

Last updated: 12 January 2026

## MISCOPHUS

*Miscophus* Jurine, 1807:206. Type species: *Miscophus bicolor* Jurine, 1807, by monotypy.

*Niteloaterus* Ashmead, 1897a:22. Type species: *Niteloaterus slossonae* Ashmead, 1897, by monotypy.

*Hypomiscophus* Cockerell, 1898a:321. Type species: *Miscophus arenarum* Cockerell, 1898, by original designation.

*Miscophinus* Ashmead, 1898:187. Type species: *Miscophus laticeps* Ashmead, 1898, by original designation.

Some papers on nesting habits of Nearctic species (as *Niteloaterus*): Krombein, 1963; Evans, 1963; Cazier and Mortenson, 1965; Powell, 1967.

Review of biology: Kazenas, 2001b:169.

Keys: Suárez, 1959:58 (Spanish species of *handlirschi* group); Girish Kumar, Mawadda, Terine, and Amal, 2024:590 (Indian subcontinent).

Revisions: Honoré, 1944b (Egypt); de Andrade, 1952 (Portugal), 1953a (Cyprus), 1954 (*gallicus* group, now *helveticus* group), 1956a (*soikai* group), 1956b (*handlirschi* group), 1960 (*bicolor* group and isolated species); Schmid-Egger, 2002c (Canary Islands); Schmid-Egger and Straka, 2019 (Central, Northern, and Eastern Europe); Schmid-Egger and Al-Jahdhami, 2022 (Arabian Peninsula and southern Israel).

### 1. *absconditus* de Andrade

*Miscophus absconditus* de Andrade, 1960:121, ♀, ♂. Holotype: ♀, Spain: Balearic Islands: Mayorca (Univ. Coimbra). – Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); R. Bohart and Menke, 1976:317 (in checklist of world Sphecidae); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:323 (in Sphecid Fauna of Western Europe); Baldock, 2014:356 (Spain: Island of Mallorca), 2015:69 (Spain: recorded from Mallorca by de Andrade, 1960); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:288 (in revision of Sphecidae *sensu lato* of Europe).

### 2. *aegyptius* Morice

*Miscophus aegyptius* Morice, 1897:315, ♀. Holotype: ♀, Egypt: Abbasiya near Cairo (OXUM); nec Honoré, 1944:144 (= *Miscophus pharaonis*); Giner Marí, 1945e:241 (Western Sahara); de Andrade, 1960:102 (in revision of *Miscophus bicolor* species group); Pulawski, 1964:119 (Egypt: Ghiza, Luxor, Saqqara, Tell-el-Amarna, Wadi Digla); R. Bohart and Menke, 1976:317 (in checklist of world Sphecidae); Roche, 2007a:96 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

*Miscophus politus* Honoré, 1944b:128, ♂. Holotype: ♂, Egypt: Abu Rawash near Cairo (USNM). Synonymized with *Miscophus aegyptius* by de Andrade, 1960:102. – Balthasar, 1954a:54 (Cyprus).

### 3. *aenescens* (Bridwell)

*Hypomiscophus aenescens* Bridwell, 1920g:394, ♂. Holotype: ♂, USA: Oregon: Pamela Lake on Mount Jefferson (USNM). – **As *Niteloaterus aenescens***: Krombein *in* Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera). – **As *Miscophus aenescens***: R. Bohart and Menke, 1976:317 (in checklist of world Sphecidae); Krombein, 1979b:1638 (in catalog of North American Hymenoptera).

### 4. *aeneus* Lomholdt

*Miscophus aeneus* Lomholdt, 1985:111, ♀, ♂. Holotype: ♀, Namibia: Churutabis, Bethanien (SMW).

**5. *aenigma* Honoré**

*Miscophus aenigma* Honoré, 1944:136, ♂. Holotype: ♂, actually ♀, Egypt: Hawamdieh (USNM). – de Andrade, 1960:47 (in revision of *Miscophus bicolor* species group); Pulawski, 1964:113 (Egypt: Abydos, Ghiza, Kom Ombo, Kom Osheim; Sudan: Wadi Halfa, description of ♂); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Roche, 2007a:96 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger, 2011b:551 (in key to *Miscophus* of Arabian Peninsula; first record from United Arab Emirates: Al-Ajban), 553 (color photograph of female), 2014:582 (United Arab Emirates); Gadallah, 2020b:40 (in list of aculeate wasps of Arabian Peninsula); Schmid-Egger and Al-Jahdhami, 2022:321 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 339 (no new specimens examined).

**6. *affinis* Pulawski**

*Miscophus affinis* Pulawski, 1964:116, ♀, ♂. Holotype: ♀, Egypt: Abu Rawash near Cairo (originally W.J. Pulawski coll., now CAS). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Guichard, 1980:228 (Oman, determination tentative); Roche and Zalut, 1994:115 (Egypt: Sinai Peninsula); Roche, 2007a:96 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger, 2011b:549 (in key to *Miscophus* of Arabian Peninsula), 552 (first record from United Arab Emirates: Ar-Rafah), 553 (color photograph of female), 2014:582 (United Arab Emirates); Gadallah, 2020b:40 (in list of aculeate wasps of Arabian Peninsula); Schmid-Egger and Al-Jahdhami, 2022:322, 325 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 338 (no new species examined).

**7. *agadiriensis* de Andrade**

*Miscophus agadiriensis* de Andrade, 1954:49, ♀, ♂. Holotype: ♀, Morocco: Agadir (Lausanne). – de Beaumont, 1957a:144 (Morocco: Agadir); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

**8. *akrofisianus* Balthasar**

*Miscophus akrofisianus* Balthasar, 1954a:45, ♀, ♂. Holotype: ♀, Cyprus: Akrofisi (originally V. Balthasar coll., now NMPC). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

**9. *albomaculatus* de Andrade**

*Miscophus albomaculatus* de Andrade, 1960:39, ♀. Holotype: ♀, Israel: Nahariya (originally P. Verhoeff coll., now RMNH). – de Beaumont, 1968a:264 (Canary Islands: Fuertaventura); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Báez and Ortega, 1978:192 (Canary Islands); Hohmann, La Roche, Ortega, and Barquín, 1993:221 (detailed locality records from Canary Islands); Schmid-Egger, 2002c:1629 (in revision of *Miscophus* of Canary Islands).

**10. *albufeirae* de Andrade**

*Miscophus albufeirae* de Andrade, 1952:20, ♀. Holotype: ♀, Portugal: Albufeira Lagoon (Univ. Coimbra). – de Andrade, 1960:107 (in revision of *Miscophus bicolor* species group); Diniz, 1959:30 (Portugal: Lagoa de Albufeira), 1960:32 (Portugal: Évora, Lagoa de Albufeira), 1964a:3 (Portugal: Lagoa de Albufeira); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Gayubo, 1982f:255 (Spain: Cádiz Province: San Roque), 1984c:369 (Portugal: El Algarve Province), 1987a:116 (Spain: Ciudad Real Province: Mestanza); Gayubo and Mingo, 1988:84 (Spain); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:324 (in Sphecid Fauna of Western Europe); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Mokrousov

and Popov, 2016:582 (first record from Russia: Krasnodarskiy Kray: Lake Solenoye in Temryuk District); Fresno, 2017:151 (Spain: Madrid, Murcia, and Zamora provinces); Antropov, 2017b:240 (in catalog of Crabroninae of Russia); Fresno, 2018:229 (Spain: Salamanca: Cabeza de Framontanos, Villarino); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 338 (locality records from Greece, Hungary, Kyrgyzstan, Russia, Spain, and Turkey), 339 (comments on geographic distribution and synonymy); Rezaei, Fallahzadeh, Dousti, and Saghaei, 2020b:12 (Iran: Fars: Larestan: Hormood Abbsi at 27°32'06"N 54°59'02"E, and Larestan: Karmostaj at 27°31'55"N 54°26'01"E); Cross, Baldock, and Wood, 2021:47 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2021:69 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:288 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

*Miscophus susterai* Balthasar, 1954a:43, ♀. Holotype: ♀, Cyprus: Yermasoyia River (originally V. Balthasar coll., now NMPC). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae). Synonymized with *Miscophus albufeirae* by Schmid-Egger and Straka, 2019:337, 339.

*Miscophus unigena* Balthasar, 1954a:50, ♀. Holotype: ♀, Cyprus: Yermasoyia River (originally V. Balthasar coll., now NMPC). Synonymized with *Miscophus albufeirae* by Schmid-Egger and Straka, 2019:338, 339. – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

*Miscophus albufeirae anatolicus* de Beaumont, 1967a:335, ♀. Holotype: ♀, Turkey: Mersin: Mut (M. Schwarz coll., Ansfelden, Austria). Synonymized with *Miscophus albufeirae* by Schmid-Egger and Straka, 2019:338, 339. – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Ljubomirov and Yildirim, 2008:229 (in catalog of Crabronidae of Turkey); Standfuss and Standfuss, 2012:427 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Bitsch, 2014:403 (record from Greece by Standfuss and Standfuss, 2012 reported); Yildirim, Ljubomirov, and Lelej, 2014:12 (distribution in Turkey by biogeographic provinces).

### 11. *alfierii* Honoré

*Miscophus alfierii* Honoré, 1944b:125, ♀, ♂ (as *Alfierii*, incorrect original capitalization). Syntypes: Egypt: Wadi Hoff and Abu Rawash near Cairo (USNM). – P. Verhoeff, 1955:379 (in revision of *Miscophus handlirschi* species group); de Andrade, 1956b:29 (in revision of *handlirschi* species group of *Miscophus*; Israel); de Beaumont 1960b:246 (Libya), 1966:212 (Egypt: Alexandria area); de Beaumont, Bytinski-Salz and Pulawski, 1973:18 (Israel); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Guichard, 1991a:340 (Jordan); Roche and Zalut, 1994:115 (Egypt: Sinai Peninsula); Roche, 2007a:97 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

### 12. *alhashmii* Schmid-Egger and Al-Jahdhami

*Miscophus alhashmii* Schmid-Egger and Al-Jahdhami, 2022:328, ♀, ♂. Holotype: ♀, Oman: Dhofar: 80 km south-southwest of Salaah at 16.857°N 53.420°E (Ch. Schmid-Egger personal collection, Berlin, Germany). – Schmid-Egger and Al-Jahdhami, 2022:322, 324 (in key to *Miscophus* of Arabian Peninsula and southern Israel).

### 13. *americanus* W. Fox

*Miscophus americanus* W. Fox, 1890b:138, ♀. Holotype: ♀, USA: New Jersey: Camden County: no specific locality (ANSP). – W. Fox, 1891e:196 (description of ♂), 1894a:479 (in revision of North American Larrinae); Dalla Torre, 1897:697 (in catalog of world Hymenoptera); Ashmead, 1899d:251 (in checklist of North American Crabronidae); J. Smith, 1900:519 (in list of insects of New Jersey), 1910:684 (in new list of insects of New Jersey); F. Williams, 1914a:179 (in revision of Larrinae of Kansas); Mickel, 1918b:431 (in catalog of Nebraskan Sphecidae); Rau, 1922:28 (USA: Missouri: Silica), 1926:211 (Missouri: Wickes: sheltered clay bank); Cresson, 1928:43 (holotype in

ANSP); Brimley, 1938:443 (North Carolina: Raleigh, Swannanoa); Krombein, 1939:139 (New York State); Strickland, 1947:129 (Canada: Alberta: Wainwright); Krombein, 1951a:143 (Virginia: Dunn Loring; visiting tulip-tree honeydew); Krombein *in* Muesebeck, Krombein, and Townes, 1951:944 (in catalog of North American Hymenoptera); Krombein, 1952a:93 (USA: Virginia: Westmoreland State Park), 1953a:296 (visiting foliage of *Quercus marilandica*), 297 (visiting foliage of *Liquidambar styraciflua*), 328 (North Carolina), 1953b:123 (visiting foliage of *Quercus virginiana*), 125 (attracted to a grass), 132 (North Carolina: Kill Devil Hills); Krombein and Evans, 1954:232 (Florida: Miami, Everglades); Krombein, 1963f:273 (Maryland: Plummers Island near Washington, D.C.); Kurczewski and Kurczewski, 1963:146 (Pennsylvania: Presque Isle State Park); Kurczewski, 1969:472 (nesting habits); Steiner, 1973:23 (Canada: Northwest Territories); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); L. Davis, 1978:217 (North Carolina: Kill Devil Hills, data from Krombein, 1953a); Krombein, 1979b:1638 (in catalog of North American Hymenoptera); Kurczewski, 1982:68 (nesting habits); Steiner, 1986:104 (references to publications on nesting habits); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County); Ahlstrom, 1995:110 (in checklist of insects of North Carolina); Finnamore, 1997:894 (expected to occur in Yukon); Kurczewski, 1998d:250 (pine barrens in upstate New York); Buck, 2004:25 (in checklist of Crabronidae of Ontario, Canada), 30 (distribution within Ontario), 50 (first records from Alberta and Ontario: list of localities); Buck and Bennett, 2025:215 (in checklist of Sphecidae *sensu lato* of Canada, Alaska, and Greenland: Canada: Alberta, Manitoba, Northwest Territories, Ontario, Saskatchewan, first record from Quebec: no specific locality).

#### 14. *andradei* P. Verhoeff

*Miscophus andradei* P. Verhoeff, 1955:381, ♀. Holotype: ♀, Portugal: Lisboa (RMNH). – de Andrade, 1956b:27 (in revision of *Miscophus handlirschi* species group); Balthasar, 1957:111 (in key to western Palearctic *Miscophus*); Diniz, 1959:30 (Portugal: Caparica, Cova do Vapor, Lagoa de Albufeira, Lisboa, Trafaria, Troia), 1964a:4 (Portugal: Cova do Vapor, Lagoa de Albufeira, Trafaria); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:335 (in Sphecid Fauna of Western Europe); Cross, Baldock, and Wood, 2021:47 (in catalog of Sphecidae *sensu lato* of Portugal); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:300 (in revision of Sphecidae *sensu lato* of Europe). As *Miscophus* sp. aff. *bonifaciensis*: de Andrade, 1952:14 (Portugal), corrected to *Miscophus andradei* by P. Verhoeff, 1955:381.

#### 15. *angolensis* Lomholdt

*Miscophus angolensis* Lomholdt, 1985:121, ♀, ♂. Holotype: ♀, Angola: Rio Giraul 10 mi. northeast of Moçamedes, now Namibe (BMNH).

#### 16. *antares* de Andrade

*Miscophus antares* de Andrade, 1956b:31, ♀. Holotype: Algeria: El Goléa (MNHN); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

#### 17. *arenarum* Cockerell

*Miscophus arenarum* Cockerell, 1898a:321, ♀. Holotype or syntypes: ♀, USA: New Mexico: Mesilla Park (USNM). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Krombein, 1979b:1638 (in catalog of North American Hymenoptera); Buck and Bennett, 2025:215 (in checklist of Sphecidae *sensu lato* of Canada, Alaska, and Greenland: Canada: Manitoba, first record from Alberta: no specific locality). – As *Miscophinus arenarum*: Ashmead, 1899d:251 (new generic assignment, in checklist of North American Crabronidae); Cockerell, 1899a:144

(New Mexico). – *As Niteloaterus arenarum*: Krombein in Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera).

### 18. *ater* Lepeletier de Saint Fargeau

*Miscophus ater* Lepeletier de Saint Fargeau, 1845:238, ♀. Lectotype: ♀, France: Paris area (MNHN), designated by de Andrade, 1960:115. – Belke, 1859:70 (Ukraine: Kamieniec Podolski); P. Ivanov, 1872:152 (Ukraine: Khar'kiv Oblast': Kupyansk area); Yaroshevskiy, 1881:126 (Ukraine: Khar'kiv Oblast': Kupyansk); Kohl, 1885a: 228, footnote (original description copied), 232 (in checklist of world *Miscophus*); Ed. André, 1888:214 (in revision of Sphecidae of Europe and Algeria), 19\* (bibliographic references); Acloque, 1897:93 (in Sphecid Fauna of France and Algeria); Dalla Torre, 1897:697 (in catalog of world Hymenoptera); de Gaulle, 1908:121 (in catalog of French Hymenoptera); W. Schulz, 1911a:68 (the syntype females in Paris Museum are identical to *spurius* Dahlbom and *niger* Dahlbom); de Beaumont, 1954a:63 (Italy); Grandi, 1954:240 (Italy); Benno, 1958b:12 (in review of Dutch Sphecidae); Nouvel and Ribaut, 1958:14 (France: Pyrénées-Orientales: Banyuls-sur-Mer); Valkeila, 1959a:182 (Finland: Uusikirkko, now in Russia: Polyany, and Bromarf); Wolf, 1959b:23 (Germany: Nassau); de Andrade, 1960:112 (in revision of *Miscophus bicolor* species group); Diniz, 1960:32 (Portugal: Caparica); Noskiewicz and Puławski, 1960:118 (in key to Polish Sphecidae); Valkeila, 1962b:66 (southwestern Finland); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964c:79 (in Sphecid Fauna of Switzerland); Diniz, 1964a:3 (Portugal: Caparica); Benno, 1967:36 (in checklist of Sphecidae of Netherlands); Gauss, 1967:554 (Germany: Baden-Württemberg); Lefeber and Petit, 1970:130 (Belgium: Plombières); Oehlke, 1970:717 (first record from Democratic Germany); Tumšs, 1970:82 (first record from Latvia); Lefeber, 1971a:17 (Netherlands and Belgium: many localities); Lomholdt, 1971:124 (Denmark: Island of Læsø); Schmidt, 1971b:37 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mainzer Sand); Stritt, 1971a:104 (Germany: Baden-Württemberg: Karlsruhe); Haeseler, 1972:155 (Germany: Schleswig-Holstein; anthropogenic habitats); Lomholdt, 1972:122 (Denmark: Island of Læsø); Oehlke, 1972:137 (Germany: island of Hiddensee); Simon Thomas, 1972:183 (France); Scobiola-Palade, 1974:144 (first record from Romania: Sărăturile sandbank in Danube delta); Lefeber, 1975a:38 (Belgium: As, Bree, Genk, Gruitrode, Houthalen, Mechelse Heide, Ogrimbe, Plombières, Rekem); Lomholdt, 1975b:31 (Denmark: Island of Anholt); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Leclercq, Gaspar, Lajoinie, and Thirion, 1976:178 (Belgium: Chaumont-Gistoux); Lomholdt, 1976:258 (in Sphecid Fauna of Fennoscandia and Denmark); Simon Thomas, 1976:5 (France: Lot-et-Garonne: Forêt de Campet); Simon Thomas and Wiering, 1976:109 (Netherlands: IJsselmeer Polders); Kolesnikov, 1977:318 (Russia: Bryansk Oblast'); Schmidt, 1977/78:55 (Germany: Rheinland-Pfalz: Mainzer Sand); Kazenas, 1978b:141, 142 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:228 (in key to Sphecidae of European part of USSR); Schmidt, 1977/78:55 (Germany); Lefeber, 1979:12 (in checklist of Sphecidae of Netherlands), 76 (Netherlands: distribution map); Leclercq, Gaspar and Verstraeten, 1979:map 1413 (Belgium); Richards, 1979:398 (British Channel Islands); Pagliano, 1980:128 (Italy: Piemonte); Preuss, 1980a:23 (Germany; endangered, nesting in dry soils); Richards, 1980:42 (in key to Sphecidae of British Isles); Schmidt, 1981:189 (Germany: Baden-Württemberg); Woydak, 1981:41 (Germany: Westfalen: Hamm); Gayubo, 1982a:111 (northern Spain: Sierra de Béjar); Dollfuss, 1983b:11 (in catalog of Sphecidae of Austria); Lefeber, 1983a:84 (Netherlands: Waddendistrict: Western Friesian Islands); Riemann, 1983:85 (Germany: Bremen-Daverden area); Gayubo, 1984b:88 (Spain: Salamanca Province); Haack, Tschardtke, and Vidal, 1984:130 (Germany: Hamburg area); Veenendaal, 1984:19 (Netherlands: Amsterdam); Haeseler, 1985a:350 (Germany: Schleswig Holstein), 1985c:571 (Germany: Friesian Islands); Lefeber, 1985:87 (Netherlands: southern Limburg); Brechtel, 1986:61 (Germany: Südpfalz); Gayubo and Heras, 1986:45 (Spain: Segovia Province; floral records); Gayubo and Sanza, 1986:51 (Spain: Burgos, Soria); Vikberg, 1986:76 (Finland); Fitton, Shaw, and Austin, 1987:79

(in list of European Hymenoptera that prey on spiders); Lomholdt, 1987:93 (Denmark: western Jutland: Skallingen Peninsula); Riemann, 1987b:40 (Germany: Niedersachsen: Nature Reserves Dünengebiet near Neumühlen and Voßberge); Schmidt and Westrich, 1987:365 (Germany: Mainz area); Dollfuss, 1988:12, 24 (Austria: Bisamberg near Wioen; Niederösterreich: Oberweiden); Nilsson, 1988:98 (Sweden); Gayubo and Mingo, 1988:84 (Spain); Kowalczyk, 1988b:65 (Poland: environs of Łódź); Riemann, 1988:223 (Germany: Bremen area); Wolf, 1988b:140 (Germany: Rheinland-Westfalen); Jacobs, 1989:13 (Germany: Mecklenburg-Vorpommern); Nilsson, 1989:48 (Sweden); Pádr *in* Šedivý, 1989a:168 (in checklist of Czechoslovakian Sphecidae); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:95 (Belorussia: Berezinskiy Nature Reserve); Jacobs and Oehlke, 1990:129 (illustration of male genitalia), 167 (new records from Democratic Germany); Pagliano, 1990:107 (in catalog of Italian Sphecidae); Day, 1991:xvi (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:115 (in key to Sphecidae of North and Central Europe); Jacobs, 1991:46 (Germany: Mecklenburg-Vorpommern: Nature Reserve Elbtaldünen); Jakubzik, 1991:75 (Germany: Nordrhein-Westfalen: Köln); Kowalczyk, 1991a:90, 97, 99, 102 (Poland: Łódź); H.-J. Schulz, 1991:31 (Germany: Oberlausitz: 5 km southwest of Wittichenau); Budrys, 1992:31 (in list of Sphecidae of Lithuania); Delarze, 1992:68 (Switzerland: Valais: Les Folatères); N. Schneider, 1992:178 (Luxemburg); K. Weber, 1992:88 (Germany: Bayern: Bamberg District); Archer, 1993:46 (Great Britain: Channel Islands); Kuhlmann, 1993:75 (Germany: known from Westfalen); Luig, 1993:44 (Estonia); Kowalczyk, 1994:74 (Poland: Łagiewniki forest in Łódź); Schmid-Egger, 1994a:688 (Germany: Rheinland-Pfalz: Höllenberg near Grünstadt); Theunert, 1994c:44 (Germany: summary of records from Niedersachsen and Bremen); Ljubomirov, 1995a:77 (first record from Bulgaria); Negrisola, 1995a:23 (Italy: Veneto); Negrisola *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Nemkov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:414 (in key to Sphecidae of Russian Far East); Schmid-Egger, Risch, and Niehuis, 1995:195 (Germany: summary of records from Rheinland-Pfalz); Gusenleitner, 1996a:7 (Austria: Burgenland), 1996b:810 (Austria: Steiermark); Jakubzik, 1996:253 (Germany: Köln); Minoranskiy and Shkuratov, 1996:81 (Russia: Rostov Oblast'); Pawlikowski and Kruszyński, 1996:87 (Poland: Toruń Basin); Saure, 1996:503 (Germany: Berlin-Pankow: sewage irrigation field); Schmid-Egger, Schmidt, and Doczkal, 1996:377 (Germany: Baden-Württemberg: probably endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg); Woydak, 1996:40 (Germany: Westfalen: summary of distribution and nesting habits); Celary, 1997:58 (in checklist of Animals of Poland); Ljubomirov, 1997:120 (Bulgaria); Riemann, 1997:49 (Germany: Achim 14 km southeast of Bremen); Schmidt and Schmid-Egger, 1997:19 (in checklist of German Sphecidae); Blösch, 1998:167 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); F. Burger, Saure, and Oehlke, 1998:28 (Germany: in list of Sphecidae of Brandenburg); Dollfuss, Gusenleitner, and Bregant, 1998:514 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km west-southwest of Hamburg); Flügel, 1998:60 (Germany: Brandenburg: Unteres Odertal National Park); González, Gayubo, and Torres, 1998:72, 73 (Spain: Valladolid Province); Gorobchishin, 1998:49 (Ukraine: Kiev and surroundings); Haeseler and Ritzau, 1998:51 (Germany: Bremen: island of Harriersand in Weser River and Steller Heide); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E); N. Schneider and Wahis, 1998:21 (Luxemburg: sandstone quarries); H.-J. Schulz, 1998c:113 (Germany: Lausitz: former military training area near Mücka); van der Smissen, 1998:62 (Germany: Mecklenburg-Vorpommern, Niedersachsen, Schleswig-Holstein); K. Weber, 1998:143 (Germany: Bayern: Bamberg area); Anan'eva and Kochetkov, 1999:7 (Russia: Ryazan Oblast': no specific locality); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Gonzáles, Gayubo, and Torres,

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1999:355 (Spain: Valladolid: Viana de Cega); Herrmann, 1999:7 (Germany: Niedersachsen: Oldenburg area; habitats size); Kuhlmann, Wolf, and Woydak, 1999:569 (Germany: endangered in Nordrhein-Westfalen); Pauly, 1999:109 (in catalog of Belgian aculeates); Riemann, 1999:835 (Germany: Niedersachsen: sand pits near Bremen); Sörensen, Mauss, and Schindler, 1999:504 (Germany: Schleswig-Holstein); Zehnder and Zettel, 1999:131 (Switzerland: recolonization of flooded area in Valais Canton); Blösch, 2000:241 (in Sphecidae Fauna of Germany); Dressler, 2000:33 (Germany: Hessen: Darmstadt area); Grace, Yates, and Triplet, 2000:10, 20 (Great Britain: East Sussex: Rye Bay area); Jacobs, 2000:8 (Germany: Land Mecklenburg-Vorpommern: not endangered); Mokrousov, 2000b:30 (Russia: Nizhniy Novgorod Oblast'); Schmid-Egger, 2000b:275 (Germany: Baden-Württemberg: shores of Rhine River); Vepřek, 2000:234 (Czech Republic: Moravia: Helenkov, Moravský Pisek, Rohatka; Slovakia: Gemerský Jablonec); Józán, 2001:279 (Hungary: Somogy County); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia); Ljubomirov, 2001b:50 (Bulgaria: Mount Vitosha near Sofia); Ohl et al., 2001:140 (distribution in Germany by provinces); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:325 (in Sphecidae Fauna of Western Europe); Szczepko and Kowalczyk, 2001:188 (Poland: Kampinos National Park near Warszawa); van der Smissen, 2001:61 (Germany: Schleswig-Holstein: Zettel, Gross, and Mazzucco, 2001:72 (Austria: Wien); Kazenas, 2002a:82 (geographic distribution); Kowalczyk, Szczepko, and Świątek, 2002:153 (Poland: Kampinos National Park near Warszawa); Shkuratov, 2002b:141 (Russia: Rostov Oblast': Rostovskiy Nature Reserve at 46°27'N 42°41'E); Shlyakhtenok and Skibinska, 2002:33 (Belorussia: no specific locality); Söderman and Vikberg, 2002:51 (in list of Aculeata of Finland); van der Meer, 2002:15 (Netherlands: costal dunes at Meijendel); Bergsten, Ekerholm, Hellquist, Hilszczanski, Nilsson, Pettersson, and Werner, 2003:71 (Sweden: Västerbotten: island of Romelsön); Cölln, Esser, and Jakubzik, 2003:63 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Haeseler, 2003:340 (Germany: Niedersachsen: island of Harriersand near Bremen); Kowalczyk and Kurzac, 2003:209 (Poland: Łódź: Botanical Garden); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:67 (Germany: in catalog of wasps and bees of Bayern); Schmid-Egger, 2003:754 (Italy: Basilicata: Lauria); Tischendorf and Treiber, 2003:121 (Germany: Hessen: 15 km southwest of Frankfurt am Main: nesting under high power lines); von der Heide and Metscher, 2003:102 (Germany: Niedersachsen: Emsland area); Abenius, 2004:40 (Sweden: Norrbottens: Luleå area); Beron, 2004:840 (Bulgaria: eastern Rhodope Mountains: Arda Hut, citation of Ljubomirov, 1997:120); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Klein and Lefeber *in* Peeters, van Achterberg, et al., 2004:399 (in Wasp and Ant Fauna of Netherlands); Liška, 2004:89 (Slovakia: (Vah River valley near Trenčín); Shkuratov, 2004a:77 (Russia: Rostov Oblast'); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Szczepko and Kowalczyk, 2004:126 (Poland: Kampinos National Park near Warszawa); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:45 and 60 (in checklist of Polish Sphecidae); Burger, 2005:34 (Germany: Thüringen); Ebrahimi, 2005:126 (in key to selected Iranian Sphecidae); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Gros, 2005:13 (nest, prey transport, mass provisioning, list of prey); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Jacob and Remacle, 2005:62 (Belgium: Luxembourg Province: quarry Haut des Loges in Vance); Jacobs, 2005a:448 (Bulgaria); Knowles and Else, 2005:231, 232 (in key to British *Miscophus*); Kowalczyk and Kurzac, 2005:105 (Poland: Botanical Garden in Łódź); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Mandery, 2005:174 (Germany: Bayern: Hainberg Nature Reserve near Nürnberg); Pagliano and Negrisoló, 2005:395 (in Sphecidae Fauna of Italy); Pijfers, 2005:50 (Netherlands: Twente: Noordelijke Manderheide); Riemann and Hohmann, 2005:561 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:16 (Germany: Berlin); Theunert, 2005a:17 (Germany: in checklist of Sphecidae of Niedersachsen and

Bremen); Venne and Bleidorn, 2005:43 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Ziska and Saure, 2005:81 (Germany: Berlin: Biesenhorster Sand); Feitz, Gloden, Melchior, and Schneider, 2006:82 (Luxemburg: Baggerweieren area in Haff Réimech Nature Reserve); Gorobchishin, 2006:109 (Ukraine: several localities in Cherkasy, Kyiv, and Sumy Oblast's); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Liška, 2006:88 (Slovakia: Váh river valley near Trenčín); Peeters, Krekels, and Megens, 2006:22 (Netherlands: Reichswald forest near Nijmegen); N. Schneider, 2006:135, 139 (Luxemburg: anthropogenic habitats); Shlyakhtenok, 2006:111 (Belarusia: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006b:98 (first record from Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Vepřek, 2006:510 (Czech Republic: Kokořínsko area); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:460 (nesting habits studied by Gros, 2005, first recorded from Greece by Standfuss and Standfuss, 2006a); Hallin, 2007b:25 (Sweden: Blekinge County); Jacobs, 2007:103, 105 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:24 (Germany: northwestern Sachsen); Saure, 2007:82 (Germany: in checklist of Aculeata of Land Brandenburg); Vago, 2007:175 (France: département de Pas-de-Calais); Venne, Bleidorn, and Lauterbach, 2007:302 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia), 213 (records from Moravia and Slovakia were summarized by Vepřek, 2000); Winkler, 2007:30 (Germany: Niedersachsen: eastern Friesland); Haeseler, 2008:308 (Germany: Friesian Islands); Nemkov, 2008b:19 (in catalog of Crabronidae of Asiatic Russia); Theunert, 2008:53 (Germany: map of distribution in Niedersachsen and Bremen); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Debuysier and Vago, 2009:4 (in list of Sphecidae *sensu lato* of northern France); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen); Gayubo, González, Tormos, and Asís, 2009:363 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:264 (Bulgaria: Maleshevska Planina); Kowalczyk, Kurzac, and Nadolski, 2009:63 (Poland: between Warta and Widawka rivers); Livory, Chevin, Lair, Sagot, and Baldock, 2009:23 (France: Département de la Manche); Mokrousov, 2009:287 (Russia: Republic Mari El); Nemkov, 2009b:81 (in new catalog of Sphecidae and Crabronidae of siatic Russia); Pagliano, 2009:184 (Italy: recorded from Basilicata by Schmid-Egger, 2003); Szczepko and Wiśniowski, 2009:70 (Poland: Spała Landscape Park); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Hable, Krauss, von der Dunk, and Wickl, 2010:27 (Germany: Bayern: Sulz- and Ottmaringer Tal); Howe, Knight, and Clee, 2010:99 (Great Britain: occurring on coastal sand dunes); Mokrousov, 2010a:62 (Russia: Kirov, Nizhny Novgorod, and Vladimir Oblast's, Mari El Republic: no specific localities); Saure, 2010a:88 (Germany: Berlin-Reinickendorf: Baumberge), 2010b:175 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:136 (Germany: Bayern: collected along Main-Donau canal); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:102 (Western Slovakia: recorded from Borská Nižina); van der Smissen, 2010a:344 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records), 2010b:38 (France: Vaucluse: Bédoin), 2010c:397 (Sweden: Öland: Byrums Sandvik); Baghirov, 2011b:148 (Russia: Altay Republic: Kosh-Agach); Burger, 2011a:287 (Germany: in red list of Sphecidae *sensu lato* of Thüringen); Józán, 2011:180 (in checklist of Sphecidae *sensu lato* of Hungary); Saure, 2011c:199 (Germany: Berlin-Spandau: Fort Hahneberg); Theunert, 2011a:20 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:146 (Germany: Hessen: not endangered); Tripotin, 2011:23 (France: Seine-Maritime: artificial sand site near Sandouville); Ziska and Saure, 2011:109 (Germany: Berlin: Tegeler Fließ valley); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Cölln, Jakubzik,

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and Kinkler, 2012:25 (Germany: Nordrhein-Westfalen: Leverkusen); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); Saure, 2012b:229 (Germany: Berlin-Spandau: Spandauer Forst); Shlyakhtenok, 2012a:171 (Belorussia: collected in private plots), 2012b:92 (Belorussia: Beresina National Reserve: overgrowing dry meadow); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Tripotin, 2012:23 (France: Seine-Maritime: estuary of Seine river); Flügel, 2013a:120 (Germany: Brandenburg: Pimpinellenberg near Oderberg); Mokrousov, Ruchin, and Egorov, 2013:202 (Russia: Mordovian Republic: Mordovian State Nature Reserve); Pankov, 2013:230 (Russia: Ivanovo Oblast'); Saure, 2013:20 (Berlin: Treptow-Köpenick: Gosener Wiesen); A. Scholz and Liebig, 2013:22 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:170 (in annotated catalog of aculeate wasps of Belorussia); Wiśniowski and Szczepko, 2013:39 (Poland: Kampinos National Park near Warszawa); Bitsch, 2014:404 (recent records from Bulgaria and Greece reported); Ebrahimi, 2014:39 (Iran: Alborz: Karaj: Malārd); Flügel, 2014:254 (Brandenburg: Hangelsberger Heide); Hellqvist, Abenius, and Norén, 2014:92 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Olszewski, Wiśniowski, and Szczepko, 2014:63 (Poland: miscellaneous locality records); Yıldırım, Ljubomirov, and Lelej, 2014:12 (distribution in Turkey by biogeographic provinces); Archer, 2015:203 (Great Britain: English coastal sand dunes); Baldock, 2015:68 (Spain: recorded from Mallorca by de Andrade, 1960); Simon, Lorthiois, and Macé, 2015:54 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine); Voigt, 2015:70 (Germany: Schleswig-Holstein: Sorgwohld area); Bleidorn, Gerth, Hopfe, et al., 2016:10 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Cölln and Jakubzik, 2016:18 (Germany: Rheinland-Pfalz: Vulkaneifel District); Else, Bolton, and Broad, 2016:30 (in checklist of Aculeata of Great Britain and Ireland: England); Mokrousov and Popov, 2016:582 (Russia: Krasnodarskiy Krai); Reemer and Peeters, 2016:10 (Netherlands: Hulshorsterzand); U. Sörensen, 2016:427 (Germany: Schleswig-Holstein: der Ochsenweg south of Leck); Stolle and Saure, 2016:923 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Antropov, 2017b:240 (in catalog of Crabroninae of Russia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:66 (Iran: known from Alborz and Tehran provinces); Nicolas and Vago, 2018:14 (France: Pas-de-Calais: Mont Saint-Frieux); Carminati, Mora, and Cretin, 2019:18 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Olszewski and Kowalczyk, 2019:103 (northern Poland: Pomorze Gdańskie = Gdańsk Pomerania); Ruchin and Antropov, 2019a:13233 (Russia: Mordovia State Nature Reserve); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 339 (reference to original description, geographic distribution); Cross, Baldock, and Wood, 2021:47 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2021:69 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:94 (in commented list of Sphecidae *sensu lato* of Poland); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:289 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey); Olszewski, Sparks, Twerd, and Wiśniowski, 2024:5 (central Poland: common in river valleys: no specific localities); Pytel-Huta and Franchuk, 2024:83 (Ukraine: Rivno Nature Reserve); Buck and Bennett, 2025:215 (in checklist of Sphecidae *sensu lato* of Canada, Alaska, and Greenland: first record from Canada: Ontario: no specific locality); Kochetkov and Korsun, 2025:8 (Russia: Zabaikalskiy Krai: Daurskiy Nature Reserve).

