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CRABRO

Crabro Fabricius, 1775:373, junior homonym of *Crabro Geoffroi* de Saint Hilaire, 1762, which was suppressed by the International Commission on Zoological Nomenclature, 1943b:91 (Opinion 144) and 1994:59 (Opinion 1754). Type species: *Vespa cribraria* Linnaeus, 1758, designated by the International Commission on Zoological Nomenclature, 1943b:91 (opinion 144).

Carabro Say, 1823:78. Lapsus for *Crabro*.

Pemphilis Risso, 1826:227. Nomen nudum. – Pate, 1935:245 (as valid name for *Crabro* Fabricius). As R. Bohart and Menke (1976:48) indicate, "there is no description, and the two species placed under it, "*Pemphilis palmata*" Leach and "*patellatus* Fab.," appear to be manuscript names. We have confirmed Pate's (1935:245) statement that Fabricius never used the latter name in his publications. We have searched through most of W.E. Leach's works for the name *palmata* but have not found it. In his foreword to volume 5, Risso implied that his friend Leach assisted with the insect portion, and it seems likely that Risso simply published some names that he copied from Leach determination labels. Since there is no evidence so far that *palmata* Leach is the same as *Crabro palmatus* Panzer or that *patellatus* Fab. is equivalent to *Crabro patellatus* Panzer, we cannot accept Pate's 1935 designation of *palmata* Leach as type species of *Pemphilis* Risso as valid. The first acceptable use of *Pemphilis* under the Code is that of Pate, 1944b."

Thyreopus Lepeletier de Saint Fargeau and Brullé, 1835:751. Type species: *Sphex cribrarius* (Linnaeus, 1767) [= *Vespa cribraria* Linnaeus, 1758], designated by Westwood, 1839:80. Objective synonym of *Crabro*.

Anothyreus Dahlbom, 1845:526. Type species: *Anothyreus lapponicus* of Dahlbom, 1845 [= *Crabro lapponicus* Zetterstedt, 1838], designated by Ashmead, 1899d:214.

Thyreocnemus A. Costa, 1867c:135 and 1871b:64. Type species: *Crabro pugillator* A. Costa, 1871, by monotypy.

Paranothyreus Kohl, 1897a:490. Not available under First Edition of the Code (1961): used as a secondary, not primary division of a genus (Article 42d). Available under Third (1985) and Fourth Editions (1999): Articles 10(e) and 10.4, respectively.

Paranothyreus Ashmead, 1899d:213. Type species: *Crabro hilaris* F. Smith, 1856, by original designation. Validation of *Paranothyreus* Kohl, 1897, under First Edition of the Code.

Synothyreopus Ashmead, 1899d:213. Type species: *Crabro tumidus* (Packard, 1867) [= *Thyreopus tumidus* Packard, 1867], by original designation.

Agnosicrabro Kohl, 1915:138. Not available under First Edition of the Code (1961): used as a secondary, not primary division of a genus (Article 42d). Available under Third (1985) and Fourth Editions (1999): Articles 10(e) and 10.4, respectively.

Dyscolocrabro Kohl, 1915:138. Not available under First Edition of the Code (1961): used as a secondary, not primary division of a genus (Article 42d). Available under Third (1985) and Fourth Editions (1999): Articles 10(e) and 10.4, respectively.

Hemithyreopus Kohl, 1915:138. Not available under First Edition of the Code (1961): used as a secondary, not primary division of a genus (Article 42d). Available under Third (1985) and Fourth Editions (1999): Articles 10(e) and 10.4, respectively.

Paranothyreus Kohl, 1915:138. Not available under First Edition of the Code (1961): used as a secondary, not primary division of a genus (Article 42d). Available under Third (1985) and Fourth Editions (1999): Articles 10(e) and 10.4, respectively.

Parathyreopus Kohl, 1915:138. Not available under First Edition of the Code (1961): used as a secondary, not primary division of a genus (Article 42d). Available under Third (1985) and Fourth Editions (1999): Articles 10(e) and 10.4, respectively.

- Agnosicrabro* Pate, 1944b:349 (as *Agnosicrabro* Kohl). Type species: *Crabro occultus* Fabricius, 1804, by original designation. Validation of *Agnosicrabro* Kohl, 1915, under First Edition of the Code.
- Dyscolocrabro* Pate, 1944b:349 (as *Dyscolocrabro* Kohl). Type species: *Crabro chalybeus* Kohl, 1915, by original designation. Validation of *Dyscolocrabro* Kohl, 1915, under First Edition of the Code.
- Hemithyreopus* Pate, 1944b:349 (as *Hemithyreopus* Kohl, 1915). Type species: *Crabro loewi* Dahlbom, 1845, by original designation. Validation of *Hemithyreopus* Kohl, 1915, under First Edition of the Code.
- Paranothyreus* Pate, 1944b:349 (as *Paranothyreus* Kohl). Type species: *Crabro hilaris* F. Smith, 1856, by original designation. Validation of *Paranothyreus* Kohl, 1915 under First Edition of the Code.
- Parathyreopus* Pate, 1944b:349 (as *Parathyreopus* Kohl). Type species: *Crabro filiformis* Radoszkowski, 1877, by original designation. Validation of *Parathyreopus* Kohl, 1915 under First Edition of the Code.
- Pemphilis* Pate, 1944b:340. Type species: *Vespa cribraria* Linnaeus, 1758, by original designation. Validation of Risso's (1826:227) name. Objective synonym of *Crabro* Fabricius, 1775.
- Norumbega* Pate, 1947a:12. Type species: *Thyreopus argus* Packard, 1867, junior secondary homonym of *Crabro argus* (Christ, 1791) [= *Crabro argusinus* R. Bohart, 1976], by original designation.
- Othyreus* Marshakov, 1977:858, as subgenus of *Crabro*. Type species: *Crabro tricolor* Gussakovskij, by original designation and monotypy.

Revisions: R. Bohart, 1976 (Nearctic species), with corrections to key by Leclercq, 2008b; R. Miller, 1976 (*hilaris* species group); Marshakov, 1980b (subgenus *Othyreus*).

Review of biology: Kazenas, 2001b:198.

1. *advena* F. Smith

Crabro pegasus Harris, 1835:68. Nomen nudum. – Kohl, 1888c:585 (in list of Nearctic *Crabro*).

Crabro advena F. Smith, 1856:421, ♀, ♂. Lectotype: ♀. Canada: Nova Scotia: no specific locality (BMNH), designated by R. Bohart, 1976:252. – Cresson, 1862:235 (in catalog of North American Hymenoptera); Kohl, 1888c:584 (in list of Nearctic *Crabro*); W. Fox, 1895a:171 (in revision of North American Crabronini, as *advenus*); Dalla Torre, 1897:580 (in catalog of world Sphecidae); Patton, 1897:248 (preying on *Belvesia* [correctly: *Belvosia*] *unifasciata*, a parasite of army worm); Kincaid, 1900a:358 (recorded from Washington by W. Fox, as *advenus*); Harrington, 1902:219 (Canada: Ontario: Ottawa, as *advenus*); H. Smith, 1908b:399 (in revision of Nebraskan Sphecidae, as *advenus*); Rohwer, 1916b:669, 670 (in catalog of Hymenoptera of Connecticut); Mickel, 1918b:384 (in catalog of Nebraskan Sphecidae, as *advenus*); Rohwer in Viereck, 1925:669, 670 (in key to Sphecidae of Connecticut); Krombein in Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera, as *advenus*); Leclercq, 1954c:249 (in catalog of world Crabronini, as *advenus*), 314 (nest and prey records); Evans, 1957b:104 (description of larva, as *advenus*), 1959b:164 (additional description of larva, as *advenus*), 1960:123 (nesting habits, as *advenus*), 1963c:102 (prey carried by midlegs in transport, as *advenus*); Kurczewski and Kurczewski, 1963:148 (Pennsylvania: Presque Isle State Park, as *advenus*); Kurczewski and Acciavatti, 1968:200 (nesting habits, as *advenus*); Kurczewski, Burdick, and Gaumer, 1969b:152 (nesting habits, as *advenus*); R. Bohart and Menke, 1976:407 (in checklist of world Sphecidae); R. Bohart, 1976:252 (in revision of Nearctic *Crabro*); Krombein, 1979b:1673 (in catalog of North American Hymenoptera, nesting sites, list of prey); Evans, Kurczewski, and Alcock, 1980:865 (nesting habits); O'Brien and Kurczewski, 1980:668 (nesting habits); Finnamore, 1982:1164 (in Sphecid Fauna of southern Quebec); Weislo, 1983 (prey: *Ptilodexia* sp., a tachinid); Radović, 1985:65 (sting apparatus analyzed); Finnamore, 1988:863 (Canada: Yukon Territory); Spofford, Kurczewski, and Downes, 1989:256, 259 (nest parasite: *Macronychia confundens* Townsend and *Senotainia trilineata* (Wulp), miltogrammine flies, and references to publications on nest parasites *Metopia argyrocephala* (Meigen), *Metopia campestris* (Fallén), miltogrammine flies, and undetermined Miltogrammini); Kurczewski and Acciavatti, 1990:61 (New York: Cayuga County); Spofford and Kurczewski, 1990:745,

- 748, 751 (nest parasites: *Macronychia confudens* (Townsend), *Senotainia trilineata* (Van der Wulp), and unknown species of Miltogrammini, Sarcophagidae), 1992:999 (species of miltogrammine parasites listed), 1002 (counter-cleptoparasitic habits: diversionary flight), 1005 (post-larvipositional counter-cleptoparasitic habits: abandon prey); Kurczewski, 1993:77 (prey include Therevidae, Dolichopodidae, Scatophagidae); Finnamore, 1997:890 (Canada: Yukon); Kurczewski, 1998d:250 (pine barrens in upstate New York); Sugar *et al.*, 1998:16 (Canada: southern Ontario); Kurczewski, 2003b:451 (nesting habits); Buck, 2004:26 (Canada: in checklist of Crabronidae of Ontario); Leclercq, 2008b:78 (in improved key to North American *Crabro*), 79 (bibliographic references, locality records from Canada and USA); Ratzlaff, 2016:24 (Canada: British Columbia: from R. Bohart, 1976 and Leclercq, 2008). – **As *Thyreopus advena***: Packard, 1867:308 (new combination, in revision of North American Sphecidae, as *advenus*); Cresson, 1887:285 (in catalog of North American Hymenoptera); Ashmead, 1890:31 (in checklist of Hymenoptera of Colorado, as *advenus*). – **As *Synothyreopus advenus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae); J. Smith, 1900:515 (in list of insects of New Jersey, probable in New Jersey); J.Ch. Bradley, 1928:1020 (in catalog of New York Sphecidae). – **As *Pemphilis advena***: Strickland, 1947:128 (new combination, Canada: Alberta: Red Deer).
- Crabro succinctus* Cresson, 1865b:479, ♀. Lectotype: ♀, USA: ColoradoTerritory: no specific locality (ANSP), designated by Cresson, 1916:103. Synonymized with *Crabro advena* by W. Fox, 1895a:171. – Kohl, 1888c:585 (in list of Nearctic *Crabro*). – **As *Thyreopus succinctus***: Packard, 1867:369 (new combination, listed); Cresson, 1887:286 (in catalog of North American Hymenoptera); Ashmead, 1890:31 (in checklist of Hymenoptera of Colorado).
- Thyreopus pegasus* Packard, 1867:362, ♂, ♀. Syntypes: USA: Massachusetts: no specific locality (ANSP). – Cresson, 1862:236 (in catalog of North American Hymenoptera); Provancher, 1882:131 and 1883b:665 (in revision of Canadian Hymenoptera); Cresson, 1887:286 (in catalog of North American Hymenoptera); Kohl, 1888c:585 (in list of Nearctic *Crabro*); nec Faull, 1913:384 (= *Crabro argusinus*).
- Thyreopus signifer* Packard, 1867:361, ♂, ♀. Lectotype: ♀, USA: Massachusetts: no specific locality (MCZ), designated by R. Bohart, 1976:252. Synonymized with *Crabro advena* by R. Bohart in R. Bohart and Menke, 1976:407. – Cresson, 1887:286 (in catalog of North American Hymenoptera). – **As *Crabro signifier***: Kohl, 1888c:585 (new combination, in list of Nearctic *Crabro*); W. Fox, 1895a:209 (original description copied), 1896b:78 (redescription); Dalla Torre, 1897:628 (in catalog of world Sphecidae); Krombein in Muesebeck *et al.*, 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:249 (in catalog of world Crabronini).
- Thyreopus elegans* Provancher, 1883:665, ♀, ♂. This name is given as a synonym of *Crabro advena* by Bohart and Menke, 1976:407 and by Krombein in Krombein *et al.*, 1979:1673, but does not exist in Provancher's original publication.
- Crabro discretus* W. Fox, 1895a:165, ♀. Holotype or syntypes: ♀, USA: District of Columbia (USNM). Synonymized with *Crabro advena* by R. Bohart in R. Bohart and Menke, 1976:407. – Dalla Torre, 1897:596 (in catalog of world Sphecidae); Krombein, 1939:144 (New York State); Krombein in Muesebeck *et al.*, 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:254 (in catalog of world Crabronini), 315 (nest and prey records); Krombein, 1958a:52 (USA: West Virginia: Lost River State Park), 53 (prey: a male *Achatoneura*, a larvaevorid); Kurczewski and Acciavatti, 1968:198 (review of nesting habits). – **As *Thyreopus discretus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

2. *aequalis* W. Fox

- Crabro aequalis* W. Fox, 1895a:164, ♀. Lectotype: ♀, USA: Georgia: no specific locality (ANSP), designated by Cresson, 1928:52. – Dalla Torre, 1897:580 (in catalog of world Sphecidae); Rohwer, 1916b:670, 671 (in catalog of Hymenoptera of Connecticut); Rohwer in Viereck, 1925:670, 671 (in key to Sphecidae of Connecticut; New Haven); Krombein in Muesebeck *et al.*, 1951:1016 (in catalog of North American Hymenoptera); Krombein, 1953a:297 (visiting foliage of *Liquidambar styraciflua*), 337 (North Carolina), 1953b:122 (visiting foliage of *Quercus marilandica* Münchhausen), 134 (North Carolina: Kill Devil Hills); Leclercq, 1954c:246 (in catalog of world

Crabronini); Krombein, 1958f:198 (in supplement to catalog of North American Hymenoptera: Florida, New Carolina); Wray, 1967:124 (North Carolina: Kill Devils Hills); R. Bohart and Menke, 1976:407 (in checklist of world Sphecidae); R. Bohart, 1976:242 (in revision of Nearctic *Crabro*); R. Miller, 1976:247 (in revision of *hilaris* species group of *Crabro*); L. Davis, 1978:216 (North Carolina: Kill Devil Hills, data from Krombein, 1953a); Krombein, 1979b:1672 (in catalog of North American Hymenoptera); Ahlstrom, 1995:111 (in checklist of insects of North Carolina); Leclercq, 2008b:79 (bibliographic references, locality records from Florida and Oklahoma). – **As *Thyreopus aequalis***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

Paranothyreus rugicollis Viereck, 1904c:241, ♂. Holotype: ♂, USA: New Jersey: Riverton (ANSP). Synonymized with *Crabro aequalis* by Krombein in Muesebeck et al., 1951:1016. – Cresson, 1928:56 (holotype in ANSP). – **As *Crabro rugicollis***: J. Smith, 1910:682 (new combination, in new list of insects of New Jersey); Leclercq, 1954c:245 (in catalog of world Crabronini).

Thyreopus knoxensis Mickel, 1916a:424, ♂. Holotype: ♂, USA: North Dakota: Knox (UNL). Synonymized with *Crabro aequalis* by R. Bohart in R. Bohart and Menke, 1976:407. – Stevens, 1917:423 (North Dakota); Muma, 1952:23 (holotype in UNL). – **As *Crabro knoxensis***: Krombein in Muesebeck et al., 1951:1018 (new combination, in catalog of North American Hymenoptera); Leclercq, 1954:256 (in catalog of world Crabronini).

3. *alashanicus* Marshakov

Crabro alashanicus Marshakov, 1976c:941, ♂, ♀. Holotype: ♂, China: Gobi: Alashan Mountains: Hotyn-gol (ZIN). – Marshakov, 1977:861, 869 (in key to *Crabro* of USSR).

4. *alpestris* Cameron

Crabro alpestris Cameron, 1891a:152, ♂. Holotype or syntypes: ♂, Mexico: Guerrero: Tepetlapa (BMNH). – Dalla Torre, 1897:582 (in catalog of world Sphecidae); Leclercq, 1950e:10 (member of subgenus *Synothyreopus*), 1954c:249 (in catalog of world Crabronini); R. Bohart, 1976:245 (in revision of Nearctic *Crabro*); R. Bohart and Menke, 1976:407 (in checklist of world Sphecidae); R. Bohart, 1976:245 (in revision of Nearctic *Crabro*); Leclercq, 1981e:78 (Mexico); Amarante, 2002:24 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:663 (in checklist of Mexican Sphecidae); Leclercq, 2008b:76 (in improved key to North American *Crabro*), 79 (bibliographic references, locality records from Mexico). – **As *Thyreopus alpestris***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

5. *alpinus* Imhoff

Thyreopus interruptus Lepeletier de Saint Fargeau and Brullé, 1835:755, junior secondary homonym of *Crabro interruptus* Fabricius, 1787 (now in *Palarus*). Holotype or syntypes: ♂, France: Dauphiné?: no specific locality (lost). Tentatively synonymized with *Crabro alpinus* by Kohl, 1888c:572, synonymy confirmed by Leclercq, 1974d:260. – Lepeletier de Saint Fargeau, 1845:163 (in revision of world Hymenoptera); Dours, 1874:153 (in catalog of Hymenoptera of France); Marquet, 1875:210 (France: Hérault: Montpellier); Samie, 1879:LCXVI (France: Gironde: Pomerol); Kohl, 1883b:50 (in list of European *Thyreopus*); Acloque, 1897:89 (in Sphecid Fauna of France and Algeria); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Coulon, 1925:124 (France: Biville, La Bourboule). – **As *Crabro interruptus***: Dahlbom, 1845:359 (new combination, in revision of Sphecidae and Pompilidae), 526 (in key to *Crabro*); F. Smith, 1856:395 (in catalog of Hymenoptera in British Museum); Becker, 1880:151 (Russia: Sarepta, now Krasnoarmeysk south of Volgograd).

Crabro alpinus Imhoff, 1863:90, ♀, ♂. Syntypes: Switzerland: Engadin: Samaden; Wallis: Saasthal (Zool. Mus. Basel?). – Kohl, 1888b:721 (Austria: Tirol, now Italy: Alto Adige), 1883e:653 (Switzerland); 1888c:572 (in revision of *Crabro*, as section *Thyreopus* of *Crabro*), 1893:24 (Austria: Niederösterreich: Schneeberge); Dalla Torre, 1897:582 (in catalog of world Sphecidae); Mocsáry, 1897:84 (Kingdom of Hungary: localities are in today's Croatia and Romania); Schmiedeknecht, 1907:190 (in key to Hymenoptera of Central Europe); Kohl, 1912a:61 (Austria: Südtirol: Ratzes, now Italy: Trentino-Alto Adige Region), 63 (Austria: Südtirol: Siser Alpe, now Italy: Trentino-Alto Adige Region: Alpe di Siusi), 1915:167 (in revision of Palearctic Crabronini); Berland, 1925d:190 (in Sphecid Fauna of

France); Falcoz, 1926:132 (France: mont Pilat in northern Cévennes, list of prey); Falcoz and Ferrière, 1927:123 (France: mont Pilat in northern Cévennes, list of prey); Berland, 1928b:181 (add Falcoz, 1926 to bibliography in Berland, 1925d); Schmiedeknecht, 1930:646, 647 (in keys to Hymenoptera of North and Central Europe); Guiglia, 1934a:147 (Italy: Trentino: Madonna di Campiglio); Steck, 1935:322 (Switzerland); Vergne, 1935:119 (France: Auvergne: Besse, La Bourboule, Le Mont-Dore); Bernard, 1936a:35 (France: Hautes-Pyrénées: Pic de Néouvielle area); Dulac, 1937:22 (France: Saône-et-Loire: Uchon); Carl and de Beaumont, 1947:69 (Switzerland: Graubünden = Gisons Canton: Swiss National Park); Balthasar, 1948:140 (first record from Czechoslovakia: Slovakia: Tatranska Lomnica); Zavadil *in* Zavadil and Šnoflak, 1948:120, 121 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); de Beaumont, 1949a:9 (Switzerland: Samaden); Franz, 1949:13 (Austria: Hohe Tauern); de Beaumont, 1951h:35 (Switzerland: Neuchâtel area); Leininger, 1951:115 (first record from Germany: Baden-Württemberg: Schwarzwald: Kaltenbronn and Neustadt); Zavadil, 1951:85 (Slovakia: Tatranska Lomnica); Nouvel and Ribaut, 1953:183 (France: Haute-Garonne: Luchon, Hautes-Pyrénées: Orédon); de Beaumont, 1954e:96 (Italy); Grandi, 1954:243 (Italy); Leclercq, 1954c:251 (in catalog of world Crabronini), 314 (nest and prey records); de Beaumont, 1958c:211 (Swiss National Park); Móczár, 1958a:265 (in annotated catalog of Hungarian Crabronini, color variation), 1958b:199 (Hungary: list of collecting localities); de Beaumont, 1959a:38 (Italy: Alto Adige and Trentino); Wolf, 1959b:34 (known from Germany, but not from Nassau); Noskiewicz and Puławski, 1960:139, 141 (in key to Polish Sphecidae, not yet found in Poland); Leclercq, 1961e:63 (Austria, Bulgaria: Rila Mts.; France: Hautes-Pyrénées and Haut-Rhin Departments; Switzerland); Babiý, 1964:118 (Austria: Land Salzburg); de Beaumont, 1964c:134 (in Sphecid Fauna of Switzerland); Bonelli, 1966c:220 (Italy: Trentino–Alto Adige: Razes, Val Cadino); de Beaumont, 1967a:350 (Turkey); Scobiola-Palade, 1967b:52 (Romania); Stritt, 1968:110 (Germany: Baden-Württemberg); Romanova, 1969:135 (Russia: northern Caucasus); Zangheri, 1969:1708 (Italy: in catalog of flora and fauna of Romagna Region); Gauss and Perraudin, 1970:362 (Germany: Baden-Württemberg: forest district Schmelzplatz); Wolf, 1971:375 (Italy: Trentino–Alto Adige: Alpi Siusi); Balthasar, 1972:73 (in Sphecid Fauna of Czechoslovakia, may be expected in the country); Kofler, 1972:113 (Austria: eastern Tirol); Gauss, 1974:199 (Germany: Baden-Württemberg: Kirchzarten); Leclercq, 1974d:260 (synonymy with *Thyreopus interruptus* Lepeletier de Saint Fargeau confirmed), 1975b:3 (France); R. Bohart and Menke, 1976:407 (in checklist of world Sphecidae); Marshakov, 1977:864, 869 (in key to *Crabro* of USSR); Schmidt, 1977:98 (Germany: Baden-Württemberg: Enzklösterle); Marion, 1978:90 (France: Nièvre Department); Pulawski, 1978:265, 267 (in key to Sphecidae of European part of former USSR); Schwammberger, 1978:420 (Germany: Württemberg); Dathe, 1980:209 (Russia: northern Caucasus: Teberda); Pagliano, 1980:123 (Italy: Piemonte); Schmidt, 1980:377 (Germany: Baden-Württemberg); Heath and Leclercq, 1981: map 18 (distribution in Europe); Schedl, 1982:102 (Austria: Tirol: Ötztaler Alps); Dollfuss, 1983b:17 (in catalog of Sphecidae of Austria); Westrich and Schmidt, 1985b:110 (Germany: endangered in Baden-Württemberg); Dollfuss, 1987:22 (Austria); Pagliano, 1990:81 (in catalog of Italian Sphecidae); Schwammberger and Priesner, 1990:547 (Austria: Kärnten); Day, 1991:xiii (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:163 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:407 (Italy: Piemonte); Negrisoló, 1991:321 (Italy: Udine Province); Pagliano, 1991b:333 (in key to Italian Crabroninae); Bitsch and Leclercq, 1993:72 (in revision of western European Crabroninae); Leclercq, 1993c:13 (Austria, Bulgaria, Switzerland); Leclercq and Barbier, 1993:8 (map of distribution in France); Gayubo and Borsato, 1994:212 (Italy: Veneto); Negrisoló *in* Minelli, Ruffo, and La Posta, 1995b:6 (in catalog of Italian fauna); Schmid-Egger, Schmidt, and Doczkal, 1996:376 (Germany: Baden-Württemberg: endangered); Schmidt and Schmid-Egger, 1997:8 (in checklist of German Sphecidae); Ljubomirov, 1999b:54 (Bulgaria: Mt. Vitosha near Sofia); Neumayer, Schwarz, and Bregant, 1999:223 (Austria: in checklist of Sphecidae of Land Kärnten); Blösch, 2000:317 (in Sphecid Fauna of Germany); Ohl et al., 2001:138 (distribution in Germany by provinces); Bieri, 2002:73 (Liechtenstein); Gayubo, González, Tormos, and Asís, 2002:88 (Spain: Lérida: Lagos de Colomers); Drewes, 2003:135 (Austria: miscellaneous locality records); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:63 (in catalog of wasps and bees of Bayern, Germany); Wickl, Voith, Mandery, Weber, Kraus,

Bausenwein, and Blösch, 2003:197 (Germany: Bayern: extremely rare, geographically restricted); Dollfuss, 2004b:761 (Austria, Bulgaria, Romania); Hellrigl, 2004a:172 (Italy: Trentino-Alto Adige, as Südtirol: Vinschgau = Val Venosta: Sulden); Jacobs, 2005a:442 (Bulgaria: Sandanski); Kofler, 2005:179 (Austria: Tirol: Lienz District: many localities); Pagliano and Negrisolò, 2005:220 (in Sphecidae Fauna of Italy); Yildirim and Ljubomirov, 2005:1793 (Turkey: Rize: İkizdere and Çamlıhemşin); Ljubomirov, 2006:538 (Bulgaria: Rhodope Mountains: Syutkiya Peak, Trigrad village); Jacobs, 2007:144, 146 (in key to Crabronidae of Germany); Vepřek and Straka, 2007:204 (in catalog of Sphecidae of Czech Republic and Slovakia), 228 (only record from Slovakia by Balthasar, 1948 is misidentification, species does not occur in Slovakia); Ljubomirov and Yildirim, 2008:258 (in catalog of Crabronidae of Turkey); Belkheir, 2009:18 (France: Pyrénées-Orientales: commune d'Eyne); Bitsch and Leclercq, 2009:216 (in supplement to vol. I of Faune de France, 1993: now known from Bulgaria and northern Spain, observed in Italy; also: France: Alpes-Maritimes: Merveilles); Guéorguiev and Ljubomirov, 2009:265 (Bulgaria: Maleshevska Planina); Schmid-Egger, 2010a:14 (in red list of Aculeata of Germany: extremely rare); Gogala, 2011:18 (Slovenia); Schmid-Egger, 2011a:37 (France: Parc National du Mercantour: Valmasque); Bitsch, Grouet, and Savina, 2013:291 (France: Pyrénées centrales: départede Saint Fargeaument d'Ariège: col de Pailhères), 292 (France: Pyrénées centrales: département d'Ariège: Ascou-Pailhères); Yildirim, Ljubomirov, and Lelej, 2014:14 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:141 (in checklist of Hymenoptera of Turkey); Mokrousov and Popov, 2016:571 (Russia: Abkhazia, Krasnodarskiy Krai); Antropov, 2017b:226 (in catalog of Crabroninae of Russia); Magdalou, 2017:14 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Vallée d'Eyne). – **As *Thyreopus alpinus***: Kohl, 1883b:50 (new combination, in list of European *Thyreopus*); Baudot, 1931:255 (characteristics of cocoon); Vergne, 1931a:83 (France: Puy-de Dôme: Besse; nesting habits, description of larva).

Thyreopus lactarius Chevrier, 1867a:229, ♂. Holotype: ♂, Switzerland: Mont Blanc massif: between Naut-bourant and Col du Bonhomme (MHNG). Synonymized with *Crabro alpinus* by Kohl, 1881:56. – Kohl, 1880:122 (Austria: Tirol, and Italy: Trentino–Alto Adige); de Cobelli, 1903:116 (Italy: Trentino: Presanella in Adamello group).

Crabro interruptulus Dalla Torre, 1897:606. Substitute name for *Crabro interruptus* Lepeletier de Saint Fargeau and Brullé, 1835. – J. Smith, 1910:681 (in new list of insects of New Jersey); Viereck, 1911:98 (*Crabro interruptulus* in H. Smith, 1910:681 should be replaced by *Crabro interruptus* Lepeletier de Saint Fargeau).

As *Crossocerus* sp.: Pagliano, 2011a:144 (specimens in coll. Spinola, Torino, partim, are *Crabro alpinus*)

6. *altaicus* F. Morawitz

Crabro altaicus F. Morawitz, 1892:166, ♀, ♂. Lectotype: ♂, Kazakhstan: Semipalatinsk territory, now Semey: Mai-Kipchagay (ZIN), designated by Marshakov, 1977:858. – F. Morawitz, 1893:426 (as a variety of *Crabro uljanini*); Dalla Torre, 1897:582 (in catalog of world Sphecidae, as *uljanini* var. *altaicus*); Kohl, 1915:160 (as synonym of *Crabro uljanini*); Kuznetsov-Ugamskiy, 1927:245 (good species, Uzbekistan: Bolshoy Chimgan); Leclercq, 1954c:252 (in catalog of world Crabronini); R. Bohart and Menke, 1976:407 (in checklist of world Sphecidae); Marshakov, 1977:858 (valid species, diagnostic characters), 861, 868 (in key to *Crabro* of USSR); Islamov, 1986:531 (Uzbekistan: Tashkent Oblast': Bolshoy Chimgan); Esenbekova and Kazenas, 2000:51 (southeast Kazakhstan: 3–8 km south of and 18 km west of Alma Ata, 7–8 km south of Talgar); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia), 200 (nest and prey); Kazenas and Esenbekova, 2001:135 (Kazakhstan: Almatinskiy Nature Reserve); Kazenas, 2002a:103 (geographic distribution, collecting localities in Kazakhstan); Dollfuss, 2004b:762 (Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, also Mongolia); Kazenas, 2004b:107 (Kazakhstan: western Tien Shan); Hua, 2006:278 (in list of Chinese insects, geographic distribution); Hua, 2006:279 (in list of Chinese insects, geographic distribution, as *uljanini altaicus*); Kazenas, 2008b:114 (Kazakhstan: foothills of Zailiskiy Alatau: occurring among others on loess cliffs); Baghirov, 2011b:143 (Russia: recorded from Altay by Marshakov, 1977); Kazenas, 2013a:89, 90 (color photographs of adult wasps, short information on geographic distribution and nesting habits); Mokrousov, Shlyakhtenok, and Grebennikov, 2016:21 (Russia: Altai Republic: 15 km southeast of of Kurai on Chuya River at 50.186°N 88.118°E); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

7. *alticola* Cameron

Crabro alticola Cameron, 1891a:152, ♂, ♀. Lectotype: ♀, Mexico: Durango: Ciudad (BMNH), designated by R. Bohart, 1976:246. – Dalla Torre, 1897:582 (in catalog of world Sphecidae); Leclercq, 1950e:10 (member of subgenus *Synothyreopus*), 1954c:250 (in catalog of world Crabronini); R. Bohart and Menke, 1976:407 (in checklist of world Sphecidae); R. Bohart, 1976:246 (in revision of Nearctic *Crabro*); Leclercq, 1981e:78 (Mexico); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:663 (in checklist of Mexican Sphecidae). – **As *Thyreopus alticola***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

8. *altigena* Dalla Torre

Crabro alticola F. Morawitz, 1893c:431, ♀, junior primary homonym of *Crabro alticola* Cameron, 1891. Lectotype: ♀, Tadjikistan: Pamir: no specific locality (ZIN), designated by Marshakov, 1977:858.

Crabro altigena Dalla Torre, 1897:582. Substitute name for *Crabro alticola* F. Morawitz. – Kohl, 1915:170 (original description copied); Leclercq, 1954c:251 (in catalog of world Crabronini); R. Bohart and Menke, 1976:407 (in checklist of world Sphecidae); Marshakov, 1977:869 (in key to *Crabro* of USSR); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia).

Crabro gulmargensis Nurse, 1903a:529, ♀, ♂. Lectotype: ♂, India: Kashmir: no specific locality (BMNH), designated by Marshakov, 1977:859. Synonymized with *Crabro altigena* by Marshakov, 1977:859. – Kohl, 1915:164 (in revision of Palearctic Crabronini); Ramakrishna Aiyar, 1916:559 (in catalog of Indian aculeates described afteringham, 1897); Leclercq, 1954c:252 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia).

9. *arcadiensis* R. Miller

Crabro arcadiensis R. Miller, 1976:248, ♀, ♂. Holotype: ♂, USA: Florida: Highlands County: Archbold Biological Station (Cornell Univ.). – R. Miller and Kurczewski, 1976:267 (nesting habits); Spofford, Kurczewski, and Downes, 1989:257, 259 (nest parasite: *Senotainia trilineata* (Wulp), a miltogrammine fly, and reference to publication on nest parasite *Ptychoneura aristalis* (Coquillett), a miltogrammine fly); Deyrup and Eisner, 2003:522 (a Floridian, red-marked species); Leclercq, 2008b:76, 77 (in improved key to North American *Crabro*), 79 (bibliographic references, locality records from Florida).

10. *argus* R. Bohart

Crabro argus Harris, 1835:68. Nomen nudum. – Kohl, 1888c:584 (in list of Nearctic *Crabro*).

Thyreopus argus Packard, 1867:359, ♂, junior secondary homonym of *Sphex argus* Christ, 1791 (= *Crabro cribrarius*). Lectotype: ♂, USA: Maine: Brunswick (ANSP), designated by R. Bohart, 1976:263. – Cresson, 1887:285 (in catalog of North American Hymenoptera); Ashmead, 1899d:217 (in checklist of North American Crabronidae); J. Smith, 1900:515 (in list of insects of New Jersey); Harrington, 1902:219 (Canada: Ontario: Ottawa). – **As *Solenius argus***: J.Ch. Bradley, 1928:1020 (new combination, in catalog of New York Sphecidae). – **As *Norumbega argus***: Strickland, 1947:127 (new combination, Canada: Alberta: Athabasca). – **As *Crabro argus***: Kohl, 1888c:584 (new combination, in list of Nearctic *Crabro*); W. Fox, 1895a:165 (in revision of North American Crabronini); Dalla Torre, 1897:583 (in catalog of world Sphecidae); Kincaid, 1900a:408 (USA: Washington: Olympia); H. Smith, 1908b:400 (in revision of Nebraskan Sphecidae); J. Smith, 1910:681 (in new list of insects of New Jersey); Rohwer, 1916b:670, 671 (in catalog of Hymenoptera of Connecticut); Mickel, 1918b:383 (in catalog of Nebraskan Sphecidae); Rohwer *in* Viereck, 1925:670, 671 (in key to Sphecidae of Connecticut, West Haven); Dow, 1930b:181 (prey); Krombein, 1950a:272 (North Carolina: Dare County); Wray, 1950:38 (North Carolina: Kill Devil Hills); Krombein *in* Muesebeck et al., 1951:1018 (in catalog of North American Hymenoptera); Krombein, 1953a:296 (visiting foliage of *Quercus marilandica* Münchhausen), 337 (North Carolina), 1953b:123 (visiting foliage of *Liquidambar styraciflua*), 134 (North Carolina: Kill Devil Hills); Krombein and Evans, 1954:235 (Florida); Leclercq, 1954c:256 (in catalog of world Crabronini); Evans, 1959b:164 (description of larva), 1960:129 (nesting habits);

Kurczewski and Acciavatti, 1968:198 (review of nesting habits); Wray, 1967:124 (North Carolina: Kill Devils Hills); L. Davis, 1978:216 (North Carolina: Kill Devil Hills, data from Krombein, 1953a).

Crabro argusinus R. Bohart in R. Bohart and Menke, 1976:407. Substitute name for *Crabro argus* Packard, 1867. – R. Bohart, 1976:263 (in revision of Nearctic *Crabro*); Krombein, 1979b:1674 (in catalog of North American Hymenoptera, nesting sites, list of prey); Matthews, Hook and Krispyn, 1979:153 (nesting habits); Evans, Kurczewski, and Alcock, 1980:868 (nesting habits); Finnamore, 1982:164 (in Sphecidae Fauna of Southern Quebec); Radović, 1985:65 (sting apparatus analyzed); McCorquodale, 1986:1622 (flight characteristics as defense against *Senotainia trilineata* (van der Wulp)); Steiner, 1986:107 (references to publications on nesting habits); Spofford, Kurczewski, and Downes, 1989:257, 259, 260 (nest parasites: *Phrosinella aurifacies* Downes and *Senotainia vigilans* Allen, miltogrammine flies, and references to publications on nest parasites *Phrosinella fumosa* Allen, *Senotainia trilineata* (van der Wulp), *Senotainia* sp. near *trilineata* (van der Wulp), *Sphenometopa tergata* (Coquillett), miltogrammine flies, and undetermined Miltogrammini); Spofford and Kurczewski, 1990:746, 748, 749, 751 (nest parasites: *Phrosinella aurifacies* Downes, *Senotainia trilineata* Van der Wulp, *Senotainia vigilans* Allen), and unknown species of Miltogrammini, Sarcophagidae), 1992:999 (species of miltogrammine parasites listed), 1002 (counter-cleptoparasitic habits: diversionary flight), 1005 (post-larvipositional counter-cleptoparasitic habits: abandon prey); Ahlstrom, 1995:111 (in checklist of insects of North Carolina); Kurczewski, 1998d:250 (pine barrens in upstate New York); Finnamore, 1997:894 (expected to occur in Yukon); Buck, 2004:26 (Canada: in checklist of Crabronidae of Ontario,); Leclercq, 2008b:78 (in improved key to North American *Crabro*), 79 (bibliographic references, locality records from USA); Ratzlaff, 2016:24 (Canada: British Columbia: from Krombein, 1979 and Buck, 2004).

