

**AMMOPHILA**

*Ammophila* W. Kirby, 1798:199. Type species: *Sphex sabulosus* Linnaeus, 1758, designated by International Commission on Zoological Nomenclature, 1946:571 (Opinion 180).

*Ammophylus* Latreille, 1802b:332. Lapsus or emendation of *Ammophila* W. Kirby, 1798.

*Miscus* Jurine, 1807:130, no included species. Type species: *Miscus campestris* (Latreille, 1809) [= *Ammophila campestris* Latreille, 1809], designataed by Shuckard, 1837:79 (one of the two species first included in *Miscus* by Latreille, 1809:54).

*Ammophilus* Latreille in Cuvier, 1829:322. Lapsus or emendation of *Ammophila* W. Kirby, 1798.

*Coloptera* Latreille, 1845:387. Type species: *Coloptera barbara* Lepeletier de Saint Fargeau, 1845, by monotypy.

*Argyrammophila* Gussakovskij, 1928a:7, as subgenus of *Ammohilla* Kby. [*sic*]. Type species: *Ammophila induta* Kohl, 1901, by original designation.

*Apynemia* Leclercq, 1961c:211, as subgenus of *Ammophila* W. Kirby. Type species: *Ammophila fallax* Kohl, 1884 [= *Ammophila hungarica* Mocsáry, 1883], by original designation.

Keys: Dreisbach, 1944:268 (Michigan); Alfieri, 1946 (Egypt); Leclercq, 1955h:80 (*Ammophila rubripes* and related species); de Beaumont, 1963b:7 (Palearctic species of *Ammophila nasuta* species group); Tsuneki, 1967j:9 (East Asia); Myartseva, 1971a (Turkmenistan); Alayo Dalmau, 1976:11 (Cuba); Guichard, 1988a:126 (Arabian Peninsula); Menke, 2004:772 (red-legged South American species); Danilov, 2014b:519 (Siberia).

Revisions: Kohl, 1906b (Palearctic Ammophilini); Roth, 1928 (North African Ammophilini); Dollfuss, 2013a (Palearctic Region and India), 2015a (Sub-Saharan Africa); Ch. Wang, Bashir, Q. Li, and Ma, 2018 (China), Menke, 2020 (North and Central America).

Stinging sequences, preying preceding nest construction, and nesting sites in *Podalonia* and *Ammophila*: Picard, 1925b

Species groups: *nigricans* species group (Menke, 1970:238), *procera* species group (Menke, 1964a:7), *urnaria* species group (Menke, 1966b:25), reviewed by Menke 2020.

Nest structure: Barth, 1910.

Structure of gastral segment I: Pulawski, 1965b:259.

Nest provisioning and parental investment: Field, 1992a, b (*Ammophila sabulosa*).

Sleeping aggregations: Vardy, 1995.

Review of known biology: Kazenas, 2001b:102.

**1. aberti Haldeman**

*Ammophila urnaria* Lepeletier de Saint Fargeau, 1845:381, ♀, junior primary homonym of *Ammophila urnaria* Dahlbom, 1843. Holotype or syntypes: ♀, Brazil: no specific locality (M. Spinola collection, Torino). Synonymized with *Ammophila aberti* by Menke, 1965c:1 and by Menke in Bohart and Menke, 1976:150 (as new synonymy). – Amarante, 2005a:14 (correction to his 2002 catalog); Pagliano, 2008:512 (holotype in M. Spinola collection, Torino).

NOTE: Synonymy with *aberti* is questionable because the latter does not occur in Brazil.

*Ammophila aberti* Haldeman, 1852:368, sex not stated. Holotype or syntypes: USA: Utah: Great Salt Lake Valley (lost: Fernald, 1931a:449). – Cresson, 1863:318 (in catalog of North American Hymenoptera); Patton, 1879d:353 (USA: northwestern Kansas); Snow, 1881:96 (in checklist of Hymenoptera of Kansas: Wallace County: no specific locality); Cresson, 1887:274 (in catalog of North American Hymenoptera); Dalla Torre, 1897:395 (in catalog of world Hymenoptera, as *alberti*); Ashmead, 1899d:354 (in checklist of North American Sphecidae, as *alberti*); Bridwell, 1899:209 (Kansas: no specific locality); Melander, 1903:160 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Snow, 1906:133 (Arizona); Salt, 1927:182 (stylopized specimens, as *alberti*; Arizona: Palmerlee and Tucson); Murray in Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera); Evans, 1959b:148 (description of larva), 1958e:451 (behavioral evolution), 1959d:454 (nesting behavior), 1963c:63 (nest closure); Powell, 1964b:244 (life cycle, male activities, mating, nest construction, prey: geometrid caterpillars, nest closure, parasites); Menke, 1965b:257 (Hicks, 1935b, correctly identified this species); G. Bohart, Nye, and Hawthorn, 1970:49 (Utah: Logan, onion pollinator); Hurd and Linsley, 1975:116 (Arizona: Cochise County: Douglas and Portal; New Mexico, Socorro County: Socorro; on flowers of *Larrea tridentata* (De Candolle) Coville, Zygophyllaceae); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Krombein, 1979b:1589 (in catalog of North American Hymenoptera); Zalom, Meyer, and Mason, 1979:239 (Arizona: Santa Rita Mountains; sympatric association with the bombyliids *Systropus angulatus ammophiloides* Townsend and *S. arizonicus* Banks); F. Parker, Tepedino, and Vincent, 1981:249 (nest provisioning); Rust, Hanks and Bechtel, 1983:406 (Nevada: Churchill County: Sand Mountain); Brockmann, 1985b:312 (nest closure summary); Parks, 1986:34 (California: Torrey Pines State Reserve); Steiner, 1986:98 (references to papers on nesting habits); Kingsley, Bailowitz, and Smith, 1987:18 (Arizona: Organ Pipe Cactus National Monument: Quitobaquito Springs area); Spofford, Kurczewski, and Downes, 1989:256 (references to publications on nest parasites *Hilarella hilarella* (Zetterstedt), *Metopia argyrocephala* (Meigen), and *Opsidia* sp., miltogrammine flies); Menke, 1994f:21 (Utah: Calf Creek Falls State Park); G. Scudder, 1994:75 (in checklist of rare and endangered invertebrates of British Columbia); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Ohl and Linde, 2003:149 (number of ovarioles); Jiménez-Jiménez, and Placios-Cardiel, 2008:227 (Mexico: Baja California Sur: La Paz area; nesting habits); Miller, Pearce, and O'Neill, 2009:3 (known to be parasitized by *Paraxenos lugubris* (Pierce), Strepsiptera); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Ratzlaff, 2016:28 (Canada: British Columbia: from Spencer and Wellington, 1948, Blades and Masier, 1992, and Scudder, 1994); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:81 (in revision of North and Central American *Ammophila*). – **As *Sphex aberti***: Mickel, 1918b:403 (new combination, in catalog of Nebraskan Sphecidae, as *alberti*); Hicks, 1932b:145 (nesting habits); Fernald, 1934:80 (in revision of North American and West Indian *Ammophila*); Murray, 1938:41 (re-description); Dreisbach, 1944:269, 270 (in key to *Ammophila* of Michigan); Strickland, 1947:129 (Canada: Alberta: Lethbridge, Medicine Hat); Spencer and Wellington, 1948:10 (British Columbia); Piek and Spanjer, 1986:189 (in list of Sphecidae with known prey).

*Ammophila tarsata* F. Smith, 1856:219. Substitute name for *Ammophila urnaria* Lepeletier de Saint Fargeau. – Dalla Torre, 1897:410 (in catalog of world Hymenoptera).

*Ammophila yarrowi* Cresson, 1875:713, ♂. Lectotype: ♂, USA: Colorado: Pueblo (ANSP), designated by Cresson, 1916:95. Synonymized with *Ammophila aberti* by Fernald, 1931a:449 (as *Sphex aberti*), and by Menke, 1965c:1 (as new synonym). – Williston, 1892:85 (nesting habits); W. Fox, 1894c:101 (Mexico: Baja California), 1895c:266 (Mexico: Baja California Sur); Dalla Torre, 1897:412 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae, as *yarrowii*); Melander, 1903:160 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); G. Peckham and E. Peckham, 1905:41 (nest construction and closure); G. Carpenter, 1930b:297 (nest closure).

*Sphex transversus* Fernald, 1934:141, ♂. Holotype: ♂, USA: Utah: Beaver Valley (originally H. Fernald collection, now USNM). Synonymized with *Ammophila aberti* by Murray, 1938:41, and Menke, 1965c:1 (as new synonym).

**2. abnormis Dollfuss**

*Ammophila abnormis* Dollfuss, 2013a:404, ♂. Holotype: ♂, Pakistan: Baluchestan: Gwal (BMNH). – Dollfuss, 2013a:402 (in key to *Ammophila* of Palearctic Region and India).

**3. acuta (Fernald)**

*Sphex acutus* Fernald, 1934:150, ♂. Holotype: ♂, USA: southern Arizona: no specific locality (originally H. Fernald collection, now USNM). – **As *Ammophila acuta***: Murray in Muesebeck, Krombein, and Townes, 1951:975 (new combination, in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae);

Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Ratzlaff, 2016:28 (first record from Canada: British Columbia: Southern Interior and Southern Interior Mountains), 39 (British Columbia: locality records); Menke, 2020:61 (in revision of North and Central American *Ammophila*); Menke, 2020:63 (in revision of North and Central American *Ammophila*).

#### 4. *adelpha* Kohl

As *Ammophila striata*: Kohl, 1884a:382 (description, China), corrected to *Ammophila adelpha* by Kohl, 1901d:152.

*Ammophila adelpha* Kohl, 1901:152, ♀. Lectotype: ♀, China: Sinkiang (as Dzhungaria): no specific locality, designated by Dollfuss, 2013a:405 (NHMW). – Kohl, 1906b:343 (in revision of Palearctic Ammophilini); Gussakovskij, 1934a:6 (northwestern China); de Beaumont, 1957b:129 (northern Iran; diagnostic characters); Kazenas, 1968b:342 (Kazakhstan: Mangyshlak Peninsula); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Kazenas, 1978b:36 (in key to Sphecidae of Kazakhstan and Central Asia); Dollfuss, 1989:7 (type material in NHMW); Kazenas, 1992c:25 (Turkmenistan: Repetek Nature Reserve), 1998b:158 (in Sphecid Fauna of Kazakhstan); Esenbekova and Kazenas, 2000:12 (southeastern Kazakhstan: 5–8 km east of Bakanas); Kazenas, 2001b:17 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:35 (geographic distribution, collecting localities in Kazakhstan), 2004b:100 (Kazakhstan: western Tien Shan Mountains), 2004d:28 (Kazakhstan: northern Caspian region), 2008a:98 (southeastern Kazakhstan: 50 km east of Chilik, near Kapchagay, near Bakanas); Danilov, 2010b:44 (distribution of Tethyan type); Dollfuss, 2013a:392, 393, 402, 403 (in key to *Ammophila* of Palearctic Region and India), 405 (in revision of *Ammophila* of Palearctic Region and India), 2013b:565 (locality records from Kazakhstan, Kyrgyzstan, and Uzbekistan); Kazenas, 2014a:132 (Kazakhstan: Karatau Mountain Range); Danilov, 2017b:211 (in catalog of Sphecidae s.s. of Russia); Danilov and Mokrousov, 2017a:110 (Russia: Kalmykia: near Hullhuta); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:14 (Iran: known from Semnan Province); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299, 302 (in key to *Ammophila* of China); Danilov, 2020:316 (specimens from Kazakhstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

#### 5. *aellos* Menke

*Ammophila aellos* Menke, 1966b:26, ♀, ♂. Holotype: ♂, Mexico: Jalisco: 8 mi. south of Guadalajara (UCD). – R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Menke, 2020:82 (in revision of North and Central American *Ammophila*).

#### 6. *afghanica* Balthasar

*Ammophila afghanica* Balthasar, 1957b:190, ♀, ♂ (♂ = *Ammophila sarekandana*). Holotype: ♀, Afghanistan: Badakhshan: Sarekanda (originally V. Balthasar collection, now NMPC). – R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Dollfuss, 2013a:394, 403 (in key to *Ammophila* of Palearctic Region and India), 406 (in revision of *Ammophila* of Palearctic Region and India); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan).

#### 7. *africana* Dollfuss

*Ammophila africana* Dollfuss, 2015a:318, ♂. Holotype: ♂, Kenya: Archer's Post at Evaso Ng'iro River: 0°39'N 37°41'E (CAS). Paratypes: Ethiopia, Ivory Coast, Senegal. – Dollfuss, 2015a:317 (in key to Sub-Saharan *Ammophila*), 2015b:413 (locality records from Ethiopia and Kenya).

#### 8. *albotomentosa* Morice

*Ammophila albotomentosa* Morice, 1900a:69, ♀, ♂. Syntypes: Algeria: Biskra (OXUM). Dollfuss (2013a) spoke of a holotype, but this cannot be regarded as designation of lectotype under Article 74.7 of the Code. – Kohl, 1906b:348 (in revision of Palearctic Ammophilini); Morice, 1911:73 (Algeria: Biskra); Roth, 1928:195 (in revision of North African Ammophilini); Leclercq, 1955h:84 (bibliographic references); de Beaumont, 1963b:20 (in revision of *Ammophila nasuta* species group); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Gayubo, 1985b:492 (Spain: Valencia: Gilet; redescription); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:77 (in Sphecid Fauna of Western Europe); Dollfuss, 2013a:387, 398 (in key to *Ammophila* of Palearctic Region and India), 407 (in revision of *Ammophila* of Palearctic Region and India), 2013b:566 (Tunisia: Gasfa); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:302 (in list of Tunisian Sphecidae *sensu stricto*); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:91 (in Sphecid Fauna of Europe).

#### 9. *altigena* Gussakovskij

*Ammophila altigena* Gussakovskij, 1930b:73, ♂. Holotype: ♂, Tajikistan: Sary-kol Range on Chinese border of Pamir [Tajikistan: Gorno-Badakhshanskiy Autonomous Region: near Akbaytal at 38°29'N 73°52'E according to Danilov, 2016:346] (ZIN). – R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Kazenas, 2001b:17 (in checklist of Sphecidae of Kazakhstan and Central Asia); Dollfuss, 2013a:400 (in key to *Ammophila* of Palearctic Region and India), 408 (in revision of *Ammophila* of Palearctic Region and India), 2013b:566 (locality records from Kazakhstan and Uzbekistan); Danilov, 2016:346 (holotype preserved in Zoological Institute, Sankt-Petersburg, Russia).

#### 10. *antenniferruginea* Yan and Q. Li

*Ammophila antenniferruginea* Yan and Q. Li, 2010:48, ♀. Holotype: ♀, China: Xingiang: Uygur Autonomous Region: Tuoli County (Academia Sinica). – Ch. Wang, Bashir, Q. Li, and Ma, 2018:300 (in key to *Ammophila* of China)

#### 11. *antoninae* Danilov

*Ammophila antoninae* Danilov, 2018:322, ♂. Holotype: ♂, Tajikistan: Lake Iskandekul at 39°04'N 68°21'E (ZIN).

#### 12. *antropovi* Dollfuss

*Ammophila antropovi* Dollfuss, 2013a:409, ♂. Holotype: ♂, Tunisia: 25 km south of Zarzis (OÖLM). – Dollfuss, 2013a:398 (in key to *Ammophila* of Palearctic Region and India), 2013b:566 (Tunisia: 25 km south of Zarzis); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:302 (in list of Tunisian Sphecidae *sensu stricto*).

#### 13. *aphrodite* Menke

*Ammophila aphrodite* Menke, 1964a:8, ♀, ♂. Holotype: ♂, USA: California: Riverside County: 10 mi. east of White Water (UCD). – R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Danilov, 2014:354 (a pair of paratypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Menke, 2020:107 (in revision of North and Central American *Ammophila*).

#### 14. *apicalis* Guérin-Méneville

*Ammophilus apicalis* Guérin-Méneville, 1835:pl. 70, Fig. 3, ♀, actually ♂. Holotype or syntypes: ♂, Cuba: no specific locality (MSNG). – Guérin-Méneville, 1844:435 (description); Guiglia, 1948b:179 (type in Genova Mus). – As *Ammophila apicalis*: F. Smith, 1856:224 (new combination, in catalog of Hymenoptera in British Museum); Cresson, 1863:318 (in catalog of North American Hymenoptera), 1865a:134 (Cuba); Girard, 1879:969 (morphology and distribution); Menke, 1964b:151 (synonymy, study of type, diagnostic characters), 1970:238 (member of *Ammophila nigricans* species group, diagnostic characters, distribution); Alayo Dalmau, 1973:185 (in catalog of Cuban Hymenoptera), 1976:11 (in key to Cuban *Ammophila*), 27 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Genaro and Sánchez Alonso, 1990c:1 (nesting behavior); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Fernández, Saríol, Vega, Ricardo, González, and Portuondo, 2002:46 (Cuba: Provincia Granma); Portuondo and Fernández, 2004:134 (Cuba: Sierra Maestra and Nipe-Sagua-Baracoa mountains); Genaro, 2006:51 (in checklist of Cuban Sphecidae and Crabronidae; other countries: Isla de la Juventud, Bahamas: Long Island, Jamaica).

*Ammophila guerinii* Dalla Torre, 1897:400 (as *guérinii*, incorrect diacritic mark). Unnecessary substitute name for *Ammophila apicalis* Guérin-Méneville, 1835, nec Brullé, 1839. – Ashmead, 1899d:354 (in checklist of North American Sphecidae), 1900:308 (in checklist of Caribbean Hymenoptera); Melander, 1903:161 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution). – As *Sphex guerinii*: Holland, 1917:294 (new combination, Cuba: Isla de Pinos, now Isla de la Juventud: Nueva Gerona); Fernald, 1934:57 (in revision of North American and West Indian *Ammophila*).

**15. arabica W.F. Kirby**

*Ammophila arabica* W.F. Kirby, 1900:24, ♀. Holotype: ♀, Yemen: Lahej near Aden (lost: Guichard, 1988a:129). – R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); El-Hawagry, Khalil, Sharaf, Fadl, and Aldawood, 2013:78 (Saudi Arabia: Al-Baha Province); Gadallah, 2020d:78 (in list of aculeate wasps of Arabian Peninsula).

**16. ardens F. Smith**

*Ammophila ardens* F. Smith, 1868b:247, ♀. Holotype or syntypes: ♀, Australia: Western Australia: Swan River (BMNH). – Froggatt, 1892:209 (in catalog of Australian Hymenoptera); Dalla Torre, 1897:395 (in catalog of world Hymenoptera); R. Turner, 1908:466 (Australia: Queensland: Mackay); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Cardale, 1985:229 (in catalog of Australian Sphecidae).

**17. areolata Walker**

*Ammophila areolata* Walker, 1871:19, ♀. Holotype or syntypes: ♀, Egypt: Sinai Peninsula: Pharaoh's Baths (destroyed). – Dalla Torre, 1897:395 (in catalog of world Hymenoptera); Kohl, 1906b:370 (original description copied); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Gadallah, 2020d:78 (in list of aculeate wasps of Arabian Peninsula).

**18. argyrocephala Arnold**

*Ammophila argyrocephala* Arnold, 1951:143, ♀. Syntypes: Ethiopia: River Errer, Meisso (BMNH). – Leclercq, 1955h:82 (bibliographic references); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Dollfuss, 2015a:313, 315 (in key to Sub-Saharan *Ammophila*), 319 (in revision of Sub-Saharan *Ammophila*), 2015b:414 (locality records from Ethiopia, Kenya, Mozambique, Namibia, South Africa, Tanzania, and Zimbabwe).

**19. arnoldi Dollfuss**

*Ammophila arnoldi* Dollfuss, 2015a:321, ♂. Holotype: ♂, South Africa: Western Cape Province: Knersflakte at 31°07'30"S 18°55'30"E (ZMHU). – Dollfuss, 2015a:315 (in key to Sub-Saharan *Ammophila*).

**20. arvensis Lepeletier de Saint Fargeau (preoccupied)**

*Ammophila arvensis* Lepeletier de Saint Fargeau, 1845:384, ♀, ♂, junior secondary homonym of *Ammophila arvensis* (Dahlbom, 1843), now *Ammophila pubescens*. Syntypes: North America: no specific locality (M. Spinola collection, Torino). – F. Smith, 1856:223 (in catalog of Hymenoptera in British Museum); Cresson, 1863:318 (in catalog of North American Hymenoptera), 1887:274 (in catalog of North American Hymenoptera); J. Smith, 1900:523 (in list of insects of New Jersey); Melander, 1903:160 (in key to North American *Ammophilini*), 163 (bibliographic references, geographic distribution); Murray *in* Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae, = *Ammophila procera* or *Podalonia*); Casolari and Casolari Moreno, 1980:101 (specimens in M. Spinola collection, Torino); Pagliano, 2008:517 (unpublished lectotype in M. Spinola collection, Torino). – **As *Sphex arvensis***: J. Smith, 1910:676 (new combination, in new list of insects of New Jersey, as *arvensis* Dahlb.); Rohwer, 1916b:682 (in catalog of Hymenoptera of Connecticut); Rohwer *in* Viereck, 1925:682 (in key to Sphecidae of Connecticut); J.Ch. Bradley, 1928:1012 (in catalog of New York Sphecidae).

**21. asiatica Tsuneki**

*Ammophila asiatica* Tsuneki, 1971k:166, ♀, ♂. Holotype: ♂, Mongolia: Uvs Aymag: Hödlon gol (TMB). – R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Nemkov *in* Nemkov, Kazenas, Budryns, et Antropov, 1995:387 (in key to Sphecidae of Russian Far East); Nemkov, 2008b:17 and 2009b:48 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Danilov, 2010b:45 (distribution of Scythian type); Dollfuss, 2013a:394, 404 (in key to *Ammophila* of Palearctic Region and India), 410 (in revision of *Ammophila* of Palearctic Region and India), 2013b:566 (Mongolia: locality records); Danilov, 2014a:426 (Russia: Siberia: Altay Republic, Buryatia, Tyva, Zabaikal'skiy Krai), 2014b:520, 521 (in key to Sphecidae s.s. of Siberia), 2017b:212 (in catalog of Sphecidae s.s. of Russia); Baghirov and Nesterovitch, 2019:45 (Russia: Western Siberia: Yamalo-Nenets Autonomous District: near Khanymey village); Danilov, 2020:316 (specimens from Russia: Tyva Republic, and Kazakhstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

**22. assimilis Kohl**

*Ammophila assimilis* Kohl, 1901d:150, ♀, ♂. Lectotype: ♀, Syria: no specific locality (NHMW), designated by Dollfuss, 2013a:411. – Kohl, 1906b:341 (in revision of Palearctic *Ammophilini*); Balthasar, 1954b:281 (Palestine: Jerusalem); de Beaumont and Bytinski-Salz, 1955:39 (Israel); de Beaumont, 1967a:269 (Turkey), 1969:81 (Turkey), 1970a:389 (Afghanistan); R. Bohart and Menke, 1976:150 (in checklist of world Sphecidae); Kazenas, 1978b:38 (in key to Sphecidae of Kazakhstan and Central Asia); Dollfuss, 1989:7 (type material in NHMW); Guichard, 1991a:338 (Jordan); Ljubomirov and Yildirim, 2008:33 (in catalog of Sphecidae of Turkey); Murai and Amr, 2011:118 (recorded from Syria by Kohl, 1901); Dollfuss, 2013a:390, 400 (in key to *Ammophila* of Palearctic Region and India), 411 (in revision of *Ammophila* of Palearctic Region and India), 2013b:566 (locality records from Jordan and Syria); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces); Dollfuss, 2015b:414 (locality records from Jordan and Turkey); Koçak and Kemal, 2015:277 (in checklist of Hymenoptera of Turkey), 2023:1691 (in checklist of Sphecidae *sensu lato* of Turkey).

**23. atlantica Roth**

*Ammophila nasuta* var. *atlantica* Roth, 1928:199, ♀, ♂. Lectotype: ♀, Morocco: Tanger (MNHN), designated by Dollfuss, 2013a:412. – Nadig, 1933:101 (Morocco); Leclercq, 1955h:85 (bibliographic reference). – **As *Ammophila nasuta atlantica***: de Beaumont, 1951e:267 (new status; Morocco), 1963b:11 (subspecific status confirmed, in revision of *Ammophila nasuta* species group). – **As *Ammophila atlantica***: Bytinski-Salz *in* de Beaumont and Bytinski-Salz, 1955:38 (as full species); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Dollfuss, 2013a:387, 399 (in key to *Ammophila* of Palearctic Region and India), 412 (in revision of *Ammophila* of Palearctic Region and India), 2013b:567 (Morocco: locality records).

**24. aucella Menke**

*Ammophila aucella* Menke, 1966b:27, ♀, ♂. Holotype: ♂, Mexico: Jalisco: 3 mi. southeast of Plan de Barrancas (UCD). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Menke, 2020:84 (in revision of North and Central American *Ammophila*).

**25. aurifera R. Turner**

*Ammophila aurifera* R. Turner, 1908:464, ♀, ♂. Syntypes: Australia: Northern Territory: Darwin (BMNH). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Cardale, 1985:229 (in catalog of Australian Sphecidae).

**26. azteca Cameron**

*Ammophila azteca* Cameron, 1888a:17, ♀. Syntypes: ♀, Mexico: Sinaloa: Mazatlán (BMNH). – Dalla Torre, 1897:396 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:161 (in key to North American *Ammophilini*), 164 (bibliographic references, geographic distribution); Fernald, 1934:152 (in revision of North American and West Indian *Ammophila*, as *Sphex*, as unrecognized species); Evans, 1965:8 (simultaneous care of more than one nest), 1970:485 (Wyoming: Jackson Hole, prey); Menke, 1965b:200 (*Sphex aculeatus* of Hicks, 1935, is *Ammophila azteca*); G. Bohart, Nye, and Hawthorn, 1970:49 (Utah: Logan, onion pollinator); Horning and Barr, 1970:104 (USA: Idaho: Craters of the Moon National Monument); Steiner, 1973:25 (Canada: Northwest Territories, Yukon Territory); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Kumar, Lavigne, Lloyd, and Pfadt, 1976:51 (USA: Colorado: Pawnee National Grassland); Steiner, 1977:315 (remarkable constancy in captivity for overnight resting site); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Finnamore, 1982:28 (in Sphecid Fauna of Southern Quebec); Menke, 1983b:21 (Nebraska: Hooker County: Mullen area; Cherry County: Nenzel area; and Dawes County: north of Crawford); Brockmann, 1985b:312 (nest closure summary); Rust, Menke, and Miller, 1985:46 (California Channel Islands), 52 (prey: geometrid caterpillar); Menke, 1986c:35 (Utah: San Juan County: east of Natural Bridges National Monument; Arizona: Navajo County: 18 mi. west of Kayenta); Piek and Spanjer, 1986:179 (in list of Sphecidae with known prey); Rosenheim, 1987a:740 (California: Nevada County: Sagehen Creek near Hobart Mills), 1987b:401 (nest parasite: *Argochrysis*

*armilla* R. Bohart, a chrysidid); O'Brien, 1989b:209 (distribution in Michigan); Menke, 1994f:22 (Utah: Monticello area; New Mexico: Aztec); Blades and Maier, 1996:71 (Canada: British Columbia: Osoyoos - Mount Kobau area at 119°40'W 49°05'N); Finnamore, 1997:884 (Canada: Yukon, as *azteca azteca*); Weissmann and Kondratieff, 1999:77 (Colorado: Great Sand Dunes National Monument); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Dollfuss, 2015b:414 (locality records from California and Oregon); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Ratzlaff, 2016:28 (Canada: British Columbia: from Krombein, 1979); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:64 (in revision of North and Central American *Ammophila*).

*Sphex pilosus* Fernald, 1934:120, ♀, ♂. Holotype: ♀, USA: "Colorado Territory": no specific locality (ANSP). Synonymized with *Ammophila azteca* by Menke, 1965b:258, 1965c:1, and 1967a:3 (as new synonym). – Murray, 1938:26 (26 (redescription); Dreisbach, 1944:269, 271 (in key to *Ammophila* of Michigan), 274 (Michigan: locality records); Strickland, 1947:129 (Canada: Alberta); Spencer and Wellington, 1948:10 (British Columbia, as *pilosus pilosus*). – **As *Ammophila pilosa***: Murray in Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera); Evans, 1963b:238 (nesting behavior); Powell, 1964b:244 (prey: lycaenid and pterophorid caterpillars); Evans, 1970:486 (Wyoming: Jackson Hole).

*Sphex aculeatus* Fernald, 1934:145, ♀, ♂. Holotype: ♀, USA: Colorado: Boulder County: Owen's Lake (originally H. Fernald collection, now USNM). Synonymized with *Ammophila azteca* by Menke, 1965c:1 and 1967a:3. – Hicks, 1935:99 (nesting habits).

*Sphex pilosus* var. *nudus* Murray, 1938:28, ♀, ♂, junior primary homonym of *Sphex nudus* Fernald, 1903. Holotype: ♂, USA: Minnesota: Sawyer (depository?). – **As *Sphex pilosus nudus***: Dreisbach, 1944:269, 271 (new status, in key to *Ammophila* of Michigan), 273 (Michigan: locality records). – **As *Sphex nudus***: Strickland, 1947:129 (new status, Canada: Alberta).

*Ammophila pilosa brevisericea* Murray in Muesebeck, Krombein, and Townes, 1951:976. Substitute name for *Sphex pilosus nudus* Murray, 1938. Synonymized with *Ammophila azteca* Cameron, 1988 by Menke, 1965c:1.

*Ammophila shoshone* Menke, 1967a:5, ♀, ♂. Holotype: ♂, USA: Wyoming: Horse Creek Camp in Shoshone National Forest (Cornell Univ.). Synonymized with *Ammophila azteca* by Menke, 2020:64. – R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1594 (in catalog of North American Hymenoptera).

*Ammophila silvestris* Kirkbride, 1982:457, ♀, ♂. Holotype: ♂, USA: Idaho: Idaho County: 21 mi. west of Lolo Pass (Univ. Idaho, Moscow). Paratypes: Montana, Wyoming. Synonymized with *Ammophila azteca* by Menke, 2020:64. – Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini).

As *Sphex breviceps*: Hicks, 1933a:49 (nesting habits), corrected to *Ammophila azteca* by Menke, 1965b:258.

As *Sphex arvensis*: A. Brown, 1934:264 (Canada: Ontario: Timagami), corrected to *Ammophila azteca* by Buck, 2004:75.

### **ssp. *clemente* Menke**

*Ammophila azteca clemente* Menke, 1967a:7, ♀, ♂. Holotype: ♂, USA: California: Los Angeles County: Island of San Clemente (Los Angeles County Mus.). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Rust, Menke, and Miller, 1985:46 (California: Channel Islands), 52 (prey); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Menke, 2020:67 (in revision of North and Central American *Ammophila*).

### **27. *barbara* (Lepeletier de Saint Fargeau)**

*Coloptera barbara* Lepeletier de Saint Fargeau, 1845:387, ♂. Syntypes: Algeria: Oran (originally Lepeletier de Saint Fargeau collection, now?). – Lucas, 1849:276 (Algeria: Oran; original description copied with modifications); F. Smith, 1856:225 (in catalog of Hymenoptera in British Museum); Ed. André, 1886:92 (in revision of Sphecidae of Europe and Algeria), 1888:5\* (bibliographic references); Pérez, 1895:CLXXII (valid species; Tunisia: Kairouan); Acloque, 1897:97 (in Sphecid Fauna of France and Algeria); Zanon, 1926:91 (Libya: Fueihat 15 km south of Benghazi). – **As *Ammophila barbara***: Dalla Torre, 1897:396 (new combination, in catalog of world Hymenoptera); Kohl, 1906b:317 (in revision of Palearctic Ammophilini); von Schulthess, 1926b:208 (Tunisia: Kairouan; Libya: Benghazi); Roth, 1928:186 (in revision of North African Ammophilini); Guiglia, 1934b:291 (Libya: bibliography and summary of locality records); Giner Marí, 1945:362 (Río de Oro, now Western Sahara in Morocco), 1947:18 (Río de Oro, now Western Sahara in Morocco); Berland, 1950b:296 (Niger: Air area); de Beaumont, 1950f:395 (Algeria), 1951e:264 (Morocco; nominotypical subspecies); Grandi, 1954:235 (Algeria: El Kantara); de Beaumont and Bytinski-Salz, 1955:36 (Israel); Leclercq, 1955h:93 (bibliographic references); de Beaumont, 1956a:215 (Libya), 1958a:290 (illustration of genitalia), 1960e:3 (taxonomy and relationships); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Guichard, 1980:224 (Oman), 1988a:127 (Oman); Roche, 2007a:15 (first record from Egypt: Sinai Peninsula, in checklist of Egyptian Sphecidae), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger, 2011b:593 (first record from United Arab Emirates: Wadi Bih), 597 (color photograph of male); Dollfuss, 2013a:394, 404 (in key to *Ammophila* of Palearctic Region and India), 413 (in revision of *Ammophila* of Palearctic Region and India), 2013b:567 (locality records from Jordan, Morocco, Syria, Tunisia, and Turkey); Schmid-Egger, 2014:615 (United Arab Emirates: Wadi Bih); Dollfuss, 2015b:414 (Turkey: Bitlis); Koçak and Kemal, 2015:277 (in checklist of Hymenoptera of Turkey); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:6 (Turkey: Bayburt: Kopdağı); Augul, 2019:492 (Iraq: Basra Province: Al-Hartha District); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:302 (in list of Tunisian Sphecidae *sensu stricto*); Gadallah, 2020d:78 (in list of aculeate wasps of Arabian Peninsula); Kaplan and Yildirim, 2023:1691 (in checklist of Sphecidae *sensu lato* of Turkey).

*Ammophila barbara semota* de Beaumont, 1967a:265, ♀. Holotype: ♀, Turkey: Ankara: Dickmen (BMNH). Synonymized with *Ammophila barbara* by Dollfuss, 2013a:413. – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Gülmez and Tüzün, 2005:50 (Turkey: Ankara Province); Ljubomirov and Yildirim, 2008:34 (in catalog of Sphecidae of Turkey); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces); Gülmez, 2019:3 (Turkey: Ankara Province: no specific locality); Kaplan and Yildirim, 2023:1691 (in checklist of Sphecidae *sensu lato* of Turkey).

As *Ammophila judaeorum* (present correction based on geographic distribution): W. Schulz, 1905b:32 (Algeria: Biskra; redescription); Morice, 1911:73 (Algeria: Biskra); Giner Marí, 1945b:362 (Morocco: Western Sahara: Aserifa, Um at Sfaia), 1947:18 (Morocco: Western Sahara).

### **28. *barbarorum* Arnold**

*Ammophila barbarorum* Arnold, 1951:141, ♀. Lectotype: ♀, Ethiopia: Addis Ababa (BMNH), designated by Dollfuss, 2015a:322. – Leclercq, 1955h:86 (bibliographic reference); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Dollfuss, 2015a:311, 315 (in key to Sub-Saharan *Ammophila*), 322 (in revision of Sub-Saharan *Ammophila*), 2015b:415 (Kenya: Mackinnon Road).

### **29. *barkalovi* Danilov**

*Ammophila barkalovi* Danilov, 2015a:538, ♀, ♂. Holotype: ♀, Kazakhstan: Almaty Region: Altyń-Emel National Park, near mount Ayak-Kalkhan at 43°52'N 78°43'E (Institute of Systematics and Ecology of Animals, Russian Academy of Sciences, Siberian Branch, Novosibirsk, Russia). – Danilov, 2016:356 (paratype preserved in Zoological Institute, Sankt-Petersburg, Russia), 2020:317 (specimen from Mongolia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

### **30. *beaumonti* Dollfuss**

*Ammophila beaumonti* Dollfuss, 2013a:414, ♀, ♂. Holotype: ♂, Mongolia: Gobi Aymag: 100 km northwest of Dalanzagdad Bayanzad (OÖLM). – Dollfuss, 2013a:389, 399 (in key to *Ammophila* of Palearctic Region and India), 2020:317 (specimens from Kazakhstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

### **31. *bechuana* (R. Turner)**

*Sphex bechuana* R. Turner, 1929b:554, ♀. Holotype or syntypes: ♀, Botswana: Ghanzi, Mongalatsila (BMNH). – **As *Ammophila bechuana***: Leclercq, 1955h:88 (new combination, bibliographic references); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Dollfuss, 2015a:311, 314 (in key to Sub-Saharan *Ammophila*), 323 (in revision of Sub-Saharan *Ammophila*, description of ♂; Kenya, Malawi, Namibia, South Africa, Tanzania, Yemen, Zimbabwe),

2015b:415 (locality records from South Africa, Tanzania, Yemen, Zambia, and Zimbabwe); Gadallah, 2020d:78 (in list of aculeate wasps of Arabian Peninsula).

### 32. *bella* Menke

*Ammophila bella* Menke, 1966b:27, ♀, ♂. Holotype: ♂, Mexico: Puebla: 3 mi. north of Petlalcingo (UCD). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Menke, 2020:85 (in revision of North and Central American *Ammophila*).

### 33. *bellula* Menke

*Ammophila bellula* Menke, 1964a:17, ♀, ♂. Holotype: ♂, USA: Arizona: Pima County: Madera Canyon in Santa Rita Mountains (UCD). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Menke, 2020:87 (in revision of North and Central American *Ammophila*).

### 34. *beniniensis* (Palisot de Beauvois)

*Sphex beniniensis* Palisot de Beauvois, 1806:48, sex not stated. Holotype or syntypes: Nigeria: city of Benin (destroyed?). – R. Turner, 1919c:394 (synonymy); Arnold, 1920:37 (in revision of southern African *Ammophila*), 1928:263 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:95 (Zaire); Scott in Arnold, 1933a:370 (Ethiopia: Harar District and Higo Samula); Arnold, 1945:87 (Madagascar, geographic variation). – **As *Ammophila beniniensis***: F. Smith, 1856:213 (new combination, in catalog of Hymenoptera in British Museum); W. Fox, 1896e:552 (Ethiopia: Bale Province: Sheikh Husein, now Shek Husen); Dalla Torre, 1897:396 (in catalog of world Hymenoptera); Bingham, 1902:218 (South Africa, Malawi); Cameron, 1908a:266 (Kenya, redescription); Carpenter, 1918:xlii (nesting behavior; determination tentative); Giordani Soika, 1939c:104 (Eritrea: Alta Asaorta, Maio); Guiglia, 1939a:201 (Eritrea: Saganeiti), 1939b:91 (Ethiopia: Lake Tana: Bahar-Dar), 1943c:76 (Ethiopia: Gamo Gofa: Sagan – Omo region), 1950:245 (Ethiopia: Gamo Gofa: Banno); Arnold, 1951:141 (Ethiopia: Moggio); Berland, 1952b:276 (boundary of Ivory Coast, Guinea, and Liberia: Mount Nimba); Leclercq, 1953b:211 (Madagascar), 1955h:89 (bibliographic references, locality records from Zaire and elsewhere), 1955i:406 (Rwanda), 1961b:54 (Madagascar, Zaire), 1961d:107 (Madagascar, color variation), 1962a:394 (Tanzania: Uluguru Mountains); Diniz, 1964c:110 (Angola: Lunda: Alto Chicapa, Andrada, Dundo, Muíta-Luembe, Rio Caquele, Xá-Ua at Rio Luita); Leclercq, 1969:1051 (Congo Brazzaville); I. Robertson, 1969:480 (Tanzania: Nuarumbugu); R. Bohart and Menke, 1976:139 (in checklist of world Sphecidae); de Beaumont, 1967b:503 (South Africa, Zimbabwe); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); nec Guichard, 1980:224 (= *Ammophila punti*); Gess, 1981:19 (South Africa: Hilton Farm 18 km west-northwest of Grahamstown; nesting in friable soils); Rodgers and Homewood, 1982:233 (Tanzania: Usambara Mountains, as *benninensis*); Weaving, 1988:327-349 (prey selection), 1989a:1-16 (South Africa; nesting habits: nest provisioned with one large caterpillar), 1989b:847-871 (habitat selection and nest construction); Dollfuss, 1990:122 (Central African Republic); S. Gess, 1996:279, 283, 303 (floral records); S. Gess and F. Gess, 2003:94 (Namibia and South Africa: visiting flowers of *Sarcostemma viminale* (L.) R. Br., Apocynaceae, *Geigeria* sp., Asteraceae, *Lasiospermum bipinnatum* (Thunb.) Druce, Asteraceae, *Verbesina encelioides* (Cav.) Benth and Hook., Asteraceae, *Anchusa capensis* Thunb., Boraginaceae, *Maytenus linearis* (L. f.) Marais, *Acacia karroo* Hayne, Fabaceae, *Phyllopodium cuneifolium* (L. f.) Benth., *Lycium* sp., Solanaceae, and *Tribulus* sp., Zygophyllaceae); Dollfuss, 2015a:310, 314 (in key to Sub-Saharan *Ammophila*), 324 (in revision of Sub-Saharan *Ammophila*), 2015b:415 (locality records from Benin, Burkina Faso, Cameroon, Central African Republic, Egypt, Ethiopia, Ghana, Guinea, Kenya, Malawi, Madagascar, Mozambique, Namibia, Nigeria, Oman, Senegal, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe); Danilov, 2020:317 (specimen from South Africa in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Gadallah, 2020d:78 (in list of aculeate wasps of Arabian Peninsula).

*Sphex tenuis* Palisot de Beauvois, 1806:48, sex not stated. Holotype or syntypes: Nigeria: city of Benin (destroyed?). Synonymized with *Sphex beniniensis* by Arnold, 1945:86. – Schletterer, 1891:13 (Zaire); W. Schulz, 1906:192 (probable synonym of *Ammophila beniniensis*); Brauns, 1911a:238 (South Africa, as *tennis*); Arnold, 1920:39 (in revision of southern African *Ammophila*), 1928b:263 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae), 1943:77 (Zaire); Schouteden, 1930:95 (Zaire); Arnold, 1943:77 (Zaire). – **As *Ammophila tenuis***: F. Smith, 1856:212 (new combination, in catalog of Hymenoptera in British Museum); Kohl, 1894:342 (Mozambique: Delagoa Bay, now Maputo Bay; South Africa: Port Natal, now Durban; Zambia: Chama); Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Guiglia, 1940b:289 (Somalia), 1943c:76 (Ethiopia: Gamo Gofa: Sagan – Omo region), 1950:246 (Ethiopia: Gamo Gofa: Banao, Caschei, headwaters of Sagan); I. Robertson, 1969:480 (Tanzania: Ukiriguru).

*Ammophila cyaniventris* Guérin-Méneville, 1843:9, ♂. Holotype or syntypes: ♂, Senegal: no specific locality (MSNG). Synonymized with *Sphex beniniensis* by R. Turner, 1919c:394. – Magretti, 1895:166 (Ethiopia: Ganale); Dalla Torre, 1897:398 (in catalog of world Hymenoptera, as *cyaneiventris*). – **As *Chlorion cyaniventris***: Jörgensen, 1912:285 (new combination, Argentina: Mendoza Province, clearly in error); Schrottky, 1913a:224 (Argentina, as *cyaneiventris*, clearly in error); Guiglia, 1948b:179 (type in Genova), 185 (redescription; as *cyaneiventris*). – **As *Sphex cyaniventris***: Piek and Spanjer, 1986:189 (in list of Sphecidae with known prey).

*Ammophila rugicollis* Lepeletier de Saint Fargeau, 1845:373, ♂ (authorship attributed to Klug). Holotype or syntypes: ♂, South Africa: Cape of Good Hope (originally M. Spinola collection, Torino, now missing). Synonymized with *Sphex tenuis* by Arnold, 1920:39. – F. Smith, 1856:212 (in catalog of Hymenoptera in British Museum); A. Costa, 1864b:111 (specimen from Algeria in Museo Zoologico di Napoli); Dalla Torre, 1897:407 (in catalog of world Hymenoptera); Morice, 1900a:67 (Algeria: Biskra); Magretti, 1906:20 (Eritrea); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Pagliano, 2008:514 (specimens missing in M. Spinola collection, Torino).

*Ammophila lugubris* Gerstaecker in Peters, 1858:510, ♀, ♂. Lectotype: ♀, Mozambique: no specific locality (ZMHU), designated by Dollfuss, 2015a:325. Synonymized with *Sphex beniniensis* by R. Turner, 1919c:394. – Radoszkowski, 1881:211 (Angola); W. Fox, 1896e:552 (Ethiopia: Bale Province: Sheikh Husein, now Shek Husen); Dalla Torre, 1897:404 (in catalog of world Hymenoptera); Magretti, 1906:20 (Eritrea); G. Carpenter, 1930b:292 (nest closure).

*Ammophila lugubris* Gerstaecker, 1862:480, ♀, ♂. Objective synonym of *Ammophila lugubris* Gerstaecker, 1858.

*Ammophila guineensis* Ritsema, 1874:192, ♀. Syntypes: ♀, Guinea: no specific locality (RMNH). Synonymized with *Sphex tenuis* by R. Turner, 1919c:394. – Dalla Torre, 1897:400 (in catalog of world Hymenoptera).

*Ammophila koppenfelsii* Taschenberg, 1880:777, ♀, ♂. Syntypes: West Africa: no specific locality (Halle). Synonymized with *Ammophila beniniensis* by Dollfuss, 2015a:325. – Dalla Torre, 1897:403 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae).

*Ammophila coeruleornata* Cameron, 1910b:135, ♂. Holotype or syntypes: ♂, South Africa: Gauteng: Pretoria: Borea Park (TMP). Synonymized with *Sphex tenuis* by R. Turner, 1919c:394 and Brauns, 1917:241 (as *coeruleornata*).

*Ammophila maculifrons* Cameron, 1910b:134, ♂, actually ♀. Holotype or syntypes: ♀, South Africa: Gauteng: Pretoria: Borea Park (TMP). Synonymized with *Ammophila tenuis* by Brauns, 1917:241 and R. Turner, 1919c:394.

*Ammophila massaica* Cameron, 1908a:264, ♂. Syntypes: ♂, Tanzania: Mount Meru lowlands: Ngare na nyuki (NRS). Synonymized with *Sphex tenuis* by Arnold, 1928b:279.

*Ammophila sjoestedti* Cameron, 1908a:267, ♂ (as *Sjöstedti* incorrect original capitalization and diacritic mark). Holotype or syntypes: ♂, Tanzania: Mount Meru lowlands: Ngare na nyuki (NRS). Synonymized with *Sphex tenuis* by Arnold, 1928b:279.

*Sphex beniniensis* race *tomentosus* Arnold, 1920:39, ♀ (as *tomentosa*, incorrect original termination), junior primary homonym of *Sphex tomentosus* Fabricius, 1787. Holotype: ♀, Namibia: Windhoek (TMP). Synonymized with *Ammophila beniniensis* by Dollfuss, 2015a:325. – Arnold, 1928b:265 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae). – **As *Ammophila beniniensis tomentosa***: R. Bohart and Menke, 1976:151 (new status, in checklist of world Sphecidae).

**ssp. *imerinae* de Saussure**

*Ammophila imerinae* de Saussure, 1892:435, ♂. Syntypes: ♂, Madagascar: Imerina, Antananarivo, Anosibé (MHNG). – Dalla Torre, 1897:403 (in catalog of world Hymenoptera); Arnold, 1945:87 (as junior synonym of *Sphex beninensis*, Madagascar). – **As *Ammophila lugubris* var. *imerinae***: Kohl, 1909:371 (new status; Comoro Islands, Madagascar, Island of Europa in Mozambique Channel); Bischoff, 1912:220 (Zaire). – **As *Ammophila beniniensis imerinae***: R. Bohart and Menke, 1976:151 (new status, in checklist of world Sphecidae); Pulawski, 2003b:795 (in checklist of Malagasy Sphecidae); Parnaudeau and Madl, 2009:459 (western Indian Ocean: island of Europa); Madl, 2014a:1014 (in catalog of Ampulicidae, Crabronidae, and Sphecidae of Madagascar, with synonymy and locality records), 2014b:22 (Madagascar: locality records).

