

Last updated: 18 July 2018

SPHECIUS

Sphecius Dahlbom, 1843:154. Type species: *Sphecius speciosus* Dahlbom, 1843 (junior secondary homonym of *Sphecius speciosus* (Drury, 1773)) [= *Sphex speciosus* Drury, 1773], by monotypy.

Hogardia Dufour, 1841b:228. Type species: *Hogardia dufourii* Dufour, 1841, by monotypy. Not available: published in synonymy of *Stizus nigricornis* (Article 11.5).

Hogardia Lepeletier de Saint Fargeau, 1845:288. Type species: *Hogardia rufescens* Lepeletier, 1845 [= *Stizus hogardi* Latreille, 1806], by monotypy.

Sphecius Patton, 1879c:345. Type species: *Stizus nigricornis* Dufour, 1838, by original designation

Nothosphecius Pate, 1936d:199. Type species: *Stizus grandidieri* de Saussure, 1887, by original designation.

Key to subgenera: Pate, 1936d.

Key to New World species: Holliday and Coelho, 2006.

Revision: Roth, 1951 (Palearctic species); Nemkov, 1995b (former Soviet Union); R. Bohart, 2000 (New World, yellow maculation of *convallis* and *grandis* reversed in error).

Review of biology: Kazenas, 2001b:224.

1. antennatus (Klug)

Larra antennata Klug, 1845:[22], pl. 46, fig. 5, ♂. Holotype or syntypes: ♂, Syria: no specific locality (ZMHU). – F. Smith, 1856:338 (in catalog of Hymenoptera in British Museum); D. Baker, 1997b:186 (in catalog of insect described by Klug, 1945). – **As *Sphecius antennatus***: Handlirsch, 1889a:447 (new combination, in revision of world Bembicinae); Kohl and Handlirsch, 1889:280 (Turkmenistan: Chuli); F. Morawitz, 1891a:218 (Russia: Astrakhan), 1893b:421 (Uzbekistan: Pyandjikent), 1894:360 (Turkmenistan: Khodzha-kala and Chuli); Handlirsch, 1895:956 (additional bibliography; type examined; Iran); Dalla Torre, 1897:516 (in catalog of world Sphecidae); nec W. Schulz, 1905b:40 (= *Sphecius claripennis*); Maidl, 1922:72 (Albania, Montenegro); Grandi, 1934:128 (Italy: Umbria: Poggio Mirteto); Giordani Soika, 1944:9 (Italy: Sicilia: Falcone); de Beaumont, 1947b:386 (Cyprus); Zavadil in Zavadil and Šnoflak, 1948:164 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); Pittioni, 1950:23 (Cyprus); Roth, 1951:88 (in revision of Palearctic *Sphecius*); Vogrin, 1955:34 (Yugoslavia); de Beaumont, 1959a:19 (Italy: Lazio); de Beaumont and Bytinski-Salz, 1959:107 (Israel); de Beaumont, 1965a:28 (Greece), 1967a:311 (Turkey); Romanova, 1969:134 (Russia: North Caucasus); Tsuneki, 1971k:197 (Mongolia); Balthasar, 1972:367 (in Sphecid Fauna of Czechoslovakia: may be expected in the country); R. Bohart and Menke, 1976:510 (in checklist of world Sphecidae); Georghiou, 1977:191 (Cyprus); Kazenas, 1978b:80 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:204 (in key to Sphecidae of European part of former USSR); Pagliano, 1980:116 (Italy: Sicilia); Islamov, 1986:522 (Uzbekistan: Surkhandarya and Tashkent Oblast's); Pagliano, 1990:74 (in catalog of Italian Sphecidae); Dollfuss, 1991:203 (in key to Sphecidae of North and Central Europe); Kazenas, 1992c:28 (Turkmenistan: Repetek Nature Reserve); Pagliano, 1992:44 (in key to Italian Nyssoninae); Kazenas and Esenbekova, 1995:80 (Kazakhstan; bibliographic reference to leafhopper prey); Negrisolò in Minelli, Ruffo, and La Posta, 1995b:5 (in catalog of Italian fauna); Nemkov, 1995b:180 (in revision of Gorytini of Russia and adjacent countries); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:241 (in Sphecid Fauna of Western Europe); Nazarova, 1998:41 (Tajikistan: Tigrovaya Balka Nature Reserve); Shkuratov, 1998:97 (Russia: Rostov Oblast'); Esenbekova and Kazenas, 2000:62 (southeast Kazakhstan: 2 km SW El'tay, 1-6 km NW and 6 km W Zhabagly); Giachino, Grosso, Marchetti, Pagliano, Scaramozzino, and Vailati, 2000:109 (Greece); Kazenas, 2001b:46 (in checklist of Sphecidae of Kazakhstan and Central Asia), 226 (prey: *Cicadatra querula* Pallas; copula-

tion linear), 2002a:123 (geographic distribution, collecting localities in Kazakhstan); Shkuratov, 2002b:139 (Russia: Rostov Oblast: Rostovskiy Nature Reserve at 46°27'N 42°41'E); Kazenas, 2004b:110 (Kazakhstan: western Tien Shan); Shkuratov, 2004a:75 (Russia: Rostov Oblast', nest structure, prey: *Cidatra atra* (Olivier, a cicadid)); Ebrahimi, 2005:129 (in key to selected Iranian Sphecidae); Gayubo and Özbek, 2005:19 (Turkey: seven localities); Pagliano and Negrisolò, 2005:170 (in Sphecid Fauna of Italy); Shoreenko, 2005a:167 (Ukraine: Crimea), 2005b:98 (Ukraine: Crimea: Karadagh Nature Reserve); Evans and O'Neil, 2007:34 (summary of information on prey); Ljubomirov and Yildirim, 2008:97 (in catalog of Crabronidae of Turkey); Shoreenko, 2009:368 (in list of Sphecidae s.l. of Crimea); Baghirov, 2010:678 (Russia: Altai Territories: village Savvushka); Kazenas, 2010a:168 (Kazakhstan: new locality records); Baghirov, 2011b:142 (Russia: Altayskiy Kray: Savvushka); Nemkov, 2012b:121 (review of known prey); Kazenas, 2013a:109, 110 (color photographs of adult wasps, short information on geographic distribution and nesting habits); Ebrahimi, 2014:34 (Iran: Fārs: Firuzābād: Sargār and Shirāz: Sādeghieh); Kazenas, 2014a:138 (Kazakhstan: Karatau Mountain Range); Protsenko, Fateryga, and Ivanov, 2014:32 (Crimea: many localities); Yildirim, Ljubomirov, and Lelej, 2014:7 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:150 (in checklist of Hymenoptera of Turkey); Mokrousov and Popov, 2016:569 (Russia: Krasnodarskiy Kray); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:17 (Turkey: Karaçoban: Bozyar); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:38 (Iran: known from Alborz and Fars provinces); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae), 2017b:224 (in catalog of Bembicinae of Russia); Shoreenko, 2017:80 (in Crimea collected in June through August).

