 2012:42 (in key to Oriental *Passaloecus*).

30. *nipponicola* Tsuneki

Passaloecus annulatus nipponicola Tsuneki, 1955c:13, ♂. Holotype: ♂, Japan: Fukui Prefecture: Koike (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1955c:4 (in key to *Passaloecus* of Japan), 1959b:105 (description of ♀), 1971n:87 (in key to Japanese *Passaloecus*); Suda, 1973:122 (Japan: Yamanashi Prefecture); Nambu, 1975b:69 (Japan: Saitama Prefecture); Merisuo, 1976a:24 (comparison with *Passaloecus insignis*); Hashimoto and Nakanishi, 1997:24 (holotype transferred to Hyogo Mus.). – **As *Passaloecus nipponicola***: R. Bohart in Bohart and Menke, 1976:186 (full species status, in checklist of world Sphecidae); Budrys in Nemkov, Kazenas, Budrys, et Antropov, 1995:403 (in key to Sphecidae of Russian Far East); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:45 (Japan: Gifu Prefecture), 2006a:21 (Japan: Toyama Prefecture); Okusa and Tajima, 2008:74 (Japan: central Honshu: Aichi Prefecture); Nemkov, 2008b:19 (in catalog of Crabronidae of Asiatic Russia), 2009b:70 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Nemkov, 2012c:437 (in catalog of Crabronidae of Russian Far East); Terayama, 2012:3 (in key to Pemphredonini of Japan), 10 (description), 18 (in checklist of Pemphredonini of Japan); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia).

31. *patagiatus* Vincent

Passaloecus patagiatus Vincent, 1979:185, ♀, ♂. Holotype: ♂, USA: Oregon: Klamath County: Pokegama (USNM). Paratypes: California, Nevada, British Columbia. – Ratzlaff, 2016:27 (Canada: British Columbia: from Vincent, 1978).

32. *petiolatus* Ma and Q. Li

Passaloecus petiolatus Ma and Q. Li, 2012:46, ♂. Holotype: ♂, China: Tibet: Chaya: Jitang at 30°44'N 97°50'E (Institute of Zoology, Chinese Academy of Sciences, Beijing, China). – Ma and Q. Li, 2012:42 (in key to Oriental *Passaloecus*).

33. *pictus* Ribaut

Passaloecus pictus Ribaut, 1952:26, ♀, ♂. Holotype: sex not indicated, France: Haute-Garonne: Vieille Toulouse (depository?). – Nouvel and Ribaut, 1953:181 (France: Haute-Garonne: Saint-Béat); de Beaumont, 1954e:94 (Italy: Lazio: Acilia); Steiner, 1955:144 (France: Dordogne); Leclercq, 1956g:325 (Greece: Parnassós); Grandi, 1957:390 (Italy: Ronchi near Massa Carrara); Nouvel and Ribaut, 1958:15 (France: Pyrénées-Orientales: Banyuls-sur-Mer); Wolf, 1958:16 (diagnostic characters); de Beaumont, 1959a:33 (Italy), 1960a:22 (Greece: Island of Rhodes); Janvier, 1961b:873 (nesting habits); de Beaumont, 1964c:110 (in Sphecidae Fauna of Switzerland, not recorded from Switzerland); Evans, 1964b:251 (discussion of Janvier's, 1961, description of larva); de Beaumont, 1965a:57 (Greece), 1967a:343 (Turkey; geographic variation, characteristics of Turkish specimens), 1969:93 (Turkey); Suárez, 1969:33 (first record from Spain: Almería Province); Merisuo, 1972c:205 (tyloids on male antenna); Erlandsson, 1974:79 (Greece, Italy, Yugoslavia); Leclercq, 1974b:200 (France: locality records); Merisuo, 1974a:12 (redescription), 14 (member of *borealis* species group); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Pulawski, 1978:248 (in key to Sphecidae of European part of former USSR); Gayubo, 1981a:147 (N Spain: Sierra de Béjar), 1982f:248 (Spain: Cádiz Province: Arcos de la Frontera, San Roque); 1984a:168 (Spain: previously recorded from Salamanca Province); Mingo and Gayubo, 1984:112 (Spain); Gayubo and Tormos, 1984:12 (Spain: Valencia); Schmidt, 1984:287 (Germany: Baden-Württemberg); Westrich and Schmidt, 1985b:111 (Germany: endangered in Baden-Württemberg); Gayubo, 1986c:32 (Spain: Zamora Province); Gayubo and Heras, 1986:36 (Spain: Segovia and Valladolid Provinces); Gayubo, 1987:109 (Spain: Ciudad Real Province); Gayubo, Asís, and Tormos, 1990a:14 (Spain; nesting site); Pagliano, 1990:115 (in catalog of Italian Sphecidae); Day, 1991:xvii (in summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:73 (in key to Sphecidae of North and Central Europe); Amarante and Vincent, 1993:6 (Brazil: São Paulo); Torregrosa, Gayubo, Tormos, and Asís, 1993:11 (Spain: Alicante Province); Theunert, 1993:75 (Germany: Niedersachsen: city center of Braunschweig); Gayubo and Borsato, 1994:204 (map of distribution in Italy), 205 (Italy: Toscana); Theunert, 1994c:47 (Germany: summary of records from Niedersachsen and Bremen); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian fauna); Schmid-Egger, Risch, and Niehuis, 1995:202 (summary of records from Germany: Rheinland-Pfalz Province); Jakubzik, 1996:253 (Germany: Köln); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: endangered in Baden-Württemberg); Witt, 1996:106 (Germany: Brandenburg), 110 (locality records); Schmidt and Schmid-Egger, 1997:23 (in checklist of German Sphecidae); González, Gayubo, and Torres, 1998:72, 73 (Spain: Valladolid Province); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); N. Schneider and Wahis, 1998:22 (Luxemburg: sandstone quarries); González, Gayubo, and Torres, 1999:354 (Spain: Valladolid: Viana de Cega); Pauly, 1999:108 (likely to be found in Belgium); Blösch, 2000:196 (in Sphecidae Fauna of Germany); Gayubo, González, and Torres, 2000:184 (Spain: Salamanca Province); Ljubomirov, 2000:9 (first record from Bulgaria: Sofia, specimens in N. Nedelkov collection); Neumeyer, 2000:99 (first record from Switzerland: Basel); Dollfuss and Bitsch *in* Bitsch et al., 2001:102 (in Sphecidae Fauna of Western Europe); Ivanov and Ljubomirov, 2001:211 (Bulgaria: Kresna Gorge at 41°48'N 23°10'E); Ljubomirov, 2001b:47 (Bulgaria: Mount Vitosha near Sofia); Ohl et al., 2001:141 (distribution in Germany by provinces); Zettel, Gross, and Mazzucco, 2001:70 (Austria: Wien); Amarante, 2002:51 (in catalog of Neotropical Crabronidae); Cölln, Esser, and Jakubzik, 2003:62 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Feitz, Schneider, and Pauly, 2003:85 (Luxemburg: Esch-sur-Alzette); Straka, Bogusch, Tyrner, and Vepřek, 2004:147 (Czech Republic: Praha); Alves-dos-Santos, 2003:330 (Brazil: University of São Paulo campus); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:68 (Germany: in catalog of wasps and bees of Bayern); Schmid-Egger, 2003:756 (Italy: Sicilia: Milo, Vendicari; Malta: Ghadira Beach, Mgarr); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:197 (Germany: probably endangered in Bayern); Dollfuss, 2004a:119 (Algeria: Alger-Zeralda, Italy, Macedonia, Morocco, Syria: 50 km SE Suwayda Anata); Esser, Jakubzik, Sonnenburg,

and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo, Nieves-Aldrey, González, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Straka, Bogusch, Turner and Vepřek, 2004:147 (first record from Czech Republic: Praha); Burger, 2005:34 (Germany: Thüringen); Cruz-Sánchez, Gayubo, González, and Torres, 2005:221 (Spain: Salamanca: San Martín del Castañar); Gülmez and Tüzün, 2005:54 (Turkey: Ankara Province); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Pagliano and Negrisolo, 2005:460 (in Sphecidae Fauna of Italy); Saure, 2005:18 (Germany: Berlin); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Gusenleitner, 2006:1358 (first record from Austria: Osttirol: Lienz); N. Schneider, 2006:133, 140, 142 (Luxemburg: anthropogenic habitats); Tomarchio and Turrisi, 2006:958 (Italy: Mount Etna); Baños-Picón, Gayubo, Asís, and González, 2007:257, 259 (Spain: Zamora: Cabañas de Aliste); Burger, 2007:59, 60 (Germany: Thüringen: Weimar-Schöndorf); Jacobs, 2007:76, 79 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:25 (Germany: northwestern Sachsen); Saure, 2007:83 (Germany: in checklist of Aculeata of Brandenburg); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:456 (recorded from Luxemburg by Feitz et al., 2002, 2003); Shorenko, 2007b:257 (Ukraine: Crimea: Otuzy valley); Venne, Bleidorn, and Lauterbach, 2007:302 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:201 (in catalog of Sphecidae of Czech Republic and Slovakia, known only from Bohemia and Moravia), 218 (first record from Moravia: Boři Les railway station); Gayubo, González, Tormos, and Asís, 2008:140 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Józán, 2008:81 (first record from Hungary: Kaposzderahely, Kaposvár); Ljubomirov and Yildirim, 2008:179 (in catalog of Crabronidae of Turkey); Raemakers, 2008:21 (first records from Netherlands); Theunert, 2008:67 (Germany: map of distribution in Niedersachsen and Bremen); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen), 38 (Hessen: Rockenberg Protected Area, Wettenberg: Gleiberg near Gießen); Gayubo, González, Tormos, and Asís, 2009:362 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:623 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:263 (Bulgaria: Maleshevska Planina); Pagliano, 2009:187 (Italy: recorded from Sicilia by Tomarchio and Turrisi, 2006; France: Corse: Casiria); Shorenko, 2009:368 (in list of Sphecidae s.l. of Crimea); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Józán, 2010:253 (Hungary: Somogy County); Saure, 2010b:176 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:18 (in red list of Aculeata of Germany: relatively common); van der Smissen, 2010a:347 (Germany: Schleswig-Holstein: Bad Schwartau); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:497 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Józán, 2011:179 (in checklist of Sphecidae s.l. of Hungary); Murai and Amr, 2011:119 (recorded from Syria by Dollfuss, 2004a); Saure, 2011a:6 (Germany: Berlin: former airport Tempelhof); Saure, Bohrer, Venne, and Diestelhorst, 2011:224 (Germany: Rheinland-Westfalen: Nature Reserves Doberg and Eiberg, nesting in cliffs); 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., 2011:156 (Germany: not endangered in Hessen); Ziska and Saure, 2011:109 (Germany: Berlin: Tegeler Fließ valley); Boillat, 2012:228 (Switzerland: in checklist of insects of Canton de Genève); Standfuss and Standfuss, 2012:427 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Olszewski and Pawlikowski, 2013:267 (first record from Poland: Gorzowskie Murawy Nature Reserve near Gorzów Wielkopolski); Vieira, Oliveira, Brewster, and Gayubo, 2013:19 (Portugal: Douro International Natural Park and Serras de Aire e Candeeiros Natural Park); Bitsch, 2014:407 (France: Haut-Rhin: Dessenheim; Lot: Cahors; record from Corsica by Pagliano, 2009 reported); U. Frommer, 2014:27 (Germany: Hessen: Lorch); Yildirim, Ljubomirov, and Lelej, 2014:10 (distribution in Turkey by biogeographic provinces); Atbaei, Fallahzadeh, and Ljubomirov, 2015:20 (first record from Iran: Fars Province); Koçak and Kemal, 2015:149 (in checklist of Hymenoptera of Turkey); Rezaei and Fallahzadeh, 2015:12

