

Last updated: 2 July 2010

## **ARGOGORYTES**

*Argogorytes* Ashmead, 1899d:324. Type species: *Gorytes carbonarius* F. Smith, 1856, by original designation.

*Archarpactus* Pate, 1937c:10. Type species: *Sphex mystaceus* Linnaeus, 1761, by original designation. Substitute name for *Arpactus* Jurine, 1801, which was suppressed by the International Commission on Zoological Nomenclature, 1939:10 (Opinion 135) and therefore has no nomenclatural status. Not available: not meeting any of the requirements of Article 13.1 of the Code (R. Bohart and Menke, 1976:52).

*Malaygorytes* Nemkov, 1999a:1. Type species: *Malaygorytes konishii* Nemkov, 1999, by original designation and monotypy. Synonymized with *Argogorytes* by Nemkov and Pulawski, 2009:11.

Key: Nemkov, 1995c (former Soviet Union).

Revision: R. Bohart, 2000 (Neotropical Region).

Review of biology: Kazenas, 2001b:219.

### **1. areatus (Taschenberg)**

*Gorytes areatus* Taschenberg, 1875:365, ♀. Holotype or syntypes: ♀, Brazil: no specific locality (Halle). – Handlirsch, 1888b:374 (revision); Dalla Torre, 1897:536 (in catalog of world Sphecidae, as *aeratus*); Maidl and Klima, 1939:57 (in catalog of world Astatinae and Bembicinae). – **As *Argogorytes areatus***: R. Bohart and Menke, 1976:492 (new combination, listed); R. Bohart, 2000:157 (in revision of Neotropical Gorytini); Tschuch and Brothers, 2000:324 (stridulatory organs on female sterna III and IV); Amarante, 2002:13 (in catalog of Neotropical Crabronidae).

### **2. basalis (F. Smith)**

*Gorytes basalis* F. Smith, 1860b:125, ♀. Holotype: ♀, Indonesia: Moluccas: Ambon: no specific locality (OXUM). – Handlirsch, 1888b:538 (original description translated into German). – Dalla Torre, 1897:537 (in catalog of world Sphecidae); Maidl and Klima, 1939:56 (in catalog of world Astatinae and Bembicinae). – **As *Argogorytes basalis***: R. Bohart and Menke, 1976:492 (new combination, listed).

### **3. bismarckianus Tsuneki**

*Argogorytes bismarckianus* Tsuneki, 1982a:47, ♀. Holotype: ♀, Papua New Guinea: New Britain: Yalom (ZMK).

### **4. caerulescens (R. Turner)**

*Gorytes caerulescens* R. Turner, 1914b:251, ♀. Holotype: ♀, Sri Lanka: Kandy (BMNH). – Maidl and Klima, 1939:55 (in catalog of world Astatinae and Bembicinae). – **As *Argogorytes caerulescens***: R. Bohart and Menke, 1976:492 (new combination, listed); Krombein, 1985a:20 (Sri Lanka; redescription).

### **5. carbonarius (F. Smith)**

*Gorytes carbonarius* F. Smith, 1856:366, ♀, ♂. Syntypes: New Zealand: no specific locality (BMNH). – Hutton, 1881:104 (original description copied); W.F. Kirby, 1881a:40 (in checklist of New Zealand Hymenoptera), 1884b:69 (in checklist of Hymenoptera of New Zealand); Handlirsch, 1888b:539 (original description translated into German), 1895:870 (redescription); Dalla Torre, 1897:539 (in catalog of world Sphecidae); Cameron, 1898a:46 (New Zealand: Greymouth); Gourlay, 1930:7 (preys upon *Philaenus trimaculatus* White, a cercopid); Maidl and Klima, 1939:65 (in catalog of world Astatinae and Bembicinae); Gourlay, 1964:49 (nesting habits, prey: *Carystoterpa trimaculata* (Butler), an aphrophorid). – ***Argogorytes carbonarius***: R. Bohart and Menke, 1976:492 (new combination, listed); Callan, 1979:33 (New Zealand; available information reviewed), 1981:161 (review of known nesting habits); Valentine and Walker, 1991:40 (in catalog of New Zealand Hymenoptera);

Schöne, Harris, Schöne, and Mahalski, 1993:152 (homing after displacement); Harris, 1994:58 (in Fauna of New Zealand, description of mature larva, cocoon, nest, prey); Schöne, Schöne, Kühme, and Kühme, 1994 (homing after displacement); Evans and O'Neil, 2007:45 (summary of information on nesting habits).

*Gorytes trichiosoma* Cameron, 1888b:180, sex not indicated. Syntypes: New Zealand: Greymouth (BMNH?). Synonymized with *Gorytes carbonarius* by Handlirsch, 1895:870.

#### 6. *clypealis* R. Bohart

*Argogorytes clypealis* R. Bohart, 2000:158, ♀, ♂. Holotype: ♀, Argentina: Cordoba: Alta García (UCD). – Amarante, 2002:13 (in catalog of Neotropical Crabronidae).

#### 7. *constrictus* (F. Smith)

*Gorytes constrictus* F. Smith, 1859a:160, ♀, ♂. Syntypes: Indonesia: Maluku: Aru Island (OXUM). – Handlirsch, 1888b:540 (original description translated into German); Dalla Torre, 1897:540 (in catalog of world Sphecidae); Maidl and Klima, 1939:56 (in catalog of world Astatinae and Bembicinae). – *As Arpactus constrictus*: R. Turner, 1915a:79 (new combination, discussion of synonymy). – *As Argogorytes constrictus*: R. Bohart and Menke, 1976:492 (new combination, listed).

#### 8. *cruciger* (Hacker and Cockerell)

*Arpactus cruciger* Hacker and Cockerell, 1922:289, ♀ (as *crucigera*, incorrect original termination). Holotype or syntypes: ♀, Australia: Queensland: Brisbane (Brisbane Mus.). – *As Gorytes crucigera*: Maidl and Klima, 1939:56 (new combination, in catalog of world Astatinae and Bembicinae). – *As Argogorytes cruciger*: R. Bohart and Menke, 1976:492 (new combination, listed, as *crucigera*); Cardale, 1985:280 (in catalog of Australian Sphecidae, as *crucigera*).

#### 9. *fairmairei* Handlirsch

*Gorytes fairmairei* Handlirsch, 1893a:CLVI, ♂ (as *Fairmairei*, incorrect original capitalization). Holotype or syntypes: ♂, Algeria: Tlemcen (depository not indicated). – Handlirsch, 1895:868 (Algeria, in revision of world Bembicinae); Dalla Torre, 1897:541 (in catalog of world Sphecidae); Handlirsch, 1898b:487 (Algeria); W. Schulz, 1905b:43 (Algeria: Alger); Morice, 1911:112 (Algeria: Bône, Constantine); Smits van Burgst, 1913a:319 (Tunisia); von Schulthess, 1926b:216 (Tunisia); Nadig, 1933:90 (Morocco: Moulasy-Idris); Maidl and Klima, 1939:49 (in catalog of world Astatinae and Bembicinae). – *As Argogorytes fairmairei*: R. Bohart and Menke, 1976:492 (new combination, listed); Nemkov, 1995c:130, 131 (in key to Palearctic *Argogorytes*).

#### 10. *fargeii* (Shuckard)

*Gorytes fargeii* Shuckard, 1837a:214, ♀, ♂ (as *Fargeii*, incorrect original capitalization). Syntypes: Britain: Highfate and Battersea (depository unknown). – F. Smith, 1856:361 (listed); A. Costa, 1967c:58 (in revision of Italian Sphecidae), 1869a:17 (France), 1869b:74 (in revision of Italian Sphecidae); Magretti, 1884b:106 (Italy: Firenze area); Radoszkowski, 1892:581 (male genitalia); Chyzer, 1902:34 (Hungary); de Graham, 1941:99 (Great Britain: Lincolnshire); Kloet, 1941:235 (Great Britain: Wales: Cardiff); Schneid, 1941:1039 (Germany: Bayern: Bamberg area); Spooner, 1943:74 (Great Britain); Guichard and Yarrow, 1948:93 (Great Britain: London: Hampstead Heath); Leclercq, 1948:205 (*Gorytes fargei* is the correct name, not *campestris* Müller); Šnoflak in Zavadil and Šnoflak, 1948:68 (in key to Sphecidae of Czechoslovakia); Cavro, 1950:34 (France: Département du Nord); de Beaumont, 1951h:32 (Switzerland: Neuchâtel area), 1954e:88 (Italy); Aerts, 1955:62 (Germany: Rheinland); Zirngiebl, 1957:181 (Germany: Rheinland-Pfalz: Landau, Speyer); Gauss, 1967:552 (Germany: Baden-Württemberg); Niedl and Deneš, 1967:82 (Czech Republic: Třeboň area); D. Baker, 1998:172 (type origin and depository). – *As Argogorytes fargeii*: Grandi, 1957:385 (new combination, Italy: Abruzzi); Benno, 1958b:11 (in review of Dutch Sphecidae); de Beaumont, 1959a:19 (Italy); de Beaumont and Bytinski-Salz, 1959:101 (Israel); Wolf, 1959b:30 (Germany: Nassau); Noskiewicz and Puławski, 1960:88 (in key to Polish Sphecidae); de Beaumont, 1962b:24 (Spain); Valkeila, 1962b:67 (southwestern Finland); Ceballos, 1964:92 (in supplement to catalog