As *Ammophila rubiginosa*: de Saussure, 1892:435 (Madagascar), corrected to *Sphex beninensis* by Arnold, 1945:87; Friederichs, 1918:43 (nesting habits in Madagascar), 48 (Madagascar: Diego Suarez), present correction.

**35. *bispinosa* Dollfuss**

*Ammophila bispinosa* Dollfuss, 2015a:326, ♂. Holotype: ♂, Zambia: 50 km east of Mwinilunga at 11°43'S 24°47'E (OÖLM). Paratype: Angola. – Dollfuss, 2015a:316 (in key to Sub-Saharan *Ammophila*), 2015b:419 (locality records from Zambia).

**36. *boharti* Menke**

*Ammophila boharti* Menke, 1964a:9, ♀, ♂. Holotype: ♂, USA: California: Yolo County: Davis (UCD). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Danilov, 2014:354 (a pair of paratypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Menke, 2020:110 (in revision of North and Central American *Ammophila*).

**37. *borealis* Q. Li and Ch. Yang**

*Ammophila borealis* Q. Li and Ch. Yang, 1990:263, ♀, ♂. Holotype: ♀, China: Nei Mongol: City of Hailar (Beijing Agricultural University). – Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2013a:415 (original description translated from Chinese into English, in revision of *Ammophila* of Palearctic Region and India); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300, 302 (in key to *Ammophila* of China).

**38. *braunsi* (R. Turner)**

*Sphex braunsi* R. Turner, 1919c:395, ♀, ♂. Syntypes: South Africa: Eastern Cape Province: Willowmore (BMNH). – Arnold, 1920:42 (in revision of southern African *Ammophila*), 1928b:267 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae). – **As *Ammophila braunsi***: Leclercq, 1955h:88 (new combination, bibliographic references); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Weaving, 1988:327-349 (prey selection), 1989a:1-16 (South Africa; nesting habits: one large caterpillar per cell), 1989b:847-871 (nests in abandoned burrows of other wasps in non-friable clay soils); Dollfuss, 2015a:311, 315 (in key to Sub-Saharan *Ammophila*), 327 (in revision of Sub-Saharan *Ammophila*), 2015b:419 (locality records from South Africa).

*Sphex laticeps* Arnold, 1928b:268, ♀. Holotype: ♀, Namibia: Koakoveld: Warmbad (SAMC). Synonymized with *Ammophila braunsi* by Dollfuss, 2015a:327. – Arnold, 1930:17 (in checklist of Afrotropical Sphecidae). – **As *Ammophila laticeps***: Leclercq, 1955h:88 (new combination, bibliographic references); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); S. Gess and F. Gess, 2003:97 (Namibia: visiting flowers of *Ocimum americanum* L., Lamiaceae).

**39. *breviceps* F. Smith**

*Ammophila breviceps* F. Smith, 1856:221, ♀. Holotype: ♀, Mexico: no specific locality (BMNH). – Cresson, 1863:318 (in catalog of North American Sphecidae); Cameron, 1888a:19 (Mexico); Dalla Torre, 1897:396 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:160 (in key to North American), 163 (bibliographic references, geographic distribution); Murray in Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera); Hurd and Linsley, 1975:116 (New Mexico: Hidalgo County: Lordsburg; on flowers of *Larrea tridentata* (De Candolle) Coville, Zygophyllaceae); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); C. Ward et al., 1977:55 (associated with mesquite (*Prosopis glandulosa* Torr.), Fabaceae); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Zalom, Meyer, and Mason, 1979:239 (Arizona: Santa Rita Mountains; sympatric association with the bombyliids *Systropus angulatus ammophiloides* Townsend and *S. arizonicus* Banks); Menke, 1986c:36 (Arizona: Gila County: Carrizo), 37 (Arizona: Cochise County: north of Apache, Naco); Steiner, 1986:98 (references to papers on nesting habits); Kingsley, Bailowitz, and Smith, 1987:18 (Arizona: Organ Pipe Cactus National Monument: Quitobaquito Springs area); Menke, 1994f:21 (Utah: Calf Creek Falls State Park and Monticello area; Arizona: Bisbee); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Ohl and Linde, 2003:149 (number of ovarioles); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas); Miller, Pearce, and O'Neill, 2009:3 (known to be parasitized by *Paraxenos lugubris* (Pierce), Strepsiptera); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of *Ammophilini*); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:67 (in revision of North and Central American *Ammophila*). – **As *Sphex breviceps***: H. Smith, 1908b:329 (new combination, in revision of Nebraskan Sphecidae); Mickel, 1918b:403 (in catalog of Nebraskan Sphecidae); Fernald, 1931:448 (synonymy); nec Hicks, 1933a:49 (= *Ammophila azteca*); Fernald, 1934:84 (in revision of North American and West Indian *Ammophila*, as *breviceps breviceps*); Dreisbach, 1944:270 (in key to *Ammophila* of Michigan, as *breviceps breviceps*); Strickland, 1947:129 (Canada: Alberta: Lethbridge, Vermillion, as *breviceps breviceps*).

**40. *brevipennis* Bingham**

*Ammophila brevipennis* Bingham, 1897:232, ♀. Holotype: ♀, India: Maharashtra: Bombay, now Mumbai (BMNH). – Giner Marí, 1945c:850 (India: Maharashtra: Khandala); Gupta, 1960:26 (India: Himalaya); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Dollfuss, 2013a:390 (in key to *Ammophila* of Palearctic Region and India), 416 (in revision of *Ammophila* of Palearctic Region and India).

**41. *californica* Menke**

*Ammophila californica* Menke, 1964a:18, ♀, ♂. Holotype: ♂, USA: California: Kern County: Mill Potrero on side of Mount Pinos (UCD). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Menke, 2007:37 (in review of *Ammophila pruinosus* complex); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:68 (in revision of North and Central American *Ammophila*).

**42. *calva* (Arnold)**

*Sphex beniniensis* var. *calvus* Arnold, 1920:38, ♀, ♂. Syntypes: Zimbabwe: Umgusa and Sawmills; South Africa: Zululand, now QuaZulu-Natal (SAM). – Arnold, 1928b:264 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae). – **As *Sphex beniniensis calvus***: Marshall, 1997:3 (new combination, new status, reference to original description). – **As *Sphex calvus***: Arnold, 1945:86 (new status, raised to full species). – **As *Ammophila calva***: Menke in Bohart and Menke, 1976:151 (new combination, as new status, in checklist of world Sphecidae); Dollfuss, 2015a:311, 314 (in key to Sub-Saharan *Ammophila*), 328 (in revision of Sub-Saharan *Ammophila*; Botswana, Ethiopia, Kenya, Mozambique, Senegal, Tanzania, Zambia, Zimbabwe), 2015b:419 (locality records from Ethiopia, Kenya, Mozambique, Senegal, South Africa, Zambia, and Zimbabwe).

**43. *campestris* Latreille**

*Ammophila campestris* Latreille, 1809:54, ♀, ♂. Syntypes: France: Paris area (lost). – Audouin, 1822a:242 (in Dictionnaire classique d'histoire naturelle); Dahlbom, 1831:45 (redescription); nec Curtis, 1836:pl.604, Shuckard, 1837a:80, 251, and Stephens, 1846:15 (= *Ammophila pubescens*); Lepeletier de Saint Fargeau and Audinet-Serville, 1828:452 (redescription); Taschenberg, 1858:61 (in key to Sphecidae of Germany); Funk, 1859:59 (Germany: Bayern: Bamberg); nec F. Smith, 1851c:17 and 1865b:86 (= *Ammophila pubescens*); Taschenberg, 1866:208 (in revision of Hymenoptera of Germany); Kirchner, 1867:217 (in catalog of European Hymenoptera); Wierzejski, 1868:117 (Ukraine: Podole Region); Schlechtendal, 1872:37 (Germany: Sachsen: Zwickau); Wierzejski, 1874:258 (Ukraine: Podole Region: Sinków, Skala on Zbrucz River); Becker, 1880:150 (Russia: Sarepta, now Krasnoarmeysk south of Volgograd); Kohl, 1880:183 (Austria: Tirol, and Italy: Trentino-Alto Adige), 237 (the genus *Miscus* cannot be maintained); nec E. Saunders, 1880:248 (= *Ammophila pubescens*); Magretti, 1881:113 (Italy: Lombardia), 270 (in list of species discussed in this paper); Kohl,

1883e:674 (Switzerland); von Heyden, 1884:116 (Germany: Frankfurt am Main); Ed. André, 1886:62 (in revision of Sphecidae of Europe and Algeria); Wüstnei, 1886:43 (Germany: Schleswig-Holstein); Ed. André, 1888:2\* (bibliographic references); Kohl, 1888b:729 (Austria: Tirol, now Italy: Alto Adige); Kohl and Handlirsch, 1889:276 (Turkmenistan); F. Morawitz, 1889a:127 (Mongolia); Kohl, 1893a:35 (Austria: Niederösterreich); F. Morawitz, 1893a:108 (Russia: Karelian Isthmus, may be *Ammophila pubescens*), 1893b:407 (Tajikistan: Takfan in Yaghnob River valley); Sickmann, 1893:95 (Germany: Niedersachsen: Iburg); Baldini, 1894:47 (Italy: Modena area); Engel, 1894:53 (Germany: Jägerhof in Hausbruch near Hamburg); Krieger, 1894:13 (Germany: Kingdom of Saxony); Medina, 1894a:259 (Spain: Cazalla); Sickmann, 1894:218 (China: Hopei Province: Tientsin); nec E. Saunders, 1896:88 (= *Ammophila pubescens*); Dalla Torre, 1897:396 (in catalog of world Hymenoptera); Mocsáry, 1897:79 (Kingdom of Hungary, some localities are in today's Croatia, Romania, and Slovakia); O. Schneider, 1898:103 (Germany: Island of Borkum); nec Morice, 1900c:210 (= *Ammophila pubescens*); nec Adlerz, 1901:170 (= *Ammophila pubescens*); nec Barnes, 1902:266 (= *Ammophila pubescens*); Friese, 1902:477 (occurring in Lapland according to Zetterstedt, 1838, may be *Ammophila pubescens*); E. Saunders, 1902b:143 (Great Britain: Island of Jersey; France: Bretagne: Saint Briac); de Cobelli, 1903:103 (Italy: Province of Trentino); Antiga and Bofill, 1904:4 (Spain: Cataluña Province); Gadeau de Kerville, 1903:306 (France: Eure Department); Adlerz, 1904:108 (nesting habits, may be *Ammophila pubescens*); Aurivillius, 1904:254 (in revision of Swedish Sphecidae); nec E. Saunders, 1903a:16 (= *Ammophila pubescens*); Zilahi Kiss, 1904:77 (Hungary: Hadad); Ferton, 1905:97 (homing); Kubes, 1905:83 (Czech Republic: Kolín, Obora, Sušice); Thijssse, 1905:91 (Netherlands, nesting habits); Kohl, 1906b:319 (in revision of Palearctic Ammophilini); Scholz, 1906:202 (mating); Clerc and Clerc, 1907:79 (Russia: Ekaterinburg district); Móczár and Henter, 1907:205 (Romania: Caraș-Severin: Mehadia); Schmiedeknecht, 1907:245 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:103 (in catalog of French Hymenoptera); Adlerz, 1909b:163 (detailed study of nesting habits); E. Scholz, 1909a:22 (habitat and nesting behavior), 1910:306 (Germany: Wohlau: Krehlau; now Poland: Wołów); Dittrich, 1911b:25 (Germany: Niederschlesien Province, now Poland: Dolny Śląsk Region); Graeffe, 1911:48 (Italy: Trieste area); Zavattari, 1911:3 (Italy: Piemonte: Valle del Maira); Geyer, 1912:378 (structure of compound eyes); nec Latter, 1913:24 (*Ammophila pubescens*); Torka, 1913:35 (Germany: Provinz Posen, now Poland: Poznań Region); Alfken, 1914:283 (northwestern Germany); Birula, 1914:388 (Belorussia: Ambrosovich and Luskinopol' near Vitebsk, sleeping aggregation of females); Dusmet y Alonso, 1915:86 (Spain: Aragón); O. Meyer, 1919:156 (Germany: Posen Province, now Poland: Poznań Region); nec Morley, 1919:209 (= *Ammophila pubescens*); Łoziński, 1920:121 (Poland: Dąbrowa near Tarnów); Strand, 1920:14 (Germany: Mecklenburg-Vorpommern: Rostock), 23 (Germany: Berlin-Dahlem); A. Wagner, 1920:35 (Germany: Lower Elbe region); Fahringer and Friese, 1921:160 (Turkey: Erzurum: Chanziri in Amanus Mountains = Gavur Dağları); E. Nielsen, 1921:323 (review of prey paralyzing); Strand, 1921:33 (Germany: Bayern: Kulmbach); Dubois, 1922:213 (in key to Belgian Sphecidae); Fahringer, 1922:176 (Turkey); Hedicke, 1922:272 (Germany: Brandenburg: Gross Machnower Weinberg); Strand, 1922:197 (Germany: Bayern: Kulmbach); Alfken, 1924:231 (northern Germany); Berland, 1925d:31 (in Sphecidae Fauna of France); Bischoff, 1925:301 (Latvia: Wezkukkul; Poland: Białowieża and Grajewo area); Coulon, 1925:115 (France); E. Nielsen, 1925:441 (nesting habits, prey); Picard, 1925b:162 (review of observations on stinging sequence), 163 (nest construction precedes hunting); Schütze, 1925:114 (Germany: Lausitz Region); Shestakov, 1925:37 (Russia: Yaroslavl' area); K. Strohm, 1925:212 (Germany: Baden-Württemberg: Heidelberg); Bouwman, 1926:280 (in list of Sphecidae of Netherlands); Friese, 1926:167 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); Grandi, 1926:271 (nesting habits), 275 (description of mature larva); Hémon, 1926:199 (France: Finistère: Fouesnant); Maneval, 1926:81 (substituting prey, tenthredinid larvae); K. Strohm, 1926:74 (reference to Leininger, 1922); Bouwman, 1927:113 (in revision of Sphecidae of Netherlands); Crèvecoeur, 1927:308 (material excavated from nest is carried in flight); Grandi, 1927:188 (nest closing), 1927:271 (nesting habits), 275 (description of larva and cocoon); Kokujev, 1927:71 (Russia: Siberia: Lake Baikal); Benoist, 1928:408 (France: Alpes-Maritimes, Basses-Alpes, Hautes-Alpes); Berland, 1928b:175 (add Maneval, 1926, Grandi, 1926, and Crèvecoeur, 1928 to bibliography in Berland, 1925d); Grandi, 1928d:264 (nest closure); van der Vecht, 1928:93 (Netherlands: Meijendel sand dunes); Blüthgen, 1929:83 (Germany: Saale River valley: Himmelreich); Roth, 1929:179 (in revision of Spanish Ammophilini); Bischoff, 1930a:215 (Tajikistan: Pamir); Schmiedeknecht, 1930:706 (in keys to Hymenoptera of North and Central Europe); nec Hobby, 1931b:108 and Spooner, 1931:14 (= *Ammophila pubescens*); Pulkkinen, 1931:52 (in revision of Sphecidae of Finland); Bondroit, 1932:33 (Belgium: Forêt de Soignes); Crèvecoeur, 1932 (nesting habits, progressive provisioning); Guiglia, 1932c:3 (Italy: Valle d'Aosta: Parco Nazionale del Gran Paradiso); nec Hobby, 1932a:4 (*Ammophila pubescens*); Maneval, 1932:90 (prey, spatial orientation); Micheli, 1933:5 (nesting behavior); E. Nielsen, 1933:308 (nesting habits); Balles, 1934:21 (Germany: Baden-Württemberg: Mannheim-Rheinau, Oberachern); Bondroit, 1934:60 (Belgium: specimen with setae covered with secretion); Grandi, 1934:64 (correction to Crèvecoeur, 1932 interpretation of Grandi, 1926 observations), 130 (Italy: Trentino-Alto Adige: Vallesinella); Gussakovskij, 1934a:6 (China, Mongolia); Jansson, 1934:290 (Sweden); Minkiewicz, 1934:220 (nesting behavior); Forsius in Forsius and Hellén, 1935:12 (in checklist of Hymenoptera of Finland); Gussakovskij, 1935:414 (Transcaspa); Marchand and Dulac, 1935:61 (France: Saône-et-Loire: Saint Laurent d'Andenay); E. Nielsen, 1935:196 (metabolism of paralyzed caterpillars is slightly above that of normal individuals), 215 (degeneration of nervous ganglia in paralyzed caterpillars); Vergne, 1935:117 (France: Auvergne: common); Crèvecoeur and Maréchal, 1936:249 (in catalog of Belgian Hymenoptera); Drogoszewski, 1936:130 (Poland: Łowicz, Skarżysko); Heldmann, 1936:103 (Germany: Hessen: Bergstrasse); J. Muller, 1936:163 (Belgium); Pattri, 1936:113 (Germany: Hessen; Darmstadt area, on sandy habitats); Wnukowskij, 1936:128 (Russia: Western Siberia: railroad station Mezheninovka at 56°21'38"N 85°22'4"E); Dulac, 1937:7 (France: Saône-et-Loire: Saint-Laurent d'Andenay); Gobel, 1937:47 (Poland: Poznań District: Głuszyna, Kobylepole, Puszczykowo, Strzeszyn, Wyssogotowo); nec Richards, 1937b:104 (= *Ammophila pubescens*); Zavadil, Šusterka, and Bat'a, 1937:212 (in catalog of Sphecidae of Czechoslovakia); nec Baerends and van Roon, 1938:41 (= *Ammophila pubescens*); Gussakovskij, 1938:3 (China: Kiangsu Province); A. Wagner, 1938a:123 (northwestern Germany); nec Yarrow, 1939:15 (= *Ammophila pubescens*); Dovnar-Zapolskiy, 1940:304 (Russia: Kursk Oblast); Balthasar, 1941b:112 (Czech Republic: eastern Morava); Guiglia, 1941c:165 (Italy: Calabria: Grande Sila); Paul, 1941:48 (Germany: Pommern: common in Central- and Ostpommern, now Poland: Pomorze Region); Schneid, 1941:1050 (Germany: Bayern: Bamberg area); Alfken, 1942:231 (Germany: Niedersachsen: Lüneburger Heide); J. Perkins, 1942:197 (Sweden: Skåne: Degaberga and Löderup); nec Adriaanse, 1943:69 (= *Ammophila pubescens*); Giner Marí, 1943a:70 (in Sphecidae Fauna of Spain); nec Spooner, 1943:71 (= *Ammophila pubescens*); Adriaanse, 1944:150 (nesting habits, partly *Ammophila pnsscens*); Guiglia, 1944b:6 (Italy); Šnoflák, 1944a:144 (Czech Republic: serpentine steppe near Mohelno); de Beaumont, 1945:467 (Switzerland; diagnostic characters); Richards, 1946:235 (in key to *Ammophila campestris* and *pubescens*); Adriaanse, 1947:1 (nesting behavior, comparison with that of *Ammophila adriaansei*, now *pubescens*); Carl and de Beaumont, 1947:67 (Switzerland: Graubünden = Grisons Canton: Swiss National Park); Guiglia, 1947a:28 (Italy: Piano Maiuri); Wilcke, 1947:118 (in key to Dutch *Ammophila*); Hellén, 1948:13 (*Ammophila campestris* confused with *A. adriaansei*, now *pubescens*); Leclercq, 1948:204 (less common in Belgium than *Ammophila pubescens*, locality records); Šnoflák in Zavadil and Šnoflák, 1948:100 (in key to Sphecidae of Czechoslovakia); de Andrade, 1949:7 (Portugal); Franz, 1949:13 (Austria: Hohe Tauern); nec Baerends and Baerends-van Roon, 1950:53 (= *Ammophila pubescens*); Cavro, 1950:31 (France: Département du Nord); Georgel, 1950:63 (France: Seine-et-Oise: Sucy-en-Brie); Szulczewski, 1950:108 (Poland: Wielkopolski National Park 15 km south of Poznań); Kjellander, 1951:48 (specimens studied by Adlerz are *Ammophila alpicola*, now *pubescens*; in Sweden collected only in Slättö and Hälsingborg); Głowacki, 1953:521 (Poland: Konstancin near Warszawa); Heldmann, 1953:112 (Germany: Hessen: Eberstädter Düne near Darmstadt); Leininger, 1953:18 (Germany: Baden-Württemberg); Nouvel and Ribaut, 1953:176 (France: Haute-Garonne: Saint-Béat, Luchon, Hautes-Pyrénées: Cadéac, Cauterets); Bischoff and Stadler, 1954:126 (Germany: Bayern: Romberg); de Beaumont, 1954e:86 (Italy); Grandi, 1954:153 (nesting habits), 235 (Italy); Aerts, 1955:64 (Germany: Rheinland); de Beaumont, 1955:56 (effects of stylopization); Steiner, 1955:133 (France: Dordogne); nec Teschner, 1955:57 (= *Ammophila pubescens*); Vogrin, 1955:30 (Yugoslavia); Ceballos, 1956:359 (in catalog of Hymenoptera of Spain); Evans and Lin, 1956a:147 (larva's description by Grandi, 1926); Bajári, 1957a:13 (in key to Hungarian Sphecidae); Fahlander, 1957:63 (Sweden: Småland: Ryssby); Grandi, 1957:386 (Italy); Zirngiebl, 1957:185 (Germany: Rheinland-Pfalz: Birkenheide, Leistadt); Benno, 1958b:10 (in review of Dutch Sphecidae); de Beaumont, 1958c:201 (Swiss National Park); Evans, 1958e:451 (behavioral evolution); Nelson, 1958:154 (Great Britain: Island of Man), may be *Ammophila sabulosa* according to Nelson, 1981:145; de Beaumont, 1959a:7 (Italy, form?); Diniz, 1959:26 (Portugal: Serra do Gerês); Wolf, 1959b:28

(known from Germany, but not from Nassau); Čingovski, 1960:5 (Macedonia: Yakupitsa); Noskiewicz and Pulawski, 1960:37 (in key to Polish Sphecidae); Scobiola, 1960b:233 (Romania: Simleul Silvaniei Region: Giurtelec); Grandi, 1961:129 (nesting habits), 469 (description of larva); Maréchal and Petit, 1961:82 (taxonomic history, comparison with *Ammophila adriaansei* [= *pubescens*], distribution in Belgium); Wengris, 1962:203 (Lithuania: Vilnius area); Hoop, 1963b:8 (Germany: Schleswig-Holstein: Lehmrade); de Beaumont, 1963:290 (Switzerland); Evans, 1963a:150 (prey specialization as distinctive character); Myartseva, 1963b:59 (Turkmenistan: lower Murgab River); de Beaumont, 1964a:290 (relation to *pubescens* and unrecognized species from Swiss Alps), 1964c:26 (in Sphecidae Fauna of Switzerland); Hüsing and Jäger, 1964:192 (Germany: Sachsen-Anhalt: Nietleben near Halle), 200 (found only sporadically here); de Beaumont, 1965a:12 (Greece); Diniz, 1965:2 (Portugal: Coimbra, Rezende); Fæster, 1965:192 (Denmark: Hansted Nature Reserve); Myartseva, 1965:84 (Turkmenistan: Akibay, Karabata, Yolotan, and Murgab district); Pulawski, 1965b:260 (structure of gastral segment I); Benno, 1967:33 (in checklist of Sphecidae of Netherlands); de Beaumont, 1967:268 (Turkey); Gauss, 1967:550 (Germany: Baden-Württemberg); J. Heinrich, 1967:69 (Germany: Bayern: Unterfranken District); Niedl and Deneš, 1967:86 (Czech Republic: Třeboň area); H. Schulz, 1967:59 (Germany: Brandenburg: Ruhlsdorf near Potsdam); Scobiola-Palade, 1967b:36 (Romania); Benedek, 1968:70 (Hungary, floral records); Kazenas, 1968b:342 (Kazakhstan: Alma Ata and Gur'yev, now Atyraū, oblasts); Parré, 1968:122 (Germany: Sachsen-Anhalt: Staßfurt); de Beaumont, 1969:81 (Turkey); Benedek, 1969a:83 (Hungary; marshy meadow); Lefebvre, 1969c:232 (Netherlands: Sint-Pietersberg = Montagne Saint Pierre); Romanova, 1969:133 (Russia: North Caucasus); Schmidt, 1969:161 (Germany: Rhein-Main area: Mainzer Sand); Zangheri, 1969:1699 (Italy: in catalog of flora and fauna of Romagna Region); Benedek, 1970:96 (Hungary: Tapolca); Islamov, 1970:63, 64 (Uzbekistan: Chirchik Basin); Oehlke, 1970:672 (Democratic Germany); Tumšs, 1970:70 (Latvia); Wolf, 1971:374 (Italy: Trentino-Alto Adige: Alpi Siusi); Schmidt, 1971b:22 (Germany: Rheinland-Pfalz: between Gonsenheimer Wald and Mainzer Sand); Balthasar, 1972:430 (in Sphecidae Fauna of Czechoslovakia); Kazenas, 1972b:98 (Kazakhstan); Oehlke, 1972:134 (Germany: Island of Hiddensee); Simon Thomas, 1972:175 (France: Landes, Lot-et-Garonne); Haeseler, 1973:53 (Germany: Schleswig-Holstein: Segrahner Berg 12 km southeast of Mölln); Wolf, 1973:41 (Germany: Siegerländer Hüttensand); Kazenas, 1974b:108 (feeding on flowers of *Tamarix* sp., Tamaricaceae, in Kazakhstan), 109 (feeding on flowers of *Statice gmelini* Willd., Plumbaginaceae, *Euphorbia* spp., Euphorbiaceae, in Kazakhstan), 110 (feeding on flowers of *Daucus carota* L., Apiaceae, in Kazakhstan), 111 (feeding on flowers of *Thymus marschallianus* Willd., Lamiaceae, *Saussurea* sp., Asteraceae, and *Lepidium crassifolium* W. et K., Brassicaceae, in Kazakhstan); Kim, Yoon, and Kim, 1975:21 (Korea, as *camptoctris*); Lomholdt, 1975c:80 (in Sphecidae Fauna of Fennoscandia and Denmark); R. 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Wickl, 2010:26 (Germany: Bayern: Sulz- and Ottmaringer Tal); Mokrousov, 2010a:60 (Russia: Nizhny Novgorod Oblast', Tatarstan: no specific localities); Rudoiskatel', 2010:147 (Russia: central and southern Ural Mountains); Saure, 2010b:174 (Germany: Berlin-Reinickendorf: airport Tempel and Flughafensee Protected Area); Schmid-Egger, 2010a:22 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:131 (Germany: Bayern: collected along Main-Donau canal); Shorenko and Konovalov, 2010:10 (Ukraine); Smit and Wijngaard, 2010:69 (in checklist of Sphecinae of Netherlands); Treiber, 2010:134 (France: départements du Bas-Rhin and du Haut-Rhin); van der Smissen, 2010a:332 (Germany: Schleswig-Holstein and Mecklenburg-Vorpommern: locality records), 2010b:383 (France: Ardèche: Lachamp-Raphaël, Plateau du Coiron); Wurdack and Gack, 2010:153 (Germany: Baden-Württemberg: Kaiserstuhl); Baghirov, 2011b:139 (Russia: Altayskiy Krai: Savvushka); Burger, 2011a:286 (Germany: in red list of Sphecidae *sensu lato* of Thüringen); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:497 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Gogala, 2011:7 (Slovenia); Józán, 2011:178 (in checklist of Sphecidae *sensu lato* of Hungary); Rudoiskatel', 2011d:238 (Russia: central Ural Mountains); Saure, 2011d:199 (Germany: Sachsen-Anhalt: conservation area "Heide südlich Burg"); Schmid-Egger, 2011a:42 (France: Parc National du Mercantour); Theunert, 2011a:18 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:66 (Germany: Hessen: endangered); Ziska and Saure, 2011:108 (Germany: Berlin: Tegeler Fließ valley); Boillat, 2012:228 (Switzerland: in checklist of insects of Canton de Genève); Burguet *in* Durand and Burguet, 2012:2 (France: Puy-de-Dôme: sands Girauts-Faures in Orliat commune); Protzenko, Fateryga, Ivanov, and Puzanov, 2012:52 (Ukraine: Crimea; Russia: Irkutsk Oblast': near Bakhtay and Bolshoy Goloustnyy); Nemkov, 2012c:434 (in catalog of Sphecidae of Russian Far East); Saure, 2012b:227 (Germany: Berlin-Spandau: Spandauer Forst); Shlyakhtenok, 2012b:91 (Belorussia: Beresina National Reserve: overgrowing dry meadow); Akulov and Proshchalykin, 2013:111 (Russia: Siberia: Krasnoyarsk Krai); Bitsch, Grouet, and Savina, 2013:291 (France: Pyrénées centrales: département d'Ariège: col de Pailhères), 292 (France: Pyrénées-Orientales: col de Puymorens); Braun-Reichert, 2013:14 (Germany: Bayern: pastures between Regensburg and Nürnberg); Dollfuss, 2013a:394, 404 (in key to *Ammophila* of Palearctic Region and India), 417 (in revision of *Ammophila* of Palearctic Region and India), 2013b:567 (locality records from Austria, Czech Republic, France, Greece, Hungary, Italy, Kazakhstan, Kyrgyzstan, Romania, Russia, Serbia, Slovakia, Tunisia, and Turkey); Dyuzhaeva, 2013:116 (Russia: Samara Oblast': Zhiguli Nature Reserve); Mokrousov, Ruchin, and Egorov, 2013:198 (Russia: Republic of Mordovia: Mordovian State Nature Reserve); Pankov, 2013:228 (Russia: Ivanovo Oblast'); Saure, 2013:17 (Berlin: Treptow-Köpenick: Gosener Wiesen); A. Scholz and Liebig, 2013:16 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:131 (in annotated catalog of aculeate wasps of Belorussia); Vieira, Oliveira, Brewster, and Gayubo, 2013:15 (Portugal: Douro International Natural Park); Wiśniowski and Piotrowski, 2013:20 (Poland: Poleski National Park); Wiśniowski and Szczepko, 2013:20 (Poland: Kampinos National Park near Warszawa); Bitsch, 2014:395 (France: Ariège: Ascou: col de Pailhères); Danilov, 2014a:426 (Russia: Siberia: Altayskiy Krai, Irkutsk Oblast', Krasnoyarskiy Krai, Novosibirsk Oblast', Omsk Oblast', Tyva), 2014b:520, 521 (in key to Sphecidae s.s. of Siberia); Flügel, 2014:255 (Brandenburg: Hangelsberger Heide); U. Frommer, 2014:26 (Germany: Hessen: Lorch); Hellqvist, Abenius, and Norén, 2014:90 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Kazenas, 2014a:132 (Kazakhstan: Karatau Mountain Range); Kim, Yeo, and Kim, 2014:274 (in key to *Ammophila* of South Korea), 275 (in revision of Sphecidae *sensu stricto* of South Korea); Mokrousov and Vafin, 2014:54 (Russia: Republic of Tatarstan); P. Rosa and Pagliano, 2015:95 (Italy: Lombardia and Piemonte: Parco del Ticino); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces); Dollfuss, 2015b:419 (Morocco: Grand Atlas Mountains: Oukaimedon); J.-K. Kim, 2014:416 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Koçak and Kemal, 2015:277 (in checklist of Hymenoptera of Turkey); Paukkunen and Kozlov, 2015:67 (northernmost known area: Russia: Murmansk Oblast': Kashkarantsy); P. Rosa and Pagliano, 2015:95 (Italy: Lombardia and Piemonte: Parco del Ticino); Saure, 2015:12 (Germany: Berlin-Lichterfelde); Shorenko, 2015:311 (in list of Sphecidae *sensu lato* of Crimea); Simon, Lorthiois, and Macé, 2015:53 (France: alluvial terraces in Seine-Maritime Department: Anneville-Ambourville); Bleidorn, Gerth, Hopfe, et al., 2016:11 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Levárdá and Matache, 2016:39 (in catalog of Sphecidae s.s. of Romania); Mokrousov and Popov, 2016:560 (Russia: Krasnodarskiy Krai); Reemer and Peeters, 2016:10 (Netherlands: Hulshorsterzand); A. Scholz, 2016:71 (Germany: Sachsen: Kleinraschützer Heide); Stolle and Saure, 2016:927 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Vas, Szöllösi-Tóth, and Muskovits, 2016:154 (Romania: Sălaj County); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:7 (Turkey: Erzurum: Çat: Yukari Çat); Arens, 2017a:635 (Greece: Peloponnesus); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Magdalou, 2017:14 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Julols and Vallée d'Eyne); Shorenko, 2017:75 (in Crimea collected in May through July); Twerd, Krzyżyński, Waldon-Rudziołek, and Olszewski, 2017:6 (Poland: Inowrocław: nesting in postindustrial soda ash dumping sites); Lett, 2018:202 (France: Loir-et-Cher: Gièvres at 47°16'39"N 1°41'52"E); Nicolas and Vago, 2018:12 (France: Pas-de-Calais: Mont Saint-Frieux); Shorenko, 2018:126 (Crimea, including localities, habitats, and number of specimens); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300, 302 (in key to *Ammophila* of China); Baghirov and Nesterovitch, 2019:45 (Russia: Western Siberia: Yamalo-Nenets Autonomous District: near Khanymey village); Carminati, Mora, and Cretin, 2019:27 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Ruchin and Antropov, 2019a:1319 (Russia: Mordovian State Nature Reserve); Gülmez, 2019:3 (Turkey: Ankara and Sivas provinces: no specific localities), 4 (abnormal forewing venation); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:91 (in Sphecid Fauna of Europe); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:303 (in list of Tunisian Sphecidae *sensu stricto*); Danilov, 2020:317 (specimens from Kazakhstan and Russia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Kejval, Blažej, and Erhart, 2020:118 (western Czech Republic); Saure, 2020:276 (Germany: Sachsen-Anhalt: sand dunes); Can and Gulmez, 2021b:308 (Turkey: locality records); Cross, Baldock, and Wood, 2021:14 (in catalog of Sphecidae *sensu lato* of Portugal); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland); Embergenov, Élmurodova, Amirov and Kimyonazarov, 2022:47 (Uzbekistan: Khiva area, Zhizzak Province: Arnasay District); Embergenov, Akhmedov, and Medetov, 2023:24 (Uzbekistan: southern Lake Aral region); Kaplan and Yildirim, 2023:1691 (in checklist of Sphecidae *sensu lato* of Turkey). – ***As SpheX campestris***: Zetterstedt, 1838:436 (new combination, in revision of insects of Lapland, probably misidentified *Ammophila pubescens*); Valkeila, 1962b:67 (southwestern Finland). – ***As Podalonia campestris***: Bischoff, 1931:8 (new combination, Spain). – ***As Miscus campestris***: Vander Linden, 1827:362 (new combination, France: Paris area); von Siebold, 1839:47 (Germany: Danzig, now Poland: Gdańsk); Herrich-Schaeffer, 1840:297 (Germany: Bayern: Regensburg area); Dahlbom, 1942a:8 (in review of Scandinavian aculeates), 1843:7 (in revision of Sphecidae and Pompilidae), 1845:429 (in Tabula Synoptica of Sphecidae); Lepelletier de Saint Fargeau, 1845:386 (in revision of world Hymenoptera); Eversmann, 1849:363 (Russia: Orenburg area); nec F. Smith, 1849b:2550 (= *Ammophila pubescens*, preying on caterpillars, nesting in soil); Wissmann, 1849:9 (Germany: Kingdom of Hannover: Hannover, Hedemünden); Tischbein, 1850:7 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); Wesmael, 1852:83 (Belgium); F. Smith, 1853:62 (in checklist of British Hymenoptera); Kirchner, 1854:310 (Czechoslovakia: Kaplitz in Budweiser District, now České Budějovice); F. Smith, 1856:224 (in catalog of Hymenoptera in British Museum); Kawall, 1857:23 (Kurland, now Latvia); Ruthe and Stein, 1857:312 (Germany: Berlin area); Schenck, 1857:203 (Germany: in revision of fossorial wasps of Nassau Region); A. Costa, 1858a:19 (Italy: Campania: Monti Partenii in Benevento Region), 1858b:21 (in revision of Sphecidae of Kingdom of Naples); F. Smith, 1858c:84 (in review of British Aculeata, redescription); Assmuss, 1859:606 (Russia: Moscow Governorate); Schenck, 1860:149 (Germany: Nassau Region); Brischke, 1862:98 (Germany: Preussen Province, now Poland: Pomorze Region), 1864:208 (Germany: Pommern, now Poland: Pomorze Region, prey); A. Costa, 1867b:79 and 1867c:23 (in revision of Italian Sphecidae); Jaennicke, 1867:147 (Germany: Hessen: Frankfurt area); Schenck, 1867a:357 (Germany: Nassau Region); Dietrich, 1868:364 (Switzerland: Zurich Canton); Jaennicke, 1868:9 (Germany: Hessen: Rüsselsheim); Aichinger, 1870:321 (Austria: Tirol); Thomson, 1870:230 (in revision of Swedish wasps); F. Smith, 1871b:9 (in catalog of British Aculeata); P. Ivanov, 1872:152 (Ukraine: Khar'kiv Oblast': Kupyansk area); Dours, 1874:146 (in catalog of Hymenoptera of France); Thomson, 1874:173 (in revision of Hymenoptera of Scandinavia); Beuthin, 1876:231 (Germany: Hamburg area); Girard, 1879:970 (morphology and habits); Marquet, 1881:178 (southern France, a variety of *Ammophila sabulosa*); Yaroshevskiy, 1881:127 (Ukraine: Khar'kiv Oblast': Khar'kiv, Kupyansk); Schøyen, 1887:9 (Norway: Kragere, Kristiania (now Oslo), and Lærdal i Sogn); Radoszkowski, 1887b:91 (in list of Transcaspian Hymenoptera); Brischke, 1888a:54 (Germany: Hela Peninsula, now Poland: Hel Peninsula), 1888b:94 (Germany: Preussen Province, now Poland: Pomorze Region); Assmuss, 1892:52 (Russia: earlier record from

Moscow Governorate repeated); Westerlund, 1893:23 (Russia: Karelian Republic: northern shore of Lake Ladoga); Acloque, 1897:97 (in Sphecid Fauna of France and Algeria); Borries, 1897:99 (nesting habits); Lüderwaldt, 1897b:30 (Germany: Gollnow, now Poland: Pomorze Region: Goleniów); Strand, 1898b:92 (Norway); Chyzer, 1902:33 (Hungary); Cavro, 1910:685 (France: Département du Nord); Schirmer, 1912:168 (Germany: Berlin area); Ferton, 1923:294 (finds nest with difficulty when carrying prey); Casolari and Casolari Moreno, 1980:101 (specimens in M. Spinola collection, Torino).

*Ammophilus retusus* Gistel, 1848:142, sex not stated. Holotype or syntypes: Germany: no specific locality (depository unknown, perhaps München). Synonymized with *Ammophila campestris* by Menke, 1964b:152. – **As *Ammophila retusus***: Gistel, 1850:466 (new combination, redescription).

*Miscus neoxenus* F. Smith, 1856:225, ♀, ♂. Syntypes: China: Shanghai (BMNH). Synonymized with *Ammophila campestris* by Kohl, 1906b:319. – Kohl, 1906b:321 (as variety of *Ammophila campestris*), 373 (original description copied). – **As *Ammophila neoxena***: Dalla Torre, 1897:405 (new combination, in catalog of world Hymenoptera); Dover, 1926:234 (China: Hong Kong).

*Ammophila slovacca* Zavdil in Zavdil, Šusterka, and Baťa, 1937:213, ♂. Holotype: ♂, Slovakia: Děvinská Kobyla (NMPC). Synonymized with *Ammophila campestris* by Noskiewicz, 1939:163 and Balthasar, 1972:430. – Šnoflák in Zavdil and Šnoflák, 1948:100 (in key to Sphecidae of Czechoslovakia); Bajári, 1957a:13 (in key to Hungarian Sphecidae), 1957b:134 (first record from Hungary); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Haris, 2016:27 (in list of species described by V. Zavdil from Carpathian Basin).

#### 44. *caprella* Arnold

*Ammophila caprella* Arnold, 1951:142, ♂, ♀. Syntypes: Ethiopia: Addis Ababa, Mangasha (BMNH). – Leclercq, 1955h:83 (bibliographic references); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Dollfuss, 2015a:313, 316 (in key to Sub-Saharan *Ammophila*), 330 (in revision of Sub-Saharan *Ammophila*; Angola, Burkina Faso, Central African Republic, Nigeria, Togo, Zambia), 2015b:419 (locality records from Central African Republic and Zambia).

#### 45. *cellularis* Gussakovskij

*Ammophila cellularis* Gussakovskij, 1930c:203, ♀. Holotype: ♀, Kazakhstan: Pavlodar at 52°18'N 76°57'E (ZIN). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Kazenas, 1978b:37 (in key to Sphecidae of Kazakhstan and Central Asia), 1998b:162 (in Sphecid Fauna of Kazakhstan), 2001b:17 (in checklist of Sphecidae of Kazakhstan and Central Asia, as *cellularis*), 2002a:36 (geographic distribution, collecting localities in Kazakhstan); Danilov, 2009:57 (Russia: Western Siberia: Kulundinskaya Steppe), 2010b:45 (distribution of Scythian type); Dollfuss, 2013a:393 (in key to *Ammophila* of Palearctic Region and India); Danilov, 2014b:519 (in key to Sphecidae s.s. of Siberia, not yet found in Siberia); 2015a:539 (redescription), 2016:348 (holotype preserved in Zoological Institute, Sankt-Petersburg, Russia).

#### 46. *centralis* Cameron

*Ammophila centralis* Cameron, 1888a:6, ♂. Lectotype, ♂, Guatemala: El Reposo (BMNH), designated by Menke in Bohart and Menke, 1976:151. – Dalla Torre, 1897:397 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:161 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Murray in Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Maes, 1989:94 (in catalog of Nicaraguan Sphecidae); Hanson and Menke, 1995:637 (known from Costa Rica); Menke, 1996e:192 (in key to Ammophilini of Costa Rica, in revision of Ammophilini of Costa Rica); Menke and Parker, 1996:186 (Costa Rica: population largest during wet season); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007:47 (Mexico: Tamaulipas); Menke, 2020:54 (in revision of North and Central American *Ammophila*). – **As *Sphex centralis***: Fernald, 1934:109 (new combination, in revision of North American and West Indian *Ammophila*).

*Ammophila consors* Cameron, 1888a:12, ♀, ♂. Lectotype: ♂, Mexico: northern Yucatán: Temax (BMNH), designated by Menke in Bohart and Menke, 1976:151. Synonymized with *Ammophila centralis* by Bohart and Menke, 1976:151 and by Menke, 1996e:192 (as new synonym). – Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:161, 162 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); Murray in Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera). – **As *Sphex consors***: Fernald, 1934:41 (new combination, in revision of North American and West Indian *Ammophila*).

*Ammophila nigrocaerulea* Cameron, 1888a:12, [♀] (as *nigro-caerulea*, incorrect original hyphenation). Syntypes: ♀, Guatemala: San Gerónimo (BMNH). Synonymized with *Ammophila centralis* by Bohart and Menke, 1976:151 and by Menke, 1996e:192 (as new synonym). – Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:162 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); Fernald, 1934:157 (in revision of North American and West Indian *Ammophila*, as unrecognized species).

#### 47. *centroafricana* Dollfuss

*Ammophila centroafricana* Dollfuss, 2015a:331, ♂. Holotype: ♂, Central African Republic: 60 km southeast of Bouar at 15°42'N 16°00'E (OÖLM). Paratypes: Benin, Burkina Faso, Cameroon, Ghana, Guinea, Ivory Coast, Liberia, Namibia, Nigeria, Sierra Leone, Togo, Zimbabwe. – Dollfuss, 2015a:318 (in key to Sub-Saharan *Ammophila*), 2015b:420 (locality records from Benin, Central African Republic, Guinea, Nigeria, Zambia, and Zimbabwe).

#### 48. *clavus* (Fabricius)

NOTE: *clavus*, Latin for nail, is a noun and thus invariable.