(Iran: Fars: Kaftarak at 29°34'N 52°41'E); Saure, 2015:14 (Germany: Berlin-Lichterfelde); Mokrousov and Popov, 2016:587 (first record from Russia: Krasnodarskiy Krai: Yuzhnaya Ozereyevka village near Novorossiysk); Sadeghi, Fallahzadeh, Ostovan, Ljubomirov, and Hesami, 2016:431 (Iran: Fars Province); Saure, 2016b:19 (Germany: endangered in Sachsen-Anhalt), 50 (Germany: Sachsen-Anhalt: fruit orchards); Schmid-Egger, Dandria, and Xuereb, 2016:81 (in checklist of Crabronidae of Maltese Islands); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:31 (Turkey: Erzurum and Kars provinces); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:74 (Iran: known from Fars Province); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia); Shorenko, 2017:78 (in Crimea collected in June).

34. *ribauti* Merisuo

Passaloecus ribauti Merisuo, 1974:139, ♀. Holotype: ♀, France: Vaucluse: Carpentras (RMNH). – R. Bohart and Menke, 1976:629 (in checklist of world Sphecidae); Dollfuss, 1991:74 (in key to Sphecidae of North and Central Europe); Leclercq, 1991a:274 (should be added to Leclercq's, 1979, Catalogue of French and Benelux Sphecidae); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian fauna); Dollfuss and Bitsch *in* Bitsch et al., 2001:104 (in Sphecidae Fauna of Western Europe); Dollfuss, 2004a:120 (Algeria, Croatia, Greece, Serbia, Syria, Turkey, Ukraine); Pagliano and Negrisolo, 2005:460 (in Sphecidae Fauna of Italy); Standfuss and Standfuss, 2006c:304 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Ljubomirov and Yildirim, 2008:179 (in catalog of Crabronidae of Turkey); Józán, 2009:165 (Croatia: Sveta Jelena, Rovini); Pagliano, 2009:188 (Italy: Toscana: Fauglia); Murai and Amr, 2011:114, 119 (first record from Syria: Al Thawrah Nature Reserve at 35°51'N 28°38'E); Bitsch, 2014:407 (France: Ardèche: Saint-Remèze; Gard: Cros; Haute-Garonne: Fronton); Yıldırım, Ljubomirov, and Lelej, 2014:10 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:149 (in checklist of Hymenoptera of Turkey); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia); Shorenko, 2017:78 (in Crimea collected in June).

35. *relativus* W. Fox

Passaloecus relativus W. Fox, 1892h:319, ♂. Lectotype: ♂, USA: Colorado: no specific locality (ANSP), designated by Cresson, 1928:52. – Dalla Torre, 1897:369 (in catalog of world Hymenoptera); Ashmead, 1899d:223 (in checklist of North American Crabronidae); Kohl, 1905d:529 (in checklist of world *Passaloecus*); Rohwer, 1909a:100 (description of ♀); Yasumatsu, 1934d:111 (in checklist of world *Passaloecus*); nec Krombein, 1938b:124, 1951a:143, Krombein *in* Muesebeck et al., 1951:968, Krombein, 1952b:178, 1954a:6, 1958b:25 (prey), 1962b:13, 1963f:275, and Krombein et al., 1967:398 (= *Passaloecus areolatus*); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); nec Evans, 1970:487 (= *Passaloecus armeniacae*, *cuspidatus*, and *melanocrus*), 1973c:148 (earlier record from Wyoming: Jackson Hole, was erroneous); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Krombein, 1979b:1606 (in catalog of North American Hymenoptera); Vincent, 1979:137 (summary of nesting habits), 179 (in revision of North American *Passaloecus*).

36. *singularis* Dahlbom

NOTE: Starting with Shuckard, 1837 and prior to Yarrow (1970), the name *gracilis* was incorrectly used for this species. The name *gracilis* refers to *singularis* in all cases (even after Yarrow, 1970), when the name *turionum* (a junior synonym of the true *gracilis*) is simultaneously used, or when the name *tenuis* is given as a synonym of *gracilis*.

Passaloecus singularis Dahlbom, 1844:243, ♂. Holotype: ♂, Sweden: Skåne (as Scania): no specific locality (Lund). – Dahlbom, 1845:505 (in key to *Passaloecus* of Europe); F. Smith, 1856:427 (in catalog of Hymenoptera in British Museum); Kirchner, 1867:222 (in catalog of European Hymenoptera); Yarrow, 1970:171 (study of type), 179 (in list of British *Passaloecus*, with bibliographic references), 181 (Great Britain: all southern counties of England and Wales, rarer in midland counties, as far north as Grange over Sands, Lancashire); Felton, 1971:213 (England: Kent: Sittingbourne); Kofler, 1972:110 (Austria: eastern Tirol); Merisuo, 1972c:204 (tyloids on male antenna), 206 (in list

of *Passaloecus* of Finland, with bibliographic references), 1973c:109 (in key to *Passaloecus* of Finland), 113 (locality records from Finland); Leclercq, 1974b:200 (summary of distribution and nesting habits, shape of clypeus); Merisuo, 1974a:14 (member of *singularis* species group); Frilli and Pizzaghi, 1975:53 (Italy: Gambaro in Piacenza Province), 76 (Italy: Monticelli d'Ongina in Piacenza Province); Lefeber, 1975b:154 (Belgium); Lomholdt, 1975b:31 (Denmark: Island of Anholt), 1975c:126 (in Sphecidae Fauna of Fennoscandia and Denmark); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Cretin and Robert, 1976:45 (France: Doubs: Chassagne-Saint Denis); Jacob-Remacle, 1976:239 (Belgium: Liège, nest structure and mortality); Leclercq, Gaspar, Delecluse and Thirion, 1976:149 (Belgium: Wallonian freeway median strip); Guichard, 1977:252 (Great Britain: Surrey); Schmidt, 1977:97 (Germany: Baden-Württemberg: Enzklosterle in Schwarzwald); Haeseler, 1978b:63 (Germany: Niedersachsen: a bog near Oldenburg); Haeseler, 1979:10 (Germany: Niedersachsen: 10 km S Oldenburg); Krombein, 1979b:1606 (in catalog of North American Hymenoptera); Marchal and Leclercq, 1979:9 (Belgium: Gembloux); Schmidt, 1979a:55 (Germany: Ost-Holstein); Vincent, 1979:133 (summary of nesting habits), 165 (in revision of North American *Passaloecus*); Jacob-Remacle and Leclercq, 1980:193 (Belgium: gardens in Liège); Pagliano, 1980:131 (Italy: Piemonte); Preuss, 1980a:21 (nesting in galls of *Lipara lucens* Meigen); Richards, 1980:72 (in key to Sphecidae of British Isles); Westrich, 1980:632 (Germany: Baden-Württemberg: Tübingen area); Dollfuss and Ressler, 1981:322 (Austria: Niederösterreich: Scheibbs District); Gayubo, 1981a:147 (northern Spain: Sierra de Béjar); Haeseler, 1981:51 (Germany: Friesian Island: Island of Amrum); Woydak, 1981:38 (Germany: Westfalen: Hamm); Axelsson, 1982:79 (Sweden); Finnamore, 1982:79 (in Sphecidae Fauna of Southern Quebec); Leclercq, 1982a:124 (Belgium: Liège), 1982e:100 (Norway: Nord-Trøndelag: Røra); Dollfuss, 1983b:7 (in catalog of Sphecidae of Austria); Riemann, 1983:82 (Germany: Bremen-Daverden area); Schmidt and Westrich, 1983:121 (first record from Greece); Chevin and Silvestre de Sacy, 1984:7 (France: Yvelines Department); Gayubo and Tormos, 1984:12 (Spain: Valencia); Haack, Tschamtker, and Vidal, 1984:131 (Germany: Hamburg area); Jacob-Remacle, 1984:260 (Belgium: urban center of Liège); Lefeber, 1984:29 (Netherlands: Maastricht); Mingo and Gayubo, 1984:112 (Spain); Nilsson, 1984:104 (Sweden: Västmanland Province); Schmidt, 1984:287 (Germany: Baden-Württemberg); Schmidt and Westrich, 1984:240 (Germany: Rheinland-Pfalz: Bad Münster); Veenendaal, 1984:18 (Netherlands: Amsterdam); Haeseler, 1985a:350 (Germany: Schleswig Holstein), 355 (prey), 1985c:571 (Germany: Friesian Islands); Józán, 1985b:56 (Hungary south of Lake Balaton), 77 (floral records), 83 (ecological and zoogeographic characteristics); Lefeber, 1985:87 (Netherlands: southern Limburg); Brechtel, 1986:65 (Germany: Südpfalz); Gayubo, 1986c:32 (Spain: Zamora Province); Gayubo and Tormos, 1986a:11 (Spain: Castellón de la Plana); Jacob Remacle, 1986:109 (Belgium; trap-nests); Józán, 1986:369 (Hungary: Kiskunság National Park); Skibińska, 1986b:150, 153 (Poland: suburbs of Warszawa), 157 (rural and suburban parks), 160 (gardens), 162 (urban parks), 164 (streetside green), 168 (green areas of housing estates), 173 (various green urban habitats); Vikberg, 1986b:75 (Finland); Riemann, 1987a:340 (Germany: Niedersachsen: Bremen area), 1987b:42 (Germany: Niedersachsen: Nature Reserves Dünengebiet near Neumühlen and Voßberge); Schmidt and Westrich, 1987:369 (Germany: Mainz area); Archer, 1988a:33 (Great Britain: Bernwood Forest near Oxford); Chevin, 1988:15 (France: La Manche Department); Dollfuss, 1988:11 (Austria: Bisamberg); Kowalczyk, 1988a:44 (Poland: Rogów), 1988b:64 (Poland: environs of Łódź); Riemann, 1988:223 (Germany: Bremen area); Wolf, 1988b:142 (Germany: Rheinland-Westfalen); Archer, 1989a:131 (Great Britain: York: found before coniferization); Bałazy, Banaszak, and Michalski, 1989:119 (Poland: Wielkopolski National Park); Jacobs, 1989:9 (Germany: Mecklenburg-Vorpommern); Józán, 1989:101 (Hungary: Tihany Nature Reserve); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:97 (Belarus: Berezinskiy Nature Reserve); Skibińska, 1989a:204 (Poland: Warszawa area), 1989b:291 (Poland: moist meadow in Warszawa area); Archer, 1990b:133 (phenology), 136 (Great Britain: city of Leicester), 1990c:18 (Great Britain: Leicestershire); Barbier, Rasmont, and Wahis, 1990:32 (Belgium: Hainaut); Jacobs and Oehlke, 1990:154 (new records from German Democratic Republic); Kowalczyk, 1990:290 (Poland: Góry Świętokrzyskie); Kuznetzova, 1990:22 (Russia: Voronezh Oblast: Galich'ya Gora Nature