of Spanish Sphecidae); de Beaumont, 1964c:53 (in Sphecid Fauna of Switzerland); Valkeila, Brander, and Käpylä, 1964:75 (Finland: Southern Finland: Forssa, Näyte); de Beaumont, 1965a:27 (Greece); Benno, 1967:34 (in checklist of Sphecidae of Netherlands); de Beaumont, 1967a:310 (Turkey); J. Heinrich, 1967:72 (Germany: Bayern: Karlstadt); Scobiola-Palade, 1967a:161 (Romania: Constanța District: Comarova), 1967b:47 (Romania); Scobiola-Palade, 1968c:383 (Romania: Frătești); de Beaumont, 1969:84 (Turkey); Benedek, 1969a:83 (Hungary: hygrophilous meadow); Oehlke, 1970:695 (Democratic Germany); Schmidt, 1971b:30 (Germany: Mainz area); Balthasar, 1972:330 (in Sphecid Fauna of Czechoslovakia); Haeseler, 1972:155 (Germany: Schleswig-Holstein: anthropogenic habitats); Oehlke, 1972:136 (Germany: Hiddensee Island); Hoop, 1973:47 (Germany: Schleswig-Holstein: Flehmude); Diniz, 1973:44 (Portugal: nine localities); Lefeber, 1973:152 (Belgium); Lefeber and Petit, 1974:163 (Belgium: Plombières); Lomholdt, 1975c:191 (in Sphecid Fauna of Fennoscandia and Denmark); R. Bohart and Menke, 1976:492 (listed); Benno, 1977:153 (distribution in Netherlands); Kolesnikov, 1977:317 (Russia: Bryansk Oblast'); Leclercq, 1978b:map 1179 (distribution in Belgium); Schmidt, 1977/78:55 (Germany); Marion, 1978:87 (France: Nièvre Department); Pulawski, 1978:198 (in key to Sphecidae of European part of former USSR); Lefeber, 1979:11 (in checklist of Sphecidae of Netherlands), 35 (Netherlands: distribution map); Richards, 1979:401 (British Channel Islands); Schmidt, 1979b:340 (Germany); Borg-Karlson and Tengö, 1980:828 (pyrazines as marking volatiles); Petit, 1980:44 (Luxembourg: Grevenmacher); Richards, 1980:82 (in key to Sphecidae of British Isles); Callan, 1981:161 (nesting habits); Axelsson, 1982:79 (Sweden); Gayubo, 1982b:37 (Spain: Ávila, Cáceres, and Salamanca provinces); Skibińska, 1982:123 (Poland: Warszawa area); Dollfuss, 1983a:76 (endangered in Niederösterreich, Austria), 78 (endangered in Oberösterreich, Austria), 79 (endangered in Steiermark, Austria), 80 (endangered in Tirol, Austria), 1983b:21 (in catalog of Sphecidae of Austria); Gayubo, 1983e:233 (Spain: Salamanca Province); Ågren and Borg-Karlson, 1984:111 (chemicals involved in luring males to flowers of *Ophrys insectifera*); Ågren, Kullenberg, and Sensenbaugh, 1984:15 (similarity of female pilosity to that of labellum of *Ophrys insectifera*); Haack, Tschartke, and Vidal, 1984:124 (Germany: Hamburg area); Gayubo, 1985c:171 (Spain: Valladolid: Iscar); Józán, 1985b:61 (Hungary S Lake Balaton), 81 (floral records), 84 (ecological and zoogeographic characteristics); Lefeber, 1985:87 (Netherlands: southern Limburg); Westrich and Schmidt, 1985b:110 (Germany: endangered in Baden-Württemberg); Gayubo, 1986b:39 (Spain: Andalucía), 1986d:119 (Spain: Zamora Province); Nemkov, 1986:107 (Russia: Siberia: Irkutsk Oblast'); Gayubo, 1886e:992 (teratological specimen); Gayubo and Sanza, 1986:73 (Spain: Burgos); Skibińska, 1986b:157 (Poland: Warszawa area: rural and suburban parks); Vikberg, 1986:78 (Finland); Archer, 1987:111 (Great Britain: Yorkshire); Dollfuss, 1987:23 (Austria); Schmidt and Westrich, 1987:360 (Germany: Mainz area); Kowalczyk, 1988a:45 (Poland: Rogów), 1988b:64 (Poland: environs of Łódź); Nilsson, 1988:98 (Sweden); Wolf, 1988b:141 (Germany: Nordrhein-Westfalen); Archer, 1989b:232 (Great Britain: Suffolk); Ågren, 1989:529 (SEM study of flagellar sensilla); Jacobs, 1989:26 (Germany: Mecklenburg-Vorpommern); Józán, 1989:102 (Hungary: Tihany Natural Reserve); Pádr in Šedivy, 1989a:166 (in checklist of Czechoslovakian Sphecidae); Skibińska, 1989b:291 (Poland: moist meadow in Warszawa area); Gayubo, Asis, and Tormos, 1990b:77 (Spain); Jacobs and Oehlke, 1990:123 (population regress in Democratic Germany after 1960), 208 (new records from Democratic Germany); Kowalczyk, 1990:291 (Poland: Góry Świętokrzyskie); Kuznetzova, 1990:18 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pádr, 1990:70 (Czech Republic: Praha area); Pagliano, 1990:70 (in catalog of Italian Sphecidae); Day, 1991:xiii (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:190 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:413 (Italy); Kowalczyk, 1991a:97, 100, 101 (Poland: Łódź), 1991b:120 (Poland: Augustów Forest); Sorg and Wolf, 1991:195 (Germany: Koppelstein Reserve SE Koblenz); Delarze, 1992:67 (Switzerland: Valais: Les Follatères); Pagliano, 1992:36 (in key to Italian Nyssoninae); K. Weber, 1992:86 (Germany: Bayern: Bamberg District); Archer, 1993:46 (Great Britain: Channel Islands); Józán, 1993:414 (Hungary: Bükk National Park); Kuhlmann, 1993:75 (Germany: known from Westfalen); Torregrosa, Gayubo, Tormos, and Asís, 1993:20 (Spain: Alicante Province); Wiśniowski, 1993a:97 (Poland: in checklist of Sphecidae of Białowieża Primeval Forest); Archer, 1994a:73 (Great Britain: Yorkshire), 1994b:104

(British Channel Islands); Blagoveshchenskaya, 1994:91 (Russia: Ul'yanovsk Oblast', as *fragei*); Dollfuss, 1994:100 (endangered in Austria); Gayubo and Borsato, 1994:216 (Italy: Trentino, Veneto); Theunert, 1994c:33 (Germany: summary of records from Niedersachsen and Bremen); Tormos, Asis, and Gayubo, 1994:189, 219 (Spain: Albacete Province); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:4 (in catalog of Italian fauna); Nemkov, 1995c:129, 131 (in key to Palearctic *Argogorytes*), 131 (geographic variation, distribution in former Soviet Union); Nemkov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:459, 460 (in key to Sphecidae of Russian Far East); Schmid-Egger, Risch, and Niehuis, 1995:164 (summary of records from Germany: Rheinland-Pfalz State); Doronin, 1996:18 (Latvia: Sigulda, nest parasitized by *Chrysis iris* Christ, a chrysidid); Harvey and Plant, 1996:80 (Great Britain: summary of records from Essex); Jakubzik, 1996:251 (Germany: Köln); Jakubzik and Cölln, 1996b:398 (Germany: Rheinland-Pfalz); Schmid-Egger, Schmidt, and Doczkal, 1996:376 (Germany: Baden-Württemberg: endangered); Voblenko, Gorobchishin, and Nesterov, 1996:15 (Ukraine: Polesye Region); Woydak, 1996:92 (Germany: Westfalen: summary of distribution and nesting habits); Archer, 1997b:98 (Great Britain: Watsonian Yorkshire); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:181 (in Sphecid Fauna of Western Europe); Celary, 1997:60 (in checklist of Animals of Poland); Schmidt and Schmid-Egger, 1997:6 (in checklist of German Sphecidae); Dollfuss, Gusenleitner, and Bregant, 1998:522 (Austria: summary of collecting records from Burgenland); Gonzáles, Gayubo, and Torres, 1998:74, 75 (Spain: Valladolid Province); Haeseler and Ritzau, 1998:50 (Germany: Bremen: Harriersand Island in Weser River); van der Smissen, 1998:53 (Germany: Schleswig-Holstein); K. Weber, 1998:133 (Germany: Bayern: Bamberg area); Herrmann, 1999:7 (Germany: Niedersachsen: Oldenburg area; habitats size); Kuhlmann, Wolf, and Woydak, 1999:568 (extinct or presumably extinct in Nordrhein-Westfalen State of Germany); Pauly, 1999:111 (in catalog of Belgian aculeates); M. Schwarz, 1999:88 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:370 (in Sphecid Fauna of Germany); Jacobs, 2000:6, 16 (Germany: Land Mecklenburg-Vorpommern: close to extinction); Ljubomirov, 2000:12 (Bulgaria, specimens in N. Nedelkov collection); Archer, 2001a:107 (Great Britain: Watsonian Yorkshire), 2001c:15 (Great Britain: Watsonian Yorkshire); Kazenas, 2001b:45 (in checklist of Sphecidae of Kazakhstan and Central Asia); Kazenas and Esenbekova, 2001:135 (Kazakhstan: Almatinskiy Nature Reserve); Ohl et al., 2001:137 (distribution in Germany by provinces); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Zettel, Gross, and Mazzucco, 2001:79 (Austria: Wien); Archer, 2002b:129 (Great Britain: Watsonian Yorkshire: distribution map); Kazenas, 2002a:116 (geographic distribution, collecting localities in Kazakhstan); Litt, 2002:166 (Belgium); Shlyakhtenok and Skibinska, 2002:35 (Belarus': no specific locality); Drewes, 2003:133 (Greece: Xanthi); Haeseler, 2003:339, 345 (Germany: Niedersachsen: Harriersand Island near Bremen); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:63 (in catalog of wasps and bees of Bayern, Germany); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estacion Giogeológica de El Ventorrillo in Sierra de Guadarrama); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:195 (Germany: Bayern: extinct or no longer collected); Esser, Jakubzik, and Sonnenburg, 2004:18 (Germany: Nordrhein-Westfalen); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:261 (in checklist of Sphecidae of Nordrhein-Westfalen State of Germany); Gayubo et al. 2004:130 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Litt, 2004:222 (Switzerland: Valais: Vissoie); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:355 (in catalog of Polish Crabronidae); Stolle et al., 2004:371 (Germany: Sachsen-Anhalt: in red list of Sphecidae); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:51 and 62 (in checklist of Polish Sphecidae); Archer, 2005:30 (Great Britain: Watsonian Yorkshire); Cruz-Sánchez, Gayubo, González, and Torres, 2005:219 (Spain: Salamanca: San Martín del Castañar); Gayubo and Özbek, 2005:16 (Turkey: six localities); Kraatz, 2005:102 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Pagliano and Negrisolo, 2005:137 (in Sphecid Fauna of Italy); Reder, 2005:948 (Germany: Rheinland-Pfalz: six localities); Riemann and Hohmann, 2005:546 (Germany: Niedersachsen: city of Bremen and adjacent area); Theunert, 2005a:16 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Ebrahimi, 2006:1 (Iran); Archer, 2006b:84 (Great Britain: Yorkshire: Flamborough Head); Evans and

O'Neil, 2007:48 (summary of information on *Ophrys* pollination); Jacobs, 2007:168 (in key to Crabronidae of Germany); Saure, 2007:81 (in checklist of Aculeata of Brandenburg Land, Germany); Vepřek and Straka, 2007:208 (in catalog of Sphecidae of Czech Republic and Slovakia); Yildirim and Ljubomirov, 2007:117 (Turkey: many localities); Ebrahimi, 2008:95 (first record from Iran: Ardebil: Khalkal-Asalem road, Azarab); yGayubo, Gonzales, Tormos, and Asís, 2008:137 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Ljubomirov and Ban-Calefariu, 2008:203 (Romania: recorded from Maramureş District by Szilády, 1914, as *Gorytes campestris*); Ljubomirov and Yildirim, 2008:75 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:24 (in catalog of Crabronidae of Asiatic Russia); Archer, 2009:24 (Great Britain: Yorkshire: Sheffield); U. Frommer, 2009a:26 (Germany: in checklist of Sphecidae of central Hessen); Nemkov, 2009b:131 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Bitsch, 2010:112 (in supplement to vol. II of Faune de France, 1997: recent records from Bulgaria and Romania reported); Schmid-Egger, 2010a:14 (in red list of Aculeata of Germany: very rare).