*Sphex clavus* Fabricius, 1775:348, sex not stated (as *clauus*). Holotype or syntypes: ♀, Nova Hollandia, now Australia: no specific locality (BMNH: Banks collection). – Fabricius, 1781:445 (redescription), 1787:275 (redescription); Gmelin, 1790:2727 (redescription); Christ, 1791:299 (redescription); Fabricius, 1793:205 (redescription), 1796:155 (in Index to his Entomologia Systematica, 1793); Turton, 1801:487 (redescription); Fabricius, 1804:206 (redescription); Dahlbom, 1845:XX (specimens in collection Fabricius are *Ammophila holosericea*). – **As *Ammophila clavus***: Audouin, 1822a:242 (new combination, in Dictionnaire classique d'histoire naturelle); F. Smith, 1856:214 (in catalog of Hymenoptera in British Museum, type in Banks collection); Froggatt, 1892:209 (in catalog of Australian Hymenoptera); Dalla Torre, 1897:397 (in catalog of world Hymenoptera); R. Turner, 1908:463 (redescription; Australia: Queensland); Maidl, 1925a:381 (Indonesia: Sumatra); Sonan, 1927:132 (new combination, Taiwan, as *clvus*); Yasumatsu, 1935a:3, 22 (China: Jehol Region); Iwata, 1939b:165 (nesting habits); Sonan, 1942:134 (in revision of Ammophilini of Taiwan); Iwata, 1955:28 (egg size, number of oocytes); van der Vecht, 1961a:39 (redescription of type material); Tsuneki, 1962b:25, 26 (in key to Ammophilini of Japan and Korea; synonymy); Iwata, 1964b:358 (nesting behavior in Thailand), 1965:107 (number of oocytes); Tsuneki, 1966a:21 (Japan), 1967e:2 (China: Manchuria), 1967i:383 (Ruykyu Islands and Taiwan), 1967j:5 (Taiwan), 9, 11 (in key to Ammophilini of East Asia); Okuno, 1969:63 (nesting habits); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Brockmann, 1985b:312 (nest closure summary); Cardale, 1985:229 (in catalog of Australian Sphecidae); Naumann, 1993:181 (Australia: Queensland: Heathlands area in Cape York), 1998:182 (Australia: north-west Queensland: Musselbrook area, approximately 18°40'S 138°23'E); Ohl and Linde, 2003:149 (number of ovarioles); Hua, 2006:275 (in list of Chinese insects, geographic distribution, as *clavus clavus*; Nagase, 2006b:2 (specimens collected by First Scientific Expedition to Manchoukou, 1933, now part of eastern China); Pagliano, 2008:514 (specimens in M. Spinola collection, Torino); Dollfuss, 2013a:392, 402 (in key to *Ammophila* of Palearctic Region and India), 419 (in revision of *Ammophila* of Palearctic Region and India), 2013b:568 (locality records from China, India, Indonesia, Laos, Malaysia, Thailand, and Vietnam); Barthélémy, 2014:4 (China: Hong Kong); Job and Olakkengil, 2014:14 (India: Kerala: Thrissur District); Dollfuss, 2015b:420 (locality records from Laos and Thailand); Pham, Kumar and Danilov, 2015:1583 (in list of Sphecidae *sensu lato* of Vietnam, as *clavus clavus*); Tano and Kurokawa, 2015:26 (central Vietnam: My Son); Sheikh, Thomas, Bandari, and Jubiraj, 2017:286 (India: Madhya Pradesh: Jabalpur District: Dumna Nature Park; diagnostic characters); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299, 302 (in key to *Ammophila* of China); Pham, Truong, Th.T. Nguyen, Th.H. Nguyen, Q. Nguyen, and Th.M. Nguyen, 2019:73 (Vietnam: Hanoi and vicinity);

Danilov, 2020:317 (specimens from Thailand and Vietnam in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

*Ammophila atripes* F. Smith, 1852a:46, ♀. Holotype or syntypes: ♀, India: Maharashtra: Khandaly (BMNH). Synonymized with *Ammophila clavus* by Dollfuss, 2013a:419. – F. Smith, 1856:217 (in catalog of Hymenoptera in British Museum); de Motschoulsky, 1863:23 (Sri Lanka, listed); F. Smith, 1871a:359 (in catalog of Oriental Aculeata); Cameron, 1889c:93 (in list of Sphecidae of Oriental Region), 97 (redescription); Bingham, 1896a:437 (in list of Aculeata of Sri Lanka, bibliographic references), 1897:229 (redescription; prey: Locustidae, probably in error); Dalla Torre, 1897:395 (in catalog of world Hymenoptera); Cameron, 1901a:25 (Malaysia); Rothney, 1903:104 (India: West Bengal: Barrackpore); Ashmead, 1904d:150 (Philippines); Bingham, 1905:44 (Malaysia: Biserat); Cameron, 1905k:65 (Java); R. Brown, 1906:687 (in catalog of Philippine Hymenoptera); Paiva, 1907:15 (India: West Bengal: Siliguri; Nepal: Soon-drijal); Maxwell-Lefroy, 1909:203 (India: common); Strand, 1913a:85 (Taiwan); Nurse, 1914:445 (India: Assam: Sadiya); Strand, 1915:95 (India, Sri Lanka; China: Tsingtau, now Qingdao); Dover, 1926:234 (China: Hong Kong); Matsumura and Uchida, 1926:41 (Okinawa); von Schulthess, 1935:304 (Australia: Burnside, Darwin, Katherine; Indonesia: Flores: Kelimotoe; specimens from Timor = *Ammophila insolata auricollis*); Iwata and Yoshikawa, 1961:398 (Thailand); Tsuneki, 1963i:101 (Malaysia: Parit Buntar); Yasumatsu and Hirashima, 1965:176 (Taiwan: Tainan); Baltazar, 1966:342 (occurrence in Philippines doubtful); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Hua, 1989:116 (China); Krombein, 1984a:6 (Sri Lanka, nesting habits); Cardale, 1985:229 (in catalog of Australian Sphecidae); Zhou and Wu, 1993a:670 (China: Wuling Mountains), 1993b:724 (China: Longqi Mountain Nature Reserve, as *atripes atripes*); Q. Li, J. Li, and J. Yang, 1994:289 (in revision of *Ammophila* of Shandong Province, China, as *atripes atripes*); S. Gupta, 1995:85 (India: Uttar Pradesh); Q. Li and Ch. Yang, 1995c:573 (China: Zhejiang Province: Baishanzu Mountain, as *atripes atripes*), 1995c:271 (China: Zhejiang Province: Gutianshan, as *atripes atripes*); van Vondel, 1995:29 (specimens from India and Java in Natuurmuseum Rotterdam); Wu and Zhou, 1996a:47 (in revision in Economic Insect Fauna of China, as *atripes atripes*); Jha and Farooqi, 1994:8 (description and illustration of male genitalia); Yamane, Ikudome, and Terayama, 1999:480 (Japan: in Identification Guide to Sphecidae of Nansei = Ryukyu Islands); Jonathan, Ray, and Kundu, 2000:185 (India: Meghalaya: East Khasi Hills: Songsak; West Garo Hills: Tura); Q. Li and He, 2001:754 (China: Tianmushan Nature Reserve at 30°22'N 119°26'E, as *atripes atripes*); S. Gupta, 2004:25 (India: Uttaranchal: Naitwar in Uttarkashi District); Wu, Zhou, Q. Li, and Yang, 2003:808 (China: Fujian Province, as *Ammophila atripes atripes*); Q. Li and He, 2004:1117 (in hymenopterous fauna of Zhejiang Province, China, as *Ammophila atripes atripes*); Hua, 2006:275 (in list of Chinese insects, geographic distribution, as *atripes atripes*); Q. Li, 2006:140 in X. Chen and J. He (description, habits, distribution, illustration of habitus, as *atripes atripes*); Terayama and Tano, 2006:7, 14, 18 (in key to Japanese Ampulicidae and Sphecidae); Ma, Q. Li, Wang, Jiang, and Lu, 2018:852 (China: Shanxi: Qinling Mountains, as *atripes atripes*). – **As *Ammophila clavus atripes***: Tsuneki, 1957j:15 (new status), 1967j:9 (in key to Ammophilini of East Asia), 1974b:590 (Thailand, Malaysia). – **As *Sphex atripes***: Rohwer, 1922:671 (new combination, Philippines).

*Ammophila basalis* F. Smith, 1856:214, ♀. Syntypes: ♀, India or Pakistan: Punjab: no specific locality (BMNH). Synonymized with *Ammophila clavus* by Dollfuss, 2013a:419. – F. Smith, 1871a:359 (in catalog of Oriental Aculeata); Cameron, 1889c:93 (in list of Sphecidae of Oriental Region); Bingham, 1897:231 (in revision of wasps and bees of British India, now India and Pakistan); Dalla Torre, 1897:396 (in catalog of world Hymenoptera); Nurse, 1893a:520 (description of ♂); Rothney, 1903:104 (India: West Bengal: Barrackpore); Maxwell-Lefroy, 1909:203 (India: common); Matsumura, 1911:119 (in Thousand insects of Japan); Dutt, 1912:202 (India: Pusa); Ramakrishna Aiyar, 1916:554 (reference to Nurse, 1903); Matsumura and Uchida, 1926:41 (Okinawa); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Jha and Farooqi, 1994:8 (description and illustration of male genitalia); Jonathan, Ray, and Kundu, 2000:184 (India: Meghalaya: East Khasi Hills: Shillon); Hua, 2006:275 (in list of Chinese insects, geographic distribution).

*Ammophila nigripes* F. Smith, 1856:215, ♂. Holotype or syntypes: ♂, India: Tamil Nadu: Madras (BMNH). Synonymized with *Ammophila basalis* by R. Turner, 1919c:396. – F. Smith, 1871a:359 (in catalog of Oriental Aculeata), 1878b:167 (Burma: Tenasserim Province); Cameron, 1889c:93 (in list of Sphecidae of Oriental Region), 97 (redescription); Bingham, 1897:231 (in revision of wasps and bees of British India, now India and Pakistan); Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Rothney, 1903:104 (India: West Bengal: Barrackpore); Bingham, 1905:44 (Malaysia: Sungkei); Dutt, 1912:202 (India: Pusa).

*Ammophila dimidiata* F. Smith, 1856:216, ♀, junior primary homonym of *Ammophila dimidiata* (Christ, 1791). Syntypes: ♀, India: Bombay, Madras, north Bengal (BMNH). Tentatively synonymized with *Ammophila atripes* by R. Bohart and Menke, 1976:151, synonymy confirmed by Dollfuss, 2013a:418. – F. Smith, 1871a:359 (in catalog of Oriental Aculeata); Cameron, 1889c:93 (in list of Sphecidae of Oriental Region); Bingham, 1897:230 (in revision of wasps and bees of British India, now India and Pakistan); Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Rothney, 1903:104 (India: West Bengal: Barrackpore).

*Ammophila simillima* F. Smith, 1856:217, ♀. Holotype or syntypes: ♀, China: Hong-Kong (BMNH). Synonymized with *Ammophila atripes* by Bingham, 1897:229. – A. Costa, 1864b:111 (specimen from China in Museo Zoologico di Napoli); Dalla Torre, 1897:410 (in catalog of world Hymenoptera).

*Ammophila pulchella* F. Smith, 1856:218, ♂. Syntypes: China: Hong Kong and Shanghai (BMNH). Synonymized with *Ammophila atripes* by Bingham, 1897:229. – Dalla Torre, 1897:406 (in catalog of world Hymenoptera); Nomura, 1934:25 (Japan: Ryukyu Islands, as *sulchella*).

*Ammophila longiventris* de Saussure, 1867:24, ♂. Lectotype: ♂, Sri Lanka: Trincomalee (MHNG), designated by Menke in R. Bohart and Menke, 1976:151. Synonymized with *Ammophila atripes* by Bingham, 1897:229, synonymy confirmed by W. Schulz, 1911b:162. – Bingham, 1896a:437 (in list of Aculeata of Sri Lanka, bibliographic references); Cameron, 1889c:93 (in list of Sphecidae of Oriental Region); Dalla Torre, 1897:404 (in catalog of world Hymenoptera); Casolari and Casolari Moreno, 1980:100 (specimen in M. Spinola collection, Torino); Pagliano, 2008:510 (specimen in M. Spinola collection, Torino).

*Ammophila humbertiana* de Saussure, 1867:25, ♀. Lectotype: ♀, Sri Lanka: Trincomalee (MHNG), designated by Menke in Bohart and Menke, 1976:151. Synonymized with *Ammophila atripes* by W. Schulz, 1911b:161. – Radoszkowski, 1871:196 (China: Zheizhang Province: Ning-Po); Cameron, 1889c:93 (in list of Sphecidae of Oriental Region); Bingham, 1896a:437 (in list of Aculeata of Sri Lanka, bibliographic references), 1897:230 (redescription); Dalla Torre, 1897:403 (in catalog of world Hymenoptera).

*Ammophila spinosa* F. Smith, 1873a:259, ♀. Holotype or syntypes: ♀, China: Hong Kong (BMNH). Synonymized with *Ammophila atripes* by Bingham, 1897:229. – Dalla Torre, 1897:410 (in catalog of world Hymenoptera).

*Ammophila orientalis* Cameron, 1889c:9, ♀. Syntypes: origin not indicated, but probably India (OXUM). Synonymized with *Ammophila basalis* by Bingham, 1897:231. – Cameron, 1889c:3 (in list of Sphecidae of Oriental Region); Dalla Torre, 1897:406 (in catalog of world Hymenoptera); Dollfuss, 1989:7 (type material in NHMW).

*Ammophila buddha* Cameron, 1889c:94, sex not stated. Syntypes: India: Uttar Pradesh: Allahabad; and West Bengal: Barrackpore 20 km north of Calcutta (OXUM). Synonymized with *Ammophila atripes* by Bingham, 1897:229. – Cameron, 1889c:93 (in list of Sphecidae of Oriental Region); Dalla Torre, 1897:396 (in catalog of world Hymenoptera); Dollfuss, 1989:7 (type material in NHMW).

### **ssp. *formosana* Strand**

*Ammophila formosana* Strand, 1913:85, ♀, ♂. Syntypes: Taiwan: many localities (DEI). – Strand, 1927:253 (in list of species described by author); Dollfuss, 2013a: 419 (in revision of *Ammophila* of Palearctic Region and India, listed in synonymy of *Ammophila clavus*). – **As *Ammophila atripes formosana***: R. Bohart and Menke, 1976:151 (new status, listed); Tsuneki, 1982d:10 (Taiwan), 1982g:55 (known from the Ryukyu archipelago); Yamane and Ikudome, 1990:101 (Japan: distribution in Ryukyu Islands); Porter, Stange, and Wang, 1999:5 (in checklist of Sphecidae of Taiwan). – **As *Ammophila clavus formosana***: Tsuneki and Iida, 1969:17 (description of larva), Tsuneki, 1971f:4 (Taiwan); Haneda, 1972:5 (Taiwan); Tano, 1972:22 (Japan: Ryukyu Islands); Murota, 1973b:116 (Taiwan); Hua, 2006:275 (in list of Chinese insects, geographic distribution).

*Ammophila clavus taiwana* Tsuneki, 1967j:15, ♀, ♂. Holotype: ♀, Taiwan: Puli (originally K. Tsuneki collection, now USNM). Synonymized with *Ammophila clavus formosana* by Tsuneki, 1971f:4. – Tsuneki, 1967j:9 (in key to *Ammophilini* of East Asia), 1968i:60 (nesting habits); Tsuneki *in* Tsuneki and Iida, 1969:6 (nesting habits); Haneda, 1971b:31 (Taiwan); Nuhn and Menke, 1994:26 (holotype transferred to USNM).

#### **ssp. japonica Kohl**

*Ammophila japonica* Kohl, 1906:328, ♀, ♂. Lectotype: ♂, Japan: Kofou (MNHN), designated by Menke *in* Bohart and Menke, 1976:151. Dollfuss, 2013a: 419 (in revision of *Ammophila* of Palearctic Region and India, listed in synonymy of *Ammophila clavus*). – Strand, 1915:95 (as synonym of *Ammophila atripes*); Gussakovskij, 1938:3 (China: Kiangsu Province). – **As *Ammophila atripes japonica***: R. Bohart and Menke, 1976:151 (new status, in checklist of world Sphecidae); Tsuneki, 1982b:14 (known from Korea); Paik, 1985:197 (in list of Sphecidae of Korea); Tsuneki, 1991:199 (Korea); Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:386 (in key to Sphecidae of Russian Far East); Suda, 2004:35 (Japan: Yamanashi Prefecture); Negoro, Haneda, and Tano, 2005:43 (Japan: Toyama Prefecture); N. Yamamoto, 2011:11 (Japan: Kyūshyū: mainland Nagasaki Prefecture). – **As *Ammophila clavus japonica***: Tsuneki, 1967j:9, 11 (in key to *Ammophila* of East Asia), 15 (new status); Itami, 1968a:16 (Japan: Yamagata Prefecture: foot of Mount Iide); Nambu, 1968b:26 (Japan: Saitama Prefecture); Tsuneki, 1968i:36 (nesting habits), 1969e:24 (Japan: specimens in Osaka Museum of Natural History), 1973p:120 (Japan: Fukui Prefecture), 1974a:359 (Korea); Nambu, 1975b:70 (Japan: Saitama Prefecture); Hua, 2006:275 (in list of Chinese insects, geographic distribution); J.-K. Kim, 2014:416 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Kim, Yeo, and Kim, 2014:274 (in key to *Ammophila* of South Korea), 276 (in revision of Sphecidae *sensu stricto* of South Korea); Shimizu and Watanabe, 2016:36 (Japan: Fukui Prefecture: Katsuyama City).

#### **ssp. taschenbergi Cameron**

*Ammophila erythropus* Taschenberg, 1869:434, ♀, junior primary homonym of *Ammophila erythropus* F. Smith, 1856. Syntypes: Indonesia: Java: no specific locality (Halle). Dollfuss, 2013a: 419 (in revision of *Ammophila* of Palearctic Region and India, listed in synonymy of *Ammophila clavus*). – Bohart and Menke, 1976:151 (in checklist of world Sphecidae).

*Ammophila taschenbergi* Cameron, 1889c:94. Substitute name for *Ammophila erythropus* Taschenberg. – Dalla Torre, 1897:410 (in catalog of world Hymenoptera). Dollfuss, 2013a: 419 (in revision of *Ammophila* of Palearctic Region and India, listed in synonymy of *Ammophila clavus*). – **As *Ammophila atripes taschenbergi***: R. Bohart and Menke, 1976:151 (new status, in checklist of world Sphecidae).

#### **49. cleopatra Menke**

*Ammophila cleopatra* Menke, 1964a:19, ♀, ♂. Holotype: ♂, USA: California: Santa Barbara County: Goleta (UCD). – Evans, 1970:485 (Wyoming: Jackson Hole); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1590 (in catalog of North American Hymenoptera); Parks, 1986:34 (California: Torrey Pines State Reserve); Menke, 1986c:36 (Arizona: Cochise County: 3 mi. east of Willcox), 37 (Arizona: Cochise County: Naco); O'Brien, 1989b:210 (distribution in Michigan); Dollfuss, 1989:7 (paratype in NHMW); Spofford, Kurczewski, and Downes, 1989:258 (reference to publication on nest parasite *Senotainia littoralis* Allen, miltogrammine fly); Menke, 1994f:21 (Utah: Calf Creek Falls State Park and Monticello area); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Ohl and Linde, 2003:149 (number of ovarioles); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario), 29 (distribution within Ontario), 34 (first records from Ontario and British Columbia: list of localities); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Danilov, 2014:354 (a pair of paratypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Ratzlaff, 2016:28 (Canada: British Columbia: from Buck, 2004); Lechner, 2019:152 (Iowa: Sioux City, parasitized by strepsipteran *Paraxenos lugubris* Pierce); Menke, 2020:89 (in revision of North and Central American *Ammophila*).

As *Ammophila juncea*: Evans, 1959d:461 (nesting behavior), corrected to *Ammophila cleopatra* by Menke, 1965b:258.

#### **50. clypeola Q. Li and Ch. Yang**

*Ammophila clypeola* Q. Li and Ch. Yang, 1990:262, ♀. Holotype: ♀, China: Nei Mongol: Dongsheng County: no specific locality (Beijing Agricultural University). – Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2013a:421 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ch. Wang, Bashir, Q. Li, and Ma, 2018:296 (China: Nei Mongol: Siziwangqi at 41°31'N, 111°41'E, description of ♂), 300, 302 (in key to *Ammophila* of China).

#### **51. clypeolineata Dollfuss**

*Ammophila clypeolineata* Dollfuss, 2015a:332, ♀, ♂. Holotype: ♂, Central African Republic: 90 km northeast of Nola at 04°07'N 16°37'E. Paratypes: Ivory Coast, Namibia, Nigeria, Kenya, Uganda – Dollfuss, 2015a:310, 314 (in key to Sub-Saharan *Ammophila*), 2015b:420 (locality records from Central African Republic and Nigeria).

#### **52. coachella Menke**

*Ammophila coachella* 1965c:1, nomen nudum. Objective synonym of *Ammophila coachella* Menke, 1966b.

*Ammophila coachella* Menke, 1966b:38, ♀, ♂. Holotype: ♂, USA: California: Riverside County: Boyd Desert Research Center 4 mi. south of Palm Desert (originally CIS, now CAS). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 2020:139 (in revision of North and Central American *Ammophila*).

#### **53. conditor F. Smith**

*Ammophila conditor* F. Smith, 1856:223, ♀. Holotype or syntypes: ♀, USA: Florida: Duval County: Saint John's Bluff, now in Jacksonville (BMNH). – Cresson, 1863:318 (in catalog of North American Hymenoptera); Provancher, 1882:15 (description of ♂), 1883b:616 (in revision of Canadian Hymenoptera); Taylor, 1884:80 (Canada: British Columbia: Island of Vancouver); Cresson, 1887:274 (in catalog of North American Hymenoptera); Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); J. Smith, 1900:523 (in list of insects of New Jersey); nec Harrington, 1902:224 (= *Ammophila urnaria*); Melander, 1903:159 (in key to North American *Ammophilini*), 163 (bibliographic references, geographic distribution); Murray *in* Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 2020:111 (in revision of North and Central American *Ammophila*). – **As *Spheg conditor***: J. Smith, 1910:676 (new combination, in new list of insects of New Jersey); nec Faull, 1913:384 (= *Ammophila urnaria*); Fernald, 1926:8 (as new synonym of *Ammophila procera*); Krombein and Evans, 1955:233 (Florida).

#### **54. confusa A. Costa**

*Ammophila confusa* A. Costa, 1864b:111, sex not stated. Syntypes: Senegal: no specific locality (Napoli). – Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Berland, 1950b:295 (Niger: Air area, as *confusa* Smith); Leclercq, 1955h:92 (bibliographic references, as incertae sedis); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae).

#### **55. conifera (Arnold)**

*Spheg conifer* Arnold, 1920:47, ♀, ♂ (as *conifera*, incorrect original termination). Syntypes: South Africa: Eastern Cape Province: Willowmore; Zimbabwe: Bulawayo (SAM). – Arnold, 1928b:273 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae); Marshall, 1997:3 (reference to original description). – **As *Ammophila conifera***: Salt, 1927:182 (new combination, stylopized specimen; Zaire: Kabare); Leclercq, 1955h:87 (bibliographic references, locality records); de Beaumont, 1967b:504 (South Africa); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Gess, 1981:19 (South Africa: Hilton Farm 18 km west-northwest of Grahamstown; nesting in friable soils); Weaving, 1988:327-349 (prey selection), 1989a:1-16 (South Africa; nesting habits); S. Gess, 1996:275, 303 (floral records); S. Gess and F. Gess, 2003:95 (South Africa: visiting flowers of *Hermbsstaedtia glauca* Reichb. ex Steud., Amaranthaceae, *Conyza bonariensis* (L.) Cronq., Asteraceae, *Acacia karroo* Hayne, Fabaceae, and

*Phyllopodium cuneifolium* (L. f.) Benth., Scrophulariaceae); Dollfuss, 2015a:311, 315 (in key to Sub-Saharan *Ammophila*), 334 (in revision of Sub-Saharan *Ammophila*; Mozambique, Namibia, Zimbabwe), 2015b:420 (locality records from Mozambique, Namibia, South Africa, and Zimbabwe).

### 56. *cora* Cameron

*Ammophila cora* Cameron, 1888a:14, ♂. Lectotype: ♂, Guatemala: San Geronimo (BMNH), designated by Menke in Bohart and Menke, 1976:151. – Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:162 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Menke, 2020:55 (in revision of North and Central American *Ammophila*). – **As *Sphecx cora***: Fernald, 1934:107 (new combination, in revision of North American and West Indian *Ammophila*).

### 57. *coronata* A. Costa

*Ammophila coronata* A. Costa, 1864b:111, sex not stated. Holotype: Philippines: no specific locality (Napoli). – Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Ashmead, 1904d:150 (Philippines, as *corinata*); R. Brown, 1906:687 (in catalog of Philippine Hymenoptera); Baltazar, 1966:342 (in catalog of Hymenoptera of Philippines); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Tano, Nozaka, Kurokawa, and Murota, 1994:51 (Philippines). – **As *Sphecx coronatus***: Rohwer, 1922:671 (new combination, Philippines).

*Ammophila superciliaris* de Saussure, 1867:24, ♀. Holotype or syntypes: Philippines: Manila (NHMW). Synonymized with *Ammophila coronata* by R. Bohart and Menke, 1976:151. – Cameron, 1889c:94 (in list of Sphecidae of Oriental Region, as *supercillosa*); Casto de Elera, 1895:245 (in catalog of fauna of Philippines); Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Ashmead, 1904a:6 (Philippines), 1904d:150 (Philippines); R. Brown, 1906:687 (in catalog of Philippine Hymenoptera).

### 58. *crassifemoralis* (R. Turner)

*Sphecx crassifemoralis* R. Turner, 1919d:48, ♂. Holotype: ♂, Uganda: Mount Elgon (BMNH). – Arnold, 1928b:261 (original description copied), 1930:17 (in checklist of Afrotropical Sphecidae). – **As *Ammophila crassifemoralis***: Leclercq, 1955h:93 (new combination, bibliographic references); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Dollfuss, 2015a:310, 314 (in key to Sub-Saharan *Ammophila*, description of ♀; Central African Republic).

### 59. *curvistriata* Cameron

? *Ammophila curvistriata* Cameron, 1908a:265, ♂, actually ♀. Holotype: ♀, Tanzania: Mount Kilimanjaro: Kibonoto (NRS). – Arnold, 1928b:279 (tentatively synonymized with *Sphecx ferrugineipes*); Dollfuss, 2015a:312, 317 (in key to Sub-Saharan *Ammophila*), 337 (in revision of Sub-Saharan *Ammophila*, resurrected status, description of ♂; Angola, Botswana, Burkina Faso, Cameroon, Ethiopia, Kenya, Mali, Nigeria, Senegal, South Africa), 2015b:421 (locality records from Ethiopia, Kenya, Mozaambique, Senegal, South Africa, and Zimbabwe).

### 60. *cybele* Menke

*Ammophila cybele* Menke, 1970:237, ♀, ♂. Holotype: ♂, Cuba: Oriente: Juraguá (Acad. Cienc. Cuba). – Alayo Dalmau, 1973:186 (in catalog of Cuban Hymenoptera), 1976:11 (in key to Cuban *Ammophila*), 27 (in checklist of Cuban Sphecidae); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Reyes and Hernández, 1995:3 (holotype in Inst. Ecol. Sist., La Havana, Cuba); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Hidalgo-Gato González, Reyes Sánchez, Mestre Novoa, Fernández García, Rodríguez-León Merino, Rodríguez Velázquez, Genaro Artola, and Fontenla Rizo, 2002:29 (holotype deposited at IZAC); Portuondo and Fernández, 2004:134 (Cuba: Sierra Maestra); Genaro, 2006:51 (in checklist of Cuban Sphecidae and Crabronidae).

### 61. *dejecta* Cameron

*Ammophila dejecta* Cameron, 1888a:14, sex not stated. Syntypes: Mexico: northern Sonora: no specific locality (BMNH). – Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:161 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); Fernald, 1934:155 (in revision of North American and West Indian *Ammophila*, as unrecognized species); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Menke, 2020:91 (in revision of North and Central American *Ammophila*).

### 62. *dentigera* Gussakovskij

*Ammophila dentigera* Gussakovskij, 1928a:8, ♀, ♂. Syntypes: Turkmenistan: Bayram Ali at 36°50'N 54°26'E; Uzbekistan: Khiva at 41°23'N 60°22'E; Iran: Golestan: Astrabad, now Gorgan at 36°50'N 54°26'E (ZIN). – de Beaumont, 1961b:272 (Afghanistan); Myartseva, 1972a:86 (Turkmenistan); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Kazenas, 1978b:38 (in key to Sphecidae of Kazakhstan and Central Asia); Nazarova and Shomirsaidov, 1997:23 (Tajikistan: fruit tree orchards in Vakhsh River valley); Kazenas, 1998b:163 (in Sphecid Fauna of Kazakhstan); Nazarova, 1998:40 (Tajikistan: Tigrovaya Balka Nature Reserve); Kazenas, 2001b:17 (in checklist of Sphecidae of Kazakhstan and Central Asia), 107 (nest with terminal false burrow next to cell, prey: caterpillar, probably Noctuidae), 2002a:36 (geographic distribution, collecting localities in Kazakhstan); Nazarova, 2005:93 (alfalfa fields in southwestern Tajikistan); Kazenas, 2008a:98 (southeastern Kazakhstan: 35 km north of Chilik, 65 km west of Bakanas); Danilov, 2010b:44 (distribution of Tethyan type); Dollfuss, 2013a:389, 399 (in key to *Ammophila* of Palearctic Region and India), 421 (in revision of *Ammophila* of Palearctic Region and India), 2013b:596 (locality records from Kazakhstan, Turkmenistan, and Uzbekistan); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Danilow, 2016:348 (syntypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:14 (Iran: known from Golestan Province).

### 63. *deserticola* Tsuneki

*Ammophila deserticola* Tsuneki, 1971k:169, ♂, ♀. Holotype: ♂, Mongolia: Bulgan Aymag: Somon Abzaga (TMB). – Tsuneki, 1971m:2 (China: Peking: Tiendang); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:387 (in key to Sphecidae of Russian Far East); Nemkov, 2008b:17 (in catalog of Sphecidae of Asiatic Russia); Danilov, 2009:57 (Russia: Western Siberia: Kulundinskaya Steppe); Nemkov, 2009b:49 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Danilov, 2010b:45 (distribution of Scythian type), 2011a:189 (Russia: Primorskiy Krai: Khanka Rayon: Komissarovo), 2011b:203 (Russia: Zabaikal'skiy Krai: Daur'skiy Nature Reserve); Nemkov, 2012c:434 (in catalog of Sphecidae of Russian Far East); Akulov and Proshchalykin, 2013:111 (Russia: Siberia: Krasnoyarsk Krai); Dollfuss, 2013a:393, 403 (in key to *Ammophila* of Palearctic Region and India), 423 (in revision of *Ammophila* of Palearctic Region and India), 2013b:569 (locality records from China, Kyrgyzstan, Mongolia, and Russia: Tyva Republic); Danilov, 2014a:426 (Russia: Siberia: many areas), 2014b:519, 521 (in key to Sphecidae s.s. of Siberia), 2017b:212 (in catalog of Sphecidae s.s. of Russia); Jacobs and Liebig, 2018:134 (Russia: Irkutsk Oblast': Bol'shoje Goloustnoye); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300, 302 (in key to *Ammophila* of China); Danilov, 2020:317 (specimens from various localities in Russia and from Kazakhstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Kochetkov, 2023:189 (Russia: Amur Oblast': Khingan Nature Reserve).

### 64. *djaouak* de Beaumont

*Ammophila djaouak* de Beaumont, 1956a:, ♂. Holotype: ♂, Libya: Tripolitania: Gargaesc (BMNH). – de Beaumont, 1960b:226 (Libya), 1963b:18 (in revision of *Ammophila nasuta* species group); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Roche, 2007a:16 (first record from Egypt, description of ♂, in checklist of Egyptian Sphecidae), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Dollfuss, 2013a:398 (in key to *Ammophila* of Palearctic Region and India), 424 (in revision of *Ammophila* of Palearctic Region and India), 2013b:569 (Tunisia: Tataouine); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:303 (in list of Tunisian Sphecidae *sensu stricto*).

### 65. *dolichocephala* Cameron

*Ammophila dolichocephala* Cameron, 1910b:135, ♂. Syntypes: ♂, South Africa: Gauteng: Pretoria (TMP). – Brauns, 1917:241 (syntypes in TMP); Leclercq, 1955h:87 (bibliographic references); de Beaumont, 1967b:504 (Namibia);

R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Weaving, 1988:327-349 (prey selection), 1989a:1-16 (South Africa; nesting habits), 1989b:847-871 (habitat selection and nest construction); S. Gess and F. Gess, 2003:95 (Namibia: visiting flowers of *Geigeria* sp., Asteraceae); Dollfuss, 2015a:311, 315 (in key to Sub-Saharan *Ammophila*), 338 (in revision of Sub-Saharan *Ammophila*; Kenya, Namibia, South Africa, Zimbabwe), 2015b:421 (locality records from Kenya, Namibia, South Africa, and Zimbabwe). – ***As Spheg dolichocephala***: Arnold, 1920:46 (new combination, description of ♀), 1928b:272 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae).

### 66. *dolichodera* Kohl

*Ammophila dolichodera* Kohl, 1884a:383, ♂. Lectotype: ♂, South Africa: Western Cape Province: Prince Albert area (NHMW), designated by Dollfuss, 2015a:340. – Dalla Torre, 1897:399 (in catalog of world Hymenoptera); Leclercq, 1955h:86 (bibliographic references); de Beaumont, 1967b:504 (Namibia); I. Robertson, 1969:480 (Tanzania: Nyarumbugu); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Guichard, 1988a:128 (Saudi Arabia); Weaving, 1988:327-349 (prey selection), 1989a:1-16 (South Africa; nesting habits: hunting precedes nest construction, one large caterpillar used), 1989b:847-871 (habitat selection and nest construction); Dollfuss, 1989:7 (type material in NHMW); S. Gess and F. Gess, 2003:95 (South Africa: visiting flowers of *Monechma* sp., Acanthaceae, and *Deverra denudata* (Viv.) Pfisterer and Podl., Apiaceae); Gadallah and Assery, 2004a:217 (Saudi Arabia: in key to Sphecidae of Jeddah Region), 224 (in catalog of Sphecidae of Saudi Arabia); Sakenin, Samin, and Bagriacik, 2010:17 (Iran: Kermanshah: Ravansar); Schmid-Egger, 2011b:593 (first record from United Arab Emirates: Wadi Bih, Wadi al-Helo, Wadi Maidad, Wadi Safid, Wadi Wurayah), 598 (color photograph of male); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharabawy, 2013:359 (in new catalog of Sphecidae of Saudi Arabia); Dollfuss, 2015a:311, 316 (in key to Sub-Saharan *Ammophila*), 340 (in revision of Sub-Saharan *Ammophila*; Ethiopia, Mali, Mozambique, Namibia, Niger, Tanzania, Yemen, Zambia, Zimbabwe), 2015b:421 (locality records from Ethiopia, Kenya, Mozambique, Namibia, South Africa, Tanzania, Yemen, Zambia, and Zimbabwe); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:14 (Iran: known from Kermanshah Province; Gadallah, 2020d:78 (in list of aculeate wasps of Arabian Peninsula). – ***As Spheg dolichoderus***: R. Turner, 1919c:396 (new combination, synonymy); Arnold, 1920:48 (in revision of southern African *Ammophila*), 1928b:274 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae), 1935a:503 (South Africa: Kalahari).

*Ammophila macrocola* Kohl, 1884:377, ♂. Holotype or syntypes: ♂, South Africa: Western Cape Province: Prince Albert area (depository?). Synonymized with *Ammophila dolichodera* by R. Bohart and Menke, 1976:151.

*Ammophila pulchricollis* Cameron, 1910b:133, ♂, actually ♀ (Brauns, 1917:241). Holotype: ♀, South Africa: Transvaal: Masemola (TMP). Synonymized with *Ammophila dolichodera* by R. Turner, 1919c:396. – Brauns, 1917:241 (holotype is a ♀).

*Ammophila lukombensis* Cameron, 1912b:398, ♀. Holotype or syntypes: ♀, Zaire: Lukombe (MRAC). Synonymized with *Ammophila dolichodera* by Leclercq, 1955h:86. – ***As Spheg lukombensis***: Arnold, 1928b:279 (new combination, original description copied), 1930:17 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:95 (Zaire).

### 67. *dubia* Kohl

*Ammophila dubia* Kohl, 1901d:159, ♀, ♂. Lectotype: ♀, Egypt: no specific locality (NHMW), designated by Dollfuss, 2013a:425. – Kohl, 1906b:356 (in revision of Palearctic Ammophilini); Gussakovskij, 1933b:274 (Iran); Guiglia, 1934b:293 (Libya: bibliography and summary of locality records); Alfieri, 1946:130 (in revision of Egyptian *Ammophila*); de Beaumont and Bytinski-Salz, 1955:39 (Israel); Leclercq, 1955h:84 (bibliographic references); de Beaumont, 1965b:772 (Chad: Ennedi); Pulawski, 1967c:387 (Sudan: Nile second cataract); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Dollfuss, 1989:7 (type material in NHMW); Roche and Zalut, 1994:114 (Egypt: Sinai Peninsula); Roche, 2007a:19 (in checklist of Egyptian Sphecidae, redescription), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Dollfuss, 2013a:387, 397 (in key to *Ammophila* of Palearctic Region and India), 425 (in revision of *Ammophila* of Palearctic Region and India), 2013b:569 (locality records from Morocco and Yemen); Schmid-Egger, 2014:615 (United Arab Emirates); Dollfuss, 2015a:311, 316 (in key to Sub-Saharan *Ammophila*), 3341 (in revision of Sub-Saharan *Ammophila*; Ethiopia, Somalia, Tanzania), 2015b:422 (locality records from Kenya and Oman); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:14 (Iran: known from Kerman Province); Gadallah, 2020d:78 (in list of aculeate wasps of Arabian Peninsula).

### 68. *duhokensis* Augul, Abdoul-Rassoul, and Kaddou

*Ammophila duhokensis* Augul, Abdoul-Rassoul, and Kaddou, 2013:15, ♀, ♂. Holotype: ♂, Iraq: Duhok Governorate: Mount Sheranish (Iraq Natural History Museum). – Augul, 2019:492 (Iraq: Duhok Province: Gara Mountain).

### 69. *dysmica* Menke

*Ammophila dysmica* Menke, 1965c:1, nomen nudum. Objective synonym of *Ammophila dysmica* Menke, 1966b.

*Ammophila dysmica* Menke, 1966b:30, ♀, ♂. Holotype: ♂, USA: California: Nevada County: Sagehen Creek near Hobart Mills (UCD). – Evans, 1970:485 (nesting habits); Horning and Barr, 1970:104 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Steiner, 1986:98 (references to papers on nesting habits); Rosenheim, 1987a:739-749 (nesting habits), 1987b:402 (nest parasite: *Argochrysis armilla* R. Bohart, a chrysidid), 1988:33 (role of parasites in nest site selection), 1989:353-348 (behaviorally mediated refuges from the cleptoparasite *Argochrysis armilla* R. Bohart); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:92 (in revision of North and Central American *Ammophila*).

### 70. *electa* Kohl

*Ammophila electa* Kohl, 1901d:155, ♀, ♂. Lectotype: ♀, Algeria: Sidi Maklouf (MNHN), designated by Menke in Bohart and Menke, 1976:154. – Kohl, 1906b:330 (in revision of Palearctic Ammophilini); von Schulthess, 1926b:208 (Tunisia); Roth, 1928:192 (in revision of North African Ammophilini); Guiglia, 1934b:292 (Libya: bibliography and summary of locality records), 1937:184 (Libya: Cyrenaica: Agheila, Mechili), 1942b:229 (Libya); Dollfuss, 2013a:392, 402 (in key to *Ammophila* of Palearctic Region and India), 426 (full species status, in revision of *Ammophila* of Palearctic Region and India), 2013b:569 (Tunisia: locality records); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:303 (in list of Tunisian Sphecidae *sensu stricto*; new records from Gafsa, Kairouan, Sidi Bouzid, and Tataouine provinces). – ***As apicalis electa***: de Beaumont, 1951e:264 (new status; Morocco), 1956a:180 (Libya), 1960:226 (Libya). – ***As terminata electa***: R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae).

### 71. *elongata* Fischer de Waldheim

*Ammophila elongata* Fischer de Waldheim, 1843:2, ♀, ♂. Syntypes: southern Russia: no specific locality (NHMW, ZMHU). Dollfuss (2013a) spoke of a holotype, but this cannot be regarded as designation of lectotype under Article 74.7 of the Code. – F. Smith, 1856:210 (in catalog of Hymenoptera in British Museum); Kirchner, 1867:217 (in catalog of European Hymenoptera); Dalla Torre, 1897:399 (in catalog of world Hymenoptera); Kohl, 1906b:325 (in revision of Palearctic Ammophilini); Myartseva, 1971b:180 (ranges slightly outside Turanian Province); Tsuneki, 1971k:177 (Mongolia); Kazenas, 1972b:100 (Kazakhstan: Ili in Alma Ata Oblast', Aidarly in Taukum Desert); Myartseva, 1972a:86 (Turkmenistan); Kazenas, 1974b:108 (feeding on flowers of *Tamarix* sp. Tamaricaceae, in Kazakhstan), 109 (feeding on flowers of *Statice gmelini* Willd., Plumbaginaceae, *Euphorbia* spp., Euphorbiaceae, in Kazakhstan), 110 (feeding on flowers of *Nitraria schoberi* L. and *Peganum harmala* L., Zygophyllaceae, in Kazakhstan), 112 (feeding on flowers of *Apocynum lancifolium* Russ., Apocynaceae, in Kazakhstan); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Kazenas, 1978b:35 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:181 (in key to Sphecidae of European part of USSR); Kazenas, 1998b:165 (in Sphecid Fauna of Kazakhstan); Esenbekova and Kazenas, 2000:12 (southeastern Kazakhstan: 3 km northwest of Borandysu, Chinghil'su, 10 km northwest of Chundzha, near Kapchagay, 5 km southwest of village Kazakhstan); Kazenas, 2001b:17 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:36 (geographic distribution, collecting localities in Kazakhstan), 2004d:28 (Kazakhstan: northern Caspian region); Danilov, 2010b:45 (distribution of Tethyan type); Dollfuss, 2013a:391, 401 (in key to *Ammophila* of Palearctic Region and India), 2013b:569 (locality records from Iran, Kazakhstan, Mongolia, Turkey, and Turkmenistan); Danilov, 2014b:519, 520 (in key to Sphecidae s.s. of Siberia, not yet found in Siberia), 2017b:212 (in catalog of

Sphecidae s.s. of Russia); Danilov and Mokrousov, 2017a:110 (Russia: Amur Oblast', Volgograd Oblast'); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:14 (Iran: known from Golestan Province); Danilov, 2020:317 (specimens from Volgograd Oblast' in Russia and Kazakhstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Embergenov, Élmurodova, Amirov and Kimyonazarov, 2022:47 (Turkmenistan: Karakum Desert); Kaplan and Yildirim, 2023:1691 (in checklist of Sphecidae *sensu lato* of Turkey).

## 72. *erminea* Kohl

*Ammophila erminea* Kohl, 1901d:157, ♀, ♂. Lectotype: ♀, Egypt: no specific locality (NHMW), designated by Dollfuss, 2013a:428. – Kohl, 1906b:365 (in revision of Palearctic Ammophilini); Maidl, 1924:246 (Sudan: Port Sudan); von Schulthess, 1926b:209 (Tunisia); Roth, 1928:206 (in revision of North African Ammophilini); Guiglia, 1932d:468 (Libya: Gialo), Guiglia, 1934b:293 (Libya: bibliography and summary of locality records), 1936:4 (Libya: Gialo, and Fezzan: no specific locality), 1937:184 (Libya: Cyrenaica: Mechili), 1942b:229 (Libya); Giner Marí, 1945b:362 (Morocco: Western Sahara), 1945e:219 (Morocco: Western Sahara); Alfieri, 1946:140 (in revision of Egyptian *Ammophila*); Giner Marí, 1947:19 (Morocco: Western Sahara); de Beaumont, 1951e:265 (Morocco; Zeitoun is in Egypt, not in Malta as accepted by Kohl; range: Sinai to Río de Oro, now Western Sahara in Morocco); de Beaumont and Bytinski-Salz, 1955:39 (Israel); Leclercq, 1955h:77 (bibliographic references); de Beaumont, 1956:180 (Libya), 1960:226 (Libya), 1966:211 (Egypt: Aboukir); R. Bohart and Menke, 1976:153 (as junior synonym of *Ammophila rubripes*); Abdu and Shaumar, 1985:229 (Qatar: Al Kor, Al Shahaniyah); Guichard, 1988a:128 (resurrected status, Arabian Peninsula); Dollfuss, 1989:7 (type material in NHMW); Guichard, 1991a:338 (Jordan); Roche and Zalut, 1994:114 (Egypt: Sinai Peninsula); Gadallah and Assery, 2004a:217 (in key to Sphecidae of Jeddah Region, Saudi Arabia), 224 (in catalog of Sphecidae of Saudi Arabia, as *erminea*); Roche, 2007a:19 (in checklist of Egyptian Sphecidae, redescription), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Schmid-Egger, 2011b:597 (United Arab Emirates: Jebel Hafit south of al-Ain, Sharjah/Tawi as-Saman oasis, Wadi Bih, Wadi Wurayah), 598 (color photograph of male); Dollfuss, 2013a:388, 397 (in key to *Ammophila* of Palearctic Region and India), 428 (in revision of *Ammophila* of Palearctic Region and India), 2013b:570 (locality records from Egypt, Iran, Jordan, Morocco, Tunisia, and Yemen); El-Hawagry, Khalil, Sharaf, Fadl, and Aldawood, 2013:78 (Saudi Arabia: Al-Baha Province: Jebel El-Baher); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:359 (in new catalog of Sphecidae of Saudi Arabia); Schmid-Egger, 2014:615 (United Arab Emirates); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:14 (Iran: known from Kerman Province); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:303 (in list of Tunisian Sphecidae *sensu stricto*; new records from Kebili, Sidi Bouzid, and Tataouine provinces); Gadallah, 2020d:79 (in list of aculeate wasps of Arabian Peninsula).

*Ammophila dantoni* Roth in Nadig, 1933:101, ♀, ♂ (as *Dantoni*, incorrect original capitalization, ♀ = *Ammophila rubripes*). Holotype: sex not stated, Morocco: no specific locality (originally A. Nadig collection, now Zurich). Male synonymized with *Ammophilae erminea* by Dollfuss, 2013a:428, female synonymized with *Ammophila rubripes* by Dollfuss, 2013a:480.

## 73. *evansi* Menke

*Ammophila evansi* Menke, 1964a:20, ♀, ♂. Holotype: ♂, USA: Connecticut: Litchfield County: Colebrook (MCZ) – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Finnamore, 1982:29 (in Sphecid Fauna of southern Quebec); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); M. O'Brien and A. O'Brien, 1988:73 (nesting habits); O'Brien, 1989b:210 (distribution in Michigan); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County); Ahlstrom, 1995:107 (in checklist of insects of North Carolina); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario); Miller, Pearce, and O'Neill, 2009:3 (known to be parasitized by *Paraxenos lugubris* (Pierce), Strepsiptera); Menke, 2020:68 (in revision of North and Central American *Ammophila*).

## 74. *exsecta* Kohl

*Ammophila propinqua* var. *exsecta* Kohl, 1906:364, sex not stated. Holotype: Syria: no specific locality (NHMW). – *As Ammophila exsecta*: R. Bohart and Menke, 1976:151 (new status, in checklist of world Sphecidae); Dollfuss, 1989:7 (type material in NHMW); Murai and Amr, 2011:118 (recorded from Syria by Kohl, 1906); Dollfuss, 2013a:388, 395 (in key to *Ammophila* of Palearctic Region and India), 429 (in revision of *Ammophila* of Palearctic Region and India), 2013b:570 (Jordan: Mubalath in Jordan valley); Gadallah, 2020d:79 (in list of aculeate wasps of Arabian Peninsula).

## 75. *extremitata* Cresson

*Ammophila extremitata* Cresson, 1865b:457, ♀, ♂. Lectotype: ♀, USA: "Colorado Territory": no specific locality (ANSP), designated by Cresson, 1916:94 (as *extrematata*). – Cresson, 1887:274 (in catalog of North American Hymenoptera, as *extrematata*); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado, as *extrematata*); Dalla Torre, 1897:399 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae, as *extremimator*); Melander, 1903:157 (diagnostic characters), 159, 160, 161, 162 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Viereck, 1903a:68 (New Mexico: Beulah); Hart, 1907:255 (Illinois); Johnson and Ledig, 1918:24 (California: Claremont); Fernald, 1931a:449 (as new synonym of *Sphex placidus*); Menke, 1965c:2 (restored from synonymy); Horning and Barr, 1970:104 (USA: Idaho: Craters of the Moon National Monument, identification tentative); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); G. Scudder, 1994:75 (in checklist of rare and endangered invertebrates of British Columbia); Blades and Maier, 1996:71 (Canada: British Columbia: Osoyoos - Mount Kobau area at 119°40'W 49°05'N); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Ratzlaff, 2016:28 (Canada: British Columbia: from Blades and Maier, 1992 and Scudder, 1994); Menke, 2020:56 (in revision of North and Central American *Ammophila*). – *As Sphex extremitatus*: H. Smith, 1908b:330 (new combination, in revision of Nebraskan Sphecidae); J. Smith, 1910:677 (in new list of insects of New Jersey, as *extrematata*); Rohwer, 1916b:681, 682 (in catalog of Hymenoptera of Connecticut, as *extrematata*, probably in error); Mickel, 1918b:404 (in catalog of Nebraskan Sphecidae); Rohwer in Viereck, 1925:681, 682 (in key to Sphecidae of Connecticut, as *extrematata*); nec *Sphex guerinii extremitatus*: Fernald, 1934:62 (= *Ammophila fernaldi*).

## 76. *eyrensis* R. Turner

*Ammophila eyrensis* R. Turner, 1908:465, ♀. Holotype: ♀, Australia: South Australia: Killalpanima 100 mi. east of Lake Eyre (BMNH). – R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Cardale, 1985:229 (in catalog of Australian Sphecidae).

## 77. *femurrubra* W. Fox

*Ammophila femurrubra* W. Fox, 1894c:102, ♀ (as *femur-rubra*, incorrect original hyphenation). Lectotype: ♀, Mexico: Baja California Sur: San José del Cabo (CAS), designated by Menke, 1965c:1. – W. Fox, 1895c:266 (Mexico: Baja California Sur); Dalla Torre, 1897:399 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:160 (in key to North American Ammophilini, as *femur-rubrum*), 164 (bibliographic references, geographic distribution, as *femur-rubru*); Fernald, 1934:54 (as new synonym of *Sphex volcanicus*); Menke, 1965c:2 (restored from synonymy); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:56 (in revision of North and Central American *Ammophila*).