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Passaloecus tenuis A. Morawitz, 1864:462, ♀, ♂. Syntypes: Russia: Sankt Petersburg (ZIN). Synonymized with *Passaloecus gracilis* by Richards, 1935a:165 and with *Passaloecus singularis* by Yarrow, 1970:171. – Brischke, 1864:209 (Germany: Preussen Province, now Poland: Pomorze Region); Ed. André, 1888:200 (in revision of Sphecidae of Europe and Algeria), 16* (bibliographic references); Dalla Torre, 1897:369 (in catalog of world Hymenoptera); de Cobelli, 1903:107 (Italy: Province of Trentino); Höppner, 1904:168 (nest parasite: *Eurytoma rubicola* Gir.); W. Schulz, 1904b:92 (Czechoslovakia); Kohl, 1905d:522, 526 (in key to Palearctic *Passaloecus*); Schmiedeknecht, 1907:209, 210 (in key to Hymenoptera of Central Europe); Cavro, 1910:685 (France: département du Nord); Dittrich, 1911b:22 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); M. Müller, 1911:114 (Germany: Brandenburg: no specific locality, nesting in galls of *Lipara*); Schirmer, 1912:166 (Germany: Berlin area); Birula,

1913:539 (Ukraine: Zhytomyr Oblast': Radomyshl'); Alfken, 1914:277 (northwest Germany); Birula, 1914:384 (Belarus': Luskinopol' near Vitebsk); Schütze, 1916:42 (Germany: Sachsen: Rachlau, visiting flowers of parsley, *Petroselinum crispum*); Dubois, 1919:96 (Belgium: Bruxelles: Uccle); O. Meyer, 1919:152 (Germany: Posen Province, now Poland: Poznań Region); Noskiewicz, 1920b:155 (Poland, now Ukraine: forest district Kopanki near Kalusz); A. Wagner, 1920:41 (Germany: Lower Elbe region); Dubois, 1921c:196, 197 (in key to Belgian Sphecidae); Maidl, 1922:65 (Croatia: Savina); Bischoff, 1925:299 (Latvia: Wezkukkul; Poland: Grajewo area); Maréchal, 1925:11 (Belgium: Chaudfontaine and Liège); Schütze, 1925:112 (Germany: Lausitz Region); Shestakov, 1925:36 (Russia: Yaroslavl' area); Friese, 1926:152 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); F. Werner, 1927:66 (Austria: Niederösterreich: River Kamp valley); Bouwman, 1928b:208 (in revision of Sphecidae of Netherlands); Schmiedeknecht, 1930:672 (in keys to Hymenoptera of North and Central Europe); Bischoff, 1933:4 (Spain); Balles, 1934:18 (Germany: Baden-Württemberg: Achern, Oberachern); Grandi, 1934:46 (nesting habits, description of mature larva), 128 (Italy: Emilia-Romagna: Bologna); Yasumatsu, 1934d:111 (in checklist of world *Passaloecus*), 112 (first record from Japan: Honsû: Kamikôchi); Blüthgen, 1937:235 (Germany: Saale River valley: Naumburg); Grandi, 1937:283 (nesting in dry stems of *Prunus persica*); Maréchal, 1938b:211 (Belgium, on leaves of *Tilia*); Móczár, 1938c:81 (Hungary: Kőszeg Hills); A. Wagner, 1938a:120 (northwestern Germany); Dvornar-Zapolskiy, 1940:303 (Russia: Kursk Oblast'); Paul, 1941:42 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); Adriaanse, 1945:264 (nesting habits, nest parasite: *Eurytoma* sp.); Aerts, 1950a:51 (Germany: Nordrhein-Westfalen: Rheidter Wertchens near Köln); Cavro, 1950:33 (France: département du Nord); Szulczewski, 1950:106 (Poland: Wielkopolski National Park 15 km S Poznań); de Beaumont, 1951h:34 (Switzerland: Neuchâtel area); Nouvel and Ribaut, 1953:180 (France: Haute-Garonne: Luchon, Saint-Béat); de Beaumont, 1954e:94 (Italy); Fahlander, 1954:251 (Sweden: Gästrikland Region); Teschner, 1955:57 (Germany: Nordrhein-Westfalen: Hohe Ward near Münster); Vogrin, 1955:40 (Yugoslavia); Ceballos, 1956:356 (in catalog of Hymenoptera of Spain); Grandi, 1957:391 (Italy: Abruzzi); Zirngiebl, 1957:179 (Germany: Rheinland-Pfalz: Pfalz region); Evans, 1958c:132 (larval description by Grandi, 1934); Hamann, 1960:196 (Austria: Oberösterreich: Mönchgraben near Linz); Grandi, 1961:237 (nesting habits), 525 (description of larva); Janvier, 1961b:847 (nesting habits); Grandi, 1962:97 (Italy); de Beaumont, 1962b:27 (Spain); Babiy, 1964:116 (Austria: Land Salzburg); Ceballos, 1964:86 (in supplement to catalog of Spanish Sphecidae, as *tenius*); de Beaumont, 1964c:109 (in Sphecid Fauna of Switzerland); Evans, 1964b:251 (discussion of Janvier's, 1961, description of larva); Benedek, 1966b:295 (in key including *Passaloecus roettgeni*, *tenuis*, and *clypealis*); de Beaumont, 1967a:343 (Turkey); Gauss, 1967:556 (Germany: Baden-Württemberg); J. Heinrich, 1967:78 (Germany: Bayern: Unterfranken District); Lefeber, 1967c:219 (Netherlands: Boholz, Maastricht, Sint Pietersberg); Benedek, 1968:74 (Hungary, floral records), 1969a:84 (Hungary; marshy meadow; as *tenius*); Wolf, 1968:12 (Germany: Nordrhein-Westfalen: Siegen, inhabitant of forest edge); Benedek, 1969b:421 (Hungary: Csopak, collected in vicinity of aphid *Hyalopteritena pruni* (Geofroy)); Lefeber, 1969b:99 (Netherlands: Amby, Bemelen, Maastricht; Belgium: Lanaye); Benedek, 1970:100 (Hungary: Tapolca); Gauss and Perraudin, 1970:360 (Germany: Baden-Württemberg: Bodensee area); Oehlke, 1970:746 (German Democratic Republic); Schmidt, 1971b:42 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mainzer Sand); Stritt, 1971a:105 (Germany: Baden-Württemberg: Karlsruhe); Tsuneki, 1971n:86 (in key to Japanese *Passaloecus*); Bonelli, 1972:8 (nesting habits); Haeseler, 1972:156, 172, 200, 204 (Germany: Schleswig-Holstein; anthropogenic habitats); Oehlke, 1972:139 (Germany: Island of Hiddensee); Erlandsson, 1974:79 (Italy); Levi, Sysoletina, and Shernin, 1974:269 (Russia: Kirov Oblast': Kirov); Simon Thomas and Wiering, 1976:109 (Netherlands: IJsselmeer Polders); Benedek, 1979:233 (Hungary: Bakony Hills); Delarze, 1992:68 (Switzerland: Valais: Les Folatères); Salzmann-Wandeler, 1998a:98 (Switzerland: Luzern Canton: Sempach).

Passaloecus gertrudis Krombein, 1938b:124, ♀, ♂. Holotype: ♀, USA: New York: Buffalo: Forest Lawn (USNM). Synonymized with *Passaloecus singularis* by Vincent in Bohart and Menke, 1976:184. – Krombein in Muesebeck et

al., 1951:968 (in catalog of North American Hymenoptera); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park).