Stizus aberrans Eversmann, 1849:391, ♀, ♂. Syntypes: Russia: Orenburg province and lower Volga (depository unknown: Nemkov, 1995b). Synonymized with *Sphecius antennatus* by Handlirsch, 1889a:447.

Sphecius antennatus var. *impressus* Kokujev, 1909:248, ♂. Lectotype: ♂, Tajikistan: Dubeba in Pamir (ZIN), designated by Nemkov, 1995b:181. Synonymized with *Sphecius antennatus* by Nemkov, 1995b:181. – **As *Sphecius antennatus impressus***: R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae).

As *Sphecius nigricornis*: Pagliano, 2011a:131 (specimens in coll. Spinola, Torino, are *Sphecius antennatus*).

2. *citrinus* Arnold

Sphecius citrinus Arnold, 1929a:257, ♀. Holotype: ♀, South Africa: Cape Province: Carnarvon District: Van Wyks (SAM). – Arnold, 1930:19 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae).

3. *claripennis* Morice

Sphecius claripennis Morice, 1911:126, ♀, ♂. Syntypes: Algeria: Biskra (OXUM). – von Schulthess, 1926b:217 (Tunisia); Kruger, 1929a:21 and 1929b:56 (Libya: Cyrenaica: Giarabub); Guiglia, 1934b:300 (Libya: bibliography and summary of locality records); Lohrmann, 1943:196 (in checklist of recently described *Sphecius*); de Beaumont, 1950d:13 (Egypt: Siwa oasis), 1950f:400 (Algeria); Roth, 1951:93 (in revision of Palearctic *Sphecius*); Grandi, 1959b:286 (Algeria: Goriana in Hodna region); Roth, 1959a:77 (Algeria: Goriana in Hodna region); Oehlke and Wudowenz, 1974:422 (one syntype in DEI); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Roche, 2007a:115 (in catalog of Egyptian Ampulicidae, Sphecidae, and Crabronidae), 2007b:8 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae).

As *Sphecius antennatus*: W. Schulz, 1905b:40 (Algeria: Biskra; redescription), corrected to *Sphecius claripennis* by Morice, 1911:127 and Roth in von Schulthess, 1926b:217.

Sphecius sp.: Morice, 1911:127 (Algeria: Biskra), corrected to *Sphecius claripennis* by Roth, 1951:93.

4. *conicus* (Germar)

Stizus conicus Germar, 1817:262, sex not indicated. Holotype or syntypes: Dalmatia: Spalato, now Croatia: Split (ZMHU). – Vander Linden, 1829:18 (bibliographic references, Italy: Spalato, now Croatia: Split); Dahlbom, 1843:152 (in revision of Sphecidae and Pompilidae), 1845:476 (in key to world *Stizus*); Eversmann, 1849:389

(Russia: Orenburg Province and lower Volga); Frauenfeld, 1861:103 (Croatia: Dalmatia); nec Brischke, 1862:101 and 1888b:98 (= *Stizus perrisi*); Kirchner, 1867:219 (in catalog of European Hymenoptera); Gasperini, 1887:15 (described from Dalmatia, now Croatia); nec F. Morawitz, 1891a:224 (= *Stizus fasciatus*); nec Lüderwaldt, 1897:29 (= *Stizus perrisi*); Casolari and Casolari Moreno, 1980:116 (specimens in M. Spinola collection). – **As *Larra conica***: F. Smith, 1856:342 (new combination, in catalog of Hymenoptera in British Museum). – **As *Sphecius conicus***: Bischoff, 1937a:240 (new combination, synonymy, identity of species, Klug and not Germar is the author of the species); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Pulawski, 1978:204 (in key to Sphecidae of European part of former USSR); Pagliano, 1990:74 (in catalog of Italian Sphecidae); Dollfuss, 1991:203 (in key to Sphecidae of North and Central Europe); Pagliano, 1992:44 (in key to Italian Bembicinae); Negrisolò in Minelli, Ruffo, and La Posta, 1995b:5 (in catalog of Italian fauna, presence in Italy needs confirmation); Nemkov, 1995b:181 (in revision of Gorytini of Russia and adjacent countries); Scharrer, 1995:30 (Croatia: Island of Krk; Slovenia: Piran); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:242 (in Sphecid Fauna of Western Europe); Esenbekova and Kazenas, 2000:62 (southeast Kazakhstan: 3 km south west of Temirbastau); Kazenas, 2002a:123 (geographic distribution, collecting localities in Kazakhstan); Shorenko, 2003:98 (Ukraine: Crimea); Kazenas, 2004b:110 (Kazakhstan: western Tien Shan); Gayubo and Özbek, 2005:19 (Turkey: Erzurum: Olur: Oltu); Pagliano and Negrisolò, 2005:171 (in Sphecid Fauna of Italy); Kazenas, 2007a:92 (Kazakhstan: Akmala Oblast': Kurgandzhin Nature Reserve and vicinity); Ljubomirov and Yildirim, 2008:98 (in catalog of Crabronidae of Turkey); Józán, 2009:167 (Croatia: Rovinjsko Selo); Pagliano, 2009:178 (Italy: Emilia-Romagna: Siso near Parma); Shorenko, 2009:368 (in list of Sphecidae s.l. of Crimea); Bitsch, 2010:115 (in supplement to vol. II of Faune de France, 1997: recent record from Italy reported); Rudoiskatel', 2010:151 (southern Ural Mountains); Gogala, 2011:29 (Slovenia); Protsenko, Fateryga, and Ivanov, 2014:32 (Crimea: Lis'ya Bukhta near Feodosiya, Karalarskaya Step' on Kerch Peninsula, Kazantip Nature Reserve); Yıldırım, Ljubomirov, and Lelej, 2014:7 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:151 (in checklist of Hymenoptera of Turkey); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae), 2017b:225 (in catalog of Bembicinae of Russia, as *conicus conicus*); Shorenko, 2017:80 (in Crimea collected in May through July).