As *Crabro pegasus*: Faull, 1913:384 (Canada: Toronto region), corrected to *Crabro argusinus* by Buck, 2004:77.

11. *atlanticus* R. Miller

Crabro atlanticus R. Miller, 1976:253, ♀, ♂. Holotype: ♂, USA: New Jersey: Ocean County: Lahaway (MCZ). Paratypes: Georgia, North Carolina. – Leclercq, 2008b:76 (in improved key to North American *Crabro*), 79 (bibliographic references, locality records from Florida).

12. *bruneri* (Mickel)

Thyreopus bruneri Mickel, 1916a:422, ♀, ♂. Holotype: ♂, USA: Nebraska: Sioux County: no specific locality (UNL). – Muma, 1952:23 (holotype in UNL), 28 (paratypes in UNL). – As *Crabro bruneri*: Mickel, 1918b:384 (new combination, in catalog of Nebraskan Sphecidae); Krombein in Muesebeck et al., 1951:1016 (as new combination, in catalog of North American Hymenoptera); Leclercq, 1954c:249 (in catalog of world Crabronini); R. Bohart and Menke, 1976:409 (as new synonym of *Crabro vernalis* by R. Bohart), 628 (as valid species, new status by R. Bohart); R. Bohart, 1976:252 (in revision of Nearctic *Crabro*); Krombein, 1979b:1674 (in catalog of North American Hymenoptera); Leclercq, 2008b:80 (bibliographic references).

13. *canningsi* Finnamore

Crabro canningsi Finnamore, 1988:859, ♀, ♂. Holotype: ♂, Canada: Yukon Territory: Fish Creek, 69°27'N 140°19'W (Spencer Entomol. Mus., Univ. British Columbia). – Finnamore, 1997:890 (Canada: Yukon); Leclercq, 2008b:76, 77 (in improved key to North American *Crabro*), 80 (bibliographic references).

14. *carabii* Nesterov

Crabro carabii Nesterov, 1994c:75, ♂. Holotype: ♂, Turkmenistan: Karabil Plateau 180 km east-southeast of Takhta-Bazar (ZIK).

15. *caspicus* (F. Morawitz)

Blepharipus caspicus F. Morawitz, 1888:292, ♂. Lectotype: ♂, Transcaspia: Tschikishlar, locality not found in available maps and gazetteers (ZIN), designated by Marshakov, 1977:859. – As *Crabro caspicus*: Dalla Torre, 1897:586 (new combination, in catalog of world Sphecidae); Kohl, 1915:185 (original description copied); Leclercq, 1954c:247 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae);

Marshakov, 1977:870 (in key to *Crabro* of USSR); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:103 (geographic distribution, collecting localities in Kazakhstan), 2004d:33 (Kazakhstan: northern Caspian region: no specific locality); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

16. *chalybeus* Kohl

Crabro chalybeus Kohl, 1915:192, ♂ (spelled *chalybaeus* in key, p. 139, and in Index, p. 441). Holotype: ♂, Japan: no specific locality (NHMW). – Leclercq, 1954c:245 (in catalog of world Crabronini); Tsuneki, 1960g:26 (occurrence in Japan doubtful); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae), 628 (*chalybaeus* and *chalybeus* are original alternative spellings); Dollfuss, 1989:9 (type material in NHMW); Haneda, 2008:9 (in key to Japanese Crabroninae).

17. *cingulatus* (Packard)

Thyreopus cingulatus Packard, 1867:366, ♂, ♀. Lectotype: ♂, USA: Illinois: no specific locality (ANSP), designated by Cresson, 1928:53. – Cresson, 1887:285 (in catalog of North American Hymenoptera). – **As *Paranothyreopus cingulatus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae); J. Smith, 1900:515 (in list of insects of New Jersey); Rau and Rau, 1918:96 (nest entrance like an arched doorway, with flat bottom, nest structure, prey: uniquely *Paralimna appendiculata* Loew, now *punctipennis* (Wiedemann), an ephydrid); Rau, 1938b:543 (sleeping habits). – **As *Crabro cingulatus***: Kohl, 1888c:584 (new combination, in list of Nearctic *Crabro*); W. Fox, 1895a:177 (in revision of North American Crabronini); Dalla Torre, 1897:589 (in catalog of world Sphecidae); Kincaid, 1900a:358 (USA: Washington: Olympia); H. Smith, 1908b:399 (in revision of Nebraskan Sphecidae); J. Smith, 1910:682 (in new list of insects of New Jersey); Mickel, 1918b:384 (in catalog of Nebraskan Sphecidae); Rau and Rau, 1918:96 (nesting habits); Brimley, 1938:449 (North Carolina: Laurel Hill); Krombein *in* Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:245 (in catalog of world Crabronini), 314 (nest and prey records); Krombein, 1958f:198 (in supplement to catalog of North American Hymenoptera: Wisconsin); Kurczewski and Acciavatti, 1968:197 (review of nesting habits); R. Bohart, 1976:243 (in revision of Nearctic *Crabro*); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Miller, 1976:256 (in revision of *hilaris* species group of *Crabro*); Krombein, 1979b:1672 (in catalog of North American Hymenoptera); Radović, 1985:65 (sting apparatus analyzed); Steiner, 1986:107 (references to publications on nesting habits); Ahlstrom, 1995:111 (in checklist of insects of North Carolina); Amarante, 2002:24 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:663 (in checklist of Mexican Sphecidae); Leclercq, 2008b:80 (bibliographic references, locality records from USA, first record from Florida).

Crabro clarconis Viereck, 1906:213, ♀. Holotype: ♀, USA: Kansas: Clark County: no specific locality (Kansas Univ.). Synonymized with *Crabro cingulatus* by R. Miller *in* R. Bohart and Menke, 1976:408. – Krombein *in* Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:245 (in catalog of world Crabronini); LaBerge, 1956:526 (holotype in Snow Entomological Museum).

18. *cognatus* W. Fox (preoccupied)

Crabro cognatus W. Fox, 1895a:178, ♀, ♂, junior primary homonym of *Crabro cognatus* F. Smith, 1856:478. Lectotype: ♀, USA: Montana: no specific locality (ANSP), designated by Cresson, 1928:53. – Dalla Torre, 1897:592 (incorrectly listed as synonym of *Crabro cognatus* F. Smith); Mickel, 1918b:384 (in catalog of Nebraskan Sphecidae); Brimley, 1938:450 (North Carolina: Fort Macon, as *cognatus* Cresson); Krombein *in* Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:245 (in catalog of world Crabronini, as *cognatus* F. Smith); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:243 (in revision of Nearctic *Crabro*); R. Miller, 1976:257 (in revision of *hilaris* species group of *Crabro*); Ahlstrom, 1995:111 (in checklist of insects of North Carolina); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 59 (first record from Ontario: Cambridge, Elora, Guelph); Leclercq, 2008b:80 (bibliograph-

ic references, locality records from Canada and USA). – **As *Paranothyreopus cognatus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae); Strickland, 1947:128 (Canada: Alberta: Medicine Hat).

19. *comberi* Leclercq

Crabro comberi Leclercq, 1950e:6, ♀. Holotype: ♀, Pakistan: Karachi (BMNH). – Leclercq, 1954c:244 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1980b:329 (in key), 332 (redescription; transferred to subgenus *Othyreus*).

20. *comosiceps* R. Bohart

Crabro comosiceps R. Bohart, 1976:264, ♂, ♀. Holotype: ♂, USA: Arizona: Rustler Park in Chiricahua Mountains (UCD). – Leclercq, 2008b:77 (in improved key to North American *Crabro*), 80 (bibliographic references, locality records from Arizona).

21. *conspicuus* Cresson

Crabro conspicuus Cresson, 1865b:480, ♀. Lectotype: ♀, USA: Colorado Territory: no specific locality (ANSP), designated by Cresson, 1916:103. – Cresson, 1887:286 (in catalog of North American Hymenoptera); Kohl, 1888c:585 (in list of Nearctic *Crabro*); Dalla Torre, 1897:592 (in catalog of world Sphecidae); W. Fox, 1895a:171 (in revision of North American Crabronini); Rohwer, 1908b:246 (USA: Colorado), 258 (in key to *Crabro* of Colorado and New Mexico); Krombein *in* Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:249 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:259 (in revision of Nearctic *Crabro*); Krombein, 1979b:1674 (in catalog of North American Hymenoptera); Leclercq, 2008b:78 (in improved key to North American *Crabro*, as *spicuus*), 80 (bibliographic references, locality records from USA); Ratzlaff, 2016:24 (Canada: British Columbia: from R. Bohart, 1976 and Leclercq, 2008). – **As *Thyreopus conspicuus***: Packard, 1867:369 (new combination, listed); Cresson, 1887:286 (in catalog of North American Hymenoptera); Ashmead, 1890:31 (in checklist of Hymenoptera of Colorado). – **As *Synothyreopus conspicuus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

Crabro medius W. Fox, 1895a:167, ♂. Lectotype: ♂, USA: Washington: no specific locality (ANSP), designated by Cresson, 1928:54. Synonymized with *Crabro conspicuus* by Krombein *in* Muesebeck et al., 1951:1016. – Dalla Torre, 1897:610 (in catalog of world Sphecidae). – **As *Thyreopus medius***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

Crabro viciniformis Viereck, 1907:381, ♀. Holotype: ♀, USA: Arizona: Coconino County: base of Humphrey's Peak (Kansas Univ.). Synonymized with *Crabro latipes* by R. Bohart *in* R. Bohart and Menke, 1976:408 and with *Crabro conspicuus* by R. Bohart, 1976:259. – Krombein *in* Muesebeck et al., 1951:1018 (in catalog of North American Hymenoptera); Leclercq, 1954c:255 (in catalog of world Crabronini); LaBerge, 1956:526 (holotype in Snow Entomological Museum).

22. *costaricensis* Cameron

Crabro costaricensis Cameron, 1891a:148, ♀. Holotype or syntypes: ♀, Costa Rica: Río Sucio (BMNH). – Dalla Torre, 1897:592 (in catalog of world Sphecidae); Ashmead, 1899d:173 (in checklist of North American Crabronidae, misspelled *costariensis*); Leclercq, 1950e:10 (member of subgenus *Synothyreopus*), 11 (comparison with *peltista*), 1954c:250 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:246 (in revision of Nearctic *Crabro*); Leclercq, 1981e:78 (Costa Rica, Guatemala, Nicaragua); Hanson and Menke, 1995:640 (known from Costa Rica); Amarante, 2002:24 (in catalog of Neotropical Crabronidae); Leclercq, 2008b:76 (in improved key to North American *Crabro*), 80 (bibliographic references, locality records from Costa Rica, Mexico, and El Salvador, prey: a bionid).

23. *cribrarius* (Linnaeus)

Vespa cribraria Linnaeus, 1758:573, sex not indicated. Holotype: ♀, Europe: no specific locality (Linn. Soc. London). – International Commission on Zoological Nomenclature, 1943b:91 (designated as type species of *Crabro*); Day, 1979:61 (study of holotype); Day and Fitton, 1978:193 (recuration of Linnean type material). – **As *Sphex cribraria***: Forster, 1770:14 (new combination, in catalog of British insects); Linnaeus, 1771:13 (Sweden: Södermanland: Ryby at 59°28'N 15°46'E); Fueßlin, 1775:50 (Switzerland); Schrank, 1781:384 (in revision of insects of Austria); von Scheven, 1781:77 (redescription); Retzius, 1783:64 (redescription); von Scheven, 1784:89 (n list of “Siebbienen” known to him), Schreber, 1784:97 (in review of Siebbienen, now *Crabro*); de Villers, 1789:232 (redescription); Schrank, 1802:330 (in revision of insects of Bayern (= Bavaria, Germany)); Stiles, 1936:214 (proposed selection as type species of *Crabro*). – **As *Lestica cribraria***: Billberg, 1820:107 (new combination, specimens from Sweden in collection Billberg); Rohwer, 1911c:154 (discussion of the name). – **As *Thyreopus cribrarius***: Lepelletier de Saint Fargeau and Brullé, 1835:752 (new combination, in revision of Crabronini); Herrich-Schaeffer, 1840:294 (Germany: Bayern: Regensburg area); Lepelletier de Saint Fargeau, 1845:158 (in revision of world Hymenoptera); Kirchner, 1854:313 (Czechoslovakia: Kaplitz in Budweiser District, now České Budějovice; as *cribrarius*); Kawall, 1857:26 (Kurland, now Latvia); Ruthe and Stein, 1857:315 (Germany: Berlin area); A. Costa, 1858:20 (Italy: Campania: Monti Partenii in Benevento Region); Funk, 1859:58 (Germany: Bayern: Bamberg); Taschenberg, 1858:110 (in key to Sphecidae of Germany); Assmus, 1859:619 (Russia: Moscow Oblast'); Brischke, 1862:107 (Germany: Preussen Province, now Poland: Pomorze Region; A. Costa, 1863:66 (Italy: Calabria Ulteriore: Aspromonte), 1866:27 (specimen from France in Museo Zoologico di Napoli); Jaenicke, 1867:146 (Germany: Hessen: Frankfurt area); Kirchner, 1867:224 (in catalog of European Hymenoptera); Jaenicke, 1868:8 (Germany: Hessen: Königsbrunnen); Wierzejski, 1868:117 (Poland: Kraków area; Ukraine: Liv and Podole Region; common everywhere); P. Ivanov, 1872:151 (Ukraine: Khar'kov Oblast': Kupyansk area); Dours, 1874:153 (in catalog of Hymenoptera of France); Wierzejski, 1874:261 (Ukraine: Podole Region, common everywhere); Beuthin, 1876:230 (Germany: Hamburg area); Schmiedeknecht, 1876:186 (Germany: Thüringen: Rothensteiner Felsen); Roebuck, 1878:48 (Great Britain: Yorkshire county); Yaroshevskiy, 1881:122 (Ukraine: Khar'kiv Oblast': Khar'kiv, Kupyansk); Friese, 1883:201 (Germany: Sachsen-Anhalt: Kösen, Weissenfels); Kohl, 1883b:50 (in list of European *Thyreopus*); Siebke, 1880:71 (Norway); Brischke, 1888b:101 (Germany: Preussen Province, now Poland: Pomorze Region), 1889:204 (Germany: Steegen east of Danzig, now Poland: Stegna east of Gdańsk); Brischke, 1892:28 (Germany: Radaue River valley west of Danzig, now Poland: Radunia River west of Gdańsk); Sickmann, 1893:61 (Germany: Niedersachsen: Iburg, analysis of color variation); Westerlund, 1893:26 (Russia: Karelian Republic: northern shore of Lake Ladoga); Brischke, 1894:53 (Germany: Brösen west of Danzig, now Poland: west of Gdańsk); Krieger, 1894:6 (Germany: Kingdom of Saxony); Meunier, 1896:269 (Belgium: Bruxelles area); Aclouque, 1897:89 (in Sphecidae Fauna of France and Algeria); Borries, 1897:28 (nesting habits); Lüderwaldt, 1897b:30 (Germany: Gollnow, now Poland: Pomorze Region: Goleniów); Meunier, 1897b:353 (Belgium: coastal sand dunes at Blankenberge); Flamary, 1898:45 (France: Saône-et-Loire: Mâcon area); Lange, 1898:70 (Germany: Sachsen: Annaberg-Buchholz); Chyzer, 1902:34 (Hungary); Vángel, 1905:167 (Hungary); Clerc and Clerc, 1907:79 (Russia: Ekaterinburg district); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Adlerz, 1910:55 (Sweden; nesting habits); Graeffe, 1911:43 (Italy: Trieste area); Rudow, 1912:71 (nesting in soil); Schirmer, 1912:164 (Germany: Berlin area); R. Perkins, 1913b:389, 392 (in key to British Crabronini), 1916:15 (diagnostic characters); Schütze, 1916:42 (Germany: Sachsen: Rachlau, visiting flowers of parseley, *Petroselinum crispum* (Mill) Nyman); Keren'skiy, 1919:32 (Russia: Penza Government); Noskiewicz, 1920b:155 (Poland, now Ukraine: forest district Kopanki near Kałusz); Gennerich, 1922:44 (cleaning apparatus); Haines, 1922:14 (Great Britain: Dorset: common); Coulon, 1925:124 (France); Hamm and Richards, 1926:307 (summary of nesting habits), 322 (list of prey); Hémon, 1926:200 (France: Finistère: Fouesnant); F. Werner, 1927:66 (Austria: Niederösterreich: River Kamp valley); Wnukowskij, 1927:32 (Russia: Western Siberia: village Kornilovo at 53°57'N 81°10'E); Jones, 1928b:14 (Great Britain: Hampshire: Milford-on-Sea); Harttig, 1930b:8 (specimen bearing dipteran egg); Spooner, 1931:16 (Great

Britain: Cambridgeshire); Vergne, 1931a:83 (France: Puy-de Dôme: Besse); Minkiewicz, 1935:196 (Poland: Kazimierz on Wisła, 51°20'N 21°58'E); Szulczewski, 1950:104 (Poland: Wielkopolski National Park 15 km south of Poznań); Hamann, 1960:196, 198 (Austria: Oberösterreich: Mönchgraben at 48°13'N 14°21'E); Radović and Krnić, 1979:unpaginated foldout (nesting in coarse sand and loose soil, foreleg structure); Casolari and Casolari Moreno, 1980:118 (specimens in M. Spinola collection, Torino); Pagliano, 2011a:147 (specimens in M. Spinola collection, Torino, are *Crabro cribrarius*). – **As *Crabro cribrarius***: Fabricius, 1775:374 (new combination, redescription), 1781:470 (redescription), 1787:296 (redescription); Olivier, 1792a:514 (redescription); Fabricius, 1793:297 (redescription); Panzer, 1793, Heft 15:19 (in revision of German insects); Fabricius, 1796:51 (in Index to his Entomologia Systematica, 1793); Roth von Schreckenstein, 1802:32 (Germany: Baden-Württemberg); Schrank, 1802:331 (in revision of insects of Bayern (= Bavaria, Germany); Latreille, [1805]:323 (redescription); Panzer, 1806:181 (in critical review of his earlier work); Jurine, 1807:211 (in checklist of species of *Crabro*); Stephens, 1829a:365 (in catalog of British insects), 1829b:33 (in checklist of British insects); Vander Linden, 1829:42 (bibliographic references, Belgium: Bruxelles, all Europe); Shuckard, 1836:57 (preying on Diptera), 59 (hindtibiae used in evacuating material during nest construction), 1837a:126 (in revision of British Aculeata); Zetterstedt, 1838:444 (in revision of insects of Lapland); Dahlbom, 1839-40:57 (in revision of Scandinavian Crabronini); von Siebold, 1839:50 (Germany: Danzig, now Poland: Gdańsk); Dahlbom, 1842a:15 (in review of Scandinavian aculeates), 1845:XXV (specimens in collection Fabricius examined), 353 (in revision of Sphecidae and Pompilidae), 526 (in key); Gistel, 1848:141 (Germany, description); Eversmann, 1849:422 (Russia: Orenburg, Kazan', Simbirsk, and Saratov provinces; as *cribratus*); von Kiesenwetter, 1849:91 (Germany: Kingdom of Saxony); F. Smith, 1849b:2551 (preying on Diptera); Wissmann, 1849:16 (Germany: Kingdom of Hannover: common); Tischbein, 1850:10 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); F. Smith, 1851c:25 (Great Britain: sandy areas); Wesmael, 1852:612 (Belgium: Bruxelles); F. Smith, 1853:63 (in checklist of British Hymenoptera), 1856:394 (in catalog of Hymenoptera in British Museum); Schenck, 1857:71 (in revision of fossorial wasps of Nassau Region, Germany); F. Smith, 1858c:149 (in review of British Aculeata, redescription); Belke, 1859:70 (Ukraine: Kamienec Podolski); Schenck, 1860:145 (Germany: Nassau Region); Brown, 1863:181 (Great Britain: Burton-on-Trent); A. Morawitz, 1864:455 (Russia: Sankt Petersburg), 1866a:270 and 1866b:348 (specimens in Eversmann collection); Sila-Nowicki, 1854:54 (Poland: Tatry Mountains, Ukraine: L'viv), 1865:54 (western Ukraine: Galicia region: no specific locality); F. Smith, 1865b:86 (Great Britain: Dorset County: Bournemouth); Belke, 1866:512 (Ukraine: Zhytomyr Oblast': Radomyshl'); Taschenberg, 1866:172 (in revision of Hymenoptera of Germany); A. Costa, 1867c:134 (in revision of Italian Sphecidae); Dietrich, 1868:362 (Switzerland: Zurich Canton); F. Smith, 1869d:77 (Great Britain: Norfolk: Cromer); von Aichinger, 1870:312 (Austria: Tirol); Bold, 1870:149 (Great Britain: Northumberland and Durham); Schenck, 1867a:350 (Germany: Nassau Region); Thomson, 1870:170 (in revision of Swedish Crabroninae); A. Costa, 1871b:63 (in revision of Italian Sphecidae); F. Smith, 1871b:15 (in catalog of British Aculeata); Schlechtendal, 1872:36 (Germany: Zwickau); Thomson, 1874:280 (in revision of Hymenoptera of Scandinavia); Taschenberg, 1875:382 (Germany: Halle); Daly, 1878:45 (Great Britain: Dorset: Glanville's Wootton); Roebuck, 1978:48 (Great Britain: recorded from Yorkshire county: Wakefield, by F. Smith, 1858); Girard, 1879:934 (redescription); Kohl, 1880:120 (Austria: Tirol, and Italy: Trentino–Alto Adige); E. Saunders, 1880:293 (in revision of British Aculeata); Marquet, 1881:186 (southern France); Kohl, 1883e:653 (Switzerland); Sickmann, 1883:69 (Germany: Niedersachsen: Wellingholthausen); Harwood, 1884:212 (England: Essex: Colchester area); von Heyden, 1884:123 (Germany: Frankfurt am Main area); Wüstnei, 1886:33 (Germany: Schleswig-Holstein); Kohl, 1888c:563 (in revision of *Crabro*, as section *Thyreopus* of *Crabro*); V. Perkins, 1892:206 (Great Britain: Gloucestershire: Wotton-under-Edge); Radoszkowski, 1892:593 (male genitalia); Kohl, 1893a:23 (Austria: Niederösterreich); F. Morawitz, 1893a:115 (Russia: Karelian Isthmus); Baldini, 1894:70 (Italy: Modena area); E. Saunders, 1896:142 (in revision of British Aculeata); Dalla Torre, 1897:593 (in catalog of world Sphecidae); Mocsáry, 1897:84 (Kingdom of Hungary: some localities are in today's Croatia, Romania, and Slovakia); Strand, 1898b:96 (Norway); R. Bradley, 1900:13 (Great Britain: Birmingham); Nevinson, 1900:62 (Great Britain: Wales:

Towyn); Sladen, 1900:265 (Great Britain: Kent: St. Margaret's Bay); Gardner, 1901:381 (Great Britain: Cheshire: Cuddington, Bollin River valley, Delamere, Wallasey, West Kirby); Malloch, 1901:6 (Great Britain: Scotland: Dumbartonshire); Nevinson, 1901:72 (Great Britain: Wales: Criccieth); Rothney, 1901:150 (Great Britain: Cornwall: Tintagel); N. Arnold, 1902:88 (Russia: Mohilev Province, now Belarus'); Friese, 1902:477 (occurring in Lapland according to Zetterstedt, 1838); Nevinson, 1902:12 (Great Britain: Cornwall: Newquay); E. Saunders, 1902b:144 (British Channel Islands: Alderney, Guernsey, and Jersey Island; France: Bretagne: St. Briac); Strand, 1903:7 (Norway: Austad); de Cobelli, 1903:116 (Italy: Province of Trentino); Antiga and Bofill, 1904:24 (Spain: Cataluña Province); Aurivillius, 1904:297 (in revision of Swedish Sphecidae); Jourdain 1904:221 (Great Britain: Derbyshire: Little Eaton, Repton Shrubs); W. Schulz, 1904b:98 (Czechoslovakia); Zilahi Kiss, 1904:77 (Hungary: Peér); Kubes, 1905:84 (Czech Republic: Kolín, Sušice); Mosolov, 1905b:19 (Russia: Moscow Government: Mikhailovskoye); Móczár and Henter, 1907:206 (Hungary: Putnok); E. Saunders, 1907c:Plate A Fig. 8 (color image of male); Schmiedeknecht, 1907:190, 191 (in key to Hymenoptera of Central Europe); Morley, 1909:306 (Great Britain: Isle of Wight); Cavro, 1910:685 (France: Département du Nord); Dittrich, 1911b:18 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Birula, 1912:532 (citation of Belke, 1866), 535 (Ukraine: Zhytomyr Oblast': Radomyshl'); Kohl, 1913b:16 (Russia: Voronezh Oblast': Valuyki at 50°14'N 38°08'E); Latter, 1913:35 (nesting in sand); Szilády, 1913:89 (Hungary: Gyergyótölgyes, Gyilkos-tó, Havasgyörgy, Igenpataka, Nagyenyed); Alfken, 1914:272 (northwestern Germany); Birula, 1914:376 (Belarus': Ambrosovich, Korolevo, and Luskopol' near Vitebsk); Hallett, 1914:57 (Great Britain: Cardiff County); Kohl, 1915:152 (in revision of Palearctic Crabronini); Hallett, 1919:262 (Great Britain: Island of Guernsey); O. Meyer, 1919:148 (Germany: Posen Province, now Poland: Poznań Region); Noskiewicz, 1920a:155 (Poland: Tatry Mountains: Gubałówka); Strand, 1920:23 (Germany: Berlin-Dahlem); A. Wagner, 1920:44 (Germany: Lower Elbe region); Dubois, 1921b:152 (in key to Belgian Sphecidae), 164 (phenology, nesting habits); Strand, 1921:33 (Germany: Bayern: Kulmbach); Fahringer, 1922:181 (Turkey); Hedicke, 1922:270 (Germany: Brandenburg: Gross Machnower Weinberg); Strand, 1922:197 (Germany: Bayern: Kulmbach); R. Perkins, 1924:224 (Great Britain: Devon); Berland, 1925d:189 (in Sphecid Fauna of France); Bischoff, 1925:297 (Latvia; Lithuania; Poland: Białowieża); Grönblom, 1925:4 (list of prey); R. Perkins, 1925:151 (Great Britain: Gloucestershire and Somersetshire); Schütze, 1925:110 (Germany: Lausitz Region); Shestakov, 1925:35 (Russia: Yaroslavl' area); K. Strohm, 1925:210 (Germany: Baden-Württemberg: Heidelberg, Kaiserstuhl, Karlsruhe); Friese, 1926:148 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); K. Strohm, 1926:74 (reference to Baader in Brahm, 1791, Rehmmanm, 1830, Roth von Schreckenstein, 1802, and Leininger, 1922); Zavadil, 1926:32 (Czechoslovakia); Benoist, 1928:410 (France: Basses-Alpes); Berland, 1928b:181 (add Carr, 1916 and Hamm and Richards, 1926 to bibliography in Berland, 1925d); Bouwman, 1930:68 (in revision of Sphecidae of Netherlands); Schmiedeknecht, 1930:646, 647 (in keys to Hymenoptera of North and Central Europe); Bischoff, 1931:9 (Spain); Butterfield and Fordham, 1931:156 (Great Britain: Yorkshire); Grandi, 1931:58 (Italy: Emilia-Romagna: Gabellina); Pulkkinen, 1931:133 (in revision of Sphecidae of Finland); Bondroit, 1932:40 (Belgium: Bruxelles area); Drogoszewski, 1933:117 (Poland: Łowicz); E. Nielsen, 1933:270 (summary of nesting habits); Routledge, 1933:88 (England: Cumberland); Balles, 1934:16 (Germany: Baden-Württemberg: many localities); Grandi, 1934:128 (Italy: Toscana: Abetone); Jansson, 1934:288 (Sweden); Forsius *in* Forsius and Hellén, 1935:10 (in checklist of Hymenoptera of Finland); Richards, 1935a:165 (study of type: the species is interpreted correctly); Steck, 1935:322 (Switzerland); Vergne, 1935:119 (France: Auvergne: common); Crèvecoeur and Maréchal, 1936:256 (in catalog of Belgian Hymenoptera); Dulac, 1937:22 (France: Saône-et-Loire: La Coudraye); Goebel, 1937:38 (Poland: Poznań District: Strzeszyn); Richards, 1937b:105 (in checklist of British aculeates); Zavadil, Šusterka, and Bat'a, 1937:156 (in catalog of Sphecidae of Czechoslovakia); Guichard, 1938:72 (Great Britain: Norfolk coast); Móczár, 1938c:81 (Hungary: Kőszeg Hills); Molitor, 1938:450 (color recognition); Redikortsev, 1938:144 (Russia: Mordovian State Nature Reserve); A. Wagner, 1938a:116 (northwestern Germany); Guichard, 1939a:42 (Great Britain: southern Cornwall: Polperro); Dvornar-Zapolskiy, 1940:303 (Russia: Kursk Oblast'); Balthasar, 1941b:112 (Czech Republic: eastern Moravia); de

Graham, 1941:99 (Great Britain: Lincolnshire); Kloet, 1941:235 (Great Britain: Wales: Cardiff, Gawsorth, and Wilmslow); Paul, 1941:35 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); Schneid, 1941:1027 (Germany: Bayern: Bamberg area); J. Perkins, 1942:198 (Sweden: Skåne: Degaberga and Löderup); Giner Marí, 1943a:237 (in Sphecidae Fauna of Spain); Guiglia, 1944b:36 (Italy); Šnoflák, 1944a:143 (Czech Republic: serpentine steppe near Mohelno); T. Fletcher, 1945:53 (Great Britain: Gloucestershire: Wotton); Hallett: 1945:129 (Great Britain: Herefordshire: Hope Mansell); R. Perkins, 1945:147 (Great Britain: Devon: moorland near Lydford); Villiers, 1946:12 (France: Haute-Savoie: Samoëns area); Carl and de Beaumont, 1947:69 (Switzerland: Graubünden = Grisons Canton: Swiss National Park); Tsuneki, 1947d:286 (Korea); Zavadil in Zavadil and Šnoflák, 1948:120, 121 (in key to Sphecidae of Czechoslovakia); Chambers, 1949:227 (Great Britain: Bedfordshire); Franz, 1949:13 (Austria: Hohe Tauern); Leclercq, 1949a:10 (Switzerland: Samaden; Poland: Bydgoszcz, as Bromberg, and Zawiercie); Sala de Castellarnau, 1949:89 (Spain: Teruel: Bronchales); Aerts, 1950a:50 (Germany: Nordrhein-Westfalen: Rheidter Wertchens near Köln); Cavro, 1950:39 (France: Département du Nord); Graham, 1950:349 (eggs of unknown insect deposited on thorax); Leclercq, 1951b:67 (yellow body pigments are pterines); Caruel, 1951:100 (France: Marne Department); de Beaumont, 1951h:35 (Switzerland: Neuchâtel area); Leclercq, 1951e:12 (bibliography of Belgian records); Richards, 1951:2 (British populations have less thoracic markings than most continental ones), 1952:142 (Great Britain: Anglesea); Cleu, 1953:51 (France: Ardèche River basin); Móczár, 1953:311 (Hungary); Nouvel and Ribaut, 1953:183 (France: Central Pyrénées: Garonne River valley, Hautes-Pyrénées: Cauterets); Bischoff and Stadler, 1954:127 (Germany: Bayern: Romberg); Fahlander, 1954:249 (Sweden: Gästrikland Region); Grandi, 1954:243 (Italy); Leclercq, 1954c:253 (in catalog of world Crabronini), 316 (nest and prey records); Tjeder, 1954:69 (Sweden: eastern Skåne: Mölleån, Vitemölla); Aerts, 1955:59 (Germany: Rheinland); Teschner, 1955:56 (Germany: Nordrhein-Westfalen: Hohe Ward near Münster); Atanassov, 1955:196 (Bulgaria: Bynderitsa in Pirin Mountains, Alibotush Mountains.); Vogrin, 1955:42 (Yugoslavia); Ceballos, 1956:393 (in catalog of Hymenoptera of Spain); Kullenberg, 1956:313 (study of chemical sexual attractants); Preuss, 1956:14 (Germany: Schleswig-Holstein: Mölln in Lauenburg); Grandi, 1957:391 (Italy: Abruzzi); Yeo, 1957:19 (Great Britain: Middlesex, now in London); Zirngiebl, 1957:175 (Germany: Rheinland-Pfalz: Pfalz region); Benno, 1958b:18 (in review of Dutch Sphecidae); de Beaumont, 1958c:210 (Switzerland); Móczár, 1958b:199 (Hungary: list of collecting localities); Pulawski, 1958a:188 (Bulgaria: Vitosha Mountain. near Sofia); Tonapi, 1958a:510 (spiracular structures), 1958b:250 (study of respiratory system); Nelson, 1958:154 (Great Britain: Isle of Man); Ceballos, 1959:230 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1959a:37 (Italy); Olberg, 1959:32 (visiting almost exclusively flowers of Umbelliferae, now Apiaceae; photograph of specimen on flowers of *Angelica silvestris*); Wolf, 1959b:34 (Germany: Nassau); Leclercq, 1960c:419 (locality records from Spain); Noskiewicz and Puławski, 1960:139, 141 (in key to Polish Sphecidae); Hoop, 1961:63 (Germany: Schleswig-Holstein); Atanassov, 1962:122 (Bulgaria: Petrich area); Grandi, 1962:98 (Italy); Valkeila, 1962b:68 (southwestern Finland); Wengris, 1962:206 (Lithuania: Vilnius area); Erlandsson, 1963:66 (Denmark: Bornholm Island); Felton, 1963:178 (Great Britain: Kent County); Hoop, 1963a:73 (Germany: Schleswig-Holstein: Reher Kratt); Lehrer and Scutaru, 1963:284 (Romania: Moldova: Birnova and Mircești in Iași District); Valkeila, Brander, and Käpylä, 1963:42 (Finland: historical region Lounais-Hämeen = southwestern Häme); Babiy, 1964:118 (Austria: Land Salzburg); Ceballos, 1964:94 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964c:134 (in Sphecidae Fauna of Switzerland); Plavil'shchikov, 1964:122 (Russia: Mordovian State Nature Reserve); Valkeila, Brander, and Käpylä, 1964:75 (Finland: Southern Finland: Forssa); Fæster, 1965:193 (Denmark: Hansted Nature Reserve); B. Klug, 1965:138 (Germany: Rheinland); Bonelli, 1966c:220 (Italy: Trentino-Alto Adige: Ortisei, Piazöl); Gauss, 1966c:240 (specimen bearing dipteran egg); Benno, 1967:39 (in checklist of Sphecidae of Netherlands); de Beaumont, 1967a:350 (Turkey); Gauss, 1967:558 (Germany: Baden-Württemberg); J. Heinrich, 1967:80 (Germany: Bayern: Unterfranken District); Hoop, 1967b:45 (Germany: Niedersachsen: Helgoland Island); Leclercq, 1967a:31 (locality records from Great Britain); Niedl and Deneš, 1967:71 (Czech Republic: Třeboň area); Scobiola-Palade, 1967b:52 (Romania); Benedek, 1968:76 (Hungary, visiting flowers of *Angelica silvestris* L. and