*Miscophus maritimus* F. Smith, 1858c:91, ♀, ♂. Syntypes: Great Britain: Kent: Sandown near Deal (BMNH). Synonymized with *Miscophus ater* by de Andrade, 1960:112. – F. Smith, 1871b:10 (in catalog of British Aculeata); E. Saunders, 1880:251 (in revision of British Aculeata), 1882:87 (Great Britain: Deal); Kohl, 1885a:231, footnote (original description copied), 233 (in checklist of world *Miscophus*); Ed. André, 1888:213 (in revision of Sphecidae of Europe and Algeria), 19\* (bibliographic references); Baldini, 1894:54 (Italy: Modena area); E. Saunders, 1896:84 (in revision of British Aculeata); Dalla Torre, 1897:698 (in catalog of world Hymenoptera); E. Saunders, 1902b:143 (Great

Britain: Island of Jersey); Antiga and Bofill, 1904:12 (Spain: Cataluña Province); R. Perkins, 1916:230 (specimens in F. Smith collection); van der Vecht, 1926:116 (in key to *Miscophus* of Netherlands), 118 (locality records); Bouwman, 1928b:30 (in revision of Sphecidae of Netherlands); Lieftinck, 1928:324 (Netherlands: island of Texel); van der Vecht, 1928:93 (Netherlands: Meijendel sand dunes); Bischoff *in* Schmiedeknecht, 1930:676 (in keys to Hymenoptera of North and Central Europe); van der Vecht 1934:10 (Netherlands: Kotten); Richards, 1937b:104 (in checklist of British aculeates); Giner Marí, 1943a:207 (unknown to the author), Spooner, 1943:71 (Great Britain); Deleurance, 1946b:63 (prey: minute Salticide), 67 (France: Bouche-du-Rhône: Camargue: Bois des Rièges); Šnoflák *in* Zavadil and Šnoflák, 1948:46 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); Bischoff and Stadler, 1954:126 (Germany: Bayern: Romberg); Ceballos, 1956:390 (in catalog of Hymenoptera of Spain); Richards, 1964:11 (in Britain confined to southeast of the country and also found in continental Europe); Balthasar, 1972:186 (in Sphecid Fauna of Czechoslovakia: can be expected in the country).

As *Miscophus niger*: Nielsen, 1907:34 (Denmark), corrected to *Miscophus ater* by Lomholdt, 1971:124; Fæster, 1965:192 (Denmark: Hansted Nature Reserve), corrected to *Miscophus ater* by Lomholdt, 1971:124; Hoop, 1963b:7 (Germany: Schleswig-Holstein: Wahlstedt), corrected to *Miscophus ater* by Hoop, 1973:48.

As *Miscophus spurius*: Kirschbaum, 1853:44 (Germany: Mainz-Mombach), corrected to *Miscophus ater* by Schmidt, 1971b:37.

### 19. *atrescens* Lomholdt

*Miscophus atrescens* Lomholdt, 1985:70, ♀, ♂. Holotype: ♀, South Africa: Botswana: Lake Ngami 12 mi. northeast of Sehitwa (BMNH). – Hancock, Chahwanda, and Mhlanga, 1995:38 (paratype in Bulawayo Museum).

### 20. *atlanteus* de Andrade

*Miscophus atlanteus* de Andrade, 1956b:19, ♂. Holotype: ♂, Morocco: Tafraout (Lausanne). – de Beaumont, 1957a:144 (Morocco); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

### 21. *aurulentus* Lomholdt

*Miscophus aurulentus* Lomholdt, 1985:103, ♀, ♂. Holotype: ♀, Angola: 18 mi. east of Porto Alexandre, now Tômbwa (BMNH).

### 22. *bellulus* Arnold

*Miscophus bellulus* Arnold, 1924:27, ♀. Lectotype: ♀, Zimbabwe: Filabusi: Druid Mine (Bulawayo), designated by Lomholdt, 1985:68. – Arnold, 1929c:400 (description of ♂), 1930:8 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:62 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:38 (holotype in Bulawayo Museum).

### 23. *belveriensis* de Andrade

*Miscophus belveriensis* de Andrade, 1960:64, ♀, ♂. Holotype: ♀, Spain: Mayorca (Univ. Coimbra). – Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae, as *belberiensis*); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:319 (in Sphecid Fauna of Western Europe); Baldock, 2014:356 (Spain: Island of Mallorca), 2015:69 (Spain: Mallorca: S'Albufera); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:282 (in revision of Sphecidae *sensu lato* of Europe).

### 24. *benidormicus* P. Verhoeff

*Miscophus benidormicus* P. Verhoeff, 1955:380, ♀. Holotype: ♀, Portugal: Benidorm (Univ. Coimbra). – de Andrade, 1956b:24 (in revision of *Miscophus handlirschi* species group; Spain); Ceballos, 1959:230 (in supplement to catalog

of Spanish Sphecidae); Suárez, 1959:58 (Spain); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:335 (in Sphecid Fauna of Western Europe); Fresno, 2018:229 (Spain: Murcia: Abanilla); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:300 (in revision of Sphecidae *sensu lato* of Europe).

### 25. *berlandi* de Andrade

*Miscophus berlandi* de Andrade, 1956b:36, ♂. Holotype: ♂, Western Sahara: Villa Cisneros (MNHN). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

As *Miscophus bonifaciensis*: Berland, 1939:85 (Western Sahara: Villa-Cisneros) and 1943:312 (Western Sahara: Villa-Cisneros), corrected to *Miscophus berlandi* by de Andrade, 1956b:36.

### 26. *betpakdalensis* Kazenas

*Miscophus betpakdalensis* Kazenas, 1992b:99, ♀, ♂. Holotype: ♀, Kazakhstan: Betpakdala: 50 km north of Furmanovka (ZIN). – Esenbekova and Kazenas, 2000:38 (southeast Kazakhstan: Borandysu); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:82 (geographic distribution, collecting localities in Kazakhstan).

### 27. *bicolor* Jurine

*Miscophus bicolor* Jurine, 1807:pl. 11 and pl. 11, Fig. 25, ♂. Holotype or syntypes: ♂, Europe: no specific locality, perhaps Switzerland (MHNG). – Guérin Méneville, 1828b:632 (in Dictionnaire classique d'histoire naturelle); Stephens, 1829:363 (in catalog of British insects), 1829b:33 (in checklist of British insects); Vander Linden, 1829:27 (bibliographic references, Belgium: Bruxelles, France: Versailles, Germany, color variation); Westwood, 1836:301 (installing nests in sand, in spite of not having a rake); Shuckard, 1837a:92 (in revision of British Aculeata); Herich-Schaeffer, 1840:297 (Germany: Bayern: Regensburg area); Dahlbom, 1942a:12 (in review of Scandinavian aculeates), 1844:235 (in revision of Sphecidae and Pompilidae); von Siebold, 1844:132 (Germany: Preussen: vicinity of Danzig, now Poland: Gdańsk); Dahlbom, 1845:466 (in key to European *Miscophus*); Lepeletier de Saint Fargeau, 1845:237 (in revision of world Hymenoptera); von Kiesenwetter, 1849:88 (Germany: Kingdom of Saxony: Leipzig); F. Smith, 1849b:2551 (preying on spiders, nesting in sand); Wissmann, 1849:12 (Germany: Kingdom of Hannover: Hedemünden); F. Smith, 1851c:19 (Great Britain: London: Borough of Croydon: Coombe Wood; Surrey: Weybridge); Wesmael, 1852:85 (Belgium: Bruxelles); F. Smith, 1853:63 (in checklist of British Hymenoptera), 1856:311 (in catalog of Hymenoptera in British Museum); Kawall, 1857:25 (Kurland, now Latvia); Ruthe and Stein, 1857:314 (Germany: Berlin area); Giraud, 1858:446 (Austria: Wien area; prey); nec F. Smith, 1858c:91 (= *Miscophus concolor*); Taschenberg, 1858:97 (in key to Sphecidae of Germany); Funk, 1859:59 (Germany: Bayern: Bamberg); Six, 1859:17 (Netherlands: no specific locality); Schenck, 1860:149 (Germany: Nassau Region); Giraud, 1863a:14 (Italy: Piemonte: Suse); Taschenberg, 1866:202 (in revision of Hymenoptera of Germany); A. Costa, 1867b:94 and 1867c:38 (in revision of Italian Sphecidae); Jaennicke, 1867:147 (Germany: Hessen: Frankfurt area); Kirchner, 1867:215 (in catalog of European Hymenoptera); Schenck, 1867a:356 (Germany: Nassau Region); Jaennicke, 1868:9 (Germany: Hessen: Kelsterbach); Wierzejski, 1868:116 (Ukraine: Podole Region: Janów); Taschenberg, 1870:17 (Germany: Halle); F. Smith, 1871b:10 (in catalog of British Aculeata); P. Ivanov, 1872:152 (Ukraine: Kharkov Oblast': Kupyansk area); Dours, 1874:139 (in catalog of Hymenoptera of France); Wierzejski, 1874:257 (Ukraine: Podole Region); Beuthin, 1879:240 (Germany: Hamburg area); Girard, 1879:956 (morphology and habits); Kohl, 1880:178 (Austria: Tirol, and Italy: Trentino–Alto Adige); E. Saunders, 1880:250 (in revision of British Aculeata); Marquet, 1881:179 (France: Haute-Garonne: Toulouse); Yaroshevskiy, 1881:126 (Ukraine: Khar'kiv Ob-

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last': Kupyansk); Frei-Gessner, Kohl, and Kriechbaumer, 1882:395 (Jurine's name is valid); Kohl, 1883e:673 (Switzerland); A. Costa, 1884b:32 (Italy: Sardegna: Stagno di Cabras); Kohl, 1885:220 and 221 (in key to western Palearctic *Miscophus*), 222 (in revision of western Palearctic *Miscophus*), 232 (in checklist of world *Miscophus*), 1888b:728 (Austria: Tirol, now Italy: Alto Adige); Ed. André, 1888:215 (in revision of Sphecidae of Europe and Algeria), 19\* (bibliographic references); Radoszkowski, 1892:591 (male genitalia); Kohl, 1893a:31 (Austria: Niederösterreich); Sickmann, 1893:83 (Germany: Niedersachsen: Iburg); Krieger, 1894:10 (Germany: Kingdom of Saxony); Ferton, 1896a:266 (number and position of prey, host egg); Meunier, 1896:273 (Belgium: Bruxelles area); Acloque, 1897:93 (in Sphecida Fauna of France and Algeria); Dalla Torre, 1897:697 (in catalog of world Hymenoptera); Mocsáry, 1897:77 (Hungary: several localities including Vrđnik in today's Croatia); de Cobelli, 1903:108 (Italy: Province of Trentino); Antiga and Bofill, 1904:12 (Spain: Cataluña Province); Mantero, 1905:73 (Italy: Toscana: Isola del Giglio); Schmiedeknecht, 1907: 213 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:121 (in catalog of French Hymenoptera); Dittrich, 1911b:22 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); W. Schulz, 1911a:68 (an original pair in Paris Museum corresponds to Kohl's interpretation); Birula, 1912:540 (Ukraine: Zhytomyr Oblast': Radomyshl'); Rudow, 1912:46 (prey: aphids, cicadellids, and psyllids, clearly in error); Schirmer, 1912:166 (Germany: Berlin area); Alfken, 1914:278 (northwestern Germany); O. Meyer, 1919:153 (Germany: Posen Province, now Poland: Poznań Region); A. Wagner, 1920:39 (Germany: Lower Elbe region); Dubois, 1922:198 (in key to Belgian Sphecidae); Ferton, 1923:67 (prey: small arachnids); Berland, 1925d:127 (in Sphecida Fauna of France); Blüthgen, 1925:166 (Germany: Saale River valley: Himmelreich, Roßbach); Coulon, 1925:121 (France: Eure: Evreux); Bouwman, 1926:280 (in list of Sphecidae of Netherlands); Friese, 1926:163 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); van der Vecht, 1926:116 (in key to *Miscophus* of Netherlands), 117 (diagnosis, prey, locality records); Berland, 1928b:178 (add Giraud, 1858 to bibliography in Berland, 1925d); Bouwman, 1928b:29 (in revision of Sphecidae of Netherlands); Maneval, 1929b:292 (nesting habits); Maréchal, 1930c:165 (female and male pupa); Bischoff in Schmiedeknecht, 1930:675 (in keys to Hymenoptera of North and Central Europe); Grandi, 1931:57 (Italy: Toscana: Vallata delle Pozze near Le Mandriole); Pulkkinen, 1931:01 (in revision of Sphecidae of Finland, not yet found in Finland); Bondroit, 1932:38 (Belgium: recorded from Bruxelles area by Wesmael); Bernard, 1935:65 (France: Var: Fréjus area); Grandi, 1935a:110 (Italy); Maneval, 1935:75 (prey); Vergne, 1935:118 (France: Auvergne: Lezoux, Pont-du-Chateau); Crèvecoeur and Maréchal, 1936:252 (in catalog of Belgian Hymenoptera); Drogoszewski, 1936:129 (Poland: Opatów); Zavadil, Šusterka, and Bat'a, 1937:184 (in catalog of Sphecidae of Czechoslovakia); Móczár, 1938c:80 (Hungary: Kőszeg Hills); A. Wagner, 1938a:120 (northwestern Germany); Maneval, 1939:72 (preying almost exclusively on spider *Asagena phalerata* Panzer, nest temporary closure, description of larva); Móczár, 1939:4 (Hungary: Jászberény); Paul, 1941:43 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); Schneid, 1941:1038 (Germany: Bayern: Bamberg area); Giner Marí, 1943a:209 (in Sphecida Fauna of Spain); nec Guiglia, 1944a:148 (= *bicolor guigliaae*); Guiglia, 1944b:29 (Italy); Šnoflák, 1944a:143 (Czech Republic: serpentine steppe near Mohelno); Balthasar, 1948:141 (Slovakia: Kovačov, Parkan); Šnoflák in Zavadil and Šnoflák, 1948:46 (in key to Sphecidae of Czechoslovakia); Pittioni, 1950:26 (Cyprus); Szulczewski, 1950:105 (Poland: Wielkopolski National Park 15 km south of Poznań); Caruel, 1951:100 (France: Marne Department); de Andrade, 1952:28 (in revision of *Miscophus* of Portugal); Nouvel and Ribaut, 1953:179 (France: Central Pyrénées: upper valley of Garonne River); Bischoff and Stadler, 1954:126 (Germany: Bayern: Romberg); de Beaumont, 1954a:62 (Italy), 1954e:92 (Italy); Grandi, 1954:240 (Italy); Macko and Noskiewicz, 1954:180, 186 (Poland: Dolny Śląsk: Stolec at 50°35'N 16°53'E); Aerts, 1955:61 (Germany: Rheinland; as *Misephus*); Vergne, 1955:5 (France: Auvergne); Vogrin, 1955:38 (Yugoslavia); Ceballos, 1956:390 (in catalog of

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Hymenoptera of Spain); Bajári, 1957a:59 (in key to Hungarian Sphecidae); Balthasar, 1957:112 (in key to western Palearctic *Miscophus*); de Beaumont, 1957b:137 (northern Iran); Grandi, 1957:390 (Italy); Benno, 1958b:12 (in review of Dutch Sphecidae); Evans, 1958c:125 (discussion of larval description by Maneval, 1939); Nouvel and Ribaut, 1958:14 (France: Pyrénées-Orientales: Banyuls-sur-Mer); nec Pulawski, 1958a:185 (= *lusitanicus thracicus*); Diniz, 1959:30 (Portugal: Cascais, Quinta do Mato); Olberg, 1959:253 (photograph of prey carrying); Wolf, 1959b:23 (Germany: Nassau); de Andrade, 1960:87 (in revision of *Miscophus bicolor* species group); Diniz, 1960:32 (Portugal: Cascais, Resende); de Beaumont, 1960a (Greece: island of Rhodes); Noskiewicz and Puławski, 1960:117 (in key to Polish Sphecidae); de Beaumont, 1961c:50 (Greece: island of Crete); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964c:79 (in Sphecid Fauna of Switzerland); Diniz, 1964a:3 (Portugal: Cascais, Estoril, Quinta do Mato); Pulawski, 1964:119 (Egypt: Abu Rawash); de Beaumont, 1965a:54 (Greece); B. Klug, 1965:132 (Germany: Baden-Württemberg: Freiburg im Breisgau area); Bonelli, 1966c:218 (Italy: Trentino–Alto Adige: Montagna); Benno, 1967:36 (in checklist of Sphecidae of Netherlands); de Beaumont, 1967a:334 (Turkey); Gauss, 1967:554 (Germany: Baden-Württemberg); J. Heinrich, 1967:76 (Germany: Bayern: Unterfranken District); Niedl and Deneš, 1967:76 (Czech Republic: Třeboň area); Scobiola-Palade, 1967:43 (Romania); Benedek, 1968:73 (Hungary, visiting flowers of *Angelica silvestris* L.); Nagy, 1968:378 (nest parasite in Romania: *Smicromyrme septentrionalis* Hoffer, a mutillid, now *Smicromyrme sicana* (De Stefani Perez, 1887)); Scobiola-Palade, 1968c:385 (Romania: Budești); de Beaumont, 1969:92 (Turkey); Benedek, 1969a:84 (Hungary; hygrophilous meadow), 1970:98 (Hungary: Tapolca); Gauss and Perraudin, 1970:360 (Germany: Baden-Württemberg: Sandhausen, Witte Valley, and Kaiserstuhl area: Achkarren, Kiechlingsberge); Oehlke, 1970:718 (Democratic Germany); Tumšs, 1970:82 (Latvia); Lefeber, 1971a:17 (Belgium: As); Vegter, 1971:229 (Netherlands: Drenthe Province); Balthasar, 1972:188 (in Sphecid Fauna of Czechoslovakia); Kofler, 1972:107 (Austria: eastern Tirol); Simon Thomas, 1972:183 (France: Landes); Tsuneki, 1972e:403 (Mongolia); Haeseler, 1973:54 (Germany: Niedersachsen: Pevestorf 72 km southeast of Lauenburg); Erlandsson, 1974:74 (Yugoslavia); Simon Thomas, 1974:57 (Netherlands: Limburg: Tienray); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Simon Thomas and Wiering, 1976:109 (Netherlands: IJsselmeer Polders); Georghiou, 1977:190 (Cyprus); Kolesnikov, 1977:318 (Russia: Bryansk Oblast'); Pulawski, 1978:227, 228 (in key to Sphecidae of European part of USSR); Benedek, 1979:231 (Hungary: Bakony Hills); Leclercq, Gaspar and Verstraeten, 1979:map 1414 (Belgium); Lefeber, 1979:12 (in checklist of Sphecidae of Netherlands), 77 (Netherlands: distribution map); Casolari and Casolari Moreno, 1980:114 (specimens in M. Spinola collection, Torino); Pagliano, 1980:129 (Italy: Abruzzo); Westrich, 1980:629 (Germany: Baden-Württemberg: Tübingen area); Dollfuss and Ressler, 1981:316, 322 (Austria: Niederösterreich: Scheibbs District); Schmidt, 1981:189 (Germany: Baden-Württemberg); Donath, 1982:213 (Germany: Cottbus Bezirk); Gayubo, 1982a:111 (northern Spain: Sierra de Béjar), 1982f:256 (Spain: Cádiz Province: Castellar de la Frontera, San Roque); Skibińska, 1982:123 (Poland: Warszawa area); Dollfuss, 1983b:11 (in catalog of Sphecidae of Austria); Józán, 1983:100 (Hungary); Lefeber, 1983a:84 (Netherlands: Waddendistrict: island of Schiermonnikoog); Riemann, 1983:85 (Germany: Bremen-Daverden area); Gayubo, 1984b:88 (Spain: Salamanca Province), 1984c:369 (Portugal: El Algarve Province); Haack, Tschamtker, and Vidal, 1984:130 (Germany: Hamburg area); Haeseler, 1985c:571 (Germany: Friesian Islands); Józán, 1985a:181 (Hungary), 1985b:57 (Hungary south of Lake Balaton), 83 (ecological and zoogeographic characteristics); Brechtel, 1986:61 (Germany: Südpfalz: Scheibhardt); Gayubo, 1986c:34 (Spain: Zamora Province); Gayubo and Sanza, 1986:52 (Spain: Soria); Józán, 1986:370 (Hungary: Kiskunság National Park); Nemkov, 1986:97 (Russia: Siberia: Irkutsk Oblast'); Piek and Spanjer, 1986:185 (in list of Sphecidae with known prey); Steiner, 1986:104 (references to publications on nesting habits);

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Gayubo, 1987a:116 (Spain: Ciudad Real Province); Asís and Jiménez, 1988:273 (Spain: Castellón Province); Dollfuss, 1988:13, 24 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Gayubo and Mingo, 1988:85 (Spain); Karsai, 1988:100 (Hungary: Kiskunság National Park); Jacobs, 1989:13 (Germany: Mecklenburg-Vorpommern); Pádr *in* Šedivý, 1989a:168 (in checklist of Czechoslovakian Sphecidae); Jacobs and Oehlke, 1990:168 (Democratic Germany: new locality records); Kowalczyk, 1990:291 (Poland: Góry Świętokrzyskie); Pádr, 1990:75 (Czech Republic: Praha area); Pagliano, 1990:107 (in catalog of Italian Sphecidae); Schwammler and Priesner, 1990:540 (Austria: Kärnten); Dollfuss, 1991:115 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:403 (Italy: Liguria); Jacobs, 1991:46, 47 (Germany: Mecklenburg-Vorpommern: Nature Reserve Elbtaldünen); Józán, 1991:603 (Hungary: Bátorliget Nature Reserve); Schembri, 1991:181 (first record from Malta); Bonelli, 1992:31 (prey and nesting habits); Delarze, 1992:68 (Switzerland: Valais: Les Follatères); Józán, 1992a:229 (Hungary: Béda-Karapanca Protected Area), 1992b:173 (Hungary: Boronka-melléki Protected Area), 1992c:289 (Hungary: Zselic Hills); Nemkov, 1992b:245 (Russia: Far East: Natalino near Khingan Nature Reserve); K. Weber, 1992:88 (Germany: Bayern: Bamberg District); Józán, 1993:413 (Hungary: Bükk National Park); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Blagoveshchenskaya, 1994:87 (Russia: Ulyanovsk Oblast); Schmid-Egger, 1994a:688 (Germany: Rheinland-Pfalz: Höllenberg near Grünstadt); Theunert, 1994c:44 (Germany: summary of records from Niedersachsen and Bremen); Jansen and Kaluza, 1995:7 (Germany: endangered in Sachsen); Józán, 1995:105 (Hungary: projected Duna-Dráva National Park); Ljubomirov, 1995a:77 (Bulgaria: locality records); Nemkov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:413 (in key to Sphecidae of Russian Far East); Papp and Józán, 1995:145 (Hungary: Síkfőkút oak forest); Krasnobayev et al., 1995:139 (Russia: Zhiguli Hills northwest of Samara); Negrisola *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Scharrer, 1995:24 (Austria: Niederösterreich: Bucklige Welt; Croatia: Split; Germany: Bayern: Aschaffenburg, Oberrhein); Schmid-Egger, 1995:62 (Germany: northwestern Baden-Württemberg); Schmid-Egger, Risch, and Niehuis, 1995:196 (summary of records from Germany: Rheinland-Pfalz Province); Jakubzik and Cölln, 1996b:400 (Germany: Rheinland-Pfalz); Minoranskiy and Shkuratov, 1996:81 (Russia: Rostov Oblast); Pawlikowski and Kruszyński, 1996:87 (Poland: Toruń Basin); Schmid-Egger, Schmidt, and Doczkal, 1996:377 (Germany: Baden-Württemberg: endangered); Tischendorf, 1996:46 (Germany: Hessen: near Bensheim); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg), 109 (locality records); Woydak, 1996:40 (Germany: Westfalen: summary of distribution and nesting habits), 104 (not recorded after 1950); Celary, 1997:58 (in checklist of Animals of Poland); Ljubomirov, 1997:120 (Bulgaria); Schmidt and Schmid-Egger, 1997:19 (in checklist of German Sphecidae); F. Burger, Saure, and Oehlke, 1998:28 (Germany: in list of Sphecidae of Brandenburg), 35 (endangered); Dollfuss, Gusenleitner, and Bregant, 1998:514 (Austria: summary of collecting records from Burgenland); Flügel, 1998:60 (Germany: Brandenburg: Unteres Odertal National Park); González, Gayubo, and Torres, 1998:74, 75 (Spain: Valladolid Province), 1999:355 (Spain: Valladolid: Viana de Cega); Gorobchishin, 1998:49 (Ukraine: Kiev and surroundings); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); Józán, 1998:311 (Hungary: Duna-Dráva National Park); Kulik, 1998:130 (northwestern Germany); N. Schneider, Olinger, and Cungs, 1998:161 (Luxemburg: Bonnevoie); van der Smissen, 1998:62 (Germany: Schleswig-Holstein: Lasche, Neu Darchau); K. Weber, 1998:143 (Germany: Bayern: Bamberg area); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Generani, Pagliano, Scaramozzino, and Strumia, 1999:79 (Italy: Toscana: Isola di Montecristo); Herrmann, 1999:7 (Germany: Niedersachsen: Oldenburg area; habitats size); Pauly, 1999:109 (in catalog of Belgian aculeates); Saure, 1999:33 (Germany: Berlin-Köpenick); M. Schwarz, 1999:86 (Austria: Oberösterreich: city of Linz area); Blösch, 2000:241 (in Sphecidae Fauna of Germany); Canovai et al., 2000:77 (first record from Corsica), 78 (Italy: Toscana: Isola di Montecristo); Dressler, 2000:33

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(Germany: Hessen: Darmstadt area); Esenbekova and Kazenas, 2000:38 (southeast Kazakhstan: 3-4 km south, 8 km south, and 20 km west of Alma Ata, 8 km south of Talgar); Flügel, 2000:46 (Germany: Hessen: Halberg near Neumorschen); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Gonzáles, Gayubo, and Tormos, 2000:19 (Andorra: Santa Coloma); Jacobs, 2000:8, 16 (Germany: Land Mecklenburg-Vorpommern: endangered); Józán, 2000:108 (Hungary: Bakony Mountains); Mokrousov, 2000b:30 (Russia: Nizhniy Novgorod Oblast'); Shkuratov, 2000:59 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Theunert, 2000:149 (Germany: Niedersachsen: Heeseberg); Vicidomini, 2000b:25 (Italy: previously recorded from Campania); Józán, 2001:279 (Hungary: Somogy County); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia), 170 (review of known biology); Kazenas and Esenbekova, 2001:134 (Kazakhstan: Almatinskiy Nature Reserve); Ljubomirov, 2001b:50 (Bulgaria: Mount Vitosha near Sofia); Ohl et al., 2001:140 (distribution in Germany by provinces); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:326 (in Sphecid Fauna of Western Europe); van der Smissen, 2001:61 (Germany: Schleswig-Holstein: threatened with extinction); Zettel, Gross, and Mazzucco, 2001:72 (Austria: Wien); Deván, 2002a:200 (Slovakia: Kobela Nature Reserve near Nové Mesto); Esser and Cölln, 2002:1136 (southwestern Germany: Eifel region); Józán, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:82 (geographic distribution, collecting localities in Kazakhstan); Lukáš, 2002:190 (Slovakia: Hájnica hill near Trenčianske Bohuslavice); Cölln, Esser, and Jakubzik, 2003:62 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Generani, Pagliano, Scaramozzino, and Strumia, 2003:65 (Italy: Arcipelago Toscano); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Józán, 2003:227 (Hungary: Látrányi Pusztá Nature Conservation Area); Lukáš, 2003:73 (Slovakia: Bratislava: old fruit orchard); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:67 (Germany: in catalog of wasps and bees of Bayern); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); von der Heide and Metscher, 2003:102 (Germany: Niedersachsen: Emsland area); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:196 (Germany: Bayern: endangered); Deván, 2004:147 (western Slovakia); Esser, Jakubzik, and Sonnenburg, 2004:18 (Germany: Nordrhein-Westfalen); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Gayubo, Nieves-Aldrey, González, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Jakubzik, Niehuis, and Cölln, 2004:458 (Germany: Rheinland-Pfalz: Roßstein in Rhein valley at 50°06'42"N 7°43'87"E); Klein and Lefebvre *in* Peeters, van Achterberg, et al., 2004:399 (in Wasp and Ant Fauna of Netherlands); Majzlan and Deván, 2004:33 (Slovakia: Malacky-Široké); Shkuratov, 2004a:77 (Russia: Rostov Oblast'), 2004b:167 (Russia: Rostov Oblast': Gosudarstvennyi Muzej-Zapovednik M.A. Sholokhova); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Stolle et al., 2004:372 (Germany: Sachsen-Anhalt: in red list of Sphecidae); Tischendorf and Frommer, 2004:69 (Germany: Hessen: near Lorch); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:45 and 60 (in checklist of Polish Sphecidae); Burger, 2005:34 (Germany: Thüringen); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Gros, 2005:18 (nest, transport, prey); Knowles, 2005:19 (collected again in Great Britain: Suffolk County: Maidscross Hill near Lakenheath); Knowles and Else, 2005:229 (first record from Great Britain: Suffolk County: Maidscross Hill near Lakenheath), 231 (in key to British *Miscophus*); Kofler, 2005:173 (Austria: Tirol: Lienz District: the only record is by Kohl, 1880:178); Kraatz, 2005:103 (Germany: Niedersachsen: Bümmerstede near Oldenburg); Nemkov, 2005a:148 (Russia: island of Sakhalin); Pagliano and Negrisoló, 2005:396 (in Sphecid Fauna of Italy); Reder, 2005:951 (Germany: Rheinland-