Stizus luniger Eversmann, 1849:391, ♀. Syntypes: Russia: lower Volga (depository unknown: Nemkov, 1995b:181). Synonymized with *Sphecius conicus* by Bischoff, 1937a:240. – Handlirsch, 1889a:457 (in revision of world Bembicinae); Dalla Torre, 1897:517 (in catalog of world Sphecidae); Mocsáry, 1897:82 (Kingdom of Hungary: two localities now in Croatia); Móczár, 1943a:59 (first record from Hungary: Nagykörös, redescription); Zavadil in Zavadil and Šnoflak, 1948:163 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); Bajári, 1957a:26 (in key to Hungarian Sphecidae, not yet found in Hungary); Roth, 1951:92 (diagnostic characters); Balthasar, 1972:367 (in Sphecid Fauna of Czechoslovakia: may be expected in the country). – **As *Sphecius syriacus luniger***: de Beaumont, 1965a:28 (new status, Greece), 1967a:311 (Turkey); Kazenas, 1978b:80 (in key to Sphecidae of Kazakhstan and Central Asia).

spp. *creticus* de Beaumont

Sphecius syriacus creticus de Beaumont, 1965a:29, ♀, ♂. Holotype: ♂, Greece: Crete Island: Sitia (M. Schwarz coll.). – Krombein, 1972b:384 (Greece; prey: *Cicadetta* sp.). – **As *Sphecius conicus creticus***: R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae).

spp. *syriacus* (Klug)

Larra syriaca Klug, 1845:[22], pl. 46, fig. 6, ♀. Holotype or syntypes: Syria: no specific locality (ZMHU). – D. Baker, 1997b:186 (in catalog of insect described by Klug, 1945). – **As *Sphecius syriacus***: Roth, 1959a:75 (new combination, comparison with *Sphecius percussor*); de Beaumont, 1961c:48 (Greece: Crete Island). – **As *Sphecius conicus syriacus***: R. Bohart and Menke, 1976:511 (new status, in checklist of world Sphecidae); Nemkov, 1995b:181 (in revision of Gorytini of Russia and adjacent countries).

Sphecius percussor Handlirsch, 1889a:455, ♀, ♂. Lectotype: ♂, China: Sinkiang Uighur: Dzungaria: no specific locality (NHMW), designated by Roth, 1959a:75. Synonymized with *Sphecius conicus syriacus* by Nemkov, 1995b:181. – Kohl and Handlirsch, 1889:280 (Turkmenistan); Handlirsch, 1895:957 (bibliographic reference); Dalla Torre, 1897:518 (in catalog of world Sphecidae); Roth, 1951:89 (in revision of Palearctic *Sphecius*), 1959a:75 (comparison with *Sphecius syriacus*); Balthasar, 1972:367 (in Sphecid Fauna of Czechoslovakia: may be expected in the country); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Kazenas, 1978b:80 (in key to Sphecidae of Kazakhstan and Central Asia); Kazenas, 2001b:47 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:123 (geographic distribution, collecting localities in Kazakhstan); Nazarova, 2004:107 (Tajikistan: Badakhshan Region: Rushan district: villages Dasht and Visav in Bartang River valley).

As *Stizus nigricornis*: Radoszkowski, 1877:35 (Kazakhstan: Kizyl-Kum and Syr-Daria area), corrected to *Sphecius conicus syriacus* by Nemkov, 1995b:181; Radoszkowski, 1886a:34 (Turkmenistan, male genitalia).

5. *convallis* Patton

Sphecius speciosus var. *convallis* Patton, 1879c:343, ♀. Holotype or syntypes: ♀, USA: California: Tuolumne County: Yosemite National Park (depository?). – As *Sphecius convallis*: W. Fox, 1894c:103 (new status, Mexico: Baja California), 1895b:265 (bibliographic references), 1895c:266 (Mexico: Baja California Sur San Jose del Cabo); Ashmead, 1899d:347 (in checklist of North American Crabronidae, as *convallis*); Lohrmann, 1943:196 (in checklist of recently described *Sphecius*, valid name for *raptor* Handlirsch); Krombein in Muesebeck et al., 1951:987 (in catalog of North American Hymenoptera); Krombein, 1958f:193 (in supplement to catalog of North American Hymenoptera: prey: *Diceroprocta apache* (Davis), a cicadid); Evans, 1966d:110 (synopsis of known behavior); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Radović, 1985:66 (sting apparatus analyzed); Frommer, 1988:95 (California: Riverside County: Deep Canyon); Krombein, 1979b:1698 (in catalog of North American Hymenoptera); R. Bohart, 2000:172 (in key to New World *Sphecius*, gastral maculation in error); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:666 (in checklist of Mexican Sphecidae); Holliday and Coelho, 2006:794, 796 (in key to New World *Sphecius*); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 46 (Mexico: Tamaulipas); Hastings, Schultheis, Whitson, Holliday, Coelho, and Mendell, 2008:32 (DNA analysis shows two clades, one being virtually identical to *Sphecius speciosus*); Holliday, Hastings, and Coelho, 2009:4 (list of prey); Coelho, Holliday, and Hastings, 2011:33, 34 (maps of geographic distribution); Coelho, Hastings and Holliday, 2012:133 (near-optimal foraging: mean loaded muscle ratio of 0.187) Coelho, Holliday, Hastings, and Phillips, 2016:102 (regulation of thorax temperature in very hot environment)..

Sphecius raptor Handlirsch, 1889a:461. Substitute name for *Stizus grandis* of Packard, 1867 and for *Sphecius speciosus* var. *convallis* Patton. Synonymized with *Sphecius convallis* by W. Fox, 1894c:103 and W. Schulz, 1906:199. – Dalla Torre, 1897:518 (in catalog of world Sphecidae); Ashmead, 1899d:347 (in checklist of North American Crabronidae).

6. *grandidieri* (de Saussure)

Stizus grandidieri de Saussure, 1887:9, ♀ (as *Grandidieri*, incorrect original capitalization). Holotype or syntypes: ♀, Madagascar: no specific locality (MNHN). – de Saussure, 1892:463 (Madagascar); Friese, 1900:267 (Madagascar: Nosy-Be). – As *Sphecius grandidieri*: Handlirsch, 1895:958 (new combination; redescription); Dalla Torre, 1897:516 (in catalog of world Sphecidae); Kohl, 1909:373 (Madagascar: Toliara); Arnold, 1945:67 (Madagascar; redescription); Evans, 1966d:111 (synopsis of known behavior); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Leclercq, 1990b:119 (Madagascar); Pulawski, 2003b:796 (in checklist of Malagasy Sphecidae); Madl, 2014a:948 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Malagasy subregion, with synonymy and locality records).

Sphecius freyi Handlirsch, 1891:27, ♀ (as *Freyi*, incorrect original capitalization) (possibly 1892). Lectotype: ♀, Madagascar: Nosibé (NHMW), designated by Madl, 2014a:948. Synonymized with *Sphecius grandidieri* by de Saussure, 1892:463.