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by *Hedychridium coriaceum* Dahlbom, a chrysidid); Fowles, 1996:35 (Great Britain: in checklist of aculeates of Wales); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Harvey and Plant, 1996:69 (Great Britain: summary of records from Essex); Jakubzik, 1996:251 (Germany: Köln); Jakubzik and Cölln, 1996b:398 (Germany: Rheinland-Pfalz); Saure, 1996:503 (Germany: Berlin-Pankow: sewage irrigation field); Schmid-Egger, Schmidt, and Doczkal, 1996:376 (Germany: Baden-Württemberg: not endangered); Voblenko, Gorobchishin, and Nesterov, 1996:15 (Ukraine: Polesye Region); von der Dunk and Amon, 1996:41 (Germany: Bayern: Altdorf sand dunes east of Nürnberg); Witt, 1996:105 (Germany: Brandenburg); Woydak, 1996:72 (Germany: Westfalen: summary of distribution and nesting habits); Wu and Zhou, 1996a:114 (in revision in Economic Insect Fauna of China); Celary, 1997:59 (in checklist of Animals of Poland); Else in R. Edwards, 1997:62 (Great Britain and Ireland: distribution, habitat, flight period, prey, nesting habits, flowers visited, map of distribution by Archer and Roberts); Gauss, 1997:27 (egg of miltogrammatid flies deposited on adult specimens); Riemann, 1997:49 (Germany: Achim 14 km southeast of Bremen); Schmidt and Schmid-Egger, 1997:8 (in checklist of German Sphecidae); Stoyanov and Ljubomirov, 1997:27 (Bulgaria: Rila Mountains); Celary, 1998a:107 (Poland: Babia Góra National Park), 1998b:211 (Poland: Babia Góra National Park); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km west-southwest of Hamburg); Elligsen, 1998:70 (Ukraine: Sambir area); Flügel, 1998:59 (Germany: Brandenburg: Unteres Odertal National Park); 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); Józán, 1998:312 (Hungary: Duna-Dráva National Park); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); Mauss and Schindler, 1998:136 (Germany: Schleswig-Holstein: Nordfriesland District); Salzmann-Wandeler, 1998a:98 (Switzerland: Luzern Canton: Sempach), 1998b:102 (Switzerland: Schwyz Canton: Gersau-Oberholz); N. Schneider and Wahis, 1998:20 (Luxemburg: sandstone quarries); van der Smissen, 1998:54 (Germany: Schleswig-Holstein, Mecklenburg-Vorpommern, Niedersachsen); K. Weber, 1998:135 (Germany: Bayern: Bamberg area); Anan'eva and Kochetkov, 1999:7 (Russia: Ryazan Oblast': no specific locality); Archer, 1999a:9 (Great Britain: Lancashire); Erhardt, 1999:75 (Germany: Niedersachsen: Ammerland area); Gusenleitner, 1999:600 (Austria: Vorarlberg: locality records); Herrmann, 1999:7 (Germany: Niedersachsen: Oldenburg area; habitats size); Ljubomirov, 1999b:54 (Bulgaria: Mt. Vitosha near Sofia); Mandery, 1999:104 (Germany: Bayern: Coburg area); Neumayer, Schwarz, and Bregant, 1999:223 (Austria: in checklist of Sphecidae of Land Kärnten); Pauly, 1999:109 (in catalog of Belgian aculeates); Riemann, 1999:834 (Germany: Niedersachsen: sand pits near Bremen); M. Schwarz, 1999:87 (Austria: Oberösterreich: city of Linz area); Skibińska, 1999:96 (dominant sphecid species in Białowieża Primeval Forest, Poland); Sörensen, Mauss, and Schindler, 1999:503 (Germany: Schleswig-Holstein); Archer, 2000a:45 (Great Britain: Yorkshire), 2000c:115 (Great Britain: Lincolnshire); Blösch, 2000:317 (in Sphecid Fauna of Germany); Cartier, 2000:164 (France: Hauts-de-Seine: Rueil-Malmaison); Dressler, 2000:31 (Germany: Hessen: Darmstadt area); Jacobs, 2000:6 (Germany: Land Mecklenburg-Vorpommern: not endangered); Józán, 2000:111 (Hungary: Bakony Mountains); Ljubomirov, 2000:11 (Bulgaria, specimens in N. Nedelkov collection); M. Mader and Chalwatzis, 2000:59 (Germany: Hessen: Oderwald Mountains.); Mauss, Schröder, and Botta, 2000:76 (Germany: Bayern: Arber area in Bavarian Forest); Mokrousov, 2000b:31 (Russia: Nizhniy Novgorod Oblast'); M. Schwarz, 2000:10 (Austria: Oberösterreich: Linz); Archer, 2001a:107 (Great Britain: Watsonian Yorkshire), 2001b:14 (Great Britain: Watsonian Yorkshire); Dillier and Neumeyer, 2001:29, 33 (Switzerland: delta of Reuss River on Lake Uri); Dorow, 2001:136 (Germany: Hessen: Schönbuche Forest Reserve); Haeseler, 2001:265 (Germany: Niedersachsen: Brookdeich near Oldenburg); Józán, 2001:280 (Hungary: Somogy County); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia), 200 (review of known biology); Mazzucco, 2001:203 (Austria: Niederösterreich: Steinfeld); Ohl et al., 2001:138 (distribution in Germany by provinces); Reemer and van der Meer, 2001:16 (Netherlands: along Almelo-Nordhorn canal); Skibińska, 2001:220 (Poland: Białowieża Primeval Forest); Szczepko and Kowalczyk, 2001:188 (Poland: Kampinos National Park near Warszawa); van der Smissen, 2001:59 (Germany: Schleswig-Holstein: not endangered); Wolf, 2001a:171 (Germa-

ny: Bayern: Lech valley from Augsburg to Donau); Zettel, Gross, and Mazzucco, 2001:77 (Austria: Wien); Archer, 2002b:113 (Great Britain: Watsonian Yorkshire: distribution map); Archer and Edwards, 2002:102 (Great Britain: West Sussex: Ambersham and Iping commons); Beavis, 2002:106 (Great Britain: Kent: Tunbridge Wells area); Bieri, 2002:73 (Liechtenstein); Kazenas, 2002a:103 (geographic distribution, collecting localities in Kazakhstan); Kowalczyk, Szczepko, and Świątek, 2002:154 (Poland: Kampinos National Park near Warszawa); Litt, 2002:166 (Belgium); Lukáš, 2002:190 (Slovakia: Hájnica hill near Trenčianske Bohuslavice); C. Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shlyakhtenok and Skibinska, 2002:34 (Belarus: no specific locality); Wiśniowski, 2002:72 (Poland: Ojców National Park); Ziska, 2002:7 (Germany: Berlin-Köpenick: Krumme Lake); Cölln, Esser, and Jakubzik, 2003:61 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); de Bruyn and Sinning, 2003:9 (Germany: Niedersachsen: Wümme-Nordarm northeast of Bremen); Drewes, 2003:135 (Austria, France, Germany, Italy, Slovenia, Turkey: miscellaneous locality records); Haeseler, 2003:339 (Germany: Niedersachsen: Harriersand Island near Bremen); Józán, 2003:228 (Hungary: Látrányi Puszta Nature Conservation Area); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:64 (in catalog of wasps and bees of Bayern, Germany); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Reemer, 2003:62 (Netherlands: Gelderland: Zaltbommel area); Schmid-Egger, 2003:751 (Italy: Sicilia: Randazzo); Tischendorf and Treiber, 2003:120 (Germany: Hessen: 15 km southwest of Frankfurt am Main: nesting under high power lines); von der Heide and Metscher, 2003:101 (Germany: Niedersachsen: Emsland area); Wiśniowski *in* Dylewska and Wiśniowski, 2003:168 (Poland: Ojców National Park); Wiśniowski and Werstak, 2003:78 (Poland: Pieniny National Park); Archer, 2004:47 (Great Britain: Worcestershire: Devils Spittleful Nature Reserve); Dollfuss, 2004b:762 (Russia: Tuva: Khadya; Spain: Soria; Turkey: 50 km south of Kars Pasli); Dorow, 2004a:127 (Germany: Hessen: Schönbuche Nature Reserve); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:261 (in checklist of Sphecidae of Nordrhein-Westfalen State of Germany); Gayubo et al., 2004:132 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Hellrigl, 2004a:172 (Italy: Trentino-Alto Adige, as Südtirol: Vinschgau = Val Venosta: Lichtenberg near Prad, Schlanders); Kazenas, 2004d:33 (Kazakhstan: shores of Ural River); Litt, 2004:222 (Switzerland: Valais: Grimentz); Majzlan and Deván, 2004:32 (Slovakia: Malacky-Široké); Salzmann-Wandeler and Rezbanyai-Reser, 2004:26 (central Switzerland); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:355 (in catalog of Polish Crabronidae); Szczepko and Kowalczyk, 2004:126 (Poland: Kampinos National Park near Warszawa); Tannert and von der Dunk, 2004:135 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); van Achterberg and Peeters, 2004:30 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:48 and 61 (in checklist of Polish Sphecidae); Wright, 2004:19 (Great Britain: Isle of Wight); Blösch, 2005:5 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Burger, 2005:31 (Germany: Thüringen); Dubitzky, Blank, and Schönitzer, 2005:272 (Germany: Bayern: area north of Dachau, as *cribarius*); Fuhrmann, 2005:89 (Germany: Nordrhein-Westfalen: Grubengelände Littfeld Nature Reserve); Gayubo and Özbek, 2005:29 (Turkey: eight localities); Haeseler, 2005:628 (Germany: Niedersachsen: Steller Heide near Bremen); Hallin, 2005:29 (Sweden: Örebro County: Nydalen); Jacobs, 2005a:442 (Bulgaria: Kulinoto in Pirin Mts.); Kofler, 2005:179 (Austria: Tirol: Lienz District: many localities); Kowalczyk and Kurzac, 2005:104 (Poland: Botanical Garden in Łódź); Kraatz, 2005:102 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Landeck, Wöhler, and Landgraf, 2005:18 (Germany: Lausitz Region; visiting flowers of *Reseda luteola* Linnaeus, Resedaceae, and *Carthamus tinctorius* Linnaeus, Asteraceae); Mandery, 2005:173 (Germany: Bayern: Hainberg Nature Reserve near Nürnberg); Nemkov, 2005a:153 (Russia: Sakhalin Island); Pagliano and Negrisolo, 2005:221 (in Sphecid Fauna of Italy); Pijfers, 2005:49 (Netherlands: Twente: Noordelijke Manderheide); Riemann and Hohmann, 2005:547 (Germany: Niedersachsen: city of Bremen and adjacent area); Robinson, 2005:34 (Great Britain: Cumbria County); Saure, 2005:14 (Germany: Berlin); Schmalz, 2005:57 (references to XIXth century authors); Theunert, 2005a:16 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:42 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Wiśniowski, 2005a:312 (Poland: Ojców

National Park; occurring in all non-forest biotopes); Yildirim and Ljubomirov, 2005:1794 (Turkey: Erzurum: five localities); Ljubomirov, 2006:538 (Bulgaria: earlier records from Rhodope Mountains summarized, also: several additional localities); Archer, 2006a:21 (Great Britain: Lincolnshire: Rauceby Warren National Park), 2006c:217 (Great Britain: Staffordshire: Highgate Common); Dathe, 2006:38 (*Crabro cribrarius*, recorded from Plauenscher Grund near Dresden, Germany, by von Block, 1799, has the same name now); Gorobchishin, 2006:129 (Ukraine: Cherkasy Oblast': Kaniv Nature Reserve; Kyiv Oblast': Kyiv and villages Kruglyk, Svityl'ne, Verkhnyachka); Hua, 2006:278 (in list of Chinese insects, geographic distribution); Liebig, 2006:38 (Germany: Sachsen: Muskauer Heide); Peeters, Krekels, and Megens, 2006:22 (Netherlands: Reichswald forest near Nijmegen); Shlyakhtenok, 2006:112 (Belarus': Polesye Radiological Nature Reserve); Vepřek, 2006:509 (Czech Republic: Kokořínsko area); Archer, 2007a:151 (Great Britain: Norfolk: Thetford Warren Lodge), 2007c:152 (Great Britain: South Devon coast); Baghirov, 2007:93 (Russia: southwestern Siberia); Beavis, 2007:92 (Great Britain: Tunbridge Wells and Central High Weald); Chevin, Livory, Lair, Sagot, and Baldock, 2007:18 (France: Département de la Manche); Dorow, 2007:263 (Germany: Hessen: Niddahänge Forest Reserve); Dvořák, Straka, Smetana, Halada, Vepřek, and Karas, 2007:168 (Czech Republic: Vyšenské Kopce National Nature Reserve); Guldmond, Pijfers, and den Belder, 2007:202 (Netherlands: Gelderland: dairy farm in de Graafschap); Hallin, 2007b:25 (Sweden: Blekinge County); Herrmann, 2007a:51 (Germany: Niedersachsen: Ostfriesland); Jacobs, 2007:144, 147 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:22 (Germany: northwestern Sachsen); Józán, 2007:179 (Hungary: Zselic hills); Kowalczyk and Nadolski, 2007:283 (Poland: Łódź: railway areas); Nemkov, 2007c:997 (in Appendix to Key to identification of Sphecidae of Far East of Russia); Saure, 2007:81 (Germany: in checklist of Aculeata of Brandenburg); Shorenko, 2007b:258 (Ukraine: Crimea: Lobanovo village in Dzhankoy District); Vago, 2007:175 (France: départements d'Aisne, Nord, Pas-de-Calais, and Somme); Venne, Bleidorn, and Lauterbach, 2007:300 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:204 (in catalog of Sphecidae of Czech Republic and Slovakia); Archer, 2008a:144 (Great Britain: Cumbria: North Walney Nature Reserve, Sandscale Haws, Lindisfarne Nature Reserve, and Bamburgh Dunes); K. Alexander, 2008:149 (Great Britain: Norfolk: Sheringham Park, as *cribraria*); Danilov and Tshernyshev, 2008:41 (Russia: Novosibirsk Oblast': Karasuk area); Gayubo, González, Tormos, and Asís, 2008:138 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Haeseler, 2008:307 (Germany: Friesian Islands); Kochetkov, Bol'shakova, Butenko, and Priklonskiy, 2008:263 (Russia: Rязан' Oblast': Oka Nature Reserve); Ljubomirov and Yildirim, 2008:259 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:22 (in catalog of Crabronidae of Asiatic Russia); Tannert and von der Dunk, 2008:181 (Germany: Bayern: west of Ernhofen and Weissenbrunn); Theunert, 2008:14 (Germany: map of distribution in Niedersachsen and Bremen); Belkheir, 2009:18 (France: Pyrénées-Orientales: commune d'Eyne); Bitsch and Leclercq, 2009:216 (in supplement to vol. I of Faune de France, 1993: first records from French Department of Loire: Veauce); U. Frommer, 2009a:26 (Germany: in checklist of Sphecidae of central Hessen), 31 (occurrence in Hessen not confirmed); Guéorguiev and Ljubomirov, 2009:265 (Bulgaria: Maleshevska Planina); Hessling, 2009:103 (Germany: Niedersachsen: Hunte River valley south of Oldenburg); Kowalczyk, Kurzac, and Nadolski, 2009:62 (Poland: between Warta and Widawka rivers); Nemkov, 2009b:113 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:70 (Norway: locality records); Ruchin, Antropov, and Shibayev, 2009:169 (Russia: Republic of Mordovia); Shorenko, 2009:367 (in list of Sphecidae s.l. of Crimea); Straka, Dvořák, and Bogusch, 2009:257 (Czech Republic: Jizerské Mountains and Frýdlant region); van Diemen, 2009:49 (Netherlands: airbase Gilze-Rijen); Archer, 2010a:52 (Great Britain: Watsonian Nottinghamshire: Spalford Warren), 2010b:99 (Great Britain: Watsonian Staffordshire: Cannock Chase Country Park); Ermilov and Mokrousov: 2010:89 (phoretic mite *Calvolia* sp. in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:35 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Falk, 2010:92 (Great Britain: heathland sites in West Midlands region); Hable, Wickl, Krauss, and von der Dunk, 2010:26 (Germany: Bayern: Sulz- and Ottmaringer Tal); Howe, Knight, and Clee, 2010:100 (United Kingdom: occurring on coastal sand dunes); Jakubzik, Kinkler, and Cölln, 2010:154 (Germany: Rheinland-Pfalz: Leverkusen-Steinbüchel); Johansson, 2010:121 (Sweden:

Småland: upper Emå river valley); Mokrousov, 2010a:61 (Russia: Ivanovo, Kirov, Nizhniy Novgorod Oblast's, Chuvash Republic, Tatarstan: no specific localities), 2010c:107 (Russia: Chuvash Republic: National Park "Chavash varmane"); Rudoiskatel', 2010:157 (Russia: central and southern Ural Mountains); Sakenin, Samin, and Bagriacik, 2010:16 (Iran: Mazandaran: Behshahr); Saure, 2010b:174 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:14 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:132 (Germany: Bayern: collected along Main-Donau canal); Shorenko and Konovalov, 2010:16 (Ukraine); Saure, 2011a:5 (Germany: Berlin: former airport Tempelhof); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:101 (Western Slovakia: recorded from Borská nížina); van der Smissen, 2010a:334 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records), 2010c:396 (Sweden: Öland: Rönnerum); Archer, 2011a:42 (Great Britain: Yorkshire: Strensall Common); Baghirov, 2011b:144 (Russia: Altayskiy Kray and Altay Republic); Gogala, 2011:18 (Slovenia); Józán, 2011:181 (in checklist of Sphecidae s.l. of Hungary); Mokrousov, Berezin, and Egorov, 2011:69 (Russia: Chuvash Republic); Saure, 2011c:197 (Germany: Berlin-Spandau: Fort Hahneberg), 2011d:199 (Germany: Sachsen-Anhalt: conservation area "Heide südlich Burg"); Schmid-Egger, 2011a:37 (France: Parc National du Mercantour); Shlyakhtenok, 2011:94 (Belarus: city of Minsk); Theunert, 2011a:19 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:114 (Germany: Hessen: not endangered); von der Dunk, 2011:184 (Germany: Bayern: Kaiserburg in Nürnberg); Ziska and Saure, 2011:108 (Germany: Berlin: Tegeler Fließ valley); Archer, 2012:182 (Great Britain: urban York); Boillat, 2012:225 (Switzerland: in checklist of insects of Canton de Genève); Cölln, Jakubzik, and Kinkler, 2012:24 (Germany: Nordrhein-Westfalen: Leverkusen); Gerth, Mayer, Hering, Wolf, Schaffer, and Bleidorn, 2012:9 (Germany: Sachsen: Bienitz in Leipzig); Franzén, Molander, Norén, and Nilsson, 2012:26 (Sweden: Skåne: Kullaberg Peninsula); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); Prisiy, 2012:49 (Russia: Belgorod Oblast'); Saure, 2012b:228 (Germany: Berlin-Spandau: Spandauer Forst); Shibayev and Polumordvinov, 2012:278 (Russia: Penza Oblast'); Shlyakhtenok, 2012a:171 (Belarus: collected in private plots); Yildirim, 2012:81 (Turkey: Bayburt and Erzurum provinces); Akulov and Proshchalykin, 2013:115 (Russia: Siberia: Krasnoyarsk Kray: 20 km south of Minusinsk); Bitsch, Grouet, and Savina, 2013:292 (France: Pyrénées-Orientales: col de Puymorens); Flügel, 2013b:57 (Germany: Hessen: Knüllköpfchen); Kazenas, 2013a:91, 92 (color photographs of adult wasps, short information on geographic distribution and nesting habits); Mokrousov, Ruchin, and Egorov, 2013:200 (Russia: Republic of Mordovia: Mordovian State Nature Reserve); Pankov, 2013:229 (Russia: Ivanovo Oblast'); Saure, 2013:18 (Berlin: Treptow-Köpenick: Gosener Wiesen); Shlyakhtenok, 2013:204 (in annotated catalog of aculeate wasps of Belarus'); Wiśniowski and Szczepko, 2013:26 (Poland: Kampinos National Park near Warszawa); Celary and Plewa, 2014:46 (Poland: Góra Puławska near Puławy, in oak stand); Hellqvist, Abenius, and Norén, 2014:91 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); J.-K. Kim, 2014:424 (in catalog of Sphecidae s.l. of Korean Peninsula); Mokrousov and Vafin, 2014:56 (Russia: Republic of Tatarstan); Ruchin and Antropov, 2014:36 (Russia: Republic of Mordovia); Yildirim, Ljubomirov, and Lelej, 2014:14 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:141 (in checklist of Hymenoptera of Turkey); P. Rosa and Pagliano, 2015:99 (Italy: Lombardia and Piemonte: Parco del Ticino); Samin, Bagriacik, and Monaem, 2015:196 (Iran: Kermanshah: Kermanshah); Saure, 2015:12 (Germany: Berlin-Lichterfelde); Else, Bolton, and Broad, 2016:13 (in checklist of Aculeata of Great Britain and Ireland: England, Scotland, Wales, Isle of Man); Mokrousov and Popov, 2016:571 (Russia: Krasnodarskiy Kray); Reemer and Peeters, 2016:10 (Netherlands: Hulshorsterzand); Stolle and Saure, 2016:921 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Wiśniowski, 2016:127 (Poland: Ojców National Park); Antropov, 2017b:226 (in catalog of Crabroninae of Russia); Flügel, 2017:5 (Germany: Hessen: Eschkopf near Rockensüß); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:46 (Iran: known from Kermanshah and Mazandaran provinces); Jansen, 2017:6 (Germany: Sachsen: Leipzig); Magdalou, 2017:14 (France: Crabro 21 Pyrénées-Orientales: Réserves Naturelles Catalanes: Vallée d'Eyne); Shorenko, 2017:76 (in Crimea collected in July).

- Sphex patellarius* Schreber, 1784:95, ♀, ♂. Syntypes: Germany: no specific locality (depository?). Synonymized with *Crabro cribrarius* by Kohl, 1915:153. – **As *Crabro patellarius***: Schrank, 1802:330 (new combination, Germany: in revision of insects of Bayern (= Bavaria)).
- Sphex cribrarius argus* Christ, 1791:281, ♀, ♂ (as *Cribraria Argus*, incorrect original termination and capitalization). Not available: binominal nomenclature not observed (Article 11.4). Syntypes: Germany: no specific locality (lost). Synonymized with *Crabro cribrarius* by Kohl, 1888c:563.
- Sphex cribrarius longus* Christ, 1791:282, ♀, ♂ (as *cribraria longa*, incorrect original termination). Not available: binominal nomenclature not observed (Article 11.4). Syntypes: Germany: no specific locality (lost). Synonymized with *Crabro cribrarius* by Kohl, 1888c:563.
- Sphex cribrarius lunatus* Christ, 1791:282, ♀, ♂ (as *cribraria lunata*, incorrect original termination), junior primary homonym of *Sphex lunatus* Fabricius, 1775. Not available: binominal nomenclature not observed (Article 11.4). Syntypes: Germany: no specific locality (lost) Synonymized with *Crabro cribrarius* by Kohl, 1888c:563.
- Crabro palmatus* Panzer, 1797, Heft 46:3, ♂. Holotype or syntypes: ♂, Germany: no specific locality (depository ?). Synonymized with *Crabro cribrarius* by F. Smith, 1855:99 and Kohl, 1915:153. – Jurine, 1807:212 (in checklist of species of *Crabro*); Stephens, 1829a:365 (in catalog of British insects), 1829b:33 (in checklist of British insects); F. Smith (*Crabro palmatus* of Stephens, 1829a and 1929b = *Crabro cribrarius*).
- Crabro interruptus* Stephens, 1829a:365, by indication (Article 12.2.1: reference to Panzer, 1804), junior primary homonym of *Crabro interruptus* Fabricius, 1787 (now in *Palarus*). Substitute name for *Crabro clypeatus* of Panzer, 1804. Synonymized with *Crabro cribrarius* by F. Smith, 1855:99. – Stephens, 1829b:33 (in checklist of British insects).
- Crabro cribrarius* var. *inornatus* Mocsáry in Mocsáry and Szépligeti, 1901:163, ♀, ♂. Syntypes: Russia: Siberia: Yarovskaya (TMB). Synonymized with *Crabro cribrarius* by Leclercq, 1954c:253. – Bischoff, 1925:297 (Latvia); Koornneef, 1951:246 (Netherlands: Velp); Romanova, 1969:135 (Russia: North Caucasus). – **As *Crabro cribratus inornatus***: Tsuneki, 1972a:148 (new status, Mongolia).
- Crabro cribrarius* var. *hypotheticus* Kokujev, 1927:72, ♀. Holotype: ♀, Russia: Siberia: Kocherikov Promontory of Lake Baikal (ZIN). Synonymized with *Crabro cribrarius* by Leclercq, 1954c:253.
- As *Crabro clypeatus*: Panzer, 1794, Heft 15:20 (in revision of German insects), present correction.

24. *cribrellifer* (Packard)

- Thyreopus cribrellifer* Packard, 1867:358, ♂. Lectotype: ♂, USA: Illinois: no specific locality (ANSP), designated by Cresson, 1928:53. – Cresson, 1887:286 (in catalog of North American Hymenoptera); Ashmead, 1899d:217 (in checklist of North American Crabronidae, as *crebellifer*); J. Smith, 1900:515 (in list of insects of New Jersey); Harrington, 1902:219 (Canada: Ontario: Ottawa, as *cribellifer*). – **As *Solenius cribrellifer***: J.Ch. Bradley, 1928:1020 (new combination, in catalog of New York Sphecidae). – **As *Crabro cribrellifer***: Kohl, 1888c:585 (new combination, in list of Nearctic *Crabro*, as *cribellifer*); W. Fox, 1895a:168 (in revision of North American Crabronini); Dalla Torre, 1897:595 (in catalog of world Sphecidae); J. Smith, 1910:681 (in new list of insects of New Jersey); Rohwer, 1916b:670, 671 (in catalog of Hymenoptera of Connecticut); Rohwer in Viereck, 1925:670, 671 (in key to Sphecidae of Connecticut); Krombein in Muesebeck et al., 1951:10 (in catalog of North American Hymenoptera); Krombein, 1952a:95 (USA: Virginia: Westmoreland State Park); Leclercq, 1954c:255 (in catalog of world Crabronini), 315 (nest and prey records); Krombein, 1963f:277 (Maryland: Plummers Island near Washington, D.C.); Kurczewski and Acciavatti, 1968:198 (review of nesting habits); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:265 (in revision of Nearctic *Crabro*); Barrows, Lebau, and Eckstein, 1978:175 (nesting habits and prey); Krombein, 1979b:1675 (in catalog of North American Hymenoptera); Evans, Kurczewski, and Alcock, 1980:869 (nesting habits); Finnamore, 1982:167 (in Sphecidae Fauna of Southern Quebec); Wcislo, 1984:157 (gregarious nesting); Radović, 1985:65 (sting apparatus analyzed); Wcislo, Low, and Karr, 1985:115 (parasite pressure and repeated burrow use); Wcislo, 1986:82 (nest parasite: *Metopia campestris* (Fallén),

a miltogrammine fly), 1987:519 (facultative parasitic behavior within otherwise free-living species); Spofford, Kurczewski, and Downes, 1989:256 (reference to publication on nest parasite *Metopia campestris* (Fallén), a miltogrammine fly); Low and Wcislo, 1992:219 (role of foretibial shield in mating); Kurczewski, 1998d:250 (pine barrens in upstate New York); Wcislo, 1998:181 (proportions of antennae in relations to parasitic/non-parasitic habits); Melo, 2000:88 (use of nest by more than one female); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Leclercq, 2008b:77 (in improved key to North American *Crabro*), 80 (bibliographic references, locality records from USA).

Thyreopus sinuatus Provancher, 1883b:664, ♀, junior secondary homonym of *Crabro sinuatus* Fabricius, 1804. Holotype or syntypes: ♀, Canada: Toronto (type material not located: Gahan and Rohwer, 1918:199). Synonymized with *Crabro cribrellifer* by Krombein in Muesebeck et al., 1951:1017. – Cresson, 1887:286 (in catalog of North American Hymenoptera). – **As *Crabro sinuatus***: Kohl, 1888c:585 (new combination, in list of Nearctic *Crabro*).

Crabro provancheri W. Fox, 1895a:168 (as *Provancheri*, incorrect original capitalization). Substitute name for *Crabro sinuatus* (Provancher) W. Fox, 1895. – Dalla Torre, 1897:619 (in catalog of world Sphecidae); J. Smith, 1910:681 (in new list of insects of New Jersey); Rohwer, 1916b:670, 671 (in catalog of Hymenoptera of Connecticut); Rohwer in Viereck, 1925:670, 671 (in key to Sphecidae of Connecticut). – **As *Thyreopus provancheri***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae); J. Smith, 1900:515 (in list of insects of New Jersey). – **As *Solenius provancheri***: J.Ch. Bradley, 1928:1020 (new combination, in catalog of New York Sphecidae)

25. *denningi* R. Bohart

Crabro denningi R. Bohart, 1976:260, ♂. Holotype: ♂, USA: North Dakota: Lisbon (Univ. Minnesota). Range: North Dakota, Saskatchewan. – Hilchie, 1982:106 (prey of *Philanthus albopilosus*), 107 (Alberta: Empress); 80 (bibliographic references).

26. *deserticola* R. Bohart

Crabro deserticola R. Bohart, 1976:266, ♂, ♀. Holotype: ♂, USA: California: San Diego County: Borrego Valley (UCD). Paratypes: Arizona, New Mexico. – Leclercq, 2008b:76, 77 (in improved key to North American *Crabro*), 80 (bibliographic references, New Mexico: Hot Springs).

27. *dietrichi* R. Bohart

Crabro dietrichi R. Bohart, 1976:261, ♂, ♀. Holotype: ♂, Canada: Ontario, correctly Prince Edward Island Province: Prince Edward National Park (Cornell Univ.). Range: Saskatchewan, Wyoming. – Buck, 2004:75 (the type locality is in Prince Edward Island Province, not in Ontario); Leclercq, 2008b:78 (in improved key to North American *Crabro*), 80 (bibliographic references).

28. *digitatus* R. Bohart

Crabro digitatus R. Bohart, 1976:267, ♂. Holotype: ♂, USA: Michigan: Delta County: no specific locality (UCD). – Finnamore, 1982:168 (in Sphecidae Fauna of Southern Quebec); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Leclercq, 2008b:81 (bibliographic references).

29. *femoralis* F. Morawitz

Crabro femoralis F. Morawitz, 1892:161, ♂. Lectotype: ♂, Russia: Krasnoyarskiy Krai: Minussinsk (ZIN), designated by Marshakov, 1977:859. – Dalla Torre, 1897:600 (in catalog of world Sphecidae); Kohl, 1915:184 (in revision of Palearctic Crabronini); Leclercq, 1954c:247 (in catalog of world Crabronini); Tsuneki, 1972a:149 (Mongolia); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:870 (in key to *Crabro* of USSR); Leclercq, 1982b:145 (China: Harbin; Russia: N Ussuriysk); Nemkov, 1986:103 (previously recorded from Lake Baikal area), 1990c:84 (Russia: Buryat Republic, Chita Oblast'); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:446 (in key to Sphecidae of Russian Far East); Hua, 2006:278 (in list of Chinese insects, geographic distribution); Nemkov, 2008b:23 (in catalog of Crabronidae of Asiatic Russia), 2009b:115 (in new catalog of Sphe-

cidae and Crabronidae of Asiatic Russia), 2009c:236 (Russia: Primorskiy Kray: Lazovsky Nature Reserve), 2012c:441 (in catalog of Crabronidae of Russian Far East); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

30. *filiformis* Radoszkowski

Crabro filiformis Radoszkowski, 1877:79, ♀, ♂. Syntypes: Uzbekistan: Tashkent; Kazakhstan: Chardara (ZMMU). – Kohl, 1888c:583 (in revision of *Crabro*, as section *Thyreopus* of *Crabro*), 1915:181 (in revision of Palearctic Crabronini); Dalla Torre, 1897:600 (in catalog of world Sphecidae); Leclercq, 1954c:247 (in catalog of world Crabronini); Myartseva, 1963b:610 (Turkmenistan: lower Murgab River), 1965:95 (Turkmenistan: Bayram-Ali district); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:870 (in key to *Crabro* of USSR); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:104 (geographic distribution, collecting localities in Kazakhstan); Dollfuss, 2004b:762 (Kazakhstan, Turkmenistan, Uzbekistan); Kazenas, 2004b:108 (Kazakhstan: western Tien Shan), 2014a:136 (Kazakhstan: Karatau Mountain Range).

31. *flavicus* R. Bohart

Crabro flavicus R. Bohart, 1976:268, ♂. Holotype: ♂, Canada: Alberta: Elkwater Park (CNC). – Sarazin, 1986:306 (holotype in CNC); Leclercq, 2008b:77 (in improved key to North American *Crabro*); Leclercq, 2008b:81 (bibliographic references); Ratzlaff, 2016:24 (Canada: British Columbia: from R. Bohart, 1976).

32. *flavinubis* R. Bohart

Crabro flavinubis R. Bohart, 1976:262, ♂, ♀. Holotype: ♂, USA: California: Inyo County: Mono Pass (originally UCB, now CAS). – Leclercq, 2008b:81 (bibliographic references).

33. *flavoniger* Dutt

Crabro flavo-niger Dutt, 1921:30, ♀, incorrect original hyphenation. Holotype: ♀, India: Bihar: Pusa (BMNH). – Leclercq, 1954c:246 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae).

34. *florissantensis* Rohwer

Crabro florissantensis Rohwer, 1909c:149, ♂. Holotype or syntypes: ♂, USA: Colorado: Florissant (USNM). – Carter, 1925:131 (Canada: Alberta: Waterton); Krombein in Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:248 (in catalog of world Crabronini); Evans, 1970:491 (Wyoming: Jackson Hole); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:254 (in revision of Nearctic *Crabro*); Krombein, 1979b:1674 (in catalog of North American Hymenoptera); Weissmann and Kondratieff, 1999:78 (Colorado: Great Sand Dunes National Monument); Leclercq, 2008b:81 (bibliographic references, locality records from Oregon and Wyoming); Ratzlaff, 2016:24 (Canada: British Columbia: from R. Bohart, 1976 and Leclercq, 2008). – As “*Solenius*” *florissantensis*: Strickland, 1947:128 (new combination, Canada: Alberta: Waterton).

35. *fratellus* Kohl

Crabro fratellus Kohl, 1915:151, ♀. Holotype: ♀, China: Tshheli, now Hebay (NHMW). – Leclercq, 1954c:244 (in catalog of world Crabronini); Tsuneki, 1967e:10 (China: Manchuria: Harbin; redescription); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1980b:329 (in key to subgenus *Othyreus*), 332 (redescription; transferred to subgenus *Othyreus*); Leclercq, 1982b:145 (China: Harbin); Dollfuss, 1989:9 (type material in NHMW); Dollfuss, 2004b:762 (Kazakhstan: 6 km southeast of Lepsi); Hua, 2006:278 (in list of Chinese insects, geographic distribution).

36. *funestus* Kohl

Crabro funestus Kohl, 1915:163, ♀, ♂. Lectotype: ♂, China: Tsing Hai: Lake Rhombo-mtso in headwaters of Blue River (ZIN), designated by Marshakov, 1977:858. – Leclercq, 1954c:252 (in catalog of world Crabronini), 315 (nest

and prey records); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:861, 864 (in key to *Crabro* of USSR); Leclercq, 1982b:146 (China: Songpan, Szechuan, Tibet: Gyantse); Dollfuss, 1989:9 (type material in NHMW), 2004b:763 (China); Hua, 2006:278 (in list of Chinese insects, geographic distribution).

37. *grisselli* R. Bohart

Crabro grisselli R. Bohart, 1976:247, ♂, ♀. Holotype: ♂, USA: New Mexico: Grant County: 0.5 mi west of San Lorenzo (UCD). – Leclercq, 2008b:81 (bibliographic references, Mexico: Chihuahua: 10 mi. N Jimenez; Durango: 30 km west of Ceballos).

38. *helvocrinus* R. Bohart

Crabro helvocrinus R. Bohart, 1976:251, ♂, ♀. Holotype: ♂, USA: California: Riverside County: Keen Camp in San Jacinto Mountains (originally UCB, now CAS). – Leclercq, 2008b:81 (bibliographic references).

39. *henrici* Krombein

Thyreopus vierecki Rohwer, 1910a:50, ♂. Holotype: ♂, USA: New Jersey: Da Costa (USNM), junior secondary homonym of *Crabro vierecki* H. Smith, 1908. – **As *Crabro vierecki***: J. Smith, 1910:682 (new combination, in new list of insects of New Jersey: DaCosta).

Crabro henrici Krombein in Muesebeck et al., 1951:1016. Substitute name for *Crabro vierecki* (Rohwer, 1910) Krombein in Muesebeck et al., 1951:1016. – Krombein in Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:248 (in catalog of world Crabronini); Krombein, 1958f:198 (in supplement to catalog of North American Hymenoptera: New Mexico); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:255 (in revision of Nearctic *Crabro*); Leclercq, 2008b:78 (in improved key to North American *Crabro*), 81 (bibliographic references, New York: Ithaca: Kite Hill).

40. *hilaris* F. Smith

Crabro hilaris F. Smith, 1856:416, ♀. Holotype or syntypes: ♀, USA: Florida: Duval County: St. John's Bluff, now in Jacksonville (BMNH). – Cresson, 1862:236 (in catalog of North American Hymenoptera); Packard, 1866:115 (in revision of North American Crabroninae: listed only); Cresson, 1887:285 (in catalog of North American Hymenoptera); W. Fox, 1895a:179 (in revision of North American Crabronini); Dalla Torre, 1897:604 (in catalog of world Sphecidae); H. Smith, 1908b:399 (in revision of Nebraskan Sphecidae); J. Smith, 1910:682 (in new list of insects of New Jersey: DaCosta); Mickel, 1918b:384 (in catalog of Nebraskan Sphecidae); Brimley, 1938:449 (North Carolina: Aberdeen, Raleigh); Krombein, 1950a:271 (North Carolina: Dare County); Krombein in Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Krombein, 1953a:296 (visiting foliage of *Quercus marilandica* Münchhausen), 337 (North Carolina), 1953b:122 (visiting foliage of *Quercus marilandica* Münchhausen), 123 (visiting foliage of *Quercus virginiana* Mill.), 134 (North Carolina: Kill Devil Hills); Leclercq, 1954c:245 (in catalog of world Crabronini); R. Bohart, 1976:244 (in revision of Nearctic *Crabro*); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Miller, 1976:258 (in revision of *hilaris* species group of *Crabro*); Krombein, 1979b:1672 (in catalog of North American Hymenoptera); Matthews, Hook and Krispyn, 1979:151 (nesting habits); Kurczewski and Miller, 1991:254 (New York: Suffolk County: Fire Island State Park); Ahlstrom, 1995:111 (in checklist of insects of North Carolina); Leclercq, 2008b:81 (bibliographic references, locality records from Florida, North Carolina, and Oklahoma). – **As *Paranothyreus hilaris***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae); Viereck, 1903c:62 (New Jersey, Pennsylvania).