*Gorytes croceipes* Eversmann, 1849:394, ♀, ♂. Syntypes: Russia: Orenburg province and lower Volga (ZIN). Synonymized with *Gorytes campestris* [= *Argogorytes fargeii*] by Handlirsch, 1888b:372

*Argogorytes mongolensis* Tsuneki, 1971k:196, ♂. Holotype: ♂, Mongolia: Chövsgöl Aymag: 84 km W Mörön (TMB). Synonymized with *Argogorytes fargeii* by Nemkov, 1995c:132. – R. Bohart and Menke, 1976:492 (listed).

*Argogorytes przewalskyi* Kazenas, 1971:153, ♀. Holotype: ♀, Kazakhstan: Alma-Ata Oblast': Kunghei-Alatau Range (ZIL). Synonymized with *Argogorytes fargeii* by Nemkov, 1995c:132. – Kazenas, 1971:161 (in Kazakhstan found only in southeastern mountains); R. Bohart and Menke, 1976:492 (listed).

*Argogorytes przewalskii* Kazenas, 1972b:143, ♀. Objective synonym of *Argogorytes przewalskyi* Kazenas, 1971. Synonymized with *Argogorytes fargeii* by Nemkov, 1995c:132. – Kazenas, 1978b:78 (in key to Sphecidae of Kazakhstan and Central Asia), 2001b:45 (in checklist of Sphecidae of Kazakhstan and Central Asia).

As *Mellinus campestris* (a misinterpretation, *Gorytes campestris* actually is *Argogorytes mystaceus*): Fabricius, 1790:226 (new combination, redescription), 1793:287 (redescription); Billberg, 1829:107 (specimens from Sweden in collection Billberg); Dahlbom, 1845:XXIII (specimens in collection Fabricius are *Gorytes*, now *Argogorytes*). – As *Vespa campestris*: Illiger, 1807b:144 (new combination, synonymy, redescription). – As *Arpactus campestris*: Jurine, 1807:194 (new combination, listed). – As *Gorytes campestris*: Wesmael, 1839:75 (new combination, interpretation of species), 76 (comparison with *Gorytes mystaceus*); Herrich-Schaeffer, 1840:290 (Germany: Bayern: Regensburg area); Dahlbom, 1843:168 (in revision of Sphecidae and Pompilidae), 1845:484 (in key to European *Gorytes*); Lepeletier de Saint Fargeau, 1845:58 (in revision of world Hymenoptera); Wissmann, 1849:13 (Germany: Kingdom of Hannover: Hannover, Münden, Harz Mts.); Tischbein, 1850:8 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); Wesmael, 1852:98 (Belgium); Kirschbaum, 1853:45 (Germany: Herzogtum Nassau: Mainz-Mombach, Weilburg, and Wiesbaden); Kawall, 1857:24 (Kurland, now Latvia); Ruthe and Stein, 1857:314 (Germany: Berlin area); Schenck, 1857:166 (in revision of fossorial wasps of Nassau Region, Germany); Taschenberg, 1858:90 (in key to Sphecidae of Germany); Assmus, 1859:612 (Russia: Moscow Oblast'); Funk, 1859:59 (Germany: Bayern: Bamberg); Schenck, 1860:148 (Germany: Nassau Region); Brischke, 1862:101 (Germany: Preussen Province, now Poland: Pomorze Region); Taschenberg, 1866:194 (in revision of Hymenoptera of Germany); Jaenicke, 1867:147 (Germany: Hessen: Frankfurt area); Kirchner, 1867:220 (in catalog of European Hymenoptera); Schenck, 1867a:355 (Germany: Nassau Region); Dietrich, 1868:363 (Switzerland: Zurich Canton); Jaenicke, 1868:9 (Germany: Hessen: Mombach); A. Costa, 1869b:82 (in revision of Italian Nyssoninae); Wierzejski, 1868:117 (Poland: Krakow, Pieniny Mts.; Ukraine: Bukowina Region: Kalinowce); A. Costa, 1869a:17 (France); Aichinger, 1870: 318 (Austria: Tirol); Thomson, 1870:245 (in revision of Swedish wasps); Schlechtendal, 1872:37 (Germany: Sachsen: Zwickau); Dours, 1874:149 (in catalog of Hymenoptera of France); Mocsáry, 1874:120 (Siebenbürgen, now Romania: Transylvania: no specific locality); Thomson, 1874:232 (in revision of Hymenoptera of Scandinavia); Wierzejski, 1874:259 (Poland: Kraków, Pieniny; Ukraine: Bukowina: Kalinowce);

Marquet, 1875:209 (France: Haute-Garonne: Toulouse); Schmiedeknecht, 1876:186 (Germany: Thüringen: Rothensteiner Felsen); Girard, 1879:948 (morphology); Samie, 1879: LCXVI (France: Gironde: Pomerol); Becker, 1880:151 (Russia: Sarepta, now Krasnoarmeysk S Volgograd); Kohl, 1880:170 (Austria: Tirol, and Italy: Trentino–Alto Adige); Siebke, 1880:65 (Norway); Marquet, 1881:182 (southern France); Schøyen, 1881:11 (correction to Siebke, 1880); Friese, 1883:202 (Germany: Sachsen-Anhalt: Weissenfels); Kohl, 1883e:666 (Switzerland); Harwood, 1884:211 (England: Essex: Colchester area); von Heyden, 1884:117 (Germany: Frankfurt am Main); Wüstnei, 1886:40 (Germany: Schleswig-Holstein: Sonderburg); Brischke, 1888b:98 (Germany: Preussen Province, now Poland: Pomorze Region); Handlirsch, 1888b:372 (in revision of world Nyssonini and Bembecini); F. Morawitz, 1891a:218 (Russia: Astrakhan'); Radoszkowski, 1892:581 (male genitalia); Kohl, 1893a:27 (Austria: Niederösterreich); F. Morawitz, 1893a:112 (Russia: Karelian Isthmus), 1893b:420 (China: Sinkiang Uighur: Artuch 20 km N Kashgar); Sickmann, 1893:87 (Germany: Niedersachsen: Iburg); Westerlund, 1893:26 (Russia: Karelian Republic: northern shore of Lake Ladoga); Engel, 1894:53 (Germany: Reinbek near Hamburg); Krieger, 1894:8 (Germany: Kingdom of Saxony); Handlirsch, 1895:867 (additional bibliography, Armenia); W. Fox, 1896a:525 (Handlirsch's records from North America are doubtful); Acloque, 1897:83 (in Sphecidae Fauna of France and Algeria); Borries, 1897:63 (reference to Shuckard, 1834 and 1837:215); Dalla Torre, 1897:538 (in catalog of world Sphecidae); Lüderwaldt, 1897b:29 (Germany: Gollnow, now Poland: Pomorze Region: Goleniów); Mocsáry, 1897:82 (Kingdom of Hungary, some localities are in today's Romania, and Slovakia); Lange, 1898:70 (Germany: Sachsen: Annaberg-Buchholz); Strand, 1898b:94 (Norway); Ferton, 1901a:104 (preying), 105 (prey); N. Arnold, 1902:89 (Russia: Mohilev Province, now Belarus'); E. Saunders, 1902b:143 (British Channel Islands: Alderney Island); de Cobelli, 1903:112 (Italy: Province of Trentino: Monte Baldo, Pejo); Adlerz, 1904:53 (nesting habits); Aurivillius, 1904:269 (in revision of Swedish Sphecidae); W. Schulz, 1904b:96 (Czechoslovakia, France, Hungary, Italy); Kubes, 1905:84 (Czech Republic: Kolín, Maria Sorg u Jáchimova); von Heyden, 1905:81 (Germany: Hessen: Frankfurt); Adlerz, 1906:30 (Sweden; nesting habits); Mercet, 1906a:126 (in key to Spanish *Gorytes*); Móczár and Henter, 1907:205 (Hungary: Tiszaalpár); E. Saunders, 1907b:67 (Great Britain: West Suffolk and Eastbourne); Schmiedeknecht, 1907:218 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:120 (in catalog of French Hymenoptera); Cavro, 1910:685 (France: Département du Nord); Dittrich, 1911b:23 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Schirmer, 1912:166 (Germany: Berlin area); Kohl, 1913b:16 (Russia: Voronezh Oblast': Valuyki at 50°14'N 38°08'E); Lundblad, 1913:212 (Sweden); Szilády, 1913:89 (Hungary: Nagyenyed, Radnai havasok); Alfken, 1914:279 (NW Germany); Birula, 1914:385 (Belarus': Ambrosovich and Luskinopol' near Vitebsk); Haines, 1914:129 (Great Britain: Dorset); O. Meyer, 1919:153 (Germany: Posen Province, now Poland: Poznań Region); A. Wagner, 1920:32 (Germany: Lower Elbe region); Dubois, 1921c:200, 203 (in key to Belgian Sphecidae); Gennerich, 1922:41 (morphology); Jansson, 1922:24 (Sweden: Öland Island); Leininger, 1924:121 (Germany: Baden-Württemberg: Friedrichstal, Sandhausen near Heidelberg); Lundblad, 1924:22 (Sweden: Lappland: Lycksele); R. Perkins, 1924a:227 (Great Britain: Devon); Berland, 1925d:86 (in Sphecidae Fauna of France); Bischoff, 1925:300 (Latvia: Wezkukkul and Wirginalen 20 km N Liepāja; Poland: Białowieża); Coulon, 1925:118 (France); Shestakov, 1925:36 (Russia: Yaroslavl' area); K. Strohm, 1925:211 (Germany: Baden-Württemberg: Oberbergen in Kaiserstuhl); Friese, 1926:159 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); K. Strohm, 1926:74 (reference to Baader *in* Brahm, 1791); Bouwman, 1927:54 (in revision of Sphecidae of Netherlands); Benoist, 1928:409 (France: Alpes-Maritimes: Saint-Dalmas-le-Selvage); Hamm and Richards, 1930:102 (summary of nesting habits); Schmiedeknecht, 1930:680 (in keys to Hymenoptera of North and Central Europe); Spooner, 1931:14 (Great Britain: Cambridgeshire); Bondroit, 1932:32 (Belgium: recorded from Bruxelles area by Vander Linden and Wesmael); E. Nielsen, 1933:300 (summary of nesting habits); Grandi, 1934:128 (Italy: Emilia-Romagna: vicinity of Bologna); Jansson, 1934:289 (Sweden); Forsius *in* Forsius and Hellén, 1935:11 (in checklist of Hymenoptera of Finland); Minkiewicz, 1935:219 (Poland: Lake Garbaś 20 km W Suwałki); Richards, 1935a:168 (*Gorytes campestris* of authors nec Linnaeus should be called *Gorytes fargeii*); Vergne, 1935:118 (France: Auvergne: common); Zavadil, Šustera, and Baťa, 1937:189 (in catalog