7. *grandis* (Say)

Stizus grandis Say, 1823:77, ♀, ♂. Syntypes: USA: Arkansas: Arkansas River (lost). – Le Conte, 1859a:3 (Say's 1823 redescription copied), 165 (reference to the original description); Cresson, 1863:316 (in catalog of North American Hymenoptera); Packard, 1867:442 (in revision of North American Bembicinae); Cresson, 1875:715 (Nevada); Snow, 1881:96 (in checklist of Hymenoptera of Kansas: Wallace County: no specific locality), 1906:8 (Arizona: Tucson). – **As *Sphecius grandis***: Handlirsch, 1889a:464 (new combination, in revision of world Bembicinae); W. Fox, 1895b:265 (bibliographic references); Dalla Torre, 1897:516 (in catalog of world Sphecidae); Ashmead, 1899d:347 (in checklist of North American Crabronidae); Krombein *in* Muesebeck et al., 1951:987 (in catalog of North American Hymenoptera); Krombein, 1958f:193 (in supplement to catalog of North American Hymenoptera: a correction); Evans, 1966d:110 (preying behavior); Alcock, 1975b:561 (male behavior); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Krombein, 1979b:1697 (in catalog of North American Hymenoptera); Radović, 1985:66 (sting apparatus analyzed); Hastings, 1986:262 (influence of body size and emergence time on provisioning success), 1989a:363 (territory defense in male), 1989b:255 (protandry and mating opportunity); R. Bohart, 2000:172 (in key to New World *Sphecius*, gastral maculation in error); Amarante, 2002:18 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:666 (in checklist of Mexican Sphecidae); Holliday and Coelho, 2006:794 (in key to New World *Sphecius*); Evans and O'Neil, 2007:34 (summary of information on nesting habits); Coelho, Holliday, Hastings, Maty, Swigart, and Mendell, 2007:270 (thermoregulation in male during patrolling); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 46 (Mexico: Tamaulipas); Hastings, Schultheis, Whitson, Holliday, Coelho, and Mendell, 2008:32 (DNA analysis shows two clades, perhaps two cryptic species); Holliday, Hastings, and Coelho, 2009:4 (list of prey); Coelho, Holliday, and Hastings, 2011:33, 34 (maps of geographic distribution). – **As *Sphecius speciosus* var. *grandis***: Cockerell, 1899a:142 (New Mexico).

Stizus fervidus Cresson, 1873:223, ♀. Holotype: ♀, USA: Texas: Bastrop or Travis County: no specific locality (ANSP). Synonymized with *Sphecius grandis* by W. Fox, 1895b:265. – Ashmead, 1899d:347 (in checklist of North American Crabronidae); Cresson, 1916:97 (type in ANSP). – **As *Sphecius fervidus***: Handlirsch, 1889a:465 (new combination, in revision of world Bembicinae); Dalla Torre, 1897:516 (in catalog of world Sphecidae).

Stizus nevadensis Cresson, 1874:99, ♂. Lectotype: ♂, USA: Nevada: no specific locality (ANSP), designated by Cresson, 1916:96. Synonymized with *Sphecius grandis* by Handlirsch, 1889a:464 (tentatively) and W. Fox, 1895b:265 (definitely). – Cresson, 1876:207 (Utah: Spring Lake); Patton, 1879c:343 (bibliographic references); Snow, 1881:96 (in checklist of Hymenoptera of Kansas: Wallace County: no specific locality); Cresson, 1887:278 (in catalog of North American Hymenoptera); Ashmead, 1890:33 (in checklist of Hymenoptera of Colorado), 1899d:347 (in checklist of North American Crabronidae); Dalla Torre, 1897:517 (in catalog of world Sphecidae); Amarante, 2005a:9 (correction to his 2002 catalog).

Stizus nevadensis Cresson, 1875:716, ♂. Objective synonym of *Stizus nevadensis* Cresson, 1874.

8. *hemixanthopterus* Morice

Sphecius hemixanthopterus Morice, 1911:125, ♀, ♂. Syntypes: Algeria: Biskra (OXUM). – Lohrmann, 1943:196 (in checklist of recently described *Sphecius*); de Beaumont, 1950f:400 (Algeria); Roth, 1951:93 (in revision of Palearctic *Sphecius*); Oehlke and Wudowenz, 1974:423 (one syntype in DEI); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae).

9. *hogardii* (Latreille)

Stizus hogardii Latreille, 1806:pl. XIII, fig. 12, ♀ (as *Hogardii*, incorrect original capitalization). Holotype or syntypes: Santo Domingo Island, now Hispaniola: no specific locality (lost). – Latreille, 1809a:100 (description); Cres-

son, 1863:316 (in catalog of North American Hymenoptera), 1865a:145 (Cuba); Ashmead, 1896b:30 (Bahama Islands: Eleuthera Island; Florida: Key West); Gundlach, 1886:136 (...). – **As *Sphecius hogardii***: Dahlbom, 1843:154 (new combination); F. Smith, 1856:336 (in catalog of Hymenoptera in British Museum); Packard, 1867:443 (new combination, bibliographic references); Handlirsch, 1889a:462 (in revision of world Bembicinae); W. Fox, 1895b:265 (bibliographic references); Dalla Torre, 1897:517 (in catalog of world Sphecidae); Ashmead, 1899d:347 (in checklist of North American Crabronidae), 1900:308 (in checklist of Caribbean Hymenoptera); Pate, 1947b:93 (known from Cuba); Krombein *in* Muesebeck et al., 1951:987 (in catalog of North American Hymenoptera); Krombein and Evans, 1955:233 (Florida: Lake Placid); Alayo Dalmau, 1969:9 (in revision of Cuban Bembicinae), 1973:187 (in catalog of Cuban Hymenoptera), 1976:28 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Krombein, 1979b:1697 (in catalog of North American Hymenoptera); Stange, 2000:1 (in key to Sphecius of Florida, geographic distribution); de Zayas, 1981:78 (Cuba), 79 (illustration of habitus); Genaro and Juarrero de Varona, 1998:323 (nesting behavior); R. Bohart, 2000:172 (in revision of Neotropical Gorytini); Portuondo and Fernández, 2004:135 (Cuba: Sierra Maestra); Amarante, 2005a:9 (correction to his 2002 catalog); Genaro, 2006:52 (in checklist of Cuban Sphecidae and Crabronidae; other countries: Isla de la Juventud, Bahamas, Hispaniola, Jamaica); Holliday and Coelho, 2006:794 (in key to New World *Sphecius*); Evans and O'Neil, 2007:36 (summary of information on nesting habits); Perez-Gelabert, 2008:240 (in list of insects of island of Hispaniola); Holliday, Hastings, and Coelho, 2009:4 (preying on cicada *Uhleroides walkerii* (Guérin-Méneville, 1856)); Coelho, Holliday, and Hastings, 2011:33 (map of geographic distribution)..