41. *hispidus* W. Fox

Crabro hispidus W. Fox, 1895a:192, ♀. Holotype: ♀, USA: Oregon: Mt Hood (ANSP). – Dalla Torre, 1897:604 (in catalog of world Sphecidae); Cresson, 1928:54 (holotype in ANSP); Krombein in Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:248 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:255 (in revision of Nearctic *Crabro*);

Krombein, 1979b:1674 (in catalog of North American Hymenoptera); Finnamore, 1988:863 (Canada: Yukon Territory), 1997:890 (Canada: Yukon); Leclercq, 2008b: 81 (bibliographic references, Washington: Pierce County: Mount Rainier National Park: near Silver Springs); Ratzlaff, 2016:24 (Canada: British Columbia: from R. Bohart, 1976, Krombein, 1979, and Leclercq, 2008. – *As Anothyreus hispidus*: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

42. *ingricus* (F. Morawitz)

Thyreopus ingricus F. Morawitz, 1888:294, ♀, ♂. Lectotype: ♂, Russia: Sankt-Petersburg Oblast': Kolomäggi (ZIN), designated by Marshakov, 1977:859. – *As Crabro ingricus*: F. Morawitz, 1893a:114 (new combination, Russia: Karelian Isthmus; additional description); Dalla Torre, 1897:605 (in catalog of world Sphecidae); Mocsáry, 1897:84 (Kingdom of Hungary: Mehádia, now in Romania); Kohl, 1915:179 (in revision of Palearctic Crabronini); Hellén, 1923:60 (recorded from Finland), 1931b:65 (recorded from Finland); Pulkkinen, 1931:136 (in revision of Sphecidae of Finland); Forsius *in* Forsius and Hellén, 1935:10 (in checklist of Hymenoptera of Finland); de Beaumont, 1945:480 (first record from Switzerland); Zavadil *in* Zavadil and Šnoflak, 1948:120, 121 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); Leclercq, 1954c:250 (in catalog of world Crabronini); Móczár, 1958b:199 (Romania: Băile Herculane, as Herkulesfürdő); de Beaumont, 1964c:135 (in Sphecid Fauna of Switzerland); Oehlke, 1970:770 (not recorded from Democratic Germany); Balthasar, 1972:85 (in Sphecid Fauna of Czechoslovakia, may be expected in the country); Leclercq, 1975b:3 (France: Basses Alpes); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Lomholdt, 1976:295 (in Sphecid Fauna of Fennoscandia and Denmark); Marshakov, 1977:864 (in key to *Crabro* of USSR); Pulawski, 1978:267 (in key to Sphecidae of European part of former USSR); Jacobs and Oehlke, 1990:193 (not known from Democratic Germany); Nemkov, 1990c:84 (Russia: Kamchatka); Dollfuss, 1991:164 (in key to Sphecidae of North and Central Europe); Pagliano, 1991b:333, 335 (in key to Italian Crabroninae); Bitsch and Leclercq, 1993:75 (in revision of western European Crabroninae); Leclercq, 1993c:13 (references to publications); Leclercq and Barbier, 1993:10 (map of distribution in France); Vernier, 1994:96 (Switzerland: Swiss Plateau: Sense valley); Nemkov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:444, 446 (in key to Sphecidae of Russian Far East); Schmidt and Schmid-Egger, 1997:8 (in Germany known only from Bavaria); Blösch, 2000:320 (in Sphecid Fauna of Germany); Mokrousov, 2000a:24 (Russia: Nizhniy Novgorod Oblast': Kerzhenskiy Nature Reserve), 2000b:31 (Russia: Nizhniy Novgorod Oblast') 32 (Nizhniy Novgorod Oblast' is southernmost area of its distribution in Eastern Europe); Ohl et al., 2001:138 (distribution in Germany by provinces); Mokrousov, 2002:149 (Russia: Nizhniy Novgorod Oblast': Kerzhenskiy Nature Reserve); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:64 (in catalog of wasps and bees of Bayern, Germany); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:195 (Germany: Bayern: extinct or no longer collected); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:355 (in catalog of Polish Crabronidae); Wiśniowski, 2004:48 and 62 (in checklist of Polish Sphecidae); Baghirov, 2007:93 (Russia: southwestern Siberia); Jacobs, 2007:145, 147 (in key to Crabronidae of Germany); Nemkov, 2008b:22 (in catalog of Crabronidae of Asiatic Russia); Bitsch and Leclercq, 2009:216 (in supplement to vol. I of Faune de France, 1993: now known from Poland, not found in Switzerland after 1933 and in France since 1966 in Alpes-de-Haute-Provence: Annot); Humala and Polevoi, 2009:63 (Russia: Republic of Karelia east of Lake Onega: River Koloda); Nemkov, 2009b:113 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Mokrousov, 2010a:61 (Russia: Nizhniy Novgorod Oblast': no specific localities), 2010b:100 (Russia: Nizhniy Novgorod Oblast': no specific localities); Nemkov, 2010a:16 (Russia: first record from Primorskiy Krai: Lazovskiy Nature Reserve); Rudoiskatel', 2010:158 (Russia: central Ural Mountains); Schmid-Egger, 2010a:14 (in red list of Aculeata of Germany: extremely rare); Nemkov, 2011:94 (in Russian Far East occurring only in Kamchatka and Primorskiy Krai); Baghirov, 2011b:144 (Russia: Altayskiy Krai: Savvushka); Schmid-Egger, 2011c:555 (may occur in Austria: Tirol: Tiroler Lech Nature Park); Boillat, 2012:225 (Switzerland: in checklist of insects of Canton de Genève); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); Wiśniowski

and Szczepko, 2013:27 (Poland: Kampinos National Park near Warszawa); Bitsch, 2014:400 (recent records from Germany and Poland reported); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

43. *jordanicus* Guichard

Crabro jordanicus Guichard, 1991a:340, ♀, ♂. Holotype: ♂, Jordan: 80 km north of Aqaba (J. Gusenleitner coll., Linz). – Leclercq, 1993c:14 (a paratype deposited in Gembloux); Dollfuss, 2004b:763 (Syria: 50 km south of Homs, Maalula).

44. *korbi* (Kohl)

Thyreopus korbi Kohl, 1883:177, ♀, ♂ (as *Korbi*, incorrect original capitalization). Syntypes: Spain: Chiclana, Gibraltar (NHMW). – As *Crabro korbi*: Kohl, 1888c:579 (new combination, in revision of *Crabro*, as section *Thyreopus* of *Crabro*); Dalla Torre, 1897:606 (in catalog of world Sphecidae); Antiga and Bofill, 1904:24 (Spain: Cataluña Province); Kohl, 1915:177 (in revision of Palearctic Crabronini); Giner Marí, 1943a:239 (in Sphecidae Fauna of Spain); Leclercq, 1954c:250 (in catalog of world Crabronini); Ceballos, 1956:394 (in catalog of Sphecidae of Spain, as *korbi*), 1959:231 (in supplement to catalog of Spanish Sphecidae); Leclercq, 1960c:419 (locality records from Spain); de Beaumont, 1962b:28 (Spain); Ceballos, 1964:94 (in supplement to catalog of Spanish Sphecidae); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:864 (in key to *Crabro* of USSR, as *korbyi*); Gayubo, 1982b:27 (Spain: Cáceres: Hervás), 1882e:105 (Spain: Cádiz Province), 1984b:94 (Spain: Salamanca Province), 1985c:170 (Spain: Cádiz: San Roque; Valladolid: Traspinedo); Gayubo and Sanza, 1986:67 (Spain: Burgos); Dollfuss, 1989:9 (type material in NHMW); Gayubo, Asís, and Tormos, 1990b:76 (Spain: Salamanca Province); Bitsch and Leclercq, 1993:75 (in revision of western European Crabroninae); Leclercq, 1993c:14 (collecting localities from Spain); Leclercq and Barbier, 1993:11 (map of distribution in France); Dollfuss, 2004b:763 (Spain); González, Gayubo, Asís, and Tormos, 2009:625 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park).

45. *lacteipennis* Rohwer

Crabro lacteipennis Rohwer, 1909c:150, ♀. Holotype or syntypes: ♀, USA: origin unknown, perhaps Colorado: Denver (USNM). – Krombein in Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:248 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:246 (in revision of Nearctic *Crabro*); Krombein, 1979b:1673 (in catalog of North American Hymenoptera); Amarante, 2002:24 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:663 (in checklist of Mexican Sphecidae); Leclercq, 2008b: 81 (bibliographic references, Colorado: Sagach County: 14 mi. northeast of Saguache).

46. *lapponicus* Zetterstedt

Crabro lapponicus Zetterstedt, 1838:433, ♀. Syntypes: Norway: Lappland: Bossekop, Altdeidet, and Talvig (Lund). – Dahlbom, 1839:69 and 1839-40 (in revision of Scandinavian Crabronini), 1842a:15 (in review of Scandinavian aculeates), 1845:363 (in revision of Sphecidae and Pompilidae), 526 (in key to *Crabro*); Wissmann, 1849:16 (Germany: Kingdom of Hannover: Klausthal); F. Smith, 1856:415 (in catalog of Hymenoptera in British Museum); Schenck, 1861:157 (redescription, in Germany according to Dahlbom); A. Morawitz, 1864:456 (Russia: Sankt-Petersburg); Schenck, 1867a:351 (known from Germany); Thomson, 1870:169 (in revision of Swedish Crabroninae), 1874:279 (in revision of Hymenoptera of Scandinavia); Siebke, 1880:70 (Norway); Schøyen, 1881:12 (correction to Siebke, 1880); Kohl, 1883e:652 (Switzerland); F. Morawitz, 1893a:114 (Russia: Karelian Isthmus); Dalla Torre, 1897:606 (in catalog of world Sphecidae); Mocsáry, 1897:84 (Kingdom of Hungary: localities are actually in today's Slovakia); Strand, 1898b:96 (Norway), 1901:7 (Norway: Tysfj); Friese, 1902:478 (Norway: Tromsø); Adlerz, 1904:40 (nesting habits); Antiga and Bofill, 1904:24 (Spain: Cataluña Province); Aurivillius, 1904:297 (in revision of Swedish Sphecidae); Schmiedeknecht, 1907:189 (in key to Hymenoptera of Central Europe); Sparre Schneider, 1909:108 (Norway: Troms County, common); Dittrich, 1911b:18 (Germany: Niederschlesien Province: Riesenge-

birge, now Poland: Dolny Śląsk Region: Karkonosze Mts.); Kohl, 1915:186 (in revision of Palearctic Crabronini); Noskiewicz, 1920a:155 (Poland: Tatry Mountains: Toporowa Cyrhla); Lundblad, 1924:23 (Sweden: Lapland: Lycksele); Berland, 1925d:192 (in Sphecidae Fauna of France); Friese, 1926:148 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); Soot-Ryen, 1927:7 (Norway: Dividal, prey: *Symphoromyia crassicornis* Panzer); Barovskij, 1929:148 (Russia: north of Sankt-Petersburg); Gaunitz, 1929:199 (Sweden: Lapland); Schmiedeknecht, 1930:646 (in keys to Hymenoptera of North and Central Europe); Pulkkinen, 1931:136 (in revision of Sphecidae of Finland); Forsius in Forsius and Hellén, 1935:10 (in checklist of Hymenoptera of Finland); Steck, 1935:322 (Switzerland); Zavadil, Šustera, and Bat'a, 1937:157 (in catalog of Sphecidae of Czechoslovakia); Giner Marí, 1943a:240 (in Sphecidae Fauna of Spain); de Beaumont, 1945:480 (occurrence in Switzerland doubtful); Zavadil in Zavadil and Šnoflak, 1948:122 (in key to Sphecidae of Czechoslovakia); Leclercq, 1949a:9 (Norway); Fæster, 1951:458 (distribution in Scandinavia); Zavadil, 1951:85 (Czech Republic: Jeseníky; Slovakia: Tatranska Lomnica); Leclercq, 1954c:246 (in catalog of world Crabronini), 314 (nest and prey records); Scobiola, 1954:884 (first record from Romania: Bucegilor); Ceballos, 1956:394 (in catalog of Sphecidae of Spain); Zirngiebl, 1957:175 (possibly occurring in Germany: Rheinland-Pfalz: Pfalz region); Móczár, 1958b:199 (Hungary: list of collecting localities); Ceballos, 1959:231 (in supplement to catalog of Spanish Sphecidae); Wolf, 1959b:34 (known from Germany, but not from Nassau); Leclercq, 1960c:420 (Spain: Cataluña: Sierra de Nuria); Noskiewicz and Puławski, 1960:139, 140 (in key to Polish Sphecidae); Valkeila, 1962b:68 (southwestern Finland); Valkeila, Brander, and Käpylä, 1963:42 (Finland: historical region Lounais-Hämeen = southwest Häme); Ceballos, 1964:94 (in supplement to catalog of Spanish Sphecidae); Oehlke, 1970:770 (Democratic Germany); Tumšs and Maršakovs, 1970:25 (Latvia); Balthasar, 1972:86 (in Sphecidae Fauna of Czechoslovakia); Niedl and Deneš, 1972:153 (Czech Republic: Třeboň area); Scobiola-Palade, 1972b:255 (Romania); Lomholdt, 1974:201 (map of distribution in Fennoscandia and Denmark); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Lomholdt, 1976:296 (in Sphecidae Fauna of Fennoscandia and Denmark); Marshakov, 1977:871 (in key to *Crabro* of USSR); Pulawski, 1978:266, 267 (in key to Sphecidae of European part of former USSR); Nemkov, 1986:104 (Russia: Irkutsk Oblast); Vikberg, 1986:77 (Finland); Pádr in Šedivý, 1989a:170 (in checklist of Czechoslovakian Sphecidae); Weiffenbach, 1989:108 (Germany: Hessen: Gießen area); Jacobs and Oehlke, 1990:195 (no new records from Democratic Germany); Day, 1991:xiv (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:164 (in key to Sphecidae of North and Central Europe); Bitsch and Leclercq, 1993:71 (in revision of western European Crabroninae); Leclercq, 1993c:14 (Norway, Sweden, Poland: Zakopane); Leclercq and Barbier, 1993:12 (map of distribution in France); Pádr and Lukáš, 1994:892 (Slovakia: High Tatra Mountains); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:443, 446 (in key to Sphecidae of Russian Far East); Schmid-Egger, Schmidt, and Doczkal, 1996:376 (Germany: not recorded from Baden-Württemberg, extinct in Bavaria); Celary, 1997:59 (in checklist of Animals of Poland); Schmidt and Schmid-Egger, 1997:8 (in checklist of German Sphecidae); Celary, 1998b:211 (Poland: Babia Góra National Park); Blösch, 2000:320 (in Sphecidae Fauna of Germany); Wiśniowski, 2000:162 (Poland: Bieszczady mountains); Ohl et al., 2001:138 (distribution in Germany by provinces); Gusenleitner, 2002:1125 (Austria: Kärnten south of Oberschütt); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:64 (: in catalog of wasps and bees of Bayern); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:197 (Germany: Bayern: probably endangered); Dollfuss, 2004b:763 (Czech Republic, Slovakia); Skibińska in Bogdanowicz, Chud-zicka, Pilipiuk, and Skibińska, 2004:355 (in catalog of Polish Crabronidae); Stolle et al., 2004:371 (Germany: Sachsen-Anhalt: found before 1926); Wiśniowski, 2004:48 and 62 (in checklist of Polish Sphecidae); Burger, 2005:31 (Germany: Thüringen); Jacobs, 2007:145, 146 (in key to Crabronidae of Germany); Pettersson, Hellqvist, and Gabriellsson, 2007:7 (Sweden: Västerbotten: Ammarnäs); Vepřek and Straka, 2007:204 (in catalog of Sphecidae of Czech Republic and Slovakia); Ljubomirov and Ban-Calefariu, 2008:205 (Romania: Maramureş District: Repedea); Nemkov, 2008b:22 (in catalog of Crabronidae of Asiatic Russia); Bitsch and Leclercq, 2009:216 (in supplement to vol. I of Faune de France, 1993: now known from Austria, Czech Republic, and Slovakia); U. Frommer, 2009a:31 (Germany: not occurring in Hessen); Nemkov, 2009b:112 (in new catalog of Sphecidae and Crabronidae of Asiatic

Russia); Schmid-Egger, 2010a:14 (in red list of Aculeata of Germany: extremely rare); Straka, Dvořák, and Bogusch, 2009:258 (Czech Republic: Rašeliniště National Nature Reserve); Tischendorf, Frommer, Flügel et al., 2011:57 (Germany: Hessen: strongly endangered); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); Bitsch, Grouet, and Savina, 2013:291 (France: Pyrénées centrales: département d'Ariège: col de Pailhères), 292 (taxonomic history, morphological characteristics, nesting habits); Bitsch, 2014:400 (recent record from France discussed); Hellqvist, Abenius, and Norén, 2014:91 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Stolle and Saure, 2016:921 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Antropov, 2017b:226 (in catalog of Crabroninae of Russia). – **As *Anothyreus lapponicus***: Taschenberg, 1858:111 (new combination, in key to Sphecidae of Germany); Kirchner, 1867:225 (in catalog of European Hymenoptera); Westerland, 1893:27 (Russia: Karelian Republic: northern shore of Lake Ladoga); Rudow, 1896:329 (Germany: Brandenburg: no specific locality); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Adlerz, 1910:57 (Sweden; nesting habits); Strand, 1910d:340 (Norway: Grönlien); Kolubajiv, 1938:25 (Czechoslovakia: Slovakia: Vysoké Tatry = High Tatra); Schneid, 1941:1027 (Germany: Bayern: Bamberg area); Zavadil, 1946:8 (Czechoslovakia: Beskid in Ostrava area); Casolari and Casolari Moreno, 1980:118 (specimens in M. Spinola collection, Torino); Pagliano, 2011a:147 (specimens in coll. Spinola, Torino, are *Crabro lapponicus*).

Crabro biguttatus F. Morawitz, 1892:163, ♀. Lectotype: ♀, Russia: Siberia: Krasnoyarskiy Krai: Minussinsk (ZIN), designated by Marshakov, 1977:871. Synonymized with *Crabro lapponicus* by Marshakov, 1977:859. – Dalla Torre, 1897:584 (in catalog of world Sphecidae); Kohl, 1915:189 (original description copied); Leclercq, 1954c:246 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae).

47. *largior* W. Fox

Crabro largior W. Fox, 1895a:161, ♀, ♂. Lectotype: ♀, USA: Nevada: no specific locality (ANSP), designated by Cresson, 1928:54. – Dalla Torre, 1897:606 (in catalog of world Sphecidae); H. Smith, 1908b:400 (in revision of Nebraskan Sphecidae); Rohwer, 1917a:243 (California: Tahoe); Mickel, 1918b:383 (in catalog of Nebraskan Sphecidae); Krombein in Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:254 (in catalog of world Crabronini); Evans, 1970:491 (Wyoming: Jackson Hole); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:269 (in revision of Nearctic *Crabro*); Evans, 1978:33 (Wyoming: Jackson Hole; preying on tachina flies); Evans, Kurczewski, and Alcock, 1980:874 (nesting habits); Finnamore, 1988:863 (Canada: Yukon Territory); Spofford, Kurczewski, and Downes, 1989:256, 259 (references to publications on nest parasites *Metopia argyrocephala* (Meigen) and *Senotainia trilineata* (Wulp), miltogrammine flies); Finnamore, 1997:890 (Canada: Yukon); Leclercq, 2008b:81 (bibliographic references, locality records from California and Oregon). – **As *Thyreopus largior***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

48. *latipes* F. Smith

Crabro gryphus Harris, 1835:68, nomen nudum. Synonymized with *Crabro latipes* by Packard, 1867:477.

Crabro latipes F. Smith, 1856:396, ♂. Holotype or syntypes: ♂, Canada: Nova Scotia: no specific locality (BMNH). – Cresson, 1962:236 (in catalog of North American Hymenoptera), 1865b:477 (specimens in ANSP collection); Packard, 1867:355 (in revision of North American Sphecidae); Provancher, 1882:132 and 1883b:665 (in revision of Canadian Hymenoptera); Kohl, 1888c:585 (in list of Nearctic *Crabro*); W. Fox, 1895a:169 (in revision of North American Crabronini); Kincaid, 1900a:357 (USA: Washington); Rohwer, 1908b:246 (Colorado), 259 (in key to *Crabro* of Colorado and New Mexico); H. Smith, 1908b:400 (in revision of Nebraskan Sphecidae); Rohwer, 1916b:670, 671 (in catalog of Hymenoptera of Connecticut), 1917a:243 (California: Placer County: Summit); Mickel, 1918b:383 (in catalog of Nebraskan Sphecidae); Carter, 1925:131 (Canada: Alberta: Lethbridge); Rohwer in Viereck, 1925:670, 671 (in key to Sphecidae of Connecticut); Krombein in Muesebeck et al., 1951:1018 (in catalog of North American Hymenoptera); Leclercq, 1954c:255 (in catalog of world Crabronini), 315 (nest and prey records); Krombein, 1955a:17 (prey: *Musca domestica* Linnaeus); Kurczewski and Acciavatti, 1968:199 (review of

nesting habits); Kurczewski, Burdick, and Gaumer, 1969b:152 (nesting habits); Evans, 1970:491 (Wyoming: Jackson Hole); Horning and Barr, 1970:106 (USA: Idaho: Craters of the Moon National Monument); Steiner, 1973:28 (Canada: Northwest Territories, Yukon Territory); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:269 (in revision of Nearctic *Crabro*); Krombein, 1979b:1675 (in catalog of North American Hymenoptera, nesting site, list of prey); Leclercq, 1981e:78 (Mexico: Oaxaca); Finnamore, 1982:169 (in Sphecidae Fauna of Southern Quebec); Steiner, 1982b:183 (in females, hunting periods alternate with basking periods); Finnamore, 1988:863 (Canada: Yukon Territory); Kurczewski and Acciavatti, 1990:61 (New York: Cayuga County); Finnamore, 1997:890 (Canada: Yukon); Kurczewski, 1998d:250 (pine barrens in upstate New York); Amarante, 2002:24 (in catalog of Neotropical Crabronidae); Buck, 2004:26 (Canada: in checklist of Crabronidae of Ontario); Dollfuss, 2004b:763 (Canada: Ontario: Toronto; USA: Colorado: Roosevelt National Forest); Leclercq, 2008b:76, 77 (in improved key to North American *Crabro*), 81 (bibliographic references, locality records from Canada and USA); Ratzlaff, 2016:25 (Canada: British Columbia: from R. Bohart, 1979, Krombein, 1979, and Leclercq, 2008). – **As *Thyreopus latipes***: Cresson, 1887:286 (new combination, in catalog of North American Hymenoptera); Ashmead, 1890:31 (in checklist of Hymenoptera of Colorado), 1899d:217 (in checklist of North American Crabronidae); Harrington, 1902:219 (Canada: Ontario: Ottawa). – **As *Solenius latipes***: J.Ch. Bradley, 1928:1020 (new combination, in catalog of New York Sphecidae). – **As *Pemphilis latipes***: Strickland, 1947:128 (new combination, Canada: Alberta).

Crabro vicinus Cresson, 1865b:479, ♀. Lectotype: ♀, USA: Colorado Territory: no specific locality (ANSP), designated by Cresson, 1916:103. Synonymized with *Crabro latipes* by R. Bohart, 1976:269. – Cresson, 1887:285 (in catalog of North American Hymenoptera); Ashmead, 1890:32 (in checklist of Hymenoptera of Colorado, as *vicinus*); W. Fox, 1895a:170 (in revision of North American Crabronini); Dalla Torre, 1897:636 (in catalog of world Sphecidae); Kincaid, 1900a:357 (USA: Washington: Olympia, Seattle; Oregon: Corvallis, Newport); Ashmead, 1902:132 (Alaska: Kukak Bay); Rohwer, 1908b:245 (Colorado, as *vincus*), 258 (in key to *Crabro* of Colorado and New Mexico, as *vincus*); H. Smith, 1908b:400 (in revision of Nebraskan Sphecidae); Rohwer, 1917a:243 (California: Eldorado County: Tahoe; Placer County: Summit); Mickel, 1918b:383 (in catalog of Nebraskan Sphecidae); Krombein in Muesebeck et al., 1951:1018 (in catalog of North American Hymenoptera); Leclercq, 1954c:255 (in catalog of world Crabronini). – **As *Thyreopus vicinus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae); Kincaid, 1900b:508 (Alaska: Kukak Bay); Ashmead, 1910:138 (Alaska: Kukak Bay).

Thyreopus coloradensis Packard, 1867:356, ♂. Lectotype: ♂, USA: Colorado: no specific locality (ANSP), designated by Cresson, 1928:53. Synonymized with *Crabro latipes* by W. Fox, 1895a:169, 170. – Cresson, 1887:286 (in catalog of North American Hymenoptera); Kohl, 1888c:584 (in list of Nearctic *Crabro*); Ashmead, 1890:31 (in checklist of Hymenoptera of Colorado); Snow, 1906:9 (Arizona: Humphrey's Peak).

Crabro elongatus Provancher, 1888:293, ♂. Lectotype: ♂, Canada: Quebec: Cap Rouge (depository not located: Gahan and Rohwer, 1918:199). Synonymized with *Crabro latipes* by R. Bohart in R. Bohart and Menke, 1976:408. – W. Fox, 1895a:208 (original description translated into English); Krombein in Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:254 (in catalog of world Crabronini).

Crabro canadensis Dalla Torre, 1897:585. Unnecessary substitute name for *Crabro elongatus* Provancher, incorrectly interpreted as homonym of *elongatulus* Vander Linden, 1829.

Crabro pratus Carter, 1925:133, ♀. Holotype: ♀, Canada: Alberta: Chin (CNC). Synonymized with *Crabro latipes* by R. Bohart in R. Bohart and Menke, 1976:408. – Krombein in Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:249 (in catalog of world Crabronini); Sarazin, 1986:306 (holotype in CNC). – **As “*Solenius*” *pratus***: Strickland, 1947:128 (new combination, Canada: Alberta: Lethbridge).

49. *leopardus* R. Bohart

Crabro leopardus R. Bohart, 1976:270, ♂, ♀. Holotype: ♂, USA: California: Nevada County: Sagehen Creek (UCD). – Leclercq, 2008b:82 (bibliographic references).

50. *loewi* Dahlbom

Crabro loewi Dahlbom, 1845:368, ♂ (as *Loewi*, incorrect original capitalization). Syntypes: ♂, Germany: Posen, now Poland: Poznań (Lund). – Dahlbom, 1845:527 (in key to *Crabro*); F. Smith, 1856:414 (in catalog of Hymenoptera in British Museum); Schenck, 1857:124 (in revision of fossorial wasps of Germany); Taschenberg, 1866:172 (in revision of Hymenoptera of Germany); Schenck, 1867a:351 (known from Germany); Thomson, 1870:175 (in revision of Swedish Crabroninae, as *Loeui*); Kohl, 1893a:24 (Austria: Niederösterreich: Leithagebirge, redescription); Dalla Torre, 1897:609 (in catalog of world Sphecidae, as *löwei*); Schmiedeknecht, 1907:190, 191 (in key to Hymenoptera of Central Europe); Kohl, 1913b:16 (Russia: Voronezh Oblast': Valuyki at 50°14'N 38°08'E, as *Löwi*), 1915:182 (in revision of Palearctic Crabronini, as *Löwi*); O. Meyer, 1919:148 (Germany: Posen Province: Strelau, now Poland: Poznań Region); A. Wagner, 1920:44 (can be expected in Germany: Lower Elbe region); Schmiedeknecht, 1930:647, 648 (in keys to Hymenoptera of North and Central Europe); Kuntze and Noskiewicz, 1938:406 (Poland: Lwów, now Ukraine: Lviv, also known from more northern parts of Poland, as *Löwi*); Balthasar, 1945:114 (first record from Czech Republic: southeastern Morava: Mutěnice); Zavadil in Zavadil and Šnoflak, 1948:120, 121 (in key to Sphecidae of Czechoslovakia); Noskiewicz and Chudoba, 1949:412 (Poland: Dolny Śląsk: Sułów); Balthasar, 1950:37 (incorrectly given as unknown from Czechoslovakia by Zavadil and Šnoflak, 1948); Leclercq, 1954c:247 (in catalog of world Crabronini, as *löwei*); Móczár, 1958a:265 (in annotated catalog of Hungarian Crabronini, as *löwei*), 1958b:199 (Hungary: list of collecting localities); Wolf, 1959b:34 (Germany: Nassau, as *löwei*); Noskiewicz and Puławski, 1960:139, 141 (in key to Polish Sphecidae); Schmidt, 1969:166 (Germany: Rhein-Main area: Mainzer Sand; record by Wolf, 1959, is wrong determination); Oehlke, 1970:771 (Democratic Germany); Schmidt, 1971b:47 (Germany: Rheinland-Pfalz: Mainzer Sand, map of distribution); Balthasar, 1972:83 (in Sphecid Fauna of Czechoslovakia); Leclercq, 1975b:3 (France: possible in Brittany); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:870 (in key to *Crabro* of USSR); Pulawski, 1978:267 (in key to Sphecidae of European part of former USSR); Preuss, 1980a:23 (Germany; endangered, nesting in dry soils); Heath and Leclercq, 1981: map 18 (distribution in Europe); Skibińska, 1982:120, 124 (Poland: Warszawa, as *loewi*); Chevin, 1983:301 (France: La Manche Department); Dollfuss, 1983a:76 (Austria: endangered in Niederösterreich,), 77 (endangered in Burgenland, Austria), 1983b:17 (in catalog of Sphecidae of Austria: Wien, Burgenland); Nemkov, 1986:104 (previously recorded from Lake Baikal area); Skibińska, 1986b:174 (Poland: Warszawa: housing estates, as *loewi*); Schmidt and Westrich, 1987:372 (Germany: Mainz area); Chevin, 1988:15 (France: La Manche Department); Pádr in Šedivý, 1989a:170 (in checklist of Czechoslovakian Sphecidae); Jacobs and Oehlke, 1990:195 (no new records from Democratic Germany); Nemkov, 1990c:84 (Russia: Chita Oblast': 42 km southwest of Borzi); Day, 1991:xiv (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:164 (in key to Sphecidae of North and Central Europe); Bitsch and Leclercq, 1993:81 (in revision of western European Crabroninae); Leclercq, 1993c:14 (references to recent publications); Leclercq and Barbier, 1993:13 (map of distribution in France); Dollfuss, 1994:97 (endangered in Austria); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:443, 446 (in key to Sphecidae of Russian Far East); Schmid-Egger, Risch, and Niehuis, 1995:17 (summary of records from Germany: Rheinland-Pfalz State); Schmid-Egger, Schmidt, and Doczkal, 1996:376 (Germany: not recorded from Baden-Württemberg: endangered, extinct in Rheinland-Pfalz); Celary, 1997:59 (in checklist of Animals of Poland); Schmidt and Schmid-Egger, 1997:8 (in checklist of German Sphecidae); Dollfuss, Gusenleitner, and Bregant, 1998:516 (Austria: Burgenland: Leithagebirge, last collected in 1888); Blösch, 2000:320 (in Sphecid Fauna of Germany); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia); Ohl et al., 2001:137 (distribution in Germany by provinces); Zettel, Gross, and Mazzucco, 2001:77 (Austria: Wien); Kazenas, 2002a:104 (geographic distribution, collecting localities in Kazakhstan); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:64 (in catalog of wasps and bees of Bayern, Germany); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:195 (Germany: Bayern: extinct or no longer collected); Skibińska in Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:355 (in catalog of Polish Crabronidae); Wiśniowski, 2004:48 and 62 (in checklist of Polish Sphecidae); Hua, 2006:278 (in list of Chinese insects, geo-

graphic distribution); Chevin, Livory, Lair, Sagot, and Baldock, 2007:19 (France: Département de la Manche); Jacobs, 2007:145, 146 (in key to Crabronidae of Germany); Saure, 2007:81 (in checklist of Aculeata of Brandenburg Land, Germany); Vepřek and Straka, 2007:204 (in catalog of Sphecidae of Czech Republic and Slovakia, known only from Moravia); Nemkov, 2008b:23 (in catalog of Crabronidae of Asiatic Russia); Bitsch and Leclercq, 2009:216 (in supplement to vol. I of Faune de France, 1993: rediscovered in place recorded by Chevin, 1983); Nemkov, 2009b:115 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Rudoiskatel', 2010:158 (Russia: southern Ural Mountains); Schmid-Egger, 2010a:14 (in red list of Aculeata of Germany: extinct, last collected in 1967); Baghirov, 2011b:144 (Russia: recorded from Altay by Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995); Józán, 2011:181 (in checklist of Sphecidae s.l. of Hungary); Pagliano, 2011a:149 (as *loevi*, specimens in coll. Spinola, Torino, are *Ectemnius* sp.); Tischendorf, Frommer, Flügel et al., 2011:181 (Germany: never found in Hessen); Kazenas, 2012b:169 (Kazakhstan: Korgalzhin State Nature Reserve), 2013a:93 (color photograph of female, short information on geographic distribution and nesting habits); Antropov, 2017b:226 (in catalog of Crabroninae of Russia). – **As *Ceratocolus loewi***: Ruthe and Stein, 1857:316 (new combination, Germany: Berlin area); Taschenberg, 1858:111 (in key to Sphecidae of Germany: Austria: Wien; Germany: Posen, now Poland: Poznań); Brischke, 1862:107 (Germany: Preussen Province, now Poland: Pomorze Region); Kirchner, 1867:225 (in catalog of European Hymenoptera); Brischke, 1888b:101 (Germany: Preussen Province, now Poland: Pomorze Region); Rudow, 1896:329 (Germany: Brandenburg: no specific locality), 1912:71 (nesting in soil); Casolari and Casolari Moreno, 1980:118 (specimens in M. Spinola collection, Torino, as *loevi*); Pagliano, 2011a:149 (as *loevi*, specimens in M. Spinola, collection Torino, are *Ectemnius* sp.); Kazenas, 2013a:93 (color photograph of female, short information on geographic distribution and nesting habits). – **As *Thyreopus loewi***: Schirmer, 1912:164 (new combination, Germany: Berlin area); Noskiewicz, 1918:138 (Galicia, now western Ukraine: Hołosko near Lwów).

Crabro jaroszewskyi F. Morawitz, 1892:164, ♀ (as *Jaroszewskyi*, incorrect original capitalization). Lectotype: ♀, Ukraine: Kharkov area: Kuriash monastery (ZIN), designated by Marshakov, 1977:859. Synonymized with *Crabro loewi* by Kohl, 1913b:16. – F. Morawitz, 189bb:169 (description of ♂); Dalla Torre, 1897:604 (in catalog of world Sphecidae).

51. *maeklini* A. Morawitz

Crabro maeklini A. Morawitz, 1866a:262, ♂ (as *Mäklini*, incorrect original capitalization and diacritic mark). Syntypes: Russia: Siberia: Okhotsk (ZIN). – Dalla Torre, 1897:610 (in catalog of world Sphecidae); Friese, 1902:478 (Norway: Saltdalen at 67°N); Sparre Schneider, 1909:108 (Norway: Nordlands: Saltdalen); Kohl, 1915:188 (in revision of Palearctic Crabronini); Soot-Ryen, 1927:7 (Norway: Karasjok); Hellén, 1931:5 (first record from Finland); Pulkkinen, 1931:137 (in revision of Sphecidae of Finland); Merisuo, 1932:90 (description of nest, list of prey); Forsius *in* Forsius and Hellén, 1935:10 (in checklist of Hymenoptera of Finland); Hellén, 1936:57 (recorded from Finland); Fæster, 1951:458 (distribution in Scandinavia); Leclercq, 1954c:246 (in catalog of world Crabronini), 314 (nest and prey records); Tsuneki, 1972a:149 (Mongolia); Lomholdt, 1974:200 (map of distribution in Fennoscandia and Denmark); Marshakov, 1975b:332 (Mongolia); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Lomholdt, 1976:297 (in Sphecid Fauna of Fennoscandia and Denmark); Marshakov, 1977:871 (in key to *Crabro* of USSR); Pulawski, 1978:266, 267 (in key to Sphecidae of European part of former USSR); Nemkov, 1986:104 (previously recorded from Lake Baikal area); Vikberg, 1986:77 (Finland); Dollfuss, 1991:164 (in key to Sphecidae of North and Central Europe); Bitsch and Leclercq, 1993:72 (included in revision of western European Crabroninae); Leclercq, 1993c:14 (Sweden: Abisko); Nemkov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:443, 444 (in key to Sphecidae of Russian Far East); Voblenko, Gorobchishin, and Nesterov, 1996:15 (Ukraine: Polesye Region); Esenbekova and Kazenas, 2000:51 (southeastern Kazakhstan: no specific locality); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia); Kazenas and Esenbekova, 2001:135 (Kazakhstan: Almatinskiy Nature Reserve); Kazenas, 2002a:104 (geographic distribution, collecting localities in Kazakhstan); Gorobchishin, 2006:130 (Ukraine: Kyiv); Kazenas, 2008a:104 (southeastern Kazakhstan: 3 km south of Talgar); Nemkov,

2008b:22 (in catalog of Crabronidae of Asiatic Russia), 2009b:112 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Rudoiskatel', 2010:157 (Russia: recorded from central Ural Mountains); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); Hellqvist, Abenius, and Norén, 2014:91 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Antropov, 2017b:226 (in catalog of Crabroninae of Russia). – **As *Anothyreus mäklini***: Hellén, 1955a:128 (new combination, Finland: Lemmenjoki).