of Sphecidae of Czechoslovakia); Móczár, 1938c:81 (Hungary: Kőszeg Hills); A. Wagner, 1938a:121 (northwestern Germany); Maidl and Klima, 1939:47 and 57 (in catalog of world Astatinae and Bembicinae); Benno, 1940b:207 (Netherlands); Hoop, 1941b:70 (Germany: Schleswig-Holstein: Süderhastedt); Benno, 1943:66 (Netherlands); Giner Marí, 1943a:169 (in Sphecid Fauna of Spain); Giordani Soika, 1944:9 (Italy: Sicilia: Taormina); Guiglia, 1944b:19 (Italy); Móczár, 1947b:90 (Hungary: Siebenbürgen: Székelykeresztúr, now Romania: Transylvania: Cristuru Secuiese); Caruel, 1951:100 (France: Marne Department); Cleu, 1953:50 (France: Ardèche River basin); Głowacki, 1953:519 (Poland: Podkowa Leśna); Móczár, 1953:310 (Hungary); Fahlander, 1954:251 (Sweden: Gästrikland Region); Grandi, 1954:231 (Italy); Vogrin, 1955:34 (Yugoslavia); Ceballos, 1956:381 (in catalog of Hymenoptera of Spain); Kullenberg, 1956:335 (study of chemical sexual attractants); Lundblad, 1958:48 (Sweden: Gotland); Kazenas, 1972b:152 (Kazakhstan); Kullenberg, 1973:9 (male pseudocopulation with flowers of *Ophrys insectifera* L.); Casolari and Casolari Moreno, 1980:116 (specimens in M. Spinola collection); Pouvreau, Coutin, and Descoins, 1988:42 (male pseudocopulation with flowers of *Ophrys insectifera* L.). – **As *Argogorytes campestris***: Bajári, 1957a:99 (new combination, in key to Hungarian Sphecidae); Evans, 1966d:69 (summary of known behavior).

As *Gorytes pleuripunctatus*: Dittrich, 1911b:23 (Germany: Niederschlesien: Agnetendorf, now Poland: Dolny Śląsk: Jagniątków), corrected to *Gorytes campestris* by Noskiewicz and Chudoba, 1949:409.

As *Argogorytes hispanicus*: Yildirim and Ljubomirov, 2005:1791 (Turkey: Erzurum: Palandöken, Ilica, Oltu), corrected to *Argogorytes fargeii* by Nemkov in Yildirim and Ljubomirov, 2007:117.

### 11. *fuliginosus* Tsuneki

*Argogorytes fuliginosus* Tsuneki, 1968h:2, ♀, ♂. Holotype: ♀, Taiwan: Nantou Prefecture: Penpuchi (originally K. Tsuneki coll., now USNM). – Tsuneki, 1971i:1 (Taiwan); R. Bohart and Menke, 1976:492 (listed); Tsuneki, 1977c:3 (Taiwan; taxonomy), 1982e:36 (Taiwan); Nuhn and Menke, 1994:25 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:13 (in checklist of Sphecidae of Taiwan); Hua, 2006:277 (in list of Chinese insects, geographic distribution).

### 12. *hispanicus* (Mercet)

*Gorytes hispanicus* Mercet, 1906a:116, ♀, ♂ (as *Hispanicus*, incorrect original capitalization). Syntypes: Spain: Madrid area (IEE). – Mercet, 1906a:127 (in key to Spanish *Gorytes*); Dusmet y Alonso, 1935:49 (Spain: Madrid: Montarco, Vaciamadrid); Maidl and Klima, 1939:50 (in catalog of world Astatinae and Bembicinae); Giner Marí, 1942a:70 (Spain: Valencia Province), 1943a:170 (in Sphecid Fauna of Spain); de Beaumont, 1945:472 (Switzerland; France: Provence); Carl and de Beaumont, 1947:68 (Switzerland: Graubünden = Grisons Canton: Swiss National Park); de Beaumont, 1951g:307 (Italy); Grandi, 1954:231 (Italy: Verona: Lago Seco); Steiner, 1955:144 (France: Dordogne); Ceballos, 1956:382 (in catalog of Hymenoptera of Spain), 1959:229 (in supplement to catalog of Spanish Sphecidae); Martin Albaladeo and Izquierdo Moya, 2006:122 (type in Museo Nacional de Ciencias Naturales). – **As *Argogorytes hispanicus***: de Beaumont, 1958c:203 (new combination, Swiss National Park), 1959a:19 (Italy: Sicilia), 1964c:53 (in Sphecid Fauna of Switzerland), 1965a:28 (Greece); Balthasar, 1972:330 (in Sphecid Fauna of Czechoslovakia: may be expected in the country); Janvier, 1974:67-77 (nesting habits); R. Bohart and Menke, 1976:492 (listed); Guichard, 1978:270 (Greece); Pulawski, 1978:198 (in key to Sphecidae of European part of former USSR); Pagliano, 1980:113 (Italy: Liguria); Callan, 1981:162 (review of known nesting habits); Gayubo, 1986b:39 (Spain: Andalucía); Gayubo and Sanza, 1986:74 (Spain: Segovia); Gayubo and Tormos, 1986a:13 (Spain: Castellón de la Plana); Islamov, 1986:521 (Uzbekistan: Tashkent Oblast'); Gayubo, Asís, and Tormos, 1990b:77 (Spain: Huesca Province); Pagliano, 1990:70 (in catalog of Italian Sphecidae); Dollfuss, 1991:190 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:413 (Italy: Valle d'Aosta, Piemonte, Veneto), 1992:287 (Spain); Pagliano, 1992:36 (in key to Italian Nyssoninae); Ebmer, Gusenleitner, and Gusenleitner, 1994:402 (first record from Austria: Slovenian side of Karawanken); Gayubo and Borsato, 1994:216 (Italy: Veneto: Boscochiesanuova); Kazenas and Esenbekova, 1995:79 (Kazakhstan; biblio-



graphic reference to leafhopper prey); Negrisoló *in* Minelli, Ruffo, and La Posta, 1995b:4 (in catalog of Italian fauna); Nemkov, 1995c:130, 131 (in key to Palearctic *Argogorytes*), 133 (first records from Kyrgyzstan and Tajikistan); Gusenleitner, 1996b:812 (Austria: Kärnten); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:181 (in Sphecidae Fauna of Western Europe); Gayubo, García, Torres, and González, 1999:91 (Spain: Soria Province); Neumayer, Schwarz, and Bregant, 1999:223 (Austria: in checklist of Sphecidae of Land Kärnten); Kazenas, 2001b:45 (in checklist of Sphecidae of Kazakhstan and Central Asia), 220 (review of known biology); Ljubomirov, 2001b:53 (Bulgaria: Mount Vitoshka near Sofia); 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, 2003:749 (Italy: Puglia: Matera); Gayubo et al. 2004:130 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Kofler, 2005:183 (Austria: Tirol: Lienz District: Amlacherhof in Amlach Common, Forchach in Lavant Common; Italy: Friuli: Cornino); Pagliano and Negrisoló, 2005:138 (in Sphecidae Fauna of Italy); nec Yildirim and Ljubomirov, 2005:1791 (= *Argogorytes fargeii* and *mystaceus*); Standfuss and Standfuss, 2006c:304 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E); Evans and O'Neil, 2007:48 (summary of information on nesting habits); Bitsch, 2010:112 (in supplement to vol. II of Faune de France, 1997: recent records from Austria and Bulgaria reported).

### 13. *konishii* (Nemkov)

*Malaygorytes konishii* Nemkov, 1999a:3 ♀. Holotype: ♀, Malaysia: Malay Peninsula: Negeri Sembilan State: Pasoh Forest Reserve (National Institute of Agro-Environmental Sciences, Tsukuba, Japan). – As *Argogorytes konishii*: Nemkov and Pulawski, 2009:11 (new combination, in cladistic analysis of Gorytini).

### 14. *matangensis* (R. Turner)

*Gorytes matangensis* R. Turner, 1914b:252, ♀. Holotype or syntypes: ♀, Malaysia (East): Sarawak: Matang (BMNH). – Maidl and Klima, 1939:55 (in catalog of world Astatinae and Bembicinae). – As *Argogorytes matangensis*: R. Bohart and Menke, 1976:492 (new combination, listed).

### 15. *mexicalis* R. Bohart

*Argogorytes mexicalis* R. Bohart, 2000:158, ♀, ♂. Holotype: ♀, Mexico: Nayarit: Pichón (UCD). – Amarante, 2002:13 (in catalog of Neotropical Crabronidae).

### 16. *mystaceus* (Linnaeus)

*Spheg mystaceus* Linnaeus, 1761:412, sex not indicated (as *mystacea*, incorrect original termination). Holotype: ♀, Sweden: no specific locality (Linnean Society, London). – de Villers, 1789:231 (redescription); Christ, 1791:270 (redescription); Day, 1979:68 (study of holotype); Day and Fitton, 1978:193 (recuration of Linnean type material). – As *Apis mystacea*: Thunberg, 1791:126 (new combination, specimens donated to Academia Upsaliensis, in *Crabro* according to Fabricius). – As *Mellinus mystaceus*: Fabricius, 1790:226 (new combination, redescription), 1793:285 (redescription), 1796:98 (in Index to his Entomologia Systematica, 1793); Roth von Schreckenstein, 1802:31 (Germany: Baden-Württemberg); Billberg, 1829:107 (specimens from Sweden in collection Billberg); Dahlbom, 1845:XXIII (specimens in collection Fabricius are *Gorytes*). – As *Crabro mystaceus*: Fabricius, 1775:375 (new combination, redescription), 1781:471 (redescription), 1787:297 (redescription); Olivier, 1792:516 (redescription). – As *Arpactus mystaceus*: Jurine, 1807:194 (new combination, listed). – As *Gorytes mystaceus*: Vander Linden, 1829:96 (new combination, bibliographic references, Belgium: Bruxelles, France: Bordeaux, redescription); Lepeletier, 1832:57 (in revision of Gorytina of France); Guérin-Méneville, 1835:pl. 71, Fig. 4 (illustration of habitus); Shuckard, 1837a:211 (in revision of British Aculeata); von Siebold, 1839:52 (Germany: Danzig, now Poland: Gdańsk); Wesmael, 1839:76 (comparison with *Gorytes campestris*); Dahlbom, 1843:166 (in revision of Sphecidae and Pompilidae); Guérin-Méneville, 1844:442 (bibliographic references); Dahlbom, 1845:483 (in key to European *Gorytes*); Lepeletier de Saint Fargeau, 1845:55 (in revision of world Hymenoptera); Eversmann, 1849:394 (Russia: Orenburg province and southern Ural Mts.); Kiesenwetter, 1849:89 (Germany: Kingdom