Hogardia rufescens Lepeletier de Saint Fargeau, 1845:289, ♀ Holotype or syntypes: ♀, Dominican Republic: Santo Domingo (M. Spinola coll., Torino). Not available (Article 11.6: published in synonymy of *Stizus hogardii* Latreille, 1809). – Casolari and Casolari Moreno, 1980:115 (specimens in M. Spinola collection); Pagliano, 2011a:127 (specimens in coll. Spinola, Torino, are ? *Sphecius pectoralis*).

ssp. bahamas Krombein

Sphecius hogardi bahamas Krombein, 1953c:17, ♀, ♂. Holotype: ♂, Bahama Islands: Bimini (AMNH). – R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Elliott, 1992:45 (known from Bahama Islands: islands of Bimini and Long Island); Amarante, 2002:18 (in catalog of Neotropical Crabronidae).

10. intermedius Handlirsch

Sphecius intermedius Handlirsch, 1895:956, ♂. Holotype: ♂, Algeria: Batna (NHMW). – Dalla Torre, 1897:517 (in catalog of world Sphecidae); W. Schulz, 1905b:41 (Algeria); nec Morice, 1911:124 (= *Sphecius schulthessi*); von Schulthess, 1926b:217 (Algeria: Biskra); Nadig, 1933:90 (Morocco: Asni); Lohrmann, 1943:196 (in checklist of recently described *Sphecius*); de Beaumont, 1950f:400 (Algeria); Roth, 1951:86 (in revision of Palearctic *Sphecius*); de Beaumont, 1953g:107 (Morocco); Roth, 1959a:75 (faunal records, recognition character); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae).

11. lutescens (Radoszkowski)

Stizus lutescens Radoszkowski, 1877:36, ♀, ♂. Lectotype: ♀, Uzbekistan: Kizilkum Desert: no specific locality (ZMMU), designated by Nemkov, 1995b:181. – Handlirsch, 1892:171 (the ♀ is a *Sphecius*, the ♂ a *Stizus*); Dalla Torre, 1897:526 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae, as synonym of *Sphecius uljanini*); Kazenas, 2001b:48 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:128 (Kazakhstan). – **As *Sphecius lutescens***: Pulawski, 1982a:365 (new combination, diagnostic characters); Nemkov, 1995b:181 (in revision of Gorytini of Russia and adjacent countries); Esenbekova and Kazenas, 2000:62 (southeast Kazakhstan: 15 km SE Borandysu, 10 km NW and 20 km W Chundzha, 2 km N Kokpek Valley); Kazenas, 2002a:123 (geographic distribution, collecting localities in Kazakhstan), 2004b:110 (Kazakhstan: western Tien Shan), 2013a:110-112 (color photographs of adult wasps, short information on geographic distribution and nesting habits), 2013b:498 (southeast Kazakhstan: 15 km SE Borandysu, 10 km NW Chundzha on

Sharyn River, Kurtogay on Sharyn River, 2 km N Kokpek Canyon), 2014a:138 (Kazakhstan: Karatau Mountain Range); Jahantigh, Rakhshani; Mokhtari, and Ramroodi, 2017:38 (Iran: known from unspecified locality); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae).

Sphecius turanicus Roth, 1959a:68, ♀, ♂. Holotype: ♀, Kazakhstan: Kara-Mts. near Dzhulek = Chiili (MNHN). Paratypes: Turkmenistan (Kopet-Dagh), Iran. Synonymized with *Sphecius lutescens* by Pulawski, 1982a:365. – Kazenas, 1972b:144 (Kazakhstan); Myartseva, 1972a:88 (Turkmenistan); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Kazenas, 1978b:79, 80 (in key to Sphecidae of Kazakhstan and Central Asia).

12. *malayanus* Handlirsch

Sphecius malayanus Handlirsch, 1895:960, ♀ (as *Malayanus*, incorrect original capitalization). Syntypes: Indonesia: Timor and Sumbava: no specific localities (RMNH). – Dalla Torre, 1897:517 (in catalog of world Sphecidae); W. Schulz, 1906:199 (bibliographic reference); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); van Vondel, 1995:29 (specimens from Indonesia: Tanimbar Island in Natuurmuseum Rotterdam).

Sphecius malayanus Handlirsch, 1896:109, ♀ Objective synonym of *Sphecius malayanus* Handlirsch, 1985.

13. *milleri* R. Turner

Sphecius milleri R. Turner, 1915d:286, ♀ Holotype or syntypes: ♀, Zambia: Ambirisao (BMNH). – Arnold, 1929a:256 (in revision of southern African Sphecidae, Zimbabwe), 1930:19 (in checklist of Afrotropical Sphecidae); Evans, 1966d:111 (synopsis of known behavior); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae).

ssp. aurantiacus Arnold

Sphecius Milleri race *aurantiacus* Arnold, 1940:112, ♂. Holotype: ♂, Eritrea: Ghinda (SAM). – As *Sphecius milleri aurantiacus*: R. Bohart and Menke, 1976:511 (new status, in checklist of world Sphecidae).

14. *nigricornis* (Dufour)

Stizus nigricornis Dufour, 1838a:271, ♀, ♂. Lectotype: ♂, France: Landes Department: Saint-Sever (MNHN), designated par Bitsch, 1996:21. – Dufour, 1841a:492 and 1841b:228 (digestive tract), 1841a:494 and 1841b:230 (male genitalia), 1841a:496 and 1841b:232 (female genitalia); von Siebold, 1844:133 (Germany: Preussen: vicinity of Danzig, now Poland: Gdańsk, probably in error); Lucas, 1849:266 (Algeria: Constantine); A. Costa, 1863:66 (Italy: Calabria Ulteriore: Collina di Terreti); Kirchner, 1867:219 (in catalog of European Hymenoptera); nec Radoszkowski, 1877:35 and 1886a:34 (= *Sphecius conicus syriacus*); Girard, 1879:950 (morphology and habits); Becker, 1880:153 (Russia: Sarepta, now Krasnoarmeysk south of Volgograd); De Stefani Perez, 1895:227 (in catalog of Sicilian Hymenoptera); Casolari and Casolari Moreno, 1980:116 (specimens in M. Spinola collection); Pagliano, 2011a:131 (specimens in coll. Spinola, Torino, are *Sphecius antennatus*). – As *Sphecienus nigricornis*: Patton, 1879c:345 (new combination, type species of *Sphecienus*). – As *Bembix nigricornis*: Marion, 1978:87 (France: Ardèche and Pyrénées-Orientales Departments). – As *Hogardia nigricornis*: Casolari and Casolari Moreno, 1980:115 (specimen in M. Spinola collection); Pagliano, 2011a:127 (specimen in coll. Spinola, Torino, are *Sphecius nigricornis* and *Sphecius antennatus*). – As *Sphecius nigricornis*: Dahlbom, 1845:480 (new combination, in key to world *Sphecius*); A. Costa, 1859:13 (in revision of Sphecidae of Kingdom of Naples), 1867c:51 (in revision of Italian Sphecidae), 1869b:67 (in revision of Italian Sphecidae); Marquet, 1881:182 (southern France); Handlirsch, 1889a:454 (in revision of world Bembicinae); Radoszkowski, 1892:586 (male genitalia); Baldini, 1894:65 (Italy: Modena area); Handlirsch, 1895:957 (reference to Girard, 1879); Dalla Torre, 1897:517 (in catalog of world Sphecidae); Antiga and Bofill, 1904:17 (Spain: Cataluña Province); Dusmet y Alonso, 1906:6 (Spain); de Gaulle, 1908:120 (in catalog of French Hymenoptera); Dusmet, 1915:88 (Spain: Aragón); Berland, 1925d:79 (in Sphecid Fauna of France); Picard, 1930:42 (France: Landes: Mont-de-Marsan); Berland, 1941:2 (poorly documented report of preying on *Cicada plebeja*); Guiglia, 1941c:162 (Italy: Calabria: Grande Sila); Giner Marí, 1943a:193 (in Sphecid Fauna of Spain); Giordani Soika, 1944:9 (Italy: Sicilia: Falcone, Messina); Guiglia, 1944b:18 (Italy); Ceballos, 1949:101 (Spain); Roth, 1951:86 (in revision of Palearctic *Sphecius*); Ce-