As *Passaloeocus gracilis* (collectively corrected to *Passaloeocus singularis* by Yarrow, 1970:179): Shuckard, 1837a:190 (in revision of British Aculeata); Dahlbom, 1842a:12 (in review of Scandinavian aculeates), 1844:242 (in revision of Sphecidae and Pompilidae), 1845:505 (in key to *Passaloeocus* of Europe); Eversmann, 1849:410 (Russia: Orenburg province); Kiesenwetter, 1849:90 (Germany: Kingdom of Saxony: Bautzen); Wissmann, 1849:13 (Germany: Kingdom of Hannover: Münden); Tischbein, 1850:9 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); F. Smith, 1851c:34 (Great Britain: no specific locality); Wesmael, 1852:284 (Belgium); Kirschbaum, 1853:47 (Germany: Herzogtum Nassau: Weilburg, Wiesbaden); F. Smith, 1853:64 (in checklist of British Hymenoptera), 1856:427 (in catalog of Hymenoptera in British Museum); Kawall, 1857:25 (Kurland, now Latvia; simultaneous use of *turionum*); Ruthe and Stein, 1857:315 (Germany: Berlin area, simultaneous use of *turionum*); Schenck, 1857:138 (Germany: in revision of fossorial wasps of Nassau Region); F. Smith, 1858c:173 (in review of British Aculeata, redescription); Goureau, 1858:XL (nesting in dry stems of *Rubus*); Taschenberg, 1858:96 (Germany; simultaneous use of *turionum*); Assmuss, 1859:614 (Russia: Moscow Oblast'); Funk, 1859:58 (Germany: Bayern: Bamberg); Schenck, 1860:147 (Germany: Nassau Region, simultaneous use of *turionum*); Brischke, 1862:103 (Germany: Preussen Province, now Poland: Pomorze Region); Giraud, 1866:472 (nesting in stems of *Rubus*, preying on aphids); Taschenberg, 1866:188 (in revision of Hymenoptera of Germany); A. Costa, 1867c:115 (in revision of Italian Sphecidae); Jaennicke, 1867:147 (Germany: Hessen: Frankfurt area); Schenck, 1867a:353 (Germany: Nassau Region); Jaennicke, 1868:8 (Germany: Hessen: Offenbach); Wierzejski, 1868:117 (Ukraine: Podole Region); von Aichinger, 1870:316 (Austria: Tirol); Thomson, 1870:238 (in revision of Swedish wasps; = *singularis*); A. Costa, 1871b:44 (in revision of Italian Sphecidae); F. Smith, 1871b:18 (in catalog of British Aculeata); Schlechtendal, 1872:37 (Germany: Sachsen: Zwickau; simultaneous use of *turionum*); Dours, 1874:145 (in catalog of Hymenoptera of France); Thomson, 1874:200 (in revision of Hymenoptera of Scandinavia, as *gracellis*); Wierzejski, 1874:260 (Poland: Kraków; Ukraine: Sinkov, Stanislawów, now Ivano-Frankovsk; simultaneous use of *turionum*); Daly, 1878:46 (Great Britain: Dorset: Glanville's Wootton); Girard, 1879:942 (morphology and habits); Kohl, 1880:139 (Austria: Tirol, and Italy: Trentino–Alto Adige); E. Saunders, 1880:258 (in revision of British Aculeata); Siebke, 1880:63 (Norway, as *gracellis*; simultaneous use of *turionum*); Schøyen, 1881:11 (correction to Siebke, 1880); Kohl, 1883e:660 (Switzerland); Sickmann, 1883:79 (Germany: Niedersachsen: Wellingholthausen); Harwood, 1884:211 (England: Essex: Colchester area); von Heyden, 1884:120 (Germany: Hesse: Frankfurt am Main area); Wüstnei, 1886:39 (Germany: Schleswig-Holstein: Emmelsbüll, Husum, Norburg, Sonderburg); Ed. André, 1888:199 (in revision of Sphecidae of Europe and Algeria, simultaneous use of *turionum*), 16* (bibliographic references); Brischke, 1888b:99 (Germany: Preussen Province, now Poland: Pomorze Region), 1889:204 (Germany: Steegen E Danzig, now Poland: Stegna E Gdańsk); C. Verhoeff, 1890b:383 (comparison with *Passaloeocus roettgeni* and *monilicornis*), 1891b:8 (nesting habits); V. Perkins, 1892:202 (Great Britain: Gloucestershire: Wotton-under-Edge); Radoszkowski, 1892:585 (male genitalia); Kohl, 1893a:38 (Austria: Niederösterreich); F. Morawitz, 1893a:111 (Russia: Karelian Isthmus); Sickmann, 1893:78 (Germany: Niedersachsen: Iburg); Engel, 1894:53 (Germany: Bahrenfeld near Hamburg); Krieger, 1894:15 (Germany: Kingdom of Saxony); De Stefani Perez, 1895:227 (in catalog of Sicilian Hymenoptera); Mocsáry, 1897:78 (Kingdom of Hungary, some localities are in today's Romania and Slovakia); Borries, 1897:89 (nesting habits); Strand, 1898b:93 (Norway); W. Evans, 1900:265 (Great Britain: Scotland: Aberfoyle); Aurivillius, 1904:262 (in revision of Swedish Sphecidae); Höppner, 1904:168 (nest parasite: *Eurytoma rubicola* Gir., simultaneous use of *turionum*); Jourdain 1904:221 (Great Britain: Derbyshire: Breadsall); Zilahi Kiss, 1904:77 (Hungary: Tasnád); Kubes, 1905:83 (Czech Republic: Kolín, Obora); von Heyden, 1905:82 (Germany: Hessen: Frankfurt); Strand, 1906:101 (Norway: Aal); de Gaulle, 1908:103 (in catalog of French Hymenoptera); Morley, 1909:305 (Great Britain: Isle of Wight); Adlerz, 1910:40 (Sweden; nesting habits); Graeffe, 1911:50 (Italy: Trieste area); R. Perkins, 1924:223 (Great

Britain: Devon); Berland, 1925d:146 (in Sphecidae Fauna of France); Coulon, 1925:114 (France: Evreux); R. Perkins, 1925:150 (Great Britain: Gloucestershire and Somersetshire); Stelfox, 1927:293 (records from Ireland are erroneous); Grandi, 1929:288 (Italy: Toscana: valle della Limentra, identification tentative); Pulkkinen, 1931:95 (in revision of Sphecidae of Finland, = *tenuis*); Spooner, 1931:14 (Great Britain: Cambridgeshire); Bondroit, 1932:35 (Belgium: common in Bruxelles area); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Hoffmeyer, 1932:60 (number and position of forewing sensillae); Bondroit, 1933:30 (Belgium: Bruxelles; simultaneous use of *turionum*); Merisuo, 1933a:60 (Finland: city of Turku; = *tenuis*); E. Nielsen, 1933:319 (summary of nesting habits); Jansson, 1934:289 (Sweden, simultaneous use of *turionum*); Forsius in Forsius and Hellén, 1935:11 (in checklist of Hymenoptera of Finland); Marchand and Dulac, 1935:61 (France: Saône-et-Loire: Saint Laurent d'Andenay); Vergne, 1935:119 (France: Auvergne: Pont-du-Chateau); Crèvecoeur and Maréchal, 1936:251 (in catalog of Belgian Hymenoptera, = *tenuis*); Dulac, 1937:16 (France: Saône-et-Loire: Saint-Laurent d'Andenay); Richards, 1937b:105 (in checklist of British aculeates); Zavadil, Šusterka, and Baťa, 1937:181 (in catalog of Sphecidae of Czechoslovakia; = *tenuis*); Móczár, 1938c:81 (Hungary: Kőszeg Hills); Leclercq, 1939:61 (partitions between cells and nest closure made of clay and small pebbles), 1940:50 (use of small pebbles and resin for cell closure varies regionally), 51 (nesting, use of pith for cell partitioning); Balthasar, 1941b:112 (Czech Republic: eastern Moravia); de Graham, 1941:99 (Great Britain: Lincolnshire); Leclercq, 1941a:68 (Belgium: Pays de Liège), 1941b:11 (Belgium: Liège area, additional information on nesting); Schneid, 1941:1036 (Germany: Bayern: Bamberg area; = *tenuis*); J. Perkins, 1942:198 (Sweden: Skåne: Degaberga, Höör, and Kivik); Šnoflák, 1944a:143 (Czech Republic: serpentine steppe near Mohelno); Balthasar, 1943:41 (Czech Republic: Moravia: Zlin area); Giner Marí, 1943:40 (in Sphecidae Fauna of Spain, simultaneous use of *turionum*); Spooner, 1943:75 (Great Britain: G. Wootton, Isle of Wight, Portland, Wyke Regis.); T. Fletcher, 1945:53 (Great Britain: Gloucestershire: Redland, Wotton); Hallett, 1945:127 (Great Britain: Herefordshire: Aston Ingham); Spooner, 1946:27 (Britain: Leicestershire: Charnwood Forest); de Hennin and Anciaux, 1948:76 (Belgium: between Sambre and Meuse Rivers); Guichard and Yarrow, 1948:90 (Great Britain: London: Hampstead Heath); Šnoflák in Zavadil and Šnoflák, 1948:47 (in key to Sphecidae of Czechoslovakia); Chambers, 1949:226 (Great Britain: Bedfordshire); Leininger, 1951:117 (Germany: Baden-Württemberg: Wasenweiler); Caruel, 1952b:101 (France: Marne Department); Leclercq, 1953a:248 (Belgium: nesting sites, prey, pupating, locality records); Móczár, 1953:310 (Hungary); Tjeder, 1954:68 (Sweden: eastern Skåne: Ravlunda kyrkby); Lehrer, 1955:264 (Romania: Moldova: Dealul Seaca in Iași District); Tsuneki, 1955c:3, 5 (in key to *Passaloecus* of Japan; as *gracilis gracilis*); Vergne, 1955:5 (France: Auvergne); Leclercq, 1956:132 (Luxemburg); Bajári, 1957a:88 (in key to Hungarian Sphecidae); Benno, 1957:144 (Netherlands: Tilburg area, nesting in stems of *Rubus*); Yeo, 1957:19 (England: Middlesex, now in London); Wolf, 1959b:27 (Germany: Nassau); Noskiewicz and Puławski, 1960:63, 65 (in key to Polish Sphecidae); Tolstova, 1962:287 (Russia: Pushkin, nesting in raspberry stems); Valkeila, 1962b:67 (southwestern Finland); Felton, 1963:178 (Great Britain: Kent County); Hoop, 1963b:7 (Germany: Schleswig-Holstein: Rosenkranz; = *tenuis*); Valkeila, Brander, and Käpylä, 1963:41 (Finland: historical region Lounais-Hämeen = southwest Häme); Hüsing and Jäger, 1964:192 (Germany: Sachsen-Anhalt: Nietleben near Halle), 198 (nesting in galleries of *Lymexylon navale* (L.), a lymexylid beetle); B. Klug, 1965:134 (Germany: Baden-Württemberg: Freiburg im Breisgau area); Benno, 1967:37 (in checklist of Sphecidae of Netherlands); Niedl and Deneš, 1967:77 (Czech Republic: Třeboň area; = *tenuis*); Scobiola-Palade, 1967b:46 (Romania); Leclercq, 1968b:39 (Great Britain: Kent), 1968d:109 (Belgium: city of Liège); Scobiola-Palade, 1968c:385 (Romania: Budești, Tigănești; = *tenuis*); Dathe, 1969:439 (Germany: Berlin Zoological Garden); Lefeber, 1969c:233 (Netherlands: Sint Pietersberg = Montagne Saint Pierre); Zangheri, 1969:1705 (Italy; = *tenuis*); Lefeber and Petit, 1970:130 (Belgium: Plombières; = *tenuis*); Tumšs, 1970:75 (Latvia); Danks, 1971a:67-73 (Great Britain: Berkshire: Silwood Park), 1971b:80 (nest mortality); Scobiola-Palade, 1972b:254 (Romania); Leclercq, 1974b:199 (locality records; simultaneous use of *turionum*); Balthasar, 1972:195