of Saxony); Wissmann, 1849:12 (Germany: Kingdom of Hannover: Münden, Harz Mts.); Tischbein, 1850:8 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); Wesmael, 1852:98 (Belgium); Kirschbaum, 1853:45 (Germany: Herzogtum Nassau: Weilburg and Wiesbaden); Kirchner, 1854:311 (Czechoslovakia: Kaplitz in Budweiser District, now České Budějovice); F. Smith, 1856:360 (listed); Kawall, 1857:24 (Kurland, now Latvia); Ruthe and Stein, 1857:314 (Germany: Berlin area); Schenck, 1857:165 (in revision of fossorial wasps of Nassau Region, Germany); Taschenberg, 1858:90 (in key to Sphecidae of Germany); Assmus, 1859:612 (Russia: Moscow Oblast'); Funk, 1859:59 (Germany: Bayern: Bamberg); Schenck, 1860:148 (Germany: Nassau Region); Brischke, 1862:101 (Germany: Preussen Province, now Poland: Pomorze Region); A. Costa, 1864b:98 (specimen from Parma, Italy, in Museo Zoologico di Napoli), 1866:24 (specimen from France in Museo Zoologico di Napoli); Taschenberg, 1866:194 (in revision of Hymenoptera of Germany); A. Costa, 1867c:58 (in revision of Italian Sphecidae); Kirchner, 1867:220 (in catalog of European Hymenoptera); Palma, 1867:40 (Italy: Sicilia settentrionale); Schenck, 1867a:355 (Germany: Nassau Region); Dietrich, 1868:363 (Switzerland: Zurich Canton); Jaenicke, 1868:9 (Germany: Hessen: Büdingen, Mombach); A. Costa, 1869b:82 (in revision of Italian Sphecidae); Wierzejski, 1868:117 (Poland: Kraków; Ukraine: Drohobycz, Podole Region); A. Costa, 1869b:74 (in revision of Italian Nyssoninae); Aichinger, 1870:318 (Austria: Tirol); Bold, 1870:147 (Great Britain: Northumberland and Durham); Thomson, 1870:246 (in revision of Swedish wasps); Schlechtendal, 1872:37 (Germany: Sachsen: Zwickau); Beletskiy, 1873:80 (Ukraine: vicinity of Khar'kov); Dours, 1874:149 (in catalog of Hymenoptera of France); Thomson, 1874:230 (in revision of Hymenoptera of Scandinavia); Wierzejski, 1874:259 (Poland: Kraków; Ukraine: Drohobycz, L'viv, Synkiv); Taschenberg, 1875:365 (Germany: Halle); Beuthin, 1876:231 (Germany: Hamburg area); Girard, 1879:947 (morphology and habits); Kohl, 1880:171 (Austria: Tirol, and Italy: Trentino–Alto Adige); Siebke, 1880:65 (Norway); Marquet, 1881:182 (southern France); Yaroshevskiy, 1881:126 (Ukraine: Khar'kiv Oblast': Khar'kiv); Friese, 1883:202 (Germany: Sachsen-Anhalt: Merseburg, Weissenfels); Kohl, 1883e:666 (Switzerland); Sickmann, 1883:82 (Germany: Niedersachsen: Wellingholthausen); Harwood, 1884:211 (England: Essex: Colchester area); von Heyden, 1884:117 (Germany: Frankfurt am Main); Wüstnei, 1886:40 (Germany: Schleswig-Holstein); Brischke, 1888b:98 (Germany: Preussen Province, now Poland: Pomorze Region); Handlirsch, 1888b:367 (in revision of world Nyssonini and Bembicini); Brischke, 1889:204 (Germany: Steegen E Danzig, now Poland: Stegna E Gdańsk); Radoszkowski, 1892:581 (male genitalia); Kohl, 1893a:26 (Austria: Niederösterreich); F. Morawitz, 1893a:112 (Russia: Karelian Isthmus); Sickmann, 1893:87 (Germany: Niedersachsen: Iburg); Westerlund, 1893:26 (Russia: Karelian Republic: northern shore of Lake Ladoga); Baldini, 1894:66 (Italy: Modena area); Krieger, 1894:8 (Germany: Kingdom of Saxony); Handlirsch, 1895:867 (additional bibliography); Laboulbène, 1895:180 (preying on *Aphrophora spumaria*); W. Fox, 1896a:525 (Handlirsch's records from North America are doubtful); Freke, 1896:40 (Ireland); Meunier, 1896:272 (Belgium: Bruxelles area); Acloque, 1897:83 (in Sphecid Fauna of France and Algeria); Borries, 1897:63 (review of nesting habits); Dalla Torre, 1897:546 (in catalog of world Hymenoptera); Meunier, 1897b:353 (Belgium: coastal sand dunes at Blankenberge); Mocsáry, 1897:82 (Kingdom of Hungary, some localities are in today's Romania and Slovakia); Flamarý, 1898:45 (France: Saône-et-Loire: Mâcon area); Lange, 1898:70 (Germany: Sachsen: Annaberg-Buchholz); Strand, 1898b:94 (Norway); Ashmead, 1899d:329 (in checklist of North American Crabronidae [sic]); Hocking, 1901:68 (Great Britain: Surrey County); Strand, 1901:7 (Norway: Porsgrund); Nevinson, 1900:62 (Great Britain: Wales: Criccieth); N. Arnold, 1902:89 (Russia: Mohilev Province, now Belarus'); Chyzer, 1902:34 (Hungary); E. Saunders, 1902a:52 (SW Ireland); de Cobelli, 1903:112 (Italy: Province of Trentino: Torcegno); Antiga and Bofill, 1904:15 (Spain: Catalonia); Aurivillius, 1904:269 (in revision of Swedish Sphecidae); W. Schulz, 1904b:95 (Czechoslovakia, France, Spain, Switzerland; geographic variation); Kubes, 1905:84 (Czech Republic: Kolín, Maria Sorg u Jáchimova, Sušice, Veltruby); Mosolov, 1905:19 (Russia: Moscow Government: Mikhailovskoye); von Heyden, 1905:81 (Germany: Hessen: Frankfurt); Vángel, 1905:167 (Hungary); Schmiedeknecht, 1907:217 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:120 (in catalog of French Hymenoptera); Orr, 1909a:25 (Ireland: Down County); Cavro, 1910:685 (France: Département du

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1954:251 (Sweden: Gästrikland Region); Grandi, 1954:231 (Italy; as *mistaceus*); Aerts, 1955:62 (Germany: Rheinland); Steiner, 1955:144 (France: Dordogne); Teschner, 1955:57 (Germany: Nordrhein-Westfalen: Hohe Ward near Münster); Vogrin, 1955:34 (Yugoslavia); Ceballos, 1956:383 (in catalog of Hymenoptera of Spain); Kullenberg, 1956:335 (study of chemical sexual attractants); Leclercq, 1956i:132 (Luxemburg); Zirngiebl, 1957:181 (Germany: Rheinland-Pfalz: Landau, Marktredwitz, Speyer); Diniz, 1959:30 (Portugal: Aldeia Nova de S. Bento, Lisboa, Soure); Felton, 1963:179 (Great Britain: Kent County); Babiy, 1964:117 (Austria: Land Salzburg); Gauss, 1967:552 (Germany: Baden-Württemberg); Niedl and Deneš, 1967:82 (Czech Republic: Třeboň area); H. Schulz, 1967:59 (Germany: Brandenburg: Ruhlsdorf near Potsdam); Parré, 1968:122 (Germany: Sachsen-Anhalt: Staßfurt); Lefeber, 1969c:233 (Netherlands: St. Pietersberg = Montagne Saint Pierre); Babiy, 1970:21 (Austria: Land Salzburg); Kullenberg, 1973:9 (male pseudocopulation with flowers of *Ophrys insectifera* L); Casolari and Casolari Moreno, 1980:116 (specimens in M. Spinola collection). – **As *Argogorytes mystaceus***: Bajári, 1957a:98 (new combination, in key to Hungarian Sphecidae); Benno, 1958b:11 (in review of Dutch Sphecidae); de Beaumont, 1958c:203 (Swiss National Park); Wolf, 1959b:30 (Germany: Nassau); Noskiewicz and Puławski, 1960:88 (in key to Polish Sphecidae); Hoop, 1961:65 (Germany: Schleswig-Holstein: Kiel-Eichhof, Russee, Steinfurth); Valkeila, 1962b:67 (southwestern Finland); Hoop, 1963a:73 (Germany: Schleswig-Holstein: Reher Kratt); Lehrer and Scutaru, 1963:283 (Romania: Moldova: Iași); de Beaumont, 1964c:53 (in Sphecid Fauna of Switzerland), 1965a:27 (Greece); B. Klug, 1965:136 (Germany: Baden-Württemberg: Freiburg im Breisgau area); Roberti, Frilli, and Pizzaghi, 1965:109 (Italy: Emilia-Romagna: Piacenza Province: no specific locality); Evans, 1966d:69 (summary of known behavior); Benno, 1967:34 (in checklist of Sphecidae of Netherlands); de Beaumont, 1967a:310 (Turkey); J. Heinrich, 1967:72 (Germany: Bayern: Unterfranken District); Scobiola-Palade, 1967b:47 (Romania); Scobiola-Palade, 1968b:142 (Romania: Island of Letea in delta of Danube); Petit, 1969:72 (Belgium: Mousny); Zangheri, 1969:1702 (Italy: in catalog of flora and fauna of Romagna Region); Hoop, 1970:60 (Germany: Schleswig-Holstein: Surendorf); Lefeber and Petit, 1970:130 (Belgium: Plombières); Oehlke, 1970:696 (Democratic Germany); Petit, 1971:22 (Luxemburg: Bourscheid); Schmidt, 1971b:30 (Germany: Mainz area); Stritt, 1971a:104 (Germany: Baden-Württemberg: Karlsruhe); Balthasar, 1972:329 (in Sphecid Fauna of Czechoslovakia); Haeseler, 1972:155 (Germany: Schleswig-Holstein: anthropogenic habitats); Kofler, 1972:106 (Austria: eastern Tirol); Scobiola-Palade, 1972b:252 (Romania); Simon Thomas, 1972:179 (France: Landes); Diniz, 1973:44 (Portugal: Coimbra); Erlandsson, 1974:65 (Italy; as *mysticus*); Lefeber, 1975b:120 (Netherlands: Schiepersberg); Lomholdt, 1975c:189 (in Sphecid Fauna of Fennoscandia and Denmark); R. Bohart and Menke, 1976:492 (listed); Benno, 1977:153 (distribution in Netherlands); Guichard, 1977:254 (Great Britain: Surrey); Kolesnikov, 1977:317 (Russia: Bryansk Oblast); Schmidt, 1977:96 (Germany: Schwarzwald); Kazenas, 1978b:78 (in key to Sphecidae of Kazakhstan and Central Asia); Leclercq, 1978b:map 1180 (distribution in Belgium); Marion, 1978:87 (France: Nièvre Department); Pulawski, 1978:198 (in key to Sphecidae of European part of former USSR); Schwammberger, 1978:417 (Germany: Württemberg); Benedek, 1979:230 (Hungary: Bakony Mountains); Bradbury and Cresswell, 1979:127 (Great Britain; pseudocopulation with *Ophrys insectifera*); Lefeber, 1979:11 (in checklist of Sphecidae of Netherlands), 37 (Netherlands: distribution map); Marchal and Leclercq, 1979:10 (Belgium: Gembloux); Schmidt, 1979b:341 (Germany); Borg-Karlson and Tengö, 1980:828 (pyrazines as marking volatiles); Pagliano, 1980:113 (Italy: Piemonte); Richards, 1980:82 (in key to Sphecidae of British Isles); Callan, 1981:161 (review of known nesting habits); Dollfuss and Ressler, 1981:324 (Austria: Niederösterreich: Scheibbs District); Józán, 1981:305 (Hungary: Hortobágy National Park); Woydak, 1981:40 (Germany: Westfalen: Hamm); Axelsson, 1982:79 (Sweden); Donath, 1982:213 (Germany: Cottbus Bezirk); Gayubo, 1982b:38 (Spain: Cáceres and Salamanca provinces); Skibińska, 1982:123 (Poland: Warszawa area); Dollfuss, 1983a:79 (endangered in Kärnten, Austria), 1983b:22 (in catalog of Sphecidae of Austria); Riemann, 1983:83 (Germany: Bremen-Daverden area); Ågren and Borg-Karlson, 1984:111 (chemicals involved in luring males to flowers of *Ophrys insectifera*); Ågren, Kullenberg, and Sensenbaugh, 1984:15 (similarity of female pilosity to that of labellum of *Ophrys insectifera*); Chevin and Silvestre de Sacy, 1984:9 (France: Yvelines Department); Haack,