## 78. *fernaldis* (Murray)

*Sphex fernaldis* Murray, 1938:19, ♀, ♂. Holotype: ♀, USA: Minnesota: Luverne (Univ. Minnesota). – Dreisbach, 1944:268, 269, 270 (in key to *Ammophila* of Michigan). – *As Ammophila fernaldis*: Murray in Muesebeck, Krombein, and Townes, 1951:975 (new combination, in catalog of North American Hymenoptera); Evans and Linsley, 1960:32 (Arizona: regular member of sleeping aggregation at Southwest Research Station); Evans, 1964b:241 (description of larva); Menke, 1965a:260 (species identification by Evans, 1964d:241, is correct); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Finnamore, 1982:30 (in Sphecid Fauna of southern Quebec); Menke, 1986c:36 (Arizona: Cochise County: Apache Pass); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario), 29 (distribution within



Ontario), 34 (first record from Ontario: Borden, Walsingham); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Kathirithamby, Lechner, McMahon, Bryson, and Johnston, 2012:466 (stylopization by *Paraxenos lugubris* Pierce, Strepsiptera); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Lechner, 2019:151-154 (Iowa: Sioux City, parasitized by strepsipteran *Paraxenos lugubris* Pierce, Strepsiptera); Menke, 2020:57 (in revision of North and Central American *Ammophila*).

As *Sphex guerinii extremitatus*: Fernald, 1934:62 (new status, in revision of North American and West Indian *Ammophila*), corrected to *Sphex fernaldi* by Murray, 1938:19 (who referred to it as *Sphex placidus extremitatus*).

### 79. *ferruginosa* Cresson

*Ammophila ferruginosa* Cresson, 1865b:455, ♀. Lectotype: ♀, USA: “Colorado Territory”: no specific locality (ANSP), designated by Cresson, 1916:94. – Cresson, 1876:208 (Colorado: Plains), 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); Dalla Torre, 1897:400 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:159 (in key to North American Ammophilini); Murray in Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera), 163 (bibliographic references, geographic distribution); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Kumar, Lavigne, Lloyd, and Pfadt, 1976:51 (USA: Colorado: Pawnee National Grassland); C. Ward et al., 1977:56 (associated with mesquite (*Prosopis glandulosa* Torr.), Fabaceae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 1983b:20 (Nebraska: Thomas County: Halsey area), 21 (Nebraska: Hooker County: Mullen area, and Dawes County: north of Crawford); Menke, 1986c:35 (Arizona: Navajo County: Hopi Reservation); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Dollfuss, 2015b:422 (locality records from Colorado, Las Cruces, and Nebraska); Ratzlaff, 2016:28 (Canada: first record from British Columbia: Southern Interior), 39 (British Columbia: Osoyoos); Menke, 2020:112 (in revision of North and Central American *Ammophila*). – As *Sphex ferruginosus*: H. Smith, 1908b:329 (new combination, in revision of Nebraskan Sphecidae); Mickel, 1918b:403 (in revision of Nebraskan Sphecidae); Fernald, 1931a:449 (as new synonym of *Sphex wrightii*), 1934:41 (valid species, in revision of North American and West Indian *Ammophila*).

*Ammophila collaris* Cresson, 1865b:456, ♂. Holotype: ♂, USA: “Colorado Territory”: no specific locality (ANSP). Synonymized with *Ammophila ferruginosa* by Fernald, 1931a:449 and 1934:41. – Cresson, 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Melander, 1903:159 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Cresson, 1916:94 (holotype in ANSP); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Pagliano, 2008:510 (specimens in M. Spinola collection, Torino). – As *Psammodia collaris*: Ashmead, 1899d:354 (new combination, in checklist of North American Sphecidae).

*Sphex cressoni* H. Smith, 1908b:329. Substitute name for *Sphex collaris* (Cresson.) H. Smith, junior secondary homonym in *Sphex* of *Sphex collaris* Linnaeus, 1767. – Mickel, 1918b:404 (in revision of Nebraskan Sphecidae).

### 80. *filata* Walker

? *Ammophila filata* Walker, 1871:18, ♂. Holotype or syntypes: ♂, Egypt: Sinai Peninsula: Wadi Genneh (destroyed). – Dalla Torre, 1897:400 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae, as tentative member of *Ammophila*); Roche, 2007a:139 (recorded from Egypt, is a *nomen dubium*).

### 81. *fischeri* Dollfuss

*Ammophila fischeri* Dollfuss, 2015a:342, ♀. Holotype: ♀, Zambia: 50 km east of Mwinilunga at 11°43'S 24°47'E (OÖLM). Paratypes: Kenya, Mozambique, Rwanda, South Africa, Tanzania, Uganda, Zaire, Zimbabwe). – Dollfuss, 2015a:312 (in key to Sub-Saharan *Ammophila*), 2015b:422 (locality records from South Africa and Zambia).

### 82. *formicoides* Menke

*Ammophila formicoides* Menke, 1964a:10, ♀, ♂. Holotype: ♂, USA: New Mexico: Hidalgo County: Rodeo (CIS according to original description, now CAS). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 1986c:37 (Arizona: Cochise County: west of Naco); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Danilov, 2014:354 (a pair of paratypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Menke, 2020:115 (in revision of North and Central American *Ammophila*).

### 83. *formosensis* Tsuneki

As *Ammophila subassimilis*: Tsuneki, 1967i:383 (Taiwan), corrected to *Ammophila formosensis* by Tsuneki, 1967j:18 and 1971f:4.

*Ammophila formosana* Tsuneki, 1967j:18, ♀, ♂, junior primary homonym of *Ammophila formosana* Strand, 1913. Holotype: ♀, Taiwan: Chiayi Prefecture: Fenchihu (originally K. Tsuneki collection, now USNM). – Tsuneki, 1967j:5 (Taiwan), 10, 11 (in key to Ammophilini of East Asia); nec *Ammophila clavus formosana* Tsuneki of Tsuneki and Iida, 1969:17 (= *Ammophila clavus formosana* Strand); Nuhn and Menke, 1994:25 (holotype transferred to USNM).

*Ammophila formosensis* Tsuneki, 1971f:4, substitute name for *Ammophila formosana* Tsuneki, 1967. – Haneda, 1972a:5 (Taiwan); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Porter, Stange, and Wang, 1999:5 (in checklist of Sphecidae of Taiwan); Dollfuss, 2013a:391, 400 (in key to *Ammophila* of Palearctic Region and India), 430 (in revision of *Ammophila* of Palearctic Region and India); Ch. Wang, Bashir, Q. Li, and L. Ma, 2018:299, 301 (in key to *Ammophila* of China); Olszewski and Danilov, 2020:193 (first records from Kyrgyzstan and Tajikistan); Danilov, 2020:317 (specimens from Kyrgyzstan and Tajikistan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

### 84. *ganquana* Yang and Q. Li

*Ammophila ganquana* Yang and Q. Li, 1989:105, ♀, ♂. Holotype: ♀, China: Shaanxi Province: Ganquan County: Quinguan (Beijing Agricult Univ.). – Q. Li and L. Yang, 2005:883 (China: Gansu: Quinling Range and South Mountains); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2013a:431 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300, 302 (in key to *Ammophila* of China); Ma, Q. Li, Wang, Jiang, and Lu, 2018:853 (China: Shanxi: Qinling Mountains).

### 85. *gaumeri* Cameron

*Ammophila gaumeri* Cameron, 1888a:4, ♀, ♂. Lectotype: ♀, Mexico: northern Yucatán: Temax (BMNH), designated by Menke in Bohart and Menke, 1976:152. – Dalla Torre, 1897:400 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:161 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Nascimento and Overall, 1980:2 (Brazil); Maes, 1989:94 (in catalog of Nicaraguan Sphecidae); Hanson and Menke, 1995:637 (known from Costa Rica); Menke, 1996e:192 (in key to Ammophilini of Costa Rica), 194 (in revision of Ammophilini of Costa Rica); Menke and Parker, 1996:187 (Costa Rica: phenological observations); Amarante, 2002:66 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Dollfuss, 2015b:423 (Mexico: Guerrero: Acahuizotla 35 km south of Chipanchingo); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro-Alberto, and Delfín-González, 2015:994 (Mexico: in list of Sphecidae *sensu lato* of Yucatán); Menke, 2020:57 (in revision of North and Central American *Ammophila*). – As *Sphex gaumeri*: Fernald, 1934:111 (new combination, in revision of North American and West Indian *Ammophila*).

*Ammophila micans* Cameron, 1888a:5, ♀. Holotype or syntypes: ♀, Guatemala: San Gerónimo (BMNH). Synonymized with *Ammophila gaumeri* by Fernald, 1934:114 (as *Sphex gaumeri*). – W. Fox, 1895c:266 (Mexico: Baja California Sur); Dalla Torre, 1897:404 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:161 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution).

### 86. *globifrontalis* Q. Li and Ch. Yang

*Ammophila globifrontalis* Q. Li and Ch. Yang, 1995b:574, ♀, ♂. Holotype: ♀, China: Guangxi Province: Nanning: Forestry Research Institute (Beijing Agricultural University). – Wu, Zhou, Q. Li, and Yang, 2003:809 (China: Fujian

Province); Q. Li and He, 2004:1119 (in hymenopterous fauna of Zhejiang Province, China); Dollfuss, 2013a:432 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ch. Wang, Bashir, Q. Li, and L. Ma, 2018:299, 302 (in key to *Ammophila* of China); Pham and Antropov, 2021:316 (recorded from Vietnam by Ph. Pham, T.T. Nguyen, Q. Nguyen, T.M. Nguyen, Dang, D.H. Nguyen, Tran, T.D. Nguyen, and V. Pham, 2020).

### 87. *globiverticalis* Ch. Wang and L.Ma

*Ammophila globiverticalis* Ch. Wang and L. Ma in Ch. Wang, Bashir, Q. Li, and L. Ma, 2018:292, ♀. Holotype: ♀, China: Xinjiang: Fukang City at 44°9'N 87°59'E (Entomological Museum of China Agricultural University, Beijing, China). – Ch. Wang, Bashir, Q. Li, and Ma, 2018:299 (in key to *Ammophila* of China).

### 88. *gracilis* Lepeletier de Saint Fargeau

*Ammophila gracilis* Lepeletier de Saint Fargeau, 1845:381, ♀. Holotype or syntypes: ♀, Mexico: no specific locality, country in error according to Menke, 1965a:216 (M. Spinola collection, Torino). – F. Smith, 1856:221 (in catalog of Hymenoptera in British Museum); Cresson, 1863:318 (in catalog of North American Hymenoptera), 1873:210 (Texas); Snow, 1881:96 (in checklist of Hymenoptera of Kansas: Douglas and Wallace counties: no specific locality); Provancher, 1883b:615 (in revision of Canadian Hymenoptera); Cresson, 1887:274 (in catalog of North American Hymenoptera); Cameron, 1888a:16 (Mexico, redescription); C. Robertson, 1892:103 (visiting flowers of *Mentha canadensis* Linnaeus, Lamiaceae), 105 (visiting flowers of *Pycnanthemum lanceolatum* Ph., Lamiaceae), 106 (visiting flowers of *Pycnanthemum muticum* Pers., Lamiaceae), 107 (visiting flowers of *Pycnanthemum linifolium* Ph., Lamiaceae), 1894:460 (visiting flowers of *Aster paniculatus* Lam., Asteraceae), 468 (visiting flowers of *Rudbeckia triloba* Linnaeus, Asteraceae); Dalla Torre, 1897:400 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); J. Smith, 1900:523 (in list of insects of New Jersey); Melander, 1903:159, 161 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Viereck, 1903d:121 (Maryland: Chestertown); G. Peckham and E. Peckham, 1905:43 (prey carrying, homing); Ducke, 1907b:90 (Brasil: Maranhão State: Alcantara); Schrottky, 1909c:210, 212 (occurring on dry sand); J. Smith, 1910:676 (in new list of insects of New Jersey); Cheesman, 1929:151 (Panama: Colón); Menke, 1965a:216 (synonymy); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Nascimento and Overal, 1980:2 (Brazil); Yústiz, 1987:13 (Venezuela: Central Lara Depression); Gaimari and Martins, 1996:240 (nesting behavior, nest distributions); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Pagliano, 2008:510 (specimens in M. Spinola collection, Torino, including ♀ holotype); Buys, 2009e:276 (Rio de Janeiro: several localities), 2011b:2 (Brazil: Rio de Janeiro: Petrópolis, Rio de Janeiro, Teresópolis); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Rodrigues and Buys, 2013:213 (Brazil: Espírito Santo: Santa Teresa); Buys and Rodrigues, 2014:37 (Brazil: first record from State of Espírito Santo: several localities); Dollfuss, 2015b:423 (locality records from Argentina and Paraguay); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); López García, Mazzitelli, Fruitos, González, Marcucci, Giusti, Alemanno, del Barrio, Portela, and Debandi, 2019:314 (Argentina: Mendoza: departamento de Tupungato: vineyards in Gualtallary); León-Burgos, Murrillo-Pacheco, Bautista-Zamora, and Quinto, 2019:6 (Colombia: Meta: Villavicencio at 4°04'30"N 73°35'07"W); Buys, 2020a:140 (nesting habits), 2020b:80 (in cladistic analysis of larvae of Sphecidae s.s.), 2020c:260 (description of mature larva); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:93 (in revision of North and Central American *Ammophila*).

*Ammophila mutica* Dahlbom, 1845:431, ♀, ♂. Holotype or syntypes: Brazil: no specific locality (Lund). Synonymized with *Ammophila gracilis* by Menke, 1965a:216. – Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Menke, 1964b:150 (redescription of type ♀). – **As *Sphex muticus***: Fernald, 1942:31 (new combination, Guyana: Kartabo).

*Ammophila moneta* F. Smith, 1856:219, ♀, ♂. Lectotype: ♀, Brazil: no specific locality (BMNH). Synonymized with *Ammophila mutica* by Menke, 1964b:149. – W. Fox, 1897b:374 (Brazil: Chapada, Pedra Branca, and Santarém).

*Ammophila fragilis* F. Smith, 1856:219, ♀, ♂. Lectotype: ♀, Brazil: no specific locality (BMNH). Synonymized with *Ammophila moneta* by W. Fox, 1897b:374 and with *Ammophila mutica* by Menke, 1964b:149. – Taschenberg, 1869:434 (Brazil; redescription); Cameron, 1888a:15 (Costa Rica, Mexico; redescription); Dalla Torre, 1897:400 (in catalog of world Hymenoptera); Ducke, 1907:90 (Brazil: Maranhão: Alcantara, as *gracilis*, corrected to *Ammophila fragilis* by Ducke, 1910:110); Melander, 1903:160 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Schrottky, 1908:51 (visiting flowers of *Oxalis* sp., Oxalidaceae); Ducke, 1910:110 (Brazil: Ceará State); Strand, 1910a:129 (Paraguay); Schrottky, 1913a:224 (Argentina, Paraguay); Bischoff and von Schulthess, 1937:168 (Argentina, Bolivia); Richards, 1937a:102 (Guyana). – **As *Sphex fragilis***: Fernald, 1907:271 (new combination, Argentina, variation), 1934:114 (in revision of North American and West Indian *Ammophila*); Rau, 1938b:541 (sleeping habits).

? *Ammophila suavis* Burmeister, 1872:241, ♀. Holotype: ♀, Argentina: Mendoza: Mendoza (ZMHU). Tentatively synonymized with *Ammophila gracilis* by R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae). – Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Schrottky, 1903b:123 (in checklist of Hymenoptera of Argentina, Paraguay, and Uruguay); Jörgensen, 1912:285 (Argentina: Mendoza Province).

? *Ammophila arechavaletai* Brèthes, 1909b:61, ♀ (as *Arechavaletai*, incorrect original capitalization). Holotype: ♀, origin unknown, probably Uruguay: no specific locality (Mus. Montevideo). Tentatively synonymized with *Ammophila gracilis* by R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae). – Genise, 1990:26 (type material in Museo de Montevideo).

### 89. *gracillima* Taschenberg

*Ammophila gracillima* Taschenberg, 1869:433, ♀. Lectotype: ♀, Sudan: Khartoum (Halle), designated by Menke in Bohart and Menke, 1976:152. – Ed. André, 1886:73 (in revision of Sphecidae of Europe and Algeria), 1888:3\* (bibliographic references); Dalla Torre, 1897:400 (in catalog of world Hymenoptera); Kohl, 1906b:323 (in revision of Palearctic Ammophilini); Longstaff, 1911:124 (Sudan: Khartoum); Morice, 1911:73 (Algeria: Biskra); Strand, 1915:96 (Turkmenistan: Askhabad); Maidl, 1924:246 (Sudan: Port Sudan); Roth, 1928:188 (in revision of North African Ammophilini); Kruger, 1929a:21 and 1929b:56 (Libya: Cyrenaica: Giarabub); Roth, 1930:82 (Algeria: Tassili des Ajjer); Guiglia, 1932d:468 (Libya: Gialo); Nadig, 1933:101 (Morocco: Agadir); Guiglia, 1934b:291 (Libya: bibliography and summary of locality records); Roth, 1934b:186 (Algeria); Gussakovskij, 1935:414 (Iran, Transcaspia, Russia: lower Volga River); Yasumatsu, 1935a:3, 22 (China: Jehol Region); Guiglia, 1936:3 (Libya: Fezzan: no specific locality); Yasumatsu, 1940:31 (China: Nei Mongol: Kunshan-tagh Desert); Guiglia, 1942b:229 (Libya); Giner Marí, 1945e:219 (Morocco:Western Sahara); Alfieri, 1946:131 (in revision of Egyptian *Ammophila*); Giner Marí, 1947:19 (Morocco: Western Sahara); Berland, 1950b:295 (Niger: Air area); de Beaumont, 1950f:396 (Algeria); Arnold, 1951:141 (Ethiopia); de Beaumont, 1951e:264 (Morocco), 1953a:172 (Mauritania); de Beaumont and Bytinski-Salz, 1955:36 (Israel); Leclercq, 1955h:88 (bibliographic references); de Beaumont, 1956a:175 (Libya), 1960b:226 (Libya); Myartseva, 1963b:59 (Turkmenistan: lower Murgab River), 1965:85 (Turkmenistan: Akibay, Anau, Sakar-Chagin district, Mary district, and Bayram-Ali district), 1966:48 (preying on caterpillars), 49 (Turkmenistan: lower course of Murgab and Tedjen rivers; preying on caterpillars of *Pericyma albidentaria* Frr., Erebidae); de Beaumont, 1967a:266 (Turkey); Tsuneki, 1967e:2 (China: Manchuria); Kazenas, 1968b:342 (Kazakhstan: Alma Ata and Aktyubinsk oblast's); Myartseva, 1969:50 (nest construction, prey: noctuid larvae, larval development); de Beaumont, 1970a:388 (Afghanistan), 1970c:2 (Iran: Baluchestan); Myartseva, 1971a:77 (in key to *Ammophila* of Turkmenistan); Kazenas, 1972b:100 (Kazakhstan); Myartseva, 1972a:86 (Turkmenistan), 1972b:112 (nest parasite: *Spinolia (Euchroesus) virgo* Semenov, a chrysidid); Kazenas, 1974b:109 (feeding on flowers of *Tamarix* sp., Tamaricaceae, and *Statice gmelini* Willd., Plumbaginaceae, in Kazakhstan), 111 (feeding on flowers of *Astragalus* sp., Fabaceae, *Saussurea* sp., Asteraceae, and *Lepidium crassifolium* W. et K., Brassicaceae, in Kazakhstan), 112 (feeding on flowers of *Lappula spinocarpos* Aschers., Boraginaceae, and *Allium caspium* Pall., Liliaceae, in Kazakhstan); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Nazarova and Shomirsaidov, 1997:23 (Tajikistan: fruit tree orchards in Vakhsh River valley); Kazenas, 1978b:36 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:181 (in key to Sphecidae of European part of USSR); Guichard, 1980:224 (Oman); Roche, 1981:2 (in checklist of Sphecidae of United Arab Emirates); Islamov, 1986:514 (Uzbekistan: Surkhandarya and Tashkent oblast's); Guichard, 1988a:128 (Arabian Peninsula), 1991a:338 (Jordan); Roche and Zalut, 1994:114 (Egypt: Sinai Peninsula); Wu and Zhou, 1996a:51 (in revision in Economic Insect Fauna of China); Kazenas,

1998b:166 (in Sphecidae Fauna of Kazakhstan); Nazarova, 1998:40 (Tajikistan: Tigrovaya Balka Nature Reserve); Esenbekova and Kazenas, 2000:13 (southeastern Kazakhstan: six localities); Kazenas, 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:37 (geographic distribution, collecting localities in Kazakhstan), 2004b:100 (Kazakhstan: western Tien Shan Mountains), 2004d:28 (Kazakhstan: northern Caspian region); Nazarova, 2005:93 (alfalfa fields in southwestern Tajikistan); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Nagase, 2006b:2 (specimens collected by First Scientific Expedition to Manchoukou, 1933, now part of eastern China); Roche, 2007a:16 (in checklist of Egyptian Sphecidae), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Danilov, 2009:57 (Russia: Western Siberia: Kulundinskaya Steppe), 2010b:44 (distribution of Palearctic–Ethiopian type); Schmid-Egger, 2011b:597 (first record from United Arab Emirates: Al-Ajban); Dollfuss, 2013a:389, 391, 399, 401 (in key to *Ammophila* of Palearctic Region and India), 433 (in revision of *Ammophila* of Palearctic Region and India), 2013b:570 (locality records from Algeria, Iran, Jordan, Kazakhstan, Morocco, Oman, Saudi Arabia, Syria, Tunisia, Turkmenistan, and Uzbekistan); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:359 (in new catalog of Sphecidae of Saudi Arabia); Danilov, 2014b:519, 520 (in key to Sphecidae s.s. of Siberia, not yet found in Siberia); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Schmid-Egger, 2014:615 (United Arab Emirates); Dollfuss, 2015a:310, 314 (in key to Sub-Saharan *Ammophila*), 344 (in revision of Sub-Saharan *Ammophila*; Sudan: Khartoum); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:7 (first record from Turkey: Iğdır: Karakoyunlu); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:14 (Iran: known from Golestan, Kerman, Mazandaran, and Sistan-o Baluchestan provinces); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299, 302 (in key to *Ammophila* of China); Augul, 2019:492 (Iraq: Wasit Province: Aziziyah: Al Zelja village); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:303 (in list of Tunisian Sphecidae *sensu stricto*; new records from Sidi Bouzid and Tataouine provinces); Danilov, 2020:317 (specimens from Astrakhan' Oblast' of Russia and Turkmenistan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Gadallah, 2020d:79 (in list of aculeate wasps of Arabian Peninsula); Embergenov, Élmurodova, Amirov and Kimyonazarov, 2022:47 (Uzbekistan: Zhizzakh Province: Zomin District); Kaplan and Yildirim, 2023:1691 (in checklist of Sphecidae *sensu lato* of Turkey). – **As *Spheg gracillima***: Arnold, 1928b:278 (new combination, original description translated into English), 1930:17 (in checklist of Afrotropical Sphecidae); Scott *in* Arnold, 1933a:370 (described from Ethiopia).

*Ammophila longicollis* Kohl, 1884:379, ♀. Lectotype: ♀, Russia: Sarepta, now Krasnoarmeysk near Volgograd (NHMW), designated by Dollfuss, 2013a:433. Synonymized with *Ammophila gracillima* by Roth, 1928:188. – Ed. André, 1886:68 (in revision of Sphecidae of Europe and Algeria), 1888:2\* (bibliographic references); F. Morawitz, 1891a:203 (Russia: Astrakhan Governorate: Ryn Peski), 1894:340 (Turkmenistan: Serax); Dalla Torre, 1897:404 (in catalog of world Hymenoptera); Myartseva, 1971a:77 (in key to *Ammophila* of Turkmenistan), 1971b:180 (ranges slightly outside Turanian Province); Kazenas, 1978b:36 (in key to Sphecidae of Kazakhstan and Central Asia).

*Ammophila debilis* F. Morawitz, 1889a:125, ♀. Holotype: ♀, “Mongolia: Tsagan Buryuk” [= China: Gansu: Jiuquan Prefecture: Jinta County] (ZIN). Synonymized with *Ammophila gracillima* by Kohl, 1906:324. – Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Danilov, 2016:336 (holotype preserved in Zoological Institute, Sankt-Petersburg, Russia).

*Ammophila philomela* Nurse, 1903a:519, ♀. Holotype or syntypes: ♀, India: Gujarat: Deesa (BMNH), synonymized with *Ammophila gracillima* by Dollfuss, 2013a:433. – Ramakrishna Aiyar, 1916:554 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae).

As *Ammophila producticollis* (♂ only): Morice, 1900a:70, corrected to *Ammophila gracillima* by ..

### 90. *guichardi* de Beaumont

*Ammophila guichardi* de Beaumont, 1956a:176, ♀, ♂. Holotype: ♀, Libya: northern Tripolitania: Giado, now Jadu (BMNH). – de Beaumont, 1960b:226 (Libya), 1966:211 (Egypt: Wadi Digla near Cairo); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Guichard, 1988a:127 (Saudi Arabia: Lodar); Roche, 2007a:20 (in checklist of Egyptian Sphecidae), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Dollfuss, 2013a:386, 397 (in key to *Ammophila* of Palearctic Region and India), 434 (in revision of *Ammophila* of Palearctic Region and India); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:360 (in new catalog of Sphecidae of Saudi Arabia); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:304 (in list of Tunisian Sphecidae *sensu stricto*; new records from Kebili and Tataouine provinces); Gadallah, 2020d:79 (in list of aculeate wasps of Arabian Peninsula).

### 91. *gusenleitneri* Dollfuss

*Ammophila gusenleitneri* Dollfuss, 2013a:435, ♀, ♂. Holotype: ♂, Morocco: Oued Massa southwest of Tiznit (OÖLM). – Dollfuss, 2013a:387, 396 (in key to *Ammophila* of Palearctic Region and India), 2015b:423 (Greece: Chalkidiki: Paliouri southeast of Kassandria); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:304 (in list of Tunisian Sphecidae *sensu stricto*; additional records from Ben Arous, Kairouan, Kasserine, Le Kef, Mahdia, Tunis, and Zaghouan provinces); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:92 (in Sphecidae Fauna of Europe).

### 92. *gussakovskii* Dollfuss

*Ammophila rugicollis* Gussakovskij, 1930c:203, ♀, ♂, junior primary homonym of *Ammophila rugicollis* Lepelletier de Saint Fargeau, 1845. Syntypes: Azerbaijan: village Karadonly in Arax valley at 39°47'N 48°2'E (ZIN). – de Beaumont, 1970c:3 (Iran: Baluchestan); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia).

*Ammophila gussakovskii* Dollfuss, 2013a:436, substitute name for *Ammophila rugicollis* Gussakovskij, 1930. – Dollfuss, 2013a:392, 402 (in key to *Ammophila* of Palearctic Region and India), 436 (in revision of *Ammophila* of Palearctic Region and India), 2013b:570 (Kazakhstan: Ili River in Bakanas District, 6 km southeast of Lepsi); Danilov, 2016:350 (syntypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:14 (Iran: known from Sistan-o Baluchestan Province); Maharramov, Mokrousov, and Proshchalykin, 2020:44 (Azarbaijan: Nakichivan Autonomous Republic); Can and Gülmez, 2021b:308 (first record from Turkey: Erzincan: Refahiye: Sakaltutan); Kaplan and Yildirim, 2023:1691 (in checklist of Sphecidae *sensu lato* of Turkey).

### 93. *haimatosoma* Kohl

*Ammophila haimatosoma* Kohl, 1884a:383, ♀. Holotype (“bei vorliegendem Stücke”): ♀, Cyprus: no specific locality (NHMW). – Ed. André, 1886:73 (in revision of Sphecidae of Europe and Algeria), 1888:3\* (bibliographic references); Dalla Torre, 1897:400 (in catalog of world Hymenoptera, as *haematosoma*); Kohl, 1901d:153 (redescription), 1906b:326 (in revision of Palearctic *Ammophilini*); Morice, 1911:73 (Algeria: Biskra); Roth, 1924:123 (Algeria: Nemours, now Ghazaouet); von Schulthess, 1926b:208 (Tunisia); Roth, 1928:188 (in revision of North African *Ammophilini*), 217 (nesting habits), 230 (prey capture preceds nest construction); Kruger, 1929a:21 and 1929b:56 (Libya: Cyrenaica: Giabarub); G. Carpenter, 1930b:291 (nest closure); Nadig, 1933:101 (Morocco: Marrakech); Guiglia, 1934b:292 (Libya: bibliography and summary of locality records); Alfieri, 1946:127 (in revision of Egyptian *Ammophila*); de Beaumont, 1950d:6 (Egypt: Siwa oasis), 1950f:395 (Morocco); Pittioni, 1950:20 (Cyprus); de Beaumont, 1951e:264 (Morocco), 1953b:226 (Libya); de Beaumont and Bytinski-Salz, 1955:36 (Israel); Leclercq, 1955h:89 (bibliographic references); de Beaumont, 1956a:175 (Libya); Grandi, 1957:386 (Libya: Tripolitania: Wadi Kaam); de Beaumont, 1960:226 (Libya), 1961e:2 (Iraq), 1965b:772 (Chad: Ennedi), 1970c:2 (Iran: Khuzestan); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Georghiou, 1977:188 (Cyprus); Piek and Spanjer, 1986:179 (in list of Sphecidae with known prey); Steiner, 1986:98 (references to papers on nesting habits); Guichard, 1988a:127 (Saudi Arabia); Roche and Zalat, 1994:114 (Egypt: Sinai Peninsula); Gadallah and Assery, 2004a:217 (Saudi Arabia: in key to Sphecidae of Jeddah Region), 224 (in catalog of Sphecidae of Saudi Arabia: Abrug east of Jeddah, north and south of Jeddah); Roche, 2007a:16 (in checklist of Egyptian Sphecidae, as *haimatosoma haimatosoma*), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae, as *haimatosoma haimatosoma*); Sakenin, Samin, and Bagriacik, 2010:17 (Iran: Kerman: Jiroft); Schmid-Egger, 2011b:597 (first record from United Arab Emirates: Dubai/Nakhalai), 601 (color photograph of male); Dollfuss, 2013a:392, 401 (in key to *Ammophila* of Palearctic Region and India), 437 (in revision of *Ammophila* of Palearctic Region and India), 2013b:571 (locality records from Algeria, Iraq, Jordan, and Yemen); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:360 (in new catalog of Sphecidae of Saudi Arabia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:15 (Iran: known from Kerman and Khuzestan provinces);

Augul, 2019:492 (Iraq: reference to Kaddou, 1967); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:304 (in list of Tunisian Sphecidae *sensu stricto*; additional records from Kebili, Sidi Bouzid, and Tozeur provinces); Gadallah, 2020d:79 (in list of aculeate wasps of Arabian Peninsula). – **As *Sphex haimatosoma***: R. Turner, 1918a:91 (new combination, Pakistan: Karachi).

#### ssp. *sinaïtica* Alfieri

*Ammophila haimatosoma* variété *sinaïtica* Alfieri, 1946:128. Holotype: ♀, Egypt: Sinai Peninsula: Wadi El Ghedeirat (originally A. Alfieri collection, now USNM). – Dollfuss, 2013a:437 (listed in synonymy of *Ammophila haimatosoma*). – **As *Ammophila haimatosoma sinaïtica***: R. Bohart and Menke, 1976:152 (new status, in checklist of world Sphecidae); Roche and Zalut, 1994:114 (Egypt: Sinai Peninsula); Roche, 2007a:16 (in checklist of Egyptian Sphecidae), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

#### 94. *haladai* Dollfuss

*Ammophila haladai* Dollfuss, 2013a:439, ♀, ♂. Holotype: ♂, Turkey: Mut: Sertavul (OÖLM). – Dollfuss, 2013a:394, 404 (in key to *Ammophila* of Palearctic Region and India), 2013b:571 (Turkey: locality records); Danilov, 2014a:426 (Russia: Siberia: Khakasiya, Novosibirsk Oblast', Omsk Oblast'), 2014b:520, 521 (in key to Sphecidae s.s. of Siberia), 2017b:212 (in catalog of Sphecidae s.s. of Russia), 2020:317 (specimens from Kazakhstan, Mongolia, and Russia: Siberia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Can and Gülmez, 2021b:308 (Turkey: Giresun and Sivas provinces); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey).

#### 95. *hallelujah* Menke

*Ammophila hallelujah* Menke, 2020, ♀, ♂. Holotype: ♂, USA: California: Lassen County: Hallelujah Junction (UCD).

#### 96. *harti* (Fernald)

*Ammophila argentata* Hart, 1907:266, ♀, ♂, junior primary homonym of *Ammophila argentata* Lepeletier de Saint Fargeau, 1845. Lectotype: ♀, USA: Illinois: Topeca (Illinois State Laboratory of Natural History), designated by Frison, 1927:230. – **As *Sphex argentatus***: Mickel, 1918b:405 (new combination, in catalog of Nebraskan Sphecidae); Britton, 1920:340 (in checklist of insects of Connecticut); Rau, 1922:24 (USA: Missouri: St. Louis, nesting behavior); J.Ch. Bradley, 1928:1012 (in catalog of New York Sphecidae).

*Sphex harti* Fernald, 1931a:450. Substitute name for *Sphex argentatus* (Hart) Fernald, 1931a, junior secondary homonym of *Sphex argentatus* Fabricius, 1787 (Article 59.3: a junior secondary homonym replaced before 1961 is permanently invalid). – Dreisbach, 1944:268, 271 (in key to *Ammophila* of Michigan), 273 (Michigan: locality records); Strickland, 1947:129 (Canada: Alberta: Wainwright); Krombein, 1958f:192 (in supplement to catalog of North American Hymenoptera: description of larva by Evans and Lin, 1956a, reported). – **As *Ammophila harti***: Murray in Muesebeck, Krombein, and Townes, 1951:975 (new combination, in catalog of North American Hymenoptera); Evans and Lin, 1956a:146 (description of larva), 1958e:451 (behavioral evolution), 1959d:459 (nesting behavior), 1963c:62 (nest closure), 1970:485 (Wyoming: Jackson Hole); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 1983b:20 (Nebraska: Thomas County: Halsey area); Brockmann, 1985b:312 (nest closure summary); Hager and Kurczewski, 1985:597 (male reproductive behavior), 1986a:451 (sarcophagid cleptoparasites *Senotainia vigilans* Allen and *Phrosisinella aurifacies* Downes), 1986b:7 (nesting habits); Wcislo, 1987:519 (facultative parasitic behavior within otherwise free-living species); O'Brien, 1989b:210 (distribution in Michigan); Spofford, Kurczewski, and Downes, 1989:258, 260 (nest parasites: *Senotainia trilineata* (Wulp), and *Sphenometopa tergata* (Coquillett), miltogrammine flies), 260 (references to publications on nest parasites *Senotainia vigilans* Allen, a miltogrammine fly, and undetermined Miltogrammini); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County); Spofford and Kurczewski, 1990:747, 749, 750 (nest parasites: *Senotainia trilineata* (Van der Wulp), *Senotainia vigilans* Allen, *Sphenometopa tergata* (Coquillett), and unknown species of Miltogrammini, Sarcophagidae), 1992:996 (species of miltogrammine parasites listed), 1002 (counter-cleptoparasitic behavior: freeze-stop and face-off, diversionary flight), 1003 (chasing flight), 1004 (post-larvipositional counter-cleptoparasitic behavior: abandon burrow), 1005 (abandon prey, clean burrow, clean prey, inordinate amount of post-provisioning time in burrow, larval feeding on maggot); Kurczewski, 1998d:250 (pine barrens in upstate New York); Weissmann and Kondratieff, 1999:77 (Colorado: Great Sand Dunes National Monument); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:70 (in revision of North and Central American *Ammophila*).

#### 97. *hemilauta* Kohl

*Ammophila hemilauta* Kohl, 1906:360, ♀. Lectotype: ♀, Tunisia: Médenine (NHMW), designated by Dollfuss, 2013a:440. – von Schulthess, 1926b:209 (Tunisia, Libya); Roth, 1928:203 (in revision of North African Ammophilini, description of ♂); nec Bischoff, 1933:6 (= *Ammophila strumosa*); Bischoff, 1933:6 (Morocco); Guiglia, 1934b:292 (Libya: bibliography and summary of locality records); Alfieri, 1946:135 (in revision of Egyptian *Ammophila*); de Beaumont and Bytinski-Salz, 1955:37 (Israel); Leclercq, 1955h:85 (bibliographic references); de Beaumont, 1956a:178 (Libya), 1958a:290 (illustration of genitalia), 1960b:226 (Libya), 1963b:20 (in revision of *Ammophila nasuta* species group); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Dollfuss, 1989:7 (type material in NHMW); Roche, 2007a:17 (in checklist of Egyptian Sphecidae, redescription), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Dollfuss, 2013a:387, 398 (in key to *Ammophila* of Palearctic Region and India), 2013b:571 (Tunisia: 20 km southeast of Gabes, Kebili, Tataouine), 2015b:423 (Egypt: Marsa Matrouh: between Burg el Arab und El Hamman at 30°54'21"N 29°26'02"E; new record: Tunisia: Mahdia: Ksour Essef: Salakta).

#### 98. *hermosa* Menke

*Ammophila hermosa* Menke 1965c:1, nomen nudum. Objective synonym of *Ammophila hermosa* Menke, 1966b.

*Ammophila hermosa* Menke, 1966b:31, ♀, ♂. Holotype: ♂, USA: California: Mono County: Black Lake (UCD). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 1994f:22 (Arizona: Bisbee); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Menke, 2020:94 (in revision of North and Central American *Ammophila*).

#### 99. *heteroclypeola* Li and Xue

*Ammophila heteroclypeola* Li and Xue, 1998:181, ♀, ♂. Holotype: ♀, China: Xingjiang: Wujiagu (Zhejiang Agricult. Univ.). – Dollfuss, 2013a:441 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300, 302 (in key to *Ammophila* of China).

#### 100. *hevans* Menke

*Ammophila hevans* Menke, 2004:766, ♀, ♂. Holotype: ♀, Bolivia, Santa Cruz 3 km north of Brazilio (CAS). Paratypes: Argentina, Paraguay. – Dollfuss, 2015b:424 (locality records from Argentina and Paraguay); Trad, Buys, and Silvestre, 2016:1 (first record from Brazil: Mato Grosso do Sul: Dourados Municipality: Lagoa Grande rural settlement at 21°59'37"S, 055°19'25"W); Aranda, 2019:308 (Brazil: Mato Grosso de Sul: Corumbá at 19°20'56"S 057°00'60"W).

#### 101. *heydeni* Dahlbom

NOTE. European records of *Ammophila holosericea* probably refer to *heydeni*.

*Ammophila heydeni* Dahlbom, 1845:430, sex non indicated (as *Heydeni*, incorrect original capitalization). Holotype or syntypes: southern Europe: no specific locality (Lund). – Eversmann, 1849:364 (Russia: Astrakhan, Orenburg and Saratov areas); F. Smith, 1856:210 (in catalog of Hymenoptera in British Museum); A. Costa, 1858a:19 (Italy: Campania: Monti Partenii in Benevento Region), 1858b:19 (Italy: in revision of Sphecidae of Kingdom of Naples); von Frauenfeld, 1861:103 (Croatia: Dalmatia: no specific locality); Sichel, 1861:751 (Italy: Sicilia); A. Costa, 1863:65 (Italy: Calabria Ulteriore: no specific locality); Giraud, 1863a:14 (Italy: Piemonte: Suse; and France: Hautes-Alpes: Vallouise near Briançon); A. Costa, 1867b:77 and 1867c:21 (in revision of Italian Sphecidae); Kirchner, 1867:217 (in catalog of European Hymenoptera); Palma, 1869:37 (Italy: Sicilia settentrionale); Aichinger, 1870:321 (Austria: Tirol); Dours, 1874:141 (in catalog of Hymenoptera of France); J. Lichtenstein, 1975b:CCII (position of nympe inside cocoon, as *Heydeini*); Frivaldszky, 1876:354 (Hungary: Temes Komitat: Grebenáč, now in Timiș District in Romania); Becker, 1880:150 (Russia: Sarepta, now Krasnoarmeysk south of Volgograd); Kohl, 1880:184 (Austria: Tirol, and Italy: Trentino–Alto Adige); Magretti, 1881:113 (Italy: Lombardia), 270 (in list of species discussed in this paper);

Yaroshevskiy, 1881:127 (Ukraine: Khar'kiv Oblast': Khar'kiv); A. Costa, 1882b:22 (Italy: Sardegna); De Stefani Perez, 1882:39 (Italy: Sicilia: Sciacca); Magretti, 1882a:383 (Italy: Pisa Province: Lavaiano); Kohl, 1883e:674 (Switzerland); Ed. André, 1886:71 (in revision of Sphecidae of Europe and Algeria); De Stefani Perez, 1886:171 (Italy: Sicilia: monte di Renda near Palermo); Gasperini, 1887:18 (Dalmatia: Brusije, San Giorgio, Spalato, now Croatia: Brusje and Sućuraj on Island of Hvar, Split); Ed. André, 1888:3\* (bibliographic references); Cuní y Martorell, 1888:164 (Spain: Barcelona); Kohl and Handlirsch, 1889:276 (Turkmenistan); F. Morawitz, 1891a:203 (Russia: Astrakhan Governorate); Kohl, 1893a:36 (Austria: Niederösterreich); F. Morawitz, 1893b:408 (Tajikistan); Baldini, 1894:48 (Italy: Modena area); De Stefani Perez, 1894:216 (Italy: Sicilia); Schletterer, 1894:30 (Istria Peninsula, now part of Croatia, Slovenia, and Italy); De Stefani Perez, 1895:226 (Italy: in catalog of Sicilian Hymenoptera); Cuní y Martorell, 1897:331 (Spain: Cataluña: villa de Calella); Dalla Torre, 1897:400 (in catalog of world Hymenoptera); Mocsáry, 1897:79 (Kingdom of Hungary, some localities are in today's Croatia and Romania); Flamary, 1898:38 (France: Saône-et-Loire: Mâcon area); Ferton, 1899:340 (prey paralyzing); Ghigi, 1902:190 (Greece: Ionian Islands: Kefalonia: Ankona, as *heideini*); de Cobelli, 1903:104 (Italy: Province of Trentino); Antiga and Bofill, 1904:3 (Spain: Cataluña Province); E. Saunders, 1904c:635 (Spain); Zilahi Kiss, 1904:77 (Hungary: Nagyfalú); Ferton, 1905:97 (homing); Kohl, 1905c:232 (Turkey: Kayseri: Erciyes Dağı); Mantero, 1905:68 (Italy: Toscana: Isola del Giglio); W. Schulz, 1905b:34 (Algeria: Biskra and Oued Deurdeur); Vángel, 1905:167 (Hungary); Kohl, 1906b:366 (in revision of Palearctic Ammophilini); W. Schulz, 1906:43 (Greece: Crete); Móczár and Henter, 1907:205 (Hungary: Hatvan, Tiszaalpar; Romania: Caraş-Severin: Mehadia); Schmiedeknecht, 1907:245 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:103 (in catalog of French Hymenoptera); Ferton, 1908:560 (nesting habits), 582 (nest excavation and homing, prey); von Schulthess, 1909:440 (Libya: Derna, Gherran); Olivier, 1910:163 (Algeria: Bou Saâda); Graeffe, 1911:48 (Italy: Trieste area); Morice, 1911:74 (Algeria: Constantine); Birula, 1913:545 (Ukraine: Zhytomyr Oblast': Radomyshl'); Kohl, 1913b:15 (Russia: Voronezh Oblast': Valuyki at 50°14'N 38°08'E); Zavattari, 1913b:3 (Greece: Island of Rhodes, as *heydenii*); Szilády, 1914:89 (Hungary: Nagyenyed, Vizakna); Kerenskiy, 1919:35 (Russia: Penza Governorate); Rabaud, 1919:52 (nest excavation, homing, choice of prey); Berland, 1921:533 (Greece); Fahringer and Friese, 1921:160 (Turkey: Erzurum: Iyaribashi in Amanus Mountains = Gavur Dağlari); Ferton, 1921:347 (France: Corse: Propriano; nesting behavior); Maidl, 1922:67 (Albania, Croatia); Fahringer, 1922:176 (Turkey); Strand, 1922:198 (Austria: Niederösterreich: Guntramsdorf); Ferton, 1923:87 (prey paralyzing), 138 (progressive provisioning), 294 (easily finds nest when carrying prey), 303 (evacuation of sand from nest in flight, prey carrying), 320 (captures other families when preferred geometrid caterpillars are in short supply); Gribodo, 1924a:262 (Libya: Benghazi), 1924b:48 (Libya: Benghazi, Tolmetta); Roth, 1924:123 (Algeria: Nemours, now Ghazaouet); Berland, 1925a:13 (a spider, *Filistata insidiatrix*, taking away a female's prey, a caterpillar of a *Pararge* butterfly, probably *P. maegera* L., Nymphalidae), 1925d:30 (in Sphecidae Fauna of France); Coulon, 1925:115 (France: Allier, Oise; Italy: Sicilia; Turkey: Istanbul); Grandi, 1925a:90 (Italy: Emilia: Gaggio Montano); Picard, 1925b:163 (nest provisioning of either mass type or delayed type, nest construction precedes hunting, prey: geometrid caterpillars); Rabaud, 1925:173 (nest containing caterpillar was open, mother *A. heydenii* visited it and disappeared, she appeared three days later, bringing second prey, the third prey was found four hours later, with an egg on it); Zanon, 1926:91 (Libya: Fueihat 15 km south of Benghazi); Grandi, 1926:281 (nesting habits); von Schulthess, 1926b:209 (Tunisia, Libya); Kuznetsov-Ugamskij, 1927:249 (Kazakhstan: Khumsan); Benoist, 1928:408 (France: Alpes-Maritimes: Grasse); Berland, 1928b:175 (add Grandi, 1926 and Roth, 1928 to bibliography in Berland, 1925d); Roth, 1928:206 (in revision of North African Ammophilini), 224 (nesting habits); Grandi, 1929:258 (prey carrying, sleeping position), 1929:287 (Italy: Toscana: valle della Limentra); Roth, 1929:185 (in revision of Spanish Ammophilini); G. Carpenter, 1930b:291, 292 (nest closure); Grandi, 1930:302 (attempts at nest closure with pebble that escaped from mandibles), 340 (Italy: Toscana: Maremma); Schmiedeknecht, 1930:706 (in keys to Hymenoptera of North and Central Europe); Dusmet y Alonso, 1931:7 (Portugal: Mitra); Molitor, 1931b:413 (nesting habits); Giordani Soika, 1932a:20 (Italy: Lido di Venezia); Guiglia, 1932d:467 (Libya: Gialo); Molitor, 1932b:450 (nesting habits and experiments); Bischoff, 1933:6 (Morocco); Dulac, 1933b:39 (France: Saône-et-Loire: Saint-Leu and Montcenis near Le Creusot); Gussakovskij, 1933b:274 (Iran, as *heydenii*); Masi, 1933:196 (Italy: Toscana: Isola di Capraia); Molitor, 1933c:502 (experiments with prey substitution), 507 (fighting between females); Nadig, 1933:100 (Algeria: Oran; Morocco); Grandi, 1934:65 (attempts at nest closure with pebble that escaped from mandibles), 130 (Italy: Lazio: Acilia, and Toscana: San Vincenzo); Guiglia, 1934b:292 (Libya: bibliography and summary of locality records); Gussakovskij, 1934a:6 (China: Sinkiang: Kuldja, as *heydenii*); Maidl, 1934:64 (Greece: Aegean Islands); Molitor, 1934b:170 (homing), 1934c:450 (experiments on nesting behavior); Nadig, 1934:33 (France: Corse: Ajaccio, Bastia, Cap Corse); Zavadil, 1934:187 (Slovakia); Berland, 1935b:63 (use of pebble for tampering nest entrance); Bernard, 1935:60 (France: Var: Fréjus area); Grandi, 1935a:49 (nesting habits), 111 (Italy); Gussakovskij, 1935:413 (Tajikistan: Kulab, as *heydenii*); Marchand and Dulac, 1935:61 (France: Saône-et-Loire: Saint Laurent d'Andenay); Vergne, 1935:117 (France: Auvergne: Chanturgue, Lezoux); Bernard, 1936c:287 (France: Hérault: Valvras; Var; Fréjus); Molitor, 1936a:195 (experiments on color recognition), 1936b:524 (reaction to disturbance and obstacles); Noskiewicz, 1936:160 (Poland: Podole Region: Trembowla, now Ukraine: Terebovlia); Roller, 1936:315 (Austria: loess cliffs at Bisamberg near Vienna); Dulac, 1937:7 (France: Saône-et-Loire: Montcenis, Saint-Laurent d'Andenay); Zavadil, Šustera, and Baťa, 1937:212 (in catalog of Sphecidae of Czechoslovakia); Kuntze and Noskiewicz, 1938:379 (in Poland known only from Podole region, now Ukraine); Móczár, 1938d:80 (Hungary: Pótharasz puszta), 1938c:81 (Hungary: Kőszeg Hills), 1939:5 (Hungary: Jászberény); Zavadil, 1939:121 (Czech Republic: Morava: Čejč); Guiglia, 1941c:165 (Italy: Calabria: Grande Sila), 1942a:59 (Greece: Island of Rhodes: Kremasti); Deleurance, 1943:62 (France: Dordogne: Montignac; two eggs in a single cell reported); Giner Marí, 1943a: (in Sphecidae Fauna of Spain); Guiglia, 1943d:91 (Albania: Scutari); Timon-David, 1943:29 (France: Bouches-du-Rhône: plage de Fos); Giordani Soika, 1944:13 (Italy: Sicilia: Messina, Taormina); Guiglia, 1944b:5 (Italy); Šnoflák, 1944a:144 (Czech Republic: serpentine steppe near Mohelno); Benoist, 1946:68 (caterpillar prey defense mechanism); de Andrade, 1949:6 (Portugal); Deleurance, 1946b:61 (prey), 67 (France: Bouche-du-Rhône: Camargue: Bois des Rièges); Balthasar, 1948:144 (Slovakia: Kovačov, Parkan); Šnoflák *in* Zavadil and Šnoflák, 1948:99 (in key to Sphecidae of Czechoslovakia); de Beaumont, 1950f:396 (Algeria, Morocco); Scobiola, 1950:21 (Romania); de Beaumont, 1951e:265 (Morocco); Cleu, 1953:50 (France: Ardèche River basin); de Beaumont, 1953h:193 (study of a ♂ from Dalmatia, holotype or syntype of *heydenii*); Guiglia, 1953b:10 (Italy: Lucania-Calabria: Santicelli); Nouvel and Ribaut, 1953:176 (France: Haute-Garonne: Saint-Béat); de Beaumont 1954e:86 (Italy); Grandi, 1954:155 (nesting habits), 235 (Italy); Hertzog, 1954:99 (France: Bouches-du-Rhône: Camargue); Aerts, 1955:64 (Germany: Rheinland); de Beaumont, 1955c:55 (effects of stylopization); de Beaumont and Bytinski-Salz, 1955:39 (Israel); Harant and Leclercq, 1955:251 (France: Hérault: eight localities); Leclercq, 1955h:76 (bibliographic references, locality records from Africa); Steiner, 1955:132 (France: Dordogne); Vergne, 1955:3 (France: Auvergne); Vogrin, 1955:31 (Yugoslavia); Bytinski-Salz, 1956:224 (Turkey: thirteen localities); 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Rosa and Pagliano, 2015:59 (Italy: Lombardia and Piemonte: Parco del Ticino); Shorenko, 2015:311 (in list of Sphecidae *sensu lato* of Crimea); Gülmez and Dizer, 2016:59 (Turkey: Tokat Province); Levärdä and Matache, 2016:39 (in catalog of Sphecidae s.s. of Romania); Mokrousov and Popov, 2016:560 (Russia: Krasnodarskiy Kray); Stolle and Saure, 2016:927 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:7 (Turkey: Antalya, Erzurum, Karaman, Manisa, and Mersin provinces); Arens, 2017a:636 (Greece: Peloponnesus); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:15 (Iran: known from Alborz, Ardabil, East Azerbaijan, Fars, Golestan, Guilan, Hormozgan, Isfahan, Kerman, Lorestan, Markazi, Mazandaran, Qazvin, Sistan-o Baluchistan, and Tehran provinces); Magdalou, 2017:14 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Forêt de la Massane); Shorenko, 2017:75 (in Crimea collected in May through September); Can and Gülmez, 2018b:756 (in some males from Turkey, crossvein Irs-m is incomplete, causing partial merging of submarginal cells II and III); Kemal and Koçak, 2018:43 (Turkey: in list of pterygot insects of Van Province); Lett, 2018:202 (France: Loir-et-Cher: Gièvres at 47°16'39"N 1°41'52"E); Shorenko, 2018:126 (Crimea, including localities, habitats, and number of specimens); Ch. Wang, Bashir, Q. Li, and Ma, 2018:298, 301 (in key to *Ammophila* of China); Augul, 2019:493 (Iraq: Wasit Province: Aziziyah: Al Zelja village); Gülmez, 2019:3 (Turkey: Amasya, Ankara, Sivas, and Tokat provinces: no specific localities), 4 (abnormal forewing venation); Shorenko, 2019:211 (among commonest sphecid species in Crimea); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:92 (in Sphecid Fauna of Europe); Cassar and Mifsud, 2020:164 (in checklist of Sphecidae s.s. of Malta); Danilov, 2020:317 (specimens from Armenia, Kazakhstan, Kyrgyzstan, Russia, both European and Siberia, Tajikistan, and Turkmenistan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Gadallah, 2020d:79 (in list of aculeate wasps of Arabian Peninsula); Maharramov, Mokrousov, and Proshchalykin, 2020:45 (Azarbaijan: Nakichivan Autonomous Republic); Shorenko, 2020:47 (Crimea: Karadag Nature Reserve); Turrisi, Altadonna, Lo Cascio, Nobile, and Selis, 2020:727 (Italy: Aeolian Archipelago: island of Lipari); Can and Gülmez, 2021b:309 (Turkey: many localities); Cross, Baldock, and Wood, 2021:14 (in catalog of Sphecidae *sensu lato* of Portugal); Can, 2022b:1875 (parasite: mite *Leptus* sp., Trombidiformes, Erythraeoidea); Embergenov, Élmurodova, Amirov and Kimyonazarov, 2022:47 (Uzbekistan: Khiva area, Fergana Province); Embergenov, Akhmedov, and Medetov, 2023:24 (Uzbekistan: southern Lake Aral region); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey). – **As *Podalonia heydeni***: Bischoff, 1931:8 (new combination, Spain).