Pfalz: Asselheim, Eisenberg, Flörsheim-Dalsheim, Grünstadt, Monsheim); Riemann and Hohmann, 2005:561 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:16 (Germany: Berlin); Straka, 2005a:404 (vulnerable in Czech Republic); Theunert, 2005a:17 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Gorobchishin, 2006:112 (Ukraine: Kyiv, Kruglyk near Kyiv); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); N. Schneider, 2006:133 (Luxemburg: anthropogenic habitats); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Tomarchio and Turrisi, 2006:957 (Italy: first record from Sicilia: Mount Etna); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:460 (nesting habits studied by Gros, 2005; France: first record from département de Savoie: Pont de Beauvoisin; first recorded from Corsica and island of Montecristo by Canovai et al., 2000); Burguet, 2007:unnumbered p. 24 (France: Puy-de-Dôme: sands Girauds-Faures in Orléat commune); Cungs, Jakubzik, and Cölln, 2007:140 (Luxemburg: Haardt Nature Reserve); Dvořák, Straka, Smetana, Halada, Vepřek, and Karas, 2007:169 (Czech Republic: Vyšenské Kopce National Nature Reserve); Flügel, 2007:40 (Germany: Hessen: Halberg near Neumorschen); Jacobs, 2007:102, 104 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:24 (Germany: north-western Sachsen); Józán, 2007:179 (Hungary: Zselic hills); Roche, 2007a:96 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Saure, 2007:82 (Germany: in checklist of Aculeata of Brandenburg); Sipos and Móczár, 2007:205 (Hungary: Bács-Kiskun megye: vicinity of Foktő); Vago, 2007:175 (France: département d'Aisne); G. Turrisi and R. Turrisi, 2007:121 (Italy: Sicilia: Mount Etna: Botanical Garden Nuova Gussonea and vicinity); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia); Danilov, 2008:349 (Russia: Altayskiy Kray: Barnaul area); Gayubo, González, Tormos, and Asís, 2008:138 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Kazenas, 2008b:113 (Kazakhstan: foothills of Zailiskiy Alatau: sometimes found on loess cliffs); Ljubomirov and Yildirim, 2008:229 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); Theunert, 2008:53 (Germany: map of distribution in Niedersachsen and Bremen); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Debuyser and Vago, 2009:4 (in list of Sphecidae *sensu lato* of northern France); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen); Gayubo, González, Tormos, and Asís, 2009:363 (Spain: Valladolid: Reserva Natural Riberas de Castromuñoz – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:264 (Bulgaria: Maleshevska Planina); Kowalczyk, Kurzac, and Nadolski, 2009:63 (Poland: between Warta and Widawka rivers); Mokrousov, 2009:287 (Russia: Republic Mari El); Nemkov, 2009b:81 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Pagliano, 2009:184 (Italy: Sicilia: island of Lampedusa: Valle Imbriacola; recorded from Sicilia by Tomarchio and Turrisi, 2006; France: Corse: Castiria); Szczepko and Wiśniowski, 2009:70 (Poland: Spała Landscape Park); Budrys, 2010:138 (first record from Lithuania: 3 km south of Puvočiai, Roduka); Burguet *in* Durand and Burguet, 2010:54 (France Département d'Ardèche: Ardèche Gorges); Hable, Krauss, von der Dunk, and Wickl, 2010:27 (Germany: Bayern: Sulz- and Ottmaringer Tal); Hable, von der Dunk, and Knipfer, 2010:65, 75 (Germany: Bayern: vicinity of Dietfurt); Mokrousov, 2010a:62 (Russia: Nizhniy Novgorod Oblast', Chuvash Republic, Mari El Republic: no specific localities); Rudoiskatel', 2010:153 (central Ural Mountains); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: rare), 2010c:73 (Germany: possibly endangered); Schmidt, 2010:136 (Germany: Bayern: collected along Main-Donau canal); van der Smissen, 2010a:344 (Germany: Schleswig-Holstein: Laasche, Neu Darchau), 2010b:385 (France: Ardèche: Saint-Maurice-d'Ibie, Saint-Thomé, Valvignères, Les Reynauds); Baghirov, 2011b:148 (Russia: recorded from Altay by Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995); Burger, 2011a:287 (Germany: in red list of Sphecidae *sensu lato* of Thüringen); Cruz-Sánchez, Asís, Gayubo, Tormos, and

González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Gogala, 2011:16 (Slovenia: Podčetrtek); Józán, 2011:180 (in checklist of Sphecidae *sensu lato* of Hungary); Mokrousov, Berezin, and Egorov, 2011:76 (Russia: Chuvash Republic); Murai and Amr, 2011:112, 119 (first record from Syria: Al Thawrah Nature Reserve at 35°51'N 28°38'E); Pagliano, 2011a:114 (specimens in coll. Spinola, Torino, are *Miscophus bicolor* and *Miscophus* sp.); N. Schneider and Feitz, 2011:121 (Luxemburg); Theunert, 2011a:20 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:146 (Germany: Hessen: not endangered); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); R. Burger, 2012:32 (Germany: Rheinland-falz: Sandrennbahn near Altrip); Burguet *in* Durand and Burguet, 2012:3 (France: Puy-de-Dôme: sands Girauts-Faures in Orléat commune); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); Shlyakhtenok, 2012a:171 (Belorussia: collected in private plots); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Dyuzhaeva, 2013:117 (Russia: Samara Oblast': Zhiguli Nature Reserve); Kazenas, 2013a:74 (color photograph of adult wasp, short information on geographic distribution and nesting habits); Mokrousov, Ruchin, and Egorov, 2013:202 (Russia: Mordovian Republic: Mordovian State Nature Reserve); Saure, 2013:20 (Berlin: Treptow-Köpenick: Gosener Wiesen); A. Scholz and Liebig, 2013:22 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:171 (in annotated catalog of aculeate wasps of Belorussia); Vieira, Oliveira, Brewster, and Gayubo, 2013:18 (Portugal: Douro International Natural Park and Serras de Aire e Candeeiros Natural Park); Bitsch, 2014:404 (recent records from France and Sicily reported); U. Frommer, 2014:27 (Germany: Hessen: Lorch); J.-K. Kim, 2014:436 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Olszewski, Wiśniowski, and Szczepko, 2014:64 (Poland: miscellaneous locality records); Yildirim, Ljubomirov, and Lelej, 2014:12 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Rezaei and Fallahzadeh, 2015:10 (Iran: Fars: Shiraz at 29°36'N 52°28'E, as *bicolor bicolor*); P. Rosa and Pagliano, 2015:103 (Italy: Lombardia and Piemonte: Parco del Ticino); Saure, 2015:14 (Germany: Berlin-Lichterfelde); Simon, Lorthiois, and Macé, 2015:54 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine); Cölln and Jakubzik, 2016:18 (Germany: Rheinland-Pfalz: Vulkaneifel District); Else, Bolton, and Broad, 2016:30 (in checklist of Aculeata of Great Britain and Ireland: England); Mokrousov and Popov, 2016:582 (Russia: Abkhazia, Krasnodarskiy Krai); Schmid-Egger, Dandria, and Xuereb, 2016:80 (in checklist of Crabronidae of Maltese Islands); Stolle and Saure, 2016:923 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:39 (Turkey: Erzurum and Kars provinces, as *bicolor bicolor*); Antropov, 2017b:241 (in catalog of Crabroninae of Russia); Durand and Burguet, 2017:2 (France: Puy-de-Dôme: Réserve Naturelle Nationale Chastreix-Sancy); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:66 (Iran: known from Fars, Mazandaran, and Tehran provinces); Říha, 2017:175 (Czech Republic: Brno); Jacobs and Liebig, 2018:143 (Russia: Irkutsk Oblast': Bol'shoye Goloustnoye and Sarma); Carminati, Mora, and Cretin, 2019:19 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Mokrousov, Proshchalykin, Aliyev, and Maharramov, 2019:13 (Azerbaijan: Nakhichevan Autonomous Republic); Ruchin and Antropov, 2019a:13233 (Russia: Mordovia State Nature Reserve); Sadeghi, Fallahzadeh, Ostovan, Ljubomirov, and Hesami, 2019a:271 (Iran: Fars: Khonj); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 340 (reference to original description, geographic distribution); Akulov, Proshchalykin, and Mokrousov, 2020:48 (Russia: central Krasnoyarsk Krai); Kejval, Blažej, and Erhart, 2020:103 (western Czech Republic); Cross, Baldock, and Wood, 2021:47 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2021:69 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:94 (in commented list of Sphecidae *sensu lato* of Poland); Saure, 2021:82 (Germany: Brandenburg: Nature Reserve Ferbitzer Bruch near Potsdam); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and

Straka, 2021:290 (in revision of Sphecidae *sensu lato* of Europe); Japoshvili and Ljubomirov, 2022:277 (Georgia: Lagodekhi Protected Areas); U. Frommer and Bahmer, 2023:194 (Germany: Hessen: Giessen: city gardens); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey); Pytel-Huta and Franchuk, 2024:84 (Ukraine: Rivno Nature Reserve); Frommer and Klenke, 2025:164 (Germany: Hessen: Lahntal near Weilburg).

*Larra dubia* Panzer, 1807-1809, Heft 106:14, [♀]. Holotype or syntypes: ♀, Germany: no specific locality (originally Iokisch coll., now?). Synonymized with *Miscophus bicolor* Jurine, 1807 by Dahlbom, 1844:235. – Peets, 1909-1911:67 (*Larra dubia* of Panzer = *Miscophus bicolor*).

*Miscophus metallicus* C. Verhoeff, 1890a:327. Holotype or syntypes: Germany: Bonn (depository?). Synonymized with *Miscophus bicolor* by de Andrade, 1960:87. – C. Verhoeff, 1890b:383 (may be identical with *Miscophus bicolor* of Schenck), 1891b:30 (nesting habits); Dalla Torre, 1897:698 (in catalog of world Hymenoptera); van der Vecht, 1926:118 (C. Verhoeff's opinion quoted).

*Miscophus tsunekii* de Andrade, 1960:97, ♀, ♂. Holotype: ♀, Korea: Keijo, now Seoul (Univ. Coimbra) Synonymized with *Miscophus bicolor* by Nemkov in Nemkov, Kazenas, Budrys, and Antropov, 1995:413. – Tsuneki, 1964:62 (in key to Larrinae of Japan and Korea), 1974a:363 (Korea); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Tsuneki, 1982b:15 (known from Korea); Paik, 1985:199 (in list of Sphecidae of Korea); Tsuneki, 1991:200 (Korea).

### **ssp. bulganicus Tsuneki**

*Miscophus bicolor bulganicus* Tsuneki, 1972e:403, ♀. Holotype: ♀, Mongolia: Bulgan aymag: Somon Bayannuur (TMB). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

### **ssp. guigliaae de Andrade**

As *Miscophus bicolor* var.: Guiglia, 1944a:148 (Cyprus: Limassol), corrected to *Miscophus bicolor guigliaae* apparently by de Andrade, 1953a:25.

*Miscophus bicolor guigliaae* de Andrade, 1953a:25, ♀, ♂. Holotype: ♀, Cyprus: Yermasoyia Hills (Univ. Coimbra). – de Andrade, 1960:90 (in revision of *Miscophus bicolor* species group); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

### **28. bonifaciensis Ferton**

*Miscophus bonifaciensis* Ferton, 1896a:264, ♀, ♂. Syntypes: France: Corse: Bonifacio (MNHN). – Ferton, 1896a:267 (list of prey), 1902:528 (limited use of wings), 1923:67 (prey: small arachnids), 80 (malaxation of prey), 336 (occurring in Corsica and North Africa, in error); Berland, 1925d:125 (in Sphecid Fauna of France); nec Berland, 1939:85 and 1943:312 (= *Miscophus berlandi*); nec Giner Marí, 1934:134 and 1943a:207 (= *Miscophus gineri*); Nadig, 1934:31 (Italy: Sardegna: Cagliari); P. Verhoeff, 1955:380 (in revision of *Miscophus handlirschi* species group); Ceballos, 1956:390 (in catalog of Hymenoptera of Spain); de Andrade, 1956b:21 (in revision of *handlirschi* species group of *Miscophus*; France: Corse); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Piek and Spanjer, 1986:185 (in list of Sphecidae with known prey); Tormos and Jimenez, 1987b:316 (Spain: Valencia Province: Dehesa de El Saler); Dollfuss, 1989:10 (type material in NHMW); Pagliano, 1990:107 (in catalog of Italian Sphecidae: Corsica); Schmid-Egger and Bitsch in Bitsch et al., 2001:336 (in Sphecid Fauna of Western Europe); Pagliano and Negrisolò, 2005:398 (in Sphecid Fauna of Italy); Schmid-Egger and Bitsch in Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:301 (in revision of Sphecidae *sensu lato* of Europe).

**29. *botswanaensis* Lomholdt**

*Miscophus botswanaensis* Lomholdt, 1985:116, ♀, ♂. Holotype: ♀, Botswana: Makarikari Pans at 20°08'S 25°32'E (BMNH).

**30. *bridwelli* Lomholdt**

*Miscophus bridwelli* Lomholdt, 1985:95, ♀. Holotype: ♀, South Africa: Western Cape Province: Cape Town (USNM).

**31. *bytinskii* P. Verhoeff**

*Miscophus bytinskii* P. Verhoeff, 1955:377, ♀. Holotype: ♀, Israel: Beersheba (originally P. Verhoeff coll., now RMNH). – de Andrade, 1960:132 (in revision of isolated *Miscophus*); de Beaumont, Bytinski-Salz and Pulawski, 1973:18 (Israel); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Schmid-Egger and Al-Jahdhami, 2022:322 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 328 (known only from holotype).

**32. *californicus* (Ashmead)**

*Miscophinus californicus* Ashmead, 1898:188, ♂. Holotype: ♂, USA: California: Alameda County: no specific locality (USNM). – As *Niteloater californicus*: Krombein in Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera); Krombein, 1961a:81 (visiting flowers of mat euphorbia, *Euphorbia albomarginata*); Powell, 1967:331 (male behavior, nesting habits); Kurczewski, 1969:481 (nesting habits). – As *Miscophus californicus* Bohart and Menke, 1976:318 (new generic assignment, in checklist of world Sphecidae); Krombein, 1979b:1638 (in catalog of North American Hymenoptera); Rust, Menke, and Miller, 1985:46 (California: Channel Islands); Frommer, 1988:94 (California: Riverside County: Deep Canyon); Kurczewski, Abela, and Ubick, 2020:1 (nesting habits); Buck and Bennett, 2025:215 (in checklist of Sphecidae *sensu lato* of Canada, Alaska, and Greenland: Canada: Alberta, Saskatchewan: no specific locality).

**33. *canariensis* de Beaumont**

*Miscophus canariensis* de Beaumont, 1968a:264, ♀, ♂. Holotype: ♀, Canary Islands: Tenerife: Los Cristianos (BMNH). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Báez and Ortega, 1978:192 (Canary Islands); Wolf, 1980:72 (Canary Islands); Hohmann, La Roche, Ortega, and Barquín, 1993:222 (detailed locality records from Canary Islands); Schmid-Egger, 2002c:1630 (in revision of *Miscophus* of Canary Islands).

**ssp. *nigrifemur* de Beaumont**

*Miscophus canariensis nigrifemur* de Beaumont, 1968a:265, ♀, ♂. Holotype: ♀, Canary Islands: Gran Canaria: Maspalomas (BMNH). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Báez and Ortega, 1978:192 (Canary Islands); Wolf, 1980:72 (Canary Islands); Hohmann, La Roche, Ortega, and Barquín, 1993:223 (detailed locality records from Canary Islands).

**34. *caninus* de Andrade**

*Miscophus caninus* de Andrade, 1953a:29, ♀, ♂. Holotype: ♀, Cyprus: Zakaki (Univ. Coimbra). – de Andrade, 1960:49 (in revision of *Miscophus bicolor* species group); de Beaumont, 1967a:333 (Turkey), 1969:90 (Turkey); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Yildirim and Ljubomirov, 2005:1798 (Turkey: Erzurum: Illica; Konya: Sille); Ljubomirov and Yildirim, 2008:230 (in catalog of Crabronidae of Turkey); Yildirim, Ljubomirov, and Lelej, 2014:12 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Kaplan and Yildirim, 2021:69 (in catalog of Crabronidae of Turkey), 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

**35. cappadocicus de Beaumont**

*Miscophus mavromoustakisi cappadocicus* de Beaumont, 1967a:333, ♀ (as *cappadocica*, incorrect original termination). Holotype: ♀, Turkey: Kayseri: Erciyes Dagi (BMNH). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Ljubomirov and Yildirim, 2008:232 (in catalog of Crabronidae of Turkey); Yildirim, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces), 19 (is an endemic of Turkey); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey), 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey). – **As *Miscophus cappadocicus***: Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 340 (raised to full species status), 341 (locality records from Bulgaria, Greece, Hungary, Italy, Slovakia, and Turkey); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:283 (in revision of Sphecidae *sensu lato* of Europe)

**36. carolinae Schmid-Egger**

*Miscophus carolinae* Schmid-Egger, 2002c:1631, ♂. Holotype: ♂, Canary Islands: Gran Canaria: dunes south of Maspalomas (Schmid-Egger coll.). – J. Fernández, 2003:129 (species description recorded).

**37. ceballosi de Andrade**

*Miscophus ceballosi* de Andrade, 1954:67, ♀, ♂. Holotype: ♀, Morocco: Tinerhir (Lausanne). – de Beaumont, 1957a:144 (Morocco: Tinerhir); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Guichard, 1980:228 (Oman); Gadallah, 2020b:40 (in list of aculeate wasps of Arabian Peninsula).

**38. chrysis Kohl**

*Miscophus chrysis* Kohl, 1894:293, ♀. Holotype: ♀, Somalia: Obock (Inst. Roy. Sci. Nat. Belgique). – Dalla Torre, 1897:697 (in catalog of world Hymenoptera); Magretti, 1906:15 (Eritrea); Arnold, 1923c:27 (original description copied), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Madl, 2018:939 (in catalog of Hymenoptera of Djibouti); Gadallah, Abu el-Ghiet, and Edmardash, 2021:1707 (Saudi Arabia: Jazan; redescription of female, description of male); Schmid-Egger and Al-Jahdhani, 2022:321, 324 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 331 (Israel: Arava Valley: Iddan at 30.807°N 35.298°E; Yemen: Al Lahima); Gadallah and Abu El-Ghiet, 2024:87 (Saudi Arabia: Jazan Province: Damad).

**39. clypearis Honoré**

*Miscophus clypearis* Honoré, 1944b:127, ♂. Holotype: ♂, Egypt: Dahshur (USNM). – de Andrade, 1960:74 (in revision of *Miscophus bicolor* species group); Pulawski, 1964:114 (Egypt: Abu Rawash; description of ♀); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Roche, 2007a:96 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

**40. coerulescens Arnold**

*Miscophus coerulescens* Arnold, 1923c:30, ♀, ♂. Lectotype: ♀, Zimbabwe: Khami Ruins (Bulawayo), designated by Lomholdt, 1985:101. – Arnold, 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:101 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:38 (lectotype and paralectotype in Bulawayo Museum).

**41. collaris Honoré**

*Miscophus collaris* Honoré, 1944b:124, sex not stated. Holotype: sex not stated, Egypt: Wadi Digla near Cairo (lost: Honoré, 1944b:143); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Roche, 2007a:98 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

**42. *concolor* Dahlbom**

*Miscophus concolor* Dahlbom, 1844:236, ♀, ♂. Syntypes: Sweden: Lackalänga near Lund, Glösbo, Wadstena Löt; and Germany: Rixdorf near Berlin (Lund). – Dahlbom, 1845:466 (in key to European *Miscophus*); Wesmael, 1852:85 (Belgium: Bruxelles); F. Smith, 1856:311 (in catalog of Hymenoptera in British Museum); Ruthe and Stein, 1857:315 (Germany: Berlin area); Taschenberg, 1858:97 (in key to Sphecidae of Germany); Funk, 1859:59 (Germany: Bayern: Bamberg); Schenck, 1860:149 (Germany: Nassau Region); Taschenberg, 1866:203 (in revision of Hymenoptera of Germany); A. Costa, 1867b:95 and 1867c:39 (in revision of Italian aculeate wasps); Kirchner, 1867:215 (in catalog of European Hymenoptera); Schenck, 1867a:356 (Germany: Nassau Region); Thomson, 1870:243 (in revision of Swedish wasps); Dours, 1874:139 (in catalog of Hymenoptera of France); Thomson, 1874:221 (in revision of Hymenoptera of Scandinavia); Wierzejski, 1874:257 (determination tentative; Western Ukraine: Janów); Beuthin, 1876:231 (Germany: Hamburg area); Girard, 1879:956 (one of three species of *Miscophus*); Kohl, 1883e:673 (Switzerland); Sickmann, 1883:86 (Germany: Niedersachsen: Wellingholthausen); Kohl, 1885:220 and 221 (in key to western Palearctic *Miscophus*), 225 (in revision of western Palearctic *Miscophus*), 232 (in checklist of world *Miscophus*); Ed. André, 1888:213 (in revision of Sphecidae of Europe and Algeria), 19\* (bibliographic references); Alfken, 1893:121 (Germany: Friesian Islands: island of Juist); Kohl, 1893a:31 (Austria: Niederösterreich); Krieger, 1894:10 (Germany: Kingdom of Saxony); Ferton, 1896a:268 (list of prey); E. Saunders, 1896:83 (in revision of British Aculeata); Borries, 1897:67 (preying on spiders); Dalla Torre, 1897:697 (in catalog of world Hymenoptera); E. Saunders, 1903a:16 (Great Britain: Woking); Antiga and Bofill, 1904:12 (Spain: Cataluña Province); Aurivillius, 1904:276 (in revision of Swedish Sphecidae); von Heyden, 1905:80 (Germany: Hessen: Frankfurt); Schmiedeknecht, 1907: 213 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:121 (in catalog of French Hymenoptera); Dittrich, 1911b:22 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Schirmer, 1912:166 (Germany: Berlin area); Lundblad, 1913:212 (Sweden); Dubois, 1919:96 (Belgium: Bruxelles: Uccle); Honoré, 1919:268 (France: Seine-et-Oise: Bouray); O. Meyer, 1919:153 (Germany: Posen Province, now Poland: Poznań Region); A. Wagner, 1920:39 (Germany: Lower Elbe region); Dubois, 1922:198 (in key to Belgian Sphecidae); Leininger, 1924:121 (Germany: Baden-Württemberg: Friedrichstal); Berland, 1925d:126 (in Sphecidae Fauna of France); Blüthgen, 1925:166 (Germany: Saale River valley: Eulau); Bouwman, 1926:280 (in list of Sphecidae of Netherlands); Friese, 1926:164 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); Hémon, 1926:199 (France: Finistère: Fouesnant); van der Vecht, 1926:116 (in key to *Miscophus* of Netherlands), 117 (diagnosis, locality records); Benoist, 1928:410 (France: Alpes-Maritimes, Basses-Alpes); Berland, 1928b:178 (France: Charente-Inférieure: Saintes, and Finistère: Fouesnant); Bouwman, 1928b:30 (in revision of Sphecidae of Netherlands); Bischoff in Schmiedeknecht, 1930:676 (in keys to Hymenoptera of North and Central Europe); Pulkkinen, 1931:100 (in revision of Sphecidae of Finland); E. Nielsen, 1933:291 (nesting habits); Giner Marí, 1934:134 (Spain: Balearic Islands: Ibiza); Jansson, 1934:289 (Sweden); Forsius in Forsius and Hellén, 1935:11 (in checklist of Hymenoptera of Finland); Crèvecoeur and Maréchal, 1936:252 (in catalog of Belgian Hymenoptera); Richards, 1937b:104 (in checklist of British aculeates); Zavadil, Šusterka, and Bat'a, 1937:184 (in catalog of Sphecidae of Czechoslovakia); Molitor, 1938:451 (color recognition); A. Wagner, 1938a:121 (northwestern Germany); Paul, 1941:43 (Germany: Pommern: Stettin, now Poland: Województwo Zachodniopomorskie: Szczecin); Schneid, 1941:1038 (Germany: Bayern: Bamberg area); Balthasar, 1943:41 (Czech Republic: Moravia: Zlin area); Giner Marí, 1943a:208 (in Sphecidae Fauna of Spain); Spooner, 1943:71 (Great Britain); Bat'a, 1944a:25 (Czech Republic); Deleurance, 1946b:64 (prey: very young *Salticus*), 67 (France: Bouche-du-Rhône: Camargue: Bois des Rièges); Guiglia, 1948c:202 (Italy: Sardegna: Villasalto); Hamon, 1948:23 (France: Essonne: Orsay); Šnoflák in Zavadil and Šnoflák, 1948:46 (in key to Sphecidae of Czechoslovakia); Ceballos,

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1949:101 (Spain); Chambers, 1949:223 (Great Britain: Bedfordshire); Currie, 1950:80 (spider prey: immature *Stemonyphantes lineata* L.); Caruel, 1951:100 (France: Marne Department); Bat'a, 1952:167 (Czech Republic); Balthasar, 1954d:181 (Slovakia); Bischoff and Stadler, 1954:126 (Germany: Bayern: Romberg); de Beaumont, 1954a:63 (Italy); Grandi, 1954:240 (Italy); Aerts, 1955:61 (Germany: Rheinland); Teschner, 1955:57 (Germany: Nordrhein-Westfalen: Hohe Ward near Münster); Vogrin, 1955:38 (Yugoslavia); Ceballos, 1956:390 (in catalog of Hymenoptera of Spain); Bajári, 1957a:59 (in key to Hungarian Sphecidae, not yet found in Hungary); Balthasar, 1957:112 (in key to western Palearctic *Miscophus*); Benno, 1958b:12 (in review of Dutch Sphecidae); Wolf, 1959b:23 (Germany: Nassau); de Andrade, 1960:94 (in revision of *Miscophus bicolor* species group); Noskiewicz and Puławski, 1960:118 (in key to Polish Sphecidae); Valkeila, 1962b:66 (southwestern Finland); de Beaumont, 1964c:80 (in Sphecid Fauna of Switzerland, not recorded from Switzerland); Richards, 1964:25 (heath-lands in southern England); Benno, 1967:36 (in checklist of Sphecidae of Netherlands); Gauss, 1967:554 (Germany: Baden-Württemberg); J. Heinrich, 1967:76 (Germany: Bayern: Aschaffenburg and Lohr); Lefeber, 1967a:138 (Belgium: Asch); Niedl and Deneš, 1967:77 (Czech Republic: Třeboň area); Oehlke, 1970:718 (Democratic Germany); Lefeber, 1971a:17 (Netherlands and Belgium: many localities), 1971b:223 (Netherlands: Sint Pietersberg); Lomholdt, 1971:124 (Denmark: Island of Læsø); Schmidt, 1971b:37 (Germany: Rheinland-Pfalz: Gonsenheimer Wald, Mainz-Mombach); Balthasar, 1972:185 (in Sphecid Fauna of Czechoslovakia); Haeseler, 1972:155 (Germany: Schleswig-Holstein; anthropogenic habitats); Lomholdt, 1972:122 (Denmark: Island of Læsø); Niedl and Deneš, 1972:152 (Czech Republic: Třeboň area); Oehlke, 1972:137 (Germany: island of Hiddensee); Haeseler, 1973:54 (Germany: Schleswig-Holstein: island of Amrum); Lefeber, 1975:38 (Belgium); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Haeseler, 1976b:72 (Germany: Friesian Islands: island of Amrum); Lomholdt, 1976:256 (in Sphecid Fauna of Fennoscandia and Denmark); Guichard, 1977:252 (Great Britain: Surrey); Kolesnikov, 1977:318 (Russia: Bryansk Oblast'); Pulawski, 1978:227, 228 (in key to Sphecidae of European part of USSR); Leclercq, Gaspar and Verstraeten, 1979:map 1415 (Belgium); Lefeber, 1979:12 (in checklist of Sphecidae of Netherlands), 78 (Netherlands: distribution map); Preuss, 1980a:23 (Germany; endangered, nesting in dry soils); Richards, 1980:42 (in key to Sphecidae of British Isles); Haeseler, 1981:51 (Germany: Friesian Island: island of Amrum); Schmidt, 1981:190 (Germany: Baden-Württemberg); Dollfuss, 1983b:11 (in catalog of Sphecidae of Austria); Lefeber, 1983a:84 (Netherlands: Waddendistrict: northern sand dunes, islands of Texel and Schiermonnikoog); Riemann, 1983:85 (Germany: Bremen-Daverden area); Haack, Tschartke, and Vidal, 1984:130 (Germany: Hamburg area); Veenendaal, 1984:19 (Netherlands: Amsterdam); Haeseler, 1985c:571 (Germany: Friesian Islands); Lefeber, 1985:87 (Netherlands: southern Limburg); Plachter, 1985:60 (Germany: Bayern: lower Brombach valley); Józán, 1986:370 (Hungary: Kiskunság National Park); Vikberg, 1986:76 (Finland); Dollfuss, 1987:21 (Austria); Fitton, Shaw, and Austin, 1987:79 (in list of European Hymenoptera that prey on spiders); Holtappels, 1987:26 (Germany: Nordrhein Westfalen: Effelder Waldsee); Schmidt and Westrich, 1987:365 (Germany: Mainz area); Dollfuss, 1988:13, 25 (Austria: Bisamberg near Vienna; Niederösterreich: Oberweiden); Haeseler, 1988:211 (Germany: Friesian Islands); Karsai, 1988:100 (Hungary: Kiskunság National Park); Riemann, 1988:223 (Germany: Bremen area); Jacobs, 1989:13 (Germany: Mecklenburg-Vorpommern); Nilsson, 1989:48 (Sweden); Pádr *in* Šedivý, 1989a:168 (in checklist of Czechoslovakian Sphecidae); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:95 (Belorussia: Berezinskiy Nature Reserve); Jacobs and Oehlke, 1990:168 (new records from Democratic Germany); Kuznetzova, 1990:20 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pádr, 1990:75 (Czech Republic: Praha area); Pagliano, 1990:107 (in catalog of Italian Sphecidae); Day, 1991:xvi (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:115 (in key to Sphecidae of North and Central Europe); H.-J. Schulz, 1991:31 (Germany: Oberlausitz: 5 km southwest of Wittichenau); Józán, 1992c:289 (Hungary: Zselic Hills);