Tscharmtke, and Vidal, 1984:124 (Germany: Hamburg area); Józán, 1985b:61 (Hungary S Lake Balaton), 81 (floral records), 84 (ecological and zoogeographic characteristics); Lefeber, 1985:87 (Netherlands: southern Limburg); Scobiola-Palade, 1985:96 (Romania: delta of Danube); Tyrner, 1985:9 (Czech Republic: Jezerka Nature Reserve in Krušné Hory = Erzgebirge); Brechtel, 1986:59 (Germany: Südpfalz); Józán, 1986:373 (Hungary: Kiskunság National Park); Nemkov, 1986:107 (Russia: Siberia: Irkutsk Oblast'); Vikberg, 1986:78 (Finland); Riemann, 1987a:339 (Germany: Niedersachsen: Bremen area); Schmidt and Westrich, 1987:361 (Germany: Mainz area); Archer, 1988a:33 (Great Britain: Bernwood Forest near Oxford), 1988b:27 (Great Britain: Yorkshire: Strensall Common); Chevin, 1988:16 (France: La Manche Department); Kowalczyk, 1988a:45 (Poland: Rogów), 1988b:64 (Poland: environs of Łódź); Pouvreau, Coutin, and Descoins, 1988:42 (pseudocopulation with *Ophrys insectifera* L.); Riemann, 1988:222 (Germany: Bremen area); Wolf, 1988b:141 (Germany: Rheinland-Westfalen); Ågren, 1989:532 (SEM study of flagellar sensilla); Archer, 1989a:131, 133 (Great Britain: York: found before and after coniferization); Jacobs, 1989:26 (Germany: Mecklenburg-Vorpommern); Józán, 1989:102 (Hungary: Tihany Natural Reserve); Nilssen, 1989:47 (Sweden); Pádr *in* Šedivý, 1989a:166 (in checklist of Czechoslovakian Sphecidae); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:94 (Belarus: Berezinskiy Nature Reserve); Weiffenbach, 1989:107 (Germany: Hessen: Gießen area); Archer, 1990c:18 (Great Britain: Leicestershire); Gayubo, Asís, and Tormos, 1990b:77 (Spain: León Province); Jacobs and Oehlke, 1990:209 (new records from Democratic Germany); Kowalczyk, 1990:291 (Poland: Góry Świętokrzyskie); Kuznetzova, 1990:18 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Nash, Boston, and Nelson, 1990:249 (Ireland: Down County); Pádr, 1990:70 (Czech Republic: Praha area); Pagliano, 1990:70 (in catalog of Italian Sphecidae); Schwammberger and Priesner, 1990:551 (Austria: Kärnten); Gayubo, Borsato, and Osella, 1991:413 (Italy); Dollfuss, 1991:190 (in key to Sphecidae of North and Central Europe); Kowalczyk, 1991a:89, 93, 99, 101, 105 (Poland: Łódź), 1991b:120 (Poland: Augustów Forest); Kuhlmann et al., 1991:87 (Germany: Senne Region); Negrisola, 1991:322 (Italy: Udine Province); Nilsson, 1991:83 (Sweden: Lake Mälaren); Scobiola-Palade, 1991:220 (Romania: Danube delta); Archer, 1992a:56 (Great Britain: Leicestershire), 1992b:21 (Great Britain: Yorkshire: Skipwith Common); Delarze, 1992:67 (Switzerland: Valais: Les Follatères); Józán, 1992a:229 (Hungary: Béda-Karapanca Protected Area), 1992b:175 (Hungary: Boronka-melléki Protected Area), 1992c:290 (Hungary: Zselic Hills); Pagliano, 1992:36 (in key to Italian Nyssoninae); N. Schneider, 1992:177 (Luxemburg); Sorg and Cölln, 1992:132 (Germany: Rheinland-Pfalz: Gönnersdorf); K. Weber, 1992:86 (Germany: Bayern: Bamberg District); Wolf, 1992c:21 (Germany: Nordrhein-Westfalen: Plettenberg: castle Schwarzenberg ruin); Gorobchishin, 1993:47 (Ukraine: Kanev Nature Reserve); Józán, 1993:415 (Hungary: Bükk National Park); Kuhlmann, 1993:75 (Germany: known from Westfalen); Gayubo and Borsato, 1994:216 (Italy: Piemonte, Veneto); Kowalczyk, 1994:73 (Poland: Łagiewniki forest in Łódź); Pádr and Lukáš, 1994:892 (Slovakia: High Tatra Mountains); Theunert, 1994c:33 (Germany: summary of records from Niedersachsen and Bremen); Archer, 1995a:21 (Great Britain: Yorkshire: Blaxton); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Józán, 1995:105 (Hungary: projected Duna-Dráva National Park); Kazenas and Esenbekova, 1995:79 (Kazakhstan; bibliographic reference to leafhopper prey); Krasnobayev et al., 1995:138 (Russia: Zhiguli Hills NW Samara); Negrisola *in* Minelli, Ruffo, and La Posta, 1995b:4 (in catalog of Italian fauna); Nemkov, 1995c:129, 131 (in key to Palearctic *Argogorytes*), 132 (distribution in former Soviet Union); Nemkov *in* Nemkov, Kazenas, Budryś, et Antropov, 1995:459, 460 (in key to Sphecidae of Russian Far East, as *mystaceus mystaceus*); Riemann, 1995:52 (Germany: Bremen); Schmid-Egger, Risch, and Niehuis, 1995:164 (summary of records from Germany: Rheinland-Pfalz State); Shlyakhtenok, 1995:193 (Belarus': Berezinsky Nature Reserve); Skibińska, 1995:424, 425, 426, 427 (Poland: pine forest in Białowieża Primeval Forest); Archer, 1996b:37 (Great Britain: Nottinghamshire: Sherwood Forest); Arens, 1996:442 (Germany: Bayern: Bayreuth area); Blösch, 1996:5 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Doronin, 1996:18 (Latvia: Kalngale, nest parasitized by *Chrysis fulgida* Linnaeus, a chrysidid); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Harvey and Plant, 1996:80 (Great Britain: summary of records from Essex); Jakubzik, 1996:251 (Germany: Köln); Jakubzik and

Cölln, 1996b:398 (Germany: Rheinland-Pfalz); Shlyakhtenok, 1996:303 (Belarus': Berezinsky Nature Reserve); Voblenko, Gorobchishin, and Nesterov, 1996:15 (Ukraine: Polesye Region); Woydak, 1996:93 (Germany: Westfalen: summary of distribution and nesting habits); Wu and Zhou, 1996a:141 (in revision in Economic Insect Fauna of China); Archer, 1997a:49 (Great Britain: Yorkshire: Cave Wold); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:182 (in Sphecidae Fauna of Western Europe); Celary, 1997:60 (in checklist of Animals of Poland); Lauterbach, 1997c:79 (Germany: Nordrhein-Westfalen: Bielefeld); Pagliano and Alma, 1997:175 (preying on *Philaenus spumarius*, prey transport), 178 (known prey listed); Riemann, 1997:49 (Germany: Achim 14 km SE Bremen); Schmidt and Schmid-Egger, 1997:6 (in checklist of German Sphecidae); Celary, 1998:212 (Poland: Babia Góra National Park); Dollfuss, Gusenleitner, and Bregant, 1998:522 (Austria: summary of collecting records from Burgenland); Haeseler and Ritzau, 1998:50 (Germany: Bremen: Harriersand Island in Weser River and Steller Heide); Jakubzik, Schlüter, and Cölln, 1998:1181, 1183 (Germany: Rheinland-Pfalz); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); Salzman-Wandeler, 1998a:97 (Switzerland: Luzern Canton: Sempach); van der Smissen, 1998:53 (Germany: Schleswig-Holstein); K. Weber, 1998:133 (Germany: Bayern: Bamberg area); Archer, 1999b:82 (Great Britain: Yorkshire); Dorow, 1999:574 (Germany: Hessen: Niddahänge E Rudingshain Forest Reserve); Erhardt, 1999:75 (Germany: Niedersachsen: Ammerland area); Gusenleitner, 1999:601 (Austria: locality records); Kuhlmann, Wolf, and Woydak, 1999:569 (endangered in Nordrhein-Westfalen State of Germany); Ljubomirov, 1999b:56 (Bulgaria: Mt. Vitosha near Sofia); Löhr, 1999:62 (Germany: Hessen: Mücke-Merlau near Gemünden); Majzlan, Rychlík, and Deván, 1999:145 (Slovakia: Čankovská Step Nature Reserve); Mandery, 1999:104 (Germany: Bayern: Coburg area); Neumayer, Schwarz, and Bregant, 1999:223 (Austria: in checklist of Sphecidae of Land Kärnten); Pauly, 1999:111 (in catalog of Belgian aculeates); M. Schwarz, 1999:88 (Austria: Oberösterreich: Linz area); Blösch, 2000:371 (in Sphecidae Fauna of Germany); Giachino, Grosso, Marchetti, Pagliano, Scaramozzino, and Vailati, 2000:109 (Greece); Jacobs, 2000:6 (Germany: Land Mecklenburg-Vorpommern: not endangered); Kuhlmann, 2000:64 (Germany: Hessen: Diemel River valley); Tschuch and Brothers, 2000:324 (stridulatory organs absent on female sterna III and IV); Wiśniowski, 2000:162 (Poland: Bieszczady Mts.); Archer, 2001a:107 (Great Britain: Watsonian Yorkshire), 2001b:14 (Great Britain: Watsonian Yorkshire); Cungs and Jakubzik, 2001:122, 123 (Luxemburg); Dorow, 2001:136 (Germany: Hessen: Schönbuche Forest Reserve); Haeseler, 2001:265 (Germany: Niedersachsen: Brookdeich near Oldenburg); Kazenas, 2001b:45 (in checklist of Sphecidae of Kazakhstan and Central Asia), 220 (review of known biology); Mazzucco, 2001:203 (Austria: Niederösterreich: Steinfeld); Ohl et al., 2001:137 (distribution in Germany by provinces); Shlyakhtenok and Agunovich, 2001:144 (Belorussia: Berezinskiy Nature Reserve); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Wolf, 2001a:171 (Germany: Bayern: Lech valley from Augsburg to Donau); Zettel, Gross, and Mazzucco, 2001:180 (Austria: Wien); Archer, 2002b:129 (Great Britain: Watsonian Yorkshire: distribution map); Archer and Edwards, 2002:103 (Great Britain: West Sussex: Ambersham and Iping commons); Beavis, 2002:111 (Great Britain: Kent: Tunbridge Wells area); Deván, 2002a:200 (Slovakia: Kobela Nature Reserve near Nové Mesto); Esser and Cölln, 2002:1136 (SW Germany: Eifel region); Kazenas, 2002a:117 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:155 (Poland: Kampinos National Park near Warszawa); Litt, 2002:166 (Belgium); C. Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shlyakhtenok and Skibińska, 2002:35 (Belarus': no specific locality); Wiśniowski, 2002:73 (Poland: Ojców National Park); Cölln, Esser, and Jakubzik, 2003:61 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Drewes, 2003:133 (Germany, Hungary: miscellaneous locality records); Esser and Jakubzik, 2003:290 (Germany: Nordrhein-Westfalen: Niederrheinisches Tiefland); Haeseler, 2003:339 (Germany: Niedersachsen: Harriersand Island near Bremen); Kuhlmann and Quest, 2003:50 (Germany: Bayern: Bayerischer Wald National Park); Kula and Tyrner, 2003:202 (Northern Czech Republic: spruce stands in air-pollution region); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:63 (in catalog of wasps and bees of Bayern, Germany); Schmid-Egger, 2003:749 (Italy: Sicilia: Madonie); von der Heide and Metscher, 2003:101 (Germany: Niedersachsen: Emsland