(in Sphecidae Fauna of Czechoslovakia); Casolari and Casolari Moreno, 1980:119 (specimens in M. Spinola collection); Kazenas, 1980e:87 (Russia: Primorskiy Krai); Pádr *in* Šedivý, 1989a:169 (in checklist of Czechoslovakian Sphecidae); Gauss, 1982:76 (Germany: nesting in old galleries of *Anisandrus dispar* Fabricius).

37. *turanicus* Gussakovskij

Passaloecus turanicus Gussakovskij, 1952:216, ♀, ♂. Syntypes: Tajikistan: Kzyl-Tam in Shakhriyab District; and Uzbekistan: Kargashi-su in Fergana Valley, Pugus, Roshan, Tashkent (ZIN). – Not listed by Bohart and Menke, 1976; Merisuo, 1976a:24 (cannot be confused with *iwatai*), 1976e:175 (redescription); Islamov, 1985:530 (Uzbekistan: Tashkent Oblast'); Esenbekova and Kazenas, 2000:21 (southeast Kazakhstan: 2 km SW Alma Ata, 3–7 km S Talgar, 3 km E Teskensu); Kazenas, 2000e:157 (in Sphecidae Fauna of Kazakhstan), 2001:22 (in checklist of Sphecidae of Kazakhstan and Central Asia); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Kazenas, 2002a:52 (geographic distribution, collecting localities in Kazakhstan); Esenbekova and Kazenas, 2003:13 and 65 (Kazakhstan: foothills of Zailiyskiy Alatau: nest structure); Dollfuss, 2004a:120 (Kyrgyzstan, Uzbekistan); Kazenas, 2004b:101 (Kazakhstan: western Tien Shan).

38. *turionum* Dahlbom

Passaloecus turionum Dahlbom, 1844:246, ♀, ♂ (as *Turionum*, incorrect original capitalization). Lectotype: ♀, Germany: Berlin area (Lund), designated by Vincent, 1979:179. Synonymized with *Passaloecus gracilis* by Vincent *in* Bohart and Menke, 1976:184, restored to full species status by Vincent, 1979:178. – Dahlbom, 1845:505 (in key to *Passaloecus* of Europe); Kiesenwetter, 1849:90 (Germany: Kingdom of Saxony: Dresden); Tischbein, 1850:6, 9 (Germany: Rheinland-Pfalz: Herrstein in Fürstentum Birkenfeld); Wesmael, 1852:285 (Belgium: Bruxelles); Kirschbaum, 1853:47 (Germany: Herzogtum Nassau: Weilburg); F. Smith, 1856:427 (in catalog of Hymenoptera in British Museum, as *Turionum*); Kawall, 1857:25 (Kurland, now Latvia); Ruthe and Stein, 1857:315 (Germany: Berlin area); Schenck, 1857:139 (Germany: in revision of fossorial wasps of Nassau Region); Taschenberg, 1858:96 (Germany; as *Turionum*); Assmuss, 1859:614 (Russia: Moscow Oblast'); Funk, 1859:58 (Germany: Bayern: Bamberg); Brischke, 1862:103 (Germany: Preussen Province, now Poland: Pomorze Region), 1864:209 (Germany: Preussen Province, now Poland: Pomorze Region); A. Morawitz, 1864:462 (Russia: Sankt Petersburg); Taschenberg, 1866:188 (in revision of Hymenoptera of Germany); A. Costa, 1867c:114 (in revision of Italian Sphecidae); Kirchner, 1867:222 (in catalog of European Hymenoptera); Schenck, 1867a:353 (Germany: Nassau Region); Jaennicke, 1868:9 (Germany: Hessen: Wiesbaden); Thomson, 1870:237 (in revision of Swedish wasps); A. Costa, 1871b:43 (in revision of Italian Sphecidae); Schlechtendal, 1872:37 (Germany: Sachsen: Zwickau); Thomson, 1874:199 (in revision of Hymenoptera of Scandinavia); Wierzejski, 1874:260 (Poland: Kraków), 1875:260 (Poland: Kraków); Beuthin, 1876:230 (Germany: Hamburg area); Radoszkowski, 1877:65 (Tajikistan, Kyrgyzstan); Kohl, 1880:139 (Austria: Tirol, and Italy: Trentino–Alto Adige); Siebke, 1880:63 (Norway); Gribodo, 1881a:145 (Italy: Calabria: Montagna Cavaliere); Schøyen, 1881:11 (correction to Siebke, 1880); Kohl, 1883e:660 (Switzerland); Sickmann, 1883:79 (Germany: Niedersachsen: Wellingholthausen); A. Costa, 1884b:33 (Italy: Sardegna: valle del Montenuovo); von Heyden, 1884:120 (Germany: Frankfurt am Main area); Wüstnei, 1886:39 (Germany: Schleswig-Holstein: Husum, Sonderburg); Gasperini, 1887:14 (Dalmatia: Spalato, now Croatia: Split); Ed. André, 1888:201 (in revision of Sphecidae of Europe and Algeria), 17* (bibliographic references); Brischke, 1888a:54 (Germany: Hela Peninsula, now Poland: Hel Peninsula), 1888b:99 (Germany: Preussen Province, now Poland: Pomorze Region); C. Verhoeff, 1891b:5 (nesting habits); Bezzi, 1892:123 (Italy: Lombardia: Provincia di Pavia: vicinity of Pavia); C. Verhoeff, 1892b:364 (nest may include progeny of one sex only; individuals of both sexes that emerge first are larger); F. Morawitz, 1893a:111 (Russia: Karelian Isthmus); Sickmann, 1893:79 (Germany: Niedersachsen: Iburg); Westerlund, 1893:25 (Russia: Karelian Republic: northern shore of Lake Ladoga); Borries, 1897:92 (nesting habits); Dalla Torre, 1897:369 (in catalog of world Hymenoptera); Mocsáry, 1897:78 (Kingdom of Hungary, one locality is in today's Romania); Strand,