? *Spheg attenuata* Christ, 1791:314. Synonymized with ... – Kohl *in* Dalla Torre, 1897:396 (in catalog of world Hymenoptera); Kohl, 1906b:370 (original description copied).

*Ammophila iberica* Ed. André, 1886:69, ♀, ♂ (as *Iberica*, incorrect original capitalization). Syntypes: Portugal: no specific locality (MNHN). Synonymized with *Ammophila heydeni* by Kohl, 1889a:20. – Ed. André, 1888:2\* (bibliographic reference); Medina, 1898:153: (Portugal: Mamede and Valpassos); E. Saunders, 1904c:635 (Spain). – **As *Ammophila***

**heydeni var. iberica:** Medina, 1894a:259 (new status, Spain: Cazalla); Antiga and Bofill, 1904:4 (Spain: Cataluña Province).

As *Ammophila holosericea*: Vander Linden, 1827:356 (synonymy; Italy, Dalmatia); Eversmann, 1849:364 (Russia: Orenburg area); von Kiesenwetter, 1849:87, footnote (Sicily, southern France); Belke, 1859:71 (Ukraine: Kamieniec Podolski); Imhoff, 1863:90 (Switzerland: Wallis: Saasthal); Schenck, 1861:162 (redescription, Germany: Sachsen = Saxony: no specific locality); A. Costa, 1869a:16 (Italy: Piemonte); Mocsáry, 1874:120 (Siebenbürgen, now Romania: Transylvania: no specific locality); Fabre, 1879:208 (nesting habits), corrected to *Ammophila heydeni* by Berland, 1923a:172; Ferton, 1901a:141 (experiment with prey substitution); Antiga and Bofill, 1904:4 (Spain: Cataluña Province); de Gaulle, 1908:103 (in catalog of French Hymenoptera).

### **spp. rubra Radoszkowski**

*Ammophila rubra* Radoszkowski, 1876b:132, sex not stated (authorship attributed to Sichel). Syntypes: Corsica, Causcaus, Egypt, and Kazakhstan (Kraków, ZMMU). – Radoszkowski, 1877:3 (Kazakhstan), 1887b:90 (in list of Transcaucasian Hymenoptera); Dalla Torre, 1897:407 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976 (as tentative synonym of *Ammophila heydeni* or *quadraticollis*); Dollfuss, 2013a:442 (listed in synonymy of *Ammophila heydeni*). – **As *Ammophila heydeni* var. rubra:** Kohl, 1906b:367 (new status, in revision of Palearctic Ammophilini); Myartseva, 1963b:59 (Turkmenistan: lower Murgab River), 1965:86 (Turkmenistan: Akibay, Murgab district, and Bayram-Ali district), 1966:48 (preying on caterpillars), 1969: 51 (prey: larvae of noctuid *Mamestra sociabilis irrisor* Ersch., Noctuidae, preimaginal development), 1972a:86 (Turkmenistan). – **As *Ammophila heydeni rubra*:** de Beaumont, 1970a:388 (new status, Afghanistan); Kazenas, 1972b:99 (Kazakhstan), 1978b:38 (in key to Sphecidae of Kazakhstan and Central Asia; Embergenov, Élmurodova, Amirov and Kimyonazarov, 2022:47 (Caucasus).

### **spp. rubriventris A. Costa**

*Ammophila rubriventris* A. Costa, 1864b:111, sex not stated. Syntypes: France: Corse: no specific locality (Napoli). – A. Costa, 1867b:78 and 1867c:23 (in revision of Italian Sphecidae), 1883:57 (Italy: Sardegna: island of Asinara and Teranova), 1884b:32 (Italy: Sardegna: Gennargentu); Ed. André, 1886:72 (in revision of Sphecidae of Europe and Algeria), 1888:3\* (bibliographic references); Baldini, 1894:48 (Italy: Modena area; determination tentative); Dalla Torre, 1897:407 (in catalog of world Hymenoptera); Ferton, 1908:577 (is a climate induced variety of *Ammophila heydeni*); Mantero, 1911:71 (Italy: Sardegna: Isola dell'Asinara); Ferton, 1923:138 (nest closure), 343 (females occur in Corsica together with *Ammophila heydeni*, males have coloration of *heydeni*); Georghiou, 1977:189 (Cyprus); Dollfuss, 2013a:442 (listed in synonymy of *Ammophila heydeni*). – **As *Ammophila heydeni* var. rubriventris:** Kohl, 1906b:367 (new status, in revision of Palearctic Ammophilini); Berland, 1925d:30 (in Sphecid Fauna of France). – **As *Ammophila heydeni rubriventris*:** Nadig, 1934:33 (new status, France: Corse: Monte d'Oro, Vizzavona; Italy: Sardegna: Gennargentu); Grandi, 1957:386 (Italy: Sardegna), 1959b:287 (Italy: Sardegna: Monte Limbara in Sassari district); Erlandsson, 1974:57 (Italy: Capo Falcone); Esmaili and Rastegar, 1974:45 (Iran); Hamon, Tussac, and Fonfria, 1992:405, 410 (in key to French Ammophilini); Luchetti, 1993:105 (Italy: Sardegna: Maddalena archipelago); Gayubo and Borsato, 1994:202 (Italy: Sardegna); Negrisolò *in* Minelli, Ruffo, and La Posta, 1995b:2 (in catalog of Italian fauna); Drewes, 2003:132 (Cyprus: Amathus); Generani, Pagliano, Scaramozzino, and Strumia, 2003:64 (Italy: Arcipelago Toscano); Pagliano and Negrisolò, 2005:67 (in Sphecid Fauna of Italy).

*Ammophila heydeni* var. *sarda* Kohl, 1906:367, ♀. Lectotype: ♀, Italy: Sardinia: no specific locality (NHMW), designated by Dollfuss, 2013a:442. Synonymized with *Ammophila heydeni rubriventris* by Pagliano, 1990:60. – **As *Ammophila heydeni sarda*:** Nadig, 1934:33 (new status, France: Corse; Vizzavona; Italy: Sardegna: Gennargentu); de Beaumont, 1947b:382 (Cyprus); Pittioni, 1950:20 (Cyprus); Pagliano, 1984:368 (Italy), 1985:14 (Italy); Dollfuss, 1989:7 (type material in NHMW).

## **102. holosericea (Fabricius)**

NOTE: This species was misinterpreted until Dollfuss (2013:443) established its identity.

*Spheg holosericeus* Fabricius, 1793:205, sex not stated (as *holoserica* incorrect original termination). Holotype or syntypes: "Barbaria" = North Africa (type lost, identity cannot be established: van der Vecht, 1961a:40). Neotype: ♀, Morocco: 15 km southeast of Sefrou (OÖLM), designated by Dollfuss, 2013a:443. Records from Europe probably refer to *Ammophila heydeni*. – Fabricius, 1796:155 (in Index to his Entomologia Systematica, 1793); Coquebert, 1801:50 (original description copied), pl. XII Fig 1 (illustration of Fabrician type); Turton, 1801:487 (redescription); Dahlbom, 1845:XX (specimens in collection Fabricius are *Ammophila holosericea*). – **As *Ammophila holosericea*:** Germar, 1817:260 (new combination, Dalmatia: Cherso, now Croatia: Cres); Audouin, 1822a:242 (in Dictionnaire classique d'histoire naturelle); Lepeletier de Saint Fargeau and Audinet-Serville, 1828:452 (redescription); Ghiliani, 1842:24 (listed from Italy: Sicilia after Fabricius, as *holoserica*); Dahlbom, 1843:9 (in revision of Sphecidae and Pompilidae), 1845:430 (in key to *Ammophila*); Lepeletier de Saint Fargeau, 1845:378 (in revision of world Hymenoptera); Eversmann, 1849:364 (Russia); Lucas, 1849:275 (Algeria: Alger, Constantine, Oran); F. Smith, 1856:209 (in catalog of Hymenoptera in British Museum); Taschenberg, 1858:61 (in key to Sphecidae of Germany); A. Costa, 1861:33 (in revision of Sphecidae of Kingdom of Naples); Imhoff, 1863:90 (Switzerland: Wallis: Saasthal); Taschenberg, 1866:208 (in revision of Hymenoptera of Germany); A. Costa, 1867b:78 and 1867c:22 (in revision of Italian Sphecidae); Kirchner, 1867:217 (in catalog of European Hymenoptera); Schenck, 1867a:357 (known from Germany); Wierzejski, 1868:117 (Ukraine: Podole Region); Palma, 1869:37 (Italy: Sicilia settentrionale); Taschenberg, 1869:432 (represented in Halle University collection); Aichinger, 1870:321 (Austria: Tirol, now Italy: Trentino–Alto Adige; as *holosericea* Dahlb.); P. Ivanov, 1872:152 (Ukraine: Kharkov Oblast': Kupyansk area; as *holosericea* Vander-Lind.); Dours, 1874:141 (in catalog of Hymenoptera of France); Martinez y Saez, 1874:31 (specimens from Spain: Madrid area, donated to Leon Dufour); Wierzejski, 1874:258 (Ukraine: Podole Region: Dzwynograd, Skała on Zbrucz River; as *holosericea* Dhlb.); Marquet, 1875:208 (France: Hérault); Radoszkowski, 1876b:131 (Egypt); Fabre, 1879:207 (nesting habits); Girard, 1879:969 (morphology and distribution); Kohl, 1880:184 (common in Italy: Bolzano and Meran according to von Aichinger, 1870); Marquet, 1881:177 (southern France); Yaroshevskiy, 1881:127 (Ukraine: Khar'kiv Oblast': Kupyansk); Magretti, 1884a:249 (Sudan); Ed. André, 1886:70 (in revision of Sphecidae of Europe and Algeria), 1888:2\* (bibliographic references); Cuní y Martorell, 1889:64 (Spain: Cataluña: Begas); Chrétien, 1896:411 (preying on caterpillars *Epimecia ustula* Frr., Noctuidae); W. Fox, 1896e:552 (Ethiopia or Somalia: Dabulli); Acloque, 1897:96 (in Sphecid Fauna of France and Algeria); Cuní y Martorell, 1897:331 (Spain: Cataluña: villa de Calella); Dalla Torre, 1897:402 (in catalog of world Hymenoptera); Bingham, 1898a:105 (Yemen: Aden); Antiga and Bofill, 1904:4 (Spain: Cataluña Province); W. Schulz, 1905b:34 (Algeria), 1906:44 (Greece: Crete); Kohl, 1906b:360 (in revision of Palearctic Ammophilini); Ferton, 1923:294 (easily finds nest when carrying prey), 327 (experiments with offering caterpillar to female that just performed final closure of nest); Berland, 1925d:30 (in Sphecid Fauna of France); Picard, 1925b:162 (review of observations on stinging sequence, the correct name is probably *heydeni*); Roth, 1928:208 (in revision of North African Ammophilini), 227 (nesting habits), 1929:185 (in revision of Spanish Ammophilini); Giner Marí, 1943a:72 (in Sphecid Fauna of Spain); Leclercq, 1955h:84 (bibliographic references); Scobiola, 1960b:236 (not occurring in Romania); Ceballos, 1964:87 (in supplement to catalog of Spanish Sphecidae); Radović and Krunić, 1979:unpaginated foldout (nesting in coarse sand and loose soil, foreleg structure); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Radović, Krunić and Brajković, 1982:28 (Yugoslavia); Radović, 1985:64 (sting apparatus analyzed); Steiner, 1986:98 (references to papers on nesting habits); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:81 (in Sphecid Fauna of Western Europe); Pagliano, 2008:511 (specimens in M. Spinola collection, Torino); Dollfuss, 2013a:387, 397 (in key to *Ammophila* of Palearctic Region and India), 443 (in revision of *Ammophila* of Palearctic Region and India, known only from Algeria, Morocco and Tunisia), 2013b:575 (locality records from Morocco and Tunisia); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:304 (in list of Tunisian Sphecidae *sensu stricto*; new record: Tunisia: Nabeul: Haouaria: Gharmen); Gadallah, 2020d:79 (record from Arabian Peninsula by Bingham, 1898 is wrong).

*Ammophila sericea* Lepeletier de Saint Fargeau and Audinet-Serville, 1828:453. Holotype: ♀, southern France: no specific locality (destroyed). Synonymized with *Ammophila holosericea* by Kohl, 1906:360.

## **103. honorei Alfieri**

*Ammophila honorei* Alfieri, 1946:140, ♀ (as *Honorei*, incorrect original capitalization). Holotype: ♀, Egypte: Sinai: between el Arish and Hassana (originally A. Alfieri collection, now Al Azhar University, Cairo). – de Beaumont and Bytinski-Salz, 1955:40 (Israel, description of ♂); Leclercq, 1955h:87 (bibliographic references); R. Bohart and Menke,



1976:152 (in checklist of world Sphecidae); Guichard, 1991a:338 (Jordan); Roche and Zalut, 1994:114 (Egypt: Sinai Peninsula); Roche, 2007a:16 (in checklist of Egyptian Sphecidae), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Dollfuss, 2013a:394, 404 (in key to *Ammophila* of Palearctic Region and India), 445 (in revision of *Ammophila* of Palearctic Region and India), 2013b:575 (Jordan: south of Shuna in Jordan valley, Petra), 2015b:424 (Jordan: Al Karak, north of Petra, south of Tafila).

#### 104. *horni* von Schulthess

*Ammophila horni* von Schulthess, 1927:297, ♂. Holotype: ♂, Sudan: Port Sudan (DEI). – de Beaumont, 1963b:21 (southeastern Egypt; in revision of *Ammophila nasuta* species group); Oehlke and Wudowenz, 1974:423 (holotype in DEI); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Roche, 2007a:17 (in checklist of Egyptian Sphecidae), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Dollfuss, 2013a:388, 397 (in key to *Ammophila* of Palearctic Region and India), 445 (in revision of *Ammophila* of Palearctic Region and India); Gadallah, 2020d:79 (in list of aculeate wasps of Arabian Peninsula).

#### 105. *hungarica* Mocsáry

*Ammophila hungarica* Mocsáry, 1883:25, ♀ (as *Hungarica*, incorrect original capitalization). Holotype or syntypes: ♀, Hungary: Lipótmező near Budapest (TMB). Synonymized with *Ammophila fallax* by Kohl, 1889a:20. – Ed. André, 1886:61 (in revision of Sphecidae of Europe and Algeria), 1888:2\* (bibliographic references); Medina, 1894a:259 (Spain: Hornachuelos); Mocsáry, 1900:79 (Hungary); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Pulawski, 1978:181 (in key to Sphecidae of European part of USSR); Leclercq, Gaspar and Verstraeten, 1979:map 1405 (Belgium); Gayubo, 1981a:140 (northern Spain: Sierra de Béjar); Dollfuss, 1983a:75 (endangered in Niederösterreich, Austria), 1983b:3 (in catalog of Sphecidae of Austria); Gayubo, 1983c:233 (Spain: Salamanca Province: Fregeneda, Membribe); Mingo and Gayubo, 1983:160 (Spain); Haeseler, 1985d:279 (tool using behavior); Józán, 1985b:55 (citation of Bajári's 1957 record from Simontornya), 68 (map of distribution in Hungary), 83 (ecological and zoogeographic characteristics); Gayubo, 1986b:37 (Spain: Andalucía); Islamov, 1986:514 (Uzbekistan: Tashkent Oblast'); Dollfuss, 1988:9 (Austria: Bisamberg near Vienna); Gayubo, Asís, and Tormos, 1990a:12 (Spain); Dollfuss, 1991:33 (in key to Sphecidae of North and Central Europe); Pagliano, 1990:61 (in catalog of Italian Sphecidae); Day, 1991:xii (summary of European Endangered Hymenoptera Lists); Gayubo, Borsato, and Osella, 1992:279 (Turkey); Hamon, Tussac, and Fonfria, 1992:408, 411 (in key to French Ammophilini), 412 (distribution in France); Dollfuss, 1994:97 (endangered in Austria); Tormos, Asís, and Gayubo, 1994:187, 197 (Spain: Albacete Province); Haeseler, 1995:603 (nest breaking, prey theft, brood parasitism); Negrisoló in Minelli, Ruffo, and La Posta, 1995b:2 (in catalog of Italian fauna); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:81 (in Sphecid Fauna of Western Europe); Kazenas, 1998b:170 (in Sphecid Fauna of Kazakhstan); Gusenleitner, 1999:594 (Austria: locality records); Pauly, 1999:107 (in catalog of Belgian aculeates); Józán, 2000:104 (Hungary: Bakony Mountains); Esenbekova and Kazenas, 2000:13 (southeastern Kazakhstan: 37 km southwest of Taraz, 10 km southwest of Zhanatas); Zettel, 2000:24 (Austria: Spitalberg near Bruckneudorf); Kazenas, 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia), 109 (nesting habits, review of known biology); Kazenas and Esenbekova, 2001:133 (Kazakhstan: Almatinskiy Nature Reserve); Ljubomirov, 2001b:46 (Bulgaria: Mount Vitosha near Sofia); Zettel, Gross, and Mazzucco, 2001:67 (Austria: Wien, collected in the XIXth century, then in 1992 and 2001); Józán, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:37 (geographic distribution, collecting localities in Kazakhstan); Wurst and Schweigert, 2002:70 (France: Cevennes); Drewes, 2003:132 (Cyprus: Amathus); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Nieves-Aldrey, Fontal-Cazalla, Garrido-Torres, and Rey del Castillo, 2003:42 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Gayubo et al. 2004:130 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Kazenas, 2004b:100 (Kazakhstan: western Tien Shan Mountains); Cruz-Sánchez, Gayubo, González, and Torres, 2005:219 (Spain: Salamanca: San Martín del Castañar); Gülmez and Tüzün, 2005:51 (Turkey: Ankara Province); Jacobs, 2005aa:436 (Bulgaria: Arkutino near Burgas); Pagliano and Negrisoló, 2005:67 (in Sphecid Fauna of Italy); Standfuss and Standfuss, 2006c:308 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Straka, 2005a:393 (extinct in Czech Republic); Baños-Picón, Gayubo, Asís, and González, 2007:255, 258 (Spain: Zamora: Cabañas de Aliste); Vepřek and Straka, 2007:199 (in catalog of Sphecidae of Czech Republic and Slovakia: known from Moravia and Slovakia only); Gayubo, González, Tormos, and Asís, 2008:136 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Ljubomirov and Yildirim, 2008:35 (in catalog of Sphecidae of Turkey); Baños-Picón, Asís, Gayubo, and Tormos, 2009:310 (Spain: frequency of specimens collected with hand nets and Malaise traps); González, Gayubo, Asís, and Tormos, 2009:622 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Pagliano, 2009:175 (Italy: Liguria: Villanova d'Albenga); Bitsch, 2010:106 (in supplement to vol. II of Faune de France, 1997: recent records from Austria and Bulgaria reported); Danilov, 2010b:44 (distribution of Tethyan type); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:497 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Józán, 2011:178 (in checklist of Sphecidae *sensu lato* of Hungary); Protsenko, Fateryga, Ivanov, and Puzanov, 2012:53 (Ukraine: Crimea: near Feodosiya); Dollfuss, 2013a:390, 400 (in key to *Ammophila* of Palearctic Region and India), 446 (in revision of *Ammophila* of Palearctic Region and India), 2013b:575 (locality records from Armenia, Bulgaria, Cyprus, Greece, Iran, Jordan, Kazakhstan, Morocco, Romania, Spain, Syria, Tajikistan, Turkey, Turkmenistan, and Uzbekistan); Danilov, 2014a:426 (Russia: Siberia: Altayskiy Kray, Novosibirsk Oblast', Omsk Oblast'), 2014b:519, 520 (in key to Sphecidae s.s. of Siberia); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Kazenas, 2014a:133 (Kazakhstan: Karatau Mountain Range); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces); Dollfuss, 2015b:424 (locality records from Greece and Jordan); Koçak and Kemal, 2015:277 (in checklist of Hymenoptera of Turkey); Shorenko, 2015:312 (in list of Sphecidae *sensu lato* of Crimea); Haris, 2016:15 (in list of species described by S. Mocsáry from Carpathian Basin); Arens, 2017a:637 (Greece: Peloponnesus); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:15 (Iran: known from Guilan and Khuzestan provinces); Shorenko, 2017:76 (in Crimea collected in May and June), 2018:126 (Crimea, including localities, habitats, and number of specimens); Augul, 2019:493 (Iraq: Dohuk Province: Amadi District: Deralok); Gülmez, 2019:3 (Turkey: Ankara and Sivas provinces: no specific localities); Bitsch, Barbier, and Jacobs in Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:93 (in Sphecid Fauna of Europe); Danilov, 2020:317 (specimens from Kyrgyzstan, Russia: Dagestan and Siberia, Tajikistan, Turkmenistan, and Uzbekistan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Maharramov, Mokrousov, and Proshchalykin, 2020:45 (Azarbaijan: Nakichivan Autonomous Republic); Cross, Baldock, and Wood, 2021:14 (in catalog of Sphecidae *sensu lato* of Portugal); Kaplan and Yildirim, 2022a:55 (Turkey: Bingöl and Diyarbakir provinces), 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey).

*Ammophila turcica* Mocsáry, 1883:29, ♂ (as *Turcica*, incorrect original capitalization). Holotype or syntypes ♂, Turkey: Brussa, now Bursa (TMB). Synonymized with *Ammophila fallax* by Kohl, 1906:315. – Ed. André, 1886:63 (in revision of Sphecidae of Europe and Algeria), 1888:2 (bibliographic references).

*Ammophila hispanica* Mocsáry, 1883:28, ♀. Holotype or syntypes: ♀, Spain: Malaga (TMB). Synonymized with *Ammophila fallax* by Kohl, 1889a:20. – Ed. André, 1886:63 (in revision of Sphecidae of Europe and Algeria), 1888:2\* (bibliographic references).

*Ammophila fallax* Kohl, 1884a:380, ♀, ♂. Lectotype: ♀, Turkey: Amasia, now Amasya (NHMW), designated by Menke in Bohart and Menke, 1976:152. Synonymized with *Ammophila hungarica* by Menke in R. Bohart and Menke, 1976:152. – Ed. André, 1886:62 (in revision of Sphecidae of Europe and Algeria), 1888:2\* (bibliographic references); Kohl, 1893a:36 (Austria: Niederösterreich: Bisamberg); Schletterer, 1894:30 (Istria Peninsula, now part of Croatia, Slovenia, and Italy); Dalla Torre, 1897:399 (in catalog of world Hymenoptera); Kohl, 1906b:315 (in revision of Palearctic Ammophilini); Schmiedeknecht, 1907:245 (in key to Hymenoptera of Central Europe); Graeffe, 1911:48 (Italy: Trieste area); Berland, 1925d:31 (in Sphecid

Fauna of France, not yet found in France); Roth, 1928:185 (in revision of North African Ammophilini), 1929:177 (in revision of Spanish Ammophilini); Berland, 1930b:163 (France: Bouche-du-Rhône Department); Schmiedeknecht, 1930:706 (in keys to Hymenoptera of North and Central Europe); Dusmet y Alonso, 1931:7 (Portugal); Maidl, 1934:64 (Greece: Aegean Islands: Mytilene); Zavadil, Šustera, and Baťa, 1937:213 (in catalog of Sphecidae of Czechoslovakia); Giner Marí, 1943a:70 (in Sphecid Fauna of Spain); Balthasar, 1945:115 (Czech Republic: southeastern Morava Region); de Beaumont, 1947b:382 (Cyprus); Šnoflák *in* Zavadil and Šnoflák, 1948:100 (in key to Sphecidae of Czechoslovakia); de Andrade, 1949:6 (Portugal, Cyprus); de Beaumont, 1950f:396 (Morocco); Pittioni, 1950:19 (Cyprus); Leclercq, 1955h:75 (bibliographic references); Vogrin, 1955:31 (Yugoslavia); Ceballos, 1956:359 (in catalog of Hymenoptera of Spain); Bajári, 1957a:13 (in key to Hungarian Sphecidae); Grandi, 1957:386 (Italy: Abruzzi); Balthasar, 1958:339 (Slovakia: Gbelce); de Beaumont, 1959a:6 (Italy); Diniz, 1959:26 (Portugal: five localities); Noskiewicz and Pulawski, 1960:38 (in key to Polish Sphecidae, not yet found in Poland); Leclercq, 1961f:148 (Belgium: Limbourg: Lommel); Ceballos, 1964:87 (in supplement to catalog of Spanish Sphecidae); de Beaumont, 1964c:26 (in Sphecid Fauna of Switzerland, not recorded from Switzerland), 1965a:11 (Greece); Diniz, 1965:2 (Portugal: Carcavelos, Coimbra, Estoril, Gois, Lisboa, Viseu); Pulawski, 1965b:260 (structure of gastral segment I); de Beaumont, 1967a:265 (Turkey); Kazenas, 1968b:342 (Kazakhstan: Alma Ata Oblast'); de Beaumont, 1969:80 (Turkey), 1970a:387 (Afghanistan), 1970c:2 (Iran: Khuzestan); Balthasar, 1972:428 (in Sphecid Fauna of Czechoslovakia); Kazenas, 1972b:98 (Kazakhstan: Alma Ata, Podgornoye in Ketmen' Range); Erlandsson, 1974:57 (Spain: Málaga: Fuengirola); Georghiou, 1977:188 (Cyprus); Kazenas, 1978b:35 (in key to Sphecidae of Kazakhstan and Central Asia); Dollfuss, 1989:7 (lectotype in NHMW); Pádr *in* Šedivy, 1989a:166 (in checklist of Czechoslovakian Sphecidae); Guichard, 1991a:338 (Jordan); Embergenov, Élmurodova, Amirov and Kimyonazarov, 2022:47 (Uzbekistan: Zhizzak Province: Zomin District: Beshbulok village).

#### 106. *hurdi* Menke

*Ammophila hurdi* Menke, 1964a:12, ♀, ♂ Holotype: ♂, USA: California: Alameda County: Tesla = Corral Hollow Creek about 10 mi. east of Livemore (CIS according to original description, now CAS). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:116 (in revision of North and Central American *Ammophila*).

#### 107. *iliensis* Kazenas

*Ammophila tsunekii* Kazenas, 1978a:661, ♀, ♂, junior primary homonym of *Ammophila tsunekii* Menke, 1976. Holotype: ♀, Kazakhstan: Ili River Valley 15 km east of Ayak-kalkan at 43°52'N 78°54'E (ZIN). – Danilov, 2016:355 (holotype preserved in Zoological Institute, Sankt-Petersburg, Russia).

*Ammophila iliensis* Kazenas, 1998b:172. Substitute name for *Ammophila tsunekii* Kazenas, 1978. – Kazenas, 2008a:98 (southeastern Kazakhstan: Ili River valley: Barokhudzir, Kalkan); Danilov, 2010b:45 (distribution of Tethyan type); Dollfuss, 2013a:388, 397 (in key to *Ammophila* of Palearctic Region and India), 447 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Russian into English).

*Ammophila iliensis* Kazenas, 2001b:18. Unnecessary substitute name for *Ammophila tsunekii* Kazenas, 1978 (in checklist of Sphecidae of Kazakhstan and Central Asia, the original reference to 1985 paper is in error).

*Ammophila iliensis* Kazenas, 2002a:38. Unnecessary substitute name for *Ammophila tsunekii* Kazenas, 1978.

#### 108. *imitator* Menke

*Ammophila imitator* 1965c:1, nomen nudum. Objective synonym of *Ammophila imitator* Menke, 1966b.

*Ammophila imitator* Menke, 1966b:37, ♂. Holotype: ♂, USA: Arizona: Cochise County: 6 mi. east of Douglas (originally CIS, now CAS). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 1986c:37 (Arizona: Cochise County: west of Naco); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Menke, 2020:117 (in revision of North and Central American *Ammophila*).

#### 109. *induta* Kohl

*Ammophila induta* Kohl, 1901d:158, ♀. Lectotype: ♀, Turkmenistan: Repetek (NHMW), designated by Dollfuss, 2013a:448. – Kohl, 1906b:345 (in revision of Palearctic Ammophilini); Kazenas, 1968b:342 (Kazakhstan: Alma Ata Oblast'); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 1978b:37 (in key to Sphecidae of Kazakhstan and Central Asia); Dollfuss, 1989:7 (type material in NHMW); Kazenas, 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:37 (geographic distribution, Kazakhstan: Chelkar in Bolshiye Barsuki sands); Danilov, 2010b:45 (distribution of Tethyan type); Dollfuss, 2013a:389, 399 (in key to *Ammophila* of Palearctic Region and India), 448 (in revision of *Ammophila* of Palearctic Region and India).

#### 110. *infesta* F. Smith

*Ammophila infesta* F. Smith, 1873a:190, ♀, ♂. Syntypes: Japan: Hyogo (BMNH). – Dalla Torre, 1897:403 (in catalog of world Hymenoptera); Pérez, 1905a:25 (central Japan: no specific locality); Matsumura, 1911:118 (in Thousand insects of Japan); Matsumura and Uchida, 1926:41 (Okinawa); Gussakovskij, 1932:4 (Russia: Primorskiy Krai); Yasumatsu, 1934c:63 (Japan: Island of Yakushima); Baba, 1935:84 (Japan: Island of Sado); Yasumatsu, 1935a:7, 22 (China: Jehol Region); Iwata, 1936a:121 (nesting habits); Masaki, 1936:259 (Korea); Yasumatsu, 1937c:67 (Japan: Island of Tsushima); Gussakovskij, 1938:3 (China: Kiangsu Province); Yasumatsu, 1938e:345 (China: Changsha in Yangtze Basin), 1939e:12 (China: Manchuria: Changchun); Yasumatsu, 1940a:92 (China: Hopei: Kalgan); nec Yasumatsu, 1942b:103 (= *Ammophila sabulosa nipponica*); Yasumatsu, 1942c:104 (China: Beijing); Iwata, 1955:28 (egg size, number of oocytes); Miyamoto, 1959:34 (visiting flowers of *Torilis anthriscus* Gmel., Apiaceae), 36 (visiting flowers of *Astilbe japonica* Miq., Saxifragaceae); Nambu, 1968b:26 (Japan: Saitama Prefecture); Tsuneki, 1962e:70 (*Ammophila infesta* in Iconographia Insectorum Japonicorum, Ed. II is actually *Ammophila sabulosa infesta*); R. Bohart and Menke, 1976:628 (in checklist of world Sphecidae, as full species); Tsuneki, 1982b:1 (Korea; reversed to full species status), 1982g:56 (known from the Ryukyu archipelago); Paik, 1985:197 (in list of Sphecidae of Korea); Tsuneki, 1991:199 (Korea); Hashimoto, 1996:342 (skeletonomuscular modifications of anterior abdominal segments); Yamane, Ikudome, and Terayama, 1999:479 (Japan: in Identification Guide to Sphecidae of Nansei = Ryukyu Islands); Sudo, Tsuyuki, Ito, and Tani, 2001:1109 (wing apparatus and flapping behavior); Mizota, 2002:69 (Japan: Miyagi Prefecture: Kinkazan Island); Haneda, 2003:3 (Japan: Nagasaki Prefecture: Tsushima); Haneda and Inoue, 2003:50 (Japan: Fukui Prefecture: Katsumi in City of Obama); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:30 (Japan: Gifu Prefecture); Suda, 2004:35 (Japan: Yamanashi Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:63 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:43 (Japan: Gifu Prefecture); Kinota, Haneda, and Tano, 2005: 29 Japan: Hokkaido); Negoro, Haneda, and Tano, 2005:44 (Japan: Toyama Prefecture); Haneda, Nozaka, Tano, Kurokawa and Murota, 2006a:18 (Japan: Toyama Prefecture); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Nagase, 2006b:2 (specimen collected by First Scientific Expedition to Manchoukou, 1933, now part of eastern China); Terayama and Tano, 2006:7, 15, 18 (in key to Japanese Ampulicidae and Sphecidae); Nemkov, 2008b:17 (in catalog of Sphecidae of Asiatic Russia); Ohkusa and Tajima, 2008:74 (Japan: central Honshu: Aichi Prefecture); Nemkov, 2009b:49 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:235 (Russia: Primorskiy Krai: Lazovskiy Nature Reserve); Danilov, 2010b:45 (distribution of eastern Palearctic type); Ohkusa and Tajima, 2010:11 (Japan: Island of Honshu: Shiga Prefecture); Dollfuss, 2013a:390, 400 (in key to *Ammophila* of Palearctic Region and India), 449 (in revision of *Ammophila* of Palearctic Region and India), 2013b:576 (Japan: locality records); Danilov, 2014b:519, 520 (in key to Sphecidae s.s. of Siberia, not yet found in Siberia); Kim, Yeo, and Kim, 2014:274 (in key to *Ammophila* of South Korea), 277 (in revision of Sphecidae *sensu stricto* of South Korea); Jacobs and Liebig, 2018:134 (Russia: Primorskiy Krai: Anisimovka and Poshiga); Danilov, 2020:317 (specimen from Russia: Primorskiy Krai in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia). – **As *Sphex infesta***: Okamoto, 1924:203 (new combination, Korea: Island of Quelpart, now Island of Cheju). – **As *Ammophila sabulosa infesta***: Tsuneki, 1962b:25, 26 (in key to Ammophilini of Japan and Korea), 1962c:29 (new status); Iwata, 1963b:196 (Japan: prey record); Tsuneki and Shimoyama, 1963:48 (Japan: Towada Prefecture); Tano, 1964:38 (Japan: Kyushu: Island of Yakushima); Tsuneki, 1967e:2 (China: Manchuria; also Harbin: *sabulosa infesta* forma B), 1967g:44

(Japan: Mount Hyonosen; forma A), 1967j:10, 12 (in key to Ammophilini of East Asia), 20 (comparison of lowland and montane populations, the former named *Ammophila sabulosa nipponica* on p. 23); Fukuda, 1968:26 (Japan); Haneda, 1968a:45 (Japan), 1968b:56 (Japan: Nagano Prefecture: Ina District); Itami, 1968a:16 (Japan: Yamagata Prefecture: foot of Mount Iide); Nambu, 1968b:26 (Japan: Saitama Prefecture); Nishino, 1968:24 (Japan); Tsuneki, 1968j:1 (comparison of lowland and montane populations, the former is *Ammophila sabulosa nipponica*); Haneda, 1969:69 (Japan: Yamanashi Prefecture); T. Iida, 1969a:272 (description of mature larva); Itami, 1969:46 (Japan: Niigata Prefecture); Tsuneki, 1969e:24 (Japan: specimens in Osaka Museum of Natural History), 1970b:9 (central Japan); Tano, 1971:82 (Japan: Shikoku: Mount Tsurugi); Yamada, 1971:34 (Japan: Aichi Prefecture); Nambu, 1972e:90 (Japan: Saitama Prefecture), 1973a:152 (Japan: Saitama Prefecture); Suda, 1973:123 (Yamanashi Prefecture); Tsuneki, 1974a:360 (Korea); Kim, Yoon, and Kim, 1975:21 (Korea); Nambu, 1975b:70 (Japan: Saitama Prefecture); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Tsuneki, 1982b:14 (known from Korea), 1982g:56 (known from Ryukyu archipelago); Sk. Yamane and Ikudome, 1990:102 (Japan: distribution in Ryukyu Islands); Q. Li, J. Li, and J. Yang, 1994:290 (China: in revision of *Ammophila* of Shandong Province); Nemkov *in* Nemkov, Kazenas, Budryns, et Antropov, 1995:387 (in key to Sphecidae of Russian Far East); Ohl and Linde, 2003:149 (number of ovarioles); Q. Li and J. He, 2004:1119 (in hymenopterous fauna of Zhejiang Province, China); Q. Li and L. Yang, 2005:883 (China: Gansu: Quinling Range and South Mountains); Q. Li, 2006:141 *in* X. Chen and J. He (description, habits, distribution, illustration of habitus); Ohkusa and Tajima, 2008:74 (Japan: central Honshu: Aichi Prefecture); Nemkov, 2012c:434 (in catalog of Sphecidae of Russian Far East); J.-K. Kim, 2014:417 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Ma, Q. Li, Wang, Jiang, and Lu, 2018:854 (China: Shanxi: Qinling Mountains); Ma, Zhang, Ch. Li, Ji, and Q. Li, 2018:485 (China: Shanxi: Lishan National Nature Reserve); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299, 301 (in key to *Ammophila* of China).

*Ammophila marginalis* Pérez, 1905a:151, ♀. Holotype or syntypes: ♀, Japan: Yokohama (MNHN). Synonymized with *Ammophila sabulosa infesta* by Menke *in* Bohart and Menke, 1976:153. – Pérez, 1905a:25 (Japan: Yokohama); Kohl, 1906b:373 (original description copied).

### 111. *insignis* F. Smith

*Ammophila insignis* F. Smith, 1856:213, ♀, ♂. Syntypes: Gambia: no specific locality (BMNH or OXUM). – W. Fox, 1896e:552 (Ethiopia or Somalia: Turfer); Dalla Torre, 1897:403 (in catalog of world Hymenoptera); Bingham, 1898a:105 (Yemen: Aden); Schouteden, 1930:95 (Zaire, as *insignis* var.); Berland, 1950b:295 (Niger: Air area); Leclercq, 1955h:82 (bibliographic references, locality records from Zaire and elsewhere), 1961b:55 (Zaire); Diniz, 1964c:110 (Angola: Lunda: Posto Cacombo at Upper Cuilo); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Weaving, 1988:327-349 (prey selection), 1989a:1-16 (South Africa; nesting habits: nests are mass provisioned), 1989b:847-871 (nests in vertical banks, animal burrows, and caves); Dollfuss, 2013a:387, 396, 397 (in key to *Ammophila* of Palearctic Region and India), 450 (in revision of *Ammophila* of Palearctic Region and India), 2013b:576 (locality records from Algeria, Israel, Jordan, Oman, and Yemen), 2015a:311, 316 (in key to Sub-Saharan *Ammophila*), 344 (in revision of Sub-Saharan *Ammophila*), 2015b:424 (locality records from Benin, Central African Republic, Ethiopia, Kenya, Malawi, Mozambique, Namibia, Oman, Senegal, South Africa, Tanzania, ); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:15 (Iran: known from West Azerbaijan Province); Gadallah, 2020d:79 (in list of aculeate wasps of Arabian Peninsula); Olszewski and Danilov, 2020:193 (United Arab Emirates: Wadi Wurayah). – **As *Sphex insignis***: R. Turner, 1929b:555 (new combination, variation).

*Ammophila egregia* var. *promontorii* Kohl, 1894:342, nomen nudum (Mozambique: Delagoa Bay, now Maputo Bay).

*Ammophila transvaalensis* Cameron, 1910b:134, ♂. Holotype or syntypes: ♂, South Africa: Transvaal, now Gauteng, Limpopo, and Mpumalanga provinces: no specific locality (TMP). Synonymized with *Ammophila insignis* by Leclercq, 1955:82 – **As *Sphex egregia* race *transvaalensis***: Arnold, 1920:53 (new combination, new status, original description copied), 1928b:270 (in revision of southern African *Ammophila*) 1930:17 (in checklist of Afrotropical Sphecidae), 1935a:503 (South Africa: Kalahari). – **As *Ammophila insignis* var. *transvaalensis***: Giordani Soika, 1939c:105 (new subspecific combination, Eritrea: Adi Ugri).

*Sphex egregia* race *promontorii* Arnold, 1920:43, ♀, ♂ (authorship attributed to Kohl). Syntypes: Zimbabwe and South Africa: no specific localities (SAM). Synonymized with *Sphex egregia transvaalensis* by Arnold, 1928b:270. – **As *Sphex insignis* race *promontorii***: Scott *in* Arnold, 1933a:370 (new subspecific combination, Ethiopia: Maraquo).

*Ammophila egregia* Mocsáry, 1881b:327, ♀, ♂. Syntypes: Lebanon: Beirut (TMB). Synonymized with *Ammophila insignis* by R. Turner, 1929:555 and Dollfuss, 2013a:451 (as new synonym). – Ed. André, 1886:75 (in revision of Sphecidae of Europe and Algeria), 1888:3\* (bibliographic references); Dalla Torre, 1897:399 (in catalog of world Hymenoptera); Kohl, 1906b:361 (in revision of Palearctic Ammophilini); Brauns, 1911a:238 (South Africa); Arnold, 1931:207 (Turner's synonymy reported); Guiglia, 1939c:184 (Libya: Tassili des Ajjer: Wadi Tagiuresa; as *egregia* var.; redescription), 1942b:229 (Libya; as *egregia* var.); Alfieri, 1946:137 (in revision of Egyptian *Ammophila*); de Beaumont and Bytinski-Salz, 1955:39 (Israel); de Beaumont, 1956a:179 (Chad: Tibesti). – **As *Sphex egregia***: R. Turner, 1929b:555 (new combination, as new synonym of *Ammophila insignis*); Schouteden, 1930:95 (Zaire). – **As *Ammophila insignis* *egregia***: R. Bohart and Menke, 1976:152 (new status, in checklist of world Sphecidae); Guichard, 1980:224 (Oman), 1988a:128 (Arabian Peninsula), 1991a:338 (Jordan); Roche and Zalut, 1994:114 (Egypt: Sinai Peninsula); Gadallah and Assery, 2004a:217 (Saudi Arabia: in key to Sphecidae of Jeddah Region.), 224 (in catalog of Sphecidae of Saudi Arabia: south of Jeddah), 2004b:1396 (skeletal parts of sting apparatus); Roche, 2007a:20 (in checklist of Egyptian Sphecidae, redescription), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Sakenin, Samin, Bagriacik, and Rastegar, 2011:1 (Iran: West Azarbaijan: Mahabad); Schmid-Egger, 2011b:597 (first record from United Arab Emirates: Wadi Wurayah); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:360 (in new catalog of Sphecidae of Saudi Arabia).