area); Wiśniowski *in* Dylewska and Wiśniowski, 2003:176 (Poland: Ojców National Park); Archer, 2004:47 (Great Britain: Worcestershire: Devils Spittleful Nature Reserve); Dorow, 2004a:127 (Germany: Hessen: Schönbusche Nature Reserve); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:261 (in checklist of Sphecidae of Nordrhein-Westfalen State of Germany); Jakubzik, Niehuis, and Cölln, 2004:457 (Germany: Rheinland-Pfalz: Roßstein in Rhein valley at 50°06'42"N 7°43'87"E); Litt, 2004:222 (Switzerland: Valais: Zinal); Salzman-Wandeler and Rezbanyai-Reser, 2004:27 (central Switzerland); Schneider and Carrières, 2004:98 (Luxemburg: Bon-Pays Region); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:355 (in catalog of Polish Crabronidae); van Achterberg and Peeters, 2004:32 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:51 and 62 (in checklist of Polish Sphecidae); Blösch, 2005:5 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Gayubo and Özbek, 2005:16 (Turkey: Erzurum: Tortum, Pehlivanlý; Kars: Sarýkamýþ); Haeseler, 2005:628 (Germany: Niedersachsen: Steller Heide near Bremen); Jacobs, 2005a:438 (Bulgaria); Kofler, 2005:183 (Austria: Tirol: Lienz District: several localities); Kraatz, 2005:102 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Pagliano and Negrisoló, 2005:138 (in Sphecid Fauna of Italy); Quest and Kuhlmann, 2005:32 (Germany: Bayern: Bayerischer Wald National Park); Riemann and Hohmann, 2005:546 (Germany: Niedersachsen: city of Bremen and adjacent area); Theunert, 2005a:16 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Yildirim and Ljubomirov, 2005:1791 (Turkey: Bayburt, Erzurum, and Kars provinces); Feitz, Gloden, Melchior, and Schneider, 2006:82 (Luxemburg: Baggerweieren area in Haff Réimech Nature Reserve); Hua, 2006:277 (in list of Chinese insects, geographic distribution); Ljubomirov, 2006:537 (Bulgaria: Rhodope Mountains: Yurukovo Village, as *mystaceus mystaceus*); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund), 2006c:304 (Greece: Thessalia: Magnissia Peninsula at 39°N 23°E); Vepřek, 2006:508 (Czech Republic: Kokořinsko area); Dorow, 2007:263, 264 (Germany: Hessen: Schönbusche Forest Reserve); Evans and O'Neil, 2007:48 (summary of information on nesting habits); Flügel, 2007:39 (Germany: Hessen: Halberg near Neumorschen); Jacobs, 2007:168 (in key to Crabronidae of Germany); Kowalczyk and Nadolski, 2007:283 (Poland: Łódź: railway areas); Saure, 2007:81 (in checklist of Aculeata of Brandenburg Land, Germany); Venne, Bleidorn, and Lauterbach, 2007:300 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:208 (in catalog of Sphecidae of Czech Republic and Slovakia); Ljubomirov and Yildirim, 2008:76 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:24 (in catalog of Crabronidae of Asiatic Russia); Donie, 2009:9 (Germany: Niedersachsen: Oldenburg); U. Frommer, 2009a:26 (Germany: in checklist of Sphecidae of central Hessen); Nemkov, 2009b:132 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Pagliano, 2009:178 (Italy: Molise: Campolieto); Zettel, Wagner, Zimmermann, Wiesbauer, Sorger, Ockermüller, and Seyfert, 2009:10 (Austria: Niederösterreich: Pfaffstätten); Bitsch, 2010:112 (in supplement to vol. II of Faune de France, 1997: recent record from Bulgaria reported; France: first record from Ain: Virieu-le-Grand and Virieu-le-Petit); Schmid-Egger, 2010a:14 (in red list of Aculeata of Germany: relatively common).

*Vespa campestris* Linnaeus, 1761:417, sex not indicated. Lectotype: ♀, Sweden: no specific locality (Linnean Society, London), designated by Day, 1979:54. Synonymized with *Gorytes mystaceus* by Vander Linden, 1829:97, synonymy confirmed by Shuckard, 1837:211, Richards, 1935a:168, and Day, 1979:54. – Fabricius, 1775:369 (redescription), 1787:291 (redescription); Christ, 1791:234 (redescription); Richards, 1935a:168 (study of type material); Day and Fitton, 1978:194 (recuration of Linnean type material). – **As *Mellinus arvensis***: Fabricius, 1793: 287 (new combination redescription), 1796:98 (in Index to his Entomologia Systematica, 1793), 1804:299 (redescription). – **As *Gorytes campestris***: Ashmead, 1899d:329 (new combination, in checklist of North American Crabronidae [*sic*]).

*Vespa inimica* M. Harris, 1776:.... Synonymized with ...

*Sphex longicornis* Rossi, 1790:67, sex not indicated. Holotype or syntypes: sex unknown, Italy: Etruria, now Toscana: no specific locality (destroyed). Synonymized with *Gorytes mystaceus* by Lepeletier, 1832:61 (tentatively) and by Wesmael, 1839:75.

*Crabro bicinctus* Fabricius, 1793:299, sex not indicated. Holotype: ♀, Dania, now Denmark: no specific locality (ZMK). Synonymized with *Ceropales spinosa* (now *Nysson interruptus*) by Fabricius, 1804:186 and by *Argogorytes mystaceus* by van der Vecht, 1961a:47. Suppressed by ICZN, 1967, Opinion 675.

*Mellinus arpactus* Fabricius, 1804:300, sex not indicated. Holotype: ♂, Germany: no specific locality (ZMK). Synonymized with *Gorytes mystaceus* by Handlirsch, 1888:368 (tentatively), synonymy confirmed by van der Vecht, 1961a:48. – Dahlbom, 1845:XXIII (type material not examined). – **As *Gorytes arpactus***: Spinola, 1806:95 (new combination; Italy: Liguria).

*Vespa flavicincta* Donovan, 1808:73, [♀]. Holotype or syntypes: ♀, Great Britain: no specific locality (lost) Synonymized with *Gorytes mystaceus* by Handlirsch, 1888b:368.

*Gorytes tonsus* Bondroit, 1933:27, ♀. Holotype: ♀, Belgium: Bruxelles: Solbosch (depository?). Synonymized with *Argogorytes mystaceus* by Bitsch and Barbier in Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:182. – **As *Gorytes mystaceus* var. *tonsus***: Maidl and Klima, 1939:53 (new status, in catalog of world Astatinae and Bembicinae). As *Argogorytes hispanicus*: Yildirim and Ljubomirov, 2005:1791 (Turkey: Erzurum: Palandöken, İspir), corrected to *Argogorytes mystaceus* by Nemkov in Yildirim and Ljubomirov, 2007:117.

### **ssp. *grandis* (Gussakovskij)**

*Gorytes grandis* Gussakovskij, 1932:28, ♀. Syntypes: ♀, Russia: Primorskiy Kray: Sedanka, Sutshan, and Tigrovaya (Stockholm). – Maidl and Klima, 1939:50 (in catalog of world Astatinae and Bembicinae). – **As *Argogorytes mystaceus grandis***: Tsuneki, 1963a:2 (new combination, in key to Gorytini of Japan and Korea), 6 (Japan; redescription; new status), 20 (description of ♂), 1964f:47 (Japan: Nagano Prefecture: Arashi Valley), 1965c:29 (key), 1965f:41 (nesting habits); T. Iida, 1968:21 (Japan); Itami, 1969:46 (Japan: Niigata Prefecture); Tsuneki, 1969d:14 (nesting habits), 1970b:9 (Central Japan); Nambu, 1972b:14 (Japan: Saitama Prefecture); Suda, 1973:123 (Japan: Yamanashi Prefecture); Nambu, 1975b:71 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:492 (listed); Tsuneki, 1976d:297 (China: Manchuria), 1979d:9 (Japan); Kazenas, 1980e:82 (Russia: Far East); Callan, 1981:161 (review of known nesting habits); Tsuneki, 1982b:18 (known from Korea); Nemkov, 1992b:249 (Russia: Far East: Khingan Nature Reserve), 1995b:129, 131 (in key), 132 (distribution in former Soviet Union); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:459, 460 (in key to Sphecidae of Russian Far East); Miyatake, 1996:103 (specimens in Hiroshi Aoki collection); Ohl and Linde, 2003:150 (number of ovarioles); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:37 (Japan: Gifu Prefecture); Suda, 2004:46 (Japan: Yamanashi Prefecture); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:54 (Japan: Gifu Prefecture); Kinota, Haneda, and Tano, 2005:31 (Japan: Hokkaido); Nemkov, 2005a:158 (Russia: Sakhalin Island); Hua, 2006:277 (in list of Chinese insects, geographic distribution); Nemkov, 2006b:169 (Russia: Primorskiy Kray: Kedrovaya Pad' Nature Reserve), 2007b:75 (Russia: Kuril Islands: Kunashir Island), 2009b:132 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:238 (Russia: Primorskiy Kray: Lazovsky Nature Reserve).