1898b:93 (Norway); J. Nielsen, 1901a:269 (nesting habits); N. Arnold, 1902:88 (Russia: Mohilev Province, now Belarus); de Cobelli, 1903:107 (Italy: Province of Trentino); Antiga and Bofill, 1904:8 (Spain: Cataluña Province); Aurivillius, 1904:262 (in revision of Swedish Sphecidae); Zilahi Kiss, 1904:77 (Hungary: Tasnád); Kubes, 1905:83 (Czech Republic: Veltruby); Mantero, 1905:67 (Italy: Toscana: Isola del Giglio); Adlerz, 1906:34 (Sweden, nesting habits); de Gaulle, 1908:103 (in catalog of French Hymenoptera); Jansson, 1922:24 (Sweden: Island of Öland); Chevalier, 1924:22 (nesting habits); Berland, 1925d:146 (in Sphecid Fauna of France); Hémon, 1926:199 (France: Finistère: Fouesnant); Pulkkinen, 1931:94 (in revision of Sphecidae of Finland); Bondroit, 1932:35 (Belgium: Solbosch); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Bondroit, 1933:30 (Belgium: Bruxelles); Merisuo, 1933:60 (Finland: Turku; = *brevicornis*); Giner Marí, 1934:135 (Spain); Jansson, 1934:289 (Sweden); Yasumatsu, 1934d:111 (in checklist of world *Passaloecus*); Forsius in Forsius and Hellén, 1935:11 (in checklist of Hymenoptera of Finland); Crèvecoeur and Maréchal, 1936:251 (in catalog of Belgian Hymenoptera); Zavadil, Šusterka, and Baťa, 1937:182 (in catalog of Sphecidae of Czechoslovakia); Móczár, 1938c:81 (Hungary: Kőszeg Hills); Giordani Soika, 1939b:74 (Italy: Venezia); Leclercq, 1939:60 (use of resin for nest closure, sometimes for partitions between cells); Maréchal, 1939:341 (Belgium: Loën); J. Perkins, 1942:198 (Sweden: Skåne: Högbo); Giner Marí, 1943:40 (in Sphecid Fauna of Spain); Guiglia, 1944a:149 (Cyprus: Limassol), 1944b:32 (Italy); Šnoflák, 1944a:143 (Czech Republic: serpentine steppe near Mohelno); Carl and de Beaumont, 1947:69 (Switzerland: Graubünden = Grisons Canton: Swiss National Park); de Beaumont, 1947b:397 (Cyprus); Móczár, 1947b:90 (Hungary: Siebenbürgen: Homoródfürdő, now Romania: Transylvania: Băile Homorod); Guiglia, 1948c:202 (Italy: Sardegna: Cagliari); Georgel, 1950:64 (France: Seine-et-Oise: Sucy-en-Brie); Pittioni, 1950:27 (Cyprus); Ribaut, 1952:27 (in revision of *Passaloecus* of France); Cleu, 1953:51 (France: Ardèche River basin); Leclercq, 1953a:249 (Belgium: locality records); Móczár, 1953:310 (Hungary); Nouvel and Ribaut, 1953:181 (France: Central Pyrénées: Garonne River valley); de Beaumont, 1954e:94 (Italy); Grandi, 1954:181 (use of resin for nest closure, nest parasite: *Ellampus aeneus* Fabricius, a chrysidid), 242 (Italy); Leclercq, 1954a:291 (as new synonym of *Passaloecus insignis*); Tjeder, 1954:68 (Sweden: eastern Skåne: Vitemölla); Lehrer, 1955:264 (Romania: Moldova: Dealul Seaca in Iași District); Vergne, 1955:5 (France: Auvergne); Ceballos, 1956:356 (in catalog of Hymenoptera of Spain); Bajári, 1957a:88, 89 (in key to Hungarian Sphecidae); de Beaumont, 1957b:137 (northern Iran); Zirngiebl, 1957:179 (Germany: Rheinland-Pfalz: Pfalz region); Nouvel and Ribaut, 1958:15 (France: Pyrénées-Orientales: Banyuls-sur-Mer); Compte Sart, 1959:130 (Spain: Majorca); Wolf, 1959b:27 (Germany: Nassau); Grandi, 1961:237 (nesting habits); Janvier, 1961b:878 (nesting habits); Krombein, 1961c:258 (adventive in USA); Grandi, 1962:97 (Italy); S. Thomas, 1962:217 (adventive to Michigan; nest parasite: *Omalus auratus*); Babiý, 1964:116 (Austria: Land Salzburg); Ceballos, 1964:86 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964a:297 (taxonomic problems), 1964c:110 (in Sphecid Fauna of Switzerland); Evans, 1964b:251 (discussion of Janvier's, 1961, description of larva); Hüsing and Jäger, 1964:192 (Germany: Sachsen-Anhalt: Nietleben near Halle), 198 (digging galleries in sand); de Beaumont, 1965a:57 (Greece); Benedek, 1966a:163, 164 (nests occasionally in galls of *Cynips kollari* Htg. and *lignicola* Htg.); Bonelli, 1966c:219 (Italy: Trentino–Alto Adige: Fiè, Fiemme, as *turriorum*); de Beaumont, 1967a:343 (Turkey); Gauss, 1967:556 (Germany: Baden-Württemberg); J. Heinrich, 1967:78 (Germany: Bayern: Aschaffenburg, Kahl, Lohr; = *brevicornis*); Hoop, 1967a:39 (= *brevicornis*; Germany: Schleswig-Holstein: Lauenburg); Lefebber, 1967c:219 (Netherlands: Sint Pietersberg); Wray, 1967:124 (North Carolina: Durham); Benedek, 1968:74 (Hungary, floral records); Scobiola-Palade, 1968c:385 (Romania: București); Benedek, 1969a:84 (Hungary; marshy meadow), 1969b:421 (Hungary: Csopak, collected in vicinity of aphid *Hyalopteritena pruni* (Geoffroy)); Bonelli, 1969a:149 (nesting habits); Lefebber, 1969c:233 (Netherlands: Sint Pietersberg = Montagne Saint Pierre); Benedek, 1970:100 (Hungary: Tapolca); Suárez, 1969:33 (Spain: Almería Province); Gauss and Perraudin, 1970:360 (Germany: Baden-Württemberg: Bodensee area); Hoop, 1970:60 (Germany: Schleswig-Holstein: Hochwacht, as *turriorum*); Oehlke, 1970:747 (German Democratic Republic); Stritt,

1971a:105 (Germany: Baden-Württemberg: Karlsruhe); Schmidt, 1971b:43 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mainzer Sand; = *brevicornis*); Haeseler, 1972:156, 200 (Germany: Schleswig-Holstein; anthropogenic habitats); Kazenas, 1972b:120 (Kazakhstan); Simon Thomas, 1972:185 (France: Gironde, Landes); Erlandsson, 1974:79 (Italy); Kazenas, 1974b:111 (feeding on flowers of *Achillea millefolium* L., Asteraceae, in Kazakhstan); Leclercq, 1974b:201 (faunal records); Lomholdt, 1975b:32 (Denmark: Island of Anholt), 1975c:118 (in Sphecidae Fauna of Fennoscandia and Denmark); Eck, 1976:93 (German Democratic Republic); Haeseler, 1976b:72 (Germany: Friesian Islands: Island of Amrum); Vincent in R. Bohart and Menke, 1976:184 (as new synonym of *Passaloecus gracilis*); Georghiou, 1977:191 (Cyprus); Schmidt, 1977:97 (Germany: Baden-Württemberg: Enzklösterle in Schwarzwald), 1977/78:57 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mainzer Sand); Schwammberger, 1978:418 (Germany: Württemberg); Kazenas, 1978b:158 (in key to Sphecidae of Kazakhstan and Central Asia); Benedek, 1979:233 (Hungary: Bakony Hills); Schwammberger, 1979:116 (Germany: Nordrhein-Westfalen: Gildehauser Venn Nature Reserve); Vincent, 1979:178 (valid species); Casolari and Casolari Moreno, 1980:119 (specimens in M. Spinola collection); Westrich, 1980:632 (Germany: Baden-Württemberg: Tübingen area); Haeseler, 1981:51 (Germany: Friesian Island: Island of Amrum); Woydak, 1981:38 (Germany: Westfalen: Hamm); Gauss, 1982:76 (Germany: nesting in galls of *Retinia resinella* Linnaeus and old galleries of beetle *Myelophilus piniperda* Linnaeus); Leclercq, 1982e:100 (Norway: Nord-Trøndelag: Røra); Westrich and Schmidt, 1983a:213 (recognition characters, comparison with *Passaloecus borealis* and *gracilis*); Haack, Tschardtke, and Vidal, 1984:131 (Germany: Hamburg area); Janzon and Svensson, 1984:183 (Sweden: Island of Öland); Schmidt, 1984:288 (Germany: Baden-Württemberg); Brechtel, 1986:65 (Germany: Südpfalz); Nilsson, 1986:87 (Sweden); Riemann, 1987b:42 (Germany: Niedersachsen: Nature Reserves Dünengebiet near Neumühlen and Voßberge); Schmidt and Westrich, 1987:369 (Germany: Mainz area); Jacobs, 1989:9 (Germany: Mecklenburg-Vorpommern); Weiffenbach, 1989:106 (Germany: Hessen: Gießen area); Jacobs and Oehlke, 1990:126 (in key to *Passaloecus* of German Democratic Republic), 155 (new records from German Democratic Republic); Rohe, 1990:1049 (Germany: Rheinland-Pfalz: Lenneberg forest; as *turinonum*); Dollfuss, 1991:74 (in key to Sphecidae of North and Central Europe); Jakubzik, 1991:74 (Germany: Köln); Budrys, 1992:24 (in list of Sphecidae of Lithuania); Delarze, 1992:68 (Switzerland: Valais: Les Follatères); Gusenleitner, 1992:685 (Austria: Oberösterreich); Nilsson, 1992:54 (Sweden); K. Weber, 1992:88 (Germany: Bayern: Bamberg District); Kuhlmann, 1993:77 (Germany: known from Westfalen); Theunert, 1994c:47 (Germany summary of records from Niedersachsen and Bremen); Gusenleitner, 1995:160 (Austria: Oberösterreich); Negrisola in Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian fauna); Schmid-Egger, Risch, and Niehuis, 1995:203 (Germany: summary of records from Rheinland-Pfalz); Skibińska, 1995:423, 425, 426, 427 (Poland: pine forest in Białowieża Primeval Forest); Wolf, 1995:16 (Germany: Rheinland-Pfalz: near Lorelei Rock on Rhein River); Arens, 1996:440 (Germany: Bayern: Bayreuth area); Harvey and Plant, 1996:78 (Great Britain: tentative records from Essex); Jakubzik, 1996:253 (Germany: Köln); Jakubzik and Cölln, 1996b:400 (Germany: Rheinland-Pfalz); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: not endangered in Baden-Württemberg); Witt, 1996:106 (Germany: Brandenburg); Woydak, 1996:31 (Germany: Westfalen: summary of distribution and nesting habits); Schmidt and Schmid-Egger, 1997:24 (in checklist of German Sphecidae); Blösch, 1998:168 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Budrys, 1998:82 (Russia: Belgorod Oblast': Borisovka at 50°36'N 36°04'E); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Tschardtke, Gathmann, and Steffan-Deventer, 1998:719 (trap-nesting in Germany); van der Smissen, 1998:65 (Germany: Niedersachsen, Schleswig-Holstein); K. Weber, 1998:146 (Germany: Bayern: Bamberg area); Erhardt, 1999:75 (Germany: Niedersachsen: Ammerland area); Gonzáles, Gayubo, and Torres, 1999:354 (Spain: Valladolid: Viana de Cega); Herrmann, 1999:8 (Germany: Niedersachsen: Oldenburg area; habitats size); Luig and Voolma, 1999:178 (first record from Estonia: Järvere, Palmse, Piiri, Piusa, Veski); Majzlan, Rychlík, and Deván, 1999:146 (first record from Slovakia: Čenkovská Step