*Sphex egregia* race *litoralis* Arnold, 1920:45, ♀, ♂. Syntypes: South Africa: Eastern Cape Province: coastal area: no specific locality (SAM). Synonymized with *Ammophila insignis* by Dollfuss, 2015a:345. – Arnold, 1928b:271 (in revision of southern African *Ammophila*). – **As *Sphex egregia litoralis***: Marshall, 1997:3 (new status, reference to original description). – **As *Ammophila insignis litoralis***: R. Bohart and Menke, 1976:152 (new status, in checklist of world Sphecidae); Gess, 1981:19 (South Africa: Hilton Farm 18 km west-northwest of Grahamstown; nesting in friable soils); Dollfuss, 1990:122 (Central African Republic); S. Gess, 1996:303 (floral records); S. Gess and F. Gess, 2003:97 (South Africa: visiting flowers of *Phyllopodium cuneifolium* (L. f.) Benth., Scrophulariaceae, and *Lycium* sp., Solanaceae).

*Ammophila insignis* Smith subsp. *litoralis* Arnold var. *nigricollis* Arnold, 1960a:83 (South Africa: Natal: Drakensberg Mountains: Little Berg Summits (SAMC). Synonymized with *Ammophila insignis litoralis* by Bohart and Menke, 1976:152.

### 112. *insolata* F. Smith

*Ammophila insolata* F. Smith, 1858b:14, ♀, ♂. Syntypes: Indonesia: Celebes, now Sulawesi: no specific locality (OXUM). – F. Smith, 1863a:34 (Indonesia), 1863b:134 (known from Sulawesi and Timor), 1871a:359 (in catalog of Oriental Aculeata); Dalla Torre, 1897:403 (in catalog of world Hymenoptera); von Schulthess, 1935:304 (Indonesia: Flores: Endeh, Todabeloe); van der Vecht, 1957c:370 (Lesser Sunda Islands: locality records); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae, as *insolata*); Dollfuss, 2013b:576 (Indonesia: West Timor: Buraen: 50 km south of Kupang; Sumba: 5 km west of Lewas), 2015b:425 (Indonesia: West Timor: Buraen: 50 km south of Kupang). – **As *Sphex insolata***: F. Smith, 1863b:134 (new combination, known from Sulawesi).

#### **spp. *argyropleura* van der Vecht**

*Ammophila insolata argyropleura* van der Vecht, 1957c:371, ♀, ♂. Holotype: ♀, Indonesia: Island of Sumba: Lokojengo (Basel). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae).

#### **spp. *auricollis* van der Vecht**

As *Ammophila atripes*: von Schulthess, 1935:304 (Indonesia: Timor), corrected to *Ammophila insolata auricollis* by van der Vecht, 1957c:372.

*Ammophila insolata auricollis* van der Vecht, 1957c:372, ♀, ♂. Holotype: ♀, Indonesia: Timor: Baun (RMNH). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae).

**ssp. *ruficoxa* van der Vecht**

*Ammophila insolata ruficoxa* van der Vecht, 1957c:372, ♀, ♂. Holotype: ♀, Indonesia: Island of Kisar: no specific locality (RMNH). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae).

**113. *instabilis* F. Smith**

*Ammophila instabilis* F. Smith, 1856:214, ♀. Syntypes: Australia: Western Australia: Swan River; Northern Territory: Port Essington (BMNH). – Froggatt, 1892:209 (in catalog of Australian Hymenoptera); Dalla Torre, 1897:403 (in catalog of world Hymenoptera); R. Turner, 1908:466 (synonymy); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Cardale, 1985:229 (in catalog of Australian Sphecidae).

*Ammophila impatiens* F. Smith, 1868b:247, ♀, actually ♂. Holotype or syntypes: ♂, Australia: Western Australia: Champion Bay, now Geraldton (BMNH). Synonymized with *Ammophila instabilis* by R. Turner, 1908:466. – Froggatt, 1892:209 (in catalog of Australian Hymenoptera); Dalla Torre, 1897:403 (in catalog of world Hymenoptera).

**114. *juncea* Cresson**

*Ammophila juncea* Cresson, 1865b:460, ♂. Holotype: ♂, USA: no specific locality (ANSP). – Cresson, 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); Dalla Torre, 1897:403 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:157 (diagnostic characters), 161 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Cresson, 1916:94 (holotype in ANSP); Murray *in* Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera); Evans and Lin, 1956a:147 (description of larva); nec Evans, 1959d:461 (= *Ammophila cleopatra*); Evans and Linsley, 1960:32 (Arizona: regular member of sleeping aggregations at Southwest Research Station.); Evans, 1963:62 (nest closure); Horning and Barr, 1970:104 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 1983b:21 (Nebraska: Cherry County: Nenzel area, and Dawes County: southeast of Crawford); Brockmann, 1985b:312 (nest closure summary); Menke, 1986c:35 (Utah: San Juan County: southeast of Natural Bridges National Monument), 1994f:21, 22 (Utah: Wind Whistle Campground in Monticello area); Spofford, Kurczewski, and Downes, 1989:258 (reference to publication on nest parasite *Senotainia littoralis* Allen, a miltogrammine fly); Weissmann and Kondratieff, 1999:77 (Colorado: Great Sand Dunes National Monument); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Menke, 2020:95 (in revision of North and Central American *Ammophila*). – **As *Sphex junceus***: Mickel, 1918b:404 (new combination, in catalog of Nebraskan Sphecidae); Fernald, 1934:129 (in revision of North American and West Indian *Ammophila*); Dreisbach, 1944:269, 270 (in key to *Ammophila* of Michigan), 273 (Michigan: locality records); Krombein, 1958f:192 (in supplement to catalog of North American Hymenoptera: description of larva by Evans and Lin, 1956a, reported).

*Ammophila montezuma* Cameron, 1888a:13, ♂. Holotype or syntypes: ♂, Mexico: northern Sonora: no specific locality (BMNH). Synonymized with *Ammophila juncea* by Menke, 1965c:1. – Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:161 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); Fernald, 1931a:449 (as new synonym of *Sphex placidus*).

**115. *kalaharica* (Arnold)**

*Sphex kalaharicus* Arnold, 1935a:502, ♀, ♂. Syntypes: Namibia: Damara Pan (TMP). – **As *Ammophila kalaharica***: Leclercq, 1955h:82 (new combination, bibliographic references, South Africa: Bothaville); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Dollfuss, 2015a:312, 316 (in key to Sub-Saharan *Ammophila*), 346 (in revision of Sub-Saharan *Ammophila*; Botswana, South Africa), 2015b:425 (locality records from Namibia and South Africa).

**116. *karenae* Menke**

*Ammophila karenae* Menke, 1964a: , ♀, ♂. Holotype: ♂, USA: California: Inyo County: 13 mi. south of Olancho (CIS according to original description, not in CAS now). – Hurd and Linsley, 1975:116 (Arizona: Cochise County: Benson; on flowers of *Larrea tridentata* (De Candolle) Coville, Zygophyllaceae); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 1986c:23 (Arizona: Coconino County: Moenkopi Wash near Tuba City); Menke, 1994d:15 (California: Monterey County: Parkfield area); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Ratzlaff, 2016:28 (first record from Canada: British Columbia: Southern Interior), 39 (British Columbia: Ashcroft, Lilloet District, Osoyoos); Menke, 2020:71 (in revision of North and Central American *Ammophila*).

**117. *kennedyi* (Murray)**

*Ammophila vulgaris* Cresson, 1865b:458, ♀, ♂, junior primary homonym of *Ammophila vulgaris* W. Kirby, 1798. Lectotype: USA: Colorado Territory: no specific locality (ANSP), designated by Cresson, 1916:95. – Cresson, 1873:210 (Texas), 1875:714 (Colorado, Nevada, New Mexico) Cresson, 1876:208 (Colorado: Middle Park, Iowa: Davenport, Utah: Spring Lake), 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); C. Robertson, 1892:103 (visiting flowers of *Mentha canadensis* L., Lamiaceae), 105 (visiting flowers of *Pycnanthemum lanceolatum* Ph., Lamiaceae), 106 (visiting flowers of *Pycnanthemum muticum* Pers., Lamiaceae), 115 (visiting flowers of *Blephilia hirsuta* Benth., Lamiaceae), 1894:453 (visiting flowers of *Eupatorium serotinum* Michx., Asteraceae), 455 (visiting flowers of *Solidago missouriensis* Nutt. and *S. canadensis* Linnaeus, Asteraceae), 457 (visiting flowers of *Solidago nemoralis* Ait., Asteraceae), 460 (visiting flowers of *Aster paniculatus* Lam., Asteraceae), 461 (visiting flowers of *Erigeron philadelphicus* Linnaeus, Asteraceae), 472 (visiting flowers of *Coreopsis palmata* Nutt., Asteraceae); Dalla Torre, 1897:411 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); J. Smith, 1900:524 (in list of insects of New Jersey); Melander, 1903:157 (diagnostic characters), 160 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); G. Peckham and E. Peckham, 1905:18 (common in sandy areas of Milwaukee); Snow, 1906:133 (Arizona: Humphrey's Peak, Oak Creek 20 mi. southwest of Flagstaff); Hart, 1907:255 (Illinois); Rohwer, 1917a:241 (California: Tahoe); Viereck, 1903a:68 (New Mexico: Beulah); Johnson and Ledig, 1918:24 (California: Claremont); Salt, 1927:182 (stylo-pized specimen; Illinois: Carlinville, Florida: Inverness). – **As *Sphex vulgaris***: H. Smith, 1908b:330 (new combination, in revision of Nebraskan Sphecidae); J. Smith, 1910:677 (in new list of insects of New Jersey); Rohwer, 1916b:682 (in catalog of Hymenoptera of Connecticut); Mickel, 1918b:404 (in catalog of Nebraskan Sphecidae); Rohwer *in* Viereck, 1925:682 (in key to Sphecidae of Connecticut); G. Carpenter, 1930b:293 (nest closure); Fernald, 1931a:447 (as new synonym of *Sphex arvensis*).

*Sphex kennedyi* Murray, 1938:36. Substitute name for *Ammophila vulgaris* Cresson, 1865. – Dreisbach, 1944:269, 270 (in key to *Ammophila* of Michigan), 273 (Michigan: locality records); Spencer and Wellington, 1948:10 (British Columbia). – **As *Ammophila kennedyi***: Strickland, 1947:129 (new combination, Canada: Alberta: Vermilion); Murray *in* Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera); K. Cooper, 1953:34 (Massachusetts: Island of Penikese); Horning and Barr, 1970:104 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1591 (in catalog of North American Hymenoptera); Menke, 1983b:21 (Nebraska: Hooker County: Mullen area, Cherry County: Valentine and Nenzel areas, and Dawes County: north and southeast of Crawford); Brockmann, 1985b:312 (nest closure summary); O'Brien, 1989b:211 (distribution in Michigan); Spofford, Kurczewski, and Downes, 1989:258 (nest parasite: *Senotainia rubriventris* Macquart, a miltogrammine fly); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County); Spofford and Kurczewski, 1990:747 (nest parasite: *Senotainia rubriventris* Macquart, Sarcophagidae), 1992:996 (species of miltogrammine nest parasites listed), 1005 (post-larvipositional counter-cleptoparasitic behavior: clean burrow); Blades and Maier, 1996:71 (Canada: British Columbia: Osoyoos - Mount Kobau area at 119°40'W 49°05'N); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Dollfuss, 2015b:425 (Michigan: Mecosta County and Midland County no specific localities); Ratzlaff, 2016:28 (Canada: British Columbia: from Krombein, 1979); Lechner, 2019: 153 (Iowa: Sioux City, parasitized by strepsipteran *Paraxenos lugubris* Pierce); Field,

Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:98 (in revision of North and Central American *Ammophila*).

### 118. *kenyensis* Dollfuss

*Ammophila kenyensis* Dollfuss, 2015a:348, ♂. Holotype: ♂, Kenya: west of Mwingi (OÖLM). – Dollfuss, 2015a:315 (in key to Sub-Saharan *Ammophila*).

### 119. *kondarensis* Danilov

*Ammophila kondarensis* Danilov, 2018:323, ♀, ♂. Holotype: ♀, Tajikistan: Kondara at 38°48'N 68°48'E (ZIN). – Danilov, 2020:317 (specimen from Tajikistan and Uzbekistan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia)

### 120. *kowalczyki* Olszewski

*Ammophila kowalczyki* Olszewski in Olszewski and Danilov, 2020:190, ♀, ♂. Holotype: ♂, Iran: Kerman: Gohargaz at 30.43753°N 57.21039°E, alt. 2020 m (BMNH).

### 121. *laeviceps* F. Smith

*Ammophila laeviceps* F. Smith, 1873c:259, ♀. Holotype or syntypes: ♀, Chile: Santiago (BMNH). – Dalla Torre, 1897:403 (in catalog of world Hymenoptera, as *leviceps*); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Sielfeld, 1980b:72 (in checklist of Chilean Sphecidae); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Menke, 2004:770 (redescription), 771 (may be a synonym of *Ammophila rufipes*); Rasmussen and Asenjo, 2009:15 (in checklist of Crabronidae of Peru); Dollfuss, 2015b:426 (locality records from Argentina and Chile); Chiappa, Mandujano, and Passi, 2020:145 (nesting habits, description of larva).

*Ammophila chilensis* Reed, 1894:621, ♀, ♂. Syntypes: Chile: central provinces: no specific locality (CAS). Synonymized with *Ammophila laeviceps* by Bohart and Menke, 1976:143 (tentatively) and Menke, 2004:770 (definitely). – Gazulla and Ruiz Pereira, 1929:299 (Chile: Hacienda de "Las Mercedes"); Chiappa, 2012:8 (Chile: Región de Valparaíso: no specific locality). – **As *Sphex chilensis***: Soukup, 1943:265 (new combination, Peru).

? *Ammophila chilensis* var. *ruficollis* Reed, 1894:622, sex not stated, junior primary homonym of *Ammophila ruficollis* F. Morawitz, 1890. Syntypes: sex unknown, Chile: central provinces: no specific locality (MCZ); Menke, 2004:771 (redescription of syntype). – **As tentative synonym of *Ammophila laeviceps***: Bohart and Menke, 1976:142 (in checklist of world Sphecidae).

### 122. *laevicollis* Ed. André

*Ammophila laevicollis* Ed. André, 1886:77, ♀ (as *Laevicollis*, incorrect original capitalization). Syntypes: Spain, southern France: no specific locality (not in MNHN, see Dollfuss, 2013a:451). – Ed. André, 1888:3\* (in catalog of Sphecidae of Europe and Algeria, as new species); Dalla Torre, 1897:403 (in catalog of world Hymenoptera, as *levicollis*); Morice, 1900a:68 (Algeria: Biskra); Kohl, 1906b:350 (in revision of Palearctic Ammophilini); Pérez, 1907:495 (Oman: Dibba); de Gaulle, 1908:103 (in catalog of French Hymenoptera); Magretti, 1906:13 (Eritrea); Ferton, 1921:347 (Algeria: Nemours, now Ghazaouet; prey and nest), 1923:141 (prey and nest); Berland, 1925d:31 (in Sphecid Fauna of France); Picard, 1925b:163 (nest construction precedes hunting); Roth, 1928:196 (in revision of North African Ammophilini), 1928:196 (in revision of Spanish Ammophilini); Berland, 1930b:163 (France: Bouche-du-Rhône Department); Dusmet y Alonso, 1931:7 (Portugal: Évora, Porto); Nadig, 1933:100 (Morocco: Marrakech); Giner Marí, 1934a:130 (Spain); Giner Marí, 1943a:73 (in Sphecid Fauna of Spain); de Andrade, 1949:6 (Portugal); Hertzog, 1954:99 (France: Bouches-du-Rhône: Camargue); Leclercq, 1955h:85 (bibliographic references); Hertzog, 1956:147 (presence of psammophore on head and forelegs); Morel, Nouvel, and Ribaut, 1956:336 (France: Département des Pyrénées-Orientales); Ceballos, 1956:360 (in catalog of Hymenoptera of Spain); Diniz, 1959:27 (Portugal: 10 localities); Suárez, 1959:52 (Spain: Almería Province); de Beaumont, 1962b:18 (Spain), 1963b:16 (in revision of *Ammophila nasuta* species group); Ceballos, 1964:87 (in supplement to catalog of Spanish Sphecidae); Diniz, 1965:2 (Portugal: 25 localities); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Marion, 1978:85 (France); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Gayubo, 1981a:141 (northern Spain: Sierra de Béjar), 1982f:246 (Spain: Cádiz Province) Gayubo, 1983c:233 (Spain: Salamanca Province); Mingo and Gayubo, 1983:161 (Spain); Gayubo, 1984c:358 (Portugal: El Algarve Province); Gayubo and Tormos, 1984:11 (Spain: Valencia); Pagliano, 1984:368 (Italy); Gayubo, 1985c:167 (Spain: Valladolid: Traspinedo); Pagliano, 1985:15 (Italy); Gayubo, 1986b:37 (Spain: Andalucía), 1986c:30 (Spain: Zamora Province); Gayubo and Heras, 1986:32 (Spain: Segovia and Valladolid Provinces; floral records); Gayubo and Sanza, 1986:31 (Spain: Burgos); Gayubo and Tormos, 1986a:10 (Spain: Castellón de la Plana), 1986b:6 (Spain: Valencia), 1986f:999 (prey: geometrid larva); Piek and Spanjer, 1986:179 (in list of Sphecidae with known prey); Asís and Jiménez, 1987:25 (Spain: Castellón Province); Gayubo, 1987:108 (Spain: Ciudad Real Province); Tormos and Jiménez, 1987a:123 (Spain: Valencia), 1987b:316 (Spain: Valencia Province: Dehesa de El Saler); Asís, Gayubo, and Tormos, 1990b:240 (description of mature larva); Gayubo, Asís, and Tormos, 1990a:12 (Spain); Gayubo, Borsato, and Osella, 1992:280 (Spain); Hamon, Tussac, and Fonfria, 1992:405, 410 (in key to French Ammophilini); Gayubo, Tormos, and Asís, 1993b:308 (parasitized by *Paraxenos sphecidarum* Dufour, Strepsiptera); Torregrosa, Gayubo, Tormos, and Asís, 1993:11 (Spain: Alicante Province); Tormos, Asís, and Gayubo, 1994:187, 197 (Spain: Albacete Province); Tormos, Asís, and Gayubo, 1995:157 (nesting habits); Kuhlmann, 1996:219 (Portugal: Serra de Estrela); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:83 (in Sphecid Fauna of Western Europe); González, Gayubo, and Torres, 1998:72, 73 (Spain: Valladolid Province), 1999:354 (Spain: Valladolid: Viana de Cega); Gayubo, González, and Torres, 2000:184 (Spain: Salamanca Province); Drewes, 2003:132 (Spain: Tarragona area); Gayubo, Nieves-Aldrey, González, Tormos, Rey del Castillo, and Asís, 2004:108 (Spain: Madrid: Monte de El Pardo); Pagliano and Negrisoló, 2005:68 (in Sphecid Fauna of Italy); Magdalou, 2006b:109 (France: Pyrénées-Orientales: Mas-Larrieu Nature Reserve near Argelès-sur-Mer), 2006c:7 (France: Pyrénées-Orientales: Réserve Naturelle du Mas-Larrieu); Gayubo, González, Tormos, and Asís, 2008:136 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Baños-Picón, Asís, Gayubo, and Tormos, 2009:310 (Spain: frequency of specimens collected with hand nets and Malaise traps); Gayubo, González, Tormos, and Asís, 2009:362 (Spain: Valladolid: Reserva Natural Riberas de Castroño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:622 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Bitsch, 2010:106 (in supplement to vol. II of Faune de France, 1997: biological observations by Ferton, 1921, reported; France: first records from département d'Hérault: Ceilhes-et-Rocozels, and from Var: Aiguines, Cotignac); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:497 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Dollfuss, 2013a:387, 398 (in key to *Ammophila* of Palearctic Region and India), 451 (in revision of *Ammophila* of Palearctic Region and India), 2013b:577 (locality records from France, Portugal, and Spain), 2015b:426 (France: département d'Hérault: 10 km south of Montpellier); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Magdalou, 2017:14 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Mas Larrieu); Bitsch, Barbier, and Jacobs in Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:94 (in Sphecid Fauna of Europe); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Gadallah, 2020d:79 (in list of aculeate wasps of Arabian Peninsula); Olszewski and DaCross, Baldock, and Wood, 2021:15 (in catalog of Sphecidae *sensu lato* of Portugal); nilov, 2020:193 (Spain: Valencia: Pinet dunes).

### 123. *laevigata* F. Smith

*Ammophila laevigata* F. Smith, 1856:215, ♀. Syntypes: India: Tamil Nadu: Madras; Gujarat: no specific locality (BMNH). – de Saussure, 1867:23 (redescription, Sri Lanka); F. Smith, 1871a:359 (in catalog of Oriental Aculeata); Cameron, 1889c:93 (in list of Sphecidae of Oriental Region); de Saussure, 1892:436 (Madagascar); Bingham, 1896a:437 (in list of Aculeata of Sri Lanka: Pundaloya, bibliographic references), 1897:231 (redescription); Dalla Torre, 1897:403 (in catalog of world Hymenoptera, as *levigata*); Maxwell-Lefroy, 1909:203 (India: nesting in ground, preying on caterpillar and spiders, spiders in error); Dutt, 1912:202 (India: Pusa); Strand, 1915:97 (Sri Lanka); Arnold, 1945:86 (de Saussure's 1982 record from Madagascar is unreliable); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1984a:3 (Sri Lanka, nesting habits); S. Gupta, 1995:85 (India: Uttar Pradesh, as *laevigata*); van Vondel, 1995:29 (specimens from India in Natuurmuseum Rotterdam); Wu and Zhou, 1996a:51 (in revision in Economic Insect Fauna of China); Jha and Farooqi, 1994:8 (description and illustration of male genitalia); Jonathan, Ray, and Kundu,

2000:185 (India: Meghalaya: East Garo Hills: Dainadubi); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2013a:388, 396 (in key to *Ammophila* of Palearctic Region and India), 452 (in revision of *Ammophila* of Palearctic Region and India), 2013b:577 (locality records from Laos, Nepal, India, Thailand, and Vietnam); Job and Olakkengil, 2014:14 (India: Kerala: Thrissur District); Dollfuss, 2015b:426 (locality records from Laos and Thailand); Pham, Kumar and Danilov, 2015:1584 (in list of Sphecidae *sensu lato* of Vietnam); Sheikh, Thomas, Bandari, and Jubiraj, 2017:287 (India: Madhya Pradesh: Jabalpur District: Dumna Nature Park; diagnostic characters); Ch. Wang, Bashir, Q. Li, and Ma, 2018:298, 301 (in key to *Ammophila* of China); Pham, Truong, Th.T. Nguyen, Th.H. Nguyen, Q. Nguyen, and Th.M. Nguyen, 2019:73 (Vietnam: Hanoi and vicinity); Danilov, 2020:317 (specimens from Thailand in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

*Ammophila laevigata* ab. *bicellularis* Strand, 1915:97, ♂. Holotype: ♂, Sri Lanka: Vurelia (DEI). Synonymized with *Ammophila laevigata* by R. Bohart and Menke, 1976:152. – Strand, 1927:253 (in list of species described by the author); Oehlke and Wudowenz, 1974:421 (holotype in DEI).

#### 124. *laminituberalis* Ch. Wang and Ma

*Ammophila laminituberalis* Ch. Wang and Ma in Ch.Wang, Bashir, Q. Li, and Ma, 2018:294, ♂. Holotype: ♂, China:

Xinjiang: Fukang City at 44°9'N 87°59'E (Entomological Museum of China Agricultural University, Beijing, China).

– Ch.Wang, Bashir, Q. Li, and Ma, 2018:301 (in key to *Ammophila* of China).

#### 125. *lampei* Strand

*Ammophila chilensis* var. *nigripes* Reed, 1894:622, ♀, junior primary homonym of *Ammophila nigripes* F. Smith, 1856. Holotype: ♀, Chile: Valparaiso (MCZ).

*Ammophila lampei* Strand, 1910b:13, ♀ (as *Lampe*, incorrect original capitalization). Lectotype: ♀, Bolivia (as “Peru”): Guaqui (Städtisches Mus. Wiesbaden), designated by Menke, 1964b:150. Synonymized with *Ammophila nigripes* Reed by Menke, 1964b:150. – Strand, 1927:253 (in list of species described by author); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Sielfeld, 1980b:72 (in checklist of Chilean Sphecidae); Ch. Porter, 1987:43 (Chile: Tarapacá Region); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Rasmussen and Asenjo, 2009:15 (in checklist of Crabronidae of Peru); Chiappa, 2012:8 (Chile: Región de Valparaíso: no specific locality).

*Sphex peruvianus* Rohwer, 1913:453, ♀. Holotype: ♀, Peru: Cuzco (USNM). Synonymized with *Ammophila lampei* Strand by Menke, 1964b:150. – Soukup, 1943:265 (Peru).

#### 126. *lativalvis* Gussakovskij

*Ammophila lativalvis* Gussakovskij, 1928a:9, ♀, ♂. Syntypes: Uzbekistan: Ak-mechet near Khiva at 41°18'N 60°30'E, Ravat near Khiva area at 41°23'N 60°15'E (ZIN). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Kazenas, 1978b:38 (in key to Sphecidae of Kazakhstan and Central Asia), 1998b:173 (in Sphecid Fauna of Kazakhstan), 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia), 110 (nesting behavior), 2002a:38 (geographic distribution, collecting localities in Kazakhstan); Danilov, 2010b:45 (distribution of Tethyan type); Dollfuss, 2013a:389, 399 (in key to *Ammophila* of Palearctic Region and India), 454 (in revision of *Ammophila* of Palearctic Region and India); Danilow, 2016:349 (syntypes preserved in Zoological Institute, Sankt-Petersburg, Russia).

#### 127. *leclercqi* Menke

*Ammophila yarrowi* Leclercq, 1961c:211, ♀, junior primary homonym of *Ammophila yarrowi* Cresson, 1876. Holotype: ♀, Spain: Badajoz Province: Merida (BMNH). – Ceballos, 1964:87 (in supplement to catalog of Spanish Sphecidae).

*Ammophila leclercqi* Menke, 1964b:154. Substitute name for *Ammophila yarrowi* Leclercq, 1961. – Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:85 (in Sphecid Fauna of Western Europe); Dollfuss, 2013a:390 (in key to *Ammophila* of Palearctic Region and India), 455 (in revision of *Ammophila* of Palearctic Region and India); Bitsch, Barbier, and Jacobs in Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:94 (in Sphecid Fauna of Europe).

#### 128. *leoparda* (Fernald)

*Sphex urnarius leopardus* Fernald, 1934:125, ♀, ♂. Holotype: ♀, USA: Georgia: no specific locality (ANSP). – **As *Sphex leopardus***: Murray, 1938:29 (full species status); Dreisbach, 1944:269, 270 (in key to *Ammophila* of Michigan), 273 (Michigan: locality records). – **As *Ammophila leoparda***: Murray in Muesebeck, Krombein, and Townes, 1951:975 (new combination, in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); O'Brien, 1989b:211 (distribution in Michigan); Menke, 2020:100 (in revision of North and Central American *Ammophila*).

#### 129. *linda* Menke

*Ammophila linda* Menke, 2020:72, ♀, ♂. Holotype: ♂, USA: California: Los Angeles County: Tanbark Flat (UCD).

#### 130. *longiclypeata* Dollfuss

*Ammophila longiclypeata* Dollfuss, 2015a:350, ♂. Holotype: ♂, Namibia: Karibib District: 55 km southwest of Usakos (CAS). – Dollfuss, 2015a:315 (in key to Sub-Saharan *Ammophila*).

#### 131. *macra* Cresson

*Ammophila macra* Cresson, 1865b:460, ♂. Lectotype: ♂, Colorado Territory: no specific locality (ANSP), designated by Cresson, 1916:94. – Cresson, 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); W. Fox, 1894c:101 (Mexico: Baja California); Dalla Torre, 1897:404 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Snow, 1906:133 (Arizona: Oak Creek 20 mi. southwest of Flagstaff); Menke, 1965c:2 (restored from synonymy); Evans, 1970:486 (Wyoming: Jackson Hole); Horning and Barr, 1970:104 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Menke, 1983b:21 (Nebraska: Cherry County: Nenzel area); Brockmann, 1985b:312 (nest closure summary); Parks, 1986:34 (California: Torrey Pines State Reserve); Weissmann and Kondratieff, 1999:77 (Colorado: Great Sand Dunes National Monument); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Ratzlaff, 2016:28 (Canada: British Columbia: from Menke, 1965); Menke, 2020:119 (in revision of North and Central American *Ammophila*). – **As *Sphex macrus***: Fernald, 1926:91 (new combination, as new synonym of *Ammophila procera*), 1931a:448 and 1933:44 (as junior synonym of *Ammophila procera*).

#### 132. *malickyi* Dollfuss

*Ammophila malickyi* Dollfuss, 2015a:350, ♂. Holotype: ♂, Zimbabwe: 20 km west of Gwanda (OÖLM). Paratypes: Angola, Ethiopia, Kenya, Namibia, South Africa, Zambia. – Dollfuss, 2015a:317 (in key to Sub-Saharan *Ammophila*), 2015b:426 (locality records from Ethiopia, Kenya, South Africa, Zambia, and Zimbabwe).

#### 133. *marshi* Menke

*Ammophila marshi* Menke, 1964a:13, ♀, ♂. Holotype: ♂, USA: California: Tuolumne County: Strawberry (UCD). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Rosenheim, 1987a:740 (California: Nevada County: Sagehen Creek near Hobart Mills), 1990b:241 (aerial prey caching as defence against ants); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of *Ammophilini*); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:120 (in revision of North and Central American *Ammophila*).

#### 134. *mcclayi* Menke

*Ammophila mcclayi* Menke, 1964a:24, ♀, ♂. Holotype: ♂, USA: California: Kern County: Woody (CIS according to original description, not in CAS now). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Rust, Menke, and Miller, 1985:46 (California: Channel Islands), 52 (prey); Parks, 1986:34 (California: Torrey Pines State Reserve); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Ratzlaff, 2016:28 (first record from Canada: British Columbia: Southern Interior), 39 (British Columbia: Chopaka); Menke, 2020:58 (in revision of North and Central American *Ammophila*).

**135. *mediata* Cresson**

*Ammophila mediata* Cresson, 1865b:459, ♀, ♂. Lectotype: ♀, USA: Colorado Territory: no specific locality (ANSP), designated by Cresson, 1916:94. – Cresson, 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); Dalla Torre, 1897:404 (in catalog of world Hymenoptera); Melander, 1903:162 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Fernald, 1931a:447 (as new synonym of *Spheg arvensis*); Murray *in* Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera); Evans, 1970:486 (Wyoming: Jackson Hole); Horning and Barr, 1970:104 (USA: Idaho: Craters of the Moon National Monument); Steiner, 1973:26 (Canada: Northwest Territories, Yukon Territory); R. Bohart and Menke, 1876:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Finnamore, 1982:32 (in Sphecid Fauna of southern Quebec); Oak Creek 20 mi. southwest of Flagstaff, USA: M. O'Brien and A. O'Brien, 1988:75 (nesting habits); O'Brien, 1989b:211 (distribution in Michigan); Blades and Maier, 1996:71 (Canada: British Columbia: Osoyoos - Mount Kobau area at 119°40'W 49°05'N); Finnamore, 1997:884 (Canada: Yukon); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Ratzlaff, 2016:28 (Canada: British Columbia: from Krombein, 1979 and Buck, 2004); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:74 (in revision of North and Central American *Ammophila*). – **As *Spheg mediatus***: Murray, 1938:24 (new combination, redescription); Dreisbach, 1944:269 (in key to *Ammophila* of Michigan), 273 (Michigan: locality records); Strickland, 1947:129 (Canada: Alberta: Cypress Hills, Waterton); Spencer and Wellington, 1948:10 (British Columbia).

**136. *menghaiana* Q. Li and C. Yang**

*Ammophila menghaiana* Q. Li and C. Yang, 1989:34, ♀, ♂. Holotype: ♀, China: Yunnan Province: Menghai County: no specific locality (Beijing Agricult. Univ.). – Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2013a:455 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ch. Wang, Bashir, Q. Li, and Ma, 2018:298, 301 (in key to *Ammophila* of China).

**137. *menkei* Dollfuss**

*Ammophila menkei* Dollfuss, 2013a:456, ♂. Holotype: ♂, Tunisia: 56 km south of Tataouine (OÖLM). – Dollfuss, 2013a:398 (in key to *Ammophila* of Palearctic Region and India), 2013b:577 (Tunisia: 56 km south of Tataouine); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:305 (in list of Tunisian Sphecidae *sensu stricto*).

**138. *meridionalis* Kazenas**

*Ammophila meridionalis* Kazenas, 1980f:49, ♂. Holotype: ♂, Tajikistan: 10 km northeast of Garavuty on Vakhsh River at 37°38'N 68°31'E (ZIN). – Kazenas, 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia); Dollfuss, 2013a:396 (in key to *Ammophila* of Palearctic Region and India), 457 (in revision of *Ammophila* of Palearctic Region and India); Mokrousov and Gromenko, 2015:125 (Uzbekistan: Talimardzhan vodokhranilishche at 38°26'3" N, 65°35'37" E); Danilow, 2016:355 (holotype preserved in Zoological Institute, Sankt-Petersburg, Russia).

**139. *mescalero* Menke**

*Ammophila mescalero* Menke, 1965c:1, nomen nudum. Objective synonym of *Ammophila mescalero* Menke, 1966b.

*Ammophila mescalero* Menke, 1966b:33, ♀, ♂. Holotype: ♂, Mexico: Puebla: Cacaloapán (UCD). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Menke, 1986c:36 (Arizona: Gila County: Carrizo), 37 (Arizona: Cochise County: Naco), 1994f:21 (Arizona: Snowflake); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:101 (in revision of North and Central American *Ammophila*).

**140. *mexica* Menke**

*Ammophila mexica* Menke, 2020:58, ♀, ♂. Holotype: ♀, Mexico: Morelos: Cuernavaca (UCD).

**141. *mimica* Menke**

*Ammophila mimica* Menke, 1965c:1, nomen nudum. Objective synonym of *Ammophila mimica* Menke, 1966b.

*Ammophila mimica* Menke, 1966b:36, ♀, ♂. Holotype: ♂, USA: California: San Bernardino County: Cronise Valley (originally CIS, now CAS). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:122 (in revision of North and Central American *Ammophila*).

**142. *mitlaensis* Alfieri**

*Ammophila mitlaensis* Alfieri, 1961:139, ♀. Holotype: ♀, Egypt: Sinai: Wadi Mitla (originally A. Alfieri collection, Cairo, now USNM, but Al Azhar University, Cairo, according to Roche 2007a:21). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Roche and Zalat, 1994:114 (Egypt: Sinai Peninsula); Roche, 2007a:21 (in checklist of Egyptian Sphecidae, redescription), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Dollfuss, 2013a:390, 400 (in key to *Ammophila* of Palearctic Region and India), 458 (in revision of *Ammophila* of Palearctic Region and India), 2013b:577 (Israel: locality records).

**143. *modesta* Mocsáry**

*Ammophila modesta* Mocsáry, 1883:28, ♀. Holotype or syntypes: ♀, Spain: Granada (TMB). – Ed. André, 1886:66 (in revision of Sphecidae of Europe and Algeria), 1888:2\* (bibliographic references); Medina, 1894a:259 (Spain: Hornachuelos); Dalla Torre, 1897:404 (in catalog of world Hymenoptera); Antiga and Bofill, 1904:4 (Spain: Cataluña Province); Dusmet y Alonso, 1906:7 (Spain); Kohl, 1906b:344 (in revision of Palearctic Ammophilini); Dusmet y Alonso, 1915:86 (Spain: Aragón); Roth, 1929:181 (in revision of Spanish Ammophilini), 188 (abnormal wing venation); Bischoff, 1933:6 (Spain: Sierra Morena: Santa Helena); Giner Marí, 1943a:71 (in Sphecid Fauna of Spain); de Andrade, 1949:7 (Portugal); Ceballos, 1956:360 (in catalog of Hymenoptera of Spain); Nouvel and Ribaut, 1958:8 (first record from France: Pyrénées-Orientales: Banyuls-sur-Mer); Diniz, 1959:27 (Portugal: Torre da Marinha); Suárez, 1959:52 (Spain: Almería Province); Ceballos, 1964:87 (in supplement to catalog of Spanish Sphecidae); Diniz, 1965:2 (Portugal: 10 localities); Esmaili and Rastegar, 1974:46 (Iran); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Gayubo, 1981a:141 (northern Spain: Sierra de Béjar); Gayubo, 1983c:234 (Spain: Salamanca Province: Fregeneda, Saucelle); Gayubo and Tormos, 1984:11 (Spain: Valencia); Gayubo, 1986b:37 (Spain: Andalucía); Gayubo and Sanza, 1986:32 (Spain: Segovia); Gayubo and Tormos, 1986a:10 (Spain: Castellón de la Plana), 1986b:6 (Spain: Valencia); Tormos and Jiménez, 1987a:123 (Spain: Valencia); Gayubo, Asís, and Tormos, 1990a:13 (Spain); Hamon, Tussac, and Fonfria, 1992:408, 411 (in key to French Ammophilini), 412 (in France collected only in Banyuls-sur-Mer); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:85 (in Sphecid Fauna of Western Europe); Gayubo, González, Tormos, and Asís, 2008:136 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Baños-Picón, Asís, Gayubo, and Tormos, 2009:310 (Spain: frequency of specimens collected with hand nets and Malaise traps); González, Gayubo, Asís, and Tormos, 2009:622 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Bitsch, 2010:106 (in supplement to vol. II of Faune de France, 1997: recent records from Spain reported); Dollfuss, 2013a:390, 400 (in key to *Ammophila* of Palearctic Region and India), 459 (in revision of *Ammophila* of Palearctic Region and India), 2013b:577 (Spain: locality records); Vieira, Oliveira, Brewster, and Gayubo, 2013:15 (Portugal: Serras de Aire east of Candeeiros Natural Park); Dollfuss, 2015b:427 (Greece: Chalkidiki: west of Nikiti ); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:15 (Iran: known from unspecified province); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:91 (in Sphecid Fauna of Europe); Cross, Baldock, and Wood, 2021:15 (in catalog of Sphecidae *sensu lato* of Portugal);.

**144. *moenkopi* Menke**

*Ammophila moenkopi* Menke, 1967a:3, ♀, ♂. Holotype: ♂, USA: Arizona: Coconino County: 4.5 mi. east of Moenkopi (originally Arizona State Univ., now USNM). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Menke, 1994f:21 (Utah: Calf Creek Falls State Park); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:74 (in revision of North and Central American *Ammophila*).

**145. monachi Menke**

*Ammophila monachi* Menke, 1965c:1, nomen nudum. Objective synonym of *Ammophila monachi* Menke, 1966b.

*Ammophila monachi* Menke, 1966b:34, ♀, ♂. Holotype: ♂, USA: Nevada: Mineral County: Mount Montgomery (UCD). – R. Bohart and Menke, 1976:152; Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Menke, 2020:122 (in revision of North and Central American *Ammophila*).

**146. mongolensis Tsuneki**

*Ammophila mongolensis* Tsuneki, 1971k:163, ♀, ♂. Holotype: ♂, Mongolia: Central Aymag: 3 km east of Somon Nalajah (TMB). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Nemkov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:387 (in key to Sphecidae of Russian Far East); Nemkov, 2008b:17 and 2009b:50 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Dollfuss, 2013a:394, 403 (in key to *Ammophila* of Palearctic Region and India), 460 (in revision of *Ammophila* of Palearctic Region and India), 2013b:578 (locality records from China, Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, and Turkey); Danilov, 2014a:426 (Russia: Siberia: Altay Republic, Buryatia, Khakasiya, Sakha (= Yakutia), Zabaikal'skiy Krai), 2014b:520, 521 (in key to Sphecidae s.s. of Siberia); Mokrousov and Gromenko, 2015:125 (Uzbekistan: Karshi at 38°53'18" N, 65°49'54" E); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Jacobs and Liebig, 2018:134 (Russia: Buryat Republic: East Sayan: 30 km northwest of Mondy); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300, 302 (in key to *Ammophila* of China); Akulov, Proshchalykin, and Mokrousov, 2020:46 (Russia: central Krasnoyarsk Krai); Danilov, 2020:317 (specimens from Kazakhstan, Kyrgyzstan, and Russia: Siberia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Can and Gülmez, 2021b:309 (Turkey: Giresun: Şebinkarahisar); Mokrousov and Proshchalykin, 2021a:319 (first record from European Russia: Dagestan: near Kufa village 6 km northwest of Rutul at 41.565178°N 47.362029°E); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey).

**147. murrayi Menke**

*Ammophila murrayi* Menke, 1964a:14, ♀, ♂. Holotype: ♂, USA: California: Los Angeles County: Tanbark Flat in San Gabriel Mountains (UCD). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Menke, 1994d:15 (California: Monterey County: Parkfield area), 2020:124 (in revision of North and Central American *Ammophila*).

**148. namibiensis Dollfuss**

*Ammophila namibiensis* Dollfuss, 2015a:351, ♀, ♂. Holotype: ♂, Namibia: Karibib District: 17 km west of Usakos (CAS). – Dollfuss, 2015a:310, 313 (in key to Sub-Saharan *Ammophila*), 2015b:427 (Namibia:Karibib District: 15 km west of Karibib ).

**149. nancy Menke**

*Ammophila nancy* Menke, 2007:32, ♀, ♂. Holotype: ♂, USA: Arizona: Cochise County: Geronimo Trail east of Douglas (USNM). Paratypes: California, Nevada, New Mexico, Texas, Baja California Sur, and Sonora. – Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:75 (in revision of North and Central American *Ammophila*).

**150. nasalis Provancher**

*Ammophila nasalis* Provancher, 1895:111, ♂. Holotype or syntypes: ♂, USA: California: Los Angeles (Laval Univ.). – Melander, 1903:160 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); not listed by Gahan and Rohwer, 1917-1918; Murray *in* Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera); Powell, 1964b:251 (review of observations by Hicks, 1935); Menke, 1965b:259 (identity of *Sphex craspedotus* of Hicks, 1935); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Gwynne, 1977:335 (nesting behavior); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Miller, Pearce, and O'Neill, 2009:3 (known to be parasitized by *Paraxenos lugubris* (Pierce), Strepsiptera); Menke, 2020:142 (in revision of North and Central American *Ammophila*). – **As *Sphex nasalis***: Fernald, 1934:77 (new combination, in revision of North American and West Indian *Ammophila*).

*Sphex craspedotus* Fernald, 1934:96, ♀. Holotype: ♀, USA: California: Los Angeles County: no specific locality (USNM). Synonymized with *Ammophila nasalis* by Murray *in* Muesebeck, Krombein, and Townes, 1951:976. – Hicks, 1935:97 (nesting habits).

**151. nasuta Lepeletier de Saint Fargeau**

*Ammophila nasuta* Lepeletier de Saint Fargeau, 1845:380, ♀, ♂. Lectotype: ♀, Algeria: Oran (M. Spinola collection, Turin), designated by Menke *in* Bohart and Menke, 1976:152. – Lucas, 1849:275 (Algeria: La Calle, Oran; original description copied with modifications); F. Smith, 1856:211 (in catalog of Hymenoptera in British Museum); Walker, 1871:17 (Djibouti: Tajura; Eritrea: Rafla Bay; Africa: Red Sea coast: Island of Akeek, Massowah); Kirchner, 1867:217 (in catalog of European Hymenoptera); Dours, 1874:141 (in catalog of Hymenoptera of France); Ed. André, 1886:78 (in revision of Sphecidae of Europe and Algeria), 1888:3\* (bibliographic references); Acloque, 1897:96 (in Sphecid Fauna of France and Algeria); Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Medina, 1898:153: (Portugal: Foz do Douro); Antiga and Bofill, 1904:4 (Spain: Cataluña Province); W. Schulz, 1905b:33 (Algeria); Graeffe, 1906:456 (Tunisia: Tunis area); Kohl, 1906b:351 (in revision of Palearctic Ammophilini); Morice, 1911:73 (Algeria: Alger); Innes Bey, 1912:110 (specimens recorded by Walker, 1871, now destroyed by dermestids, were collected at Tadjurah); Roth, 1920a:15 (color variation), 1920b:86 (this variation was already observed by Lepeletier de Saint Fargeau); Roth, 1924:123 (Algeria: Nemours, now Ghazaouet); von Schulthess, 1926b:209 (Tunisia); Roth, 1928:197 (in revision of North African Ammophilini), 223 (habitat); Bischoff, 1933:6 (Morocco); nec Alfieri, 1946:136 (= *Ammophila pseudo-nasuta*); de Beaumont, 1955:56 (effects of stylopisation); Leclercq, 1955h:85 (bibliographic references); Ceballos, 1956:360 (in catalog of Hymenoptera of Spain); Bradley, 1957:39 (Lepeletier de Saint Fargeau's specimens in Turin); Diniz, 1959:27 (Portugal: no specific locality); de Beaumont, 1963b:9, 12 (in revision of *Ammophila nasuta* species group); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Pagliano, 2008:512 (lectotype in M. Spinola collection, Torino); Dollfuss, 2013a:387, 398 (in key to *Ammophila* of Palearctic Region and India), 461 (in revision of *Ammophila* of Palearctic Region and India), 2013b:578 (Algeria: Sidi Feeredj); Madl, 2018:943 (in catalog of Hymenoptera of Djibouti); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:305 (in list of Tunisian Sphecidae *sensu stricto*; new record: Tunisia: Sidi Bouzid: Maknassy).

**152. nearctica Kohl**

*Ammophila nearctica* Kohl, 1889a:18, ♂. Lectotype: ♂, USA: Washington: no specific locality (NHMW), designated by Menke, 1965c:1 and 2020:126 (Washington: Ellensburg), for the second time. – Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:162 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); Fernald, 1931a:449 (as new synonym of *Sphex politus*); Murray *in* Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Rust, Menke, and Miller, 1985:46 (California: Channel Islands); Dollfuss, 1989:7 (lectotype in NHMW); Menke, 1994d:15 (California: Monterey County: Parkfield area); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion).

**153. nefertiti Menke**

*Ammophila nefertiti* Menke, 1964a:16, ♀, ♂. Holotype: ♂, USA: California: Lassen County: 10.6 mi. north of Lichtfield (CIS according to original description, now CAS). – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Menke, 2020:140 (in revision of North and Central American *Ammophila*).

**154. nemkovi Danilov** near Kamashi at 38°49'N 66°27'E (ZIN).

*Ammophila nemkovi* Danilov, 2018:325, ♀. Holotype: ♀, Uzbekistan: Qashqadarya Province:

**155. nigri Dollfuss**

*Ammophila nigri* Dollfuss, 2015a:353, ♂. Holotype: Niger: Dosso Region: 15 km south of Dosso at 12°53.5'N 3°10.1'E (CAS) – Dollfuss, 2015a:315 (in key to Sub-Saharan *Ammophila*).