ballos, 1956:388 (in catalog of Sphecidae of Spain); Roth, 1959a:74 (Turkey: Konya; variation); Scobiola, 1960a:169 (first record from Romania: Medgidia Region: Valul-lui-Traian); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); Evans, 1966d:111 (synopsis of known behavior); Balthasar, Hrubant, and Hrubant, 1967:174 (Bulgaria: Slanchev Bryag near Nessebar); de Beaumont, 1967a:311 (Turkey); Scobiola-Palade, 1967a:161 (Romania: Constanța District: Canarua Fetei, Hagieni), 1968c:382 (Romania: Brănești); Balthasar, 1972:366 (in Sphecid Fauna of Czechoslovakia: may be expected in the country); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Pulawski, 1978:204 (in key to Sphecidae of European part of former USSR); Radović and Krunić, 1979:unpaginated foldout (nesting in hard soil, foreleg structure); Radović, Krunić and Brajković, 1982:29 (Yugoslavia); Gayubo and Tormos, 1984:21 (Spain: Valencia); Chevin and Chevin, 1985:39 (France: Aude Département); Radović, 1985:66 (sting apparatus analyzed); Pagliano, 1990:74 (in catalog of Italian Sphecidae); Dollfuss, 1991:203 (in key to Sphecidae of North and Central Europe); Pagliano, 1992:44 (in key to Italian Bembicinae); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:5 (in catalog of Italian fauna); Nemkov, 1995b:181 (n revision of Gorytini of Russia and adjacent countries); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:243 (in Sphecid Fauna of Western Europe); Kazenas, 2001b:47 (in checklist of Sphecidae of Kazakhstan and Central Asia); Gayubo and Özbek, 2005:19 (Turkey: six localities); Jacobs, 2005a:450 (Bulgaria: Primorsko); Pagliano and Negrisolo, 2005:171 (in Sphecid Fauna of Italy); Ljubomirov and Yildirim, 2008:98 (in catalog of Crabronidae of Turkey); González, Gayubo, Asís, and Tormos, 2009:625 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:500 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Yildirim, 2012:76 (Turkey: Kars: Sarikamış: Çiftşehirler); Yildirim, Ljubomirov, and Lelej, 2014:7 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:151 (in checklist of Hymenoptera of Turkey); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:17 (Turkey: Kars and Tunceli provinces); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae).

Stizus nigricornis Dufour, 1841a:492 and 1841b:228, ♀, ♂. Objective synonym of *Stizus nigricornis* Dufour, 1838.

Hogardia dufourri Dufour, 1841a:492 and 1841b:228 (as *Dufourri*, incorrect original capitalization). Not available (Article 11.6: published in synonymy of *Stizus nigricornis*).

15. *pectoralis* (F. Smith)

Stizus pectoralis F. Smith, 1856:337, ♀ Holotype or syntypes: ♀, Australia: no specific locality (BMNH). – Smith, 1873d:461 (Australia). – Froggatt, 1892:220 (in catalog of Australian Hymenoptera). – **As *Sphecius pectoralis***: Handlirsch, 1889a:470 (new combination, in revision of world Bembicinae); Dalla Torre, 1897:518 (in catalog of world Sphecidae); Riek, 1970:941 (in Insect Fauna of Australia); Evans and Matthews, 1971b:300 (nesting behavior), 303 (description of larva); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Cardale, 1985:283 (in catalog of Australian Sphecidae); Naumann, 1993:183 (Australia: Queensland: Heathlands area in Cape York); Hua, 2006:282 (in list of Chinese insects, geographic distribution); Evans and O'Neil, 2007:36 (summary of information on nesting habits).

16. *persa* Gussakovskij

Sphecius persa Gussakovskij, 1933b:288 [correctly 389], ♀, ♂. Lectotype: ♀, Iran: Seistan (now part of Iran and Afghanistan): Bandun-Naibandun (ZIN), designated by Nemkov, 1995b:182. – Lohrmann, 1943:196 (in checklist of recently described *Sphecius*); Roth, 1959a:78 (comments on the original description); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Nemkov, 1995b:182 (n revision of Gorytini of Russia and adjacent countries); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Jahan-tigh, Rakhshani, Mokhtari, and Ramroodi, 2017:38 (Iran: known from Sistan-o Baluchestan Province); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae).

17. *quartinae* Gribodo

Sphecius quartinae Gribodo, 1884b:275, ♂ (as *Quartinae*, incorrect original capitalization). Holotype or syntypes: ♂, Guinea: no specific locality (MSNG). – Handlirsch, 1889a:470 (original description copied); W. Fox, 1896e:552 (Somalia: Berbera; description of ♀); Dalla Torre, 1897:518 (in catalog of world Sphecidae, original combination incorrectly given as *Stizus quartinae*); W. Schulz, 1911b:176 (redescription); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae, original combination incorrectly given as *Stizus quartinae*); Penati and Mariotti, 2015:106 (in list of Hymenoptera described by G. Gribodo).

18. *schulthessi* Roth

Sphecius schulthessi Roth, 1951:90, ♀, ♂. Syntypes: Algeria, Morocco, Tunisia: many localities (MNHN, Lausanne, Genève, K.M. Guichard coll.). – de Beaumont, 1950f:400 (Algeria; nomen nudum), 1953g:107 (Morocco); Roth, 1959a:75 (Algeria and Morocco: collecting localities); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae).

As *Sphecius intermedius*: Morice, 1911:124 (Algeria: Biskra), corrected to *Sphecius schulthessi* by Roth, 1951:91.