Nature Reserve); Mandery, 1999:105 (Germany: Bayern: Coburg area); Pauly, 1999:108 (in catalog of Belgian aculeates); M. Schwarz, 1999:85 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:198 (in Sphecidae Fauna of Germany); Jacobs, 2000:9 (Germany: not endangered Mecklenburg-Vorpommern); Schmid-Egger, 2000b:276 (Germany: Baden-Württemberg: shores of Rhein River); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Haeseler, 2001:266 (Germany: Niedersachsen: Brookdeich near Oldenburg); Ivanov and Ljubomirov, 2001:211 (Bulgaria: Kresna Gorge at 41°48'N 23°10'E); Ohl et al., 2001:141 (distribution in Germany by provinces); Skibińska, 2001:219 (Poland: Białowieża Primeval Forest); van der Smissen, 2001:62 (Germany: not endangered in Schleswig-Holstein); Guichard, 2002:33 (first record from Great Britain, comparison with *Passaloecus gracilis*); Shlyakhtenok and Skibinska, 2002:32 (Belarus': no specific locality); Cölln, Esser, and Jakubzik, 2003:62 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Generani, Pagliano, Scaramozzino, and Strumia, 2003:66 (Italy: Arcipelago Toscano); González, Gayubo, Asís, Tormos, and García, 2003:62 (Spain: Soria: Chavaler); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:69 (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); von der Heide and Metscher, 2003:103 (Germany: Niedersachsen: Emsland area); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo et al. 2004:132 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Jakubzik, Niehuis, and Cölln, 2004:458 (Germany: Rheinland-Pfalz: Roßstein in Rhein valley at 50°06'42"N 7°43'87"E); Kuhlmann, 2004:230 (Germany is responsible for preservation of this species on its territory, as *turonium*); Majzlan and Deván, 2004:33 (Slovakia: Malacky-Široké); Skibińska in Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Stolle et al., 2004:372 (Germany: Sachsen-Anhalt: in red list of Sphecidae); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Burger, 2005:34 (Germany: Thüringen); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Kofler, 2005:171 (Austria: Tirol: Lienz District: city of Lienz, Sankt Johann); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Pagliano and Negrisoló, 2005:461 (in Sphecidae Fauna of Italy); Riemann and Hohmann, 2005:563 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:18 (Germany: Berlin); Theunert, 2005a:18 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:43 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Shlyakhtenok, 2006:111 (Belarus': Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund); Beavis, 2007:97 (Great Britain: Tunbridge Wells and Central High Weald); Jacobs, 2007:77, 80 (in key to Crabronidae of Germany); Saure, 2007:83 (Germany: in checklist of Aculeata of Brandenburg); Shlyakhtenok, 2007a:299 (Belarus': Berezinsky Nature Reserve); Vepřek and Straka, 2007:201 (in catalog of Sphecidae of Czech Republic and Slovakia), 218 (first records from Czech Republic: Budislav, Haj ve Slezsku, Praha, Vrané nad Vltavou); Haeseler, 2008:308 (Germany: Friesian Islands); Józán, 2008:82 (first record from Hungary: Nagybjom: Homokpuszta); Kazenas, 2008b:112 (Kazakhstan: foothills of Zailiskiy Alatau: nesting in loess cliff); Ljubomirov and Yildirim, 2008:180 (in catalog of Crabronidae of Turkey); Theunert, 2008:68 (Germany: map of distribution in Niedersachsen and Bremen); Donie, 2009:10 (Germany: Niedersachsen: Oldenburg); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen), 38 (only one reliable record from Hessen: Babenhausen); González, Gayubo, Asís, and Tormos, 2009:623 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Józán, 2009:165 (Croatia: Rovini); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:71 (Norway: locality records); Pagliano, 2009:188 (Italy: recorded from Trentino Alto-Adige by Kohl, 1880; Piemonte: San Benedetto Belbo); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Johansson, 2010:121 (Sweden: Småland: upper Emå river valley); Józán, 2010:254 (Hungary: Somogy County); Saure, 2010b:176 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:18 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:138 (Germany:

Bayern: collected along Main-Donau canal); van der Smissen, 2010a:347 (Germany: Schleswig-Holstein: locality records), 2010c:397 (Sweden: Södermanland: Ören); Józán, 2011:179 (in checklist of Sphecidae s.l. of Hungary); Shlyakhtenok, 2011:95 (Belarus': city of Minsk); Theunert, 2011a:21 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:157 (Germany: not endangered in Hessen); Shlyakhtenok, 2012a:171 (Belarus', and Russia: Krasnaya Polana near Sochi: collected in private plots), 2012b:92 (Belarus': Beresina National Reserve: overgrowing dry meadow); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Saure, 2013:21 (Berlin: Treptow-Köpenick: Gosener Wiesen); Shlyakhtenok, 2013:158 (in annotated catalog of aculeate wasps of Belarus'); U Frommer, 2014:27 (Germany: Hessen: Lorch); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Pagliano, 2014:75 (specimens in Spinola collection, Torino are *Passaloecus gracilis* and *P. corniger*); Yıldırım, Ljubomirov, and Lelej, 2014:10 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:149 (in checklist of Hymenoptera of Turkey); P. Rosa and Pagliano, 2015:104 (Italy: Lombardia and Piemonte: Parco del Ticino); Saure, 2015:15 (Germany: Berlin-Lichterfelde); Else, Bolton, and Broad, 2016:37 (in checklist of Aculeata of Great Britain and Ireland: England); Mokrousov and Popov, 2016:587 (Russia: Krasnodarskiy Krai); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:74 (Iran: known from Mazandaran Province); Mokrousov, 2017e:248 (in catalog of Pemphredoninae of Russia).

39. *vandeli* Ribaut

Passaloecus vandeli Ribaut, 1952:27, ♀, ♂ (as *Vandeli*, incorrect original capitalization). Holotype: ♀, France: Tarn-et-Garonne Department: Miramont (depository?). – Nouvel and Ribaut, 1953:181 (France: Haute-Garonne: Saint-Béat); Wolf, 1958:16 (diagnostic characters); de Beaumont, 1964c:110 (in Sphecid Fauna of Switzerland); Oehlke, 1970:748 (not recorded from German Democratic Republic); Schmidt, 1971b:43 (first record from Germany: Rheinland-Pfalz: Gonsenheimer Wald); Merisuo, 1972c:205 (tyloids on male antenna); D. Peters, 1973b:164 (Germany: Hessen: Frankfurt am Main, reared from artificial nests); Merisuo, 1974a:11 (redescription), 14 (member of *vandeli* species group); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae); Pulawski, 1978:248 (in key to Sphecidae of European part of former USSR); Dollfuss and Ressler, 1981:315, 322 (Austria: Niederösterreich: Scheibbs District); Dollfuss, 1983a:76 (endangered in Niederösterreich, Austria), 1983b:8 (in catalog of Sphecidae of Austria); Schmidt, 1984:288 (Germany: Baden-Württemberg); Westrich and Schmidt, 1985b:111 (Germany: endangered in Baden-Württemberg); Brechtel, 1986:65 (Germany: Südpfalz: Lauterwiesen); Schmidt and Westrich, 1987:369 (Germany: Mainz area); Jacobs and Oehlke, 1990:156 (unknown from German Democratic Republic); Day, 1991:xvii (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:74 (in key to Sphecidae of North and Central Europe); Gusenleitner, 1995:160 (Austria: Oberösterreich, Steiermark); Negrisoló *in* Minelli, Ruffo, and La Posta, 1995b:11 (in catalog of Italian fauna); Schmid-Egger, Risch, and Niehuis, 1995:203 (summary of records from Germany: Rheinland-Pfalz Province); Gusenleitner, 1996a:7 (Austria: Steiermark); Schmid-Egger, Schmidt, and Doczkal, 1996:378 (Germany: endangered in Baden-Württemberg); Schmidt and Schmid-Egger, 1997:24 (in checklist of German Sphecidae); M. Schwarz, 1999:85 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:199 (in Sphecid Fauna of Germany); Vepřek, 2000:235 (Czech Republic: Bocháčov); Zettel, 2000:26 (Austria: Wien); Dollfuss and Bitsch *in* Bitsch et al., 2001:105 (in Sphecid Fauna of Western Europe); Ivanov and Ljubomirov, 2001:211 (Bulgaria: Kresna Gorge at 41°48'N 23°10'E); Zettel, Gross, and Mazzucco, 2001:70 (Austria: Wien); Gayubo, González, Tormos, and Asís, 2002:90 (distribution in Iberian Peninsula); Wiśniowski, 2002:69 (first record from Poland: Ojców National Park); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:69 (Germany: in catalog of wasps and bees of Bayern); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:197 (Germany: probably endangered in Bayern); Deván, 2004:147 (western Slovakia); Dollfuss, 2004a:121 (Austria, Bulgaria,