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Nilsson, 1992:54 (Sweden); K. Weber, 1992:88 (Germany: Bayern: Bamberg District); Kuhlmann, 1993:75 (Germany: recorded from Westfalen by Teschner, 1955); Luig, 1993:44 (Estonia); Dollfuss, 1994:101 (endangered in Austria); Theunert, 1994c:44 (Germany: summary of records from Niedersachsen and Bremen); Jansen and Kaluza, 1995:7 (Germany: endangered in Sachsen); Ljubomirov, 1995a:77 (first record from Bulgaria); Negrisolò *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Schmid-Egger, Risch, and Niehuis, 1995:196 (summary of records from Germany: Rheinland-Pfalz Province); Arens, 1996:441 (Germany: Bayern: Bayreuth area); Blösch, 1996:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Jakubzik, 1996:253 (Germany: Köln); Saure, 1996:503 (Germany: Berlin-Pankow: sewage irrigation field); Schmid-Egger, Schmidt, and Doczkal, 1996:377 (Germany: Baden-Württemberg: endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg), 109 (locality records); Woydak, 1996:41 (Germany: Westfalen: summary of distribution and nesting habits); Celary, 1997:58 (in checklist of Animals of Poland); Ljubomirov, 1997:120 (Bulgaria); Schmidt and Schmid-Egger, 1997:19 (in checklist of German Sphecidae); Stuke, 1997:86 (Germany: Niedersachsen: Lüneburger Heide Nature Reserve); F. Burger, Saure, and Oehlke, 1998:28 (Germany: in list of Sphecidae of Brandenburg), 35 (endangered); Dollfuss, Gusenleitner, and Bregant, 1998:514 (Austria: summary of collecting records from Burgenland); Drewes, 1998:49 (Germany: Niedersachsen: Goldbeck 26 km west-southwest of Hamburg); Gorobchishin, 1998:49 (Ukraine: Kiev and surroundings); Jakubzik, Schlüter, and Cölln, 1998:1182, 1184 (Germany: Rheinland-Pfalz); van der Smissen, 1998:62 (Germany: Mecklenburg-Vorpommern, Niedersachsen, Schleswig-Holstein); K. Weber, 1998:143 (Germany: Bayern: Bamberg area); Kuhlmann, Wolf, and Woydak, 1999:569 (Germany: threatened with extinction in Nordrhein-Westfalen); Ljubomirov, 1999b:50 (Bulgaria: Mount Vitosha near Sofia); Majzlan, Rychlík, and Deván, 1999:146 (Slovakia: Čenkovská Step Nature Reserve); Pauly, 1999:109 (in catalog of Belgian aculeates); Blösch, 2000:242 (in Sphecidae Fauna of Germany); Jacobs, 2000:8, 17 (Germany: Land Mecklenburg-Vorpommern: probably endangered); Józán, 2000:108 (Hungary: Bakony Mountains); Schmid-Egger, 2000b:275 (Germany: Baden-Württemberg: shores of Rhine River); Vicidomini, 2000b:25 (Italy: previously recorded from Campania); Józán, 2001:279 (Hungary: Somogy County); Mazzucco, 2001:196, 203 (Austria: Niederösterreich: Steinfeld, endangered); Ohl et al., 2001:140 (distribution in Germany by provinces); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:327 (in Sphecidae Fauna of Western Europe); van der Smissen, 2001:61 (Germany: Schleswig-Holstein: not endangered); Zettel, Gross, and Mazzucco, 2001:72 (Austria: Wien); Archer and Edwards, 2002:102 (Great Britain: West Sussex: Ambersham and Iping commons); Shlyakhtenok and Skibinska, 2002:33 (Belorussia: no specific locality); Söderman and Vikberg, 2002:51 (in list of Aculeata of Finland); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:67 (Germany: in catalog of wasps and bees of Bayern); von der Heide and Metscher, 2003:102 (Germany: Niedersachsen: Emsland area); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:196 (Germany: Bayern: endangered); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Klein and Lefeber *in* Peeters, van Achterberg, et al., 2004:400 (in Wasp and Ant Fauna of Netherlands); Raemakers, van den Eijnde, and Kleukers, 2004:292 (Netherlands: Tungeleerwalle near Weert); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Stolle et al., 2004:372 (Germany: Sachsen-Anhalt: in red list of Sphecidae); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:45 and 60 (in checklist of Polish Sphecidae); Blösch, 2005:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Burger, 2005:34 (Germany: Thüringen); Knowles and Else, 2005:231, 232 (in key to British *Miscophus*); Kowalczyk and Kurzac, 2005:105 (Poland: Botanical Garden in Łódź); Mandery, 2005:174 (Germany: Bayern: Hainberg Nature Reserve near Nürnberg); Pagliano and Negrisolò, 2005:396 (in Sphecidae Fauna of Italy); Pijfers, 2005:50 (Netherlands: Twente: Noordelijke Manderheide); Reder,

2005:951 (Germany: Rheinland-Pfalz: Monsheim); Riemann and Hohmann, 2005:561 (Germany: Niedersachsen: city of Bremen and adjacent area); Straka, 2005a:398 (critically endangered in Czech Republic); Theunert, 2005a:17 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Venne and Bleidorn, 2005:43 (Germany: Nordrhein-Westfalen: Moosheide Nature Reserve); Ziska and Saure, 2005:81 (Germany: Berlin: Biesenhorster Sand); Bock, 2006:41 (Germany: Bayern: Kelheim District: Abensberg sands); Gorobchishin, 2006:112 (Ukraine: Kruglyk near Kyiv); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Burguet, 2007:unnumbered p. 24 (France: Puy-de-Dôme: sands Girauds-Faures in Orléat commune); Hallin, 2007b:25 (Sweden: Blekinge County); Herrmann, 2007a:52 (Germany: Niedersachsen: Ostfriesland); Jacobs, 2007:102, 104 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:24 (Germany: northwestern Sachsen); Józán, 2007:179 (Hungary: Zselic hills); Saure, 2007:82 (Germany: in checklist of Aculeata of Brandenburg); Smit and Megens, 2007:17 (Netherlands: Noort Brabant: vicinity of Leende); Venne, Bleidorn, and Lauterbach, 2007:302 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia); Haeseler, 2008:308 (Germany: Friesian Islands); Shcherbakov, 2008:211 (Russia: Moscow Oblast': near Ramenskoye); Theunert, 2008:54 (Germany: map of distribution in Niedersachsen and Bremen); U. Frommer, 2009a:28 (Germany: in checklist of Sphecidae of Hessen); Livory, Chevin, Lair, Sagot, and Baldock, 2009:23 (France: Département de la Manche); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:28 (known from Norway), 42 (Norway: locality records); Budrys, 2010:138 (first record from Lithuania: Kiemaliai, Nemirseta); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Hable, Krauss, von der Dunk, and Wickl, 2010:27 (Germany: Bayern: Sulz- and Ottmaringer Tal); Mokrousov, 2010a:62 (Russia: Nizhniy Novgorod Oblast': no specific localities); Saure, 2010a:88 (Germany: Berlin-Reinickendorf: Baumberge), 2010b:175 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: rare); Schmidt, 2010:137 (Germany: Bayern: collected along Main-Donau canal); van der Smitsen, 2010a:344 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records), 2010c:397 (Sweden: Öland: Rönnerum); Burger, 2011a:287 (Germany: in red list of Sphecidae *sensu lato* of Thüringen); Józán, 2011:180 (in checklist of Sphecidae *sensu lato* of Hungary); Saure, 2011d:200 (Germany: Sachsen-Anhalt: conservation area "Heide südlich Burg"; Theunert, 2011a:20 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:74 (Germany: Hessen: endangered); Ziska and Saure, 2011:109 (Germany: Berlin: Tegeler Fließ valley); Burguet *in* Durand and Burguet, 2012:3 (France: Puy-de-Dôme: sands Girauds-Faures in Orléat commune); Shlyakhtenok, 2012b:92 (Belorussia: Beresina National Reserve: overgrowing dry meadow); Mokrousov, Ruchin, and Egorov, 2013:202 (Russia: Mordovian Republic: Mordovian State Nature Reserve); Pankov, 2013:230 (Russia: Ivanovo Oblast'); Saure, 2012b:229 (Germany: Berlin-Spandau: Spandauer Forst); A. Scholz and Liebig, 2013:22 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:171 (in annotated catalog of aculeate wasps of Belorussia); Wiśniowski and Szczepko, 2013:39 (Poland: Kampinos National Park near Warszawa); Bitsch, 2014:404 (recorded from France by Burguet, 2007); Flügel, 2014:254 (Brandenburg: Hangelsberger Heide); Hellqvist, Abenius, and Norén, 2014:92 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Olszewski, Wiśniowski, and Szczepko, 2014:63 (Poland: miscellaneous locality records); Archer, 2015:203 (Great Britain: English coastal sand dunes); P. Rosa and Pagliano, 2015:103 (Italy: Lombardia and Piemonte: Parco del Ticino); Saure, 2015:14 (Germany: Berlin-Lichterfelde); Cölln and Jakubzik, 2016:18 (Germany: Rheinland-Pfalz: Vulkaneifel District); Else, Bolton, and Broad, 2016:31 (in checklist of Aculeata of Great Britain and Ireland: England); Reemer and Peeters, 2016:10 (Netherlands: Hulshorsterzand); Stolle and Saure, 2016:923 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Antropov, 2017b:241 (in catalog of Crabroninae of Russia); Olszewski and Kowalczyk, 2019:104 (northern Poland: Pomorze

Gdańskie = Gdańsk Pomerania); Ruchin and Antropov, 2019a:13233 (Russia: Mordovia State Nature Reserve); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 341 (reference to original description, geographic distribution); Kejval, Blažej, and Erhart, 2020:103 (western Czech Republic); Olszewski, Wiśniowski, and Ljubomirov, 2021:94 (in commented list of Sphecidae *sensu lato* of Poland); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:291 (in revision of Sphecidae *sensu lato* of Europe); Olszewski, Sparks, Twerd, and Wiśniowski, 2024:5 (central Poland: common in river valleys: no specific localities, not endangered); Frommer and Klenke, 2025:164 (Germany: Hessen: Lahntal near Weilburg).

As *Miscophus bicolor*: F. Smith, 1858:91, corrected to *Miscophus concolor* by de Andrade, 1954:94.

*Miscophus moravicus* Balthasar, 1957a:109, ♀, ♂. Holotype: ♀, Czechoslovakia: Čejč (originally V. Balthasar coll., now NMPC). Synonymized with *Miscophus concolor* by de Andrade, 1960:34. – Balthasar, 1972:189 (in Sphecidae Fauna of Czechoslovakia); Haris, 2016:33 (in list of species described by V. Balthasar from Carpathian Basin).

#### 43. *corsicus* de Andrade

*Miscophus corsicus* de Andrade, 1960:70, ♀. Holotype: ♀, France: Corse: no specific locality (originally P. Verhoeff coll., now RMNH). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Pagliano, 1990:107 (in catalog of Italian Sphecidae: Corsica); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:319 (in Sphecidae Fauna of Western Europe); Pagliano and Negrisolò, 2005:397 (in Sphecidae Fauna of Italy); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:284 (in revision of Sphecidae *sensu lato* of Europe).

#### 44. *crassipes* Lomholdt

*Miscophus crassipes* Lomholdt, 1985:85, ♀. Holotype: ♀, South Africa: Eastern Cape Province: Grahamstown, Table Farm (Albany Mus.).

#### 45. *ctenopus* Kohl

*Miscophus ctenopus* Kohl, 1884a:349, ♀, ♂. Lectotype: ♀, Egypt: Sinai Peninsula: Tor (NHMW), designated by de Andrade, 1954:33. – Kohl, 1885:220 and 221 (in key to western Palearctic *Miscophus*), 231 (in revision of western Palearctic *Miscophus*), 232 (in checklist of world *Miscophus*); Ed. André, 1888:216 (in revision of Sphecidae of Europe and Algeria), 19\* (bibliographic references); W Fox, 1896e:554 (Somalia: Berbera); Dalla Torre, 1897:698 (in catalog of world Hymenoptera); Magretti, 1906:15 (Eritrea); von Schulthess, 1909:442 (Libya: Tripoli); Storey, 1916:109 (Egypt: Heliopolis, Maadi, Massara, Moqattam Hills); Maidl, 1924:235 (Sudan: Nubbaka and Port Sudan); von Schulthess, 1926b:219 (Libya); nec Guiglia, 1933:362 (= *Miscophus sericeus*); Guiglia, 1942b:234 (Libya); nec Honoré, 1944b:137 (= *Miscophus sericeus*); Giner Marí, 1945e:239 (Western Sahara); de Andrade, 1954:30 (in revision of Palearctic *Miscophus* of *helveticus* group), 85 (Egypt); de Beaumont, 1956a:205 (Libya), 1957a:143 (Morocco), 1958b:66 (Algeria: Tassili des Ajjer), 1960b:246 (Libya); Pulawski, 1964:120 (Egypt: Abu Rawash, Dahshur, Ghiza, Kom Osheim; Sinai: Saint Catherine Monastery); de Beaumont, 1966:212 (Egypt: Alexandria area); Osborn and Krombein, 1969:16 (northwestern Sudan: Gebel 'Uweinat: Wadi Ain el Brins); de Beaumont, Bytinski-Salz and Pulawski, 1973:18 (Israel); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Roche, 1981:3 (in checklist of Sphecidae of United Arab Emirates, as *ctenopus*); Dollfuss, 1989:10 (lectotype in NHMW); Guichard, 1991a:340 (Jordan); Roche and Zalut, 1994:116 (Egypt: Sinai Peninsula); Roche, 2007a:93 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger, 2011b:551 (in key to *Miscophus* of Arabian Peninsula), 552 (first record from United Arab Emirates: Bithnah, Sharjah Desert Park), 554 (color photograph of female); Gadallah, Al Dhafer, Aldryhim,

Fadl, and Elgharbawy, 2013:352 (in new catalog of Sphecidae of Saudi Arabia); Schmid-Egger, 2014:582 (United Arab Emirates); Gadallah, 2020b:40 (in list of aculeate wasps of Arabian Peninsula); Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 332 (Oman, Saudi Arabia: Yemen: locality records).

*Miscophus ctenopus* Kohl, 1885a:228, ♀, ♂. Objective synonym of *Miscophus ctenopus* Kohl, 1884.

*Miscophus manzonii* Gribodo, 1884a:386, ♀ (as *Manzonii*, incorrect original capitalization). Syntypes: ♀, Yemen: Sheikh Osman (Genova). Synonymized with *Miscophus ctenopus* by Kohl, 1885:228, W. Schulz, 1911b:198, and de Andrade, 1954:30. – Guiglia, 1933:364 (comparison with *Miscophus ctenopus*, actually *Miscophus sericeus*), 1934b:305 (Libya: bibliography and summary of locality records); 1936:7 (Libya: Marada), 1939c:190 (Libya: Fezzan: Gat), 1942b:234 (Libya); Honoré, 1944b:139 (in revision of Egyptian *Miscophus*); de Beaumont, 1950d:21 (Egypt: Siwa oasis); Penati and Moretti, 2015:83 (in list of Hymenoptera described by G. Gribodo).

*Miscophus ctenopus* ssp. *gigas* Giner Marí, 1945e:239, ♀. Holotype: Western Sahara: El Glat (MNCN Madrid). – Synonymized with *Miscophus ctenopus* by de Andrade, 1954:30.

*Miscophus rubriventris* Honoré, 1944:141, ♀, junior primary homonym of *Miscophus rubriventris* Ferton, 1896. Holotype: ♀, Egypt: Maadi near Cairo (USNM?). Synonymized with *Miscophus ctenopus* by de Andrade, 1954:86.

*Miscophus honorei* Balthasar, 1954a:51. Substitute name for *Miscophus rubriventris* Honoré, 1944. – Nec *Miscophus honorei* de Andrade, 1954:44 (= *Miscophus dispersus*).

#### 46. *cyanescens* R. Turner

*Miscophus cyanescens* R. Turner, 1917f:297, ♂. Lectotype: ♂, Zimbabwe: Bulawayo (BMNH), designated by Lomholdt, 1985:107. – Arnold, 1923c:29 (in revision of southern African *Miscophus*), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:31. (in checklist of world Sphecidae); Lomholdt, 1985:107 (in revision of southern African Miscophini).

#### 47. *cyanurus* (Rohwer)

*Miscophinus cyanurus* Rohwer, 1909a:125, ♀, ♂. Syntypes: USA: Colorado: Boulder County: Boulder (USNM). – **As *Niteloaterus cyanurus***: Krombein in Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera); Evans, 1970:489 (Wyoming: Jackson Hole). – **As *Miscophus cyanurus***: R. Bohart and Menke, 1976:318 (new generic assignment, in checklist of world Sphecidae); Krombein, 1979b:1638 (in catalog of North American Hymenoptera); Rust, Menke, and Miller, 1985:46 (California: Channel Islands), 55 (color forms); Frommer, 1988:94 (California: Riverside County: Deep Canyon); Buck and Bennett, 2025:215 (in checklist of Sphecidae *sensu lato* of Canada, Alaska, and Greenland: first record from Canada: British Columbia: no specific locality).

#### 48. *deserticolus* R. Turner

*Miscophus deserticolus* R. Turner, 1929b:557, ♀. Lectotype: ♀, Namibia: Swakopmund (BMNH), designated by Lomholdt, 1985:114. – Arnold, 1931:208 (original description copied); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae; as *deserticola*); Lomholdt, 1985:114 (in revision of southern African Miscophini); S. Gess and F. Gess, 2003:106 (South Africa: visiting flowers of *Zygophyllum stapfi* Schinz, Zygophyllaceae, as *deserticolis*).

#### 49. *desertorum* Kazenas

*Miscophus desertorum* Kazenas, 1978b:141, ♀. Lectotype (as holotype): ♀, Kazakhstan: Ili River 15 km east of Ayak-Kalkan (ZIN), designated by Kazenas, 1992b:100. – Kazenas, 1992b:100 (description); Esenbekova and Kazenas,

2000:39 (southeastern Kazakhstan: Borandysu, Kapchagay); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:82 (geographic distribution, collecting localities in Kazakhstan), 2004b:105 (Kazakhstan: western Tien Shan), 2013a:75 (color photograph of adult wasp, short information on geographic distribution and nesting habits), 2013b:496 (southeastern Kazakhstan: Sharyn 10 km west of Chundzha on Sharyn River).

### 50. *difficilis* Nurse

*Miscophus difficilis* Nurse, 1903b:7, ♀, ♂. Syntypes: Pakistan: Baluchistan: Peshin (BMNH). – Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Girish Kumar, Mawadda, Terine, and Amal, 2024:590 (in key to *Miscophus* of Indian subcontinent).

### 51. *dispersus* de Andrade

*Miscophus dispersus* de Andrade, 1954:86, ♀, ♂. Holotype: ♀, Morocco: Saquia el Hamra (Madrid). – de Beaumont, 1958b:66 (Algeria: Tassili des Ajjer); Pulawski, 1964:125 (Egypt: Abu Rawash, Kom Ombo, Maadi; Sudan: Wadi Halfa; correspondence of sexes); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Roche, 2007a:93 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel); 332 (Israel: Arava Valley: Iddan at 30.807°N 35.298°E).

As *Miscophus honorei*: de Andrade, 1954:44 (in revision of Palearctic *Miscophus* of *helveticus* group), corrected to *Miscophus dispersus* by de Andrade, 1954:85.

As *Miscophus sericeus*: Giner Marí, 1945e:239 (Western Sahara: El Aiun), corrected to *Miscophus dispersus* by de Andrade, 1954:44, 85.

### 52. *eatoni* E. Saunders

*Miscophus eatoni* E. Saunders, 1903c:209, ♀. Holotype: ♀, Canary Islands: Tenerife: Orotava (BMNH). – Morice, 1911:131 (Algeria: Biskra); Bischoff, 1937b:2 (Canary Islands, probably a misidentification); nec Giner Marí, 1945b:361 (= *primogeniti*); de Andrade, 1960:125 (in revision of *Miscophus bicolor* species group); Diniz, 1960:32 (Portugal: nine localities); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964c:79 (in Sphecid Fauna of Switzerland), 1968a:267 (Canary Islands: Tenerife); Oehlke, 1970:719 (possibly occurring in Democratic Germany); Kofler, 1972:107 (Austria: eastern Tirol); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Báez and Ortega, 1978:192 (Canary Islands); Wolf, 1980:73 (Canary Islands); Gayubo, 1982a:112 (northern Spain: Sierra de Béjar), 1982f:256 (Spain: Cádiz Province: Los Naveros, Palmones, San Roque, Zahora); Dollfuss, 1983b:11 (in catalog of Sphecidae of Austria: Osttirol); Gayubo, 1984b:88 (Spain: Salamanca Province), 1984c:370 (Portugal: El Algarve Province); Gayubo and Tormos, 1984:17 (Spain: Valencia); Gayubo, 1986c:34 (Spain: Zamora Province); Gayubo and Heras, 1986:46 (Spain: Segovia Province); Gayubo and Sanza, 1986:52 (Spain: Burgos); Gayubo, 1987a:116 (Spain: Ciudad Real Province); Gayubo and Mingo, 1988:85 (Spain); Gayubo, Asís, and Tormos, 1990a:19 (Spain); Jacobs and Oehlke, 1990:169 (unknown from Democratic Germany); Pagliano, 1990:107 (in catalog of Italian Sphecidae); Dollfuss, 1991:116 (in key to Sphecidae of North and Central Europe); Gayubo and Torres, 1991:Table I (Spain: Salamanca; effects of urban pressure); Guichard, 1991a:340 (Jordan); Hohmann, La Roche, Ortega, and Barquín, 1993:224 (detailed locality records from Canary Islands); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Tormos, Asís, and Gayubo, 1994:188, 210 (Spain: Albacete Province); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Generani, Pagliano, Scaramozzino,

and Strumia, 1999:79 (Italy: Toscana: Isola di Montecristo); Canovai et al., 2000:78 (Italy: Toscana: Isola di Montecristo); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Ljubomirov, 2001b:50 (Bulgaria: Mount Vitosha near Sofia); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:329 (in Sphecidae Fauna of Western Europe); Bieri, 2002:76 (Liechtenstein); Generani, Pagliano, Scaramozzino, and Strumia, 2003:65 (Italy: Arcipelago Toscano); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Pagliano, 2003b:128 (Italy: Island of Lampedusa); Schmid-Egger, 2003:754 (Italy: Sicilia: Isola de Lampedusa); Gayubo et al. 2004:131 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Gayubo, Nieves-Aldrey, González, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Gros, 2005:20 (nest, progressive provisioning, list of prey); Gülmez, 2005:64 (first record from Turkey: Ankara: three localities); Kofler, 2005:173 (Austria: Tirol: Lienz District: the only record is by Kofler, 1972:107); Pagliano and Negrisolo, 2005:397 (in Sphecidae Fauna of Italy); Reder, 2005:933 (first records from Germany: Rheinland-Pfalz: Flörsheim-Dalsheim, and Hessen: Gross-Gerau); Baños-Picón, Gayubo, Asís, and González, 2007:259 (Spain: Zamora: Cabañas de Aliste); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:460 (nesting habits studied by Gros, 2005), 461 (first recorded from Germany by Reder, 2005); Jacobs, 2007:103, 105 (in key to Crabronidae of Germany); Gayubo, González, Tormos, and Asís, 2008:138 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Józán, 2008:81 (first record from Hungary: Devecser: cemetery); Ljubomirov, 2008:257 (first record from La Palma, Canary Islands, *Miscophus guichardi* and *M. nitidior* may be junior synonyms); Reder and Doczkal, 2008:21 (Germany: locality records from Baden-Württemberg, Hessen, and Rheinland-Pfalz); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Gayubo, González, Tormos, and Asís, 2009:363 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Pagliano, 2009:185 (Italy: Calabria: Sibari; Molise: Mafalda; Puglia: Noci; Sicilia: island of Lampedusa); Burguet *in* Durand and Burguet, 2010:54 (France Département d'Ardèche: Ardèche Gorges); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: relatively common); van der Smissen, 2010b:385 (France: Ardèche: Saint-Thomé; Vaucluse: Bédoin); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Schmid-Egger, 2011a:38 (France: Parc National du Mercantour: Col de Tende, La Brigue; Italy: Parco delle Alpi Marittime: San Lorenzo); Tischendorf, Frommer, Flügel et al., 2011:89 (Germany: Hessen: data insufficient to recognize degree of endangerment); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); U. Frommer, 2012:187 (Germany: probable recent migrant in the southern upper Rhein area); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Vieira, Oliveira, Brewster, and Gayubo, 2013:18 (Portugal: Douro International Natural Park and Serras de Aire e Candeeiros Natural Park); Bitsch, 2014:404 (recent records from Bulgaria, France, and Greece reported); Józán, 2014:132 (Croatia: Meka Draga: Kruševo); Gülmez and Can, 2017:82 (Turkey: Erzincan Province); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 341 (reference to original description, geographic distribution); Turrisi, Altadonna, Lo Cascio, Nobile, and Selis, 2020:730 (Italy: Aeolian Archipelago: island of Vulcano); Cross, Baldock, and Wood, 2021:48 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:292 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

As *Miscophus* sp. aff. *spurius*: de Andrade, 1952:27 (Portugal), corrected to *Miscophus eatoni* by de Andrade, 1960:125.

### 53. *eburneus* Simon Thomas

*Miscophus eburneus* Simon Thomas, 1995b:128, ♀, ♂. Holotype: ♀, Ivory Coast: 30-35 km north of Korhogo (ZMA).

### 54. *elegans* de Andrade

*Miscophus elegans* de Andrade, 1960:99, ♀. Holotype: ♀, Syria: Mezzé near Damascus (originally A. Mochi coll., now Torino). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Murai and Amr, 2011:119 (recorded from Syria by de Andrade, 1960).

### 55. *evansi* (Krombein)

*Nitelopterus evansi* Krombein, 1963a:61, ♀. Holotype: ♀, USA: Wyoming: Moran: Jackson Hole Biological Station (USNM). – Evans, 1963b:234 (nesting habits), 1964b:283 (description of larva); Kurczewski, 1969:482 (discussion of biological observations by Evans, 1963); Evans, 1970:489 (Wyoming: Jackson Hole, nesting habits). – **As *Miscophus evansi***: R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Spofford, Kurczewski, and Downes, 1989:259 (summary of previous records for nest parasites *Senotainia trilineata* (Wulp) and *Senotainia* sp. near *trilineata* (Wulp), miltogrammine flies); Krombein, 1979b:1638 (in catalog of North American Hymenoptera); G. Scudder, 1994:75 (in checklist of rare and endangered invertebrates of British Columbia); Ratzlaff, 2016:25 (Canada: British Columbia: from Scudder, 1994).

### 56. *eximius* Gussakovskij

*Miscophus eximius* Gussakovskij, 1934:9, ♀. Holotype: ♀, Mongolia: River Onzin gol (ZIN). – nec Yasumatsu, 1942c:113 (= *gegensumus*); de Andrade, 1954:83 (original description copied); Tsuneki, 1972e:401 (Mongolia); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Hua, 2006:281 (in list of Chinese insects, geographic distribution, as *eximus*).

### 57. *exoticus* Taschenberg

*Miscophus exoticus* Taschenberg, 1870:17, ♀. Holotype or syntypes: ♀, Brazil: Rio de Janeiro (Halle). – Kohl, 1885:231, footnote (original description copied), 132 (in checklist of world *Miscophus*); Dalla Torre, 1897:69 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Amarante, 2002:42 (in catalog of Neotropical Crabronidae).

### 58. *fasciatus* Lomholdt

*Miscophus fasciatus* Lomholdt, 1985:88, ♂. Holotype: ♂, South Africa: Northern Cape Province: Orange River 10 mi. north of Pella (UCD).

### 59. *flavopictus* Pulawski

*Miscophus flavopictus* Pulawski, 1964:126, ♀, ♂. Holotype: ♀, Egypt: Sinai Peninsula: Sainte Catherine Monastery (originally W. J. Pulawski coll., now CAS). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Roche and Zalat, 1994:116 (Egypt: Sinai Peninsula); Roche, 2007a:93 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 332 (Egypt, Iran, Israel: locality records).

### 60. *fluviatilis* Lomholdt

*Miscophus fluviatilis* Lomholdt, 1985:105, ♀, ♂. Holotype: ♀, Namibia: Homeb est-southeast of Gobabeb (ZMUC). – Hancock, Chahwanda, and Mhlanga, 1995:38 (paratype in Bulawayo Museum).

**61. *funebri* Honoré**

*Miscophus funebris* Honoré, 1944b:132, ♀. Holotype: Egypt: Hawamdieh (USNM). – Pulawski, 1964:128 (Egypt: Kom Ombo; redescription). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Simon Thomas, 1995b:130 (Niger); Roche, 2007a:94 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

**62. *fuscoales* Schmid-Egger**

*Miscophus fuscoales* Schmid-Egger in Schmid-Egger and Al-Jahdhami, 2022:332, ♀, ♂. Holotype: ♀, Oman: Dhofar: 80 km south-southwest of Salalah at 16.857°N 53.420°E (Ch. Schmid-Egger personal collection, Berlin, Germany). – Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel).

**63. *galei* (Rohwer)**

*Miscophinus galei* Rohwer, 1909a:124, ♀, ♂. Syntypes: USA: Colorado: Boulder County: Boulder, and Teller County: Florissant (USNM). – As *Nitelocterus galei*: Krombein in Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera). – As *Miscophus galei*: R. Bohart and Menke, 1976:318 (new generic assignment, in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera).

**64. *garianensis* de Andrade**

*Miscophus garianensis* de Andrade, 1956a:2, ♀. Holotype: ♀, Libya: Garian (BMNH). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

**65. *gegensumus* Tsuneki**

*Miscophus gegensumus* Tsuneki, 1971m:32, ♀. Holotype: ♀, China: Nei Mongol: Apaka at 44°N 114.96°E (originally K. Tsuneki coll., now?). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Hua, 2006:281 (in list of Chinese insects, geographic distribution); Nemkov, 2007c:997 (in Appendix to Key to identification of Sphecidae of Far East of Russia), 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:82 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Antropov, 2017b:241 (in catalog of Crabroninae of Russia).

*Miscophus angarensis* Nemkov, 1985:97, ♀, ♂. Holotype: ♂, Russia: Siberia: Irkutsk Oblast': Angarsk (ZIN). Synonymized with *Miscophus gegensumus* by Nemkov, 2007c:997. – Nemkov, 1990c:81 (Russia: Buryat Republic, comparison with *gegensumus*); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:413 (in key to Sphecidae of Russian Far East).

As *Miscophus eximius*: Yasumatsu, 1942c:113 (China: Nei Mongol: Apaka at 44°N 114.96°E), corrected to *Miscophus gegensumus* by Tsuneki, 1971m:32.

**66. *gibbicollis* Giner Marí**

*Miscophus gibbicollis* Giner Marí, 1945:241, ♀, ♂. Syntypes: Western Sahara: El Ayun, now La'youn (MNCN Madrid). – de Andrade, 1960:72 (in revision of *Miscophus bicolor* species group); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

**67. *gineri* P. Verhoeff**

*Miscophus gineri* P. Verhoeff, 1955:381, ♀, ♂. Holotype: ♀, Spain: Valencia: Dehesa (MNCN Madrid). – de Andrade, 1956b:22 (in revision of *Miscophus handlirschi* species group); Ceballos, 1959:230 (in supplement to catalog of Spanish Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Gayubo and Mingo, 1988:85 (Spain: type locality); Schmid-Egger and Bitsch in Bitsch et al., 2001:336 (in Sphecidae Fauna of Western Europe);

Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:302 (in revision of Sphecidae *sensu lato* of Europe).

As *Miscophus bonifaciensis*: Giner Marí, 1934:134 (Spain), corrected to *Miscophus gineri* by de Andrade, 1956b:22; Giner Marí, 1943a:207 (in Sphecidae Fauna of Spain), corrected to *Miscophus gineri* by P. Verhoeff, 1955:381.

#### 68. *gobiensis* Tsuneki

*Miscophus gobiensis* Tsuneki, 1972e:407, ♂. Holotype: Mongolia: Central Gobi aymag: Khoot-bulag (TMB). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

#### 69. *grangeri* de Beaumont

*Miscophus grangeri* de Beaumont, 1968b:164, ♀, ♂. Holotype: ♀, Algeria: Oran (MNHN, Granger coll.). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

#### 70. *gratiosus* de Andrade

*Miscophus gratiosus* de Andrade, 1960:100, ♀. Holotype: ♀, Syria: Arve: Huran (originally A. Mochi coll., now Torino). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Standfuss and Standfuss, 2006b:98 (first record from Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:460, 461 (first recorded from Greece by Standfuss and Standfuss, 2006b); Murai and Amr, 2011:119 (recorded from Syria by de Andrade, 1960); Atbaei, Fallahzadeh, and Ljubomirov, 2015:15 (first record from Iran: Fars Province, description of ♂); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:67 (Iran: known from Fars Province); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:293 (in revision of Sphecidae *sensu lato* of Europe).