Crabro maeklini A. Morawitz, 1866b:335 (as *Mäklini*, incorrect original capitalization and diacritic mark). Objective synonym of *Crabro maeklini* A. Morawitz, 1866a:262.

52. *malyshevi* L. Ahrens

Crabro malyshevi L. Ahrens, 1933:30, ♂, ♀. Syntypes: Russia: Borisovka on Vorskla (ZIN, lost?). – Leclercq, 1954c:247 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:870 (in key to *Crabro* of USSR); Pulawski, 1978:267 (in key to Sphecidae of European part of former USSR); Dollfuss, 1991:164 (in key to Sphecidae of North and Central Europe); Leclercq, 1993c:14 (known from Russia: Kursk and Chita); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:443, 446 (in key to Sphecidae of Russian Far East); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:104 (geographic distribution, collecting localities in Kazakhstan); Nemkov, 2008b:23 (in catalog of Crabronidae of Asiatic Russia), 2009b:115 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Prisniy, 2012:49 (Russia: Belgorod Oblast'); 2013a:93 (color photograph of female, short information on geographic distribution and nesting habits); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

53. *marshakovi* Kazenas

Crabro marshakovi Kazenas, 1984b:1272, ♀ (spelled *marschakovi*, but *marshakovi* in explanation of figure and in English summary on p. 1273, and dedicated to V.G. Marshakov). Holotype: ♀, eastern Kazakhstan: 25 km north of Rybachye in Alakul Depression (ZIN). – Kazenas, 1986:238 (rare in Kazakhstan, needs protection), 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:104 (geographic distribution, collecting localities in Kazakhstan).

54. *mocsaryi* Kohl

Crabro mocsaryi Kohl, 1915:166, ♂ (as *Mocsáryi*, incorrect original capitalization and diacritic mark). Syntypes: Tajikistan: Mount Alai, now Pik Lenina and Sary-pul, ca 100 km northeast of Kulab (TMB). – Bischoff, 1930:219 (Tajikistan: Pamir); Gussakovskij, 1930b:75 (Tajikistan: Pamir); Leclercq, 1954c:252 (in catalog of world Crabronini); Kazenas, 1971:161 (in Kazakhstan found only in southeastern mountains, an endemic of Tien Shan Range), 1972b:168 (Kazakhstan); Marshakov, 1975b:332 (Mongolia); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:859, 870 (in key to *Crabro* of USSR); Tsuneki, 1984e:59 (Kazakhstan or Mongolia: Alai Mts.); Islamov, 1986:530 (Uzbekistan: Taskhent Oblast': Bolshoy Chimgan); Dollfuss, 1989:9 (type material in NHMW); Esenbekova and Kazenas, 2000:52 (southeast Kazakhstan: no specific locality); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia); Kazenas and Esenbekova, 2001:135 (Kazakhstan: Almatinskiy Nature Reserve); Kazenas, 2002a:104 (geographic distribution, collecting localities in Kazakhstan); Dollfuss, 2004b:763 (Kyrgyzstan); Kazenas, 2004b:108 (Kazakhstan: western Tien Shan); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

55. *mongolicus* Tsuneki

Crabro tricolor Gussakovskij, 1938:14, ♀, junior primary homonym of *Crabro tricolor* F. Smith, 1856. Lectotype: ♀, China: Inner Mongolia: no specific locality (ZIN), designated by Marshakov, 1975b:333. – Leclercq, 1954c:247 (in catalog of world Crabronini); Marshakov, 1975b:333 (Mongolia).

Crabro mongolicus Tsuneki, 1959c:195, ♀. Holotype: ♀, China: Inner Mongolia: Apaka (originally K. Tsuneki coll., now USNM). Synonymized with *Crabro tricolor* Gussakovskij by Marshakov, 1977:858. – Tsuneki, 1971m:35 (China: Inner Mongolia: Apaka); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov,

1980b:329 and 330 (in key), 331 (redescription); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Hua, 2006:278 (in list of Chinese insects, geographic distribution).

Crabro gussakovskiji R. Bohart in R. Bohart and Menke, 1976:408. Substitute name for *Crabro tricolor* Gussakovskij, 1938. Synonymized with *Crabro mongolicus* by Marshakov, 1980b:331.

56. *monticola* (Packard)

Thyreopus monticola Packard, 1867:367, ♀. Holotype or syntypes: ♀, USA: New Hampshire: Pinkham Notch (ANSP). – Provancher, 1882:130 and 1883b:663 (in revision of Canadian Hymenoptera); Cresson, 1887:286 (in catalog of North American Hymenoptera); Ashmead, 1899d:217 (in checklist of North American Crabronidae). – **As *Solenius monticolus*** [sic]: J.Ch. Bradley, 1928:1020 (new combination, in catalog of New York Sphecidae). – **As *Pemphilis monticola***: Strickland, 1947:128 (new combination, Canada: Alberta: Red Deer). – **As *Crabro monticola***: Kohl, 1888c:585 (new combination, in list of Nearctic *Crabro*); W. Fox, 1895a:163 (in revision of North American Crabronini, as *monticolus*); Dalla Torre, 1897:611 (in catalog of world Sphecidae); Rohwer, 1916b:670, 671 (in catalog of Hymenoptera of Connecticut); Rohwer in Viereck, 1925:670, 671 (in key to Sphecidae of Connecticut); Krombein in Muesebeck et al., 1951:1018 (in catalog of North American Hymenoptera); Leclercq, 1954c:254 (in catalog of world Crabronini); Evans, 1959b:163 (description of larva), 1960:127 (nesting habits); Pechuman, 1963:218 (tabanid prey); Kurczewski and Acciavatti, 1968:199 (review of nesting habits); Elliott and Kurczewski, 1973:80 (Alaska); Evans, 1975a:261 (rapid colonizer of new habitats); R. Bohart, 1976:272 (in revision of Nearctic *Crabro*); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Krombein, 1979b:1675 (in catalog of North American Hymenoptera, nesting sites, list of prey); Evans, Kurczewski, and Alcock, 1980:878 (nesting habits); Alcock, 1982:921 (nest usurpation and sequential nest occupation); Finnamore, 1982:170 (in Sphecid Fauna of Southern Quebec); Radović, 1985:65 (sting apparatus analyzed); Wcislo, 1987:519 (facultative parasitic behavior within otherwise free-living species); Spofford, Kurczewski, and Downes, 1989:256 (nest parasites: *Metopia luggeri* Townsend, *Phrosinella aurifacies* Downes, and *Senotainia trilineata* (Wulp), miltogrammine flies, 257 (references to publications on nest parasites *Metopia argyrocephala* (Meigen) and *Phrosinella fulvicornis* (Coquillett), miltogrammine flies); Spofford and Kurczewski, 1990:746, 748 (nest parasites: *Metopia luggeri* (Townsend), *Phrosinella aurifacies* Downes, and *Senotainia trilineata* (Van der Wulp), Sarcophagidae, 1992:999 (species of miltogrammine parasites listed), 1002 (counter-cleptoparasitic habits: diversionary flight); Byers, Nalepa, Bloemers, and Dusenbury, 1993:8 (nest and prey); Finnamore, 1997:894 (expected to occur in Yukon); Kurczewski, 1998d:250 (pine barrens in upstate New York); Melo, 2000:89 (nest usurpation); Kurczewski, 2003a:425 (nesting habits); Buck, 2004:26 (Canada: in checklist of Crabronidae of Ontario); Leclercq, 2008b:77 (in improved key to North American *Crabro*), 82 (bibliographic references, locality records from Maine and Massachusetts); Ratzlaff, 2016:25 (Canada: British Columbia: from Buck, 2004).

57. *nigriceps* R. Bohart

Crabro nigriceps R. Bohart, 1976:256, ♂. Holotype: ♂, Canada: Manitoba: The Pas (UCD). – Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 59 (first record from Ontario: Algonquin National Park); Leclercq, 2008b:82 (bibliographic references).

58. *nigrostriatus* R. Bohart

Crabro nigrostriatus R. Bohart, 1976:256, ♂, ♀. Holotype: ♂, USA: California: El Dorado County (originally UCB, now CAS). – Leclercq, 2008b:82 (bibliographic references); Ratzlaff, 2016:25 (Canada: British Columbia: from R. Bohart, 1976).

59. *nomgoni* Marshakov

Crabro nomgoni Marshakov, 1980b:333, ♂, ♀. Holotype: ♂, Mongolia: Ömnögovi Aymag: 80 km south-southeast of Nomgon (ZIN). – Marshakov, 1980b:329 (in key).

60. *occultus* Fabricius

Crabro occultus Fabricius, 1804:310, sex not indicates. Holotype: ♀, Morocco: Tanger (ZMUC). – Lepeletier de Saint Fargeau and Brullé, 1835:807 (discussion of species identity); Dahlbom, 1844:343 (original description copied), 1845:525 (in key to *Crabro*, unknown to the author); F. Smith, 1856:425 (in catalog of Hymenoptera in British Museum); Kohl, 1915:190 (in revision of Palearctic *Crabronini*); Leclercq, 1949a:9 (Algeria, Tunisia), 1954c:244 (in catalog of world *Crabronini*); van der Vecht, 1961a:69 (study of holotype); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Leclercq, 1993c:14 (Spain, Morocco, Algeria, Tunisia); Dollfuss, 2004b:763 (Algeria, Morocco, Tunisia).

Crabro numidicus Gribodo, 1896:15, ♀, ♂. Lectotype: ♂, Tunisia: Tunis area (Genova), designated by de Beaumont, 1950e:265. Synonymized with *Crabro occultus* by Kohl, 1915:190, synonymy confirmed by de Beaumont, 1950e:265. – Zavattari, 1913a:4 (omitted from Dalla Torre's catalog, 1897); Penati and Mariotti, 2015:12 (reference to unpublished manuscript by Gribodo), 96 (in list of Hymenoptera described by G. Gribodo).

61. *opalescens* R. Bohart

Crabro opalescens R. Bohart, 1976:272, ♂, ♀. Holotype: ♂, USA: 15 mi east of Reno (UCD). – Rust, Hanks, and Bechtel, 1983:406 (Nevada: Churchill County: Sand Mountain); Leclercq, 2008b:82 (bibliographic references, locality records from Arizona, California, and Utah).

62. *pallidus* W. Fox

Crabro pallidus W. Fox, 1895a:163, ♀, ♂. Lectotype: ♀, USA: Montana: no specific locality (ANSP), designated by Cresson, 1928:55. – Dalla Torre, 1897:614 (in catalog of world Sphecidae); Krombein *in* Muesebeck et al., 1951:1018 (in catalog of North American Hymenoptera); Leclercq, 1954c:254 (in catalog of world *Crabronini*); Krombein, 1958f:198 (in supplement to catalog of North American Hymenoptera: Oregon); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Krombein, 1979b:1675 (in catalog of North American Hymenoptera); Finnmore, 1988:863 (Canada: Yukon Territory), 1997:891 (Canada: Yukon); Weissmann and Kondratieff, 1999:78 (Colorado: Great Sand Dunes National Monument); Leclercq, 2008b:78 (in improved key to North American *Crabro*), 82 (bibliographic references, Idaho: Owyhee County: Hotsprings); Ratzlaff, 2016:25 (Canada: British Columbia: from R. Bohart and Leclercq, 2008). – *As Thyreopus pallidus*: Ashmead, 1899d:217 (new combination, in checklist of North American *Crabronidae*).

63. *parmatulus* R. Bohart

Crabro parmatulus R. Bohart, 1976:248, ♂. Holotype: ♂, Mexico: Morelos: Huajitlán (UCD). – Leclercq, 1981e:78 (Mexico); Amarante, 2002:24 (in catalog of Neotropical *Crabronidae*); Leclercq, 2008b:82 (bibliographic references).

64. *peltarius* (Schreber)

Sphex peltarius Schreber, 1784:98, ♀, ♂ (as *peltaria*, incorrect original termination). Syntypes: Germany: Neuwarp, now Poland: Nowe Warpno (depository?). – *As Thyreopus peltarius*: Kohl, 1883b:50 (new combination, in list of European *Thyreopus*), 51 (comparison with *Thyreopus korbi*); Westerlund, 1893:26 (Russia: Karelian Republic: northern shore of Lake Ladoga); Borries, 1897:26 (nesting habits); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Adlerz, 1910:56 (Sweden; nesting habits); Graeffe, 1911:43 (Italy: Trieste area); Adlerz, 1912:60 (nesting habits); Schirmer, 1912:164 (Germany: Berlin area); Lundblad, 1913:212 (Sweden); R. Perkins, 1913b:389, 392 (in key to British *Crabronini*); Dubois, 1919:95 (Belgium: Bruxelles: Uccle); Noskiewicz, 1920b:155 (Poland, now Ukraine: forest district Kopanki near Kałusz); Jansson, 1922:25 (Sweden: Öland Island); Coulon, 1925:124 (France); Hamm and Richards, 1926:308 (summary of nesting habits), 322 (list of prey); Hémon, 1926:200 (France: Finistère: Fouesnant); Minkiewicz, 1934:207 (nesting habits), 1935:196 (Poland: Kazimierz on Wisła, 51°20'N 21°58'E), 216, 220, 222 (Poland: Lake Garbaś 20 km west of Suwałki); Szulczewski, 1950:104 (Poland: Wielkopolski National Park 15 km south of Poznań); Puławski, 1954:105 (Poland: Błędów); Hüsing and Jä-

ger, 1964:192 (Germany: Sachsen-Anhalt: Nietleben near Halle), 195 (visiting flowers of *Cirsium arvense* L., *Daucus carota* L., *Falcaria vulgaris* Bernh. and *Achillea millefolium* L., preying of flies of genus *Anthomyia* Meigen, nesting in sand). – **As *Crossocerus peltarius***: Romanova, 1969:135 (new combination, Russia: North Caucasus). – **As *Crabro peltarius***: Schrank, 1802:336 (new combination, Germany: in revision of insects of Bayern = Bavaria); Eversmann, 1849:422 (Russia: Orenburg province); A. Morawitz, 1864:455 (Russia: St.-Petersburg), 1866a:270 and 1866b:348 (specimens in Eversmann collection); Thomson, 1870:170 (in revision of Swedish Crabroninae), 1874:280 (in revision of Hymenoptera of Scandinavia); Kohl, 1880:123 (Austria: Tirol, and Italy: Trentino–Alto Adige), 213 (prey: *Pollenia rudis* (Fabricius)); E. Saunders, 1880:294 (in revision of British Aculeata); Siebke, 1880:71 (Norway); Kohl, 1883e:654 (Switzerland); von Heyden, 1884:123 (Germany: Frankfurt am Main area); Sickmann, 1886:279 279 (Germany: Friesian Islands: Spiekeroog Island; Wüstnei, 1886:33 (Germany: Schleswig-Holstein); Kohl, 1888b:721 (Austria: Tirol, now Italy: Alto Adige), 1888c:576 (in revision of *Crabro*, as section *Thyreopus* of *Crabro*); Alfken, 1893:120 (Germany: Friesian Islands: Juist Island); Kohl, 1893a:23 (Austria: Niederösterreich); F. Morawitz, 1893a:115 (Russia: Karelian Isthmus); Sickmann, 1893:62 (Germany: Niedersachsen: Iburg, analysis of color variation, prey); Krieger, 1894:6 (Germany: Kingdom of Saxony); Freke, 1896:41 (Ireland); E. Saunders, 1896:143 (in revision of British Aculeata); Dalla Torre, 1897:616 (in catalog of world Sphecidae); Kozhevnikov, 1897:15 (Russia: Moscow Government); Mocsáry, 1897:84 (Kingdom of Hungary: some localities are in today's Romania and Slovakia); O. Schneider, 1898:102 (Germany: Borkum Island); Strand, 1898b:96 (Norway); R. Bradley, 1900:13 (Great Britain: Birmingham); Nevinson, 1900:62 (Great Britain: Wales: Towyn); E. Saunders, 1900a:266 (Great Britain: Scotland: Nethy Bridge); Carr, 1901:16 (Great Britain: Lincolnshire: Skegness); Gardner, 1901:381 (Great Britain: Cheshire: Delamere, Hoyle, Oakmere, Southport, West Kirby; Lancashire: Manchester); Thornley, 1901b:63 (Great Britain: Lincolnshire: Skegness); E. Saunders, 1902b:144 (British Channel Islands: Jersey Island); de Cobelli, 1903:116 (Italy: Trentino: Adamello, Rovereto); Antiga and Bofill, 1904:24 (Spain: Cataluña Province); Aurivillius, 1904:297 (in revision of Swedish Sphecidae); Jourdain 1904:221 (Great Britain: Derbyshire: Burton); E. Saunders, 1904b:249 (Great Britain: Scotland: Brodie and Nairn); W. Schulz, 1904b:99 (Germany: Borkum and Juist Islands); Kubes, 1905:84 (Czech Republic: Kolín, Sušice); Schmiedeknecht, 1907:190, 191 (in key to Hymenoptera of Central Europe); Morley, 1909:306 (Great Britain: Isle of Wight); Dittrich, 1911b:18 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Birula, 1913:535 (Ukraine: Zhytomyr Oblast: Radomyshl); Latter, 1913:33 (claws of male foreleg modified); Alfken, 1914:272 (northwestern Germany); Birula, 1914:376 (Belarus: Ambrosovich, Korolevo, and Luskinopol' near Vitebsk); Kohl, 1915:171 (in revision of Palearctic Crabronini); H. Müller, 1917:74 (intersex); O. Meyer, 1919:148 (Germany: Posen Province, now Poland: Poznań Region); Strand, 1920:14 (Germany: Mecklenburg-Vorpommern: Rostock); A. Wagner, 1920:44 (Germany: Lower Elbe region); Dubois, 1921b:152, 153 (in key to Belgian Sphecidae), 165 (phenology, nesting habits); Fahringer, 1922:182 (Turkey); Hedicke, 1922:270 (Germany: Brandenburg: Gross Machnower Weinberg); Alfken, 1924:425 (Germany: Memmert Island); R. Perkins, 1924:224 (Great Britain: Devon); Berland, 1925d:190 (in Sphecidae Fauna of France); Bischoff, 1925:297 (Latvia; Lithuania: Dolny near Vilnius; Poland: Białowieża and Grajewo area); R. Perkins, 1925:151 (Great Britain: Somersetshire: Burnham and Kewstoke Woods); Schütze, 1925:110 (Germany: Lausitz Region); K. Strohm, 1925:210 (Germany: Baden-Württemberg: Ihringen); Friese, 1926:148 (in key to Sphecidae of Central Europe, short morphological and biological characteristics, list of 26 prey species); Zavadil, 1926:32 (Czechoslovakia); Stelfox, 1927:296 (Ireland: list of localities); Berland, 1928b:181 (add Hamm and Richards, 1926 to bibliography in Berland, 1925d); Bouwman, 1930:68 (in revision of Sphecidae of Netherlands); Schmiedeknecht, 1930:647, 648 (in keys to Hymenoptera of North and Central Europe); Butterfield and Fordham, 1931:156 (Great Britain: Yorkshire); Pulkkinen, 1931:134 (in revision of Sphecidae of Finland); Bondroit, 1932:40 (Belgium: common in Bruxelles area); Drogoszewski, 1933:117 (Poland: Łowicz); E. Nielsen, 1933:270 (summary of nesting habits); Spooner, 1933:203 (Great Britain: Bedfordshire: Sandy); Balles, 1934:16 (Germany: Baden-Württemberg: Gamshurst); Bondroit, 1934:62 (Belgium: Ostende); Jansson, 1934:288 (Sweden); Forsius in Forsius and Hellén, 1935:10 (in checklist of Hymenoptera of

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ny); Majzlan and Deván, 2004:32 (Slovakia: Malacky-Široké); Shkuratov, 2004a:80 (Russia: Rostov Oblast'), 2004b:168 (Russia: Rostov Oblast': Gosudarstvennyi Muzei-Zapovednik M.A. Sholokhova); 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); Szczepko and Kowalczyk, 2004:126 (Poland: Kampinos National Park near Warszawa); van Achterberg and Peeters, 2004:30 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:48 and 62 (in checklist of Polish Sphecidae); Bergsten, Ekerholm, Gabrielson, Hellquist, Petersson, Werner, Ström, Chauvet, and Dalecky, 2005:15 (Sweden: Västerbotten: Bjuröklubbs Nature Reserve); Blösch, 2005:5 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Burger, 2005:31 (Germany: Thüringen); Fuhrmann, 2005:89 (Germany: Nordrhein-Westfalen: Grubengelände Littfeld Nature Reserve); Haeseler, 2005:628 (Germany: Niedersachsen: Steller Heide near Bremen); Hallin, 2005:16 (Sweden: Örebro County: Hällefors); Jacob and Remacle, 2005:62 (Belgium: Luxembourg Province: quarry Haut des Loges in Vance); Jacobs, 2005a:442 (Bulgaria: Primorsko); Kazenas, 2004d:33 (Kazakhstan: Eltay, Khar'kino); Kowalczyk and Kurzac, 2005:105 (Poland: Botanical Garden in Łódź); Kraatz, 2005:102 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Mandery, 2005:173 (Germany: Bayern: Hainberg Nature Reserve near Nürnberg); Nemkov, 2005a:154 (Russia: Sakhalin Island); Pagliano and Negrisolo, 2005:221 (in Sphecidae Fauna of Italy); Pijfers, 2005:49 (Netherlands: Twente: Noordelijke Manderheide); Riemann and Hohmann, 2005:547 (Germany: Niedersachsen: city of Bremen and adjacent area); Robinson, 2005:34 (Great Britain: Cumbria County); Saure, 2005:14 (Germany: Berlin); Schmalz, 2005:57 (references to XIXth century authors); Theunert, 2005a:16 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:42 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Archer, 2006a:21 (Great Britain: Lincolnshire: Rauceby Warren National Park), 2006c:217 (Great Britain: Staffordshire: Highgate Common); Bock, 2006:41 (Germany: Bayern: Kelheim District: Abensberg sands); Gorobchishin, 2006:129 (Ukraine: several localities); Liebig, 2006:38 (Germany: Sachsen: Muskauer Heide); Ljubomirov, 2006:538 (Bulgaria: earlier records from Rhodope Mountains summarized, as *peltarius peltarius*); Peeters, Krekels, and Megens, 2006:22 (Netherlands: Reichswald forest near Nijmegen); N. Schneider, 2006:140 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:112 (Belarus: Polesye Radiological Nature Reserve); Vepřek, 2006:509 (Czech Republic: Kokořínsko area); Archer, 2007a:151 (Great Britain: Norfolk: Thetford Warren Lodge); Beavis, 2007:92 (Great Britain: Tunbridge Wells and Central High Weald); Chevin, Livory, Lair, Sagot, and Baldock, 2007:18 (France: Département de la Manche); Flügel, 2007:39 (Germany: Hessen: Halberg near Neumorschen); Guldemond, Pijfers, and den Belder, 2007:202 (Netherlands: Gelderland: dairy farm in de Graafschap); Hallin, 2007b:25 (Sweden: Blekinge County); Herrmann, 2007a:51 (Germany: Niedersachsen: Ostfriesland); Jacobs, 2007:144 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:22 (Germany: northwestern Sachsen); Lee and Scott, 2007:21 (Great Britain: East Anglian wetlands); Saure, 2007:81 (Germany: in checklist of Aculeata of Land Brandenburg); Vago, 2007:175 (France: départements d'Aisne, Nord, and Pas-de-Calais); Venne, Bleidorn, and Lauterbach, 2007:300 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:204 (in catalog of Sphecidae of Czech Republic and Slovakia); Winkler, 2007:29 (Germany: Niedersachsen: eastern Friesland); K. Alexander, 2008:149 (Great Britain: Norfolk: Sheringham Park); Archer, 2008a:144 (Great Britain: Cumbria: North Walney Nature Reserve, Sandscale Haws, and Bamburgh Dunes); Haeseler, 2008:307 (Germany: Friesian Islands); Kochetkov, Bol'shakova, Butenko, and Priklonskiy, 2008:263 (Russia: Ryazan' Oblast': Oka Nature Reserve); Ljubomirov and Yildirim, 2008:259 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:22 (in catalog of Crabronidae of Asiatic Russia); Tannert and von der Dunk, 2008:181 (Germany: Bayern: west of Ernhofen and Weissenbrunn); Theunert, 2008:15 (Germany: map of distribution in Niedersachsen and Bremen); Bitsch and Leclercq, 2009:216 (in supplement to vol. I of Faune de France, 1993: additional records: Ain: Sermoyer; Aisne: Rocourt-Saint-Martin; Eure-et Loir: Thiron, Pontgouin; Gironde: marsh of Cla; Sarthe: Savigné-sur-le-Lude); Donie, 2009:9 (Germany: Niedersachsen: Oldenburg); U. Frommer, 2009a:26 (Germany: in checklist of Sphecidae of central Hessen); Hessling, 2009:103 (Germany: Niedersachsen: Hunte River valley south of Oldenburg); Kowalczyk, Kurzac, and Nadolski, 2009:62 (Poland: between Warta and Widawka rivers); Nemkov, 2009b:113 (in new

catalog of Sphecidae and Crabronidae of Asiatic Russia); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:70 (Norway: locality records); Ruchin, Antropov, and Shibayev, 2009:169 (Russia: Republic of Mordovia); van Diemen, 2009:49 (Netherlands: airbase Gilze-Rijen); Archer, 2010a:52 (Great Britain: Watsonian Nottinghamshire: Spalford Warren), 2010b:99 (Great Britain: Watsonian Staffordshire: Cannock Chase Country Park); Ermilov and Mokrousov, 2010:89 (phoretic mites *Acarus psenuli* (Vitzthum) and *Histiostoma gordius* (Vitzthum) in Middle Volga Region of Russia); Esser, Fuhrmann, and Venne, 2010:35 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Falk, 2010:93 (Great Britain: heathland sites in West Midlands region); Hable, Wickl, Krauss, and von der Dunk, 2010:26 (Germany: Bayern: Sulz- and Ottmaringer Tal); Howe, Knight, and Clee, 2010:100 (United Kingdom: occurring on coastal sand dunes); Mokrousov, 2010a:61 (Russia: Kirov, Nizhny Novgorod, Vladimir Oblast's, Chuvash Republic, Tatarstan: no specific localities); Rudoiskatel', 2010:157 (Russia: southern Ural Mountains); Saure, 2010a:87 (Germany: Berlin-Reinickendorf: Baumberge); 2010b:175 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:14 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:132 (Germany: Bayern: collected along Main-Donau canal); Shoreenko and Kononov, 2010:17 (Ukraine); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:101 (Western Slovakia: recorded from Borská Nižina); van der Smissen, 2010a:334 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records), 2010c:396 (Sweden: Öland: Byrums Sandvik and Gårdby); Wurdack and Gack, 2010:153 (Germany: Baden-Württemberg: Kaiserstuhl); Archer, 2011a:42 (Great Britain: Yorkshire: Strensall Common); Baghirov, 2011b:144 (Russia: Altay Republic: Aktash, Kosh-Agach); Gogala, 2011:18 (Slovenia); Józán, 2011:181 (in checklist of Sphecidae s.l. of Hungary); Mokrousov, Berezin, and Egorov, 2011:69 (Russia: Chuvash Republic); Saure, 2011a:5 (Germany: Berlin: former airport Tempelhof), 2011c:197 (Germany: Berlin-Spandau: Fort Hahneberg), 2011d:199 (Germany: Sachsen-Anhalt: conservation area "Heide südlich Burg"); Schreven, 2011:17 (Netherlands: Foerperpot in Groesbeek); Theunert, 2011a:19 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:115 (Germany: Hessen: not endangered); Ziska and Saure, 2011:108 (Germany: Berlin: Tegeler Fließ valley); Archer, 2012:182 (Great Britain: urban York); Boillat, 2012:225 (Switzerland: in checklist of insects of Canton de Genève); Cölln, Jakubzik, and Kinkler, 2012:24 (Germany: Nordrhein-Westfalen: Leverkusen); Gerth, Mayer, Hering, Wolf, Schaffer, and Bleidorn, 2012:9 (Germany: Sachsen: Bienitz in Leipzig); Nemkov, 2012c:440 (in catalog of Crabronidae of Russian Far East); Piguët and Dodelin, 2012:285 (France: Seine-Maritime: rive nord de l'estuaire de la Seine, as *peltarius peltarius*); Prismaniy, 2012:49 (Russia: Belgorod Oblast'); Saure, 2012b:228 (Germany: Berlin-Spandau: Spandauer Forst); Shlyakhtenok, 2012b:91 (Belarus: Beresina National Reserve: overgrowing dry meadow); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Akulov and Proshchalykin, 2013:115 (Russia: Siberia: Krasnoyarsk Krai: 12 km east of Minusinsk); Flügel, 2013a:119 (Germany: Brandenburg: Pimpinellenberg near Oderberg); Mokrousov, Ruchin, and Egorov, 2013:200 (Russia: Republic of Mordovia: Mordovian State Nature Reserve); Pankov, 2013:229 (Russia: Ivanovo Oblast'); Saure, 2013:18 (Berlin: Treptow-Köpenick: Gosener Wiesen); Shlyakhtenok, 2013:205 (in annotated catalog of aculeate wasps of Belarus'); Wiśniowski and Szczepko, 2013:27 (Poland: Kampinos National Park near Warszawa); U. Frommer, 2014:26 (Germany: Hessen: Lorch); Hellqvist, Abenius, and Norén, 2014:91 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); J.-K. Kim, 2014:424 (in catalog of Sphecidae s.l. of Korean Peninsula); Mokrousov and Vafin, 2014:56 (Russia: Republic of Tatarstan); Yıldırım, Ljubomirov, and Lelej, 2014:14 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:141 (in checklist of Hymenoptera of Turkey); Saure, 2015:13 (Germany: Berlin-Lichterfelde); Simon, Lorthiois, and Macé, 2015:53 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine); Else, Bolton, and Broad, 2016:13 (in checklist of Aculeata of Great Britain and Ireland: England, Scotland, Wales, Ireland, Isle of Man); Stolle and Saure, 2016:921 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

Crabro patellatus Panzer, 1797, Heft 46:4 [♂]. Holotype or syntypes: ♂, Germany: no specific locality (depository?).

Synonymized with *Crabro peltarius* by Kohl, 1888c:576. – Panzer, 1806:182 (in critical review of his earlier work); Stephens, 1829a:365 (in catalog of British insects), 1829b:33 (in checklist of British insects); Vander Linden, 1829:45 (bibliographic references, Belgium: Bruxelles, taxonomic history); Shuckard, 1836:57 (preying on Diptera), 1837a:128 (in revision of British Aculeata); Dahlbom, 1839:63 and 1839-40:63 (in revision of Scandinavian Crabronini); von Siebold, 1839:50 (Germany: Danzig, now Poland: Gdańsk); Dahlbom, 1842a:15 (in review of Scandinavian aculeates), 1845:356 (in revision of Sphecidae and Pompilidae), 526 (in key to *Crabro*), determination corrected to *Crabro patellatus* by Thomson, 1870:170 (in revision of Scandinavian Crabroninae); von Kiesenwetter, 1849:91 (Germany: Kingdom of Saxony); Wissmann, 1849:16 (Germany: Kingdom of Hannover: Münden); F. Smith, 1849b:2551 (preying on Diptera); Tischbein, 1850:10 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); F. Smith, 1851c:25 (Great Britain: no specific locality); Wesmael, 1852:611 (Belgium: Bruxelles); F. Smith, 1853:63 (in checklist of British Hymenoptera), 1856:395 (in catalog of Hymenoptera in British Museum); Kawall, 1857:26 (Kurland, now Latvia); Schenck, 1857:73 (Germany: in revision of fossorial wasps of Nassau Region); F. Smith, 1858c:151 (in review of British Aculeata, redescription); Schenck, 1860:145 (Germany: Nassau Region); Brown, 1863:181 (Great Britain: Burton-on-Trent); F. Smith, 1865b:86 (Great Britain: Dorset County: Bournemouth); Taschenberg, 1866:173 (in revision of Hymenoptera of Germany); A. Costa, 1867c:134 (in revision of Italian Sphecidae); Schenck, 1867a:350 (Germany: Nassau Region); von Aichinger, 1870:313 (Austria: Tirol); Bold, 1870:150 (Great Britain: Northumberland and Durham); A. Costa, 1871b:63 (in revision of Italian Sphecidae); F. Smith, 1871b:15 (in catalog of British Aculeata); Schlechtendal, 1872:36 (Germany: Sachsen: Zwickau); Taschenberg, 1875:382 (Germany: Halle); Roebuck, 1878:48 (Great Britain: recorded from Yorkshire county: Wakefield, by F. Smith, 1858); Marquet, 1881:186 (France: Hérault: Montpellier); Meunier, 1896:269 (Belgium: Bruxelles area); N. Arnold, 1902:88 (Russia: Mohilev Province, now Belarus'). – **As *Thyreopus patellatus***: Lepeletier de Saint Fargeau and Brullé, 1835:756 (new combination, in revision of Crabronini); Herrich-Schaeffer, 1840:295 (Germany: Bayern: Regensburg area); Lepeletier de Saint Fargeau, 1845:164 (in revision of world Hymenoptera); Kirchner, 1854:313 (Czechoslovakia: Kaplitz in Budweiser District, now České Budějovice); Ruthe and Stein, 1857:315 (Germany: Berlin area); Taschenberg, 1858:110 (in key to Sphecidae of Germany); Funk, 1859:58 (Germany: Bayern: Bamberg); Brischke, 1862:107 (Germany: Preussen Province, now Poland: Pomorze Region, as *patellatus* Vander

Linden); A. Costa, 1866:27 (specimen from France in Museo Zoologico di Napoli); Jaennicke, 1867:146 (Germany: Hessen: Frankfurt area); Kirchner, 1867:224 (in catalog of European Hymenoptera); Jaennicke, 1868:8 (Germany: Hessen: Königsbrunnen); Wierzejski, 1868:117 (Ukraine: Podole Region); P. Ivanov, 1872:151 (Ukraine: Khar'kov Oblast': Kupyansk area); Dours, 1874:153 (in catalog of Hymenoptera of France); Wierzejski, 1874:261 (Poland: Krakow; Ukraine: Podole Region: Janów, Kalinowce); Beuthin, 1876:230 (Germany: Hamburg area); Schmiedeknecht, 1876:186 (Germany: Thüringen: Rothensteiner Felsen); Yaroshevskiy, 1881:122 (Ukraine: Khar'kiv Oblast': Kupyansk); Friese, 1883:201 (Germany: Sachsen-Anhalt: Kösen, Merseburg, Weissenfels); Brischke, 1888a:54 (Germany: Hela Peninsula, now Poland: Hel Peninsula), 1888b:101 (Germany: Preussen Province, now Poland: Pomorze Region), 1889:204 (Germany: Steegen east of Danzig, now Poland: Stegna east of Gdańsk), 1892:28 (Germany: Radaue River valley west of Danzig, now Poland: Radunia River west of Gdańsk); Acloque, 1897:89 (in Sphecid Fauna of France and Algeria); Rudow, 1912:71 (nesting in stems of *Cirsium* and Apiaceae, as *patellatus*); Casolari and Casolari Moreno, 1980:118 (specimens in M. Spinola collection); Pagliano, 2011a:148 (specimens in M. Spinola collection, Torino, are *Crabro peltarius*).

Crabro dentipes Panzer, 1797, Heft 46:9, [♀]. Holotype or syntypes: ♀, Germany: no specific locality (depository?).

Synonymized with *Crabro peltarius* by Kohl, 1888c:576. – Panzer, 1806:182 (in critical review of his earlier work); Jurine, 1807:212 (in checklist of species of *Crabro*); Stephens, 1829a:365 (in catalog of British insects).

Crabro medius Fabricius, 1798:270, sex not indicated. Lectotype: ♀, Europe: no specific locality (ZMUC), designated by van der Vecht, 1961a:69. Synonymized with *Crabro subpunctatus* by Dahlbom, 1845:XXV, with *Crabro*

vagabundus by ..., and with *Crabro peltarius* by van der Vecht, 1961a:69. – Fabricius, 1799:17 (in Index to his Supplementum, 1798), 1804:312 (redescription); Jurine, 1807:212 (listed). – Dahlbom, 1845:XXV (study of type material); Marquet 1881:185 (southern France). – As *Blepharipus mediatius*: Lepeletier de Saint Fargeau and Brullé, 1835:734 (new combination, in revision of Crabronini); Lepeletier de Saint Fargeau, 1845:140 (in revision of world Hymenoptera); Palma, 1867:41 (Italy: Sicilia settentrionale); Marquet, 1875:210 (France: Haute-Garonne: Toulouse); Bradley, 1957:47 (Lepeletier's specimens in M. Spinola collection, Torino); Casolari and Casolari Moreno, 1980:118 (specimens in M. Spinola collection, Torino).

As *Crabro pterotus*: Stephens, 1829a:365 (in catalog of British insects) and 1829b:33 (in checklist of British insects), corrected to *Crabro patellatus* by F. Smith, 1855:99.

As *Thyreopus* non det., partim: Pagliano, 2011a:148 (specimens in M. Spinola collection, Torino, are *Crabro peltarius*).

ssp. bilbaoensis Leclercq

Crabro peltarius bilbaoensis Leclercq, 1960c:418, ♀, ♂. Holotype: ♂, Spain: Bilbao (IEE). – Ceballos, 1964:95 (in supplement to catalog of Spanish Sphecidae); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Bitsch and Leclercq, 1993:76 (in revision of western European Crabroninae); Leclercq, 1993c:15 (reference to recent publications); Leclercq and Barbier, 1993:15 (map of distribution in France); Schmid-Egger, 2003:752 (Italy: Sicilia: Armerina); Bitsch and Leclercq, 2009:216 (in supplement to vol. I of Faune de France, 1993: recorded from Sicilia by Schmid-Egger, 2003; also: France: Lot-et-Garonne: Mezin).