19. *speciosus* (Drury)

Sphecius speciosus Drury, 1773:71, pl. XXXVIII, fig. 1, [♀]. Holotype: ♀, origin not given, but certainly North America (destroyed?). – Turton, 1801:493 (redescription). – As *Stizus speciosus*: Lepeletier de Saint Fargeau, 1845:290 (in revision of world Hymenoptera); F. Smith, 1856:336 (in catalog of Hymenoptera in British Museum); Packard, 1867:342 (in revision of North American Bembicinae); Cresson, 1873:222 (Texas); Snow, 1881:96 (in checklist of Hymenoptera of Kansas: Douglas and Wallace counties: no specific locality). – As *Hogardia speciosa*: Casolari and Casolari Moreno, 1980:115 (specimens in M. Spinola collection). – As *Sphecius speciosus*: Dahlbom, 1843:154 (new combination, in revision of Sphecidae and Pompilidae), 1845:480 (in key to world *Sphecius*); A. Costa, 1866:24 (specimen from North America in Museo Zoologico di Napoli); Bryant, 1870:87 (*Sphecius speciosus* preying on tabanids, obviously in error); Cresson, 1887:278 (in catalog of North American Hymenoptera); Patton, 1879c:342 (in revision of North American Stizini); Handlirsch, 1889a:458 (in revision of world Bembicinae); Ashmead, 1890:33 (in checklist of Hymenoptera of Colorado); Cameron, 1890a:91 (Guatemala, Honduras); Riley, 1892:248 (nesting habits, preimaginal stages); W. Fox, 1895b:265 (bibliographic references); Handlirsch, 1895:957 (additional bibliography); Dalla Torre, 1897:518 (in catalog of world Sphecidae); Ashmead, 1899d:347 (in checklist of North American Crabronidae); Bridwell, 1899:209 (Kansas: Baldwin); J. Smith, 1900:522 (in list of insects of New Jersey); Viereck, 1903d:120 (Maryland: Chestertown); H. Smith, 1908b:335 (in revision of Nebraskan Sphecidae); J. Smith, 1910:679 (in new list of insects of New Jersey); Rohwer, 1916b:692 (in catalog of Hymenoptera of Connecticut); Mickel, 1918b:433 (in catalog of Nebraskan Sphecidae); Rau and Rau, 1918:44 (feeding on sap from sunflower stalk); Davis, 1920:218 (mating habits); Rau, 1922:28 (USA: Missouri: St. Louis); Rohwer in Viereck, 1925:692 (in key to Sphecidae of Connecticut; New Haven); J.Ch. Bradley, 1928:1016 (in catalog of New York Sphecidae); E. Reinardt, 1929b:18 and 39 (nesting habits); Will, 1035:135 (Virginia: Narrows, mass occurrence); Brimley, 1938:447 (North Carolina: statewide); Balduf, 1941:91 (female carrying prey climbed author's body before flying off); Dow, 1942:310 (relation of prey to size and sex of adult wasp); Dambach and Good, 1943:32 (nesting habits); Krombein in Muesebeck et al., 1951:987 (in catalog of North American Hymenoptera); Krombein, 1953a:295 (visiting foliage of *Pinus serotina*), 334 (North Carolina), 1953b:123 (visiting foliage of *Quercus virginiana*), 133 (North Carolina: Kill Devil Hills); Evans and Lin, 1956b:46 (description of larva); Krombein, 1958f:193 (in supplement to catalog of North American Hymenoptera: description of larva by Evans and Lin, 1956a, reported), 1963f:276 (Maryland: Plummers Island near Washington, D.C.); Kurczewski and Kurczewski, 1963:147 (Pennsylvania: Presque Isle State Park); N. Lin, 1963a:115 (male territorial behavior), 1963b:121 (density dependent fighting between females); Evans, 1966d:92 (nesting habits); N. Lin, 1966a:130 (copulatory behavior), 1966c:342 (influence of weather on population level), 1966e:582 (using human observer as perch), 1966f:585 (standard and emergency courtship), 1967a:1334 (role dif-

ferentiation in copulating pairs); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); C. Ward et al., 1977:156 (associated with mesquite (*Prosopis*)); L. Davis, 1978:217 (North Carolina: Kill Devil Hills, data from Krombein, 1953a); N. Lin, 1978c:75 (emergence, sex ratio), 1979a:269 (differential prey supply relative to offspring sex), 1979b:159 (weight of wasps and prey); Krombein, 1979b:1697 (in catalog of North American Hymenoptera, nesting sites, list of prey); Radović, 1985:66 (sting apparatus analyzed); Piek and Spanjer, 1986:189 (in list of Sphecidae with known prey); Steiner, 1986:109 (references to publications on nesting habits); Pfennig and Reeve, 1989:1 (neighbor recognition and context-dependent aggression); Spofford, Kurczewski, and Downes, 1989:256, 259 (summary of previous records for nest parasites *Metopia argyrocephala* (Meigen) and *Senotainia trilineata* (Wulp), miltogrammine flies), 261 (nests parasite: undetermined species of Miltogrammini); Kurczewski and Acciavatti, 1990:61 (New York: Cayuga County); Spofford and Kurczewski, 1990:748, 751 (nest parasites: *Senotainia trilineata* (Van der Wulp), unknown species of Miltogrammini, Sarcophagidae, and *Muscina stabulans* (Fallén), Muscidae); Romel and Dykstra, 1991a:12 (Canada: Ontario: Chatham); Spofford and Kurczewski, 1992:999 (species of miltogrammine parasites listed), 1001 (nest parasite: *Muscina stabulans* (Fallén), Muscidae), 1002 (counter-cleptoparasitic behavior: freeze-stop and face-off), 1004 (post-larvipositional counter-cleptoparasitic behavior: abandon burrow), 1005 (abandon prey); Weaver, 1992a:335 (spraying), 1992b:336 (spraying); Pfennig and Reeve, 1993:700 (neighbors are more closely related than nonneighbors); Ahlstrom, 1995:112 (in checklist of insects of North Carolina); Coelho, 1997:371 (sexual size dimorphism and flight behavior); Kurczewski, 1998d:250 (pine barrens in upstate New York); R. Bohart, 2000:172 (in key to New World *Sphecius*); Stange, 2000:1 (in key to *Sphecius* of Florida, nesting habits, geographic distribution); Tschuch and Brothers, 2000:324 (stridulatory organs absent); Coelho and Holliday, 2001:345 (larger males with better flight performance have better mating success); Skevington et al., 2001:128 (Canada: Ontario: Lambton County); Amarante, 2002:18 (in catalog of Neotropical Crabronidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:666 (in checklist of Mexican Sphecidae); Buck, 2004:27 (in checklist of Crabronidae of Ontario, Canada); Grant, 2006:539 (opportunistic predation and offspring sex ratios); Holliday and Coelho, 2006:794, 796 (in key to New World *Sphecius*); Evans and O'Neil, 2007:37 (summary of information on nesting habits and male behavior); Gibb and R. Williams, 2007:2 (Indiana: reside around houses, in yards and gardens, as cicada killer); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 46 (Mexico: Tamaulipas); Coelho, Hastings, Holliday, Flure, and Barnes, 2008:11 (sexual dimorphism of femora, tibiae, and hindtibial spurs); Coelho and Holliday, 2008:403 (amputation of hindtibial spurs results in slowing burrow digging by about 50%, and extending nest construction by 8.2 hours); Hastings, Coelho, and Holliday, 2008:301 (mating at high population density); Hastings, Holliday, and Coelho, 2008:657 (size of available cicada prey is a good predictor of size for both male and female *Sphecius speciosus*); Holliday, Hastings, and Coelho, 2009:4 (list of prey); Hastings, Holliday, Long, Jones, and Rodriguez, 2010: 412 (small females capture small prey, large females capture large prey); Coelho, Holliday, and Hastings, 2011:33, 34 (maps of geographic distribution); Nemkov, 2012b:121 (review of known prey).