### **17. *nigrifrons* (F. Smith)**

*Gorytes nigrifrons* F. Smith, 1856:368, ♀. Holotype or syntypes: ♀, Canada: Nova Scotia: no specific locality (BMNH). – Cresson, 1862:235 (in catalog of North American Hymenoptera); Packard, 1867:432 (listed); Cresson, 1887:279 (in catalog of North American Hymenoptera); Handlirsch, 1888b:376 (original description translated into German); W. Fox, 1896a:525 (in revision of North American *Gorytes*); Dalla Torre, 1897:549 (in catalog of world Sphecidae); Ashmead, 1899d:329 (in checklist of North American Crabronidae); Harrington, 1902:223 (Canada: Ontario: Ottawa); Rohwer, 1912:468 (correction to Fox's key); Maidl and Klima, 1939:59 (in catalog of world Astatinae and Bembicinae). – **As *Arpactus nigrifrons***: J. Ch. Bradley, 1928:1015 (new combination, in catalog of New York Sphecidae); Brimley, 1938:446 (new combination, North Carolina: Raleigh). – **As *Argogorytes nigrifrons***: Krombein in Muesebeck et al., 1951:986 (new combination, in catalog of North American Hymenoptera); Krombein, 1963f:276 (Maryland: Plummers Island near Washington, D.C.); R. Bohart and Menke, 1976:492 (listed); Krombein, 1979b:1691 (in catalog of North American Hymenoptera); Finnermore,



1982:218 (in Sphecidae Fauna of Southern Quebec); Ahlstrom, 1995:112 (in checklist of insects of North Carolina); R. Bohart, 2000:159 (in revision of Neotropical Gorytini); Buck, 2004:27 (in checklist of Crabronidae of Ontario, Canada), 31 (distribution within Ontario), 66 (first record from Ontario: list of localities).

*Gorytes bollii* Cresson, 1873:225, ♀ (as *Bolli*, incorrect original capitalization). Holotype: ♀, USA: Texas: Dallas County: no specific locality (MCZ). Synonymized with *Gorytes nigrifrons* by Handlirsch, 1888b:376. – Cresson, 1887:279 (in catalog of North American Hymenoptera), 1916:98 (holotype in MCZ).

*Gorytes neglectus* Rohwer, 1911b:567, ♀, junior primary homonym of *Gorytes neglectus* Handlirsch, 1895. Holotype: ♀, USA: Texas: no specific locality (USNM). Synonymized with *Argogorytes nigrifrons* by R. Bohart in R. Bohart and Menke, 1976:492.

### 18. *nipponis* Tsuneki

*Argogorytes nipponis* Tsuneki, 1963a:7, ♀. Holotype: ♀, Japan: Nikko (originally K. Tsuneki coll., now Hyogo Mus.). – Tsuneki, 1963a:2 (in key to Gorytini of Japan and Korea), 20 (description of ♂); Tsuneki, Iida, Hirai, and Sabi, 1964:60 (Japan: Aomori Prefecture: Towada, as *nipponicus*); Tsuneki, 1965c:29 (key); Haneda, 1968a:46 (Japan); Tano, 1968:33 (Japan); Nambu, 1972b:14 (Japan: Saitama Prefecture); Suda, 1973:123 (Japan: Yamanashi Prefecture); Tsuneki, 1973:4 (description of ♂); Nambu 1975b:71; R. Bohart and Menke, 1976:492 (listed); Kazenas, 1980e:82 (Russia: Primorskiy Krai); Tsuneki, 1982c:22 (nesting habits); Nemkov, 1995c:129, 131 (in key to Palearctic *Argogorytes*), 133 (distribution in former Soviet Union: Primorskiy Krai, Island Kunashir); Tano, 1994a:8 (holotype in K. Tsuneki coll.); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:459, 460 (in key to Sphecidae of Russian Far East); Hashimoto and Nakanishi, 1997:23 (holotype transferred to Hyogo Mus.); Haneda and Tano, 2003:12 (Japan: Nagasaki Prefecture: Tsushima); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:54 (Japan: Gifu Prefecture); Kinota, Haneda, and Tano, 2005:31 (Japan: Hokkaido); Nemkov, 2007b:75 (Russia: Kuril Islands: Kunashir Island); Evans and O'Neil, 2007:49 (summary of information on nesting habits); Nemkov, 2008b:24 (in catalog of Crabronidae of Asiatic Russia), 2009b:132 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia).

### 19. *palawanensis* Tsuneki

*Argogorytes palawanensis* Tsuneki, 1976b:42, ♀. Holotype: ♀, Philippines: Palawan: Pinigisan (ZMK).

### 20. *parkeri* R. Bohart

*Argogorytes parkeri* R. Bohart, 2000:160, ♀, ♂ (generic name misspelled *Argochrysis*). Holotype: ♀, Costa Rica: Alajuela: 20 km S Upala (USU). – Amarante, 2002:13 (in catalog of Neotropical Crabronidae).

### 21. *porteri* R. Bohart

*Argogorytes porteri* R. Bohart, 2000:160, ♀, ♂. Holotype: ♀, Brazil: Santa Catarina: Nova Teutonia (UCD). – Amarante, 2002:13 (in catalog of Neotropical Crabronidae).

### 22. *quadrangulus* R. Bohart

*Argogorytes quadrangulus* R. Bohart, 2000:161, ♀, ♂. Holotype: ♂, Costa Rica: Guanacaste: 14 km S Cañas (USU). – Amarante, 2002:13 (in catalog of Neotropical Crabronidae).

### 23. *rubrosignatus* (R. Turner)

*Arpactus rubrosignatus* R. Turner, 1915a:77, ♀. Holotype or syntypes: ♀, Australia: Western Australia: between Yallingup and Busselton (BMNH). – R. Turner, 1915a:69 (in key to Australian *Arpactus*). – **As *Gorytes rubrosignatus***: Maidl and Klima, 1939:56 (new combination, in catalog of world Astatinae and Bembicinae). – **As *Argogorytes rubrosignatus***: R. Bohart and Menke, 1976:492 (new combination, listed); Cardale, 1985:280 (in catalog of Australian Sphecidae).

**24. rufomixtus (R. Turner)**

*Gorytes rufomixtus* R. Turner, 1914a:620, ♀. Holotype or syntypes: ♀, Australia: New South Wales: Jindabyne at Snowy River (Australian Mus., Sydney). – Maidl and Klima, 1939:56 (in catalog of world Astatinae and Bembicinae) – **As** *Arpactus rufomixtus*: R. Turner, 1915a:69 (new combination, in key to Australian *Arpactus*); Hacker and Cockerell, 1922:290 (new combination, description of ♂). – **As** *Argogorytes rufomixtus*: R. Bohart and Menke, 1976:492 (new combination, listed); Cardale, 1985:281 (in catalog of Australian Sphecidae).

**25. sapellonis (C. Baker)**

*Gorytes sapellonis* C. Baker, 1907:161, ♀. Holotype or syntypes: ♀, USA: New Mexico: Sapello Canyon (originally Pomona College, now USNM). – Maidl and Klima, 1939:60 (in catalog of world Astatinae and Bembicinae); Krombein in Muesebeck et al., 1951:993 (in catalog of North American Hymenoptera). – **As** *Argogorytes sapellonis*: R. Bohart and Menke, 1976:492 (new combination, listed); Krombein, 1979b:1691 (in catalog of North American Hymenoptera); R. Bohart, 2000:161 (in revision of Neotropical Gorytini); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 45 and 47 (Mexico: Tamaulipas).

**26. secernendus (R. Turner)**

*Arpactus secernendus* R. Turner, 1915a:78, ♀. Holotype or syntypes: ♀, southeastern Australia: no specific locality (BMNH). – R. Turner, 1915a:69 (in key to Australian *Arpactus*). – **As** *Gorytes secernendus*: Maidl and Klima, 1939:56 (new combination, in catalog of world Astatinae and Bembicinae). – **As** *Argogorytes secernendus*: R. Bohart and Menke, 1976:492 (new combination, listed); Cardale, 1985:281 (in catalog of Australian Sphecidae).

**27. similicolor (Dow)**

*Gorytes similicolor* Dow, 1933:218, ♀. Holotype: ♀, Paraguay: Villarrica (MCZ). – Maidl and Klima, 1939:60 (in catalog of world Astatinae and Bembicinae). – **As** *Argogorytes similicolor*: R. Bohart and Menke, 1976:492 (new combination, listed); R. Bohart, 2000:162 (in revision of Neotropical Gorytini); Amarante, 2002:13 (in catalog of Neotropical Crabronidae).

**28. stenopygus (Handlirsch)**

*Gorytes stenopygus* Handlirsch, 1895:869, ♀, ♂. Syntypes: ♀, Indonesia: Sulawesi: no specific locality (TMB), ♂, Philippines: Luzon: no specific locality (ZMHU). – Dalla Torre, 1897:555 (in catalog of world Sphecidae); Maidl and Klima, 1939:55 (in catalog of world Astatinae and Bembicinae); Baltazar, 1966:349 (in catalog of Hymenoptera of Philippines). – **As** *Argogorytes stenopygus*: R. Bohart and Menke, 1976:492 (new combination, listed).

**29. tonkinensis (Yasumatsu)**

*Gorytes tonkinensis* Yasumatsu, 1943:3, ♀. Holotype: ♀, Vietnam: Hoa-Sinh (Heude Mus., Shanghai). – **As** *Argogorytes tonkinensis*: R. Bohart and Menke, 1976:492 (new combination, listed); Wu and Zhou, 1996a:142 (in revision in Economic Insect Fauna of China); Hua, 2006:277 (in list of Chinese insects, geographic distribution).

**30. tristis Tsuneki**

*Argogorytes tristis* Tsuneki, 1982a:49, ♀. Holotype: ♀, Bismarck Archipelago: New Ireland: Lemkamin (ZMK).

**31. umbratilis R. Bohart**

*Argogorytes umbratilis* R. Bohart, 2000:162, ♀, ♂. Holotype: ♀, Brazil: Santa Catarina: Nova Teutonia (UCD). – Amarante, 2002:13 (in catalog of Neotropical Crabronidae).

**32. vagus (F. Smith)**

*Gorytes vagus* F. Smith, 1859a:161, ♀. Holotype or syntypes: ♀, Indonesia: Maluku: Key Island, now Kai (OXUM). – Handlirsch, 1888b:540 (as new synonym of *Gorytes constrictus*). – **As** *Arpactus vagus*: R. Turner, 1915a:79

(new combination, as questionable synonym of *Arpactus constrictus*). – **As *Argogorytes vagus***: R. Bohart and Menke, 1976:492 (new combination, as good species, listed).

**sp.**

Bischoff, 1933:4 (Morocco); Bibby, 1947:78 (Philippines: Samar group of Islands: Calicoan Island); Hanson and Menke, 1995:645 (Costa Rica).