65. peltatus Fabricius

Crabro peltatus Fabricius, 1793:297, sex not indicated. Lectotype: ♂, Europe: no specific locality (ZMUC), designated by van der Vecht, 1961a:69. – Fabricius, 1796:51 (in Index to his Entomologia Systematica, 1793); Jurine, 1807:211 (in checklist of species of *Crabro*); Zetterstedt, 1838:444 (in revision of insects of Lapland); Dahlbom, 1845:XXV (study of type material, as new synonym of *Crabro patellatus*); de Beaumont, 1964c:134 (in Sphecidae Fauna of Switzerland); Wolf, 1971:375 (Italy: Trentino–Alto Adige: Alpi Siusi); Kofler, 1972:113 (Austria: eastern Tirol); Leclercq, 1974d:261 (synonymy), 1975b:3 (France); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:861, 868 (in key to *Crabro* of USSR); Marion, 1978:90 (France: Alpes-Maritimes and Hautes-Alpes Departments); Pulawski, 1978:266, 268 (in key to Sphecidae of European part of former USSR); Pagliano, 1980:123 (Italy: Piemonte); Dollfuss and Ressler, 1981:317, 323 (Austria: Niederösterreich: Scheibbs District); Gayubo, 1982b:27 (Spain: Salamanca: puente del Congosto); Dollfuss, 1983b:18 (in catalog of Sphecidae of Austria); Gayubo, 1984b:96 (Spain: previously recorded from Salamanca Province), 1986b:38 (Spain: Andalucía); Pagliano, 1990:81 (in catalog of Italian Sphecidae); Schwammberger and Priesner, 1990:547 (Austria: Kärnten); Dollfuss, 1991:164 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:408 (Italy: Valle d'Aosta, Marche, Trentino); Gusenleitner, 1991:647 (Austria: Oberösterreich: Gmunden); Pagliano, 1991b:333 (in key to Italian Crabroninae); Bitsch and Leclercq, 1993:78 (in revision of western European Crabroninae); Leclercq, 1993c:15 (Austria: Tirol; Germany: Oberbayern; Switzerland: Klosters); Leclercq and Barbier, 1993:16 (map of distribution in France); Negrisoló *in* Minelli, Ruffo, and La Posta, 1995b:6 (in catalog of Italian fauna); Schmid-Egger, Schmidt, and Doczkal, 1996:376 (Germany: not recorded from Baden-Württemberg, endangered in Bavaria); Schmidt and Schmid-Egger, 1997:8 (in checklist of German Sphecidae); Neumayer, Schwarz, and Bregant, 1999:223 (Austria: in checklist of Sphecidae of Land Kärnten); Blösch, 2000:323 (in Sphecidae Fauna of Germany); Zettel, 2000:30 (Austria: Steiermark: Mariazell); Ohl et al., 2001:138 (distribution in Germany by provinces); Drewes, 2003:135 (Austria: Tirol: Patznauntal); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:64 (in catalog of wasps and bees of Bayern, Germany); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:197 (Germany: Bayern: extremely rare, geographically restricted); Dollfuss, 2004b:764 (Bulgaria: Sandanski); Jacobs, 2005a:442 (Bulgaria: Banderica in Pirin Mts.); Kofler, 2005:179 (Austria: Tirol: Lienz District: several localities); Pagliano and Negrisoló, 2005:222 (in Sphecidae Fauna of Italy); Jacobs, 2007:144, 146 (in key to Crabronidae of Germany); Tannert and von der Dunk, 2008:181 (Germany: Bayern:

west of Ernhofen and Weissenbrunn); Belkheir, 2009:18 (France: Pyrénées-Orientales: commune d'Eyne); Bitsch and Leclercq, 2009:216 (in supplement to vol. I of Faune de France, 1993: recorded from Pirin Mountains in Bulgaria); Schmid-Egger, 2010a:14 (in red list of Aculeata of Germany: extremely rare); Shorenko and Kononov, 2010:17 (first record from Ukraine: Kherson' Oblast': Chernomorskiy Nature Reserve; Khar'kov Oblast': village Vodyanoye); Schmid-Egger, 2011a:37 (France: Parc National du Mercantour); Bitsch, Grouet, and Savina, 2013:291 (France: Pyrénées centrales: département d'Ariège: col de Pailhères), 2013:292 (France: Pyrénées-Orientales: col de Puymorens); Bitsch, 2014:400 (France:Ariège: col de Pailhères); Magdalou, 2017:14 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Vallée d'Eyne). – **As *Vespa peltata***: Turton, 1801:531 (new combination, Europe). – **As *Lestica peltata***: Billberg, 1920:107 (new combination, specimens from Sweden in collection Billberg); Rohwer, 1911c:154 (discussion of the name).

Blepharipus flavipes Lepeletier and Brullé, 1835:736, ♀. Holotype: ♀, France: Paris area (M. Spinola collection, Torino). Synonymized with *Crabro peltatus* by Leclercq, 1974d:261. – Lepeletier de Saint Fargeau, 1845:142 (in revision of world Hymenoptera); Acloque, 1897:88 (in Sphecidae Fauna of France and Algeria); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Pagliano, 2011a:146 (specimen in M. Spinola collection, Torino, holotype, is *Crabro peltatus*). – **As *Crabro flavipes***: Dahlbom, 1845:366 (new combination, original description copied), 527 (in key to *Crabro*, unknown to the author); Dalla Torre, 1897:600 (in catalog of world Sphecidae); Bradley, 1957:47 (type in M. Spinola collection, Torino); Casolari and Casolari Moreno, 1980:118 and 119 (specimens in M. Spinola collection, Torino); Pagliano, 2011a:158 (specimens in M. Spinola collection, Torino, are *Lindenius albilabris*).

Crabro luteipes F. Smith, 1856:410. Substitute name for *Crabro flavipes* (Lepeletier and Brullé, 1835:736) F. Smith, 1856, nec *Vespa (Crabro) flavipes* Gmelin, 1790. – Dalla Torre, 1897:609 (in catalog of world Sphecidae).

Crabro rhaeticus Kriechbaumer and von Aichinger in von Aichinger, 1870:328, ♀, ♂. Syntypes: Austria: Tirol: no specific locality (depository?). Synonymized with *Crabro peltatus* by van der Vecht, 1961a:69. – von Aichinger, 1870:313 (Austria: Tirol); Kohl, 1880:122 (Austria: Tirol, and Italy: Trentino–Alto Adige), 1883e:653 (Switzerland); 1888b:721 (Austria: Tirol, now Italy: Alto Adige), 1888c:567 (in revision of *Crabro*, as section *Thyreopus* of *Crabro*); Dalla Torre, 1897:623 (in catalog of world Sphecidae); de Cobelli, 1903:116 (Italy: Trentino: Monte Baldo, San Giacomo di Monte Baldo); Antiga and Bofill, 1904:25 (Spain: Cataluña and Huesca Provinces); W. Schulz, 1904b:98 (Spain: Murcia; Turkestan); Schmiedeknecht, 1907:189, 191 (in key to Hymenoptera of Central Europe); Kohl, 1912a:61 (Austria: Südtirol: Ratzes, now in Italy: Trentino–Alto Adige Region), 1915:158 (in revision of Palearctic *Crabronini*); Berland, 1925d:190 (in Sphecidae Fauna of France); Benoist, 1928:410 (France: Hautes-Alpes: col du Lautaret and Saint-Véran); Schmiedeknecht, 1930:646, 647 (in keys to Hymenoptera of North and Central Europe); Steck, 1935:322 (Switzerland); Bernard, 1936a:35 (France: Hautes-Pyrénées: Pic de Néouvielle area); Giner Marí, 1943a:237 (in Sphecidae Fauna of Spain); Carl and de Beaumont, 1947:69 (Switzerland: Graubünden = Grisons Canton: Swiss National Park); Zavadil in Zavadil and Šnoflak, 1948:120, 121 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); Franz, 1949:13 (Austria: Hohe Tauern); Leclercq, 1949a:9 (France: Pyrénées-Orientales: Font Romeu; Switzerland); Nouvel and Ribaut, 1953:183 (France: Haute-Garonne: Luchon, Hautes-Pyrénées: Cauterets, Orédon); de Beaumont, 1954e:96 (Italy); Grandi, 1954:243 (Italy); Leclercq, 1954c:252 (in catalog of world *Crabronini*); Ceballos, 1956:395 (in catalog of Sphecidae of Spain); de Beaumont, 1958c:211 (Swiss National Park), 1959a:38 (Italy); Ceballos, 1959:231 (in supplement to catalog of Spanish Sphecidae); Wolf, 1959b:34 (known from Germany, but not from Nassau); Leclercq, 1960c:420 (Spain: Cataluña: Nuria); Noskiewicz and Puławski, 1960:139, 141 (in key to Polish Sphecidae, not yet found in Poland); de Beaumont, 1962b:28 (Spain); Grandi, 1962:98 (Italy: Trento); Ceballos, 1964:95 (in supplement to catalog of Spanish Sphecidae); Bonelli, 1966c:220 (Italy: Trentino–Alto Adige: Alpe di Siusi, Razzes, San Martino di Castrozza); Balthasar, 1972:81 (in Sphecidae Fauna of Czechoslovakia, may be expected in the country); Schedl, 1982:102 (Austria: Tirol: Ötztaler Alps). – **As *Thyreopus rhaeticus***: Kohl, 1883b:50 (new combination, in list of European *Thyreopus*); de Gaulle, 1908:122 (in catalog of French Hymenoptera).

As Thyreopus non det., partim: Pagliano, 2011a:148 (specimens in M. Spinola collection, Torino, are *Crabro peltatus*).

As *Thyreopus clypeatus*: Pagliano, 2011a:148 (specimens in M. Spinola collection, Torino, are *Crabro peltatus*)

66. *peltista* Kohl

Crabro peltista Kohl, 1888c:586, ♀, ♂. Lectotype: ♂, Mexico: Veracruz: Orizaba (NHMW), designated by R. Bohart, 1964:249. – Cameron, 1891a:153 (Mexico, Guatemala); Dalla Torre, 1897:618 (in catalog of world Sphecidae); Leclercq, 1950e:10 (member of subgenus *Synothyreopus*), 11 (comparison with *costaricensis*); Krombein in Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:250 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:249 (in revision of Nearctic *Crabro*); Krombein, 1979b:1673 (in catalog of North American Hymenoptera); Leclercq, 1981e:78 (Mexico, Guatemala); Radović, 1985:65 (sting apparatus analyzed); Dollfuss, 1989:9 (lectotype in NHMW); Maes, 1989:99 (in catalog of Nicaraguan Sphecidae); Ahlstrom, 1995:111 (in checklist of insects of North Carolina); Hanson and Menke, 1995:640 (known from Nicaragua); Amarante, 2002:24 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:663 (in checklist of Mexican Sphecidae); Leclercq, 2008b:76 (in improved key to North American *Crabro*), 82 (bibliographic references, locality records from USA, Mexico, and Guatemala, first records from Kansas: Kingman County: State Fishing Lake, and from Oklahoma: three localities). – As *Thyreopus peltista*: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae, as *peltasta*).

Crabro incertus W. Fox, 1895a:174, ♀, ♂. Lectotype: ♀, USA: Texas: no specific locality (ANSP), designated by Cresson, 1928:54. Synonymized with *Crabro peltista* by Krombein in Muesebeck et al., 1951:1017. – Dalla Torre, 1897:604 (in catalog of world Sphecidae); Brimley, 1938:449 (North Carolina: Raleigh, Reidsville). – As *Synothyreopus incertus*: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae)

67. *pleuralis* W. Fox

Crabro pleuralis W. Fox, 1895a:162, ♀, ♂. Lectotype: ♀, Canada: British Columbia: Vancouver (ANSP), designated by Cresson, 1928:55. – Dalla Torre, 1897:618 (in catalog of world Sphecidae); Kincaid, 1900a:357 (USA: Washington: Seattle, Vancouver); Mickel, 1918b:383 (in catalog of Nebraskan Sphecidae); Krombein, 1939:144 (New York State); Krombein in Muesebeck et al., 1951:1018 (in catalog of North American Hymenoptera); Leclercq, 1954c:254 (in catalog of world Crabronini); Evans, 1970:491 (Wyoming: Jackson Hole); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:276 (in revision of Nearctic *Crabro*); Krombein, 1979b:1675 (in catalog of North American Hymenoptera); Finnamore, 1988:863 (Canada: Yukon Territory), 1997:891 (Canada: Yukon); Leclercq, 2008b:83 (bibliographic references, locality records from California); Ratzlaff, 2016:25 (Canada: British Columbia: from W. Fox, 1895, R. Bohart, 1976, and Leclercq, 2008). – As *Thyreopus pleuralis*: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

68. *pubens* Marshakov

Crabro pubens Marshakov, 1976c:940, ♀ (subgenus: ? *Synothyreopus*). Holotype: ♀, Turkmenistan: Orta-Kuyu (ZIN). – Marshakov, 1977:870 (in key to *Crabro* of USSR); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia); Mokrousov, Shlyakhtenok, and Grebennikov, 2016:21 (Russia: Astrakhan' Oblast': near Volzhski village at 46.965°N 47.53°E); Antropov, 2017b:227 (in catalog of Crabroninae of Russia); Mokrousov, 2017d:59 (South-East of European Russia).

69. *pugillator* A. Costa

Crabro pugillator A. Costa, 1867c:135 and 1871b:64, ♂. Holotype: ♂, Italy: Campania: Monte Matese near Napoli (Napoli). – Kohl, 1888c:575 (in revision of *Crabro*, as section *Thyreopus* of *Crabro*); Dalla Torre, 1897:619 (in catalog of world Sphecidae); Kohl, 1915:178 (in revision of Palearctic Crabronini); Fahringer, 1922:182 (Turkey); Drenowski, 1936:247 (Bulgaria: Alibotush); de Beaumont, 1953i:65 (study of holotype), 1954e:96 (Italy); Leclercq, 1954c:250 (in catalog of world Crabronini); Bytinski-Salz, 1956:227 (Turkey: Ulu Dag); Ceballos, 1956:395 (in catalog of Sphecidae of Spain); de Beaumont, 1957b:137 (n. Iran), 1959a:38 (Italy), 1965a:60

(Greece; citation of Kohl, 1888c), 1967a:350 (Turkey); Balthasar, 1972:85 (in Sphecidae Fauna of Czechoslovakia, may be expected in the country); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:864, 868 (in key to *Crabro* of USSR); Guichard, 1978:272 (Greece); Pulawski, 1978:265, 268 (in key to Sphecidae of European part of former USSR); Pagliano, 1980:123 (Italy: Abruzzo), 1990:81 (in catalog of Italian Sphecidae); Dollfuss, 1991:164 (in key to Sphecidae of North and Central Europe); Pagliano, 1991b:333, 335 (in key to Italian Crabroninae); Gayubo, Borsato, and Osella, 1992:285 (Greece: Tymphristos); Bitsch and Leclercq, 1993:78 (in revision of western European Crabroninae); Leclercq, 1993c:15 (Greece: Olympus; Yugoslavia: Koral Mts.); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:6 (in catalog of Italian fauna, as *pugillator*); Dollfuss, 2004b:764 (Turkey); Gayubo and Özbek, 2005:29 (Turkey: eleven localities); Pagliano and Negrisolo, 2005:223 (in Sphecidae Fauna of Italy); Yildirim and Ljubomirov, 2005:1794 (Turkey: Erzurum and Rize provinces); Ebrahimi, 2006:1 (Iran, as *pugillouor*); Ljubomirov, 2006:538 (Bulgaria: Rhodope Mountains: Golyam Beglik dump, Beglika, Milevi Skali Hut: Syutkiya Peak); Ljubomirov and Yildirim, 2008:260 (in catalog of Crabronidae of Turkey); Bitsch and Leclercq, 2009:216 (in supplement to vol. I of Faune de France, 1993: recorded from Rhodope Mountains in Bulgaria by Ljubomirov, 2006); Yildirim, 2012:81 (Turkey: Erzurum: Güngörmez: Dumlubaba); Ebrahimi, 2014:34 (Iran: Ardebil: Meshgin-Shahr: Ghotursuei); Yildirim, Ljubomirov, and Lelej, 2014:14 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:141 (in checklist of Hymenoptera of Turkey); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:44 (Turkey: Erzurum and Torotum provinces; Jahantigh, Rakhshani. Mokhtari, and Ramroodi, 2017:46 (Iran: known from Ardabil and Qazvin povinces). – **As *Thyreopus pugillator***: Kohl, 1883b:50 (new combination, in list of European *Thyreopus*), 51 (comparison with *Thyreopus korbi*).

70. *rufibasis* (Banks)

Thyreopus rufibasis Banks, 1921:17, ♀. Lectotype: ♀, USA: Florida: Gulfport (MCZ), designated by R. Miller, 1976:260. – **As *Crabro rufibasis***: Krombein *in* Muesebeck et al., 1951:1016 (new combination, in catalog of North American Hymenoptera); Leclercq, 1954c:245 (in catalog of world Crabronini); Krombein and Evans, 1954:235 (Florida), 1955:234 (Florida); Krombein, 1964c:23 (nest); Kurczewski and Acciavatti, 1968:198 (review of nesting habits); R. Miller, 1976:259 (in revision of *hilaris* species group of *Crabro*); R. Miller and Kurczewski, 1976:267 (nesting habits); Krombein, 1979b:1673 (in catalog of North American Hymenoptera, nesting sites, list of prey); Spofford, Kurczewski, and Downes, 1989:258, 259 (references to publications on nest parasites *Ptychoneura aristalis* (Coquillett) and *Senotainia trilineata* (Wulp), miltogrammine flies); Leclercq, 2008b:83 (bibliographic references, locality records from Florida). – **As *Crabro hilaris rufibasis***: R. Bohart *in* R. Bohart and Menke, 1976:407 (new status, in checklist of world Sphecidae); R. Bohart, 1976:244 (in revision of Nearctic *Crabro*); Deyrup and Eisner, 2003:522 (a Floridian, red-marked subspecies).

71. *scutellatus* (von Scheven)

Sphex scutellatus von Scheven, 1781:82, ♂ (as *scutellata*, incorrect original termination). Syntypes: ♂, origin not indicated but probably Courland, now Latvia: no specific locality (depository?). – von Scheven, 1784:89 ((in list of “Siebbinen” known to him). – **As *Thyreopus scutellatus***: Kohl, 1883b:50 (new combination, in list of European *Thyreopus*); Westerlund, 1893:27 (Russia: Karelian Republic: northern shore of Lake Ladoga); de Gaulle, 1908:122 (in catalog of French Hymenoptera); Schirmer, 1912:164 (Germany: Berlin area); Lundblad, 1913:212 (Sweden); R. Perkins, 1913b:389, 392 (in key to British Crabronini), 1916:15 (diagnostic characters); Noskiewicz, 1918:138 (Galicia, now western Ukraine: Biłohorszcze, Brzuchowice, Hołosko, and Rudno near Lwów, Janów); Dubois, 1919:95 (Belgium: Bruxelles: Uccle); Coulon, 1925:124 (Germany); Hamm and Richards, 1926:309 (summary of nesting habits), 323 (list of prey); F. Werner, 1927:66 (Austria: Niederösterreich: River Kamp valley); Harttig, 1930b:8 (specimen bearing dipteran egg); Struve, 1937:149 (Germany: Island of Borkum); Hoop, 1941b:70 (Germany: Schleswig-Holstein: Süderhastedt); Szulczewski, 1950:104 (Poland: Wielkopolski National Park 15 km south of Poznań); Puławski, 1954:105 (Poland: Błędów). – **As *Crabro scutellatus***: A. Morawitz, 1864:455 (new combination, Russia: St.-Petersburg), 1866a:270 and 1866b:348 (specimens in Eversmann collection); Thomson,

1870:170 (in revision of Swedish Crabroninae), 1874:280 (in revision of Hymenoptera of Scandinavia); Kohl, 1880:124 (Austria: Tirol, and Italy: Trentino–Alto Adige); E. Saunders, 1880:294 (in revision of British Aculeata); Siebke, 1880:71 (Norway); Sickmann, 1883:70 (Germany: Niedersachsen: Wellingholthausen); von Heyden, 1884:123 (Germany: Frankfurt am Main area); Wüstnei, 1886:34 (Germany: Schleswig-Holstein: Elmshorn); Kohl, 1893a:23 (Austria: Niederösterreich); F. Morawitz, 1893a:115 (Russia: Karelian Isthmus); Sickmann, 1893:66 (Germany: Niedersachsen: Iburg, analysis of color variation); Krieger, 1894:6 (Germany: Kingdom of Saxony); E. Saunders, 1896:143 (in revision of British Aculeata); Dalla Torre, 1897:625 (in catalog of world Sphecidae); Mocsáry, 1897:84 (Kingdom of Hungary: Budapest and Szomotor, the latter is now Somotor, Slovakia); Strand, 1898b:96 (Norway); Morice, 1900c:210 (Great Britain: Surrey: Cobham); Aurivillius, 1904:297 (in revision of Swedish Sphecidae); W. Schulz, 1904b:99 (Finland: Pargola, now Russia: Pargolovo; Ukraine: Kharkov; France); Zilahi Kiss, 1904:77 (Hungary: Tasnád); G. Arnold, 1905:262 (Great Britain: Hampshire: Brockenhurst); Kubes, 1905:84 (Czech Republic: Sušice); Schmiedeknecht, 1907:190, 191 (in key to Hymenoptera of Central Europe); Graeffe, 1911:43 (Italy: Trieste area); Dittrich, 1911b:18 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Latter, 1913:33 (male foreleg modified); Alfken, 1914:272 (NW Germany); Birula, 1914:376 (Belarus: Luskino Pol' near Vitebsk); Kohl, 1915:174 (in revision of Palearctic Crabronini); R. Perkins, 1916:231 (specimens in F. Smith collection); O. Meyer, 1919:148 (Germany: Posen Province, now Poland: Poznań Region); Stöckert, 1919:37 (Germany: Franken); Noskiewicz, 1920a:155 (Poland: Tatry Mountains: Toporowa Cyrhla); A. Wagner, 1920:44 (Germany: Lower Elbe region); Dubois, 1921b:152, 153 (in key to Belgian Sphecidae), 165 (phenology, nesting habits); Alfken, 1924:231 (N Germany); Berland, 1925d:191 (in Sphecidae Fauna of France); Bischoff, 1925:297 (Latvia: Poland: Grajevo area); Schütze, 1925:110 (Germany: Lausitz Region); Shestakov, 1925:35 (Russia: Yaroslavl' area); Berland, 1928b:181 (add Hamm and Richards, 1926 to bibliography in Berland, 1925d); Bouwman, 1930:69 (in revision of Sphecidae of Netherlands); Schmiedeknecht, 1930:646, 648 (in keys to Hymenoptera of North and Central Europe); Butterfield and Fordham, 1931:156 (Great Britain: Yorkshire); Pulkkinen, 1931:135 (in revision of Sphecidae of Finland); Bondroit, 1932:40 (Belgium: Forêt de Soignes, Solbosch), 1933:32 (Belgium: Forêt de Soignes, Uccle); Jansson, 1934:288 (Sweden); Forsius *in* Forsius and Hellén, 1935:10 (in checklist of Hymenoptera of Finland); Steck, 1935:323 (Switzerland); Crèvecoeur and Maréchal, 1936:256 (in catalog of Belgian Hymenoptera); Goebel, 1937:38 (Poland: Poznań District: Nowy Młyn); Richards, 1937b:105 (in checklist of British aculeates); Zavadil, Šustera, and Baťa, 1937:157 (in catalog of Sphecidae of Czechoslovakia); A. Wagner, 1938a:115 (northwestern Germany); Balthasar, 1941b:112 (Czech Republic: eastern Moravia); Paul, 1941:35 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); Schneid, 1941:1028 (Germany: Bayern: Bamberg area); Alfken, 1942:231 (Germany: Niedersachsen: Lüneburger Heide); Balthasar, 1942:4 (Czech Republic: Moravia); J. Perkins, 1942:198 (Sweden: Skåne: Ring Lake); Balthasar, 1943:40 (Czech Republic: Moravia: Zlin area); Boyd, 1943:163 (Great Britain: eastern Dorset); Giner Marí, 1943a:239 (in Sphecidae Fauna of Spain); de Beaumont, 1945:480 (Switzerland; correction to Steck, 1935); Móczár, 1947b:90 (Hungary: Siebenbürgen: Székelykeresztúr, now Romania: Transylvania: Cristuru Secuiese); Zavadil *in* Zavadil and Šnoflak, 1948:120, 121 (in key to Sphecidae of Czechoslovakia); Cavo, 1950:40 (France: Département du Nord); Caruel, 1951:100 (France: Marne Département); Leclercq, 1951e:12 (bibliography of Belgian records); Móczár, 1953:311 (Hungary); Fahlander, 1954:249 (Sweden: Gästrikland Region); Leclercq, 1954c:251 (in catalog of world Crabronini), 314 (nest and prey records); Aerts, 1955:59 (Germany: Rheinland); Teschner, 1955:56 (Germany: Nordrhein-Westfalen: Hohe Ward near Münster); Vergne, 1955:6 (France: Auvergne); Preuss, 1956:14 (Germany: Schleswig-Holstein: Mölln in Lauenburg); Zirngiebl, 1957:175 (Germany: Rheinland-Pfalz: Birkenheide, Leistadt); Benno, 1958b:18 (in review of Dutch Sphecidae); Móczár, 1958b:199 (Hungary: collecting localities); Wolf, 1959b:34 (Germany: Nassau); Noskiewicz and Puławski, 1960:140, 142 (in key to Polish Sphecidae); Hoop, 1961:63 (Germany: Schleswig-Holstein); Valkeila, 1962b:68 (southwestern Finland); Wengris, 1962:206 (Lithuania: Vilnius area); Hoop, 1963a:73 (Germany: Schleswig-Holstein: Reher Kratt); Babiý, 1964:118 (Austria: Land Salzburg); de Beaumont, 1964c:135 (in Sphecidae Fauna of Switzerland); Plavil'shchikov, 1964:122

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Weber, 1998:136 (Germany: Bayern: Bamberg area); Erhardt, 1999:75 (Germany: Niedersachsen: Ammerland area); Herrmann, 1999:7 (Germany: Niedersachsen: Oldenburg area; habitats size); Mandery, 1999:104 (Germany: Bayern: Coburg area); Neumayer, Schwarz, and Bregant, 1999:223 (Austria: in checklist of Sphecidae of Land Kärnten); Pauly, 1999:109 (in catalog of Belgian aculeates); Petit, 1999:114 (Netherlands: Nieuw-Namen, Prosper-

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of Mordovia: Mordovian State Nature Reserve); Pankov, 2013:229 (Russia: Ivanovo Oblast'); Saure, 2013:18 (Berlin: Treptow-Köpenick: Gosener Wiesen); Shlyakhtenok, 2013:206 (in annotated catalog of aculeate wasps of Belarus'); Wiśniowski and Szczechko, 2013:27 (Poland: Kampinos National Park near Warszawa); Bitsch, 2014:400 (recvd from France by Piguet and Dodelin, 2013 noted); Hellqvist, Abenius, and Norén, 2014:91 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Mokrousov and Vafin, 2014:56 (Russia: Republic of Tatarstan); Ruchin and Antropov, 2014:36 (Russia: Republic of Mordovia); Mokrousov and Egorov, 2015:424 (Russia: Republic of Mordovia: Nature State Reserve Prisuskiy); P. Rosa and Pagliano, 2015:99 (Italy: Lombardia and Piemonte: Parco del Ticino); Simon, Lorthiois, and Macé, 2015:53 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine); Else, Bolton, and Broad, 2016:13 (in checklist of Aculeata of Great Britain and Ireland: England); Reemer and Peeters, 2016:10 (Netherlands: Hulshorsterzand); Stolle and Saure, 2016:922 (Germany: in list of Sphecidae s.l. of Sachsen-Anhalt); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

Sphex scutularius Schreber, 1784:99, ♂ (as *scutularia*, incorrect original termination). Holotype or syntypes: ♂, Germany: Neuwarp, now Poland: Nowe Warpno (depository?). Synonymized with *Crabro scutellatus* by Kohl, 1888c:580.

Sphex scutellatus quatuormaculatus Christ, 1791:286, sex not indicated (as *scutellata quatuormaculata*, incorrect original termination). Not available: binominal nomenclature not observed (Article 11.4). Holotype or syntypes: Germany: no specific locality (lost). Synonymized with

Crabro pterotus Panzer, 1801, Heft 83:16 (♂) and 17 (♀). Syntypes: Germany: no specific locality (depository ?). Synonymized with *Crabro scutellatus* by Thomson, 1870:170 and with *Crabro peltarius* by Kohl, 1888c:576. – Panzer, 1806:182 (in critical review of his earlier work); Jurine, 1807:211 (in checklist of species of *Crabro*); nec Stephens, 1829a:365 (in catalog of British insects) and 1829b:33 (in checklist of British insects) = *Crabro peltarius*; Vander Linden, 1829:45 (bibliographic references, Belgium: Bruxelles, Germany); Schummel in Gravenhorst, 1834:79 (Germany: Niederschlesien, now Poland: Dolny Śląsk Region); Dahlbom, 1839:67 and 1839:40 (in revision of Scandinavian Crabronini), 1842a:15 (in review of Scandinavian aculeates), 1845:XXV (specimens in collection Fabricius examined), 360 (in revision of Sphecidae and Pompilidae), 526 (in key to *Crabro*), determination corrected to *Crabro scutellatus* by Thomson, 1870:170; Eversmann, 1849:422 (Russia: Kazan' province and Ural foothills; and Kazakhstan; as *petrosus*); von Kiesenwetter, 1849:92 (Germany: Kingdom of Saxony: Dresden and Oberlausitz area); Wissmann, 1849:16 (Germany: Kingdom of Hannover: Münden); Wesmael, 1852:611 (Belgium: Bruxelles); F. Smith, 1856:395 (in catalog of Hymenoptera in British Museum); Kawall, 1857:26 (Kurland, now Latvia); Ruthe and Stein, 1857:315 (Germany: Berlin area); Schenck, 1857:123 (in revision of fossorial wasps of Germany); Taschenberg, 1866:173 (in revision of Hymenoptera of Germany); Schenck, 1867a:351 (known from Germany); von Aichinger, 1870:313 (Austria: Tirol; as *pterotus*, Fabr.); Schlechtendal, 1872:36 (Germany: Sachsen: Zwickau); Capron, 1878:242 (first record from Great Britain: Surrey: Shere); Meunier, 1896:269 (Belgium: Bruxelles area); N. Arnold, 1902:88 (Russia: Mohilev Province, now Belarus). – As *Thyreopus pterotus*: Lepeletier de Saint Fargeau and Brullé, 1835:760 (new combination, in revision of Crabronini); Herrich-Schaeffer, 1840:295 (Germany: Bayern: Regensburg area); Lepeletier de Saint Fargeau, 1845:165 (in revision of world Hymenoptera); Taschenberg, 1858:111 (in key to Sphecidae of Germany); Assmus, 1859:619 (Russia: Moscow Oblast', as *pterobus*); Funk, 1859:58 (Germany: Bayern: Bamberg); Brischke, 1862:107 (Germany: Preussen Province, now Poland: Pomorze Region); Kirchner, 1867:224 (in catalog of European Hymenoptera); Dours, 1874:153 (in catalog of Hymenoptera of France); Beuthin, 1876:230 (Germany: Hamburg area); Brischke, 1888b:101 (Germany: Preussen Province, now Poland: Pomorze Region), 1889:204 (Germany: Steegen east of Danzig, now Poland: Stegna east of Gdańsk); De Stefani Perez, 1895:228 (in catalog of Sicilian Hymenoptera); Acloque, 1897:89 (in Sphecid Fauna of France and Algeria); Rudow, 1912:71 (nesting in stems of *Cirsium* and Apiaceae); Casolari and Casolari Moreno, 1980:118 (specimens in M. Spinola collection, Torino); Pagliano, 2011a:148 (specimens in M. Spinola collection, Torino, are *Crabro scutellatus*).

Crabro geniculatus Stephens, 1829a:365, nomen nudum (in catalog of British insects). Synonymized with *Crabro scutellatus* (von Scheven, 1781) by F. Smith, 1855:99. – Stephens, 1829b:33 (in checklist of British insects).

Crabro phaeopterus Stephens, 1829a:366, nomen nudum (in catalog of British insects). Synonymized with *Crabro scutellatus* (von Scheven, 1781) F. Smith, 1855:100. – Stephens, 1829b:34 (in checklist of British insects, as *phaeoptera*).

72. *sibiricus* A. Morawitz

Crabro sibiricus A. Morawitz, 1866a:262, ♀, ♂. Syntypes: Russia: Siberia: Kiakhta (ZIN). – Kohl, 1888c:566 (in revision of *Crabro*, as section *Thyreopus* of *Crabro*); Sickmann, 1894:201 (China: Hopeh Province: Kalgan); Dalla Torre, 1897:628 (in catalog of world Sphecidae); Kohl, 1915:157 (in revision of Palearctic Crabronini); Leclercq, 1954c:253 (in catalog of world Crabronini); Tsuneki, 1972a:148 (Mongolia); Marshakov, 1975b:332 (Mongolia); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:861, 869 (in key to *Crabro* of USSR), nec 858 (= *Crabro signaticrus*); Tsuneki, 1984e:59 (Russia: Krasnoyarskiy Krai: Minussinsk); Nemkov, 1986:104 (Russia: Irkutsk Oblast'), 1992b:247 (Russia: Far East Dim near Khingan Nature Reserve); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:444, 446 (in key to Sphecidae of Russian Far East); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:105 (geographic distribution, collecting localities in Kazakhstan); Dollfuss, 2004b:764 (Mongolia: Ulan Baator); Baghirov, 2007:93 (Russia: southwestern Siberia); Nemkov, 2008b:23 (in catalog of Crabronidae of Asiatic Russia), 2009b:114 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2012c:440 (in catalog of Crabronidae of Russian Far East); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

Crabro sibiricus A. Morawitz, 1866b:336. Objective synonym of *Crabro sibiricus* A. Morawitz, 1866:262.

73. *signaticrus* F. Morawitz

Crabro signaticrus F. Morawitz, 1893b:425, ♀, ♂. Lectotype: ♂, Tajikistan: Simarkh in Yagnob River valley (ZIN), designated by Marshakov, 1977:858 (erroneously as *sibiricus*, but the type locality is that of *signaticrus*). – Dalla Torre, 1897:628 (in catalog of world Sphecidae); Kohl, 1915:158 (in revision of Palearctic Crabronini); Bischoff, 1930:219 (Tajikistan: Pamir); Leclercq, 1954c:253 (in catalog of world Crabronini); Kazenas, 1971:161 (in Kazakhstan found only in southeastern mountains, an endemic of Tien Shan Range), 1972b:168 (Kazakhstan), 1974b:110 (feeding on flowers of *Euphorbia* spp., Euphorbiaceae, and *Silaum besseri* L., Apiaceae, in Kazakhstan), 111 (feeding on flowers of *Sonchus arvensis* L., Asteraceae, in Kazakhstan); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Marshakov, 1977:861, 869 (in key to *Crabro* of USSR); Tsuneki, 1984e:59 (Transcaspia: Naryn; Alai Mountains, Kazakhstan or Mongolia?); Esenbekova and Kazenas, 2000:52 (southeastern Kazakhstan: no specific locality); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia); Kazenas and Esenbekova, 2001:135 (Kazakhstan: Almatinskiy Nature Reserve); Kazenas, 2002a:105 (geographic distribution, collecting localities in Kazakhstan); Dollfuss, 2004b:764 (Kazakhstan, Kyrgyzstan, as *signatus*); Kazenas, 2013a:93, 93 (color photograph of male, short information on geographic distribution and nesting habits); Mokrousov, Shlyakhtenok, and Grebennikov, 2016:21 (first record from Russia: Altai Republic: 2 km southeast of Chagan-Uzun on Balhash River at 50.093°N 88.389°E); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

74. *snowii* W. Fox

Crabro snowii W. Fox, 1896:79, ♀, ♂. Lectotype: ♀, Kansas: Douglas County: no specific locality (ANSP), designated by Cresson, 1928:56. – Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein in Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:245 (in catalog of world Crabronini); Krombein, 1963f:277 (Maryland: Plummers Island near Washington, D.C.); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:244 (in revision of Nearctic *Crabro*); R. Miller, 1976:263 (in revision of *hilaris* species group of *Crabro*); Krombein, 1979b:1673 (in catalog of North American Hymenoptera); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 59 (first record from Ontario: Powassan, Windsor); Leclercq, 2008b:83 (bibliographic references, locality rec-

ords from Maryland, Montana, Pennsylvania, and Virginia). – **As *Paranothyreopus snowii***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

75. *spinuliferus* R. Bohart

Crabro spinuliferus R. Bohart, 1976:278, ♂, ♀. Holotype: ♂, USA: California: San Bernardino County: Needles (UCD). – Leclercq, 2008b:83 (bibliographic references).