#### 71. *gratuitus* de Andrade

*Miscophus gratuitus* de Andrade, 1954:79, ♂. Holotype: Uzbekistan: Khiva (MNHN). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia).

#### 72. *guichardi* de Beaumont

*Miscophus guichardi* de Beaumont, 1968a:268, ♀, ♂. Holotype: ♀, Canary Islands: Fuertaventura: Puerto del Rosario (BMNH). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Báez and Ortega, 1978:192 (Canary Islands); Hohmann, La Roche, Ortega, and Barquín, 1993:225 (detailed locality records from Canary Islands); Schmid-Egger, 2002c:1632 (in revision of *Miscophus* of Canary Islands); Ljubomirov, 2008:257 (may be a junior synonym of *Miscophus eatoni*).

#### 73. *gussakovskiji* de Andrade

*Miscophus gussakovskiji* de Andrade, 1954:77, ♀. Holotype: ♀, Uzbekistan: Khiva (MNHN). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia); Mokrousov, 2015a:538 and 2017d:59 (southeastern European Russia); Antropov, 2017b:241 (in catalog of Crabroninae of Russia); Mokrousov, 2017d:59 (South-East of European Russia: no specific locality); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution).

#### 74. *handlirschi* Kohl

*Miscophus handlirschi* Kohl, 1892:214, ♀ (as *Handlirschi*, incorrect original capitalization). Lectotype: ♀, Algeria: Biskra (NHMW), designated by P. Verhoeff, 1955:378. – Dalla Torre, 1897:698 (in catalog of world Hymenoptera); Morice, 1911:131 (Algeria: Biskra); P. Verhoeff, 1955:378 (in revision of *Miscophus handlirschi* species group);

de Andrade, 1956b:34 (in revision of *handlirschi* species group of *Miscophus*; Algeria, Tunisia, description of ♂); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Dollfuss, 1989:10 (lectotype in NHMW).

### 75. *hebraeus* de Andrade

*Miscophus hebraeus* de Andrade, 1954:71, ♀, ♂. Holotype: ♀, Israel: Beersheba (originally P.M.F. Verhoeff coll., now RMNH). – de Beaumont, Bytinski-Salz and Pulawski, 1973:19 (Israel); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

### 76. *heliophilus* Pulawski

*Miscophus heliophilus* Pulawski, 1968:285, ♀. Holotype: ♀, Sudan: Gebel Oweinat (border of Egypt, Sudan, and Libya): Wadi Ain Brins (USNM). – Osborn and Krombein, 1969:16 (northwestern Sudan: Gebel 'Uweinat: Wadi Ain el Brins); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

### 77. *helveticus* Kohl

*Miscophus helveticus* Kohl, 1883e:673, ♀. Holotype or syntypes: ♀, Switzerland: Peney (Genève). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Pagliano, 1980:129 (Italy: Calabria); Gayubo, 1982a:112 (northern Spain: Sierra de Béjar), 1982f:256 (Spain: Cádiz Province: Bornos, Conil de la Frontera, Los Naveros, Palmones, San Roque, Zahora), 1984b:89 (Spain: Salamanca Province), 1984c:370 (Portugal: El Algarve Province); Gayubo and Sanza, 1986:52 (Spain: Burgos, Segovia); Gayubo, 1987a:116 (Spain: Ciudad Real Province); Gayubo and Mingo, 1988:85 (Spain, as *helveticus helveticus*); Karsai, 1988:100 (Hungary: Kiskunság National Park); Pagliano, 1990:108 (in catalog of Italian Sphecidae); Gayubo and Torres, 1991:Table I (Spain: Salamanca; effects of urban pressure); Schembri, 1991:181 (first record from Malta); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Gayubo and Borsato, 1994:209 (Italy: Toscana); Negrisoló *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Scaramozzino, 1995:729 (Italy: Island of Pantelleria, as *helveticus helveticus*); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:315 (in Sphecid Fauna of Western Europe); Schmid-Egger, 2002c:1633 (in revision of *Miscophus* of Canary Islands), 2003:754 (Italy: Sicilia: Acireale, Castelammare, Etna, Ragusa); Gros, 2005:15 (nest, transport, prey); Pagliano and Negrisoló, 2005:399 (in Sphecid Fauna of Italy); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:460 (nesting habits studied by Gros, 2005); Gayubo, González, Tormos, and Asís, 2008:138 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Ljubomirov and Yildirim, 2008:230 (in catalog of Crabronidae of Turkey); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:264 (Bulgaria: Maleshevska Planina); Pagliano, 2009:185 (Italy: Dardegna: lake Baratz, as *helveticus helveticus*); van der Smissen, 2010b:385 (France: Vaucluse: Bédoin); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wild-fire), 501 (exclusive species of control areas); Schmid-Egger, 2011b:551 (in key to *Miscophus* of Arabian Peninsula), 552 (first record from United Arab Emirates: Wadi Madaq, Wadi Wurayah), 554 (color photograph of female); Boillat, 2012:227 (Switzerland: in checklist of insects of Canton de Genève); Strumia, Pagliano, and Gayubo, 2012:56 (Italy: Toscana: Riserva di San Rossore); Vieira, Oliveira, Brewster, and Gayubo, 2013:18 (Portugal: Douro International Natural Park); Baldock, 2014:356 (Spain: Island of Mallorca); Bitsch, 2014:404 (two subspecies co-exist in Corsica according to Pagliano and Negrisoló, 2005); Schmid-Egger, 2014:582 (United Arab Emirates); Yildirim, Ljubomirov, and Lelej, 2014:12 (distribution in Turkey by biogeographic provinces, as *helveticus helveticus*); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Mokrousov, 2015a:538 (southeastern

*Miscophus*

European Russia); Sadeghi, Fallahzadeh, Ostovan, Ljubomirov, and Hesami, 2016:431 (Iran: Fars Province); Schmid-Egger, Dandria, and Xuereb, 2016:80 (in checklist of Crabronidae of Maltese Islands), Antropov, 2017b:241 (in catalog of Crabroninae of Russia); Sadeghi, Fallahzadeh, Ostovan, Ljubomirov, and Hesami, 2019a:271 (Iran: Fars: three localities); Schmid-Egger and Straka, 2019:336 (in key to Central, Northern, and Eastern European *Miscophus*), 341 (reference to original description, geographic distribution); Gadallah, 2020b:40 (in list of aculeate wasps of Arabian Peninsula); Cross, Baldock, and Wood, 2021:48 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:280 (in revision of Sphecidae *sensu lato* of Europe); Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 234 (Saudi Arabia: locality records; *Miscophus helveticus* is a complex of species); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

*Miscophus gallicus* Kohl, 1884a:347, ♀, ♂. Syntypes: France: Marseille, and Switzerland: Peney near Genève (NHMW). Synonymized with *Miscophus helveticus* by Bohart and Menke, 1976:318. – Kohl, 1885:220 and 221 (in key to western Palearctic *Miscophus*), 226 (in revision of western Palearctic *Miscophus*), 233 (in checklist of world *Miscophus*); Ferton, 1896a:268 (list of prey); Dalla Torre, 1897:698 (in catalog of world Hymenoptera); Antiga and Bofill, 1904:12 (Spain: Cataluña Province); Schmiedeknecht, 1907: 213 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:121 (in catalog of French Hymenoptera); Graeffe, 1911:45 (Italy: Trieste area); Morice, 1911:131 (Algeria: Médéa); Ferton, 1914:103 (nesting habits, prey), 1923:67 (prey: small arachnids), 340 (in Corsica represented by *rubriventris* that has an all red gaster); Berland, 1925d:127 (in Sphecidae Fauna of France); Coulon, 1925:121 (in Elbeuf Museum: no locality); van der Vecht, 1926:119 (brief characteristics); Bischoff *in* Schmiedeknecht, 1930:675 (in keys to Hymenoptera of North and Central Europe); Guiglia, 1934b:305 (Libya: bibliography and summary of locality records, as *gallicus* var.); Bernard, 1935:65 (France: Var: Fréjus area); Giner Marí, 1943a:207 (in Sphecidae Fauna of Spain); Guiglia, 1944a:148 (Cyprus: Limassol); Šnoflák *in* Zavadil and Šnoflák, 1948:46 (in key to Sphecidae of Czechoslovakia); Ceballos, 1949:101 (Spain); Pittioni, 1950:26 (Cyprus); de Andrade, 1952:14 (in revision of *Miscophus* of Portugal); Cleu, 1953:50 (France: Ardèche River basin); de Andrade, 1953a:9 (Cyprus, Guiglia's determination confirmed); Balthasar, 1954a:52 (in key to *Miscophus* of Cyprus); de Andrade, 1954:57 (in revision of Palearctic *Miscophus* of *helveticus* group); de Beaumont, 1954a:63 (Italy); Ceballos, 1956:390 (in catalog of Hymenoptera of Spain); de Beaumont, 1957a:144 (Morocco); Nouvel and Ribaut, 1958:14 (France: Pyrénées-Orientales: Banyuls-sur-Mer area); Diniz, 1959:31 (Portugal: eight localities); Suárez, 1959:58 (Spain: Almería Province); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); Diniz, 1964a:3 (Portugal: 11 localities); Balthasar, 1972:186 (in Sphecidae Fauna of Czechoslovakia: can be expected in the country); Erlandsson, 1974:74 (Spain); Georghiou, 1977:190 (Cyprus); Roche, 1981:3 (in checklist of Sphecidae of United Arab Emirates); Dollfuss, 1989:10 (type material in NHMW).

*Miscophus rubriventris* Ferton, 1896a:261, ♀, ♂. Syntypes: France: Corse: Bonifacio (MNHN). Synonymized with *Miscophus helveticus* by Ferton, 1901:88 and by Schmid-Egger and Bitsch *in* Bitsch et al., 2001:315. – Ferton, 1901:88 (as synonym of *gallicus*); Berland, 1925d:128 (in Sphecidae Fauna of France); Grandi, 1934: 341 (Italy: Toscana: Maremma, determination tentative); Giner Marí, 1934:134 (Spain), 1943a:209 (in Sphecidae Fauna of Spain); Guiglia, 1948c:202 (Italy: Sardegna: Villasalto); nec Balthasar, 1954a:51 (= *cypriacus cypriacus*); Móczár, 1943a:58 (first record from Hungary: Nagykörös, redescription); Ceballos, 1956:390 (in catalog of Hymenoptera of Spain); Bajári, 1957a:59 (in key to Hungarian Sphecidae); Benedek, 1969a:84 (Hungary; hygrophilous meadow). – **As *Miscophus gallicus rubriventris***: de Andrade, 1952:16 (new status); 1954:59 (in revision of *Miscophus helveticus* group); de

Beaumont, 1954a:63 (Italy); Grandi, 1954:240 (Italy; as subsp. near *rubriventris*), 1957:347 (prey: *Enophrys*, probably *rufibarbis* E. Simon), 390 (Italy); Ceballos, 1959:230 (in supplement to catalog of Spanish Sphecidae); Grandi, 1961:209 (nesting habits). – As *Miscophus helveticus rubriventris*: R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Pagliano, 1980:129 (Italy: Lazio, Molise); Gayubo and Tormos, 1986a:18 (Spain: Castellón de la Plana); Tormos and Jimenez, 1987b:316 (Spain: Valencia Province: Dehesa de El Saler; as *helveticus subiventris*); Gayubo and Mingo, 1988:85 (Spain); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Pagliano and Scaramozzino, 1995:730 (Italy: Island of Lampedusa); Pagliano, 2003b:129 (Italy: Island of Lampedusa); Pagliano and Negrisolo, 2005:400 (in Sphecid Fauna of Italy); G. Turrisi and R. Turrisi, 2007:121 (Italy: Sicilia: Mount Etna: Botanical Garden Nuova Gussonea and vicinity); Józán, 2011:180 (in checklist of Sphecidae *sensu lato* of Hungary). – As *Miscophus gallicus form rubriventris* (an infrasubspecific name, not available under Article 15.2 of the Code): Schmid-Egger and Bitsch *in* Bitsch et al., 2001:315 (in Sphecid Fauna of Western Europe); Gros, 2005:16 (nest, prey transport, prey).

*Miscophus deserti* Berland, 1943a:312, ♀. Holotype: ♀, Western Sahara: Villa-Cisneros (MNHN). Synonymized with *Miscophus helveticus* by Schmid-Egger, 2002c:1633. – de Andrade, 1954:54 (in revision of Palearctic *Miscophus* of *helveticus* group); de Beaumont, 1956a:205 (Libya), 1957a:144 (Morocco), 1968a:263 (Canary Islands: Lanzarote, Fuerteventura); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Báez and Ortega, 1978:192 (Canary Islands); Hohmann, La Roche, Ortega, and Barquín, 1993:223 (detailed locality records from Canary Islands).

*Miscophus gallicus* var. *rufus* Giner Marí, 1943a:208, ♀, ♂ (authorship attributed to Kohl). Syntypes: Spain: no specific locality (MNCN Madrid). Synonymized with *Miscophus gallicus* by de Andrade, 1954:57. – Antiga and Bofill, 1904:12 (Spain: Cataluña Province, authorship attributed to Kohl); Ceballos, 1956:391 (in catalog of Hymenoptera of Spain); Balthasar, 1957:111 (in key to western Palearctic *Miscophus*).

*Miscophus cypriacus* de Andrade, 1953a:10, ♀, ♂. Holotype: ♀, Cyprus: Yermasoyia Hills (Univ. Coimbra). Synonymized with *Miscophus helveticus* by Schmid-Egger and Bitsch *in* Bitsch et al., 2001:315. – de Andrade, 1954:63 (in revision of Palearctic *Miscophus* of *helveticus* group); Balthasar, 1957:111 (in key to western Palearctic *Miscophus*), 1972:187 (in Sphecid Fauna of Czechoslovakia: can be expected in the country); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae). – As *Miscophus gallicus form cypriacus* (an infrasubspecific name, not available under Article 15.2 of the Code): Schmid-Egger and Bitsch *in* Bitsch et al., 2001:315 (in Sphecid Fauna of Western Europe); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E).

As *Miscophus rubriventris*: Balthasar, 1954a:51 (Cyprus), corrected to *Miscophus cypriacus cypriacus* by de Andrade, 1954:63.

*Miscophus cypriacus obscurus* de Andrade, 1954:65, ♀, ♂. Holotype: ♀, Greece: Cyclades: Paros (ZMHU). Synonymized with *Miscophus helveticus* by Schmid-Egger and Bitsch *in* Bitsch et al., 2001:315. – de Beaumont, 1960a:21 (Greece: island of Rhodes), 1961c:51 (Greece: island of Crete), 1965a:54 (Greece), 1967a:333 (Turkey); de Beaumont, Bytinski-Salz and Pulawski, 1973:19 (Israel); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae). – As *Miscophus helveticus form obscurus*: Gros, 2005:18 (nest, mass provisioning, transport, prey).

### **ssp. viator de Andrade**

*Miscophus gallicus viator* de Andrade, 1954:60, ♀, ♂. Holotype: ♀, Morocco: Agadir (Lausanne). – de Beaumont, 1957a:144 (Morocco). – As *Miscophus helveticus viator*: R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

**78. *hissaricus* Gussakovskij**

*Miscophus hissaricus* Gussakovskij, 1935:422, ♀. Holotype: ♀, Tajikistan: Hissar Range: Zevar (ZIN). – de Andrade, 1954:80 (in revision of Palearctic *Miscophus* of *helveticus* group); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia).

**79. *histrionicus* Balthasar**

*Miscophus histrionicus* Balthasar, 1954a:46, ♂. Holotype: ♂, Cyprus: Yermasoyia River (originally V. Balthasar coll., now NMPC). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

**80. *ichneumonoides* Arnold**

*Miscophus ichneumonoides* Arnold, 1929c:402, ♂. Holotype: ♂, Zimbabwe: incorrectly given as Sanyati Valley, actually Sawmills as corrected by Lomholdt, 1985:119 and Hancock, Chahwanda, and Mhlanga, 1995:38 (SAM). – Arnold, 1930:8 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:119 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:38 (holotype in Bulawayo Museum).

**81. *iliensis* Kazenas**

*Miscophus iliensis* Kazenas, 1992b:97, ♀, ♂. Holotype: ♀, Kazakhstan: Ili River 18 km northeast of Ayak-Kalkan (ZIN). – Esenbekova and Kazenas, 2000:39 (southeastern Kazakhstan: Borandysu, Kapchagay); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:82 (geographic distribution, collecting localities in Kazakhstan).

**82. *imitans* Giner Marí**

*Miscophus imitans* Giner Marí, 1945e:240, ♀, ♂. Holotype: Western Sahara: Bu Kerch (MNCN Madrid). – de Andrade, 1954:52 (in revision of *Miscophus helveticus* group), 86 (Egypt); de Beaumont, 1956a:205 (Libya), 1957a:144 (Morocco), 1958b:66 (Algeria: Tassili des Ajjer); Pulawski, 1964:125 (Egypt: Abydos, Abu Rawash, Edfu, Luxor, Kom Osheim, Maadi, Saqqara, Tell-el-Amarna, Wadi Digla); de Beaumont, Bytinski-Salz and Pulawski, 1973:19 (Israel); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Radović, 1985:65 (sting apparatus analyzed); Guichard, 1991a:340 (Jordan); Roche and Zalut, 1994:116 (Egypt: Sinai Peninsula); Roche, 2007a:94 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Gadallah, 2020b:40 (in list of aculeate wasps of Arabian Peninsula); Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel); 334 (Oman, Saudi Arabia, United Arab Emirates: locality records).

**83. *impressifrons* Lomholdt**

*Miscophus impressifrons* Lomholdt, 1985:90, ♀, ♂. Holotype: ♀, South Africa: Eastern Cape Province: Willowmore (TMP).

**84. *impudens* de Andrade**

*Miscophus impudens* de Andrade, 1960:129, ♀, ♂. Holotype: ♂, Morocco: Goulimine (Lausanne). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

**85. *inconspicuus* de Andrade**

*Miscophus inconspicuus* de Andrade, 1960:119, ♂, ♀. Holotype: ♂, Egypt: Luxor (NHMW). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Dollfuss, 1989:10 (holotype in NHMW); Roche, 2007a:97 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

**86. infernalis Arnold**

*Miscophus infernalis* Arnold, 1929c:403, ♀, ♂. Lectotype: ♂, Zimbabwe: Bulawayo (Bulawayo), designated by Lomholdt, 1985:97. – Arnold, 1930:8 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:97 (in revision of southern African Miscophini).

**87. insolitus de Andrade**

*Miscophus insolitus* de Andrade, 1953a:27, ♀. Holotype: ♀, Cyprus: Yermasoyia Hills (Univ. Coimbra). – de Andrade, 1960:76 (in revision of *Miscophus bicolor* species group); de Beaumont, 1967a:334 (Turkey); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Ljubomirov and Yildirim, 2008:230 (in catalog of Crabronidae of Turkey); Yildirim, Ljubomirov, and Lelej, 2014:12 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 342 (synonymy, locality records from Cyprus, Kazakhstan, Mongolia, Russia (European), Turkey, and Turkmenistan); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:299 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

*Miscophus beaumonti* Balthasar, 1954a:49, ♀. Holotype: ♀, Cyprus: Yermasoyia River (originally V. Balthasar coll., now NMPC). Synonymized with *Miscophus insolitus* by de Andrade, 1960:76, synonymy confirmed by Schmid-Egger and Straka, 2019:342.

*Miscophus insulicola* Balthasar, 1954a:44, ♂. Holotype: ♂, Cyprus: Zakaki (originally V. Balthasar coll., now NMPC). Synonymized with *Miscophus insolitus* by Schmid-Egger and Straka, 2019:342. – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

*Miscophus percitus* Mokrousov, 2004:505, ♀, ♂. Holotype: ♂, Russia: Nizhniy Novgorod Oblast': Dzerzhinsk (ZMMU). Synonymized with *Miscophus insolitus* by Schmid-Egger and Straka, 2019:342. – Mokrousov, 2010a:62 (Russia: Nizhniy Novgorod Oblast': no specific localities), 2010b:100 (Russia: Nizhniy Novgorod Oblast': no specific localities); Antropov, 2017b:241 (in catalog of Crabroninae of Russia).

**88. irwini Schmid-Egger**

*Miscophus irwini* Schmid-Egger *in* Schmid-Egger and Al-Jahdhami, 2022:335, ♀. Holotype: ♀, Israel: Arava Valley: Iddan at 30.807°N 35.298°E (Ch. Schmid-Egger personal collection, Berlin, Germany). – Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel, as *irwini*).

**89. italicus A. Costa**

*Miscophus italicus* A. Costa, 1867b:94, ♀ (as ♂ in Diagnosis). Holotype: ♀, Italy: Campania: vicinity of Napoli (Napoli). – Kohl, 1885:220 (in key to western Palearctic *Miscophus*), 230, footnote (original description copied), 233 (in checklist of world *Miscophus*); Ed. André, 1888:216 (in revision of Sphecidae of Europe and Algeria), 19\* (bibliographic references); Dalla Torre, 1897:698 (in catalog of world Hymenoptera); de Andrade, 1954:62 (probable synonym of *Miscophus rubriventris* Ferton); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Pagliano, 1990:108 (in catalog of Italian Sphecidae); Pagliano and Negrisolò, 2005:489 (in Sphecid Fauna of Italy, as nomen dubium); Vicidomini, 2000b:25 (Italy: previously recorded from Campania).

*Miscophus italicus* A. Costa, 1867c:38. Objective synonym of *Miscophus italicus* A. Costa, 1867b:94

**90. johni Mokrousov**

*Miscophus johni* Mokrousov, 2004:503, ♀, ♂. Holotype: ♂, Russia: Nizhniy Novgorod Oblast': Dzerzhinsk (ZMMU). – Mokrousov, 2010a:62 (Russia: Nizhniy Novgorod Oblast': no specific localities), 2010b:100 (Russia: Nizhniy Novgorod Oblast': no specific localities); Mokrousov, Ruchin, and Egorov, 2013:202 (Russia: Mordovian Republic: Mordovian State Nature Reserve); Antropov, 2017b:241 (in catalog of Crabroninae of Russia); Ruchin and Antropov, 2019a:13234 (Russia: Mordovia State Nature Reserve); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 342 (diagnosis, description of ♀ from Czech Republic, redescription of ♂), 345 (locality records from Czech Republic and Russia: Novgorod Oblast'); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:294 (in revision of Sphecidae *sensu lato* of Europe).

**91. kaleshi Girish Kumar**

*Miscophus kaleshi* Girish Kumar *in* Girish Kumar, Mawadda, Terine, and Amal, 2024:591, ♀, ♂. Holotype: ♀, India: Kerala: Kozhikode District: Purameri (Zoological Survey of India, Western Ghat Regional Centre, Kozhikode, India). – Girish Kumar, Mawadda, Terine, and Amal, 2024:590 (in key to *Miscophus* of Indian subcontinent).

**92. kansensis (Slansky)**

*Nitelocterus kansensis* Slansky, 1969:467, ♀, ♂. Holotype: ♂, USA: Kansas: Douglas County: Lawrence (Kansas Univ.). – Kurczewski, 1969:483 (nesting habits). – **As *Miscophus kansensis***: R. Bohart and Menke, 1976:318 (new generic assignment, in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera).

**93. karrooensis Arnold**

*Miscophus karrooensis*: Brauns, 1911a:240 (South Africa). Nomen nudum.

*Miscophus karrooensis* Arnold, 1923c:25, ♂ (authorship attributed to Brauns). Holotype: ♂, South Africa: Eastern Cape Province: Willowmore (TMP). – Arnold, 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:69 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:38 (paratype in Bulawayo Museum, as *karooensis*).

**94. kohlii Brauns**

*Miscophus kohlii* Brauns, 1899:397, ♀, ♂ (as *Kohlii*, incorrect original capitalization). Lectotype: ♀, South Africa: Eastern Cape Province: Algoa Bay (TMP), designated by Lomholdt, 1985:108. – Arnold, 1923c:26 (in revision of southern African *Miscophus*), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:108 (in revision of southern African Miscophini); Dollfuss, 1989:10 (paratype in NHMW); Hancock, Chahwanda, and Mhlanga, 1995:38 (paralectotype in Bulawayo Museum).

**95. kriechebaumeri Brauns**

*Miscophus kriechebaumeri* Brauns, 1899:398, ♀, ♂ (as *Kriechebaumeri*, incorrect original capitalization). Lectotype: ♀, South Africa: Eastern Cape Province: Addo near Port Elizabeth (TMP), designated by Lomholdt, 1985:65. – Arnold, 1923c:24 (in revision of southern African *Miscophus*), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:65 (in revision of southern African Miscophini); Dollfuss, 1989:10 (paratype in NHMW).

*Miscophus crispus* Arnold, 1924:28, ♂. Holotype: ♂, South Africa: Natal: Killarney (SAM). Lectotype illegally designated by Lomholdt, 1985:65. Synonymized with *Miscophus kriechebaumeri* by Lomholdt, 1985:65. – Arnold, 1930:8 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Hancock, Chahwanda, and Mhlanga, 1995:38 (lectotype in Bulawayo Museum).

**96. *krunki* Lomholdt**

*Miscophus krunki* Lomholdt, 1985:82, ♀, ♂. Holotype: ♀, Namibia: 5 km east of Swakopmund (ZMUC).

**97. *laticeps* (Ashmead)**

*Miscophinus laticeps* Ashmead, 1898:188, ♀. Holotype: ♀, USA: California: Sacramento County: no specific locality (USNM). – Ashmead, 1899d:250 (in checklist of North American Crabronidae). – **As *Nitelopterus laticeps***: Krombein *in* Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera); Cazier and Mortenson, 1965c:21 (nesting habits); Kurczewski, 1969:492 (discussion of biological observations by Cazier and Mortenson, 1951); Evans, 1973c:149 (Wyoming: Jackson Hole). – **As *Miscophus laticeps***: R. Bohart and Menke, 1976:318 (new generic assignment, in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera); Kurczewski, Edwards, Kimsey, and Kurczewski, 2012:311 (nesting behavior).

**98. *levantinus* Balthasar**

*Miscophus levantinus* Balthasar, 1954a:50, ♂. Holotype: ♂, Cyprus: Yermasoyia River (originally V. Balthasar coll., now NMPC). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

**99. *lissonotus* Lomholdt**

*Miscophus lissonotus* Lomholdt, 1985:78, ♂. Holotype: ♂, Angola: Curoca River 7 mi. northwest of Porto Alexandre, now Tômbwa (BMNH).

**100. *littoreus* de Andrade**

*Miscophus littoreus* de Andrade, 1960:83, ♀, ♂. Holotype: ♀, Morocco: Agadir (Lausanne). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

**101. *luctuosus* de Andrade**

*Miscophus luctuosus* de Andrade, 1960:118, ♀. Holotype: ♀, Greece: island of Corfu: no specific locality (Univ. Coimbra). – de Beaumont, 1965a:54 (Greece); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:330 (in Sphecid Fauna of Western Europe); Ljubomirov and Yildirim, 2008:230 (in catalog of Crabronidae of Turkey); Yildirim, Ljubomirov, and Lelej, 2014:12 (distribution in Turkey by biogeographic provinces); Atbaei, Fallahzadeh, and Ljubomirov, 2015:14 (first record from Iran: Fars Province); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:67 (Iran: known from Fars Province); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:295 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

As *Miscophus* sp. aff. *spurius*: de Andrade, 1953a:27 (Cyprus), corrected to *Miscophus luctuosus* by de Andrade, 1960:118.

**102. *lugubris* Arnold**

*Miscophus lugubris* Arnold, 1929c:404, ♀. Holotype: ♀, Zimbabwe: Nyamandhlovu (Bulawayo). – Arnold, 1930:8 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:96 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:38 (holotype in Bulawayo Museum).

*Miscophus arnoldi* R. Turner, 1929b:558, ♂. Holotype: ♂, South Africa: Western Cape Province: Matjiesfontein (BMNH). Synonymized with *Miscophus lugubris* by Lomholdt, 1985:96. – Arnold, 1931:09 (original description copied); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

### 103. *lusitanicus* de Andrade

*Miscophus lusitanicus* de Andrade, 1952:28, ♀. Holotype: ♀, Portugal: Portimão (Univ. Coimbra). – de Andrade, 1953b:148 (Portugal, description of ♂), 1960:91 (in revision of *Miscophus bicolor* species group); de Beaumont, 1960a:20 (Greece: Island of Rhodes); Diniz, 1959:31 (Portugal: Praia da Rocha, Trafaria), 1960:32 (Portugal: five localities); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); Diniz, 1964a:3 (Portugal: Aljustrel, Évora, Portimão, Seixal, Trafaria); de Beaumont, 1967a:334 (Turkey), 1969:92 (Turkey); Erlandsson, 1974:74 (Spain; as *lucitanicus*); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Gayubo, 1982f:257 (Spain: Cádiz Province: Chipiona, San Roque), 1984b:89 (Spain: Salamanca Province), 1984c:170 (Portugal: El Algarve Province, as *lusitanicus lusitanicus*); Gayubo, 1986c:34 (Spain: Zamora Province); Gayubo and Heras, 1986:46 (Spain: Segovia Province); Gayubo, 1987a:116 (Spain: Ciudad Real Province); Gayubo and Mingo, 1988:86 (Spain); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:330 (in Sphecid Fauna of Western Europe); Ljubomirov and Yildirim, 2008:231 (in catalog of Crabronidae of Turkey); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Gayubo, González, Tormos, and Asís, 2009:363 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wild-fire), 501 (exclusive species of burned areas); Bitsch, 2014:404 (France: Aude: Montedon-des-Corbières); Yildirim, Ljubomirov, and Lelej, 2014:12 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Turrisi, Altadonna, Lo Cascio, Nobile, and Selis, 2020:730 (Italy: Aeolian Archipelago: island of Panarea); Cross, Baldock, and Wood, 2021:48 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:280 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

As *Miscophus bicolor*: Pulawski, 1958a:185, corrected to *Miscophus lusitanicus thracicus* by Pulawski, 1962:207.

*Miscophus lusitanicus thracicus* Pulawski, 1962a:207, ♀. Holotype: ♀, Bulgaria: Varna (originally W.J. Pulawski collection, now CAS). Synonymized with *Miscophus lusitanicus* by Schmid-Egger and Bitsch *in* Bitsch et al., 2001:330. – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Pulawski, 1978:227, 228 (in key to Sphecidae of European part of USSR); Ivanov and Ljubomirov, 2001:212 (Bulgaria: Kresna Gorge at 41°48'N 23°10'E). – As *Miscophus lusitanicus forma thracicus* (as infrasubspecific name, not available under Article 15.2 of the Code): Schmid-Egger and Bitsch *in* Bitsch et al., 2001:330 (in Sphecid Fauna of Western Europe)

### *ssp. nomadus* de Andrade

*Miscophus lusitanicus nomadus* de Andrade, 1953a:25, ♀, ♂. Holotype: ♀, Cyprus: Yermasoyia Hills (Univ. Coimbra). – de Andrade, 1960:93 (in revision of *Miscophus bicolor* species group); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

### 104. *luteoabdominalis* Schmid-Egger

*Miscophus luteoabdominalis* Schmid-Egger *in* Schmid-Egger and Al-Jahdhami, 2022:335, ♀, ♂. Holotype: ♀, Oman: Dhofar: 80 km south-southwest of Salalah at 16.857°N 53.420°E (Ch. Schmid-Egger personal collection, Berlin,

Germany). Paratypes: Israel, Oman.– Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel).

### 105. *maculipes* Arnold

*Miscophus maculipes* Arnold, 1945:136, ♀, ♂. Holotype: ♀, Madagascar: Bekily (MNHN). – Arnold, 1945:135 (in key to *Miscophus* of Madagascar); Leclercq, 1960a:997 (Madagascar); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:86 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:38 (paratypes in Bulawayo Museum); Pulawski, 2003b:797 (in checklist of Malagasy Sphecidae); Madl, 2014a:975 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

### 106. *magnus* Kazenas

*Miscophus magnus* Kazenas, 1992b:106, ♀, ♂. Holotype: ♀, Kazakhstan: Kapchagay (ZIN). – Esenbekova and Kazenas, 2000:39 (southeastern Kazakhstan: no specific locality); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:82 (geographic distribution, collecting localities in Kazakhstan), 2008a:102 (southeastern Kazakhstan: near Kapchagay).