Czech Republic, Turkey); Kuhlmann, 2004:230 (Germany is responsible for preservation of this species on its territory); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Tischendorf and Frommer, 2004:70 (Germany: Hessen: near Lorch); Wiśniowski, 2004:41 and 60 (in checklist of Polish Sphecidae); Cruz-Sánchez, Gayubo, González, and Torres, 2005:221 (Spain: Salamanca: San Martín del Castañar); Pagliano and Negrisoló, 2005:462 (in Sphecidae Fauna of Italy); Wiśniowski, 2005a:312 (Poland: Ojców National Park; found only on wooden buildings), 2005b:340 (in Poland known only from Ojców National Park); U. Frommer, 2006:37 (Germany: Hessen: Runkel area), 61 (map of distribution in Germany); Magdalou, 2006a:6, 10 (France: Pyrénées-Orientales: Réserve Naturelle de la Massane); Baños-Picón, Gayubo, Asís, and González, 2007:257, 259 (Spain: Zamora: Cabañas de Aliste); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:456 (recorded from Spain, Andorra, and Portugal by Gayubo et al., 2002, from Poland by Wiśniowski, 2004, and from France by Magdalou, 2006); Jacobs, 2007:76, 79 (in key to Crabronidae of Germany); Vepřek and Straka, 2007:201 (in catalog of Sphecidae of Czech Republic and Slovakia: not occurring there), 218 (record from Slovakia by Vepřek, 2000, was misidentification); Gayubo, González, Tormos, and Asís, 2008:140 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Józán, 2008:82 (first record from Hungary: Gige, Homokszentgyörgy, Lad); Ljubomirov and Yildirim, 2008:181 (in catalog of Crabronidae of Turkey); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen), 38 (Hessen: Runkel Protected Area); Gayubo, González, Tormos, and Asís, 2009:363 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:623 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:263 (Bulgaria: Maleshevska Planina); Józán, 2009:165 (Croatia: Mošćenice, Rovini); Pagliano, 2009:188 (Italy: Toscana: Fauglia; France: Corse: Bastelicaccia); Józán, 2010:254 (Hungary: Somogy County); Schmid-Egger, 2010a:18 (in red list of Aculeata of Germany: rare); van der Smissen, 2010a:347 (Germany: Schleswig-Holstein: Hechtsheim); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:497 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Józán, 2011:179 (in checklist of Sphecidae s.l. of Hungary); Tischendorf, Frommer, Flügel et al., 2011:158 (Germany: not endangered in Hessen); Boillat, 2012:228 (Switzerland: in checklist of insects of Canton de Genève); Larivière, Chapelin-Viscardi, and Maillet-Mezeray, 2012:296 (France: Essonne: Boigneville); Saure, 2012:29 (Germany: Berlin-Moabit); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Vieira, Oliveira, Brewster, and Gayubo, 2013:19 (Portugal: Douro International Natural Park and Serras de Aire e Candeeiros Natural Park); Bitsch, 2014:407 (France: Ardèche: Saint-Remèze; Dordogne: Lanquais; Essonne: Bigneville; Lot-et-Garonne: Buzet-sur-Baïse; Saie: Paris: Bois de Boulogne, bois de Vincennes; and Tarn: Castelnau-de-Montmiral; records from Germany by Saure, 2012 and from Corsica by Pagliano, 2009 reported); U. Frommer, 2014:27 (Germany: Hessen: Lorch); Yıldırım, Ljubomirov, and Lelej, 2014:10 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:149 (in checklist of Hymenoptera of Turkey); Straka, Bogusch, Tyrner, Řiha, Benda, Čížek, Halada, Máchačková, Marhoul, and Tropek, 2015:81 (first record from Czech Republic: near Mohelno and Podyji National Park, also Slovakia); Magdalou, 2017:16 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Forêt de la Massane).

40. *vigilans* Merisuo

Passaloecus vigilans Merisuo, 1976e:171, ♀. Holotype: ♀: Armenia: Noyesberyan (Moscow Zool. Mus.).

sp.

Nadig, 1933:103 (Morocco); Arnold, 1943:82 (Zaire); Wolf, 1958:15 (Germany: Dillenburg, aff. *borealis*); Tsuneki, 1958e:54 (Japan: city of Toyama); Wolf, 1959b:27 (Germany: Nassau; aff. *borealis*); de Beaumont, 1960b:249 (Libya; sp. of the *turionum* group); Zangheri, 1966:1705 (Italy); de Beaumont, 1967a:344 (Turkey); Schmidt,

1971b:43 (Germany: Rheinland-Pfalz: Gonsenheimer Wald; aff. *borealis*); Käpylä, 1974:64 (Finland: diurnal activity); D. Evans, 1985:22 (Canada: British Columbia: southern Vancouver Island: associated with *Quercus garryana* Douglas); Gayubo, 1985c:167 (Spain: Valladolid: Pedrosa del Rey); González, Gayubo, and Torres, 1998:72, 73 (Spain: Valladolid Province); Kurczewski, 1998d:250 (pine barrens in upstate New York); Cölln and Jakubzik, 1999:29 (Germany: Rheinland-Pfalz: Keuper-Scharren SW Hungerburg; aff. *brevilabris*); Gonzáles, Gayubo, and Torres, 1999:354 (Spain: Valladolid: Viana de Cega; aff. *clypealis*); Gayubo, González, and Torres, 2000:184 (Spain: Salamanca Province, sp. aff. *pictus*); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Martínez de Murguía, 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); S. Gupta, 2004:26 (India: Uttaranchal: Taluka in Uttarkashi District); Baños-Picón, Gayubo, Asís, and González, 2007:257 (Spain: Zamora: Cabañas de Aliste, sp. aff. *eremita*); Ljubomirov and Yildirim, 2008:181 (in catalog of Crabronidae of Turkey); Ghazi-Soltani, Ebrahimi, Iranipour, and Pour Abad, 2010:798 (Iran: East Azarbaijan: Tabriz: Khalatpouschan); Schüepp, Herrmann, Herzog, and Schmidt-Engling, 2011:716 (Switzerland plateau between Bern, Fribourg, and Solothurn, habitat fragmentation); Hellqvist, Abenius, and Norén, 2014:93 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:74 (Iran: East Azerbaijan Province); Magdalou, 2017:16 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Vallée d' Eyne).

FOSSIL PASSALOECCUS

Key: Budrys, 1993:38 (Baltic amber)

1. *electrobis* Budrys

Passaloecus electrobis Budrys, 1993:41, ♀. Holotype: ♀, Russia: Kaliningrad Oblast': Yantarnyi, formerly Palmnicken. Baltic amber: Upper Eocene (PIN). – Bennett and Engel, 2006:7 (in checklist of amber Sphecidae s.l.).

2. *fasciatus* Rohwer

Passaloecus fasciatus Rohwer, 1909a:99, ♀. Holotype: ♀, USA: Colorado: Teller County: Florissant (USNM). Age: Lower Oligocene – Yasumatsu, 1934d:110 (in checklist of world *Passaloecus*); R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae).

3. *microceras* Sorg

Passaloecus microceras Sorg, 1986:278, ♀. Holotype: ♀, Former East Prussia: Tagebau near Palmnicken, now Russia: Kaliningrad Oblast': Yantarnyi; Baltic amber: Upper Eocene (Geolog. Inst. Köln). – Budrys, 1993:39 (additional specimens, redescription). – Bennett and Engel, 2006:7 (in checklist of amber Sphecidae s.l.).

4. *munax* Sorg

Passaloecus munax Sorg, 1986:280, ♀. Holotype: ♀, Germany: Bitterfeld in Kreis Delitzsch, Baltic amber. Age: Lower Miocene. – Schumann and Wendt, 1989:41 (in list of animal inclusions in Saxon amber); Bennett and Engel, 2006:7 (in checklist of amber Sphecidae s.l.).

5. *piletskisi* Budrys

Passaloecus piletskisi Budrys, 1993:41, ♀. Holotype: ♀, Russia: Kaliningrad Oblast': Yantarnyi, formerly Palmnicken. Baltic amber: Upper Eocene (PIN). – Bennett and Engel, 2006:7 (in checklist of amber Sphecidae s.l.).

6. *scudderi* Cockerell

Passaloecus scudderi Cockerell, 1906:46, sex not indicated. Holotype: USA: Colorado: Teller County: Florissant. Age: Lower Oligocene (MCZ). – R. Bohart and Menke, 1976:184 (in checklist of world Sphecidae).

7. *zherichini* Budrys

Passaloecus zherichini Budrys, 1993:39, ♀. Holotype: ♀, Russia: Kaliningrad Oblast': Yantarnyi, formerly Palmnicken. Baltic amber: Upper Eocene (PIN). – Bennett and Engel, 2006:7 (in checklist of amber Sphecidae s.l.).

NOMINA NUDA IN *PASSALOECCUS*

Passaloecus anatolicus Merisuo: Leclercq, 2007g:195 (holotype in FSAG).

Passaloecus aphidifer Merisuo: Esenbekova and Kazenas, 2000:20 (southeast Kazakhstan: no specific locality); Kazenas, 2001:22, 2008a:100 (Southeastern Kazakhstan: Zailiyskiy Alatau and near Zharkent).

Passaloecus kohli (as *Kohli*, incorrect original capitalization): Brauns, 1911a:240 (South Africa).

Passaloecus rufipes Tournier: Antiga and Bofill, 1904:8 (Spain: Cataluña Province); Ceballos, 1956:356 (in catalog of Hymenoptera of Spain).

SPECIES DESCRIBED IN *PASSALOECCUS* AND TRANSFERRED TO OTHER GENERA

abnormis Kohl, 1888 = *Polemistus*

alishanus Tsuneki, 1971 = *Polemistus*

annulicornis Tsuneki, 1966 = *Polemistus*

bandraensis Giner Marí, 1945 = *Polemistus*

barabbas Pagden, 1933 = *Polemistus*

bequaerti Arnold, 1929 = *Polemistus*

braunsii Kohl, 1905 = *Polemistus*

braunsii apterinus Leclercq, 1959 = *Polemistus*

braunsii ferrugineipes Arnold, 1929 = *Polemistus*

dorsalis Kohl, 1912 = *Polemistus braunsii* Kohl, 1905

dudgeoni Nurse, 1903 = *Polemistus*

exul R. Turner, 1907 = *Polemistus*

formosus Tsuneki, 1967 = *Polemistus*

ghesquièrei Leclercq = *Polemistus braunsii* Kohl, 1905

levipes Bingham, 1897 = *Polemistus*

parvulus Radoszkowski, 1877 = *Diodontus*

reticulatus Cameron, 1898 = *Polemistus*

schoutedeni Leclercq, 1959 = *Polemistus*

siamensis Cockerell, 1931 = *Polemistus*

stieglmayri Kohl, 1905 = *Polemistus*

striatifrons Cameron, 1910 = *Polemistus braunsii* Kohl, 1905

sumatrensis Maidl, 1925 = *Polemistus*

yoshikawai Tsuneki, 1961 = *Polemistus sumatrensis yoshikawai* Tsuneki