76. *tenuiglossa* (Packard)

Thyreopus tenuiglossa Packard, 1866:98, ♀. Holotype or syntypes: ♀, USA: Illinois: no specific locality (depository?). – Provancher, 1889:292 (in revision of Hymenoptera of Quebec, as *tenuiglossus*). – Stevens, 1917:423 (North Dakota, as *tenuiglossis*). – **As *Synothyreopus tenuiglossus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae); Harrington, 1902:219 (Canada: Ontario: Ottawa); Strickland, 1947:128 (Canada: Alberta). – **As *Crabro tenuiglossa***: Cresson, 1887:285 (new combination, in catalog of North American Hymenoptera); W. Fox, 1895a:176 (in revision of North American Crabronini); Dalla Torre, 1897:631 (in catalog of world Sphecidae); Krombein, 1939:144 (New York State, as *tenuiglossus*); Krombein *in* Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera, as *tenuiglossus*); Leclercq, 1954c:248 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:249 (in revision of Nearctic *Crabro*); Krombein, 1979b:1673 (in catalog of North American Hymenoptera); Finnamore, 1982:171 (in Sphecid Fauna of Southern Quebec), 1994:210 (Canada: Alberta: Wagner Natural Area 8 km west of Edmonton); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Leclercq, 2008b:76 (in improved key to North American *Crabro*), 83 (bibliographic references, locality records from Alberta, Ontario, and Minnesota).

Thyreopus discifer Packard, 1867:363, ♂. Lectotype: ♂, USA: Illinois: no specific locality, see R. Bohart, 1976:249 (ANSP), designated by Cresson, 1928:53 (as *dissifer*). Synonymized with *Crabro tenuiglossus* by W. Fox, 1895a:176. – Cresson, 1887:286 (in catalog of North American Hymenoptera). – **As *Crabro discifer***: Kohl, 1888c:585 (new combination, in list of Nearctic *Crabro*).

77. *tenuis* W. Fox

Crabro tenuis W. Fox, 1895a:166, ♀, ♂. Lectotype: ♂, USA: Colorado: no specific locality (ANSP), designated by Cresson, 1928:56. – Dalla Torre, 1897:631 (in catalog of world Sphecidae); Carter, 1925:131 (Canada: Alberta: Waterton); Krombein, 1939:144 (New York State); Krombein *in* Muesebeck et al., 1951:1018 (in catalog of North American Hymenoptera); Leclercq, 1954c:254 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); R. Bohart, 1976:280 (in revision of Nearctic *Crabro*); Krombein, 1979b:1675 (in catalog of North American Hymenoptera); Finnamore, 1982:172 (in Sphecid Fauna of Southern Quebec); Kurczewski and Miller, 1991:254 (New York, Pennsylvania), 1992:33 (nesting habits); Buck, 2004:26 (in checklist of Crabronidae of Ontario, Canada); Leclercq, 2008b:77 (in improved key to North American *Crabro*), 83 (bibliographic references, locality records from USA); Ratzlaff, 2016:25 (from Canada: first record from British Columbia: Southern Interior); 33 (British Columbia: Kamloops). – **As *Thyreopus tenuis***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae). – **As *Pemphilis tenuis***: Strickland, 1947:128 (new combination, Canada: Alberta: Waterton).

Anothyreus panurgoides Viereck, 1904b:239 (♀ only), corrected to *Crabro juniatae* by Krombein, 1963:253.

Crabro juniatae Krombein, 1938c:469, ♀. Holotype: ♀, USA: Pennsylvania: Huntingdon (USNM). Synonymized with *Crabro tenuis* by R. Bohart, 1976:280. – Krombein *in* Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Krombein, 1952b:181 (USA: West Virginia: Lost River State Park); Leclercq, 1954c:254 (in catalog of world Crabronini); Krombein, 1958f:198 (in supplement to catalog of North American Hymenoptera: West Virginia, prey: *Hylemya cilicrura* (Rondani), an anthomyiid); Kurczewski and Acciavatti, 1968:199 (review of nesting habits); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae); Krombein, 1979b:1675 (in catalog of North American Hymenoptera).

78. *thyreophorus* Kohl

Crabro thyreophorus Kohl, 1888c:585, ♀, ♂. Lectotype: ♂, USA: Nevada: no specific locality (NHMW), designated by R. Bohart, 1976:252. – W. Fox, 1895a:172 (in revision of North American Crabronini); Dalla Torre, 1897:631 (in catalog of world Sphecidae); Krombein *in* Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:249 (in catalog of world Crabronini); R. Bohart, 1976:252 (in revision of Nearctic *Crabro*); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); Krombein, 1979b:1674 (in catalog of North American Hymenoptera); Dollfuss, 1989:9 (lectotype in NHMW); Leclercq, 2008b:83 (bibliographic references). – **As *Synothyreopus thyreophorus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

79. *tuberculiger* Kohl

Crabro tuberculiger Kohl, 1915:161, ♂. Holotype: ♂, Tajikistan: Mount Alai, now Pik Lenina (TMB). – Leclercq, 1954c:252 (in catalog of world Crabronini); de Beaumont, 1960c:172 (Afghanistan); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); Marshakov, 1977:859, 870 (in key to *Crabro* of USSR); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia); Dunford, Turbyville, and Leavengood, 2014:9 (listed as medically important in Afghanistan).

80. *tumidus* (Packard)

Thyreopus tumidus Packard, 1867:364, ♂, ♀. Lectotype: ♂, USA: Pennsylvania: no specific locality (ANSP), designated by Cresson, 1928:56. – Cresson, 1887:286 (in catalog of North American Hymenoptera); C. Robertson, 1894:453 (visiting flowers of *Eupatorium serotinum* Michx.), 1896:73 (visiting flowers of *Polygonum hydropiperoides* Michx.). – **As *Crabro tumidus***: Kohl, 1888c:585 (new combination, in list of Nearctic *Crabro*); W. Fox, 1895a:175 (in revision of North American Crabronini); Dalla Torre, 1897:632 (in catalog of world Sphecidae); J. Smith, 1910:682 (in new list of insects of New Jersey); Rohwer, 1916b:669, 670 (in catalog of Hymenoptera of Connecticut); Mickel, 1918b:383 (in catalog of Nebraskan Sphecidae); Rohwer *in* Viereck, 1925:669, 670 (in key to Sphecidae of Connecticut; Westbrook); Krombein *in* Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:247 (in catalog of world Crabronini); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); Krombein, 1979b:1673 (in catalog of North American Hymenoptera); Hook, 1998:251 (first records from Texas); Ahlstrom, 1995:111 (in checklist of insects of North Carolina); Leclercq, 2008b:76 (in improved key to North American *Crabro*), 83 (bibliographic references, locality records from District of Columbia, Florida and Oklahoma). – **As *Synothyreopus tumidus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae); J. Smith, 1900:515 (in list of insects of New Jersey). – **As *Solenius tumidus***: J.Ch. Bradley, 1928:1020 (new combination, in catalog of New York Sphecidae).

81. *uljanini* Radoszkowski

Crabro uljanini Radoszkowski, 1877:79, ♂ (as *Uljanini*, incorrect original capitalization). Syntypes: Tajikistan: Yagnob valley: no specific locality; also Obburden, Hodja-Chiburgan (ZMMU). – Kohl, 1888c:570 (in revision of *Crabro*, as section *Thyreopus* of *Crabro*); F. Morawitz, 1893b:426 (Tajikistan: Kol in Yagnob River valley; China: Sinkiang Uighur: Artuch 20 km north of Kashgar); Dalla Torre, 1897:632 (in catalog of world Sphecidae); Kohl, 1915:160 (in revision of Palearctic Crabronini); Gussakovskij, 1935:433 (Tajikistan: Shuroabad); Leclercq, 1954c:252 (in catalog of world Crabronini); de Beaumont, 1960c:171 (Afghanistan); Kazenas, 1971:161 (an endemic of Tien Shan Range), 1972b:168 (Kazakhstan); Tsuneki, 1972a:148 (Mongolia); Marshakov, 1975b:332 (Mongolia); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); Marshakov, 1977:861 (in key to *Crabro* of USSR); Tsuneki, 1984e:59 (Transcaspia: Ispayran); Kazenas, 2001b:41 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:105 (geographic distribution, collecting localities in Kazakhstan); Hua, 2006:279 (in list of Chinese insects, geographic distribution); Dunford, Turbyville, and Leavengood, 2014:9 (listed as medically important in Afghanistan).

82. *ussuriensis* Gussakovskij

Crabro ussuriensis Gussakovskij, 1932:18, ♀. Holotype: ♀, Russia: Primorskiy Kray: Sutshan (Stockholm). – Leclercq, 1954c:251 (in catalog of world Crabronini); Tsuneki, 1965b:36 (China: Heilongjiang: Harbin, description of ♂), 1967e:2 (China: Manchuria); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); Marshakov, 1977:864, 868 (in key to *Crabro* of USSR); Tsuneki, 1977f:4 (Korea, redescription of ♂); Leclercq, 1982b:146 (China: Cha-Tchéou to Kan-Tchéou and Harbin); Tsuneki, 1982b:9 (Korea), 17 (known from Korea); Paik, 1985:201 (in list of Sphecidae of Korea); Nemkov, 1992b:247 (Russia: Far East: Khingan Nature Reserve); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:444, 446 (in key to Sphecidae of Russian Far East); Wu and Zhou, 1996a:117 (in revision in Economic Insect Fauna of China); Hua, 2006:279 (in list of Chinese insects, geographic distribution); Nemkov, 2008b:23 (in catalog of Crabronidae of Asiatic Russia), 2009b:114 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:236 (Russia: Primorskiy Kray: Lazovsky Nature Reserve), 2012c:440 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:424 (in catalog of Sphecidae s.l. of Korean Peninsula); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

Crabro koreanus Tsuneki, 1947d:287, ♀. Holotype: ♀, South Korea: Shoyo-zan ca 16 km south of Demilitarized Zone (originally K. Tsuneki coll., now Hyogo Mus.). Synonymized with *Crabro ussuriensis* by Marshakov, 1978:859. – Leclercq, 1954c:251 (in catalog of world Crabronini); Tsuneki, 1982b:17 (known from Korea); Paik, 1985:201 (in list of Sphecidae of Korea); Tano, 1995:43 (holotype in K. Tsuneki collection); Hashimoto and Nakanishi, 1997:15 (holotype and paratype transferred to Hyogo Mus.).

83. *velitaris* R. Bohart

Crabro velitaris R. Bohart, 1976:280, ♂, ♀. Holotype: ♂, USA: California: Lassen County: Hallelujah Junction (UCD). – Finnamore, 1988:863 (Canada: Yukon Territory), 1997:891 (Canada: Yukon); Leclercq, 2008b:78 (in improved key to North American *Crabro*), 83 (bibliographic references, Wyoming: Sweetwater County: 15 mi. south of Green River 2008b:83).

84. *venator* (Rohwer)

Thyreopus venator Rohwer, 1911b:565, ♀, ♂. Holotype: sex not indicated, Mexico: Chihuahua: "Meadow Valley" (USNM). – **As *Crabro venator***: Leclercq, 1954c:249 (new combination, in catalog of world Crabronini); Evans, 1964d:302 (nesting habits); Kurczewski and Acciavatti, 1968:199 (review of nesting habits); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); R. Bohart, 1976:250 (in revision of Nearctic *Crabro*); Leclercq, 1981e:78 (Mexico); Amarante, 2002:25 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:663 (in checklist of Mexican Sphecidae); Leclercq, 2008b:83 (bibliographic references).

85. *vernalis* (Packard)

Thyreopus vernalis Packard, 1867:369, ♀. Lectotype: ♀, USA: Illinois: no specific locality (ANSP), designated by Cresson, 1928:56. – Cresson, 1887:286 (in catalog of North American Hymenoptera). – **As *Crabro vernalis***: Kohl, 1888c:585 (new combination, in list of Nearctic *Crabro*); W. Fox, 1895a:173 (in revision of North American Crabronini); Dalla Torre, 1897:636 (in catalog of world Sphecidae); H. Smith, 1908b:400 (in revision of Nebraskan Sphecidae); J. Smith, 1910:681 (in new list of insects of New Jersey); Krombein in Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:248 (in catalog of world Crabronini); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); R. Bohart, 1976:257 (in revision of Nearctic *Crabro*); Krombein, 1979b:1674 (in catalog of North American Hymenoptera); Finnamore, 1982:173 (in Sphecid Fauna of southern Quebec), 1988:863 (Canada: Yukon Territory), 1997:891 (Canada: Yukon); Buck, 2004:26 (Canada: in checklist of Crabronidae of Ontario), 30 (distribution within Ontario), first record from Ontario: Ignace); Leclercq, 2008b:83 (bibliographic references, Colorado: Chaffee County: east of side of Monarch Pass); Ratzlaff, 2016:25 (Canada: British Columbia: from R. Bohart, 1976 and Leclercq, 2008). – **As *Synothyreopus vernalis***: Ashmead,

1899d:217 (new combination, in checklist of North American Crabronidae); J. Smith, 1900:515 (in list of insects of New Jersey).

Crabro brachycarpae Rohwer, 1908b:252, ♂. Holotype or syntypes: ♂, USA: Colorado: Florissant (USNM). Synonymized with *Crabro vernalis* by R. Bohart, 1976:257 and by R. Bohart in R. Bohart and Menke, 1976:628. – Rohwer, 1908b:259 (in key to *Crabro* of Colorado and New Mexico). – Krombein in Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:249 (in catalog of world Crabronini); R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae).

Crabro gillettei Rohwer, 1908f:418, ♀. Holotype: ♀, USA: Colorado: Larimer County: no specific locality (originally Colorado Agricultural College, now USNM). Synonymized with *Crabro vernalis* by R. Bohart in R. Bohart and Menke, 1976:408, and R. Bohart, 1976:257. – Krombein in Muesebeck et al., 1951:1016 (in catalog of North American Hymenoptera); Leclercq, 1954c:248 (in catalog of world Crabronini).

86. *villosus* W. Fox

Crabro villosus W. Fox, 1895a:158, ♀. Lectotype: ♀, USA: California: no specific locality (ANSP), designated by Cresson, 1928:56. – Dalla Torre, 1897:636 (in catalog of world Sphecidae); Rohwer, 1908b:250 (in key to *Crabro* of Colorado and New Mexico); Krombein in Muesebeck et al., 1951:1018 (in catalog of North American Hymenoptera); Leclercq, 1954c:255 (in catalog of world Crabronini); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); R. Bohart, 1976:282 (in revision of Nearctic *Crabro*); Krombein, 1979b:1675 (in catalog of North American Hymenoptera); Rust, Menke, and Miller, 1985:47 (California: Channel Islands); Leclercq, 2008b:77 (in improved key to North American *Crabro*), 83 (bibliographic references, California: Los Angeles County: Pico Canyon 2 mi. west of Newhall, Riverside County: Riverside). – **As *Protothyreopus villosus***: Ashmead, 1899d:174 (new combination, in checklist of North American Crabronidae).

87. *virgatus* W. Fox

Crabro virgatus W. Fox, 1895a:174, ♂. Lectotype: ♂, USA: Nevada: no specific locality (ANSP), designated by Cresson, 1928:56. – Dalla Torre, 1897:636 (in catalog of world Sphecidae); Krombein in Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:248 (in catalog of world Crabronini); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); R. Bohart, 1976:258 (in revision of Nearctic *Crabro*); Krombein, 1979b:1674 (in catalog of North American Hymenoptera); Evans, Kurczewski, and Alcock, 1980:867 (nesting habits); Spofford, Kurczewski, and Downes, 1989:257 (reference to publication on nest parasite *Phrosinella fulvicornis* (Coquillett), a miltogrammine fly); Leclercq, 2008b:78 (in improved key to North American *Crabro*), 83 (bibliographic references, Alberta: Highwood River 35 mi. west of High River). – **As *Synothyreopus virgatus***: Ashmead, 1899d:217 (new combination, in checklist of North American Crabronidae).

Crabro veles Carter, 1925:134, ♂. Holotype: ♂, Canada: Alberta: Edmonton (CNC). Synonymized with *Crabro virgatus* by R. Bohart in R. Bohart and Menke, 1976:409. – Krombein in Muesebeck et al., 1951:1017 (in catalog of North American Hymenoptera); Leclercq, 1954c:248 (in catalog of world Crabronini); Sarazin, 1986:307 (holotype in CNC). – **As "*Solenius*" *veles***: Strickland, 1947:128 (new combination, Canada: Alberta: Edmonton).

88. *werestschagini* Gussakovskij

Crabro werestschagini Gussakovskij, 1932:19, ♀, ♂. Lectotype: ♂, Russia: Primorskiy Krai: Blagoveshchensk (ZIN), designated by Marshakov, 1977:859. – Leclercq, 1954c:25 (in catalog of world Crabronini); Tsuneki, 1967e:11 (China: Manchuria: Harbin); R. Bohart and Menke, 1976:409 (in checklist of world Sphecidae); Marshakov, 1977:864, 868 (in key to *Crabro* of USSR); Leclercq, 1982b:146 (China: Harbin); Nemkov, 1992b:248 (Russia: Far East: Khingan Nature Reserve); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:444, 446 (in key to Sphecidae of Russian Far East); Wu and Zhou, 1996a:118 (in revision in Economic Insect Fauna of China); Hua, 2006:279 (in list of Chinese insects, geographic distribution); Nemkov, 2008b:23 (in catalog of Crabronidae of Asiatic Russia), 2009b:114 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2012c:441 (in catalog of Crabronidae of Russian Far East); Antropov, 2017b:226 (in catalog of Crabroninae of Russia).

Crabro okabei Yasumatsu, 1944:752, ♀. Holotype or syntypes: China: Beijing (depository?). Synonymized with *Crabro werestchagini* by Marshakov, 1977:859. – R. Bohart and Menke, 1976:408 (in checklist of world Sphecidae).

sp.

Bridwell, 1899:209 (Kansas: no specific locality); Schrottky, 1908:48 (visiting flowers of *Petroselinum sativum* Hoffm.); Wasmann, 1908:190 (nest location attributed to smell); Strand, 1910d:340 (Norway); Drenowski, 1936:247 (Bulgaria); Yasumatsu, 1942c:114 (China: Nei Mongol: Apaka at 44°N 114.96°E); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Steiner, 1973:28 (Canada: Northwest Territories); Hurd and Linsley, 1975:117 (California: Yuma County: Yuma; on flowers of *Larrea tridentata* (De Candolle) Coville, Zygophyllaceae); Kumar, Lavigne, Lloyd, and Pfadt, 1976:51 (USA: Colorado: Pawnee National Grassland); Hilchie, 1982:107 (Alberta: Empress); D. Evans, 1985:22 (Canada: British Columbia: southern Vancouver Island: associated with *Quercus garryana* Douglas); Hua, 1989:11; 7 (China); van Vondel, 1995:30 (specimens from India in Natuurmuseum Rotterdam); Pagliano, 2011a:148 (specimens in M. Spinola collection, Torino, are *Crabro peltarius* and *C. peltatus*); Kundu, Ghosh, and Tiwari, 2012:153 (India: Andaman and Nicobar Islands).

UNRECOGNIZABLE SPECIES DESCRIBED IN OR TRANSFERED TO CRABRO

Crabro caramuru Holmberg, 1884:219, ♂ (as *Caramuru*, incorrect original capitalization). Holotype: ♂, Uruguay: Colonia (depository?). – Dalla Torre, 1897:586 (in catalog of world Sphecidae); Schrottky, 1903b:177 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay), 1913a:234 (listed); Amarante, 2002:24 (in catalog of Neotropical Crabronidae).

Crabro geniculatus Fabricius, 1793:301, sex not indicated, junior primary homonym of *Crabro geniculatus* Olivier, 1792. Holotype or syntypes: Germany: no specific locality (depository?). – Fabricius, 1796:51 (in Index to his Entomologia Systematica, 1793); Jurine, 1807:212 (in checklist of species of *Crabro*); not discussed by van der Vecht, 1961a. – **As *Pemphredon geniculatus***: Fabricius, 1804:315 (new combination, redescription); Billberg, 1820:107 (specimens from Sweden in collection Billberg); Dahlbom, 1845:XXV (type material not examined, may be a *Lindenius* or a *Crossocerus*).

Crabro grassator Bingham, 1898b:121, ♂. Holotype or syntypes: ♂, India: Himachal Pradesh: Simla (BMNH?). – Ramakrishna Aiyar, 1916:559 (in catalog of Indian aculeates described after Bingham, 1897).

Crabro notatus Illiger, 1807:148. – Vander Linden, 1829:58 (bibliographic references, Italy: Toscana).

Crabro lunatus Schrank, 1802:338, sex not indicated. Holotype or syntypes: Germany: Bayern (= Bavaria): Indgolstadt (destroyed), junior secondary homonym of *Crabro lunatus* (Christ, 1791). – Dalla Torre, 1897:609 (in catalog of world Sphecidae).

Crabro punctatus Fabricius, 1787:296, sex not indicated. Holotype or syntypes: Fenmark: Hafniae, now Copenhagen (depository?).

Crabro plumipes Linnaeus: Tischbein, 1850:10 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld).

Crabro quinquecinctus Schrank, 1802:335, sex not indicated. Holotype or syntypes: Germany: Bayern (= Bavaria): Gern (destroyed), junior primary homonym of *Crabro quinquecinctus* Fabricius, 1787.

Crabro tetraedrus Dufour, 1841a:498 and 1841b:234, ♂. Holotype or syntypes: France: Saint-Séver (lost?). = ? *Ectemnius*. – Dufour, 1841a:497 and 1841b:236 (digestive tract), 1841a:503 and 1841b:239 (male reproductive system), 1841a:507 and 1841b:243 (female reproductive system).

Crabro tricuspis Schrank, 1796:127, sex not indicated. Holotype or syntypes: Germany: Bayern = Bavaria: Pöttmes (destroyed). – Schrank, 1802:333 (in revision of insects of Bayern (= Bavaria), Germany); Dalla Torre, 1897:632 (in catalog of world Sphecidae); R. Bohart and Menke, 1976:409 (not a crabronin).

Crabro varicornis Fabricius, 1798:271, sex not indicated. Holotype or syntypes: Germany: Halae Saxonum, now Sachsen-Anhalt: Halle (depository?). – Fabricius, 1799:17 (in Index to his Supplementum, 1798); Vander Linden, 1829:75 (bibliographic references, Germany: Saxony); Dalla Torre, 1897:635 (in catalog of world Sphecidae); not discussed by van der Vecht, 1961a; R. Bohart and Menke, 1976:409 (not a crabronine). – **As *Pemphredon varicornis***: Fabricius, 1804:315 (new combination, redescription); Vander Linden, 1829:75 (bibliographic references, Germany: Saxony); Dahlbom, 1845:XXV (type material not examined, may be synonym of *Rhopalum tibiale*).

Philanthus clypeatus Thunberg, 1815:139. – **As *Crabro clypeatus***: F. Smith, 1853:64 (in checklist of British Hymenoptera); Dalla Torre, 1897:591 (new combination, in catalog of world Hymenoptera).

UNRECOGNIZABLE SPECIES

Crabro melanipes Giraud: Siła Nowicki, 1864:54 (Ukraine: L'viv), 1865:54 (western Ukraine: Galicia region).

UNRECOGNIZED SPECIES DESCRIBED IN *VESPA* (*CRABRO*)

argyrostoma Gmelin, 1790:2766. – **As *Crabro argyrostoma***: Dalla Torre, 1897:583 (new combination, in catalog of world Sphecidae).

braccata Gmelin, 1790:2768. – **As *Crabro braccatus***: Dalla Torre, 1897:584 (new combination, in catalog of world Sphecidae).

canescens Gmelin, 1790:2767. – **As *Crabro canescens***: Dalla Torre, 1897:585 (new combination, in catalog of world Sphecidae).

chrysogona Gmelin, 1790:2767. – **As *Crabro chrysogonus***: Dalla Torre, 1897:588 (new combination, in catalog of world Sphecidae).

chrysopus Gmelin, 1790:2767. – **As *Crabro chrysopus***: Dalla Torre, 1897:588 (new combination, in catalog of world Sphecidae).

chrysostoma Gmelin, 1790:2766. – **As *Crabro chrysostoma***: Dalla Torre, 1897:588 (new combination, in catalog of world Sphecidae).

clavata Gmelin, 1790:2768. – **As *Crabro clavatus***: Dalla Torre, 1897:589 (new combination, in catalog of world Sphecidae).

cylindrica Gmelin, 1790:2767. – **As *Crabro cylindricus***: Dalla Torre, 1897:595 (new combination, in catalog of world Sphecidae).

dichroa Gmelin, 1790:2767. – **As *Crabro dichrous***: Dalla Torre, 1897:596 (new combination, in catalog of world Sphecidae).

ferruginea Gmelin, 1790:2767. – **As *Crabro ferrugineus***: Dalla Torre, 1897:600 (new combination, in catalog of world Sphecidae).

flavicans Gmelin, 1790:2768. – **As *Crabro flavicans***: Dalla Torre, 1897:600 (new combination, in catalog of world Sphecidae).

flavipes Gmelin, 1790:2766. – **As *Crabro flavipes***: Dalla Torre, 1897:600 (new combination, in catalog of world Sphecidae).

gaditana Gmelin, 1790:2765. – **As *Crabro gaditanus***: Dalla Torre, 1897:623 (new combination, in catalog of world Sphecidae, as synonym of *Crabro ruficornis* (Forster, 1771) Gmelin; Ceballos, 1956:395 (in catalog of Sphecidae of Spain, as junior synonym of *Crabro ruficornis* Forster).

immaculata Gmelin, 1790:2767. – **As *Crabro immaculatus***: Dalla Torre, 1897:604 (new combination, in catalog of world Sphecidae).

leskii Gmelin, 1790:2765. – **As *Crabro leskii***: Spinola, 1806:103 (new combination, in synonymy of *Crabro lituratus* Panzer, 1805); Dalla Torre, 1897:607 (in catalog of world Sphecidae).

- lutea* Gmelin, 1790:2765. – As *Crabro luteus*: Dalla Torre, 1897:609 (new combination, in catalog of world Sphecidae).
- marginata* Gmelin, 1790:2766. – As *Crabro marginatus*: Dalla Torre, 1897:610 (new combination, in catalog of world Sphecidae).
- melanops* Turton, 1801:534. Objective synonym of *Crabro melanostoma* (Gmelin). – van der Vecht, 1960:6 (new combination, history of name).
- melanostoma* Gmelin, 1790:2766, in *Vespa*. – As *Crabro melanostoma*: Dalla Torre, 1897:610 (new combination, in catalog of world Sphecidae).
- nigerrima* Gmelin, 1790:2767. – As *Crabro nigerrimus*: Dalla Torre, 1897:611 (new combination, in catalog of world Sphecidae).
- ochropus* Gmelin, 1790:2766. – As *Crabro ochropus*: Dalla Torre, 1897:612 (new combination, in catalog of world Sphecidae).
- pubescens* Gmelin, 1790:2768, sex not indicated. Holotype or syntypes: Europe: no specific locality (depository unknown). – As *Crabro pubescens*: Dalla Torre, 1897:619 (new combination, in catalog of world Sphecidae); R. Bohart and Menke, 1976:408 (tentatively included in *Crabro*).
- punctatus* Fabricius, 1787:296, sex not indicated. Holotype or syntypes: Hafniae, now Copenhagen (depository?).
- punctulata* Gmelin, 1790:2766. – As *Crabro punctulatus*: Dalla Torre, 1897:620 (new combination, in catalog of world Sphecidae).
- tibialis* Gmelin, 1790:2767. – As *Crabro tibialis*: Dalla Torre, 1897:631 (new combination, in catalog of world Sphecidae).
- unifasciatus* Gmelin, 1790:2766. – As *Crabro unifasciatus*: Dalla Torre, 1897:632 (new combination, in catalog of world Sphecidae).

SPECIES DESCRIBED IN *CRABRO* AND TRANSFERRED TO OTHER GENERA

- abdominalis* W. Fox, 1895 = *Moniaecera*
- abnormis* Blackburn, 1887 = *Ectemnius*
- acanthophorus* Kohl, 1892 = *Crossocerus*
- aciculatus* Provancher, 1882 = *Ectemnius cephalotes* (Olivier, 1792)
- adspectans* Blackburn, 1887 = *Ectemnius*
- aegyptius* Kohl, 1888 = *Lindenius*
- aemulans* Kohl, 1905 = *Podagritys*
- aenescens* Dahlbom, 1839 = *Lindenius albilabris* (Fabricius, 1793)
- affinis* F. Smith, 1878 = *Ectemnius fredericsmithi* (Schulz, 1906)
- affinis* Rossi, 1792 = ? *Cerceris lunata* A. Costa
- affinis* Wesmael, 1852 = *Crossocerus assimilis* F. Smith, 1856
- agilis* F. Smith, 1858 = *Dasyproctus*
- agycus* Cameron, 1904 = *Ectemnius*
- aino* Tsuneki, 1947 = *Crossocerus malaisei* (Gussakovskij, 1932)
- alacer* Bingham, 1896 = *Lestica*
- alatus* Dahlbom, 1838 = *Ectemnius dives* (Lepeletier de Saint Fargeau and Brullé, 1835)
- alatus* Panzer, 1797 = *Lestica*
- albilabris* Fabricius, 1793 = *Lindenius*
- algirus* Kohl, 1892 = *Lindenius pygmaeus algirus*
- amurensis* Kohl, 1892 = *Crossocerus*

androgynus Rossi, 1792 = *Philanthus triangulum* (Fabricius, 1775)
annandali Bingham, 1908 = *Crossocerus*
annulus Dahlbom, 1838 = *Crossocerus capitosus*
arabs Kohl, 1894 = *Dasyproctus*
arcuatus Say, 1837 = *Ectemnius*
argenteus Schenck, 1857 = *Ectemnius lituratus* (Panzer, 1805)
ardens Cameron, 1890 = *Crossocerus*
arechavaletai Brèthes, 1909 = *Podagricus*
ariel Cameron, 1891 = *Ectemnius*
armaticeps W. Fox, 1895 = *Lindenius*
armatus Vander Linden, 1829 = *Lindenius*
armipes von Siebold, 1844 = *Crossocerus dimidiatus* (Fabricius, 1781)
arthriticus Rossi, 1790 = *Mellinus*, possibly *arvensis* (Linnaeus, 1758), may be a scoliid
asperatus W. Fox, 1895 = *Moniaecera*
aspidiphorus Schrank, 1802 = *Ectemnius*
assamensis Cameron, 1902 = *Crossocerus*
assimilis F. Smith, 1856 = *Crossocerus*
aswad Nurse, 1902 = *Crossocerus*
ater Cresson, 1865 = *Crossocerus*
ater Olivier, 1792 = *Psen*
atitlanae Cameron, 18 = *Ectemnius*
atriceps Cresson, 1865 = *Ectemnius*
atrifrons Cresson, 1865 = *Lestica confluenta* (Say, 1837)
aurarius Matsumura, 1912 = *Ectemnius cavifrons aurarius*
auriceps Cresson, 1865 = *Ectemnius*
auricomus Bingham, 1897 = *Ectemnius chrysites* (Kohl, 1892)
aurifrons F. Smith, 1856 = *Ectemnius decemmaculatus* (Say, 1823)
austriacus Kohl, 1899 = *Rhopalum*
balucha Nurse, 1903 = *Ectemnius flagellarius* (F. Morawitz, 1892)
banksi Rohwer, 1909 = *Ectemnius excavatus* (W. Fox, 1892)
barbipes Dahlbom, 1845 = *Crossocerus*
basiflavus Brethès, 1910 = *Ectemnius*
bellus Cresson, 1865 = *Lestica confluenta* (Say, 1837)
besseyae Rohwer, 1908 = *Ectemnius*
bicinctus Fabricius, 1793 = *Argogorytes mystaceus* (Linnaeus, 1761)
bicinctus Rossi, 1794 = *Lestiphorus*
bicuspidatus Arnold, 1944 = *Dasyproctus*
bidens Haliday, 1833 = *Crossocerus megacephalus* (Rossi, 1790)
bidens Schrank, 1802 = *Cerceris ruficornis* (Fabricius, 1793)
bigeminus Patton = *Ectemnius*
bipunctatus Fabricius, 1787 = *Mellinus arvensis* (Linnaeus, 1758)
bipunctatus Zetterstedt, 1838 = *Ectemnius borealis* (Zetterstedt, 1838)
bivittatus R. Turner, 1908 = *Williamsita*
bojus Schrank, 1802 = *Crossocerus*
boulderensis Rohwer, 1909 = *Crossocerus angelicus* (Kincaid, 1900)
borealis Zetterstedt, 1838 = *Ectemnius*

braunsii Kohl, 1894 = *Dasyproctus*
bredoi Arnold, 1947 = *Dasyproctus*
brevis Vander Linden, 1829 = *Entomognathus*
brunneipes Packard, 1866 = *Ectemnius*
bucephalus F. Smith, 1864 = *Tracheliodes*
bucephalus F. Smith, 1865 = *Vechtia rugosa* (F. Smith, 1857)
camelus Eversmann, , 1849 = *Lestica confluenta*
calceatus Rossi, 1794 = *Gorytes quinquecinctus* (Fabricius, 1793)
calceatus Tsuneki, 1947 = *Rhopalum pygidiale* R. Bohart, 1974
canaliferus Arnold, 1944 = *Arnoldita*
canonicola Viereck, 1908 = *Crossocerus maculipennis* (F. Smith, 1856)
capistratus Schrank, 1796 = *Mellinus arvensis* (Linnaeus, 1758)
capitosus Shuckard, 1837 = *Crossocerus*
carbonarius Dahlbom, 1838 = *Crossocerus*
carbonicolor Dalla Torre, 1897 = *Podagritus*
carinatus F. Smith, 1873 = *Ectemnius*
cavifrons Thomson, 1870 = *Ectemnius*
centralis Cameron, 1891 = *Ectemnius*
cephalotes Olivier, 1792 = *Ectemnius*
cephalotes Panzer, 1799 = *Ectemnius cephalotes* (Olivier, 1792)
ceraunius Rossi, 1794:123 = *Dinetus pictus*
cestratus Shuckard, 1837 = *Crossocerus*
championi Cameron, 1891 = *Ectemnius semipunctatus* (Lepeletier and Brullé, 1835)
chinensis Sickmann, 1895 = *Ectemnius*
chrysites Kohl, 1892 = *Ectemnius*
chrysostomus Lepeletier and Brullé, 1835 = *Ectemnius*
cinctellus W. Fox, 1895 = *Lestica*
cinctibellus Viereck, 1908 = *Lestica confluenta* (Say, 1837)
cinctus Rossi, 1790 = *Bembecinus tridens* (Fabricius, 1781)
cinctus Spinola, 1806 = ? *Ectemnius lapidarius* (Panzer, 1804)
cinctus R. Turner, 1908 = *Ectemnius reginellus* Leclercq, 1954
cinxius Dahlbom, 1838 = *Crossocerus*
circumscriptus Kohl, 1892 = *Enoplolindenius*
claviventris Cresson, 1865 = *Rhopalum*
clypearis Schenck, 1857 = *Crossocerus walkeri* (Shuckard, 1837)
cockerelli Rohwer, 1908 = *Crossocerus tarsatusplanipes* (W. Fox, 1895)
cognatus F. Smith, 1856 = *Rhopalum* (unrecognizable species)
collaris Matsumura, 1912 = *Lestica*
collinus F. Smith, 1856 = *Ectemnius decemmaculatus* (Say, 1823)
columbianus Kohl, 1892 = *Lindenius*
comptus Lepeletier de Saint Fargeau and Brullé, 1835 = *Ectemnius lapidaries* (Panzer, 1804)
confertus W. Fox, 1895 = *Crossocerus*
confinis Walker, 1871 = *Ectemnius*
constanceae Cameron, 1891 = *Lestica*
contiguus Cresson, 1865 = *Ectemnius nigrifrons* (Cresson, 1865)
conator R. Turner, 1908 = *Dasyproctus*

confluentus Say, 1837 = *Lestica*
congener Dahlbom, 1845 = *Crossocerus*
conglobatus R. Turner, 1908 = *Ectemnius*
continuus Fabricius, 1804 = *Ectemnius*
cora Cameron, 1888 = *Podagritys*
cornutus Fabricius, 1787 = *Cerceris cornigera* (Gmelin, 1790)
corrugatus Packard, 1866 = *Ectemnius*
crasus Lepeletier and Brullé, 1835 = *Ectemnius*
crassiceps Mickel, 1916 = *Ectemnius dilectus* (Cresson, 1865)
crassicornis Spinola, 1808 = *Ectemnius*
crassipes Fabricius, 1798 = *Rhopalum coarctatum* Scopoli, 1763
crassipes Walckenaer, 1817 = *Oxybelus quatuordecimnotatus* Jurine, 1807
crenulifer Kohl, 1905 = *Lindenius*
cristatus Packard, 1866 = *Ectemnius dives* (Lepeletier de Saint Fargeau and Brullé, 1835)
croceosignatus Arnold, 1944 = *Dasyproctus*
crudelis de Saussure, 1892 = *Dasyproctus*
cruentatus Arnold, 1944 = *Rhopalum*
ctenopus Cameron, 1902 = *Ectemnius*
cubensis Cresson, 1865 = *Lestica*
cubiceps Taschenberg, 1875 = *Ectemnius*
cunicularius Schrank, 1802 = *Cerceris ruficornis* (Fabricius, 1793)
curvicollis Cameron, 1912 = *Foxita asuncionis* (Strand, 1910)
curvitaris Herrich-Schaeffer, 1841 = *Tracheliodes*
dallatoreanus Kohl, 1880 = *Ectemnius lituratus* (Panzer, 1804)
davidsoni Sandhouse, 1938 = *Crossocerus annulipes* (Lepeletier de Saint Fargeau and Brullé, 1835)
decemmaculatus Say, 1823 = *Ectemnius*
decorus W. Fox, 1895 = *Crossocerus*
dentatus F. Smith, 1873 = *Lamocrabro*
denticornis F. Smith, 1879 = *Ectemnius*
denticoxa Bischoff, 1932 = *Crossocerus*
denticulatus Packard, 1866 = *Ectemnius lapidarius* (Panzer, 1804)
dentipleuris Cameron, 1908 = *Piyuma*
diadema Fabricius, 1781 = *Philanthus triangulum diadema* (Fabricius)
dilaticornis F. Morawitz, 1893 = *Ectemnius*
dilectus Cresson, 1866 = *Ectemnius*
dimidiatus Fabricius, 1781 = *Crossocerus*
distinctus F. Smith, 1856 = *Ectemnius*
distinguendus A. Morawitz, 1866 = *Crossocerus*
doddi R. Turner, 1908 = *Chimiloides*
drymocalloidis Rohwer, 1908 = *Ectemnius atriceps* (Cresson, 1865)
dubius F. Smith, 1856 = *Lestica confluenta* (Say, 1837)
eburneus Taschenberg, 1875 = *Lestica*
effossus Packard, 1866 = *Ectemnius lapidarius* (Panzer, 1804)
elongatulus Vander Linden, 1829 = *Crossocerus*
elongatus Nurse, 1903 = *Eupliloides*
elvinus Cameron, 1905 = *Ectemnius melanotarsis* (Cameron, 1902)