**156. nigricans Dahlbom**

*Ammophila nigricans* Dahlbom, 1843:14, ♂. Holotype or syntypes: ♂, USA: South Carolina: no specific locality (Lund). – Dahlbom, 1845:430 (in key to *Ammophila*); F. Smith, 1856:223 (in catalog of Hymenoptera in British Museum); Cresson, 1863:319 (in catalog of North American Hymenoptera), 1887:274 (in catalog of North American Hymenoptera); Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:157 (diagnostic characters), 161 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Murray in Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera); Evans, 1959d:465 (nesting behavior); Kurczewski and Kurczewski, 1963:147 (Pennsylvania: Presque Isle State Park); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Finnamore, 1982:33 (in Sphecid Fauna of Southern Quebec); Steiner, 1986:98 (references to papers on nesting habits); O'Brien, 1989b:212 (distribution in Michigan); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County); Ahlstrom, 1995:107 (in checklist of insects of North Carolina); Kurczewski, 1998d:250 (pine barrens in upstate New York); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario), 29 (distribution within Ontario), 34 (first record from Ontario: list of localities); McCravy, Bara, Hessler, Luxmore, Stinebaker, and Jenkins, 2009:113 (Illinois: Hancock County: Alice L. Kibbe Life Science Station); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Dollfuss, 2015b:427 (locality records from Florida, Kansas, Nebraska, and Ohio); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Lechner, 2019: 153 (Iowa: Sioux City, parasitized by strepsipteran *Paraxenos lugubris* Pierce); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:59 (in revision of North and Central American *Ammophila*). – **As *Sphex nigricans***: H. Smith, 1908b:330 (new combination, in revision of Nebraskan Sphecidae); Mickel, 1918b:402 (in catalog of Nebraskan Sphecidae); Britton, 1920:340 (in checklist of insects of Connecticut); Rau, 1926:211 (Missouri: Wickes: sheltered clay bank); Fernald, 1934:98 (in revision of North American and West Indian *Ammophila*); Peckham, 1934b:259 (nest and prey); Brimley, 1938:444 (North Carolina: statewide); Rau, 1938b:541 (sleeping habits); Dreisbach, 1944:269, 270 (in key to *Ammophila* of Michigan), 273 (Michigan: locality records); Strandmann, 1945a:310 (nest and prey); Piek and Spanjer, 1986:189 (in list of Sphecidae with known prey).

*Ammophila intercepta* Lepeletier de Saint Fargeau, 1845:378, ♀ (authorship attributed to Klug). Holotype or syntypes: ♀, North: no specific America locality (M. Spinola collection, Torino). Tentatively synonymized with *Ammophila nigricans* by Murray in Muesebeck, Krombein, and Townes, 1951:976, and definitely by Menke, 1965c:1 and by R. Bohart and Menke, 1976:152. – F. Smith, 1856:223 (in catalog of Hymenoptera in British Museum); Cresson, 1863:318 (in catalog of North American Hymenoptera), 1873:210 (Texas); Patton, 1879d:353 (USA: northwestern Kansas); Cresson, 1887:274 (in catalog of North American Hymenoptera); C. Robertson, 1892:105 (visiting flowers of *Pycnanthemum lanceolatum* Ph., Lamiaceae), 106 (visiting flowers of *Pycnanthemum muticum* Pers., Lamiaceae), 107 (visiting flowers of *Pycnanthemum linifolium* Ph., Lamiaceae), 114 (visiting flowers of *Blephilia ciliata* Raf., Lamiaceae), 116 (visiting flowers of *Lophanthus nepetoides* Benth.), 1894:453 (visiting flowers of *Eupatorium serotinum* Michx., Asteraceae), 455 (visiting flowers of *Solidago missouriensis* Nutt., Asteraceae), 460 (visiting flowers of *Aster paniculatus* Lam., Asteraceae), 464 (visiting flowers of *Parthenium integrifolium* Linnaeus, Asteraceae), 467 (visiting flowers of *Rudbeckia hirta* Linnaeus, Asteraceae), 469 (visiting flowers of *Lepachys pinnata* Torr. and Gray, Asteraceae), 470 (visiting flowers of *Helianthus strumosus* Linnaeus), 472 (visiting flowers of *Verbesina helianthoides* Michx. and of *Coreopsis palmata* Nutt.), 473 (visiting flowers of *Coreopsis aristosa* Michx., Asteraceae), 475 (visiting flowers of *Helenium autumnale* Linnaeus, Asteraceae), 1896:72 (visiting flowers of *Polygonum pennsylvanicum* Linnaeus, Polygonaceae); Dalla Torre, 1897:403 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Bridwell, 1899:209 (Kansas: no specific locality); J. Smith, 1900:524 (in list of insects of New Jersey); Casolari and Casolari Moreno, 1980:100, 101 (specimens in M. Spinola collection, Torino); Pagliano, 2008:512 (holotype in M. Spinola collection, Torino), 515 (specimens in M. Spinola collection, Torino). – **As *Sphex intercepta*** [sic]: J. Smith, 1910:677 (new combination, in new list of insects of New Jersey).

**157. nigrifrons Dollfuss**

*Ammophila nigrifrons* Dollfuss, 2015a:354, ♂. Holotype: ♂, South Africa: Western Cape Province: South Lamberts Bay (OÖLM). Paratypes: Botswana, Namibia, Zimbabwe. – Dollfuss, 2015a:316 (in key to Sub-Saharan *Ammophila*), 2015b:427 (locality records from Botswana, Namibia, South Africa, and Zimbabwe).

**158. nigrina F. Morawitz**

*Ammophila nigrina* F. Morawitz, 1889a:128, ♀. Holotype: ♀, China: Gansu: Sigu [= Gansu: Gannan Prefecture: Zhugqu County at 33°38'N 104°20'E] (ZIN). – Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Kohl, 1906b:320 (as new synonym of *Ammophila campestris*), 321 (as a variety of *Ammophila campestris*), 373 (original description copied); Dollfuss, 2013a:394 (in key to *Ammophila* of Palearctic Region and India), 462 (valid species, in revision of *Ammophila* of Palearctic Region and India); Danilov, 2016:337 (holotype preserved in Zoological Institute, Sankt-Petersburg, Russia).

**159. nitida Fischer de Waldheim**

*Ammophila nitida* Fischer de Waldheim, 1834:2, sex not stated. Holotype or syntypes: southern Russia: no specific locality (depository unknown). – F. Smith, 1856:210 (in catalog of Hymenoptera in British Museum); Kirchner, 1867:217 (in catalog of European Hymenoptera); Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Kohl, 1906b:374 (original description copied); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae).

**160. novita (Fernald)**

*Sphex novitus* Fernald, 1934:147, ♀, ♂. Holotype: ♀, “L. Cal.” [Lower California] = Mexico: Baja California: no specific locality (ANSP). – **As *Ammophila novita***: Murray in Muesebeck, Krombein, and Townes, 1951:976 (new combination, in catalog of North American Hymenoptera); Hurd and Linsley, 1975:116 (Arizona: Yuma County: 24.5 mi. north of Yuma; on flowers of *Larrea tridentata* (De Candolle) Coville, Zygophyllaceae); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Alcock, 1984:1 (nesting habits; prey capture preceds nest digging); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Amarante, 2005a:14 (correction to his 2002 catalog); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Menke, 2020:127 (in revision of North and Central American *Ammophila*).

**161. obliquetriolae Yang and Li**

*Ammophila obliquetriolae* Yang and Li, 1989:106, ♂. Holotype, ♂, China: Shaanxi Province: Ganquan County: Quingquan (Beijing Agricult. Univ.). – Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2013a:462 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ch. Wang, Bashir, Q. Li, and Ma, 2018: 302 (in key to *Ammophila* of China).

**162. occipitalis F. Morawitz**

*Ammophila occipitalis* F. Morawitz, 1890:583, ♀, ♂. Lectotype: ♂, Turkmenistan: Tedjen at 37°23'N 60°30'E (NHMW), designated by Dollfuss, 2013a:463. – F. Morawitz, 1891a:203 (Russia: Astrakhan Governorate: Ryn Peski); Dalla Torre, 1897:405 (in catalog of world Hymenoptera); Kohl, 1906b:322 (in revision of Palearctic Ammophilini); Morice, 1921:822 (Iraq: Amara); Gussakovskij, 1933b:274 (Iran); Kazenas, 1968b:342 (Kazakhstan: Aktyubinsk and Gur'yev, now Atyraū, oblast's); Myartseva, 1971a:77 (in key to *Ammophila* of Turkmenistan), 1972a:86 (Turkmenistan); Kazenas, 1974b:109 (feeding on flowers of *Tamarix* sp., Tamaricaceae, in Kazakhstan); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 1978b:35 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:181 (in key to Sphecidae of European part of USSR); Nazarova and Shomirsaidov, 1997:23 (Tajikistan: fruit tree orchards in Vakhsh River valley); Kazenas, 1998b:175 (in Sphecid Fauna of Kazakhstan); Nazarova, 1998:40 (Tajikistan: Tigrovaya Balka Nature Reserve); Kazenas, 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia), 110 (nest parasites), 2002a:38 (geographic distribution, collecting localities in Kazakhstan); Kazenas, 2004b:100 (Kazakhstan: western Tien Shan Mountains), 2004d:28 (Kazakhstan: northern Caspian region); Danilov, 2009:57 (Russia: Western Siberia: Kulundinskaya Steppe), 2010b:44 (distribution of Tethyan type); Kazenas, 2012b:168 (Kazakhstan: Korgalzhin State Nature Reserve); Dollfuss, 2013a:391, 401 (in key to *Ammophila* of Palearctic Region and India), 463

(in revision of *Ammophila* of Palearctic Region and India), 2013b:578 (locality records from Iran, Jordan, Turkmenistan, and Uzbekistan); Kazenas, 2014a:133 (Kazakhstan: Karatau Mountain Range); Danilov, 2016:337 (paralectotype preserved in Zoological Institute, Sankt-Petersburg; Russia: Dagestan), 2017b:212 (in catalog of Sphecidae s.s. of Russia); Danilov and Mokrousov, 2017a:110 (Russia: Dagestan); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:16 (Iran: known from Kerman and Sistan-o Baluchestan provinces); Augul, 2019:493 (recorded from Iraq by Derwesh, 1965, as *Sphex occipitalis* and *Eremochares occipitalis*); Danilov, 2020:317 (specimen from Turkmenistan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia). – **As *Sphex occipitalis***: Derwesh, 1965:71 (new combination, Iraq: no specific locality).

*Ammophila ruficollis* F. Morawitz, 1890:586, ♀. Holotype: Turkmenistan: Tedjen at 37°23'N 60°30'E (ZIN). Synonymized with *Ammophila occipitalis* by Dollfuss, 2013a:463. – Dalla Torre, 1897:407 (in catalog of world Hymenoptera); Kohl, 1906b:374 (original description copied); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 1978b:36 (in key to Sphecidae of Kazakhstan and Central Asia), 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia); Danilov, 2016:338 (holotype preserved in Zoological Institute, Sankt-Petersburg, Russia).

### 163. *ohli* Dollfuss

*Ammophila ohli* Dollfuss, 2013a: 464, ♀. Holotype: ♀, Uzbekistan: Zeravshan Mountains: Aman-Kutan Pass (OÖLM). – Dollfuss, 2013a:391 (in key to *Ammophila* of Palearctic Region and India).

### 164. *pachythoracalis* Yang and Q. Li

*Ammophila pachythoracalis* Yang and Q. Li, 1989:107, ♂ (spelled *pachytnoracalia* in English summary, p. 110). Holotype: ♂, China: Shaanxi Province: Ganquan County: Quingquan (Beijing Agricult Univ.). – Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2013a:465 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ch.Wang, Bashir, Q. Li, and Ma, 2018: 302 (in key to *Ammophila* of China).

### 165. *pakistana* Dollfuss

*Ammophila pakistana* Dollfuss, 2013a:466, ♂. Holotype: ♂, Pakistan: Quetta (BMNH). – Dollfuss, 2013a:396 (in key to *Ammophila* of Palearctic Region and India).

### 166. *parapolita* (Fernald)

*Sphex parapolitus* Fernald, 1934:51, ♀, ♂. Holotype: ♀, USA: California: Felton in Santa Cruz Mountains (Cornell Univ.). – Strickland, 1947:129 (Canada: Alberta: Medicine Hat, Wainwright). – **As *Ammophila parapolita***: Murray in Muesebeck, Krombein, and Townes, 1951:976 (new combination, in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Rust, Menke, and Miller, 1985:46 (California: Channel Islands); Menke, 1994d:15 (California: Monterey County: Parkfield area); Menke, 2020:128 (in revision of North and Central American *Ammophila*).

### 167. *parapuncticeps* Dollfuss

*Ammophila parapuncticeps* Dollfuss, 2015a:355, ♀, ♂. Holotype: ♂, South Africa: Western Cape Province: Greytown: Riviersonderend River (OÖLM). – Dollfuss, 2015a:312, 313, 318 (in key to Sub-Saharan *Ammophila*), 2015b:427 (locality records from South Africa).

### 168. *parkeri* Menke

*Ammophila parkeri* Menke, 1964a:23, ♀, ♂. Holotype: ♂, USA: California: Nevada County: Boca (UCD). – Powell, 1964b:243 (nesting site, prey: geometrid caterpillar); Horning and Barr, 1970:104 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Rust, Menke, and Miller, 1985:46 (California: Channel Islands); Piek and Spanjer, 1986:179 (in list of Sphecidae with known prey); Steiner, 1986:98 (references to papers on nesting habits); Menke, 1994d:15 (California: Monterey County: Parkfield area); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Danilov, 2014:355 (a pair of paratypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Menke, 2020:102 (in revision of North and Central American *Ammophila*).

### 169. *peckhami* (Fernald)

*Sphex peckhami* Fernald, 1934:93, ♂. Holotype: ♂, Mexico: Meadow Valley (USNM). – **As *Ammophila peckhami***: Murray in Muesebeck, Krombein, and Townes, 1951:976 (new combination, in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:76 (in revision of North and Central American *Ammophila*).

*Sphex willistoni* Fernald, 1934:91, ♀. Holotype: ♀, Mexico: Meadow Valley (USNM). Synonymized with *Sphex peckhami* by Menke, 1966b:1 and 1967a:3

### 170. *peringueyi* (Arnold)

*Sphex peringueyi* Arnold, 1928:269, ♀ (as *Peringueyi*, incorrect original capitalization). Holotype: ♀, South Africa: Western Cape Province: Tradouw Pass in Swellendam District (SAM). – Arnold, 1930:17 (in checklist of Afrotropical Sphecidae). – **As *Ammophila peringueyi***: Leclercq, 1955h:87 (new combination, bibliographic references); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Dollfuss, 2015a:311 (in key to Sub-Saharan *Ammophila*), 357 (in revision of Sub-Saharan *Ammophila*).

### 171. *persica* Dollfuss

*Ammophila persica* Dollfuss, 2013a:466, ♂. Holotype: ♂, Iran: Kohgiluyeh and Boyer-Ahmad: Kuh Gol near Sisakut at 30.84°N 51.53°E (OÖLM). – Dollfuss, 2013a:401 (in key to *Ammophila* of Palearctic Region and India), 2013b:578 (Iran: Kohgiluyeh and Boyer-Ahmad: Kuh Gol near Sisakut); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:16 (Iran: known from Kohgiluyeh-va Boyerahmad Province).

### 172. *pevtsovi* Danilov

*Ammophila pevtsovi* Danilov, 2015a:541, ♀. Holotype: ♀, China: Xinjian: Hetian: Ka Lhasa Yicun village at 36°46'N 83°48'E (ZIN). – Danilov, 2016:358 (holotype preserved in Zoological Institute, Sankt-Petersburg, Russia); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300 (in key to *Ammophila* of China).

### 173. *picipes* Cameron

*Ammophila picipes* Cameron, 1888a:11, ♂. Lectotype: ♂, Mexico: Yucatán: Temax (BMNH), designated by Menke, 1996e:194 (as holotype, Article 74b). – Dalla Torre, 1897:406 (in catalog of world Hymenoptera, as *piceipes*); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:162 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); Fernald, 1934:158 (original description copied); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1592 (in catalog of North American Hymenoptera); Hanson and Menke, 1995:637 (known from Costa Rica); Menke, 1996e:192 (in key to Ammophilini of Costa Rica), 194 (in revision of Ammophilini of Costa Rica); Menke and Parker, 1996:186 (Costa Rica: population largest during dry season); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas); Stevens and Menke, 2014:220 (Arizona: unknown from Grand Canyon ecoregion); Vanoye-Eligio, Meléndez-Ramírez, Ayala, Navarro-Alberto, and Delfín-González, 2015:995 (Mexico: in list of Sphecidae *sensu lato* of Yucatán); Menke, 2020:103 (in revision of North and Central American *Ammophila*).

*Ammophila alticola* Cameron, 1888a:10, ♂. Lectotype: ♂, Panama: Volcán de Chiriquí (BMNH), designated by Menke, 1996e:194 (as holotype, Article 74b). Synonymized with *Ammophila picipes* by Menke, 1965c:1 and by Bohart and Menke, 1976:153. – Dalla Torre, 1897:395 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:162 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution).

*Ammophila volcanica* Cameron, 1888a:17, ♀. Lectotype: ♀, Panama: Volcán de Chiriquí (BMNH), designated by Menke, 1996e:194 (as holotype, Article 74b). Synonymized with *Ammophila picipes* by Menke, 1965c:1 and by Bohart and

Menke, 1976:153. – Dalla Torre, 1897:411 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:162 (in key to North American Ammophilini, as *voltanica*), 164 (bibliographic references, geographic distribution, as *voltanica*); Murray in Muesebeck, Krombein, and Townes, 1951:977 (in catalog of North American Hymenoptera); Linsley, 1962:156 (sleeping aggregations). – **As *Sphex volcanicus***: Fernald, 1934:54 (new combination, in revision of North American and West Indian *Ammophila*).

*Ammophila chiriquensis* Cameron, 1888a:18, ♀. Lectotype: ♀, Panama: Volcán de Chiriquí (BMNH), designated by Menke, 1996e:194 (as holotype, Article 74b). Synonymized with *Ammophila picipes* by Dalla Torre, 1897:395 and by Menke, 1966f:1 (as new synonym). – Dalla Torre, 1897:397 (in catalog of world Hymenoptera, here listed as valid species); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:161 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); Fernald, 1934:134 (in revision of North American and West Indian *Ammophila*); Murray in Muesebeck, Krombein, and Townes, 1951:975 (in catalog of North American Hymenoptera).

#### 174. *pictipennis* Walsh

*Ammophila pictipennis* Walsh, 1869:164 (June), ♀, ♂. Syntypes: USA: southern Illinois and Colorado: no specific locality (depository?). – Cresson, 1873:210 (Texas); Riley, 1873:149 (.); Cresson, 1876:208 (Iowa: Davenport), 1887:274 (in catalog of North American Hymenoptera); C. Robertson, 1892:105 (visiting flowers of *Pycnanthemum lanceolatum* Ph., Lamiaceae), 106 (visiting flowers of *Pycnanthemum muticum* Pers., Lamiaceae), 114 (visiting flowers of *Blephilia ciliata* Raf., Lamiaceae); Viereck, 1893e:132 (New Jersey: Riverton; New York: Staten Island); C. Robertson, 1894:455 (visiting flowers of *Solidago missouriensis* Nutt., Asteraceae), 457 (visiting flowers of *Solidago nemoralis* Ait., Asteraceae); 462 (visiting flowers of *Erigeron strigosus* Muhl., Asteraceae), 467 (visiting flowers of *Rudbeckia hirta* Linnaeus, Asteraceae), 469 (visiting flowers of *Lepachys pinnata* Torr. and Gray, Asteraceae), 472 (visiting flowers of *Verbesina helianthoides* Michx. and Nutt., Asteraceae); Ashmead, 1899d:354 (in checklist of North American Sphecidae); W. Fox, 1895c:266 (Mexico: Baja California Sur); Dalla Torre, 1897:406 (in catalog of world Hymenoptera); Bridwell, 1899:209 (Kansas: Baldwin); J. Smith, 1900:524 (in list of insects of New Jersey); Rohwer, 1916b:686 (in catalog of sphecids of Connecticut); Salt, 1927:182 (stylopized specimens; Virginia: Falls Church and Great Falls); Fernald, 1931a:449 (as new synonym of *Sphex placidus*); Menke, 1965c:2 (restored from synonymy); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1593 (in catalog of North American Hymenoptera); Brockmann, 1985b:312 (nest closure summary); Steiner, 1986:98 (references to papers on nesting habits); O'Brien, 1989b:212 (distribution in Michigan); Spofford, Kurczewski, and Downes, 1989:256, 260 (references to publications on nest parasites *Hilarella hilarella* (Zetterstedt), a miltogrammine fly, and undetermined Miltogrammini), 258 (nest parasite: *Senotainia rubriventris* Macquart, a miltogrammine fly); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County); Spofford and Kurczewski, 1990:747 (nest parasite: *Senotainia rubriventris* Macquart, Sarcophagidae), 1992:996 (species of miltogrammine parasites listed), 1002 (counter-cleptoparasitic behavior: diversionary flight), 1005 (post-larvipositional counter-cleptoparasitic behavior: clean burrow); Ahlstrom, 1995:107 (in checklist of insects of North Carolina); Kurczewski, 1998d:250 (pine barrens in upstate New York); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario), 29 (distribution within Ontario), 35 (first record from Canada: Ontario: list of localities); Miller, Pearce, and O'Neill, 2009:3 (known to be parasitized by *Paraxenos lugubris* (Pierce), Strepsiptera); Ardila-García, Umphrey, and Gregory, 2010:339 (genome size dataset); Ohl and Spahn, 2010:52 (in cladistic analysis of Ampulicidae); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Kathirithamby, Lechner, McMahon, Bryson, and Johnston, 2012:466 (stylopization by *Paraxenos lugubris* Pierce); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Lechner, 2019:151-154 (Iowa: Sioux City, parasitized by up to six strepsipterans *Paraxenos lugubris* Pierce); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:59 (in revision of North and Central American *Ammophila*). – **As *Ammophila extremitata* var. *pictipennis***: Melander, 1903:161 (new status, in key to North American Ammophilini). – **As *Sphex extremitata* var. *pictipennis***: Viereck, 1903d:121 (new combination, Maryland: no specific locality); Rohwer, 1916b:681, 682 (in catalog of Hymenoptera of Connecticut); Rohwer in Viereck, 1925:681, 682 (in key to Sphecidae of Connecticut). – **As *Sphex pictipennis***: Rau and Rau, 1918:207 (nesting habits); Rau, 1922:23 (USA: Missouri: Saint Louis, preying on caterpillars); J.Ch. Bradley, 1928:1012 (in catalog of New York Sphecidae); G. Carpenter, 1930b:296 (nest closure); Hendrickson, 1930:159 (Iowa); Peckham, 1934b:259 (mimicked by fly *Systrophus macer* Loew, Bombyliidae); Rau, 1938b:541 (sleeping habits).

*Ammophila anomala* Taschenberg, 1869:434 (Dec.), ♀, ♂. Lectotype: ♀, USA: Illinois: no specific locality (Halle), designated by Menke in Bohart and Menke, 1976:153. Synonymized with *Ammophila pictipennis* by Menke, 1965c:1. – Dalla Torre, 1897:395 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Fernald, 1931a:449 (as new synonym of *Ammophila placida*).

? *Sphex nigropilosus* Rohwer, 1912:465, ♀. Holotype: ♀, Mexico: Distrito Federal: no specific locality (USNM). – Fernald, 1931a:449 (as new synonym of *Sphex placidus*, also misspelled as *longispinus*); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae, as tentative synonym of *Ammophila pictipes*).

#### 175. *pilimarginata* Cameron

*Ammophila pilimarginata* Cameron, 1912a:429, [♂]. Holotype or syntypes: ♂, Guiana: Demerara: no specific locality (BMNH). – Richards, 1937a:102 (as synonym of *Ammophila fragilis*); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Amarante, 2002:67 (in catalog of Neotropical Sphecidae, listed in error as synonym of *Ammophila gracilis*), 2005a:14 (correction to his 2002 catalog).

#### 176. *placida* F. Smith

*Ammophila placida* F. Smith, 1856:221, ♂. Holotype or syntypes: ♂, USA: California: no specific locality (BMNH). – Cresson, 1863:319 (in catalog of North American Hymenoptera), 1887:274 (in catalog of North American Hymenoptera); Dalla Torre, 1897:406 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:160 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Murray in Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera); K. Cooper, 1953:34 (Massachusetts: Island of Penikese); Evans, 1959b:148 (description of larva), 1959d:456 (nesting behavior); Menke, 1965b:260 (own observations of Evans, 1959d:456, refer to this species, but authors he cited dealt with *Ammophila pictipennis*); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1593 (in catalog of North American Hymenoptera); Brockmann, 1985b:312 (nest closure summary); Rust, Menke, and Miller, 1985:46 (California: Channel Islands); Spofford, Kurczewski, and Downes, 1989:256, 257 (references to publications on nest parasites *Hilarella hilarella* (Zetterstedt) and *Opsidia* sp., miltogrammine flies); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Dollfuss, 2015b:427 (locality records from Colorado, Florida, and Michigan); Ratzlaff, 2016:28 (Canada: British Columbia: from Spencer and Wellington, 1948); Menke, 2020:61 (in revision of North and Central American *Ammophila*). – **As *Sphex guerini* *placidus***: Fernald, 1934:59 (new status, in revision of North American and West Indian *Ammophila*). – **As *Sphex placidus***: Fernald, 1931a:449 (new combination, synonymy); Krombein, 1936:98 (New York: Buffalo; floral records); Brimley, 1938:444 (North Carolina: statewide); Rau, 1938b:541 (sleeping habits, as *placidens*); Strandtmann, 1945a:310 (nest and prey); Spencer and Wellington, 1948:10 (Canada: British Columbia); Krombein and Evans, 1954:233 (Florida), 1955:233 (Florida). – **As *Sphex placidus placidus***: Britton, 1938:149 (in addition to checklist of insects of Connecticut); Fernald, 1943a:290 (Florida); Dreisbach, 1944:270 (in key to *Ammophila* of Michigan), 274 (Michigan: locality records).

As *Sphex xanthopterus* (corrected to *Ammophila placida* by Menke, 1965b:258); Hicks, 1932c:193 (new combination, nesting habits), 1933c:49 (nest parasite: *Paniscus* sp., Ichneumonidae), and 1934a:39 (prey capture and stinging).

#### 177. *platensis* Brèthes

*Ammophila platensis* Brèthes, 1909b:62, ♀. Holotype: ♀, origin unknown, probably Uruguay: no specific locality (Mus. Montevideo). – R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Genise, 1990:26 (type material in MACN); Amarante, 2002:67 (in catalog of Neotropical Sphecidae).

**178. poecilcnemis Morice**

*Ammophila poecilcnemis* Morice, 1900a:67, ♀, ♂. Lectotype: ♂, Algeria: Biskra (OXUM), designated by Dollfuss, 2013a:67. – Kohl, 1906b:358 (in revision of Palearctic *Ammophilini*); Morice, 1911:74 (Algeria: Biskra); Storey, 1916:107 (Egypt: widely distributed); von Schulthess, 1926b:209 (Tunisia); Roth, 1928:208 (in revision of North African *Ammophilini*); Maidl, 1933b:122 (Morocco); Giner Marí, 1945b:362 (Morocco: Western Sahara), 1945e:220 (Morocco: Western Sahara), 1947:19 (Morocco: Western Sahara); Leclercq, 1955h:84 (bibliographic references); de Beaumont, 1956a:180 (Chad: Tibesti; specimen studied has one midtibial spur), 1958b:56 (Tassili des Ajjer; Sahara between Tunisia and Western Sahara); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Guichard, 1988a:128 (Saudi Arabia); Gadallah and Assery, 2004a:224 (in catalog of Sphecidae of Saudi Arabia); Roche, 2007a:21 (in checklist of Egyptian Sphecidae, redescription), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of *Ammophilini*); Schmid-Egger, 2011b:599 (United Arab Emirates: Jebel Hafit south of al-Ain, Wadi Bih, Wadi Hayl, Wadi al-Helo, Wadi Madaq, Wadi Shawkah, Wadi Wurayah), 600 (color photograph of female); Dollfuss, 2013a:387, 397 (in key to *Ammophila* of Palearctic Region and India), 467 (in revision of *Ammophila* of Palearctic Region and India), 2013b:578 (locality records from Jordan, Morocco, Tunisia, and Yemen); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:360 (in new catalog of Sphecidae of Saudi Arabia); Schmid-Egger, 2014:621 (United Arab Emirates); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:305 (in list of Tunisian Sphecidae *sensu stricto*); Gadallah, 2020d:80 (in list of aculeate wasps of Arabian Peninsula).

**179. polita Cresson**

*Ammophila polita* Cresson, 1865b:458, ♀. Lectotype: ♀, USA: Colorado Territory: no specific locality (ANSP), designated by Cresson, 1916:94. – Cresson, 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); Dalla Torre, 1897:406 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); G. Peckham and E. Peckham, 1900:91 (nesting habits); Melander, 1903:160 (in key to North American *Ammophilini*), 163 (bibliographic references, geographic distribution); G. Peckham and E. Peckham, 1905:18 (common in sandy areas of Milwaukee), 50 (prey carrying, nest); G. Carpenter, 1930b:292 (nest closure); Murray *in* Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1593 (in catalog of North American Hymenoptera); Rust, Hanks and Bechtel, 1983:406 (Nevada: Churchill County: Blow Sand Mountains); Piek and Spanjer, 1986:179 (in list of Sphecidae with known prey); Wcislo, 1998:181 (proportions of antennae in relations to parasitic/non-parasitic behavior); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:129 (in revision of North and Central American *Ammophila*). – **As *Sphex politus***: Mickel, 1918b:404 (new combination, in catalog of Nebraskan Sphecidae); Fernald, 1931a:449 (*Ammophila nearctica* Kohl is a synonym), 1934:49 (in revision of North American and West Indian *Ammophila*); Dreisbach, 1944:268, 270 (in key to *Ammophila* of Michigan); Strickland, 1947:129 (Canada: Alberta: Lethbridge); Spencer and Wellington, 1948:10 (British Columbia).

**180. procera Dahlbom**

*Ammophila procera* Dahlbom, 1843:15, sex not stated (authorship attributed to Klug). Lectotype: southern North America: no specific locality (Lund), designated by Menke, 1996e:194 (as holotype, Article 74b). – Dahlbom, 1845:430 (in key to *Ammophila*); F. Smith, 1856:224 (in catalog of Hymenoptera in British Museum); Cresson, 1863:319 (in catalog of North American Hymenoptera); Taschenberg, 1869:434 (Illinois: description of coloration); Patton, 1879d:353 (USA: northwestern Kansas); Cresson, 1887:274 (in catalog of North American Hymenoptera); C. Robertson, 1892:105 (visiting flowers of *Pycnanthemum lanceolatum* Ph., Lamiaceae), 106 (visiting flowers of *Pycnanthemum muticum* Pers., Lamiaceae), 114 (visiting flowers of *Blephilia ciliata* Raf., Lamiaceae); Dalla Torre, 1897:406 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Bridwell, 1899:209 (Kansas: no specific locality); J. Smith, 1900:524 (in list of insects of New Jersey: “probable in New Jersey”); Melander, 1903:158 (diagnostic characters), 159, 160 (in key to North American *Ammophilini*), 163 (bibliographic references, geographic distribution); Viereck, 1903d:121 (Maryland: Chestertown); Hartman, 1905:11 (nesting habits); Hart, 1907:255 (Illinois); G. Carpenter, 1930b:295, 298 (nest closure); Murray *in* Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera); Evans and Lin, 1956a:145 (description of larva); Evans, 1958e:451 (behavioral evolution), 1959d:451 (nesting behavior); Evans and Linsley, 1960:32 (Arizona: casual member of sleeping aggregation at Southwest Research Station); Linsley, 1962:156 (sleeping aggregations); Evans, 1963c:62 (nest closure); Powell, 1964b:242 (review of Tilden, 1953, observations); Menke, 1965b:260 (*Sphex procerus* of Hicks, 1935, is *Ammophila procera*); Evans, 1975a:264 (slow colonizer of new habitats); Horning and Barr, 1970:105 (USA: Idaho: Craters of the Moon National Monument); Hurd and Linsley, 1975:116 (Arizona: eight sites, southern California: one site, New Mexico: six sites; on flowers of *Larrea tridentata* (De Candolle) Coville, Zygophyllaceae); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1593 (in catalog of North American Hymenoptera); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Finnermore, 1982:34 (in Sphecid Fauna of Southern Quebec); Menke, 1983b:20 (Nebraska: Thomas County: Halsey area), 21 (Nebraska: Cherry County: Valentine area and Nenzel area, and Dawes County: southeast of Crawford); Brockmann, 1985b:312 (nest closure summary); Piek and Spanjer, 1986:179 (in list of Sphecidae with known prey); Steiner, 1986:99 (references to papers on nesting habits); Rosenheim, 1987:740 (California: Nevada County: Sagehen Creek near Hobart Mills); O'Brien, 1989b:213 (distribution in Michigan); Spofford, Kurczewski, and Downes, 1989:256, 260, 261 (references to publications on nest parasites *Metopia lateralis* (Macquart) and *Senotainia vigilans* Allen, miltogrammine flies, and undetermined Miltogrammini); Menke, 1994f:20 (New Mexico: Zuni; Utah: Monticello area); Ahlstrom, 1995:107 (in checklist of insects of North Carolina); Hanson and Menke, 1995:637 (known from Costa Rica); Blades and Maier, 1996:71 (Canada: British Columbia: Osoyoos - Mount Kobau area at 119°40'W 49°05'N); Menke, 1996e:192 (in key to *Ammophilini* of Costa Rica), 194 (in revision of *Ammophilini* of Costa Rica); Kurczewski, 1998d:250 (pine barrens in upstate New York); Meagher and Mitchell, 1999:368 (collected in pheromone- and synthetic floral volatile-baited traps); Weissmann and Kondratieff, 1999:77 (Colorado: Great Sand Dunes National Monument); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario); Amarante, 2005a:14 (correction to his 2002 catalog); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007:47 (Mexico: Tamaulipas); Pagliano, 2008:512 (specimens in M. Spinola collection, Torino, including lectotype); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of *Ammophilini*); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Dollfuss, 2015b:428 (locality records from Colorado, Kentucky, Nebraska, and Mexico); Ratzlaff, 2016:28 (Canada: British Columbia: from Spencer and Wellington, 1948 and Buck, 2004); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:130 (in revision of North and Central American *Ammophila*). – **As *Sphex procerus***: H. Smith, 1908b:328 (new combination, in revision of Nebraskan Sphecidae); J. Smith, 1910:676 (in new list of insects of New Jersey, as *procera*); Faull, 1913:384 (Canada: Toronto region, as *procera*); Rohwer, 1916b:681, 682 (in catalog of Hymenoptera of Connecticut); Mickel, 1918b:402 (in catalog of Nebraskan Sphecidae); Rau and Rau, 1918:215, 226, 237 (nesting habits); Britton, 1920:340 (in checklist of insects of Connecticut); Rau, 1922:24 (Missouri: Silica, Wickes, digging nest); Criddle, 1924:121 (nesting habits, as *procera*); Rohwer *in* Viereck, 1925:681, 682 (in key to Sphecidae of Connecticut, as *procera*); Fernald, 1926:8 (influence of climate on coloration); Rau, 1926:211 (Missouri: Wickes: sheltered clay bank; preying on noctuid caterpillars); J.Ch. Bradley, 1928:1012 (in catalog of New York Sphecidae); Hendrickson, 1930:159 (Iowa); Fernald, 1934:44 (in revision of North American and West Indian *Ammophila*); Peckham, 1934b:259 (floral records); Brimley, 1938:444 (North Carolina: Robeson and Wake counties); Fernald, 1943b:135 (first record from Florida); Dreisbach, 1944:268, 269 (in key to *Ammophila* of Michigan), 274 (Michigan: locality records); Strickland, 1947:129 (Canada: Alberta:); Spencer and Wellington, 1948:10 (British Columbia); Krombein, 1950a:268 (North Carolina: Dare County); G. Bohart and Knowlton, 1953:100 (mating, prey, nesting behavior); Krombein, 1953a:285 (nesting habits), 296 (visiting foliage of *Quercus marilandica* Muenchh.), 297 (visiting foliage of *Liquidambar styraciflua* L.), 298 (visiting flowers of *Monarda punctata* L., Lamiaceae, and *Cephalanthus occidentalis* L., Rubiaceae), 333 (North Carolina), 1953b:118 (nest, prey), 123 (visiting foliage of *Quercus virginiana* Mill.), 124 (visiting flowers of *Pluchea* sp., Asteraceae), 133 (North Carolina: Kill Devil Hills); Krombein and Evans, 1954:234 (Florida); Krombein, 1955d:151 (cocoon), 1958c:104 (prey, prey carrying, nest), 1958f:192 (in supplement to catalog of North American Hymenoptera: list of known prey, description of larva by Evans and Lin,

1956a, reported); Wray, 1967:123 (North Carolina: Kill Devils Hills); L. Davis, 1978:217 (North Carolina: Kill Devil Hills, data from Krombein, 1953a); D. Thomas, 2000:194 (nest excavation).

*Ammophila procera* Lepeletier de Saint Fargeau, 1845:376, ♀ (authorship attributed to Klug), junior primary homonym of *Ammophila procera* Dahlbom, 1843. Lectotype: ♀, North America: no specific locality (Torino), designated by Menke, 1996e:194 (as holotype, Article 74b). Synonymized with *Ammophila procera* Dahlbom by Menke, 1965c:1 and by Bohart and Menke, 1976:153. – Amarante, 2005a:14 (correction to his 2002 catalog).

*Ammophila saeva* F. Smith, 1856:222, ♀. Lectotype: ♀, USA: California: no specific locality (BMNH), designated by Menke, 1965c:1 and Menke in Bohart and Menke, 1976:153. Synonymized with *Ammophila procera* by Fernald, 1931a:448 (as *Sphex saevus*). – Cresson, 1863:319 (in catalog of North American Hymenoptera), 1887:274 (in catalog of North American Hymenoptera); W. Fox, 1894c:101 (Mexico: Baja California); Dalla Torre, 1897:409 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:160 (in key to North American Ammophilini); Murray in Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera), 163 (bibliographic references, geographic distribution); Tilden, 1953:211 (nesting behavior). – As *Sphex saevus*: Rohwer, 1917a:241 (new combination, California: Calaveras County).

*Ammophila gryphus* F. Smith, 1856:222, ♀, ♂ (as *Gryphus*, incorrect original capitalization). Lectotype: ♀, USA: Florida: Charleston (BMNH), designated by Menke, 1965c:1 and Menke in Bohart and Menke, 1976:153. Synonymized with *Ammophila procera* by Dalla Torre, 1897:406. – Cresson, 1863:318 (in catalog of North American Hymenoptera), 1865b:459 (coloration), 1873:209 (Texas); Provancher, 1883b:615 (in revision of Canadian Hymenoptera); Cresson, 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); Pergande, 1892:256 (nest closure, prey); C. Robertson, 1894:452 (visiting flowers of *Eupatorium purpureum* Linnaeus, Asteraceae), 457 (visiting flowers of *Solidago nemoralis* Ait., Asteraceae), 460 (visiting flowers of *Aster paniculatus* Lam., Asteraceae), 472 (visiting flowers of *Verbesina helianthoides* Michx., Asteraceae, and of *Coreopsis palmata* Nutt., Asteraceae), 473 (visiting flowers of *Coreopsis tripteris* Linnaeus, Asteraceae), 475 (visiting flowers of *Helenium autumnale* Linnaeus, Asteraceae); Pergande, 1895:168 (prey carrying); J. Smith, 1900:524 (in list of insects of New Jersey); Howard, 1901:pl. V fig. 15 (..); Harrington, 1902:224 (Canada: Ontario: Ottawa); Snow, 1906:133 (Arizona: Oak Creek 20 mi. southwest of Flagstaff); G. Carpenter, 1930b:293, 298 (nest closure); Wheeler and Wheeler, 1924:486 (use of pebble for tamping during nest closure).

*Ammophila barbata* F. Smith, 1873c:260, ♀. Syntypes: ♀, Mexico: no specific locality (BMNH). Synonymized with *Ammophila procera* by Fernald, 1931a:448 (as *Sphex procerus*). – Cameron, 1888a:7 (Mexico, diagnostic characters); Dalla Torre, 1897:396 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:159 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Fernald, 1926:91 (probably a synonym of *Ammophila procera*).

*Ammophila ceres* Cameron, 1888a:8, ♂. Holotype: ♂, Guatemala: San Gerónimo (BMNH); Menke in Bohart and Menke, 1976:153 unnecessarily designated it as lectotype. Synonymized with *Ammophila procera* by Fernald, 1926:91 (as *Sphex procerus*). – Dalla Torre, 1897:397 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:159 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution).

*Ammophila championi* Cameron, 1888a:9, ♀. Lectotype: ♀, Guatemala: San Gerónimo (BMNH), designated by Menke, 1965c:1. Synonymized with *Ammophila procera* by Fernald, 1926:91 (as *Sphex procerus*). – Dalla Torre, 1897:397 (in catalog of world Hymenoptera, as *championii*); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:160 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Heithaus, 1979:193 (Costa Rica: Guanacaste: Hacienda las Ciruelas 30.5 km northwest of Cañas).

*Ammophila striolata* Cameron, 1888a:10, ♀. Holotype or syntypes: ♀, Mexico: Durango: Ventana (BMNH). Synonymized with *Ammophila procera* by Fernald, 1926:90 (as *Sphex procerus*). – Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:160 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution).

### 181. *producticollis* Morice

*Ammophila producticollis* Morice, 1900a:67, ♀, ♂ (♂ = *Ammophila gracillima*). Syntypes: Algeria: Biskra (OXUM). – Kohl, 1906b:347 (in revision of Palearctic Ammophilini); Morice, 1911:73 (Algeria: Biskra); von Schulthess, 1926b:208 (Tunisia, Algeria: Laghouat); Roth, 1928:195 (in revision of North African Ammophilini); Alfieri, 1946:131 (in revision of Egyptian *Ammophila*); Berland, 1950b:295 (Niger: Aïr area); de Beaumont, 1951e:264 (Morocco); de Beaumont and Bytinski-Salz, 1955:36 (Israel); Leclercq, 1955h:86 (bibliographic references); de Beaumont 1956a:176 (Chad: Tibesti); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 1978b:37 (in key to Sphecidae of Kazakhstan and Central Asia); Guichard, 1988a:128 (Saudi Arabia); Roche and Zalut, 1994:114 (Egypt: Sinai Peninsula); Kazenas, 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia); Gadallah and Assery, 2004a:224 (in catalog of Sphecidae of Saudi Arabia); Roche, 2007a:22 (in checklist of Egyptian Sphecidae, redescription), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Dollfuss, 2013a:389, 399 (in key to *Ammophila* of Palearctic Region and India), 468 (in revision of *Ammophila* of Palearctic Region and India), 2013b:579 (locality records from Jordan, Kyrgyzstan, Tunisia, and Yemen); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharabawy, 2013:360 (in new catalog of Sphecidae of Saudi Arabia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:16 (Iran: known from southern Iran); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:305 (in list of Tunisian Sphecidae *sensu stricto*); Danilov, 2020:317 (specimen from Turkmenistan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Gadallah, 2020d:80 (in list of aculeate wasps of Arabian Peninsula).

*Ammophila divina* Kohl, 1901d:157, ♀. Holotype: ♀, origin unknown, could be Egypt, Kordofan, Middle East, Mesopotamia, south Iran, or Siberia (NHMW). Synonymized with *Ammophila producticollis* by Kohl, 1906b:347.

*Ammophila argentina* Gussakovskij, 1930c:202, ♀, ♂. Syntypes: Turkmenistan: Ashkhabad, and Uzbekistan: Karakul (ZIN). Synonymized with *Ammophila producticollis* by Pulawski in Bohart and Menke, 1976:153. – Kazenas, 1978b:38 (in key to Sphecidae of Kazakhstan and Central Asia); Nazarova, 1998:40 (Tajikistan: Tigrovaya Balka Nature Reserve); Danilov, 2016:346 (syntypes preserved in Zoological Institute, Sankt-Petersburg, Russia).

### 182. *proxima* (F. Smith)

*Coloptera proxima* F. Smith, 1856:225, ♀. Holotype or syntypes: ♀, Guinea: no specific locality (BMNH or OXUM). – As *Ammophila proxima*: Dalla Torre, 1897:406 (new combination, in catalog of world Hymenoptera); Leclercq, 1955h:94 (bibliographic references); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae).

### 183. *pruinosa* Cresson

*Ammophila pruinosa* Cresson, 1865b:455, ♀, ♂. Lectotype: ♀, USA: Colorado Territory: no specific locality (ANSP), designated by Cresson, 1916:94. – Cresson, 1875:713 (Colorado, Nevada, New Mexico), 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); W. Fox, 1894c:101 (Mexico: Baja California); Dalla Torre, 1897:406 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:160 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Snow, 1906:133 (Arizona); Johnson and Ledig, 1918:24 (California: Claremont); Fernald, 1931a:448 (as new synonym of *Sphex breviceps*); Murray in Muesebeck, Krombein, and Townes, 1951:976 (in catalog of North American Hymenoptera); Evans, 1959b:149 (description of larva), 1959d:466 (Hicks' biological observations on *Sphex breviceps* probably apply to *pruinosa*); Evans and Linsley, 1960:32 (Arizona: regular member of sleeping aggregation at Southwest Research Station); Linsley, 1962:156 (sleeping aggregations; may be *Ammophila breviceps*); Powell, 1964b:251 (nest construction, transport, prey: noctuid and geometrid caterpillars); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); C. Ward et al., 1977:56 (associated with mesquite (*Prosopis glandulosa* Torr.), Fabaceae); Krombein, 1979b:1594 (in catalog of North American Hymenoptera); Rust, Hanks and Bechtel, 1983:406 (Nevada: Churchill County: Sand Mountain); Brockmann, 1985b:312 (nest closure summary); Menke, 1986c:35 (Arizona: Coconino County: Moenkopi Wash near Tuba City, and Navajo County: Hopi Reservation), 36 (Arizona: Cochise County: 3 mi. east of Willcox), 37 (Arizona: Cochise County: north of Apache, west of Naco), 1994d:15 (California: Monterey County: Parkfield area); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Ohl and Linde, 2003:149 (number of ovarioles); Menke, 2007:36 (in review of *Ammophila pruinosa* complex); Miller, Pearce, and O'Neill, 2009:3 (known to be parasitized by *Paraxenos*

*lugubris* (Pierce), Strepsiptera); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:77 (in revision of North and Central American *Ammophila*). – *As Spheg pruinosus*: Mickel, 1918b:404 (new combination, in catalog of Nebraskan Sphecidae). – *As Spheg breviceps pruinosus*: Fernald, 1934:87 (new status, in revision of North American and West Indian *Ammophila*).

#### 184. *pseudodolichodera* Dollfuss

*Ammophila pseudodolichodera* Dollfuss, 2015a:358, ♀, ♂. Holotype: ♂, Namibia: Oshikoto Region: 25 km southeast of Tsumeb (OÖLM). Paratypes: Burkina Faso, Kenya, Zambia. – Dollfuss, 2015a:312 (in key to Sub-Saharan *Ammophila*), 2015b:428 (Namibia: Oshikoto Region: 25 km southeast of Tsumeb).

#### 185. *pseudoheydeni* Q. Li and He

*Ammophila pseudoheydeni* Q. Li and He, 2000d:337, ♀, ♂. Holotype: ♀, China: Xinjiang: Wulumuqi at 43.8°N 87.6°E (Zhejiang Agricultural Univ.). – Dollfuss, 2013a:470 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ch. Wang, Bashir, Q. Li, and Ma, 2018:298, 301 (in key to *Ammophila* of China).