### 107. *maurus* (Rohwer)

*Miscophinus maurus* Rohwer, 1909a:126, ♀, ♂. Syntypes: USA: Colorado: Boulder County: Boulder, and Teller County: Florissant (USNM). – As *Niteloater maurus*: Krombein in Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera); Evans, 1973c:149 (Wyoming: Jackson Hole). – As *Miscophus maurus*: R. Bohart and Menke, 1976:318 (new generic assignment, in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera).

### 108. *mavromoustakisi* de Andrade

*Miscophus mavromoustakisi* de Andrade, 1953a:33, ♀, ♂. Holotype: ♀, Cyprus: Zakaki (Univ. Coimbra). – de Andrade, 1960 (in revision of *Miscophus bicolor* species group); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Schmid-Egger, 2003:755 (Italy: Sicilia: Madonie); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:460 (specimens recorded as *nicolai* from Greece are actually *Miscophus mavromoustakisi*, differences between *mavromoustakisi* and *nicolai*); Pagliano, 2009:185 (Italy: recorded from Sicilia by Schmid-Egger); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia, known only from Slovakia), 223 (Slovakia: Chotín); Bitsch, 2014:404 (recorded from Sicily by Schmid-Egger, 2003); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey).

As *Miscophus nicolai* (specimens from Greece only): Schmid-Egger and Bitsch in Bitsch et al., 2001:320, corrected to *Miscophus mavromoustakisi* by Schmid-Egger in Vepřek and Straka, 2007:223.

### 109. *merceti* de Andrade

As *Miscophus hispanicus* Mercet: Ceballos, 1943:364 (nomen nudum); de Andrade, 1952:23 (citation).

*Miscophus merceti* de Andrade, 1952:23, ♀, ♂. Holotype: ♀, Portugal: Lisboa (Univ. Coimbra). – Ceballos, 1956:390 (in catalog of Hymenoptera of Spain); Nouvel and Ribaut, 1958:14 (France: Pyrénées-Orientales: Banyuls-sur-Mer); de Andrade, 1960:104 (in revision of *Miscophus bicolor* species group); Diniz, 1959:31 (Portugal: Lisboa), 1960:32 (Portugal: five localities); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); Diniz, 1964a:3 (Portugal: Carcavelos, Évora, Lagoa de Albufeira, Lisboa, Montijo); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Gayubo, 1982a:112 (northern Spain: Sierra de Béjar), 1984b:96 (Spain: previously recorded from Salamanca Province), 1984c:370 (Portugal: El Algarve Province), 1986c:34 (Spain: Zamora Province); Gayubo and

Sanza, 1986:52 (Spain: Segovia); Gayubo and Tormos, 1986a:18 (Spain: Castellón de la Plana); Gayubo, 1987a:116 (Spain: Ciudad Real Province); Gayubo and Mingo, 1988:86 (Spain); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:331 (in Sphecidae Fauna of Western Europe); Gros, 2005:20 (nesting habits); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:460 (nesting habits studied by Gros, 2005), 462 (prey: Arachnida Gnaphosidae: *Gnaphosa alacris* Simon, *Zelotes nilicola* (O.-P. Cambridge), Zodariidae: *Selamia reticulata* (Simon), Theridiidae: *Steatoda phalerata* (Panzer), Titanocidae: *Titanoecca monticola* (Simon), Lycosidae: *Pardosa* sp., Thomisidae: *Oxyptila blitea* Simon; nest can be bicellular); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Cross, Baldock, and Wood, 2021:49 (in catalog of Sphecidae *sensu lato* of Portugal); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:297 (in revision of Sphecidae *sensu lato* of Europe).

### **ssp. *orientalis* de Beaumont**

*Miscophus merceti orientalis* de Beaumont, 1967a:335, ♀. Holotype: ♀, Turkey: Kutahya: Gediz (BMNH). – de Beaumont, 1969:92 (Turkey); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Ljubomirov and Yildirim, 2008:232 (in catalog of Crabronidae of Turkey); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces), 19 (is an endemic of Turkey); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey), 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

### **110. *mimeticus* Honoré**

*Miscophus mimeticus* Honoré, 1944b:133, ♀, ♂. Syntypes: Egypt: Dahshur and Kafr Faruk (USNM). – de Andrade, 1960:78 (in revision of *Miscophus bicolor* species group); Pulawski, 1964:116 (Egypt: Abu Rawash, Kom Ombo, Kom Osheim, Luxor, Maadi); Tsuneki, 1972e:404 (Mongolia); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Kazenas, 1978b:141, 142 (in key to Sphecidae of Kazakhstan and Central Asia); Nemkov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:413 (in key to Sphecidae of Russian Far East); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:82 (geographic distribution, collecting localities in Kazakhstan); Roche, 2007a:97 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger, 2011b:549 (in key to *Miscophus* of Arabian Peninsula), 552 (first record from United Arab Emirates: Al-Ajban, north of Ajman, Dubai/al-Awir, Dubai/Nakhalai, Sharjah Desert Park, Wadi Siji), 555 (color photographs of female), 2014:584 (United Arab Emirates); Atbaei, Fallahzadeh, and Ljubomirov, 2015:14 (first record from Iran: Fars Province); Sadeghi, Fallahzadeh, Ostovan, Ljubomirov, and Hesami, 2016:431 (Iran: Fars Province); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:67 (Iran: known from Fars Province); Sadeghi, Fallahzadeh, Ostovan, Ljubomirov, and Hesami, 2019a:271 (Iran: Fars: Estahban: Gordeh, and Kherameh: Dodej); Gadallah, 2020b:40 (in list of aculeate wasps of Arabian Peninsula); Schmid-Egger and Al-Jahdhami, 2022:322, 325 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 338 (Oman, Yemen: locality records).

### **111. *minutus* de Andrade**

*Miscophus minutus* de Andrade, 1953a:17, ♀, ♂. Holotype: ♀, Cyprus: Yermasoyia Hills (Univ. Coimbra). – de Andrade, 1960:44 (in revision of *Miscophus bicolor* species group); de Beaumont, 1967a:333 (Turkey); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Ljubomirov and Yildirim, 2008:233 (in catalog of Crabronidae of Turkey); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Koçak and

Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 345 (reference to original description, geographic distribution, locality records from Hungary); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:285 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

### 112. *mochii* Arnold

*Miscophus mochii* Arnold, 1940:130, ♀ (as *Mochii*, incorrect original capitalization). Holotype: ♀, Egypt: Wadi Digla near Cairo (Bulawayo Mus.). – de Andrade, 1954:37 (in revision of *Miscophus helveticus* group); de Beaumont, 1957a:143 (Morocco: Tafraout); Pulawski, 1964:122 (Egypt: Maadi, Tell-el-Amarna; additional description); de Beaumont, Bytinski-Salz and Pulawski, 1973:18 (Israel); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Roche and Zalut, 1994:116 (Egypt: Sinai Peninsula); Hancock, Chahwanda, and Mhlanga, 1995:38 (holotype in Bulawayo Museum); Roche, 2007a:94 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 336 (Egypt, Israel, Morocco, Yemen: locality records).

*Miscophus pretiosus* var. *brunnescens* Honoré, 1944b:131, ♀, ♂. Syntypes: Egypt: Wadi Digla near Cairo (USNM). Synonymized with *Miscophus mochii* by de Andrade, 1954:37. – As *Miscophus pretiosus brunnescens*: R. Bohart and Menke, 1976:319 (new status, in checklist of world Sphecidae).

As *Miscophus pretiosus* Kohl nov. var.: Honoré, 1944b:129 (Egypt), corrected to *Miscophus mochii* by de Andrade, 1954:37.

### 113. *modestus* Arnold

*Miscophus modestus* Arnold, 1929c:401, ♀. Holotype: ♀, Zimbabwe: Sanyati Valley (Bulawayo Mus.). – Arnold, 1930:8 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Lomholdt, 1985:100 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:38 (holotype in Bulawayo Museum).

### 114. *mongolicus* Tsuneki

*Miscophus mongolicus* Tsuneki, 1972e:402, ♀. Holotype: ♀, Mongolia: Bayan Hongor aymag: oasis Ekhin-gol (TMB). – R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae).

### 115. *montanus* Gussakovskij

*Miscophus montanus* Gussakovskij, 1935:422, ♀, ♂. Syntypes: Tajikistan: Kurgan-Tube; Uzbekistan: Aman Kutan (ZIN). – de Andrade, 1954:82 (original description copied); R. Bohart and Menke, 1976:318 (in checklist of world Sphecidae); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution).

### 116. *nevesi* de Andrade

*Miscophus nevesi* de Andrade, 1952:16, ♀, ♂. Holotype: ♀, Portugal: Caparica (Univ. Coimbra). – de Andrade, 1960:42 (in revision of *Miscophus bicolor* species group); Diniz, 1959:31 (Portugal: Caparica, Cascais), 1960:32 (Portugal: Azenhas do Mar, Caparica, Cascais), 1964a:3 (Portugal: Azenhas do Mar, Caparica, Cascais); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Gayubo, 1984c:371 (Portugal: El Algarve Province); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:320 (in Sphecid Fauna of Western Europe); Fresno, 2017:151 (Spain: Málaga: Fuengirola, Bobadilla-Estación); Cross, Baldock, and Wood, 2021:49 (in catalog of Sphecidae *sensu lato* of Portugal); Schmid-Egger and Bitsch *in* Bitsch,

Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:285 (in revision of Sphecidae *sensu lato* of Europe).

### 117. *nicolai* Ferton

*Miscophus nicolai* Ferton, 1896a:263, ♀ (as *Nicolai*, incorrect original capitalization and diacritic mark). Syntypes: ♀, France: Bouche-du-Rhône: Marseille area (MNHN). – Ferton, 1896a:268 (prey); de Gaulle, 1908:121 (in catalog of French Hymenoptera); Ferton, 1923:67 (prey: small arachnids); Berland, 1925d:127 (in Sphecidae Fauna of France); Giner Marí, 1934:134 (Spain); Bernard, 1935:65 (France: Var: Fréjus area); Giner Marí, 1943a:208 (in Sphecidae Fauna of Spain); Deleurance, 1946b:64 (prey: small Salticidae), 67 (France: Bouche-du-Rhône: Camargue: Bois des Rièges); Ceballos, 1949:101 (Spain); de Andrade, 1952:31 (in revision of *Miscophus* of Portugal, description of ♂); Ceballos, 1956:390 (in catalog of Hymenoptera of Spain); Balthasar, 1957:111 (in key to western Palearctic *Miscophus*); Balthasar, 1957:111 (in key to western Palearctic *Miscophus*); Diniz, 1959:31 (Portugal: six localities); de Andrade, 1960:59 (in revision of *Miscophus bicolor* species group); Diniz, 1960:32 (Portugal: twelve localities); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); Diniz, 1964a:3 (Portugal: twelve localities); Suárez, 1969:32 (Spain: Almería Province); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Gayubo, 1982a:112 (northern Spain: Sierra de Béjar), 1982f:257 (Spain: Cádiz Province: Alcalá de los Gazules, Facinas, Guadiaro, Palmones, San Roque, Tiradero), 1984b:89 (Spain: Salamanca Province), 1984c:371 (Portugal: El Algarve Province), 1986c:34 (Spain: Zamora Province); Gayubo and Sanza, 1986:53 (Spain: Burgos, Segovia); Gayubo, 1987a:117 (Spain: Ciudad Real Province); Tormos and Jimenez, 1987b:316 (Spain: Valencia Province: Dehesa de El Saler); Gayubo and Mingo, 1988:86 (Spain, as *nicolai nicolai*); Gayubo, Asís, and Tormos, 1990a:19 (Spain); Gayubo, Borsato, and Osella, 1992:283 (Spain: Andalucía); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); González, Gayubo, and Torres, 1999:355 (Spain: Valladolid: Viana de Cega); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Schmid-Egger and Bitsch in Bitsch et al., 2001:320 (in Sphecidae Fauna of Western Europe, specimens from Greece = *Miscophus mavromoustakisi*); Baños-Picón, Gayubo, Asís, and González, 2007:259 (Spain: Zamora: Cabañas de Aliste); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:460 (specimens recorded from Greece are actually *Miscophus mavromoustakisi*, differences between *mavromoustakisi* and *nicolai*); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Gayubo, González, Tormos, and Asís, 2009:363 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); van der Smissen, 2010b:385 (France: Vaucluse: Bédoin); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Bitsch, 2014:404 (recorded from France by van der Smissen, 2010b); Cross, Baldock, and Wood, 2021:49 (in catalog of Sphecidae *sensu lato* of Portugal); Schmid-Egger and Bitsch in Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:285 (in revision of Sphecidae *sensu lato* of Europe).

*Miscophus nicolai rufescens* de Andrade, 1960:61, ♀, ♂. Holotype: ♀, Portugal: Setubal (Univ. Coimbra). Synonymized with *Miscophus nicolai* by Schmid-Egger and Bitsch in Bitsch et al., 2001:320 (in Sphecidae Fauna of Western Europe). – Diniz, 1960:32 (Portugal: Évora, Setubal); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); Diniz, 1964a:3 (Portugal: Évora, Setubal); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Gayubo, 1987a:117 (Spain: Ciudad Real Province); Gayubo and Mingo, 1988:86 (Spain); Gayubo, González, Tormos, and Asís, 2008:138 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia). – **As *Miscophus***

*nicolai form rufescens* (an infrasubspecific name, not available under Article 15.2 of the Code): Schmid-Egger and Bitsch in Bitsch et al., 2001:320 (in Sphecidae Fauna of Western Europe)

### 118. *niger* Dahlbom

NOTE: Many records prior to de Andrade (1953a, 1960) probably refer to *Miscophus ater*.

*Miscophus niger* Dahlbom, 1844:236, ♀, ♂. Syntypes: Sweden: Gävleborg: Glösbo; Gotland: Stenkjörke; and Germany: Rixdorf near Berlin (Lund). – Dahlbom, 1845:466 (in key to *Miscophus* of Europe); Wissmann, 1849:12 (Germany: Kingdom of Hannover: Hedemünden); Kirschbaum, 1853:44 (Germany: Herzogtum Nassau: Mainz-Mombach); F. Smith, 1856:311 (in catalog of Hymenoptera in British Museum); Ruthe and Stein, 1857:314 (Germany: Berlin area); Schenck, 1857:195 (Germany: in revision of fossorial wasps of Nassau Region); Taschenberg, 1858:97 (in key to Sphecidae of Germany); Schenck, 1860:149 (Germany: Nassau Region); Taschenberg, 1866:203 (in revision of Hymenoptera of Germany); Kirchner, 1867:215 (in catalog of European Hymenoptera); Schenck, 1867a:356 (Germany: Nassau Region); Taschenberg, 1870:17 (Germany: Halle); Thomson, 1870:242 (in revision of Swedish wasps); Dours, 1874:139 (in catalog of Hymenoptera of France); Thomson, 1874:222 (in revision of Hymenoptera of Scandinavia); Beuthin, 1876:231 (Germany: Hamburg area); Radoszkowski, 1877:23 (Uzbekistan or Tajikistan: Zaravshan valley); Girard, 1879:956 (one of three species of *Miscophus*); Friese, 1883:203 (Germany: Thüringen: Gumperda); von Heyden, 1884:116 (Germany: Frankfurt am Main); Kohl, 1885:220 and 221 (in key to western Palearctic *Miscophus*), 224 (in revision of western Palearctic *Miscophus*), 233 (in checklist of world *Miscophus*); F. Morawitz, 1893a:111 (Russia: Karelian Isthmus); Westerlund, 1893:26 (Russia: Karelian Republic: northern shore of Lake Ladoga); Krieger, 1894:10 (Germany: Kingdom of Saxony); Borries, 1897:67 (citation of Kohl, 1885:225, as *Miscophus major* Dahlbom); Dominique, 1901a:507 (France: Loire-Inférieure, now Loire-Atlantique: Iles de la Loire); Adlerz, 1904:44 (nesting habits); Antiga and Bofill, 1904:12 (Spain: Cataluña Province); Aurivillius, 1904:276 (in revision of Swedish Sphecidae); Adlerz, 1906:28 (Sweden; nesting habits); nec Nielsen, 1907:34 (= *Miscophus ater*); Schmiedeknecht, 1907: 213 (in key to Hymenoptera of Central Europe); Dittrich, 1911b:22 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:45 (Italy: Trieste area); Schirmer, 1912:166 (Germany: Berlin area); Haupt, 1913:50 (Germany: Sachsen-Anhalt: Bergholz and Erdborn in Halle area); Alfken, 1914:279 (northwestern Germany); Noskiewicz, 1918:138 (Galicia, now western Ukraine: Brzuchowice, Hołosko, and Rudno near Lwów, Sokolniki); O. Meyer, 1919:153 (Germany: Posen Province, now Poland: Poznań Region); Dubois, 1920:88 (Belgium: littoral); A. Wagner, 1920:39 (Germany: Lower Elbe region); Dubois, 1922:198 (in key to Belgian Sphecidae); Hedicke, 1922:270 (Germany: Brandenburg: Gross Machnower Weinberg); Maidl, 1922:72 (Croatia); Ferton, 1923:67 (prey: small arachnids); Bischoff, 1925:300 (Latvia: Wezkukkul; Poland: Grajewo area); Schütze, 1925:112 (Germany: Lausitz Region); Bouwman, 1926:280 (in list of Sphecidae of Netherlands); Friese, 1926:164 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); von Schulthess, 1926b:219 (Tunisia); Jansson, 1934:289 (Sweden); A. Wagner, 1938a:121 (northwestern Germany); Hoop, 1941a:69 (Germany: Schleswig-Holstein: Einfeld, Kitzberg, and Steinfurth); Paul, 1941:43 (Germany: Pommern: Stettin area, now Poland: Województwo Zachodniopomorskie: Szczecin area); Szulczewski, 1950:105 (Poland: Wielkopolski National Park 15 km south of Poznań); Benno, 1951a:273 (Netherlands: Helenaveen); de Andrade, 1953a:26 (in revision of *Miscophus* of Cyprus); de Beaumont, 1954a:62 (Italy); Grandi, 1954:240 (Italy); Tjeder, 1954:67 (Sweden: eastern Skåne: Sandhammaren); Benno, 1958b:12 (in review of Dutch Sphecidae); Wolf, 1959b:23 (Germany: Nassau); Valkeila, 1959a:182 (Finland: north to Oulu); de Andrade, 1960:123 (in revision of *Miscophus bicolor* species group); de Beaumont, 1961c:50 (Greece: Crete); Hoop, 1961:65 (Germany: Schleswig Holstein: Ihlkate); Valkeila, 1962b:66 (southwestern Finland); nec Hoop, 1963b:7 (= *Miscophus ater*); de Beaumont, 1964c:80 (in Sphecidae Fauna of Switzerland, not recorded from Switzerland);

*Miscophus*

Hüsing and Jäger, 1964:192 (Germany: Sachsen-Anhalt: Nietleben near Halle), 199 (preying on spiders, nest closed during provisioning period, visiting flowers of umbellifers); de Beaumont, 1965a:54 (Greece); nec Faester, 1965:192 (= *Miscophus ater*); Benno, 1967:36 (in checklist of Sphecidae of Netherlands); J. Heinrich, 1967:76 (Germany: Bayern: Unterfranken District); Scobiola-Palade, 1968b:143 (Romania: Island of Letea in delta of Danube); Oehlke, 1970:719 (Democratic Germany); Schmidt, 1971b:37 (Germany: Mainz area); Haeseler, 1972:200 (Germany: Schleswig-Holstein; anthropogenic habitats); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Lefeber, 1976:151 (Netherlands: Maasduintjes between Bergen and Wellse Hut); Lomholdt, 1976:259 (in Sphecid Fauna of Fennoscandia and Denmark); Guichard, 1978:271 (Greece); Kazenas, 1978b:141, 142 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:227, 228 (in key to Sphecidae of European part of USSR); Lefeber, 1979:12 (in checklist of Sphecidae of Netherlands), 80 (Netherlands: distribution map); Pagliano, 1980:129 (Italy: Piemonte); Donath, 1982:213 (Germany: Cottbus Bezirk); Dollfuss, 1983b:11 (in catalog of Sphecidae of Austria); Janzon, 1983:171 (Sweden: island of Öland); Janzon and Svensson, 1984:183 (Sweden: island of Öland); Nilsson, 1985:43 (Sweden); Scobiola Palade, 1985:97 (Romania: delta of Danube); Nemkov, 1986:97 (Russia: Siberia: Irkutsk Oblast': Angarsk); Nilsson, 1986:87 (Sweden); Vikberg, 1986:76 (Finland); Nilsson, 1988:98 (Sweden); Jacobs, 1989:13 (Germany: not occurring in Mecklenburg); Jacobs and Oehlke, 1990:129 (illustration of male genitalia), 169 (new records from Democratic Germany); Pagliano, 1990:108 (in catalog of Italian Sphecidae); Day, 1991:xvi (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:116 (in key to Sphecidae of North and Central Europe); Jacobs, 1991:46, 47 (Germany: Mecklenburg-Vorpommern: Nature Reserve Elbtaldünen); H.-J. Schulz, 1991:31 (Germany: Oberlausitz: 5 km southwest of Wittichenau); van der Smissen, 1991:97 (northwestern Germany); Nemkov, 1992b:245 (Russia: Far East: 40 km north-northwest of Svobodnyi near Khingan Nature Reserve); Theunert, 1994c:44 (Germany: summary of records from Niedersachsen and Bremen); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Jansen and Kaluza, 1995:7 (Germany: endangered in Sachsen); Ljubomirov, 1995a:77 (first record from Bulgaria); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Nemkov *in* Nemkov, Kazenas, Budryš, et Antropov, 1995:414 (in key to Sphecidae of Russian Far East); Saure and Dürrenfeld, 1995:29 (Germany: Brandenburg: Gabower Hänge near Bad Freienwalde); Blösch, 1996:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Schmid-Egger, Schmidt, and Doczkal, 1996:377 (Germany: Baden-Württemberg: endangered); Witt, 1996:106 (Germany: Brandenburg), 109 (locality records); Woydak, 1996:41 (Germany: Westfalen: summary of distribution and nesting habits); Ljubomirov, 1997:120 (Bulgaria); Schmidt and Schmid-Egger, 1997:19 (in checklist of German Sphecidae); F. Burger, Saure, and Oehlke, 1998:28 (Germany: in list of Sphecidae of Brandenburg), 34 (endangered); Dollfuss, Gusenleitner, and Bregant, 1998:514 (Austria: summary of collecting records from Burgenland); Flügel, 1998:60 (Germany: Brandenburg: Unteres Odertal National Park); Gorobchishin, 1998:49 (Ukraine: Kiev and surroundings); Kulik, 1998:131 (northwestern Germany); Lefeber, 1998:182 (Netherlands: Limburg: Sint-Pietersberg near Maastricht at 50°50'N 5°41'E, as *niger/spurius*); H.-J. Schulz, 1998c:113 (Germany: Lausitz: former military training area near Mücka); van der Smissen, 1998:63 (Germany: Mecklenburg-Vorpommern, Niedersachsen, Schleswig-Holstein); K. Weber, 1998:143 (Germany: Bayern: Bamberg area); Ljubomirov, 1999b:50 (Bulgaria: Mount Vitosha near Sofia); Wickl, 1999a:105 (Germany: Bayern: Oberpfalz area); Blösch, 2000:243 (in Sphecid Fauna of Germany); Giachino, Grosso, Marchetti, Pagliano, Scaramozzino, and Vailati, 2000:106 (Greece); Jacobs, 2000:8, 17 (Germany: Land Mecklenburg-Vorpommern: endangered); Zettel, 2000:28 (Austria: Wachau); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia); Ohl et al., 2001:140 (distribution in Germany by provinces); Schmid-

Egger and Bitsch *in* Bitsch et al., 2001:332 (in Sphecidae Fauna of Western Europe); van der Smitten, 2001:61 (Germany: Schleswig-Holstein: threatened with extinction); Shlyakhtenok and Skibinska, 2002:33 (Belorussia: no specific locality); Söderman and Vikberg, 2002:51 (in list of Aculeata of Finland); Straka and Farkač, 2002:261 (first record from Czech Republic: Lipovka Nature Reserve near Čelákovice and Praha); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:67 (Germany: in catalog of wasps and bees of Bayern); Schmid-Egger, 2003:755 (Italy: Sicilia: Amenta, Fontana Bianca, Madonie); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:196 (Germany: Bayern: endangered); Deván, 2004:147 (western Slovakia); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Klein and Lefebvre *in* Peeters, van Achterberg, et al., 2004:400 (in Wasp and Ant Fauna of Netherlands); Shkuratov, 2004a:77 (Russia: Rostov Oblast'), 2004b:167 (Russia: Rostov Oblast': Gosudarstvennyi Muzei-Zapovednik M.A. Sholokhova); Skibińska *in* Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Stolle et al., 2004:372 (Germany: Sachsen-Anhalt: in red list of Sphecidae); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:45 and 60 (in checklist of Polish Sphecidae); Blösch, 2005:4 (Germany: Bayern: Tennenloher Forst Nature Reserve near Erlangen); Burger, 2005:34 (Germany: Thüringen); Nemkov, 2005a:148 (Russia: island of Sakhalin); Pagliano and Negrisol, 2005:397 (in Sphecidae Fauna of Italy); Straka, 2005a:398 (critically endangered in Czech Republic); Gayubo, González, de la Nuez, Asís, and Tormos, 2006:210 (Spain: Salamanca: Aldeadávila de la Ribera, Villarinos de los Aires; Zamora: Fermoselle); Gorobchishin, 2006:112 (Ukraine: Cherkasy Oblast': Kaniv Nature Reserve, Keleberda near Kaniv; Kyiv Oblast': Kopcha-Ozerna); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Shlyakhtenok, 2006:111 (Belorussia: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:461 (recorded from Spain by Gayubo et al., 2006); Hallin, 2007b:25 (Sweden: Blekinge County); Jacobs, 2007:103, 105 (in key to Crabronidae of Germany); Jansen and Kaluza, 2007:24 (Germany: northwestern Sachsen); Saure, 2007:82 (Germany: in checklist of Aculeata of Land Brandenburg); Sipos and Móczár, 2007:205 (Hungary: Bács-Kiskun megye: vicinity of Foktő); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia, known only from Bohemia and Slovakia), 223 (first record from Slovakia: Kamenica on Hron, Streda on Bodrog); Józán, 2008:81 (first record from Hungary: Velence); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); Protsenko and Drozdovskaya, 2008:126 (Ukraine: Sumy Oblast': Mogritsa village); Theunert, 2008:54 (Germany: map of distribution in Niedersachsen and Bremen); Gayubo, González, Tormos, and Asís, 2009:363 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Guéorguiev and Ljubomirov, 2009:264 (Bulgaria: Maleshevska Planina); Livory, Chevin, Lair, Sagot, and Baldock, 2009:26 (France: Département de la Manche: Les Moitiers d'Allonne); Mokrousov, 2009:287 (Russia: Republic Mari El); Nemkov, 2009b:82 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:28 (known from Norway), 43 (Norway: locality records); Pagliano, 2009:185 (Italy: Emilia-Romagna: Oriano area, Parma); Budrys, 2010:138 (first record from Lithuania: Puvočiai, Rūdninkai); Hable, Krauss, von der Dunk, and Wickl, 2010:27 (Germany: Bayern: Sulz- and Ottmaringer Tal); Johansson, 2010:121 (Sweden: Småland: upper Emå river valley); Mokrousov, 2010a:62 (Russia: Kirov, Nizhniy Novgorod, and Vladimir Oblast's, Mari El Republic, Tatarstan: no specific localities); Rudoiskatel', 2010:153 (Russia: southern Ural Mountains); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: rare); van der Smitten, 2010a:344 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records), 2010b:385 (France: Ardèche: Saint-Thomé, Vogüe;

Vauluse: Bédoin), 2010c:397 (Sweden: Södermanland: Jordbro); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:499 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Gogala, 2011:16 (Slovenia: Gorjansko); Józán, 2011:180 (in checklist of Sphecidae *sensu lato* of Hungary); Protsenko and Drozdovskaya, 2011:91 (Ukraine: Mikolaiv Oblast': Bugskiy Guard National Park); Theunert, 2011a:20 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:183 (Germany: records from Hessen actually refer to *Miscophus ater*); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (first record from Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Johansson, 2013:22 (Sweden: Gotland: island of Stora Karlsö); A. Scholz and Liebig, 2013:22 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:1172 (in annotated catalog of aculeate wasps of Belorussia); Bitsch, 2014:404 (France: Aude: Laprade, Montredon-des-Corbières, Preixan; Haut-Rhin: Niederhergheim); Hellqvist, Abenius, and Norén, 2014:92 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Józán, 2014:132 (Croatia: Meka Draga: Kruševo, Tribanj Krušćica); Mokrousov and Vafin, 2014:58 (Russia: Republic of Tatarstan); Olszewski, Wiśniowski, and Szczepko, 2014:65 (Poland: miscellaneous locality records); Yıldırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Blažej, Macek, and Trýzna, 2016:122 (Czech Republic: České Švýcarsko = Bohemian Switzerland National Park); Bleidorn, Gerth, Hopfe, et al., 2016:10 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Stolle and Saure, 2016:923 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Antropov, 2017b:241 (in catalog of Crabroninae of Russia); Fresno, 2017:151 (Spain: León, Madrid, Segovia, and Zamora provinces); Lett, 2018:203 (France: Loir-et-Cher: Gièvres at 47°16'39"N 1°41'52"E); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 345 (reference to original description, geographic distribution); Akulov, Proshchalykin, and Mokrousov, 2020:48 (Russia: central Krasnoyarsk Krai); Cassar, Mifsud, and Schmid-Egger, 2020a:76 (Malta: Fawwara and Mellieħa); Cross, Baldock, and Wood, 2021:49 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yıldırım, 2021:70 (in catalog of Crabronidae of Turkey); Olszewski, Wiśniowski, and Ljubomirov, 2021:94 (in commented list of Sphecidae *sensu lato* of Poland); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:297 (in revision of Sphecidae *sensu lato* of Europe); Kaplan and Yıldırım, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution); Olszewski, Sparks, Twerd, and Wiśniowski, 2024:5 (central Poland: common in river valleys: no specific localities, not endangered); Kochetkov and Korsun, 2025:9 (Russia: Zabaikalskiy Krai: Daurskiy Nature Reserve).

### 119. *nigricans* Cameron

*Miscophus nigricans* Cameron, 1907a:1010, ♀. Holotype or syntypes: ♀, India: Maharashtra: Matheran (BMNH). – Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Girish Kumar, Mawadda, Terine, and Amal, 2024:590 (in key to *Miscophus* of Indian subcontinent).

### 120. *nigrescens* (Rohwer)

*Miscophinus nigrescens* Rohwer, 1909a:125, ♀. Holotype: ♀, USA: Colorado: Garfield County: Rifle (USNM). – **As *Niteloapterus nigrescens***: Krombein *in* Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera). – **As *Miscophus nigrescens***: R. Bohart and Menke, 1976:319 (new generic assignment, in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera).

**121. *nigriceps* (Rohwer)**

*Miscophinus nigriceps* Rohwer, 1911b:587, ♀. Holotype: ♀, USA: California: Santa Monica (USNM). – **As *Niteloapterus nigriceps***: Krombein in Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera). – **As *Miscophus nigriceps***: R. Bohart and Menke, 1976:319 (new generic assignment, in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera).

**122. *nigripes* Honoré**

*Miscophus manzonii* Gribodo var. *nigripes* Honoré, 1944b:140, ♀. Holotype or syntypes: ♀, Egypt: no specific locality (USNM). – **As *Miscophus nigripes***: de Andrade, 1954:86 (new status, in revision of Palearctic *Miscophus* of *helveticus* group); Pulawski, 1964:128 (Egypt: Abu Rawash, Edfu, Ghiza, Kom Osheim, Luxor, Saqqara, Tell-el-Amarna, Wadi Digla); Osborn and Krombein, 1969:16 (northwestern Sudan: Gebel 'Uweinat: Wadi Ain el Brins); de Beaumont, Bytinski-Salz and Pulawski, 1973:19 (Israel); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Radović, 1985:65 (sting apparatus analyzed); Guichard, 1991a:340 (Jordan); Roche and Zalut, 1994:116 (Egypt: Sinai Peninsula); Roche, 2007a:94 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

*Miscophus rubriventris* Honoré var. *nigripes* Honoré, 1944b:142, ♀, primary homonym of *Miscophus manzonii* var. *nigripes* Honoré, 1944b:140. Holotype: ♀, Egypt: Abu Rawash near Cairo (USNM). Synonymized with *Miscophus nigripes* Honoré, 1944:140 by de Andrade, 1954:86.