- emarginatus* Kohl, 1899 = *Crossocerus*
eques Nurse, 1902 = *Crossocerus*
eriogoni Rohwer, 1908 = *Crossoocerus*
erythrogaster R. Turner, 1910 = *Chimiloides*
erythropus Brèthes, 1913 = *Podagritus*
erythrotoma Cameron, 1905 = *Dasyproctus*
errans W. Fox, 1895 = *Lindenius*
erythrotoma Cameron, 1905 = *Dasyproctus*
esakii Yasumatsu, 1942 = *Crossocerus vagabundus* (Panzer, 1798)
euryops Kohl, 1899 = *Entomognathus*
excavatus W. Fox, 1892 = *Ectemnius*
exiguus Vander Linden, 1829 = *Crossocerus*
ezrae Cameron, 1904 = *Crossocerus*
familiaris F. Smith, 188857 = *Piyuma*
fargeii F. Smith, 1856 = *Ectemnius cephalotes* (Olivier, 1792)
fasciatus A. Costa, 1871 = *Crossocerus vagabundus* (Panzer, 1798)
fasciatus Lepeletier and Brullé, 1835 (described in *Ceratocolus*) = *Ectemnius*
femoratus Fabricius, 1775 = *Conura* (Chalcididae). See: Boucek, Z. and G. Delvare. 1992. The identities of species described or classified under *Chalcis* by J.C. Fabricius. *Memoirs of the American Entomological Institute* 53:11-48, 443-466. New combination for *Crabro femoratus* Fabricius: pp. 21-23.
ferrugineipes Rohwer, 1908 = *Ectemnius sonorensis* (Cameron, 1891)
festivus Marquet, 1879 = *Tracheliodes*
fimbriatus Rossi, 1790 = *Cerceris*
flagellarius F. Morawitz, 1892 = *Ectemnius*
flauipes (or *flavipes*) Fabricius, 1781 = *Palarus variegatus* (Fabricius, 1781).
flaviclypeus W. Fox, 1895 = *Lindenius*
flavicollis F. Morawitz, 1892 = *Ectemnius laevigatus* (Destefani, 1884)
flavopictus F. Smith, 1856 = *Crossocerus*
flavitarsus Tsuneki, 1947 = *Crossocerus*
floralis Olivier, 1792 = *Ectemnius cephalotes* (Olivier, 1792).
foveolineatus Viereck, 1909 = *Tracheliodes*
foxii Kincaid, 1900 = *Ectemnius*
frater Olivier, 1791 = *Ectemnius*
fredericsmithi W. Schulz, 1906 = *Ectemnius*
frenchii R. Turner, 1908 = *Rhopalum*
frigidus F. Smith, 1856 = *Ectemnius*
frontalis Panzer, 1797 = *Mellinus crabroneus* (Thunberg, 1791)
fulvohirtus Cameron, 1891 = *Podagritus*
fulvopilosellus Cameron, 1902 = *Ectemnius*
fumosus Brethès, 1910 = *Ectemnius semipunctatus* Lepeletier de Saint Fargeau and Brullé, 1835
fuscipennis Lepeletier and Brullé, 1835 = *Ectemnius atriceps* (Cresson, 1865)
fuscitarsis Herrich-Schaeffer, 1841 = *Ectemnius*
geniculatus Olivier, 1792 = *Ectemnius cephalotes* (Olivier, 1792)
gorongozae Arnold, 1960 = *Rhopalum*
gracilissimus Packard, 1866 = *Ectemnius*
granulatus Walker, 1871 = *Ectemnius*

guerrerensis Cameron, 1891 = *Crossocerus*
guttatus Vander Linden, 1829 = *Ectemnius*
haemodes Kohl, 1905 = *Lindenius*
hamilcar Kohl, 1899 = *Lindenius*
hannonis Gribodo, 1896 = *Ectemnius confinis* (Walker, 1871)
harringtonii W. Fox, 1895 = *Crossocerus*
hebetescens R. Turner, 1908 = *Ectemnius*
hector Cameron, 1891 = *Ectemnius*
heraclei Rohwer, 1908 = *Ectemnius dives* (Lepeletier de Saint Fargeau and Brullé, 1835)
herinaceus Gribodo, 1884 = *Tracheliodes quinquenotatus* (Jurine, 1807)
heterocerus Mantero, 1902 = *Podagritys*
hewitti Cameron, 1908 = *Crossocerus*
himalayensis Cameron, 1905 = *Ectemnius trichiosomus* (Cameron, 1904)
honestus Cresson, 1865 = *Ectemnius arcuatus* (Say, 1837)
hyalinus Schuckard, 1837 = *Crossocerus*
hypsaë Destefani, 1884 = *Ectemnius*
ibericus Kohl, 1905 = *Lindenius*
idoneus R. Turner, 1908 = *Notocrabro*
idrieus Cameron, 1903 = *Dasyproctus*
imbutus W. Fox, 1895 = *Ectemnius*
immanis de Saussure, 1892 = *Dasyproctus*
immitis de Saussure, 1892 = *Dasyproctus*
impressifrons F. Smith, 1856 = *Crossocerus*
impressus F. Smith, 1856 = *Ectemnius continuus punctatus* (Lepeletier and Brullé, 1835)
incavus W. Fox, 1895 = *Crossocerus*
indicus de Saussure, 1892 = *Dasyproctus*
inermis Thomson, 1870 = *Crossocerus nigritus* (Lepeletier and Brullé, 1835)
infantulus Kohl, 1894 = *Dasyproctus ceylonicus* (de Saussure, 1858)
insignis F. Smith, 1856 = *Ectemnius*
insolens W. Fox, 1895 = *Crossocerus*
intermedius A. Morawitz, 1866 = *Ectemnius*
interruptus Fabricius, 1787 = *Palarus*
interruptus Dahlbom, 1845 = *Ectemnius cephalotes* (Olivier, 1892)
interstinctus F. Smith, 1851 = *Ectemnius lapidarius* (Panzer, 1804)
intricatus F. Smith, 1856 = *Crossocerus varus* Lepeletier and Brullé, 1834
iridifrons Pérez, 1905 = *Ectemnius*
iwatai Yasumatsu, 1942 = *Piyuma prosopoides iwatai*
jakowlewi F. Morawitz, 1892 = *Ectemnius*
jason Cameron, 1891 = *Crossocerus*
jessonicum Bischoff, 1921 = *Rhopalum clavipes jessonicum*
joergenseni Brèthes, 1913 = *Podagritys*
jozankeanus Matsumura, 1912 = *Ectemnius spinipes tetracanthus* Pérez, 1905
jungii Ma, 1936 = *Dasyproctus*
hasianus Cameron, 1902 = *Ectemnius chrysites* (Kohl, 1892)
kohli Bischoff, 1921 = *Crossocerus*
konowii Kohl, 1905 = *Ectemnius*

- kratochvili* Šnoflak, 1948 = *Lindenius pygmaeus* (Rossi, 1794)
kriechbaumeri Kohl, 1879 = *Ectemnius*
labiatus Fabricius, 1793 = *Cerceris interrupta* (Panzer, 1799)
labiatus Olivier, 1792a:517, sex not indicated. Holotype or syntypes: France: Paris area (lost) = ? *Cerceris* –
 Lepeletier de Saint Fargeau and Brullé, 1835:808 (discussion of species identity).
laeviceps F. Smith, 1856 = *Crossocerus megacephalus* (Rossi, 1790)
laevigatus Destefani, 1884 = *Ectemnius confinis* (Walker, 1871)
lapidarius Fabricius, 1804 = *Lestica clypeata* (Schreber, 1759)
laportei Lepeletier de Saint Fargeau et Brullé, 1835 = *Ectemnius guttatus* (Vander Linden, 1829)
larvatus Wesmael, 1852 = *Ectemnius rubicola* (Dufour and Perris, 1840)
laticornis Tsuneki, 1947 = *Rhopalum*
latifrons W. Fox, 1895 = *Lindenius*
lefebvrei Lepeletier and Brullé, 1835 = *Crossocerus vagabundus* (Panzer, 1798)
lentus W. Fox, 1895 = *Crossocerus*
levipes Vander Linden, 1829 = *Crossocerus quadrimaculatus* (Fabricius, 1793)
libanonis Kohl, 1905 = *Entomognathus*
lindenius Shuckard, 1837 = *Ectemnius cephalotes* (Olivier, 1792)
lignarius F. Smith, 1864 = *Dasyproctus*
lindeni Dahlbom, 1839 = *Crossocerus cetratus* (Shuckard, 1837)
lituratus Panzer, 1805 = *Ectemnius*
loetus Pérez, 1905 = *Ectemnius hypsae* (De-Stefani, 1884)
lugubris Fabricius, 1793 = *Pemphredon*
lunulatus Rossi, 1792, junior primary homonym of *Crabro lunulatus* Geoffroy, 1787 = ? *Cerceris* – Pagli-
 ano and Negrisolò, 2005:489 (in Sphecid Fauna of Italy, as species dubia in *Cerceris*)
luxuriosus A. Costa, 1871 = *Ectemnius lituratus* (Panzer, 1805)
lysius Cameron, 1905 = *Ectemnius*
mackayensis R. Turner, 1908 = *Ectemnius*
maculatus Fabricius, 1781 = *Ectemnius*
maculiclypeus W. Fox, 1895 = *Crossocerus*
maculicornis Taschenberg = *Ectemnius*
maculipennis F. Smith, 1856 = *Crossocerus*
maculitarsis Cameron, 1891 = *Crossocerus*
makilingi Williams, 1928 = *Piyuma prosopoides* (R. Turner, 1908)
mauiensis Blackburn, 1887 = *Ectemnius mandibularis* (F. Smith, 1879)
mayeri Dewitz, 1881 = *Ectemnius*
megacephalus Rohwer, 1908 = *Ectemnius dilectus* (Cresson, 1865)
megacephalus Rossi, 1790 = *Crossocerus*
megacephalus F. Smith, 1873 = *Foxita*
melanotarsis Cameron, 1902 = *Ectemnius*
menyllus Cameron, 1905 = *Ectemnius*
meridionalis A. Costa, 1871 = *Ectemnius*
mesopleuralis F. Morawitz, 1890 = *Lindenius*
mexicanus Cameron, 1904 = *Enoplolindenius*
micromegas de Saussure, 1892 = *Crossocerus*
microstictus Herrich-Schaeffer, 1841 = *Ectemnius*
militaris R. Turner, 1908 = *Podagrirus*

minutulus Arnold, 1944 = *Crossocerus*
minutus Fabricius, 1793 = *Diodontus*
mixtus Zavadil, 1948 = *Lindenius pygmaeus* (Rossi, 1794)
monozonus Cameron, 1905 = *Ectemnius melanotarsis* (Cameron, 1902)
montanus Cresson, 1865 = *Ectemnius*
montanus Gistel, 1857 = *Ectemnius fossorius* (Linnaeus, 1758)
montezuma Cameron, 1891 = *Lindenius*
montivagus Cameron, 1891 = *Ectemnius dives* (Lepeletier de Saint Fargeau and Brullé, 1835)
montivagans Strand, 1917 = *Ectemnius dives* (Lepeletier de Saint Fargeau and Brullé, 1835)
mozambicus Arnold, 1960 = *Ectemnius crippsi mozambicus* (Arnold, 1960)
mucronatus Fabricius, 1793 = *Oxybelus*
mucronatus Thomson, 1870 = *Crossocerus distinguendus* (A. Morawitz, 1866)
murorum Latreille, 1805 = *Crossocerus quadrimaculatus* (Fabricius, 1793)
musaeus Cameron, 1901 = *Dasyproctus buddha* (Cameron, 1889)
nanus Cameron, 1891 = *Entomognathus*
nasicornis F. Smith, 1873 = *Lamocrabro*
neglectus F. Smith, 1868 = *Williamsita*
nielsenii Kohl, 1915 = *Ectemnius*
niger Provancher, 1888 = *Crossocerus leucostoma* (Linnaeus, 1758)
nigridens Herrich-Schaeffer, 1841 = *Lestica*
nigrifrons Cresson, 1865 = *Ectemnius ruficornis* (Zetterstedt, 1838)
nigrinus Herrich-Schaeffer, 1841 = *Ectemnius*
nigrior W. Fox, 1896 = *Crossocerus leucostoma* (Linnaeus, 1758)
nigritarsus Herrich-Schaeffer, 1841 = *Ectemnius*
nigritus Gimmerthal, 1836 = *Crossocerus annulipes* (Lepeletier and Brullé, 1835)
nigriventris Brèthes, 1913 = *Podagritys*
nigromaculatus F. Smith, 1868 = *Chimiloides*
nigror W. Fox, 1896 = *Crossocerus cinctipes* (Provancher, 1882)
nitidiventris W. Fox, 1892 = *Crossocerus*
nitidulus Fabricius, 1793 = *Tachytes*
nitobei Matsumura = *Ectemnius*
nokomis Rohwer, 1917 = *Ectemnius arcuatus* (Say, 1837)
notatus Illiger, 1807 = *Crossocerus dimidiatus* (Fabricius, 1781)
novanus Rohwer, 1911 = *Ectemnius decemmaculatus* (Say, 1823)
nursei Kohl, 1915 = *Ectemnius*
obliquus Shuckard, 1837 = *Crossocerus elongatulus* (Vander Linden, 1829)
oblongus Packard, 1866 = *Ectemnius maculosus* (Gmelin, 1790)
obscurus F. Smith, 1856 = *Ectemnius lapidarius* (Panzer, 1804)
occidentalis W. Fox, 1895 = *Rhopalum*
oceanicus Schulz, 1906 = *Podagrityoides*
ochoticus A. Morawitz, 1866 = *Lestica*
octomaculatus Preyssler, 1793 = *Ectemnius sexcinctus* (Fabricius, 1775)
odontophorus Cameron, 1890 = *Crossocerus flavopictus* (F. Smith, 1856)
odyneroides Cresson, 1865 = *Ectemnius*
onoii Yasumatsu, 1939 = *Crossocerus*
opacifrons Tsuneki, 1947 = *Crossocerus*

operus Rohwer, 1908 = *Ectemnius atriceps* (Cresson, 1865)
opulentus F. Smith, 1856 = *Ectemnius semipunctatus* (Lepeletier and Brullé, 1835)
opwana Rohwer, 1908 = *Lestica confluenta* (Say, 1837)
ordinarius R. Turner, 1908 = *Williamsita*
orientalis Cameron, 1890 = *Dasyproctus*
packardi Cresson, 1865 = *Ectemnius arcuatus* (Say, 1837)
palitans Bingham, 1896 = *Ectemnius*
pallidicornis F. Morawitz, 1890 = *Lindenius*
pamparum Brèthes, 1913 = *Podagritus*
panzeri Vander Linden, 1829 = *Lindenius*
papagorum Viereck, 1908 = *Ectemnius lapidarius* (Panzer, 1804)
parisinus Kittel, 1828 = *Oxybelus*
parvulus Packard, 1866 = *Ectemnius*
paucimaculatus Packard, 1866 = *Ectemnius*
pauper Packard, 1866 = *Ectemnius*
pedicellaris F. Morawitz, 1889 = *Ectemnius confinis* (Walker, 1871)
perlucidus R. Turner, 1908 = *Pseudoturneria*
perpusillus Walker, 1871 = *Crossocerus*
petiolatus Nurse, 1902 = *Rhopalum*
petiolatus Panzer, 1791 = *Mellinus crabroneus* (Thunberg, 1791)
philanthoides Panzer, 1801 = *Lestica subterranea* (Fabricius, 1775)
pictipes Herrich-Schaeffer, 1841 = *Ectemnius dives* (Lepeletier and Brullé, 1835)
pictipes W. Fox, 1895 = *Crossocerus chromatipus* Pate
pictipes Herrich-Schaeffer, 1841 = *Ectemnius dives* (Lepeletier and Brullé, 1835)
pictus F. Smith, 1856 = *Crossocerus maculipennis* (F. Smith, 1856)
pictus Schenck, 1857 = *Ectemnius dives* (Lepeletier and Brullé, 1835)
pinguis W. Fox, 1895 = *Lindenius columbianus* (Kohl, 1892)
pius Strand, 1910 = *Podagritus*
planaris Mickel, 1916 = *Lestica confluenta* (Say, 1837)
planifrons Thomson, 1870 = *Ectemnius ruficornis* (Zetterstedt, 1838)
planipes W. Fox, 1895 = *Crossocerus*
pluschtschevskyi F. Morawitz = *Lestica*
podagricus Vander Linden, 1829 = *Crossocerus*
polynesianalis Cameron, 1881 = *Ectemnius*
producticollis Packard, 1866 = *Lestica*
productus W. Fox, 1897 = *Ectemnius*
proletarius Mickel, 1916 = *Ectemnius borealis* (Zetterstedt, 1838)
propinquus Shuckard, 1837 = *Crossocerus elongatulus* (Vander Linden, 1829)
propinquus W. Fox, 1895 = *Crossocerus minimus* Packard, 1867
prosopiformis Nurse, 1903 = *Lindenius*
prosopoides R. Turner, 1908 = *Piyuma*
proximus Shuckard, 1837 = *Crossocerus elongatulus* (Vander Linden, 1829)
pugnans F. Smith, 1873 = *Enoplotindenius*
pullatus Arnold, 1944 = *Dasyproctus kibonotensis* Cameron, 1908
pullulus A. Morawitz, 1866 = *Crossocerus*
pumilus A. Costa, 1871 = *Ectemnius*

pulveris Nurse, 1902 = *Dasyproctus*
punctatus Walckenaer, 1817 = *Oxybelus quatuordecimnotatus* Jurine, 1807
punctum Zetterstedt, 1838 = *Crossocerus ovalis* Lepeletier de Saint Fargeau and Brullé, 1835
pygmaeus Vander Linden, 1829 = *Lindenius*
pygmaeus Rossi, 1794 = *Lindenius*
quadrangularis Packard, 1866 = *Ectemnius maculosus* (Gmelin, 1790)
quadriceps Bingham, 1897 = *Lestica*
quadricinctus Fabricius, 1787 = *Ectemnius sexcinctus* (Fabricius, 1775)
quadrififer Dufour, 1841 = *Lestica clypeata* Schreber, 1759
quadrimaculatus Fabricius, 1793 = *Crossocerus*
quadrimaculatus Provancher, 1882 and 1883 = *Lestica producticollis* (Packard, 1866)
quadripunctatus Fabricius, 1793 = *Crossocerus*
quatuordecimmaculatus Packard, 1866 = *Ectemnius maculosus* (Gmelin, 1790)
quinquecinctus Fabricius, 1787 = *Cerceris contigua* (Villers, 1789)
quinquecinctus Schrank, 1802 = ? *Cerceris contigua* (Villers, 1789)
quinquefasciatus Rossi, 1792 = *Cerceris*
quinquemaculatus Ma, 1936 = *Dasyproctus jungi* Ma
quinenotatus Jurine, 1807 = *Tracheliodes*
rabiosus Kohl, 1894 = *Dasyproctus*
rachiticus Rossi, 1790 = ? *Mellinus arvensis* (Linnaeus, 1758), possibly a scoliid
radiatus Pérez, 1905 = *Ectemnius*
repandus Fabricius, 1787 = *Tachytes*
repositus Arnold, 1944 = *Crossocerus*
revelatus Cameron, 1898 = *Dasyproctus agilis* (F. Smith, 1858).
rubrocaudatus Blackburn, 1887 = *Ectemnius*
rufifemur Packard, 1866 = *Ectemnius*
rufipes Brullé, 1839 = *Ectemnius rufitarsis* Dalla Torre, 1897 = *Ectemnius continuus rufitarsis*
rufipes Fabricius, 1787 = *Cerceris tuberculata* (Villers, 1789)
rufiventris Panzer, 1799 = *Rhopalum clavipes* (Linnaeus, 1758)
rufotaeniatus Kohl, 1905 = *Podagrirus*
rugifer Dahlbom, 1845 = *Ectemnius*
rugosopunctatus Provancher, 1883 = *Anacrabro ocellatus* Packard, 1866
rugosulopunctatus Dalla Torre, 1897 = *Anacrabro ocellatus* Packard, 1866
rugosus F. Smith, 18857 = *Vechtia*
ruthenicus F. Morawitz, 1892 = *Ectemnius cephalotes* Olivier, 1792
sabulosus Fabricius, 1787 = *Mellinus crabroneus* (Thunberg, 1791)
saevus de Saussure, 1892 = *Dasyproctus*
sahlbergi A. Morawitz, 1866 = *Entomognathus*
sakaguchii Matsumura and Uchida, 1926 = *Ectemnius schlettereri sakaguchii*
sambucicola C. Verhoeff, 1891 = *Crossocerus nigrinus* (Lepeletier and Brullé)
sapporensis Matsumura, 1912 = *Lestica camelus* Eversmann, 1849
saundersi R. Perkins, 1899 = *Ectemnius sexcinctus* (Fabricius, 1775)
saussurei Kohl, 1894 = *Dasyproctus*
saxatilis Cameron, 1891 = *Ectemnius*
schlettereri Kohl, 1888 = *Ectemnius*
schmiedeknechti Kohl, 1905 = *Entomognathus*

- schwarzi* Rohwer, 1911 = *Ectemnius*
sculpturatus F. Smith, 1873 = *Lestica*
scutatus Fabricius, 1787 = *Crossocerus palmipes* Linnaeus, 1769
scutellatus Stephens, 1837 = *Crossocerus varus* Lepeletier de Saint Fargeau and Brullé, 1835
scutellaris F. Smith, 1851 = *Crossocerus elongatulus* (Vander Linden, 1829)
scutellaris Gimmerthal, 1836 = *Crossocerus palmipes* (Linnaeus, 1767)
scutellatus Say, 1824 = *Crossocerus lentus* W. Fox, 1895
scutellifer Dalla Torre, 1897 = *Crossocerus*
semipunctatus (Lepeleiter and Brullé, 1835 = *Ectemnius*
septentrionalis Packard, 1866 = *Ectemnius ruficornis* (Zeterstedt, 1838)
serripes Panzer, 1797 = *Crossocerus dimidiatus* (Fabricius, 1781)
servus Dalla Torre, 1897 = *Crossocerus*
sexcinctus Fabricius, 1775 = *Ectemnius*
sexmaculatus Olivier, 518 = *Crossocerus dimidiatus* (Fabricius, 1804)
sexmaculatus Say, 1824 = *Ectemnius continuus* (Fabricius, 1804)
signatus Olivier, 1791 = *Crossocerus dimidiatus* (Fabricius, 1781)
signatus Panzer, 1806 = *Crossocerus binotatus* Lepeletier and Brullé, 1835
similis W. Fox, 1895 = *Crossocerus*
simillimus F. Smith, 1856 = *Dasyproctus*
simlaensis Nurse, 1902 = *Crossocerus*
singularis F. Smith, 1856 = *Ectemnius maculosus* (Gmelin)
sinuatus Fabricius, 1804 = *Ectemnius lapidarius* (Panzer, 1804)
sodalis Bingham, 1897 = *Ectemnius*
solitarius F. Smith, 1859 = *Dasyproctus*
sonorensis Cameron, 1891 = *Ectemnius*
spinibuccus Viereck, 1909 = *Crossocerus angelicus* (Kincaid, 1900)
spiniceps Stephens, 1829a:365 (in catalog of British insects, as Kirby's manuscript name) = *Crossocerus megacephalus* (Rossi, 1790). – Stephens, 1829b:33 (in checklist of British insects, as *spinipes*).
spinicollis Herrich-Schaeffer, 1841 = *Ectemnius guttatus* (Vander Linden, 1829)
spiniferus W. Fox, 1895 = *Ectemnius*
spilostomus Kohl, 1899 = *Lindenius*
spinifrons Bingham, 1897 = *Vechtia rugosa* (F. Smith, 1858)
spinosus Fabricius, 1775 = *Nysson spinosus* (J. Forster, 1771)
stirpicola Packard, 1866 = *Ectemnius*
storocephalus Cameron, 1912 = *Enoplolindenius pugnans* (F. Smith, 1873)
strangulatus Bischoff, 1930 = *Crossocerus*
striatus Lepeletier de Saint Fargeau and Brullé, 1835 = *Ectemnius cephalotes* (Olivier, 1792)
stygius Blackburn and Kirby, 1880 = *Ectemnius*
styrius Kohl, 1892 = *Crossocerus*
subinterruptus Stephens, 1829 = *Ectemnius cephalotes* (Olivier, 1792)
subpunctatus Rossi, 1790 = *Crossocerus dimidiatus* (Fabricius, 1781)
subterraneus Fabricius, 1775 = *Lestica*
subulatus Dahlbom, 1845 = *Crossocerus*
succinalis Cockerell, 1909 = *Tracheliodes*
sulcus W. Fox, 1895 = *Crossocerus elongatulus* (Vander Linden, 1829)
sulphureipes F. Smith, 1856 = *Ectemnius continuus* (Fabricius, 1804)

suzukii Matsumura, 1912 = *Crossocerus*
syriacus Kohl, 1905 = *Lindenius ibex syriacus* Kohl
tabanicida Fischer, 1929 = *Ectemnius*
taprobanae Cameron, 1898 = *Dasyproctus buddha* (Cameron, 1889)
tarsalis W. Fox, 1895 = *Crossocerus*
tasmanicus F. Smith, 1856 = *Williamsita*
tenuiventris R. Turner, 1908 = *Rhopalum*
tetracanthus Pérez, 1905 = *Ectemnius*
texanus Cresson, 1872 = *Ectemnius rufipes* (Lepeletier and Brullé, 1835)
tibialis Fabricius, 1798 = *Rhopalum coarctatum* (Scopoli, 1763)
tibialis Olivier, 1792 = *Ectemnius cephalotes* (Olivier, 1792)
tibialis Say, 1823 = *Crossocerus impressifrons* (F. Smith, 1856)
tornquisti Cockerell, 1909 = *Tracheliodes*
townsendi Rohwer, 1911 = *Lestica confluenta* (Say, 1823)
traductor Nurse, 1902 = *Crossocerus*
transiens R. Turner, 1908 = *Rhopalum*
transversalis Shuckard, 1837 = *Crossocerus elongatulus* (Vander Linden, 1829)
trapezoideus Packard, 1866 = *Ectemnius maculosus* (Gmelin, 1782)
trichiosomus Cameron, 1904 = *Ectemnius*
tricinctus Fabricius, 1775 = *Hoplisoides tristrigatus* (Gmelin, 1790)
tricolor F. Smith, 1856 = *Podagritus*
tridens Fabricius, 1798 = *Oxybelus uniglumis* (Linnaeus, 1758)
tridentatus Fabricius, 1775 = *Stizoides*
tridentatus Rohwer, 1909 = *Crossocerus impressifrons* (F. Smith, 1856)
tridentatus F. Smith, 1868 = *Williamsita*
trifasciatus Say, 1824 = *Ectemnius*
trimaculatus Rossi, 1790 = *Nysson*
trinotatus A. Costa, 1871 = *Ectemnius nigratarsus* (Herrich-Schaeffer, 1841).
uchidai Tsuneki, 1947 = *Crossocerus*
unicolor F. Smith, 1856 = *Ectemnius*
universitatis Rohwer, 1909 = *Crossocerus insolens* (W. Fox, 1895)
urophori Radoszkowski, 1877 = *Ectemnius*
vagabundus Panzer, 1798 = *Crossocerus*
vagatus F. Smith, 1869 = *Ectemnius continuus* (Fabricius, 1804)
validus De-Stefani, 1885 = *Ectemnius continuus* (Fabricius, 1804)
vanderlindeni Dahlbom, 1838 = *Crossocerus cetratus* Shuckard, 1837
varentzowi F. Morawitz, 1894 = *Ectemnius*
variabilis Schrank, 1802 = *Cerceris rybyensis* (Linnaeus, 1771)
veitchi R. Turner, 1917 = *Neodasyproctus*
venans Kohl, 1894 = *Dasyproctus*
ventralis W. Fox, 1895 = *Crossocerus maculipennis* (F. Smith, 1856)
venturii Schrottky, 1902 = *Podagritus*
venustus Rossi, 1790 = *Philanthus*
verhoeffi Dalla Torre, 1897 = *Ectemnius guttatus* (Vander Linden, 1829)
verticalis F. Smith, 1873 = *Quexua*
vespiformis Panzer, 1798 = *Ectemnius sexcinctus* Fabricius, 1775

vestitus F. Smith, 1858 = *Ectemnius lituratus* Panzer, 1805
vexillatus Panzer, 1797 = *Lestica clypeata* (Schreber, 1759)
vierecki H. Smith, 1908 = *Crossocerus angelicus* (Kincaid, 1900)
villosifrons Packard, 1866 = *Ectemnius*
violaceipennis Cameron, 1907 = *Ectemnius*
vumbuiensis Arnold, 1944 = *Dasyproctus collaris* (Arnold, 1932)
walteri Kohl, 1889 = *Ectemnius*
wesmaeli Vander Linden, 1829 = *Crossocerus*
wickwari R. Turner, 1920 = *Ectemnius*
yanoi Tsuneki, 1947 = *Crossocerus*
yasumatsui Tsuneki, 1947 = *Crossocerus*
yerburii Cameron, 1898 = *Crossocerus*
yucatanensis Cameron, 1891 = *Enoplolindenius*
zellus Rohwer, 1909 = *Lindenius armaticeps* (W. Fox, 1895)
ziegleri F. Smith, 1856 = *Crossocerus wesmaeli* (Vander Linden, 1829)

NOMINA NUDA IN CRABRO

agrestis Stephens, 1829a:365 (in catalog of British insects) = *Ectemnius continuus* (Fabricius, 1804). – Stephens, 1829b:33 (in checklist of British insects).
analis Stephens, 1829a:365 (in catalog of British insects) = *Crossocerus dimidiatus* (Fabricius, 1781). – Stephens, 1829b:33 (in checklist of British insects).
analis Wesmael: Barovskij, 1929:149 (Russia: Sankt Petersburg)
assimilix Stephens, 1829b:34 (in checklist of British insects).
aurilabris Herrich-Schaeffer, 1840:293 (Germany: Bayern: Regensburg area).
aterrimus Stephens, 1829a:365 (in catalog of British insects, as *aterrima*, incorrect original termination). – Stephens, 1829b:33 (in checklist of British insects).
australasiae: Casolari and Casolari Moreno, 1980:119 (specimens in M. Spinola collection, Torino); Pagliano, 2011a:155 (specimens in M. Spinola collection, Torino, are *Ectemnius* sp.).
bicarinatus: Casolari and Casolari Moreno, 1980:119 (specimens in M. Spinola collection, Torino); Pagliano, 2011a:157 (specimen in M. Spinola collection, Torino, is *Ectemnius* sp.).
bimaculatus Say: J. Smith, 1910:681 (in new list of insects of New Jersey).
capito Zeller: Dahlbom, 1844:337
complanatus Say: Harris. Catalogue of the insects of Massachussets, 2nd edition. – Cresson, 1862:235 (in catalog of North American Hymenoptera).
confertus Harris, Catalogue of the insects of Massachussets, 2nd edition. – Cresson, 1862:235 (in catalog of North American Hymenoptera).
consobrinus Stephens, 1829a:365 (in catalog of British insects) = *Crossocerus dimidiatus* (Fabricius, 1781:471). – Stephens, 1829b:33 (in checklist of British insects).
denticollis Schummel, 1832:74. – Dalla Torre, 1897:596 (in catalog of world Sphecidae).
divisus Stephens, 1829a:365 (in catalog of British insects) = *Ectemnius continuus* (Fabricius, 1804). – Stephens, 1829b:33 (in checklist of British insects).
duodecimguttatus Stephens, 1829a:365 (in catalog of British insects) = *Ectemnius lapidaries* (Panzer, 1803). – Stephens, 1829b:33 (in checklist of British insects).
falciventris Pérez: Antiga and Bofill, 1904:23 (Spain: Cataluña Province) = *Lindenius luteiventris* (A. Morawitz).

- famelicus* Harris, 1835: Catalogue of the insects of Massachusetts, 2nd edition.
- geniculatus* Stephens, 1829a:365 (in catalog of British insects) = *Crabro scutellatus* (von Scheven, 1781). – Stephens, 1829b:33 (in checklist of British insects).
- glauconotatus* Harris, 1835:588 in Hitchcock, Catalogue of the insects of Massachusetts, 2nd edition, Rpt. Geol., Mineral., Bot., Zool., Mass. – Krombein, 1958f:1200 (in supplement to catalog of North American Hymenoptera: listed).
- gryphus* Harris, Catalogue of the insects of Massachusetts, 2nd edition.
- hyalinaus* Stephens, 1829a:365 (in catalog of British insects). – Stephens, 1829b:34 (in checklist of British insects).
- iridipennis* F. Smith, 1879:678, in description of *Crabro denticornis* (= *Ectemnius mandibularis*).
- laetus* Pérez: Antiga and Bofill, 1904:26 (Spain: Cataluña Province) = *Ectemnius hypsae* (De-Stefani, 1884)
- nanus* Stephens, 1829a:366 (in catalog of British insects). – Stephens, 1829b:34 (in checklist of British insects, as *nana*).
- octomaculatus* Cameron: Leclercq, 1974e:668 (as *8-maculatus*) = *Crossocerus traductor* (Nurse)
- pegasus* Harris. Catalogue of the insects of Massachusetts, 2nd edition. – Cresson, 1962:236 (in catalog of North American Hymenoptera).
- phaeopterus* Stephens, 1829a:366 (in catalog of British insects) = *Crabro scutellatus* (von Scheven, 1781). – Stephens, 1829b:34 (in checklist of British insects, as *phaeoptera*).
- pictipes* Stephens, 1829a:365 (in catalog of British insects). – Stephens, 1829b:33 (in checklist of British insects).
- pusillus* Harris. Catalogue of the insects of Massachusetts, 2nd edition. – Cresson, 1962:236 (in catalog of North American Hymenoptera).
- rufifemoratus* Stephens, 1829a:366 (in catalog of British insects).
- scabriculus*: Casolari and Casolari Moreno, 1980:119 (specimens in M. Spinola collection, Torino); Pagliano, 2011a:157 (specimens in M. Spinola collection, Torino, are *Lestica* sp.).
- scutellatus* Stephens, 1829a:365 (in catalog of British insects) = *Crossocerus varus* Lpeletier de Saint Fargeau and Brullé, 18. Junior secondary homonym of *Crabro scutellatus* (von Scheven, 1781). – Stephens, 1829b:34 (in checklist of British insects, as *scutellata*).
- spiniceps* Stephens, 1829a:365 (in catalog of British insects).
- subtilis* Pérez: Antiga and Bofill, 1904:26 (Spain: Cataluña Province).
- stigma* Stephens, 1829a:365 (in catalog of British insects, as *Stigma*, incorrect original capitalization) = *Crossocerus elongatulus* (Vander Linden, 1829). – Stephens, 1829b:34 (in checklist of British insects).
- tarsalis* Stephens, 1829a:365 (in catalog of British insects) = *Crossocerus megacephalus* (Rossi 1790), – Stephens, 1829b:33 (in checklist of British insects).
- tibialis* Stephens, 1829a:366 (in catalog of British insects) = *Crossocerus podagricus* (Vander Linden, 1829). Junior secondary homonym in *Crabro* of *Vespa (Crabro) tibialis* Gmelin, 1790. – Stephens, 1829b:34 (in checklist of British insects).
- tischbeini* Tischbein, 1850 = *Crossocerus nigratus* Lepelletier de Saint Fargeau and Brullé, 1835
- tricinctus* Pérez: Antiga and Bofill, 1904:25 (Spain: Cataluña Province, primary homonym of *Crabro tricinctus* Fabricius, 1775 = *Hoplisoides tristrigatus* (Gmelin, 1790)
- varus* Panzer, 1799 = *Tracheliodes*
- tridentatus* Fabricius, 1775 = *Stizoides*
- xylurgus* Shuckard, 1837 = *Ectemnius lapidarius* (Panzer, 1804)