Vespa tricincta Fabricius, 1775:363, sex not indicated. Holotype: ♀, North America: no specific locality (BMNH, Banks, coll.). Synonymized with *Sphecius speciosus* by Handlirsch, 1889a:458. – van der Vecht, 1961a:47 (study of holotype).

Stizus vespiformis Latreille, 1818:pl. 382, Fig. 6... Synonymized with *Sphecius speciosus* by Handlirsch, 1889a:458.

Sphecius speciosus Dahlbom, 1843:154, ♀, junior secondary homonym of *Sphecius speciosus* (Drury, 1773). Holotype: ♀, USA: Pennsylvania: near Philadelphia (Lund). Synonymized with *Sphecius speciosus* Drury, 1773, by Handlirsch, 1889a:458.

20. *spectabilis* (Taschenberg)

Stizus spectabilis Taschenberg, 1875:360, ♀, ♂. Syntypes: Brazil: no specific locality (Halle). – As *Sphecius spectabilis*: Handlirsch, 1889a:463 (in revision of world Bembicinae); Patton, 1879c:344 (new combination, bibliographic

references); Dalla Torre, 1897:518 (in catalog of world Sphecidae); Schrottky, 1903b:177 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay); W. Schulz, 1906:199 (known also from Argentina and Paraguay, wing coloration); Jørgensen, 1912:290 (Argentina: Mendoza Province); Schrottky, 1913a:226 (Argentina, Paraguay); Fritz, 1958:56 (Argentina, preying on cicadas); Carcavallo and Fritz, 1959:67 (teratological specimen); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Nascimento and Overall, 1980:10 (Brazil); Menke, 1996c:11 (first record from Colombia, coloration); R. Bohart, 2000:173 (in revision of Neotropical Gorytini); Amarante, 2002:18 (in catalog of Neotropical Crabronidae); Holliday and Coelho, 2006:794 (in key to New World *Sphecius*); Rasmussen and Asenjo, 2009:7 (in checklist of Crabronidae of Peru); Coelho, Holliday, and Hastings, 2011:35 (map of geographic distribution)..

Sphecius spectabilis var. *nobilis* Brèthes, 1910a:281, ♂. Syntypes: ♂, Argentina: Mendoza: La Paz (MACN). Synonymized with *Sphecius spectabilis* by R. Bohart, 2000:173. – Schrottky, 1913:226 (Argentina: Mendoza); Jørgensen, 1912:290 (Argentina: Mendoza Province: Chacras de Coria, as *spectabilis* forma *nobilis*). – **As *Sphecius spectabilis nobilis***: Willink, 1952a:169 (new status, redescription); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Genise, 1990:27 (type material in MACN).

21. *uljanini* (Radoszkowski)

Stizus uljanini Radoszkowski, 1877:38, ♀ (as *Uljanini*, incorrect original capitalization). Holotype: Kazakhstan: Kyzyl-Kum: no specific locality (ZMMU). – **As *Sphecius uljanini***: Handlirsch, 1889a:452 (new combination, in revision of world Bembicinae); Kohl and Handlirsch, 1889:280 (Turkmenistan: Chuli); Handlirsch, 1895:957 (synonymy); Dalla Torre, 1897:519 (in catalog of world Sphecidae); Morice, 1921:823 (Iran: Qazvin; description of ♂); Roth, 1951:92 (in revision of Palearctic *Sphecius*), 1959a:71 (recognition characters); Myartseva, 1963b:60 (Turkmenistan: lower Murgab River, as *janini*), 1965:86 (Turkmenistan: Akibay), 1972a:88 (Turkmenistan); R. Bohart and Menke, 1976:511 (in checklist of world Sphecidae); Kazenas, 1978b:79, 80 (in key to Sphecidae of Kazakhstan and Central Asia); Nemkov, 1995b:182 (n revision of Gorytini of Russia and adjacent countries); Esenbekova and Kazenas, 2000:62 (southeast Kazakhstan: near Bakanas, 3 km northeast of Borandysu, 60 km east of Chilik, 10 km northwest of Chundzha); Kazenas, 2001b:47 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:123 (geographic distribution, collecting localities in Kazakhstan), 2013b:498 (southeast Kazakhstan: 30-60 km east of Chilik, 10 km northwest of Chundzha); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:38 (Iran: known from Qazvin Province); Nemkov, 2017a:Table p. 10 (in zoogeographic analysis of Palearctic Bembicinae).

Stizus terminus W. F. Kirby, 1889:134, ♀. Holotype or syntypes: ♀, Afghanistan: Hari-rud Valley (BMNH). Synonymized with *Sphecius uljanini* by Handlirsch, 1895:957.

sp.

Morice, 1911:127 (Algeria: Biskra); de Beaumont, 1957b:134 (n. Iran); Maes, 1989:95 (in catalog of Nicaraguan Sphecidae); Ruíz Cancino, Coronado Blanco, and Horta Vega, 2005:170 (Mexico: recorded from Tamaulipas State); Pagliano, 2011a:127 (as *Hogardia* sp.: specimen in coll. Spinola, Torino, is *Sphecius* sp. from Senegal); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:38 (Iran: Semnan Province).

NOMEN NUDUM IN *HOGARDIA*

Hogardia dufouri Lepeletier: A. Costa, 1864b:98 (specimen from France in Museo Zoologico di Napoli).

SPECIES DESCRIBED IN *SPHECIUS* AND TRANSFERRED TO OTHER GENERA

aethiops Handlirsch, 1889 = *Handlirschia*

lanio Stål, 1857 = *Exeirius lateritius* Shuckard, 1838