*Miscophus lotus* de Andrade, 1954:73, ♀, ♂. Holotype: ♀, Egypt: Cairo (Univ. Coimbra). Synonymized with *Miscophus nigripes* Honoré by de Andrade, 1954:86. – Dollfuss, 1989:10 (paratype in NHMW).

**123. *nigriventris* Kazenas**

*Miscophus nigriventris* Kazenas, 1992b:105, ♀, ♂ (as *nigriventris* in main description, but *nigriventris* in Russian and English abstracts and in legend of Figure 2). Holotype: ♀, Kazakhstan: 5 km northeast of Aktyubinsk (ZIN). – Esenbekova and Kazenas, 2000:39 (southeastern Kazakhstan: no specific locality); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia, 2002a:83 (geographic distribution, collecting localities in Kazakhstan), 2004d:32 (Kazakhstan: Atyrau)

**124. *niloticus* Honoré**

*Miscophus niloticus* Honoré, 1944b:131, ♀. Holotype: ♀, Egypt: Hawamdieh (USNM). – de Andrade, 1960:130 (in revision of isolated *Miscophus*); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Roche, 2007a:98 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

**125. *nitidior* de Beaumont**

*Miscophus nitidior* de Beaumont, 1968a:267, ♀, ♂. Holotype: ♀, Canary Islands: Gran Canaria: Maspalomas (BMNH). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Báez and Ortega, 1978:192 (Canary Islands); Wolf, 1980:73 (Canary Islands); Hohmann, La Roche, Ortega, and Barquín, 1993:226 (detailed locality records from Canary Islands); Schmid-Egger, 2002c:1634 (in revision of *Miscophus* of Canary Islands); Ljubomirov, 2008:257 (may be a junior synonym of *Miscophus eatoni*).

**126. *nobilis* de Andrade**

*Miscophus nobilis* de Andrade, 1960:54, ♀. Holotype: ♀, Morocco: Casablanca (RMNH); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**127. *numidus* de Beaumont**

*Miscophus numidus* de Beaumont, 1968b:166, ♀, ♂. Holotype: ♀, Algeria: Oran: La Stidia (MNHN, Granger coll.). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**128. *obscuritarsis* Pulawski**

*Miscophus obscuritarsis* Pulawski, 1964:120, ♀, ♂. Holotype: ♀, Egypt: Maadi near Cairo (originally W.J. Pulawski coll., now CAS). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Roche and Zalat, 1994:116 (Egypt: Sinai Peninsula); Roche, 2007a:95 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

**129. *occidentalis* de Andrade**

*Miscophus occidentalis* de Andrade, 1960:62, ♀. Holotype: ♀, Morocco: Agadir (Lausanne). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**130. *oraniensis* Brauns**

*Miscophus oraniensis* Brauns, 1906:58, ♀, ♂. Lectotype: ♀, South Africa: Free State: Hoopstadt (TMP), designated by Lomholdt, 1985:62. – Arnold, 1923c:31 (in revision of southern African *Miscophus*), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Lomholdt, 1985:62 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:38 (paralectotype in Bulawayo Museum).

*Miscophus rhodesianus* R. Turner, 1917f:297, ♀, ♂. Lectotype: ♀, Zimbabwe: Bulawayo (SAM), designated by Lomholdt, 1985:62. Synonymized with *Miscophus oraniensis* Brauns by Lomholdt, 1985:62. – Arnold, 1923c:32 (in revision of southern African *Miscophus*) 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:31. (in checklist of world Sphecidae).

**131. *othello* Balthasar**

*Miscophus othello* Balthasar, 1954a:48, ♀. Holotype: ♀, Cyprus: Yermasoyia River (originally V. Balthasar coll., now NMPC). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**132. *paolorosai* Schmid-Egger**

*Miscophus paolorosai* Schmid-Egger, 2011b:552, ♀, ♂. Holotype: ♀, United Arab Emirates: Um al-Quwain at 25°32'N 55°32'E (ZMHU). – Schmid-Egger and Al-Jahdhami, 2022:322, 324 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 330 (Oman, comparison with *Miscophus grangeri*).

**133. *papyrus* de Andrade**

*Miscophus papyrus* de Andrade, 1954:42, ♀. Holotype: ♀, Egypt: Cairo (ZMHU). – de Andrade, 1954:85 (Egypt); de Beaumont, 1956a:205 (Libya), 1958b:66 (Algeria: Tassili des Ajjer); Pulawski, 1964:123 (Egypt: Abu Rawash, Kom Ombo, Kom Osheim, Maadi; description of ♂); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Roche, 2007a:95 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger, 2011b:551 (in key to *Miscophus* of Arabian Peninsula), 557 (first record from United Arab Emirates: Al-Ajban, Dubai/al-Awir, Um al-Quwain, Wadi Bih, Wadi Maidaq), 558 (color photograph of female); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:352 (in new catalog of Sphecidae of Saudi Arabia); Schmid-Egger, 2014:584 (United Arab Emirates: Sharjah Desert Park); Atbaei, Fallahzadeh, and Ljubomirov, 2015:14 (first record from Iran: Fars Province); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:67 (Iran: known from Fars Province); Gadallah, 2020b:40 (in list of aculeate wasps of Arabian Peninsula); Ben Khedher, Yildirim, and Braham, 2021a:60 (first record from Tunisia: Kebili; Janouara: Rass Elain at

33°42'2.3"N 8°59'26.4"E); Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 336 (Oman, Saudi Arabia: locality records).

### 134. *pardoi* de Andrade

*Miscophus pardoi* de Andrade, 1954:40, ♀, ♂. Holotype: ♀, Morocco: Ixmoart (MNCN Madrid). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Al-Houty, 1989:160 (Kuwait: Sulabikhat), 1997:161 (Kuwait: no specific locality); Gadallah, 2020b:40 (in list of aculeate wasps of Arabian Peninsula); Schmid-Egger and Al-Jahdhami, 2022:339 (record from Kuwait by Gadallah, 2020b most likely refers to *Miscophus luteoabdominalis*).

### 135. *pharaonis* Arnold

*Miscophus pharaonis* Arnold, 1940:131, ♂. Holotype: ♂, Egypt: Fayum (Bulawayo). – de Andrade, 1960:128 (in revision of *Miscophus bicolor* species group); Pulawski, 1964:119 (Egypt: Edfu, Luxor); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Hancock, Chahwanda, and Mhlanga, 1995:38 (holotype in Bulawayo Museum); Roche, 2007a:97 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger, 2011b:551 (in key to *Miscophus* of Arabian Peninsula), 557 (first record from United Arab Emirates: Wadi Wurayah), 558 (color photograph of female), 2014:584 (United Arab Emirates); Gadallah, 2020b:41 (in list of aculeate wasps of Arabian Peninsula); Schmid-Egger and Al-Jahdhami, 2022:322, 325 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 325 (Israel, Oman, Yemen: locality records).

*Miscophus frater* Honoré, 1944:135, ♂. Holotype: ♂, Egypt: km 53 on Cairo – Fayum road, probably Kom Osheim (USNM). Synonymized with *Miscophus pharaonis* by de Andrade, 1960:128.

As *Miscophus aegyptius*: Honoré, 1944:144 (Egypt), corrected to *Miscophus pharaonis* by de Andrade, 1960:128.

### 136. *portoi* de Andrade

*Miscophus portoi* de Andrade, 1956b:14, ♀, ♂. Holotype: ♀, Portugal: Azenhas do Mar near Lisboa (Univ. Coimbra). – Ceballos, 1959:230 (in supplement to catalog of Spanish Sphecidae); Diniz, 1959:31 (Portugal: Azenhas do Mar, Fontanelas), 1964:4 (Portugal: Azenhas do Mar, Lisboa, Troia); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Gayubo and Mingo, 1988:86 (Portugal: type locality); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:337 (in Sphecid Fauna of Western Europe); Cross, Baldock, and Wood, 2021:49 (in catalog of Sphecidae *sensu lato* of Portugal); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:302 (in revision of Sphecidae *sensu lato* of Europe).

### 137. *postumus* Bischoff

*Miscophus postumus* Bischoff, 1921:1, ♀, ♂. Syntypes: Germany: Brandenburg: Niederlehme near Königswusterhausen and Bundesland Berlin: Berlin (ZMHU). – Noskiewicz, 1924b:181 (Poland: Hołosko near Lwów, now Ukraine: L'viv); van der Vecht, 1926:118 (diagnosis); Bischoff *in* Schmiedeknecht, 1930:675 (in keys to Hymenoptera of North and Central Europe); Bondroit, 1934:60 (first record from Belgium: Solbosch); Drogoszewski, 1939:165 (Poland: Betchów in Łowicz District); Šnoflák *in* Zavadil and Šnoflák, 1948:46 (in key to Sphecidae of Czechoslovakia, not yet found in Czechoslovakia); Wolf, 1959b:23 (Germany: Nassau); de Andrade, 1960:56 (in revision of *Miscophus bicolor* species group); Noskiewicz and Puławski, 1960:117 (in key to Polish Sphecidae); Oehlke, 1970:720 (Democratic Germany); Tumšs, 1970:82 (first record from Latvia: Ropaži); Balthasar, 1972:187 (in Sphecid Fauna of Czechoslovakia: can be expected in the country); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Pulawski, 1978:227, 228 (in key to Sphecidae of European part of USSR); Skibińska, 1982:123 (Poland:

Warszawa area); Dollfuss, 1983b:11 (in catalog of Sphecidae of Austria: Niederösterreich: Oberweiden), 1988:25 (Austria: Oberweiden, collected in 1932); Jacobs and Oehlke, 1990:122 and 169 (not collected in Democratic Germany after 1960); Dollfuss, 1991:116 (in key to Sphecidae of North and Central Europe); Budrys, 1992:31 (in list of Sphecidae of Lithuania: Nerionga); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Ljubomirov, 1995a:77 (first record from Bulgaria); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Celary, 1997:58 (in checklist of Animals of Poland); Ljubomirov, 1997:121 (first record from Bulgaria: Rhodope Mountains: Arda range); Schmidt and Schmid-Egger, 1997:19 (in checklist of German Sphecidae, as *posthumus*); F. Burger, Saure, and Oehlke, 1998:28 (Germany: in list of Sphecidae of Brandenburg), 33 (endangered); Dollfuss, Gusenleitner, and Bregant, 1998:514 (Austria: Burgenland: Zurndorf); Blösch, 2000:245 (in Sphecid Fauna of Germany); Shkuratov, 2000:59 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Ohl et al., 2001:140 (distribution in Germany by provinces); Schmid-Egger and Bitsch in Bitsch et al., 2001:322 (in Sphecid Fauna of Western Europe; first record from France: Pyrénées-Atlantiques: Biarritz); Beron, 2004:840 (Bulgaria, eastern Rhodope Mountains: Arda Hut, citation of Ljubomirov, 1997:121); Shkuratov, 2004a:77 (Russia: Rostov Oblast': Yelanskaya), 2004b:167 (Russia: Rostov Oblast': Gosudarstvennyi Muzei-Zapovednik M.A. Sholokhova); Skibińska in Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Wiśniowski, 2004:45 and 60 (in checklist of Polish Sphecidae); Saure, 2005:17 (Germany: Berlin); Gorobchishin, 2006:112 (Ukraine: Cherkasy Oblast': Kaniv Nature Reserve); Jacobs, 2007:102, 104 (in key to Crabronidae of Germany); Saure, 2007:82 (Germany: in checklist of Aculeata of Brandenburg); Szczepko and Wiśniowski, 2009:70 (Poland: Spała Landscape Park); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: extremely rare); Shorengo and Kononov, 2010:21 (Ukraine: Donetsk Oblast': Slavyanskiy District: Krupskaya sovkhov); Olszewski, Wiśniowski, and Szczepko, 2014:65 (Poland: miscellaneous locality records); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European *Miscophus*), 345 (reference to original description, geographic distribution); Olszewski, Wiśniowski, and Ljubomirov, 2021:94 (in commented list of Sphecidae *sensu lato* of Poland); Schmid-Egger and Bitsch in Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:286 (in revision of Sphecidae *sensu lato* of Europe) (in revision of Sphecidae *sensu lato* of Europe); Olszewski, Sparks, Twerd, and Wiśniowski, 2024:5 (central Poland: common in river valleys: no specific localities, vulnerable).

### 138. *prasanthi* Girish Kumar

*Miscophus prasanthi* Girish Kumar in Girish Kumar, Mawadda, Terine, and Amal, 2024:595, ♂. Holotype: ♂, India: Tamil Nadu: Coimbatore District: Kullnadimedu (Zoological Survey of India, Western Ghat Regional Centre, Kozhikode, India). – Girish Kumar, Mawadda, Terine, and Amal, 2024:590 (in key to *Miscophus* of Indian sub-continent).

### 139. *pretiosus* Kohl

*Miscophus pretiosus* Kohl, 1884a:351, ♀. Holotype or syntypes: ♀, Greece: Ionian Islands: island of Corfu: no specific locality (NHMW). – Kohl, 1885:220 (in key to western Palearctic *Miscophus*), 231 (in revision of western Palearctic *Miscophus*), 233 (in checklist of world *Miscophus*); Ed. André, 1888:213 (in revision of Sphecidae of Europe and Algeria), 19\* (bibliographic references); Dalla Torre, 1897:698 (in catalog of world Hymenoptera); Giordani Soika, 1944:8 (first record from Italy: Sicilia: Fiumetorto); nec Honoré, 1944:129 (= *mochii*); de Andrade, 1953a:15 (in revision of *Miscophus* of Cyprus), 1954:33 (in revision of *Miscophus helveticus* group); de Beaumont, 1954a:63 (Italy), 1957b:137 (northern Iran); Pulawski, 1958a:185 (Bulgaria: Kniazhevo near Sofia, Sandanski); de Beaumont, 1965a:54 (Greece), 1967a:333 (Turkey); Balthasar, 1972:188 (in Sphecid Fauna of Czechoslovakia: can be expected

in the country); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Pulawski, 1978:227, 228 (in key to Sphecidae of European part of USSR); Dollfuss, 1989:10 (type material in NHMW); Pagliano, 1990:108 (in catalog of Italian Sphecidae); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Shkuratov, 2000:59 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:317 (in Sphecidae Fauna of Western Europe); Kazenas, 2002a:83 (geographic distribution, collecting localities in Kazakhstan); Shkuratov, 2002b:141 (Russia: Rostov Oblast': Rostovskiy Nature Reserve at 46°27'N 42°41'E), 2004:78 (Russia: Rostov Oblast'), 2004b:167 (Russia: Rostov Oblast': Gosudarstvennyi Muzey-Zapovednik M.A. Sholokhova); Pagliano and Negrisolo, 2005:400 (in Sphecidae Fauna of Italy); Standfuss and Standfuss, 2006b:98 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Ljubomirov and Yildirim, 2008:233 (in catalog of Crabronidae of Turkey); Mokrousov, 2010a:62 (Russia: Nizhniy Novgorod Oblast': no specific localities), 2010b:100 (Russia: Nizhniy Novgorod Oblast': no specific localities); Tüzün and Yüksel, 2010:4472 (Turkey: Niğde Province); Yıldıırım, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Rezaei and Fallahzadeh, 2015:10 (Iran: Fars: Kaf-tarak at 29°34'N 52°41'E and Shiraz at 29°36'N 52°28'E); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:67 (Iran: known from Fars and Mazandaran provinces); Mokrousov, Proshchalykin, Aliyev, and Maharramov, 2019:13 (Azerbaijan: Nakhichevan Autonomous Republic); Turrisi, Altadonna, Lo Cascio, Nobile, and Selis, 2020:730 (Italy: Aeolian Archipelago: island of Vulcano); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:281 (in revision of Sphecidae *sensu lato* of Europe); Can, 2022:222 (incomplete 1r-m and 2m-cu crossveins); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

#### 140. *primogeniti* de Andrade

*Miscophus primogeniti* de Andrade, 1954:76, ♀. Holotype: ♀, Canary Islands: Gran Canaria: Cruz de Tejada (MNHN). – de Beaumont, 1968a:263 (Canary Islands: Gran Canaria); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Báez and Ortega, 1978:192 (Canary Islands); Wolf, 1980:73 (Canary Islands); Hohmann, La Roche, Ortega, and Barquín, 1993:227 (detailed locality records from Canary Islands); Schmid-Egger, 2002c:1634 (in revision of *Miscophus* of Canary Islands).

As *Miscophus eatoni*: Giner Marí, 1945b:361 (Canary Islands: Gran Canaria: El Carrizal), corrected to *Miscophus primogeniti* by de Andrade, 1954:76.

#### 141. *pseudochrysis* Simon Thomas

*Miscophus pseudochrysis* Simon Thomas, 1995b:129, ♀, ♂. Holotype: ♀, Senegal: 25-35 km south of Richard Toll (LUW). – Schmid-Egger and Al-Jahdhami, 2022:322, 324 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 331 (Israel: Arava Valley: Iddan at 30.807°N 35.298°E, Hazeva, Mezad Aqrabbim 45km SE Beer Sheva; Senegal: Mdzugan).

#### 142. *pseudolusitanicus* Schmid Egger

*Miscophus pseudolusitanicus* Schmid-Egger *in* Schmid-Egger and Al-Jahdhami, 2020:325, ♀. Holotype: ♀, Yemen: Al Kadan at 15.25°N 43.25°E (Ch. Schmid-Egger personal collection, Berlin, Germany). – Schmid-Egger and Al-Jahdhami, 2022:322 (in key to *Miscophus* of Arabian Peninsula and southern Israel).

#### 143. *pseudomimeticus* de Andrade

*Miscophus pseudomimeticus* de Andrade, 1960:81, ♀. Holotype: ♀, Tunisia: Tozeur (RMNH). – de Beaumont, 1968a:266 (Canary Islands: Fuerteventura, Gran Canaria); R. Bohart and Menke, 1976:319 (in checklist of world

Sphecidae); Báez and Ortega, 1978:192 (Canary Islands); Hohmann, La Roche, Ortega, and Barquín, 1993:228 (detailed locality records from Canary Islands); Schmid-Egger, 2002c:1635 (in revision of *Miscophus* of Canary Islands); Roche, 2007a:97 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Ben Khedher, Yildirim, Braham, and Chaaban, 2019:191 (known from Tunisia: Tozeur Province).

#### 144. *pseudonotogonia* Brauns

*Miscophus pseudonotogonia* Brauns, 1899:399, ♀, ♂. Lectotype: ♀, South Africa: Eastern Cape Province: Algoa Bay near Port Elizabeth (TMP), designated by Lomholdt, 1985:91. – Arnold, 1923c:28 (in revision of southern African *Miscophus*), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Lomholdt, 1985:91 (in revision of southern African Miscophini, as *pseudonotogonius*).

#### 145. *pulcher* de Andrade

*Miscophus pulcher* de Andrade, 1953a:21, ♀, ♂. Holotype: ♀, Cyprus: Yermasoyia Hills (Univ. Coimbra). – de Andrade, 1960:115 (in revision of *Miscophus bicolor* species group); de Beaumont, 1960a:21 (Greece: island of Rhodes); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Gorobchishin, 2006:112 (Ukraine: Sumy Oblast: village Vakiliivshchyna); Kaplan and Yildirim, 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

#### 146. *pulcherrimus* Lomholdt

*Miscophus pulcherrimus* Lomholdt, 1985:118, ♂. Holotype: ♂, Namibia: Kombat (BMNH).

#### 147. *punctatissimus* Lomholdt

*Miscophus punctatissimus* Lomholdt, 1985:83, ♂. Holotype: ♂, South Africa: Western Cape Province: Matjiesfontein (BMNH).

#### 148. *punicus* de Andrade

*Miscophus punicus* de Andrade, 1954:70, ♀. Holotype: ♀, Algeria: Biskra (MNHN). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

#### 149. *quettaensis* Nurse

*Miscophus quettaensis* Nurse, 1903b:7, ♀, ♂. Syntypes: Pakistan: Quetta (BMNH). – Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Girish Kumar, Mawadda, Terine, and Amal, 2024:590 (in key to *Miscophus* of Indian subcontinent).

#### 150. *qaboosi* Schmid-Egger and Al-Jahdhami

*Miscophus qaboosi* Schmid-Egger and Al-Jahdhami, 2022:330, ♀, ♂. Holotype: ♀, Oman: Al Mudhaibi: Samad Ashan at 22.844°N 58.170°E (Ch. Schmid-Egger personal collection, Berlin, Germany). – Schmid-Egger and Al-Jahdhami, 2022:322, 324 (in key to *Miscophus* of Arabian Peninsula and southern Israel).

#### 151. *rasilis* Kazenas

*Miscophus rasilis* Kazenas, 1992b:106 and 107. Nomen nudum. – Kazenas, 1992c:27 (Turkmenistan: Repetek Nature Reserve).

*Miscophus rasilis* Kazenas, 1993c:29, ♀, ♂. Holotype: ♀, Turkmenistan: Repetek (ZIN). – Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia)

**152. *repetekus* Kazenas**

*Miscophus repetekus* Kazenas, 1992b:100, 102, and 103. Nomen nudum. – Kazenas, 1992c:27 (Turkmenistan: Repetek Nature Reserve).

*Miscophus repetekus* Kazenas, 1993c:30, ♀♂. Holotype: ♀, Turkmenistan: Repetek (ZIN). – Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia).

**153. *reticulatus* Schmid-Egger**

*Miscophus reticulatus* Schmid-Egger, 2014:584, ♀, ♂. Holotype: ♀, Israel: Kibbutz Ketura in Arava Valley at 30°58'N35°04'E (Ch. Schmid-Egger coll., Berlin). Paratypes: Israel, United Arab Emirates. – Schmid-Egger, 2014:585 (color photographs of female); Gadallah, 2020b:41 (in list of aculeate wasps of Arabian Peninsula); Schmid-Egger and Al-Jahdhami, 2022:322, 325 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 326 (Oman: Al Wusta: Wadi Ronub at 18.802°N 56.340°E).

**154. *rothneyi* Bingham**

*Miscophus rothneyi* Bingham, 1897:215, ♀. Holotype ♀, India: Rajasthan: Jeypore, now Jaipur (OXUM). – Rothney, 1903:104 (India: West Bengal: Barrackpore); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Nazarova, 1998:41 (Tajikistan: Tigrovaya Balka Nature Reserve); Mawadda and Girish Kumar, 2023:114 (in checklist of Crabroninae of Northern India); Girish Kumar, Mawadda, Terine, and Amal, 2024:590 (in key to *Miscophus* of Indian subcontinent).

**155. *rufigaster* Simon Thomas**

*Miscophus rufigaster* Simon Thomas, 1995b:126, ♀. Holotype: ♀, Ivory Coast: 30-35 km north of Korhogo (ZMA).

**156. *rufiventris* Tsuneki**

*Miscophus rufiventris* Tsuneki, 1972e:404, ♀, ♂. Holotype: ♀, Mongolia: Southern Gobi aymag: Takhilgaul (TMB). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Nemkov, 1990c:81 (Russia: Buryat Republic); Antropov, 2017b:241 (in catalog of Crabroninae of Russia).

**157. *sabulosus* Lomholdt**

*Miscophus sabulosus* Lomholdt, 1985:77, ♀, ♂. Holotype: ♀, Namibia: Swakopmund (BMNH). – S. Gess and F. Gess, 2003:107 (Namibia: visiting flowers of *Zygophyllum clavatum* Schltr. and Diels and *Zygophyllum stapfii* Schinz, Zygophyllaceae).

**158. *sallitus* de Andrade**

As *Miscophus* n. sp. – de Beaumont, 1956d:4 (Cabo Verde Islands), corrected to *Miscophus sallitus* by de Andrade, 1960:109.

*Miscophus sallitus* de Andrade, 1960:109, ♂. Holotype: ♂, Cabo Verde Islands: Sal: "Thomas and Wiering, 1993:405 (Cape Verde Islands: island of Sal); Simon Thomas, 1995b:129 (description of ♀).

**159. *sauditus* Gadallah and Edmardash**

*Miscophus sauditus* Gadallah and Edmardash in Abu el-Ghiet, Gadallah, Gasib, Al-Fifi, and Edmardash, 2023:162, ♂.

Holotype: ♂, Saudi Arabia: Farasan Island at 16°41.8'N 42°7.3333'E (Efflatoun Bey collection, Entomology Department, Faculty of Science, Cairo University, Giza, Egypt). – Gadallah and Abu El-Ghiet, 2024:87 (Saudi Arabia: Jazan Province: Farasan)

**160. *scintillans* de Andrade**

*Miscophus scintillans* de Andrade, 1956b:25, ♀. Holotype: ♀, Morocco: Agadir (Lausanne). – de Beaumont, 1957a:144 (Morocco: Agadir); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**161. *sericeus* Radoszkowski**

*Miscophus sericeus* Radoszkowski, 1876b:134, sex not stated. Holotype or syntypes: Egypt: no specific locality (Kra-ków). – Magretti, 1884a:249 (Sudan), 1884c:589 (Sudan: Sawakin); Kohl, 1885a:230, footnote (original description copied), 233 (in checklist of world *Miscophus*); Ed. André, 1888:216 (in revision of Sphecidae of Europe and Algeria), 19\* (bibliographic references); Dalla Torre, 1897:698 (in catalog of world Hymenoptera); nec Giner Marí, 1945:239 (= *Miscophus dispersus*); de Andrade, 1954:28 (in revision of Palearctic *Miscophus* of *helveticus* group); de Beaumont, 1957a:143 (Morocco), 1960a:246 (Libya); Pulawski, 1964:119 (Egypt: Tell-el-Amarna); de Beaumont, Bytinski-Salz and Pulawski, 1973:18 (Israel); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Roche and Zalut, 1994:116 (Egypt: Sinai Peninsula); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia); Roche, 2007a:95 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger, 2011b:551 (in key to *Miscophus* of Arabian Peninsula), 557 (first record from United Arab Emirates: north of Ajman), 560 (color photograph of female), 2014:586 (United Arab Emirates); Gadallah, 2020b:41 (in list of aculeate wasps of Arabian Peninsula); Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel), 336 (Israel, Jordan, Oman: locality records).

As *Miscophus ctenopus*: Guiglia, 1933:362 (Libya: Cyrenaica) and Honoré, 1944:137 (in revision of Egyptian *Miscophus*), both corrected to *Miscophus sericeus* by de Andrade, 1954:28.

**162. *seyrigi* Arnold**

*Miscophus seyrigi* Arnold, 1945:135, ♀, ♂ (as *Seyrigi*, incorrect original capitalization. Syntypes: Madagascar: Bekily (MNHN). – Arnold, 1945:135 (in key to *Miscophus* of Madagascar); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Lomholdt, 1985:79 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:39 (paratype in Bulawayo Museum); Pulawski, 2003b:797 (in checklist of Malagasy Sphecidae); Madl, 2014a:975 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

**163. *similis* F. Morawitz**

*Miscophus similis* F. Morawitz, 1897a:149, ♀. Holotype or syntypes: Transcaspi: no specific locality (ZIN; destroyed?). – de Andrade, 1954:84 (original description copied); Pulawski, 1964:130 (Egypt: Sinai Peninsula: Sainte Catherine Monastery; redescription); de Beaumont, Bytinski-Salz and Pulawski, 1973:19 (Israel); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Roche and Zalut, 1994:116 (Egypt: Sinai Peninsula); Esenbekova and Kazenas, 2000:39 (southeastern Kazakhstan: no specific locality); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 170 (nesting habits), 2002a:83 (geographic distribution, collecting localities in Kazakhstan); Roche, 2007a:95 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae,

Sphecidae, and Crabronidae); Kazenas, 2013b:496 (southeastern Kazakhstan: Sortogay on Sharyn River 20 km west of mouth of Sharyn River); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution).

#### 164. *sirius* de Andrade

*Miscophus sirius* de Andrade, 1956b:37, ♀, ♂. Holotype: ♀, Libya: Tripolitania: Garian (BMNH). – de Beaumont, 1960:247 (Libya); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

#### 165. *slossonae* (Ashmead)

*Niteloaterus slossonae* Ashmead in Kohl, 1897:498, ♂. Holotype or syntypes: ♂, USA: Florida: Lake Worth (USNM). – Ashmead, 1899d:250 (in checklist of North American Crabronidae); Krombein, 1954c:10 (Florida, color variation, prey); Krombein and Evans, 1954:232 (Florida); Krombein and Kurczewski, 1963:140 (nesting habits); Krombein, 1964b:13 (prey); Krombein in Muesebeck, Krombein, and Townes, 1951:944 (in catalog of North American Hymenoptera); Krombein, 1958f:187 (in supplement to catalog of North American Hymenoptera); Kurczewski, 1969:494 (discussion of biological observations by Krombein and Evans, 1954, and Krombein and Kurczewski, 1963); Piek and Spanjer, 1986:186 (in list of Sphecidae with known prey). – **As *Miscophus slossonae***: Krombein and Evans, 1955:231 (Florida; nest, prey); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera); Kurczewski, 1982:71 (nesting habits); Ardila-Garcia, Umphrey, and Gregory, 2010:339 (genome size dataset).

*Niteloaterus slossonae* Ashmead, 1897a:23, ♂. Objective synonym of *Niteloaterus slossonae* Ashmead in Kohl, 1897.

*Niteloaterus slossonae barberi* Krombein, 1954b:12, ♀. Holotype: ♀, USA: Florida: Orange County: Orlando (USNM). Synonymized with *Niteloaterus slossonae* by Krombein, 1958f:187. – Krombein and Evans, 1954:232 (Florida: Orlando); Krombein, 1964c:14 (nest, prey); Kurczewski, 1969:493 (discussion of biological observations by Krombein and Kurczewski, 1963, and Krombein, 1964); Evans, 1964b:283 (description of larva). – **As *Miscophus slossonae barberi***: R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera); Kurczewski, 1982:70 (nesting habits); Steiner, 1986:104 (references to publications on nesting habits).

#### 166. *soikai* de Beaumont

*Miscophus soikai* de Beaumont, 1952c:196, ♀. Holotype: ♀, Algeria: Hoggar: Tintahour (Lausanne). – de Andrade, 1956a:1 (should not be placed in separate genus); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

#### 167. *sordidatus* Arnold

*Miscophus sordidatus* Arnold, 1945:137, ♀, ♂. Holotype: ♀, Madagascar: Bekily (MNHN). – Arnold, 1945:135 (in key to *Miscophus* of Madagascar); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Lomholdt, 1985:98 (in revision of southern African Miscophini); Pulawski, 2003b:797 (in checklist of Malagasy Sphecidae); Madl, 2014a:975 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records).

#### 168. *specularis* de Andrade

*Miscophus specularis* de Andrade, 1960:117, ♀. Holotype: ♀, Tajikistan: Kondara Canyon 35 km north of Dushanbe (BMNH). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Guichard, 1991a:340 (Jordan); Kazenas, 1978b:141 (in key to Sphecidae of Kazakhstan and Central Asia), 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia).

**169. *spinifer* Lomholdt**

*Miscophus spinifer* Lomholdt, 1985:123, ♀, ♂. Holotype: ♀, Namibia: Agathe Beach 6 mi. north of Lüderitz (UC Davis).

**170. *spurius* (Dahlbom)**

*Larra spuria* Dahlbom, 1832:56, ♀. Syntypes: Sweden: Bahusia near Uddewalla, Kjöflinge, Medhamra Äng, Wadstena Löt (Lund). – **As *Miscophus spurius***: Dahlbom, 1844:237 (new generic assignment, in revision of Sphecidae and Pompilidae), 1845:466 (in key to *Miscophus* of Europe); nec Kirschbaum, 1853:44 (= *Miscophus ater*); F. Smith, 1856:312 (in catalog of Hymenoptera in British Museum); Ruthe and Stein, 1857:315 (Germany: Berlin area); Schenck, 1857:195 (Germany: in revision of fossorial wasps of Nassau Region); F. Smith, 1857a:34 (England), 1857d:40 (Great Britain: Kent: Sandown Castle, determination tentative); Taschenberg, 1858:97 (in key to Sphecidae of Germany); Schenck, 1860:149 (Germany: Nassau Region); Brischke, 1862:103 (Germany: Preussen Province, now Poland: Pomorze Region); Funk, 1864:156 (Germany: Bayern: Bamberg); Taschenberg, 1866:203 (in revision of Hymenoptera of Germany); Kirchner, 1867:215 (in catalog of European Hymenoptera); Schenck, 1867a:356 (Germany: Nassau Region); Thomson, 1870:242 (as synonym of *Miscophus niger*); Beuthin, 1876:231 (Germany: Hamburg area); Kohl, 1880:178 (Austria: Tirol, and Italy: Trentino – Alto Adige), 1883e:673 (Switzerland); Sickmann, 1883:86 (Germany: Niedersachsen: Wellingholthausen); Ed. André, 1888:215 (in revision of Sphecidae of Europe and Algeria), 19\* (bibliographic references); Brischke, 1888b:99 (Germany: Preussen Province, now Poland: Pomorze Region); Kohl, 1888b:728 (Austria: Tirol, now Italy: Alto Adige); Kohl, 1893a:31 (Austria: Niederösterreich); Sickmann, 1893:83 (Germany: Niedersachsen: Iburg, misspelled *spurins*, *niger* treated as a synonym); Westerlund, 1893:26 (Russia: Karelian Republic: northern shore of Lake Ladoga); Borries, 1897:67 (review of known nesting habits); Dalla Torre, 1897:698 (in catalog of world Hymenoptera); Mocsáry, 1897:77 (Hungary, three localities, including Buccari, now Bakar in today's Croatia); Aurivillius, 1904:276 (in revision of Swedish Sphecidae); Kubes, 1905:85 (Czech Republic: Kolín); Adlerz, 1910:43 (Sweden; nesting habits); de Gaulle, 1908:121 (in catalog of French Hymenoptera); Jansson, 1922:24 (Sweden: island of Öland); Berland, 1925d:126 (in Sphecid Fauna of France); van der Vecht, 1926:116 (in key to *Miscophus* of Netherlands), 117 (locality records); Berland, 1928b:178 (France: Ardennes: Charleville, Charente-Inférieure: Saintes, Pyrénées-Orientales: Banyuls-sur-Mer, and department d'Allier); Bouwman, 1928b:30 (in revision of Sphecidae of Netherlands); Crèvecoeur, 1929:364 (nesting habits); Crèvecoeur and Maréchal, 1929:167 (first record from Belgium: several localities); Grandi, 1930:341 (Italy: Toscana: Maremma); Maréchal, 1930b:1 (cocoon structure, description of mature larva and of pupa); Bischoff in Schmiedeknecht, 1930:676 (in keys to Hymenoptera of North and Central Europe); Pulkkinen, 1931:100 (in revision of Sphecidae of Finland); Bondroit, 1932:38 (Belgium: Forêt de Soignes, Solbosch); Crèvecoeur and Maréchal, 1932:70 (in catalog of Belgian Hymenoptera); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); Bondroit, 1933:31 (Belgium: Bruxelles), 1934:60 (Belgium: Bruxelles, Ostende); Giner Marí, 1934:134 (Spain); Jansson, 1934:289 (Sweden); Bernard, 1935:65 (France: Var: Fréjus area); Forsius in Forsius and Hellén, 1935:11 (in checklist of Hymenoptera of Finland); Maneval, 1935:75 (France: Haute-Loire: Puy); Crèvecoeur and Maréchal, 1936:252 (in catalog of Belgian Hymenoptera); Drogoszewski, 1936:129 (Poland: Łowicz); Dulac, 1937:14 (France: Saône-et-Loire: Chassey); Zavadil, Šustera, and Bat'a, 1937:184 (in catalog of Sphecidae of Czechoslovakia); Balthasar, 1941b:112 (Czech Republic: eastern Moravia); Schneid, 1941:1038 (Germany: Bayern: Bamberg area); Bat'a, 1942:85 (Czech Republic); Balthasar, 1943:41 (Czech Republic: Moravia: Zlin area); Benno, 1943:68 (Netherlands); Giner Marí, 1943a:208 (in Sphecid Fauna of Spain); Bat'a, 1944a:25 (Czech Republic); Giordani Soika, 1944:8 (Italy: Sicilia: Siracusa); Balthasar, 1948:141 (Slovakia: Kovačov, Parkan); Šnoflák in Zavadil and Šnoflák,

1948:46 (in key to Sphecidae of Czechoslovakia); Ceballos, 1949:101 (Spain); Cavro, 1950:36 (France: Département du Nord); Fahlander, 1954:251 (Sweden: Gästrikland Region); Puławski, 1954:106 (Poland: Błędów); Aerts, 1955:61 (Germany: Rheinland; as *Misephus*); Teschner, 1955:57 (Germany: Nordrhein-Westfalen: Hohe Ward near Münster); Vergne, 1955:5 (France: Auvergne); Vogrin, 1955:38 (Yugoslavia); Ceballos, 1956:391 (in catalog of Hymenoptera of Spain); Bajári, 1957a:59 (in key to Hungarian Sphecidae); Benno, 1958b:12 (in review of Dutch Sphecidae); Valkeila, 1959a:182 (Finland: north to Oulu); Wolf, 1959b:23 (Germany: Nassau); de Andrade, 1960:110 (in revision of *Miscophus bicolor* species group); Noskiewicz and Puławski, 1960:118 (in key to Polish Sphecidae); Valkeila, 1962b:66 (southwestern Finland); Scobiola-Palade, 1965:109 (first record from Romania: Mediaş Region: Valea Lungă); Benno, 1967:36 (in checklist of Sphecidae of Netherlands); Niedl and Deneš, 1967:77 (Czech Republic: Třeboň area); Scobiola-Palade, 1967b:43 (Romania); Oehlke, 1970:720 (Democratic Germany); Tumšs, 1970:82 (Latvia); Lefeber, 1971a:17 (Netherlands: Waubach and Weert); Balthasar, 1972:184 (in Sphecid Fauna of Czechoslovakia); Niedl and Deneš, 1972:152 (Czech Republic: Třeboň area); Lefeber, 1973:152 (Netherlands: Budel; Belgium: Bree); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Lefeber, 1976:151 (Netherlands: Maasduintjes between Bergen and Wellse Hut); Lomholdt, 1976:256 (in Sphecid Fauna of Fennoscandia and Denmark); Simon Thomas and Wiering, 1976:109 (Netherlands: IJsselmeer Polders); Haeseler, 1977a:25 (Germany: Niedersachsen: Veenberge 14 km southwest of Papenburg); Kazenas, 1978b:141 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:227, 228 (in key to Sphecidae of European part of USSR); Leclercq, Gaspar and Verstraeten, 1979:map 1416 (Belgium); Lefeber, 1979:12 (in checklist of Sphecidae of Netherlands), 81 (Netherlands: distribution map); Schmidt, 1981:190 (Germany: first record from Baden-Württemberg: Karlsruhe, Sandhousen Nature Reserve); Skibińska, 1982:123 (Poland: Warszawa area); Dollfuss, 1983b:11 (in catalog of Sphecidae of Austria); Józán, 1983:100 (Hungary); Riemann, 1983:85 (Germany: Bremen-Daverden area); Haack, Tschartnke, and Vidal, 1984:130 (Germany: Hamburg area); Haeseler, 1984:110 (Germany: Mölln and Oldenburg areas); Józán, 1985a:181 (Hungary), 1985b:57 (Hungary south of Lake Balaton), 83 (ecological and zoogeographic characteristics); Nilsson, 1985:43 (Sweden); Westrich and Schmidt, 1985b:111 (Germany: endangered in Baden Württemberg); Brechtel, 1986:61 (Germany: Südpfalz: Sandbuckel); Józán, 1986:370 (Hungary: Kiskunság National Park); Nilsson, 1986:87 (Sweden); Holtappels, 1987:26 (Germany: Nordrhein Westfalen: Effelder Waldsee); Riemann, 1987b:40 (Germany: Niedersachsen: Nature Reserve Dünengebiet near Neumühlen and Voßberge); Tormos and Jimenez, 1987b:316 (Spain: Valencia Province: Dehesa de El Saler); Vikberg, 1986:76 (Finland); Karsai, 1988:100 (Hungary: Kiskunság National Park); Nilsson, 1988:98 (Sweden), 1989:48 (Sweden); Pádr in Šedivý, 1989a:168 (in checklist of Czechoslovakian Sphecidae); Pankevich, Belyavskaya, Molchanova, Shlyakhtenok, and Blinov, 1989:95 (Belorussia: Berezinskiy Nature Reserve); Jacobs and Oehlke, 1990:129 (illustration of male genitalia), 1990:196 (new records from Democratic Germany); Pádr, 1990:75 (Czech Republic: Praha area); Pagliano, 1990:108 (in catalog of Italian Sphecidae); Day, 1991:xvi (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:116 (in key to Sphecidae of North and Central Europe); van der Smissen, 1991:97 (northwestern Germany); Budrys, 1992:31 (in list of Sphecidae of Lithuania); Józán, 1992a:229 (Hungary: Béda-Karapanca Protected Area, as *surius*), 1992b:173 (Hungary: Boronka-melléki Protected Area); Józán, 1992c:289 (Hungary: Zselic Hills); Kuhlmann, 1993:77 (Germany: recorded from Westfalen by Teschner, 1955); van der Smissen, 1993:129 (northwestern Germany); Theunert, 1994c:44 (Germany: summary of records from Niedersachsen and Bremen); Jansen and Kaluza, 1995:7 (Germany: endangered in Sachsen); Józán, 1995:105 (Hungary: projected Duna-Dráva National Park); Negrisoló in Minelli, Ruffo, and La Posta, 1995b:10 (in catalog of Italian fauna); Schmid-Egger,

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Risch, and Niehuis, 1995:196 (Germany: summary of records from Rheinland-Pfalz); Jakubzik, 1996:253 (Germany: Köln); Minoranskiy and Shkuratov, 1996:81 (Russia: Rostov Oblast'); Saure, 1996:503 (Germany: Berlin-Pankow: sewage irrigation field); Schmid-Egger, Schmidt, and Doczkal, 1996:377 (Germany: Baden-Württemberg: endangered); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Witt, 1996:106 (Germany: Brandenburg), 109 (locality records); Celary, 1997:58 (in checklist of Animals of Poland); Schnee, 1997:99 (Germany: Sachsen); Schmidt and Schmid-Egger, 1997:19 (in checklist of German Sphecidae); F. Burger, Saure, and Oehlke, 1998:28 (Germany: in list of Sphecidae of Brandenburg); Gorobchishin, 1998:49 (Ukraine: Kiev and surroundings); Józán, 1998:311 (Hungary: Duna-Dráva National Park); van der Smissen, 1998:63 (Germany: Schleswig-Holstein: Prezelle, Segrahner Berg); Pauly, 1999:109 (in catalog of Belgian aculeates); Blösch, 2000:245 (in Sphecid Fauna of Germany); Jacobs, 2000:8, 16 (Germany: Mecklenburg-Vorpommern: close to extinction); Józán, 2000:108 (Hungary: Bakony Mountains); Mokrousov, 2000b:30 (Russia: Nizhniy Novgorod Oblast'); Zettel, 2000:28 (Austria: Marchfeld); Józán, 2001:279 (Hungary: Somogy County); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 170 (review of known biology); Ohl et al., 2001:140 (distribution in Germany by provinces); Schmid-Egger and Bitsch in Bitsch et al., 2001:333 (in Sphecid Fauna of Western Europe); van der Smissen, 2001:61 (Germany: Schleswig-Holstein: threatened with extinction); Józán, 2002:53 (Hungary: Mecsek Mountains); Shlyakhtenok and Skibińska, 2002:33 (Belorussia: no specific locality); Söderman and Vikberg, 2002:51 (in list of Aculeata of Finland); Józán, 2003:227 (Hungary: Látrányi Pusztá Nature Conservation Area); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:67 (Germany: in catalog of wasps and bees of Bayern.); Schmid-Egger, 2003:755 (records from Italy by Negrisol, 1995, and Pagliano, 1990, are probably erroneous); von der Heide and Metscher, 2003:102 (Germany: Niedersachsen: Emsland area); Wickl, Voith, Mandery, Weber, Kraus, Bausenwein, and Blösch, 2003:195 (Germany: Bayern: no longer endangered); Abenius, 2004:40 (Sweden: Norrbottens: Luleå area); Esser, Jakubzik, and Sonnenburg, 2004:18 (Germany: Nordrhein-Westfalen); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:263 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Gorobchishin and Protsenko, 2004:39 (Ukraine: Kherson Oblast': Chernomorskiy Nature Reserve); Klein and Lefeber in Peeters, van Achterberg, et al., 2004:401 (in Wasp and Ant Fauna of Netherlands); Kuhlmann, 2004:230 (Germany is responsible for preservation of this species on its territory); Skibińska in Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:356 (in catalog of Polish Crabronidae); Stolle et al., 2004:372 (Germany: Sachsen-Anhalt: last collected in 1915); van Achterberg and Peeters, 2004:31 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:45 and 60 (in checklist of Polish Sphecidae); Zettel, 2004:5 (Austria: Niederösterreich: Lasse; Bergsten, Ekerholm, Gabrielsson, Hellquist, Petersson, Werner, Ström, Chauvet, and Dalecky, 2005:16 (Sweden: Västerbotten: Bjuröklubbs Nature Reserve); Haeseler, 2005:629 (Germany: Niedersachsen: Steller Heide near Bremen); Hallin, 2005:16 (Sweden: Örebro County: Hällefors); Pagliano and Negrisol, 2005:398 (in Sphecid Fauna of Italy); Riemann and Hohmann, 2005:561 (Germany: Niedersachsen: city of Bremen and adjacent area); Saure, 2005:17 (Germany: Berlin); Straka, 2005a:398 (critically endangered in Czech Republic); Theunert, 2005a:17 (Germany: in checklist of Sphecidae of Niedersachsen and Bremen); Gorobchishin, 2006:112 (Ukraine: Kyiv Oblast': Kruglyk near Kyiv); Liebig, 2006:39 (Germany: Sachsen: Muskauer Heide); Shlyakhtenok, 2006:111 (Belorussia: Polesye Radiological Nature Reserve); Bitsch, Dollfuss, Bouček, Schmidt, Schmid-Egger, Gayubo, Antropov, and Barbier, 2007:461 (recorded from Italy by Pagliano and Negrisol, 2005, but presence in Italy needs confirmation); Jacobs, 2007:103, 104 (in key to Crabronidae of Germany); Józán, 2007:179 (Hungary: Zselic hills); Nemkov,

2007c:997 (in Appendix to Key to identification of Sphecidae of Far East of Russia); Saure, 2007:82 (Germany: in checklist of Aculeata of Brandenburg Land); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia), 223 (all reliable records from Czech Republic listed); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia); Theunert, 2008:55 (Germany: map of distribution in Niedersachsen and Bremen); Nemkov, 2009b:82 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:237 (Russia: Primorskiy Krai: Lazovsky Nature Reserve); Esser, Fuhrmann, and Venne, 2010:37 (Germany: in checklist of aculeates of Nordrhein-Westfalen); Rudoiskatel', 2010:153 (southern Ural Mountains); Schmid-Egger, 2010a:17 (in red list of Aculeata of Germany: very rare); van der Smissen, 2010a:344 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records); Theunert, 2011a:20 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:61 (Germany: Hessen: strongly endangered); Nemkov, 2012c:439 (in catalog of Crabronidae of Russian Far East); Saure, 2012b:229 (Germany: Berlin-Spandau: Spandauer Forst); A. Scholz and Liebig, 2013:22 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:172 (in annotated catalog of aculeate wasps of Belorussia); Hellqvist, Abenius, and Norén, 2014:92 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Voigt, 2015:69, 70 (Germany: Schleswig-Holstein: Sorgwohld area); Reemer and Peeters, 2016:10 (Netherlands: Hulshorsterzand); Stolle and Saure, 2016:924 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Antropov, 2017b:241 (in catalog of Crabroninae of Russia); Schmid-Egger and Straka, 2019:336, 337 (in key to Central, Northern, and Eastern European Miscophus); 345 (reference to original description, geographic distribution); Olszewski, Wiśniowski, and Ljubomirov, 2021:95 (in commented list of Sphecidae *sensu lato* of Poland); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:298 (in revision of Sphecidae *sensu lato* of Europe); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution); Olszewski, Sparks, Twerd, and Wiśniowski, 2024:5 (central Poland: common in river valleys: no specific localities, not endangered).

### 171. *stevensoni* Arnold

*Miscophus stevensoni* Arnold, 1923c:27, ♀, ♂ (as *Stevensoni*, incorrect original capitalization). Lectotype: ♀, Zimbabwe: Sanyati River (Bulawayo), designated by Lomholdt, 1985:74. – Arnold, 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Lomholdt, 1985:74 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:39 (type material in Bulawayo Museum).

### 172. *syriacus* de Andrade

*Miscophus syriacus* de Andrade, 1960:85, ♀. Holotype: ♀, Syria: Douma near Damascus (originally A. Mochi coll., now Torino). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Murai and Amr, 2011:119 (recorded from Syria by de Andrade, 1960).

### 173. *tagiurae* de Andrade

*Miscophus tagiurae* de Andrade, 1954:47, ♀. Holotype: ♀, Libya: Tagiura (BMNH). – de Beaumont, 1956a:205 (Libya), 1960b:246 (Libya). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Dollfuss, 1989:10 (paratype in NHMW, as *tragiurae*).

### 174. *temperatus* Balthasar

*Miscophus temperatus* Balthasar, 1954a:48, ♂. Holotype: ♂, Cyprus: Zakaki (originally V. Balthasar coll., now NMPC). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**175. *texanus* (Ashmead)**

*Miscophinus texanus* Ashmead, 1898:189, ♀. Holotype: ♀, USA: Texas: Bosque County (USNM). – Ashmead, 1899d:251 (in checklist of North American Crabronidae). – *As Nitelopterus texanus*: Krombein in Muesebeck, Krombein, and Townes, 1951:944 (in catalog of North American Hymenoptera); Cazier and Mortenson, 1965c:26 (nesting habits, determination tentative); Kurczewski, 1969:501 (discussion of biological observations by Cazier and Mortenson, 1965). – *As Miscophus texanus*: R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera); Rust, Menke, and Miller, 1985:47 (California: Channel Islands).

**176. *timberlakei* (Bridwell)**

*Hypomiscophus timberlakei* Bridwell, 1920g:394, ♀. Holotype: ♀, USA: California: Riverside County: Idylwild (USNM). – *As Nitelopterus timberlakei*: Krombein in Muesebeck, Krombein, and Townes, 1951:944 (new generic assignment, in catalog of North American Hymenoptera). – *As Miscophus timberlakei*: R. Bohart and Menke, 1976:319 (new generic assignment, in checklist of world Sphecidae); Krombein, 1979b:1639 (in catalog of North American Hymenoptera); S. Frommer, 1988:94 (California: Riverside County: Deep Canyon).

**177. *tinctus* de Andrade**

*Miscophus tinctus* de Andrade, 1956b:32, ♀, ♂. Holotype: ♀, Morocco: Tinerhir (Lausanne). – de Beaumont, 1957a:145 (Morocco); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**178. *transcaspicus* de Andrade**

*Miscophus transcaspicus* de Andrade, 1960:82, ♀. Holotype: ♀, Turkmenistan: Ashkhabad (MNHN). – Kazenas, 1972b:159 (Kazakhstan); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Kazenas, 1978b:141 (in key to Sphecidae of Kazakhstan and Central Asia); Esenbekova and Kazenas, 2000:39 (southeastern Kazakhstan: no specific locality); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:83 (geographic distribution, collecting localities in Kazakhstan), 2004d:32 (Kazakhstan: Atyrau); Nemkov, 2007c:997 (in Appendix to Key to identification of Sphecidae of Far East of Russia); Kazenas, 2008a:102 (southeastern Kazakhstan: 20 km north of Aydarly in Sarytaukum desert); Nemkov, 2008b:20 (in catalog of Crabronidae of Asiatic Russia), 2009b:83 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Antropov, 2017b:241 (in catalog of Crabroninae of Russia); Kochetkov and Korsun, 2025:9 (Russia: Zabaikalskiy Kray: Daurskiy Nature Reserve).

**179. *tricolor* Kazenas**

*Miscophus tricolor* Kazenas, 1992b:102, ♀, ♂. Holotype: ♀, Kazakhstan: 11 km south of Panfilov (ZIN). – Esenbekova and Kazenas, 2000:39 (southeastern Kazakhstan: 30 km south-southwest of Koktal on Ili River); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:83 (geographic distribution, collecting localities in Kazakhstan), 2002a:83 (geographic distribution, collecting localities in Kazakhstan), 2013b:496 (southeastern Kazakhstan: 30 km south-southwest of Koktal on Ili River); Mokrousov, Shlyakhtenok, and Grebennikov, 2016:27 (first record from Russia: Astrakhan' Oblast': near Zamyany village at 46.816°N 47.616°E and near Lapas village at 46.976°N 47.846°E; Kalmykia: Davsna sands 20 km east of Khulhuta at 46.292°N 46.672°E); Antropov, 2017b:241 (in catalog of Crabroninae of Russia); Mokrousov, 2017d:59 (South-East of European Russia: no specific locality).

**180. *tshardarensis* Kazenas**

*Miscophus tshardarensis* Kazenas, 1992b:101, ♀, ♂. Holotype: ♀, Kazakhstan: 5-8 km southwest of Chardara (ZIN). – Esenbekova and Kazenas, 2000:39 (southeastern Kazakhstan: Borandysu, 30 km south-southwest of Koktal on Ili

River); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:83 (geographic distribution, collecting localities in Kazakhstan), 2013b:496 (southeastern Kazakhstan: 30 km south-southwest of Kortal on Ili River).

#### 181. *turanicus* Kazenas

*Miscophus turanicus* Kazenas, 1992b:104, ♀, ♂. Holotype: ♀, Kazakhstan: 3 km south of Irghiz (ZIN). – Esenbekova and Kazenas, 2000:39 (southeastern Kazakhstan: Borandysu, 30 km northeast of Suzak); Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:83 (geographic distribution, collecting localities in Kazakhstan), 2004d:32 (Kazakhstan: Atyrau).

#### 182. *turkmenicus* Kazenas

*Miscophus turkmenicus* Kazenas, 1993c:33, ♀. Holotype: ♀, Turkmenistan: Akhcha-Kuyma (ZIN). – Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia).

#### 183. *turneri* Lomholdt

*Miscophus turneri* Lomholdt, 1985:93, ♀, ♂. Holotype: ♀, South Africa: Western Cape Province: Milnerton (BMNH).

#### 184. *venustus* de Beaumont

*Miscophus venustus* de Beaumont, 1969:90, ♀, ♂. Holotype: ♀, Turkey: Urfa: Birecik (Lausanne). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Ljubomirov and Yildirim, 2008:233 (in catalog of Crabronidae of Turkey); Yildirim, Ljubomirov, and Lelej, 2014:13 (distribution in Turkey by biogeographic provinces), 19 (is an endemic of Turkey); Koçak and Kemal, 2015:147 (in checklist of Hymenoptera of Turkey); Kaplan and Yildirim, 2021:70 (in catalog of Crabronidae of Turkey), 2023:1685 (in checklist of Sphecidae *sensu lato* of Turkey).

#### 185. *verecundus* Arnold

*Miscophus verecundus* Arnold, 1924:27, ♂. Holotype: ♂, Zimbabwe: Sawmills (Bulawayo). – Arnold, 1929c:400 (description of ♀), 1930:8 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Lomholdt, 1985:74 (in revision of southern African Miscophini); Hancock, Chahwanda, and Mhlanga, 1995:39 (holotype in Bulawayo Museum).

#### 186. *verhoeffi* de Andrade

*Miscophus verhoeffi* de Andrade, 1952:33, ♀, ♂. Holotype: ♀, Portugal: Cascais (Univ. Coimbra). – de Andrade, 1960:66 (in revision of *Miscophus bicolor* species group); Diniz, 1959:31 (Portugal: seven localities), 1960:32 (Portugal: eleven localities); Ceballos, 1964:93 (in supplement to catalog of Spanish Sphecidae); Diniz, 1964a:3 (Portugal: eleven localities); R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae); Gayubo, 1983d:203 (Spain: Cádiz: San Roque), 1984c:371 (Portugal: El Algarve Province), 1986c:34 (Spain: Zamora Province); Gayubo and Heras, 1986:47 (Spain: Valladolid Province; floral records); Gayubo and Sanza, 1986:53 (Spain: Burgos, Soria); Gayubo, 1987a:117 (Spain: Ciudad Real Province); Gayubo and Mingo, 1988:86 (Spain); Torregrosa, Gayubo, Tormos, and Asís, 1993:19 (Spain: Alicante Province); Tormos, Asís, and Gayubo, 1994:188, 210 (Spain: Albacete Province); Gonzáles, Gayubo, and Torres, 1998:74, 75 (Spain: Valladolid Province); Gayubo, García, Torres, and González, 1999:90 (Spain: Soria Province); González, Gayubo, and Torres, 1999:355 (Spain: Valladolid: Viana de Cega); Gayubo, González, and Torres, 2000:186 (Spain: Salamanca Province); Schmid-Egger and Bitsch *in* Bitsch et al., 2001:322 (in Sphecid Fauna of Western Europe); Cruz-Sánchez, Gayubo, González, and Torres, 2005:220 (Spain: Salamanca: San Martín del Castañar); Gayubo, González, Tormos, and Asís, 2008:138 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia; Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Gayubo, González, Tormos, and Asís, 2009:363

(Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Torres, 2009:624 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Cross, Baldock, and Wood, 2021:49 (in catalog of Sphecidae *sensu lato* of Portugal); Schmid-Egger and Bitsch *in* Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:287 (in revision of Sphecidae *sensu lato* of Europe).

**ssp. nitidus de Andrade**

*Miscophus verhoeffi nitidus* de Andrade, 1960:69, ♀, ♂. Holotype: ♀, Morocco: Kenitra (originally P. Verhoeff coll., now RMNH). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**187. wieriingi Simon Thomas**

*Miscophus wieriingi* Simon Thomas, 1995b:127, ♀. Holotype: ♀, Senegal: 25-35 km south of Richard Toll (LUW).

**188. yemenensis Schmid-Egger**

*Miscophus yemenensis* Schmid-Egger *in* Schmid-Egger and Al-Jahdhami, 2022:338, ♀. Holotype: ♀, Yemen: Al Lahima (RMNH) – Schmid-Egger and Al-Jahdhami, 2022:323 (in key to *Miscophus* of Arabian Peninsula and southern Israel).

**189. yermasoyensis Balthasar**

*Miscophus yermasoyensis* Balthasar, 1954a:47, ♂. Holotype: ♂, Cyprus: Yermasoyia River (originally V. Balthasar coll., now NMPC). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**190. zakakiensis Balthasar**

*Miscophus zakakiensis* Balthasar, 1954a:44, ♂. Holotype: ♂, Cyprus: Zakaki (originally V. Balthasar coll., now NMPC). – R. Bohart and Menke, 1976:319 (in checklist of world Sphecidae).

**191. zergericus Kazenas**

*Miscophus zergericus* Kazenas, 1993c:32, ♀, ♂. Holotype: ♀, Turkmenistan: Zergher 10 km south of Chardjow (ZIN). – Kazenas, 2001b:34 (in checklist of Sphecidae of Kazakhstan and Central Asia).

**sp.**

Hartman, 1905:55 (nesting habits); von Schulthess, 1926b:219 (Tunisia); van der Vecht, 1928:93 (Netherlands: Meijndel sand dunes); Giner Marí, 1945b:360 (Morocco: Muley Rechid), 363 (Western Sahara), 1945c:857 (India); de Beaumont, 1950f:409 (two species, Algeria), 1952c:195 (Algeria: Hoggar); Hertzog, 1954:101 (France: Bouches-du-Rhône: Camargue); Nouvel and Ribaut, 1958:14 (France: Pyrénées-Orientales: Banyuls-sur-Mer, sp. aff. *niger*); Compte Sart, 1959:136 (Spain: Majorca); de Beaumont, 1960a:21 (Greece: island of Rhodes; sp. near *mavromoustakisi*), 1960b:246 (four species; Libya); F. Williams, 1960a:305 (California); de Beaumont, 1967b:510 (South Africa); 1969:92 (Turkey); Suárez, 1969:32 (Spain: Almería Province); Kazenas, 1972b:159 (Kazakhstan); Guichard, 1980:228 (Oman); Roche, 1981:3 (in checklist of Sphecidae of United Arab Emirates); Rust, Hanks, and Bechtel, 1983:406 (Nevada: Churchill County: Sand Mountain); Lomholdt, 1985:103 (South Africa; sp. aff. *coeruleus*); Parks, 1986:35 (California: Torrey Pine State Reserve); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Blades and Maier, 1996:72 (Canada: British Columbia: Osoyoos - Mount Kobau area at 49°05'N 119°40'W); Sugar *et al.*, 1998:15 (Canada: southern Ontario); Weissmann and Kondratieff, 1999:78 (Colorado: Great Sand Dunes National Monument); S. Gess and F. Gess, 2003:107 (Namibia: visiting flowers of *Zygophyllum simplex* L., Zygophyllaceae); Kazenas, 2004b:105 (Kazakhstan: western Tien Shan); Cambra, 2005:101 (Panamá); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 46 (Mexico: Tamaulipas); Ka-

zenas, 2007a:91 (Kazakhstan: Akmala Oblast': Kurgandzhin Nature Reserve and vicinity); Gayubo, González, Tormos, and Asís, 2008:138 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia, sp. aff. *ater* and sp. aff. *eatoni*); Belkheir, 2009:17 (France: Pyrénées-Orientales: commune d'Eyne); Kazenas, 2012b:169 (Kazakhstan: Korgalzhin State Nature Reserve); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:352 (in checklist of Sphecidae of Saudi Arabia, species of *helveticus* group); Horta-Vega, Vanoye-Eligio, García-Gutiérrez, Coronado-Blanco, and Barrientos-Lozano, 2013:383 (Mexico: Tamaulipas: Ciudad Victoria: Cañón del Novillo); Ratzlaff, 2016:26 (first record from Canada: British Columbia: Southern Interior), 35 (British Columbia: Osoyoos); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:67 (Iran: East Azerbaijan Province); Magdalou, 2017:15 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Vallée d'Eyne); Gadallah, 2020b:41 (in list of aculeate wasps of Arabian Peninsula, two species).

#### NOMINA NUDA IN *MISCOPHUS*

- Miscophus allutaceus* Kohl: Dollfuss, 1989:10 (type material in NHMW).  
*Miscophus carroensis* Brauns: Dollfuss, 1989:10 (type material in NHMW).  
*Miscophus eatoni europaeus* Andrade: Diniz, 1964a:3 (Portugal: Aljustrel, Carcavelos, Cascais, Lisboa, Montijo, Rezende, Seixal, Tabuaço).  
*Miscophus guigliae* Guss. n. sp. (as *Guigliae*, incorrect original capitalization): Giordani Soika, 1939b:73 (Italy: Lido di Venezia).  
*Miscophus hispanicus* Mercet: Ceballos, 1943:364.  
*Miscophus insubricus* Spinola: A. Costa, 1867b:95 (as junior synonym of *Miscophus concolor* Dahlbom); Casolari and Casolari Moreno, 1980:114 (specimen in M. Spinola collection, Torino); Pagliano, 2011a:114 (specimen in M. Spinola collection, Torino, is *Miscophus concolor*).  
*Miscophus punicus* Gribodo: Penati and Mariotti, 2015:13 (reference to unpublished manuscript by Gribodo).  
*Miscophus sonorensis* Slansky: S. Frommer, 1988:94 (California: Riverside County: Deep Canyon).  
*Miscophus taeniatus* Gribodo: Penati and Mariotti, 2015:13 (reference to unpublished manuscript by Gribodo).  
*Miscophus tricolor* Kazenas: Kazenas, 1993c:31.  
*Miscophus unicolor*: Schummel, 1831:92. – Dalla Torre, 1897:699 (in catalog of world Hymenoptera).  
*Miscophus utricolor*: Casolari and Casolari Moreno, 1980:114 (specimens in M. Spinola collection, Torino); Pagliano, 2011a:114 (specimens in M. Spinola collection, Torino, are *Miscophus ater* and *Miscophus* sp.).  
*Miscophus venetianus* Guss. n. sp.: Giordani Soika, 1939b:73 (Italy: Lido di Venezia).

#### SPECIES DESCRIBED IN *MISCOPHUS* AND TRANSFERRED TO ANOTHER GENUS

*reptans* Arnold, 1962 = *Saliostethoides saltator* Arnold,