#### 186. *pseudokalaharica* Dollfuss

*Ammophila pseudokalaharica* Dollfuss, 2015a:359, ♀, ♂. Holotype: ♂, South Africa: KwaZulu-Natal: Mbazwana (OÖLM). Paratypes: Mozambique. – Dollfuss, 2015a:312, 316 (in key to Sub-Saharan *Ammophila*), 2015b:428 (locality records from Mozambique and Namibia).

#### 187. *pseudonasuta* Bytinski-Salz

As *Ammophila nasuta*: Alfieri, 1946:136 (in revision of Egyptian *Ammophila*), corrected to *Ammophila pseudonasuta* by Bytinski-Salz in de Beaumont and Bytinski-Salz, 1955:37.

*Ammophila pseudonasuta* Bytinski-Salz in de Beaumont and Bytinski-Salz, 1955:37, ♂. Holotype: ♂, Israel: Bat Yam (originally H. Bytinski-Salz collection, now Tel Aviv Univ.). – de Beaumont, 1963b:17 (in revision of *Ammophila nasuta* species group); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Roche and Zalat, 1994:114 (Egypt: Sinai Peninsula); Roche, 2007a:18 (in checklist of Egyptian Sphecidae), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Dollfuss, 2013a:398 (in key to *Ammophila* of Palearctic Region and India), 471 (in revision of *Ammophila* of Palearctic Region and India), 2013b:579 (Israel: Nizzanim 8 km north-northeast of Ashqelon at 31°45'N 34°37'E).

#### 188. *pubescens* Curtis

*Ammophila pubescens* Curtis, 1828-1829:122 (nomen nudum).

*Ammophila pubescens* Curtis, 1836:explanation of pl. 604, ♀, ♂ (as junior synonym of *Ammophila campestris*, but available according to Article 11.6.1 of the Code). Syntypes: Great Britain: no specific locality (depository?). – Richards, 1946:235 (in key to distinguish it from *Ammophila campestris*; synonymy); Leclercq, 1948:204 (nomenclatural history, diagnostic characters, Belgium: Bruxelles and Campine areas); de Beaumont, 1951h:32 (Switzerland: Neuchâtel area); Leininger, 1953:18 (Germany: Baden-Württemberg); Nouvel and Ribaut, 1953:176 (France: Hautes-Pyrénées: Campan, Cauterets); de Beaumont, 1955c:56 (effects of stylopization); Fahlander, 1957:63 (Sweden); Grandi, 1957:386 (Italy); Zirngiebl, 1957:185 (Germany: Rheinland-Pfalz: Birkenheide, Leistadt); Balthasar, 1958:339 (Czech Republic); Benno, 1958b:10 (in review of Dutch Sphecidae); de Beaumont, 1958c:201 (Swiss National Park); Olberg, 1959:27 (photographs of specimen visiting flowers of *Epilobium angustifolium* L., Onagraceae), 34 (photographs of specimen licking honedew from dry pine needles), 35 (photograph of specimen licking sweat from author's leg), 298-302 (photographs of females building nests), 303-304 and 307 (photographs of females carrying prey), 305-306 and 308-309 (photographs of females closing nests), 311 (photograph of larva and caterpillar prey); Hoop, 1961:66 (Germany: Schleswig-Holstein: Eggstedt); Wolf, 1959b:28 (Germany: Nassau); Noskiewicz and Pulawski, 1960:38 (in key to Polish Sphecidae); Grandi, 1962:55 (nesting habits), 97 (Italy: Alpes); Lyneborg, 1962:328 (first record from Denmark: Anholt, Bornholm, Gindeskov, Hanstet-reservatet, Læsø, Sjælland, Skagen, Stensbæk planatage); Erlandsson, 1963:66 (Denmark: Island of Bornholm); Evans, 1963a:150 (prey specialization as distinctive character); Hoop, 1963a:73 (Germany: Schleswig-Holstein: Reher Kratt), 1963b:8 (Germany: Schleswig-Holstein: Fahrenkrug, Lehmrade, Reher Kratt); Chmurzyński, 1964b:123 (report on special orientation experiments by Baerends, 1941); de Beaumont, 1964c:26 (in Sphecid Fauna of Switzerland); Fæster, 1965:192 (Denmark: Hansted Nature Reserve); Pulawski, 1965b:260 (structure of gastral segment I); Bonelli, 1966c:217 (Italy: Trentino–Alto Adige: Piazzòl, Val Cadino, Val di Cembra); Benno, 1967:33 (in checklist of Sphecidae of Netherlands); Gauss, 1967:551 (Germany: Baden-Württemberg); J. 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Scholz and Liebig, 2013:16 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:132 (in annotated catalog of aculeate wasps of Belorussia); Wiśniowski and Piotrowski, 2013:20 (Poland: Poleski National Park); Wiśniowski and Szczepko, 2013:20 (Poland: Kampinos National Park near Warszawa); Danilov, 2014a:426 (Russia: Siberia: many areas), 2014b:520, 521 (in key to Sphecidae s.s. of Siberia); Flügel, 2014:255 (Brandenburg: Hangelsberger Heide); Hellqvist, Abenius, and Norén, 2014:90 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Mokrousov and Vafin, 2014:54 (Russia: Republic of Tatarstan); Ruchin and Antropov, 2014:35 (Russia: Republic of Mordovia); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces); Dollfuss, 2015b:428 (locality records from Italy and Mongolia); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Koçak and Kemal, 2015:277 (in checklist of Hymenoptera of Turkey); Saure, 2015:12 (Germany: Berlin-Lichterfelde); Shorenko, 2015:312 (in list of Sphecidae *sensu lato* of Crimea); Simon, Lorthiois, and Macé, 2015:53 (France: alluvial terraces in Seine-Maritime Department: Anneville-Ambourville); Voigt, 2015:70 (Germany: Schleswig-Holstein: Sorgwohld area); Bleidorn, Gerth, Hopfe, et al., 2016:11 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Else, Bolton, and Broad, 2016:49 (in checklist of Aculeata of Great Britain and Ireland: England, Wales); Reemer and Peeters, 2016:10 (Netherlands: Hulshorsterzand); A. Scholz, 2016:71 (Germany: Sachsen: Kleinraschützer Heide); Stolle and Saure, 2016:927 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Danilov and Mokrousov, 2017a:110 (Russia: Bashkortostan, Jewish Autonomous Oblast', Karachay-Cherkessia, Karelia, Leningrad Oblast', Moscow Oblast', Novgorod Oblast', Penza Oblast', Tver Oblast'); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:16 (Iran: known from East Azerbaijan Province); Shorenko, 2017:76 (in Crimea collected in August); Franken and Berg, 2018:67 (Netherlands: North Holland: sand dunes); Jacobs and Liebig, 2018:135 (Russia: Buryat Republic, Irkutsk Oblast', and Promorskiy Kray: several localities); Shorenko, 2018:126 (Crimea, including localities, habitats, and number of specimens); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300, 302 (in key to *Ammophila* of China); Baghirov and Nesterovitch, 2019:45 (Russia: Western Siberia: Yamalo-Nenets Autonomous District: near Khanymey village); Olszewski and Kowalczyk, 2019:112 (northern Poland: Pomorze Gdańskie = Gdańsk Pomerania); Ruchin and Antropov, 2019a:13219 (Russia: Mordovian State Nature Reserve), 2019b:162 (common in Mordovian State Nature Reserve); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:95 (in Sphecid Fauna of Europe); Danilov, 2020:317 (specimens from Belorussia and Russia: Siberia and Primorskiy Kray in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Kejval, Blažej, and Erhart, 2020:118 (western Czech Republic); Saure, 2020:276 (Germany: Sachsen-Anhalt: sand dunes); Shorenko, 2020:47 (Crimea: Karadag Nature Reserve); Olszewski, Wiśniowski, and Ljubomirov, 2021:102 (in commented list of Sphecidae *sensu lato* of Poland); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey); Kochetkov, 2023:189 (Russia: Amur Oblast': Khingan Nature Reserve). – **As *Sphex pubescens***: Valkeila, 1962b:67 (new combination, southwestern Finland); Valkeila, Brander, and Käpylä, 1963:41 (Finland: historical region Lounais-Hämeen = southwestern Häme).

*Miscus arvensis* Dahlbom, 1843:8, ♂. Holotype: ♂, USA: Pennsylvania: no specific locality, but Europe according to Menke, 1964b:154 (Lund). Synonymized with *Ammophila pubescens* by Menke, 1964b:153. – **As *Sphex arvensis***: Britton, 1920:340 (new combination, in checklist of insects of Connecticut); Fernald, 1931a:446 (study of type), 1932:124 (prey carrying), 1934:118 (revision); nec A. Brown, 1934:264 (= *Ammophila azteca*); Brimley, 1938:444 (North Carolina: Mount Mitchell); Murray, 1938 (redescription); Dreisbach, 1944:269, 270 (in key to *Ammophila* of Michigan), 273 (Michigan: locality records); Strickland, 1947:129 (Canada: Alberta); Krombein, 1952b:181 (USA: West Virginia: Lost River State Park), 1954a:6 (West Virginia: Lost River State Park). – **As *Ammophila arvensis***: Lepeletier de Saint Fargeau, 1845:384 (new combination, revision); Dalla Torre, 1897:395 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:160 (in key to North American Ammophilini).

*Ammophila susterai* Šnoflák, 1943a:1, ♀, ♂ (as *šusterai*, incorrect original diacritic mark). Holotype: sex not stated: Czech Republic: no specific locality d (originally J. Šnoflák collection, now NMPC). Synonymized with *Ammophila pubescens* by Balthasar, 1958:339. – Šnoflák *in* Zavadiš and Šnoflák, 1948:100 (in key to Sphecidae of Czechoslovakia); Blüthgen, 1951:234 (diagnostic characters, occurs in many places in Germany); Bat'a, 1952:167 (Czech Republic); Blüthgen, 1954:140 (probably a junior synonym of *Ammophila pubescens*); Bajári, 1957a:13 (in key to Hungarian Sphecidae, not yet found in Hungary); Haris, 2016:29 (in list of species described by J. Šnoflák from Carpathian Basin).

*Ammophila campestris* var. *alpicola* de Beaumont, 1945:468, ♀, ♂. Holotype: ♂, Switzerland: Sierre (Lausanne). Synonymized with *Ammophila pubescens* by Richards, 1946:235. – **As *Ammophila alpicola***: Kjellander, 1951:48 (new status, widely distributed in Sweden, studied by Adlerz under the name of *Ammophila campestris*); Fahlander, 1954:253 (Sweden: Gästrikland Region); Tjeder, 1954:68 (Sweden: eastern Skåne: Löderup, Mälarhusen, Sandhammaren).

*Ammophila adriaansei* Wilcke, 1945:277, ♀, ♂. Syntypes: sex not stated, Netherlands: no specific locality (Amsterdam Mus., Wageningen Inst., and A. Wilcke collection). Synonymized with *Ammophila pubescens* by Richards, 1946:235. – Adriaanse, 1947:1 (nesting behavior, comparison with that of *Ammophila campestris*); Wilcke, 1947:118 (in key to Dutch *Ammophila*); Hellén, 1948:13 (taxonomic history); Teschner, 1959:417 (feeding), 418 (male behavior and mating), 426 (nesting sites), 431 (nest structure), 436 (nest closure), 440 (nest number and location), 441 (visiting nest without prey), 446 (prey spectrum), 453 (entering prey into nest); Maréchal and Petit, 1961:82 (taxonomic history, comparison with *Ammophila campestris*, distribution in Belgium).

As *Ammophila campestris* (corrected to *Ammophila pubescens* by Richards, 1946:235); Shuckard, 1837a:82 (in revision of British Aculeata) and 251 (placement in *Miscus* confirmed); Stephens, 1846:15 (in revision of British insects); F. Smith, 1849b:2550 (preying on caterpillars, nesting in soil), 1851c:17 (Great Britain: Dorsetshire: Blackwater Hants, New



Forest, Weybridge), 1865b:86 (Great Britain: Dorset County: Bournemouth), 91 (other collecting localities), 1868a:96 (Great Britain: Mousehold Heath near Norwich, as *Miscus campestris*); E. Saunders, 1880:248 (in revision of British Aculeata), 1896:88 (in revision of British Aculeata); Morice, 1900c:210 (Great Britain: Surrey: Cobham); Barnes, 1902:266 (Great Britain: Berkshire: Wellington College in Crowthorne); E. Saunders, 1903a:16 (Great Britain: Woking); Latter, 1913:23 (nesting habits, progressive provisioning described); Morley, 1919:209 (Great Britain: Hampshire: New Forest); Hobby, 1931b:108 (prey of spider *Philodromus aureolus* Clerck); Spooner, 1931:14 (Great Britain: Cambridgeshire); Hobby, 1932a:4 (caterpillar prey, a noctuid; nest parasitized by braconid *Zelex chlorophthalma* Nees); Richards, 1937b:104 (in checklist of British aculeates); Baerends and van Roon, 1938:41 (detailed observation on nesting, caterpillar prey demonstrates *Ammophila pubescens*); Yarrow, 1939:15 (Great Britain: Dorset: Lytchett Minster); Baerends, 1941a:483 and 1941b:68 (nesting habits), corrected to *Ammophila pubescens* by Baerends, 1976:726; Adriaanse, 1943:69 (nest closure); Spooner, 1943:71 (Great Britain: Parley Heath); Adriaanse, 1944:150 (nesting habits, partly *Ammophila campestris*); Baerends and Baerends-van Roon, 1950:53 (egg development, development ecology), corrected to *Ammophila pubescens* by Baerends and Baerends-van Roon, 1976:726; Teschner, 1955:57 (Germany: Nordrhein-Westfalen: Hohe Ward near Münster), corrected to *Ammophila pubescens* by Teschner, 1955:56; Meyer-Holzappel, 1986:103 (nest parasite: *Metopia argyrocephala* Meigen, Sarcophagidae, after Baerends, 1941).

*Ammophila arnaudi* Tsuneki, 1976d:289, ♂. Holotype: ♂, China: Heilongjiang Sheng: Estsentientze 65 km east of Harbin (CAS). Synonymized with *Ammophila pubescens* by Dollfuss, 2013a:472. – Pulawski, 1994:27 (CAS holotype no. 12,546); Hua, 2006:275 (in list of Chinese insects, geographic distribution).

As *Miscus campestris*: Adlerz, 1901:170 (nesting habits), present correction.

### 189. *pulawskii* Tsuneki

*Ammophila pulawskii* Tsuneki, 1971k:175, ♀, ♂. Holotype: ♂, Mongolia: Bayanhongor Aymag: Ehingol oasis (TMB). – R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Dollfuss, 2013a:388, 397 (in key to *Ammophila* of Palearctic Region and India), 473 (in revision of *Ammophila* of Palearctic Region and India), 2013b:580 (Mongolia: Chatan Bulag in Domogov Region).

### 190. *punctata* F. Smith

*Ammophila punctata* F. Smith, 1856:218, ♀. Holotype or syntypes: ♀, northern India: no specific locality, may be Pakistan (BMNH). – Cameron, 1889c:93 (in list of Sphecidae of Oriental Region); Dalla Torre, 1897:406 (in catalog of world Hymenoptera); Rothney, 1903:104 (India: West Bengal: Barrackpore); Paiva, 1907:15 (India: Bhim Tal, Kumaon, Mussoorie; Nepal: Soondrijal, Nagarkote, Chitlong); R. Turner, 1918a:91 (may be a synonym of *Ammophila sabulosa*; Tibet: Gyantse); S. Gupta, 1995:85 (India: Uttar Pradesh); V. Gupta, 1960:25 (India: Himalaya); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Jha and Farooqi, 1994:8 (description and illustration of male genitalia); S. Gupta, 1997:101 (India: Uttar Pradesh: Nanda Devi Biosphere Reserve), 2004:25 (India: Uttaranchal: Uttarkashi District); Dollfuss, 2013a:390, 399 (in key to *Ammophila* of Palearctic Region and India), 473 (in revision of *Ammophila* of Palearctic Region and India), 2013b:580 (locality records from India, Iran, and Nepal); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:16 (Iran: known from Golestan Province).

### 191. *punctaticeps* (Arnold)

*Sphex punctaticeps* Arnold, 1920:52, ♀, ♂. Syntypes: Zimbabwe: Salisbury, now Harare, and Shiloh; South Africa: Shiluvane and Algoa Bay (SAM). – Arnold, 1928b:277 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae); Marshall, 1997:3 (reference to original description). – As *Ammophila punctaticeps*: Arnold, 1951:141 (new combination, Mali: Tillembeya); Leclercq, 1955h:78 (bibliographic references), 1955i:406 (Rwanda), 1961b:55 (Zaire), 1962a:394 (Tanzania: Kilimanjaro; Kenya: Molo); de Beaumont, 1967b:504 (South Africa); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); S. Gess, 1996:276, 301 (floral records); S. Gess and F. Gess, 2003:97 (South Africa: visiting flowers of *Pteronia* sp., Asteraceae, and *Wahlenbergia pilosa* Buek, Campanulaceae); Dollfuss, 2015a:313, 317 (in key to Sub-Saharan *Ammophila*), 360 (in revision of Sub-Saharan *Ammophila*, Ethiopia, Kenya, Malawi, South Africa, Tanzania. Zaire, Zambia, Zimbabwe), 2015b:428 (locality records from Ethiopia, Kenya, Malawi, and Zambia).

### 192. *punti* Guichard

As *Ammophila beninensis*: Guichard, 1980:224 (Oman), corrected to *Ammophila punti* by Guichard, 1988a:129.

*Ammophila punti* Guichard, 1988a:129, ♀, ♂. Holotype: ♀, Saudi Arabia: Fayfa 60 km north of Gizan (BMNH). – Gadallah and Assery, 2004a:224 (in catalog of Sphecidae of Saudi Arabia); Dollfuss, 2013a:392, 396, 399, 401 (in key to *Ammophila* of Palearctic Region and India), 475 (in revision of *Ammophila* of Palearctic Region and India), 2015b:428 (Oman: Dhofar Province: Jabal al Qamar: Wadi Al Mugsay ), 2013b:580 (locality records from Yemen); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:360 (in new catalog of Sphecidae of Saudi Arabia); Gadallah, 2020d:80 (in list of aculeate wasps of Arabian Peninsula).

### 193. *quadraticollis* A. Costa

*Ammophila quadraticollis* A. Costa, 1893a:99, ♀. Holotype or syntypes: ♀, Tunisia: no specific locality (Napoli). – Dalla Torre, 1897:406 (in catalog of world Hymenoptera, as *quadricollis*); Kohl, 1906b:353 (in revision of Palearctic *Ammophilini*, original description copied); von Schulthess, 1909:440 (Libya: Derna, Tripoli); Morice, 1911:73 (Algeria: Bône, now Annaba, La Calle, now El Kala, Le Tarf, now El Tarf); Mantero, 1915:323 (Libya); Gribodo, 1921:6 (Libya: Cyrenaica: Ghemines); von Schulthess, 1926b:209 (Tunisia, Libya); Roth, 1928:200 (in revision of North African *Ammophilini*, description of ♂); Guiglia, 1934b:292 (Libya: bibliography and summary of locality records); Alfieri, 1946:132 (in revision of Egyptian *Ammophila*); de Beaumont and Bytinski-Salz, 1955:37 (Israel); Leclercq, 1955h:85 (bibliographic references); de Beaumont, 1956a:179 (Libya), 1960b:226 (Libya); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Dollfuss, 2013a:388, 398 (in key to *Ammophila* of Palearctic Region and India), 476 (in revision of *Ammophila* of Palearctic Region and India, as full species), 2013b:580 (Tunisia: 30 km east of Medenine at 32°24'N 10°50'E, 14 km southeast of Houmt Souk in island of Djerba at 33°50'N 11°00'E); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:305 (in list of Tunisian Sphecidae *sensu stricto*; new records from Kairouan, Mahdia, Medenine, and Tunis provinces). – As *Ammophila nasuta quadraticollis*: de Beaumont, 1963b:13 (new status, in revision of *Ammophila nasuta* species group); Roche and Zalut, 1994:114 (Egypt: Sinai Peninsula); Roche, 2007a:17 (in checklist of Egyptian Sphecidae, redescription of ♂), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

*Ammophila quadraticollis* A. Costa, 1893b:4, ♀, ♂. Syntypes: Tunisia: no specific locality (Napoli). Objective synonym of *Ammophila quadraticollis* A. Costa, 1893a:99.

### 194. *rauschi* Dollfuss

*Ammophila rauschi* Dollfuss, 2013a: 477, ♀, ♂. Holotype: ♂, Kyrgyzstan: Talasskaya Oblast': Talass Mountains: river Ara-Byik at 42°23'28"N 70°58'34" (OÖLM). – Dollfuss, 2013a:393, 404 (in key to *Ammophila* of Palearctic Region and India), 2013b:580 (Kyrgyzstan: locality records); Olszewski and Danilov, 2020:192 (first record from Tajikistan: Sughd Province: two localities); Danilov, 2020:317 (specimens from Kyrgyzstan and Tajikistan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

### 195. *regina* Menke

*Ammophila regina* Menke, 1964a:25, ♀, ♂. Holotype: ♂, USA: California: Tuolumne County: Strawberry (UCD). – R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1594 (in catalog of North American Hymenoptera); Rosenheim, 1987a:740 (California: Nevada County: Sagehen Creek near Hobart Mills); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Menke, 2020:77 (in revision of North and Central American *Ammophila*).

### 196. *ressli* Dollfuss

*Ammophila resslis* Dollfuss, 2015a:361, ♀, ♂. Holotype: ♀, South Africa: Western Cape Province: Greyton: Riviersonderend River (OÖLM). Paratype: Tanzania. – Dollfuss, 2015a:313, 318 (in key to Sub-Saharan *Ammophila*), 2015b:428 (locality records from South Africa).

**197. roborovskyi Kohl**

*Ammophila roborovskyi* Kohl, 1906b:368, ♀ (as *Roborovskyi*, incorrect original capitalization). Lectotype: Mongolia: Sa-Chou oasis: river Dau-khe (= Tau-ho) south of Sa-Chou (NHMW), designated by Dollfuss, 2013a:478. – Gussakovskij, 1933b:274 (Iran); Tsuneki, 1971k:175 (Mongolia); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 1978b:38 (in key to Sphecidae of Kazakhstan and Central Asia); Danilov, 2010b:45 (distribution of Tethyan type); Dollfuss, 1989:7 (type material in NHMW), 2013a:388 (in key to *Ammophila* of Palearctic Region and India, as *roborovskyi*); Danilov, 2016:346 (paralectotypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Jahan-tigh, Rakhshani, Mokhtari, and Ramroodi, 2017:16 (Iran: known from Sistan-o Baluchestan and South Khorasan provinces).

**198. rubigen Q. Li and C. Yang**

*Ammophila rubigen* Q. Li and C. Yang, 1990:260, ♀, ♂. Holotype: ♀, China: Nei Mongol: Jungar Banner, Ih Ju League: Mount Shenshan (Beijing Agricultural University). – Dollfuss, 2013a:479 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ma, Q. Li, Wang, Jiang, and Lu, 2018:854 (China: Shanxi: Qinling Mountains); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299, 302 (in key to *Ammophila* of China).

**199. rubiginosa Lepeletier de Saint Fargeau**

*Ammophila rubiginosa* Lepeletier de Saint Fargeau, 1845:372, ♀ (authorship attributed to Klug). Holotype or syntypes: ♀, South Africa: Cape of Good Hope (M. Spinola collection, Torino). – F. Smith, 1856:212 (in catalog of Hymenoptera in British Museum); A. Costa, 1864b:111 (specimen from Senegal in Museo Zoologico di Napoli); Dalla Torre, 1897:407 (in catalog of world Hymenoptera); nec Friederichs, 1918:43 and von Schulthess in Friederichs, 1918a:48 (= *Ammophila beniniensis imerinae*); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:100 (specimen in M. Spinola collection, Torino); Pagliano, 2008:512 (specimen in M. Spinola collection, Torino), 514 (holotype of *Ammophila rubiginosa* under name of *Ammophila rubricollis*); Dollfuss, 2015a:313, 317 (in key to Sub-Saharan *Ammophila*), 363 (in revision of Sub-Saharan *Ammophila*), 2015b:429 (locality records from Kenya, Mozambique, Namibia, South Africa, and Zimbabwe); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care). – **As *Spheg bonaespei* var. *ferrugineipes*** (synonymized with *Ammophila rubiginosa* by Dollfuss, 2015:363); Arnold, 1920:51 (new status, in revision of southern African *Ammophila*), 1928b:276 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae), 1935a:503 (South Africa: Kalahari); Guiglia, 1943c:76 (Ethiopia: Gamo Gofa: Sagan – Omo region), 1950:247 (Ethiopia: Gamo Gofa: Banno, Caschei).

**200. rubripes Spinola**

*Ammophila rubripes* Spinola, 1839:465, ♀. Lectotype: ♀, Egypt: no specific locality (M. Spinola collection, Torino), designated by de Beaumont, 1952e:45. – F. Smith, 1856:211 (in catalog of Hymenoptera in British Museum); Walker, 1871:17 (Sinai Peninsula: Wadi Gennah; Africa: Red Sea coast: Massowah); Magretti, 1884a:249 (Sudan); Ed. André, 1886:76 (in revision of Sphecidae of Europe and Algeria), 1888:3\* (bibliographic references); Magretti, 1899:601 (Somalia: Brava); Kohl, 1906b:374 (original description copied); Magretti, 1906:20 (Eritrea); Innes Bey, 1912:110 (specimens recorded by Walker, 1871, now destroyed by dermestids, were collected at Wadi Genneh); Guiglia, 1950:246 (Ethiopia: Gamo Gofa: Asile, Gondaraba at 4°58'N 36°49'E, Murle Omo); de Beaumont and Bytinski-Salz, 1955:39 (Israel); Leclercq, 1955h:77 (bibliographic references, locality records mainly from Zaire), 1962a:394 (Tanzania: Longido, diagnostic characters); Diniz, 1964c:110 (Angola: Lunda: Alto Cuílo, Andrada, Dundo, Luaco, Macondo, Muíta-Luembe, Posto de Cacolo at Rio Cavuembra); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Guichard, 1980:224 (Oman); Roche, 1981:2 (in checklist of Sphecidae of United Arab Emirates); Guichard, 1988a:128 (Arabian Peninsula); Al-Houty, 1989:158 (Kuwait: Abdelli, Sulabiya); Roche and Zalut, 1994:114 (Egypt: Sinai Peninsula); Al-Houty, 1997:160 (Kuwait: no specific locality); Gadallah and Assery, 2004a:217 (in key to Sphecidae of Jeddah Region, Saudi Arabia), 224 (in catalog of Sphecidae of Saudi Arabia: Hadasham 120 km est of Jeddah); Roche, 2007a:22 (in checklist of Egyptian Sphecidae, redescription), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Pagliano, 2008:511 (specimens in M. Spinola collection, Torino, including lectotype and paralectotype); Murai and Amr, 2011:118 (recorded from Syria by Mocsáry, 1883); Sakenin, Samin, Bagriacik, and Rastegar, 2011:2 (Iran: Khuzestan: Dasht-e Azadegan); Schmid-Egger, 2011b:599 (United Arab Emirates: Al-Ajban), 601 (color photograph of male); Dollfuss, 2013a:388, 396 (in key to *Ammophila* of Palearctic Region and India), 480 (in revision of *Ammophila* of Palearctic Region and India), 2013b:581 (locality records from Egypt, Jordan, Morocco, Oman, Saudi Arabia, and Yemen); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:360 (in new catalog of Sphecidae of Saudi Arabia); Schmid-Egger, 2014:621 (United Arab Emirates); Dollfuss, 2015a:313, 318 (in key to Sub-Saharan *Ammophila*), 364 (in revision of Sub-Saharan *Ammophila*; Arabian Peninsula, Benin, Botswana, Burkina Faso, Ethiopia, Central African Republic, Guinea, Israel, Jordan, Kenya, Malawi, Morocco, Mozambique, Namibia, Nigeria, South Africa, Syria, Tanzania, Uganda, Zambia, Zimbabwe), 2015b:430 (locality records from Benin, Burkina Faso, Central African Republic, Ethiopia, Guinea, Kenya, Malawi, Mozambique, Namibia, Nigeria, Oman, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe); S. Gess and Roosenschoon, 2016:104 (Dubai Desert Conservation Reserve, visiting flowers of *Solanum nigrum* L., Solanaceae); Jahan-tigh, Rakhshani, Mokhtari, and Ramroodi, 2017:16 (Iran: known from Khuzestan Province); Madl, 2018:943 (in catalog of Hymenoptera of Djibouti); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:307 (in list of Tunisian Sphecidae *sensu stricto*; additional records: Tunisia: Kairouan and Sidi Bouzid provinces); Gadallah, 2020d:80 (in list of aculeate wasps of Arabian Peninsula); Ghaderipour, Khayrandish, Madjdzadeh, Ebrahimi, and Schmid-Egger, 2021:504 (Iran: Kerman Province).

*Ammophila bonaespei* Lepeletier de Saint Fargeau, 1845:382, ♀, ♂ (as *Bonae-Spei*, incorrect original capitalization and hyphenation). Lectotype: ♀, South Africa: Western Cape Province: Cape of Good Hope (M. Spinola collection, Torino), designated by Menke in Bohart and Menke, 1976:151. Synonymized with *Ammophila rubripes* by Dollfuss, 2015a:364. – nec Lucas, 1849:276 (= *Eremochares dives*); F. Smith, 1856:218 (in catalog of Hymenoptera in British Museum); Dalla Torre, 1897:396 (in catalog of world Hymenoptera); Bingham, 1902:216 (South Africa); Bradley, 1957:39 (type in M. Spinola collection in Turin; as *bonae-spei*); I. Robertson, 1969:480 (Tanzania: Ukiriguru); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Gess, 1981:19 (South Africa: Hillton Farm 18 km west-northwest of Grahamstown; nesting in friable soils); Rodgers and Homewood, 1982:233 (Tanzania: Usambara Mountains); S. Gess and F. Gess, 1994:100 (visiting flowers of *Aspalathus spinescens* Thunb., Fabaceae); S. Gess, 1996:275, 295 (floral records); S. Gess and F. Gess, 2003:95 (South Africa: visiting flowers of *Monechma* sp., Acanthaceae, *Deverra denudate* (Viv.) Pfisterer and Podl., Apiaceae, *Chrysocoma ciliata* L., Asteraceae, *Acacia karroo* Hayne, Fabaceae, *Aspalathus spinescens* Thunb., Fabaceae, *Phyllopodium cuneifolium* (L. f.) Benth., Scrophulariaceae); Pagliano, 2008:514 (lectotype in M. Spinola collection, Torino). – **As *Spheg bonaespei***: Arnold, 1920:49 (new combination, in revision of southern African *Ammophila*), 1928b:275 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae), 1933a:357 (Ethiopia), 1935a:503 (South Africa: Kalahari).

*Ammophila ferrugineipes* Lepeletier de Saint Fargeau, 1845:383, ♀ (authorship attributed to Klug). Holotype or syntypes: ♀, South Africa: Cape of Good Hope (originally J. Serville collection, now M. Spinola collection, Torino). – F. Smith, 1856:212 (in catalog of Hymenoptera in British Museum); Gerstaecker in Peters, 1858:510 (Mozambique); Gerstaecker, 1862:481 (Mozambique); A. Costa, 1864b:111 (specimen from Senegal in Museo Zoologico di Napoli); Walker, 1871:18 (Sudan: Hor Tamanib; Djibouti: Tajura); Radoszkowski, 1876b:131 (Ethiopia); Gribodo, 1884c:297 (Ethiopia: Ambo-Karra), 1894c:134 (Mozambique: Imhambane); W. Fox, 1896e:552 (Ethiopia: Bale Province: Sheikh Husein, now Shek Husen); Dalla Torre, 1897:400 (in catalog of world Hymenoptera); Bingham, 1902:218 (South Africa, Malawi); Innes Bey, 1912:111 (specimens recorded by Walker, 1871, now destroyed by dermestids, were collected at Tadjurah); Cameron, 1910b:133 (South Africa: Limpopo Province: Waterval), 1912b:398 (Zaire); Guiglia, 1940b:289 (Somalia, as *bonae-spei* var. *ferrugineipes*); Arnold, 1943:77 (Zaire, as *bonae-spei ferrugineipes*), 1951:141 (Ethiopia, Ghana, Senegal, as *Ammophila bonae-spei* var. *ferrugineipes*); Bradley, 1957:39 (type in M. Spinola collection, Turin); de Beaumont, 1967b:504 (Namibia); Menke in Bohart and Menke, 1976:151 (in checklist of world Sphecidae, reverted to full species status); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Gess, 1981:19 (South Africa: Hilton Farm 18 km west-northwest of Grahamstown; nesting in friable soils; prey: geometrid

caterpillars), 40 (method of nest construction), 41 (vibration of wings when digging nest); Weaving, 1988:327-349 (prey selection), 1989a:1-16 (South Africa; nesting habits), 1989b:847-871 (habitat selection and nest construction); S. Gess, 1996:278, 283, 290, 303 (floral records); S. Gess and F. Gess, 2003:95 (Namibia and South Africa: visiting flowers of *Psilocaulon salicornioides* (Pax) Schwant., Aizoaceae, *Berkheya fruticosa* (L.) Ehrh., Asteraceae, *Geigeria pectidea* (DC.) Harv., Asteraceae, *Lasiospermum bipinnatum* (Thunb.) Druce, Asteraceae, *Metalasia muricata* (L.) D. Don, Asteraceae, *Senecio cinerascens* Ait., Asteraceae, *Anchusa capensis* Thunb., Boraginaceae, *Chamaesyce glandulifera* (Pax) Koutnik, Euphorbiaceae, *Aspalathus spinescens* Thunb., Fabaceae, *Limonium* sp., Plumbaginaceae, *Phyllopodium cuneifolium* (L. f.) Benth., Scrophulariaceae, *Selago corymbosa* L., Scrophulariaceae, and *Zygophyllum simplex* L., Zygophyllaceae), 2006:20 (Namibia: visiting flowers of *Chamaesyce glandulifera*, Euphorbiaceae); Pagliano, 2008:514 (holotype in M. Spinola collection, Torino); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini). – **As *Sphex ferrugineipes***: R. Turner, 1919c:396 (new combination, synonymy); Schouteden, 1930:95 (Zaire). – **Nec *Sphex bonaespei* var. *ferrugineipes*** (= *Ammophila rubiginosa*): Arnold, 1920:51 (new status, in revision of southern African *Ammophila*), 1928b:276 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae), 1935a:503 (South Africa: Kalahari); Guiglia, 1943c:76 (Ethiopia: Gamo Gofa: Sagan – Omo region), 1950:247 (Ethiopia: Gamo Gofa: Banno, Caschei)

*Ammophila rubriceps* Taschenberg, 1869:432, ♀, ♂. Syntypes: South Africa: Cape Province: no specific locality (Halle). Synonymized with *Ammophila bonaespei* by Menke in Bohart and Menke, 1976:151. – Dalla Torre, 1897:407 (in catalog of world Hymenoptera); Leclercq, 1955h:93 (bibliographic references, as species incertae sedis).

*Ammophila propinqua* Taschenberg, 1869:433, ♂. Holotype or syntypes: ♂, Sudan: Khartoum (Halle). Synonymized with *Ammophila rubripes* by Guiglia, 1948a:32, synonymy confirmed by de Beaumont, 1952e:45. – Ed. André, 1886:74 (in revision of Sphecidae of Europe and Algeria), 1888:3\* (bibliographic references); Medina, 1894a:259 (Spain: Carmona and Pozuelo de Calatrava, records questionable for geographic reasons); Dalla Torre, 1897:406 (in catalog of world Hymenoptera); Kohl, 1906b:363 (in revision of Palearctic Ammophilini); Morice, 1911:74 (Algeria: Biskra); von Schulthess, 1926b:209 (Morocco, Tunisia); Roth, 1928:207 (in revision of North African Ammophilini); Guiglia, 1932d:468 (Libya: Gialo); Nadig, 1933:101 (Morocco: Agadir, Marrakech); Guiglia, 1934b:293 (Libya: bibliography and summary of locality records); Giordani Soika, 1939c:105 (Eritrea: Keren); Guiglia, 1939d:72 (Ethiopia: Sidamo: Neghelli, now Negele), 1943c:76 (Ethiopia: Gamo Gofa: Sagan-Omo region); Giner Marí, 1945b:362 (Morocco: Western Sahara: Um at Sfaia), 1945e:219 (Morocco: Western Sahara); Alfieri, 1946:138 (in revision of Egyptian *Ammophila*); Giner Marí, 1947:19 (Morocco: Western Sahara); de Beaumont, 1950f:396 (Algeria), 1951e:266 (Morocco; taxonomic problems); Berland, 1952b:276 (boundary of Ivory Coast, Guinea, and Liberia: Mount Nimba); Ceballos, 1956:360 (in catalog of Hymenoptera of Spain); de Beaumont, 1956a:180 (Chad: Tibesti), 1965b:772 (Chad: Ennedi). – **As *Sphex propinqua***: Arnold, 1928b:277 (new combination, original description translated into English), 1930:17 (in checklist of Afrotropical Sphecidae); Scott in Arnold, 1933a:370 (described from Ethiopia).

*Ammophila syriaca* Mocsáry, 1883:30, ♀ (as *Syriaca*, incorrect original capitalization). Holotype: ♀, Syria: no specific locality (TMB). Synonymized with *Ammophila propinqua* by Kohl, 1906:363. – Ed. André, 1886:75 (in revision of Sphecidae of Europe and Algeria), 1888:3\* (bibliographic references); Dalla Torre, 1897:410 (in catalog of world Hymenoptera).

*Ammophila erythrospila* Cameron, 1905h:303, ♂. Holotype or syntypes: ♂, South Africa: Eastern Cape Province: Table Farm (AMG). Synonymized with *Sphex bonaespei ferrugineipes* by Arnold, 1920:51. – Jacot-Guillarmod, 1961:13 (syntype in Albany Museum, Grahamstown).

*Ammophila dunbrodyensis* Cameron, 1905i:322, ♂. Holotype or syntypes: ♂, South Africa: Eastern Cape Province: Dunbrody (BMNH). Synonymized with *Sphex bonaespei ferrugineipes* by R. Turner, 1919c:396.

*Ammophila meruensis* Cameron, 1908a:265, ♂. Syntypes: ♂, Tanzania: Mount Kilimanjaro: Kibonoto, and Mount Meru lowlands: Ngare na nyuki (NRS). Synonymized with *Sphex ferrugineipes* by Arnold, 1928b:279.

*Ammophila rufipes* var. *obscura* Bischoff, 1912:220, ♂ (actually ♀: Dollfuss, 2015a:364). Lectotype: ♀, Zaire: Mawambi on Ituri River (ZMHU), designated by Dollfuss, 2015a:364. Synonymized with *Ammophila rubripes* by Dollfuss, 2015a:364– **As *Ammophila obscura***: Menke in Bohart and Menke, 1976:152 (new status, in checklist of world Sphecidae).

*Ammophila dantoni* Roth in Nadig, 1933:101, ♀, ♂ (as *Dantoni*, incorrect original capitalization, ♂ = *Ammophila erminea*). Holotype: sex not stated, Morocco: no specific locality (originally A. Nadig collection, now Zurich). Female synonymized with *Ammophila rubripes* by Dollfuss, 2013a:480, male synonymized with *Ammophila erminea* by Dollfuss, 2013a:428. – de Beaumont, 1951:265 (Morocco, as *dantani*); Leclercq, 1955h:84 (bibliographic references); R. Bohart and Menke, 1976:151 (in checklist of world Sphecidae, as *dantani*).

### 201. *ruficosta* Spinola

*Ammophila ruficosta* Spinola, 1851a:394, ♀. Holotype or syntypes: ♀, Chile: central provinces: no specific locality (Torino). – F. Smith, 1856:220 (in catalog of Hymenoptera in British Museum); E. Reed, 1894:623 (as synonym of *Ammophila rufipes*); Dalla Torre, 1897:407 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Sielfeld, 1980b:72 (in checklist of Chilean Sphecidae); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Menke, 2004:771 (redescription, Argentina, Bolivia); Pagliano, 2008:513 (holotype in M. Spinola collection, Torino).

### 202. *rufipes* Guérin-Ménéville

*Ammophilus rufipes* Guérin-Ménéville, 1831:pl. 9, fig. 1, ♀. Holotype: ♀, Peru: Lima (MSNG). – **As *Ammophila rufipes***: Guérin-Ménéville, 1838:262 (new combination, description); Spinola, 1851a:393 (in revision of Chilean Hymenoptera); F. Smith, 1856:220 (in catalog of Hymenoptera in British Museum); E. Reed, 1894:622 (Chile, analysis of original description); Dalla Torre, 1897:407 (in catalog of world Hymenoptera); Brèthes, 1918a:124 (Peru: Lima); Janvier, 1928:173 (nesting habits); Guiglia, 1948b:179 (type in Genova Mus.); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:100 (specimen in M. Spinola collection, Torino); Piek and Spanjer, 1986:179 (in list of Sphecidae with known prey); Steiner, 1986:99 (references to papers on nesting habits); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Menke, 2004:769 (redescription); Pagliano, 2008:513 (specimens in M. Spinola collection, Torino); Rasmussen and Asenjo, 2009:15 (in checklist of Crabronidae of Peru); Chiappa, 2012:8 (Chile: Región de Valparaíso: no specific locality); Dollfuss, 2015b:433 (Ecuador: Loja: west of Cate-mayo at 03°58'S 79°31'W); Danilov, 2020:317 (specimen from Chile in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Menke, 2020:158 (in Appendix to revision of North and Central American *Ammophila*: color variation). – **As *Sphex rufipes***: Zapata, 1974:37 (new combination, Chile: Lampa near Santiago).

*Ammophila rufipes* Guérin-Ménéville, 1838:262. Objectif synonym of *Ammophila rufipes* Guérin-Ménéville, 1831.

*Ammophila variolosa* Giner Marí, 1944:351, ♀, ♂. Lectotype: ♂, Peru: Lima (Mus. Barcelona), designated by Menke, 1964b:151. Synonymized with *Ammophila rufipes* by Menke, 1964b:151 (tentatively) and 2004:769 (definitely). – Amarante, 2005a:14 (correction to his 2002 catalog).

### 203. *sabulosa* (Linnaeus)

*Sphex sabulosus* Linnaeus, 1758:569, sex not stated (as *sabulosa*, incorrect original termination). Lectotype: ♂, Europe: no specific locality (Zool. Society London), designated by Day, 1979:72. – Müller, 1764:72 (Denmark: Zeeland: Fridrichsdal near Copenhagen); Forster, 1770:14 (in catalog of British insects), 1771b:31 (in catalog of North American animals); Linnaeus, 1771:12 (Sweden: Södermanland: Ryby at 59°28'N 15°46'E); Fabricius, 1775:346 (redescription); Fueßlin, 1775:50 (Switzerland); O. Müller, 1776:160 (redescription; Denmark and Norway); Fabricius, 1781:442 (redescription); Schrank, 1781:379 (in revision of insects of Austria); Retzius, 1783:65 (redescription); Fabricius, 1787:273 (redescription); de Villers, 1789:219 (redescription); Gmelin, 1790:2723 (redescription); Rossi, 1790:60 (Italy: in revision of insects of Etruria, now Italy: Toscana); Christ, 1791:311 (redescription); Fabricius, 1793:198 (redescription), 1796:156 (in Index to his Entomologia Systematica, 1793); Panzer, 1799, Heft 65:12 (in revision of German insects, illustration of habitus); Dwigubsky, 1802:167 (Russia: Moskva area); Roth von Schreckenstein, 1802:30 (Germany: Baden-Württemberg); Schrank, 1802:319 (Germany: in revision of insects of Bayern = Bavaria); Latreille, [1805]:292 (redescription); Panzer, 1806:124 (in critical review of his earlier work); Spinola, 1806:71 (Italy: Liguria); Illiger, 1807b:90 (synonymy, redescription); Jurine, 1807:128 (listed); Billberg, 1820:105 (specimens in Museum Billberg); Audouin, 1822a:280 (in Dictionnaire classique d'histoire naturelle); Dahlbom, 1831:41 (redescription); Zetterstedt, 1838:435 (in

revision of insects of Lapland); Dahlbom, 1845:XX (specimens in collection Fabricius are *Ammophila sabulosa*); Gistel, 1848:142 (Germany, redescription); Duméril, 1860:950 (exemplar of *Sphex*, brief description); Belke, 1866:512 (Ukraine: Kamieniec Podolski); Rogenhofer and Dalla Torre, 1892:599 (*Sphex sabulosa* of Scopoli, 1763 = *Ammophila sabulosa*); Okamoto, 1924:203 (Korea: Island of Quelpart, now Island of Cheju); R. Perkins, 1924:221 (Great Britain: Devon), 1925:149 (Great Britain: Somersetshire); Stelfox, 1927:289 (records from Ireland are erroneous); Spooner, 1933:203 (Great Britain: Bedfordshire: Sandy), 1934b:278 (Great Britain: Devon: Braunton Burrows); Stelfox, 1936b:203 (Ireland: West Mayo); Stiles, 1936:215 (proposed selection as type species of *Ammophila*); Hallett, 1938:71 (Great Britain: Herefordshire: Mathon); Stelfox, 1939b:203 (prey confirmed: caterpillar of *Nyssia zonaria* Schiffermüller, Geometridae); Valkeila, 1962b:67 (southwestern Finland); Valkeila, Brander, and Käpylä, 1963:41 (Finland: historical region Lounais-Hämeen = southwest Häme); Käpylä, 1974:64 (Finland: diurnal activity); Day and Fitton, 1978:193 (recuration of Linnean type material). – *As Podalonia sabulosa*: Bischoff, 1931:8 (new combination, Spain). – *As Psammophila sabulosa*: Zimmermann, 1935:282 (new combination, Germany: Island of Sylt: Kampen). – *As Ammophila sabulosa*: Vander Linden, 1827:355 (new combination, synonymy, distribution); Lepeletier de Saint Fargeau and Audinet-Serville, 1828:452 (redescription); Brullé, 1933:92 (Canary Islands); Shuckard, 1837a:75 (in revision of British Aculeata); von Siebold, 1839:47 (Germany: Danzig, now Poland: Gdańsk); Herrich-Schaeffer, 1840:297 (Germany: Bayern: Regensburg area); Dufour, 1841a:513 and 1841b:245 (digestive tract), 1841a:515 and 1841b:251 (male reproductive system), 1841a:517 and 1841b:253 (female reproductive system); Dahlbom, 1942a:8 (in review of Scandinavian aculeates), 1843:9 (in revision of Sphecidae and Pompilidae), 1845:430 (in key to *Ammophila*); Lepeletier de Saint Fargeau, 1845:376 (in revision of world Hymenoptera); Eversmann, 1849:364 (Russia: common everywhere); Kiesenwetter, 1849:87 (Germany: Kingdom of Saxony); F. Smith, 1849b:2550 (preying on caterpillars, not spiders); Wissmann, 1849:10 (Germany: Kingdom of Hannover: common); Tischbein, 1850:7 (Germany: Rheinland-Pfalz: Herrstein in Fürstenthum Birkenfeld); F. Smith, 1851c:16 (Great Britain: in sandy situations); Wesmael, 1852:82 (Belgium); F. Smith, 1853:62 (in checklist of British Hymenoptera); Kirchner, 1854:310 (Czechoslovakia: Kaplitz in Budweiser District, now České Budějovice); F. Smith, 1856:207 (in catalog of Hymenoptera in British Museum); Kawall, 1857:23 (Kurland, now Latvia); Ruthe and Stein, 1857:312 (Germany: Berlin area); Schenck, 1857:202 (Germany: in revision of fossorial wasps of Nassau Region); A. Costa, 1858a:19 (Italy: Campania: Monti Partenii in Benevento Region), 1858b:18 (Italy: in revision of Sphecidae of Kingdom of Naples); F. Smith, 1858c:81 (in review of British Aculeata, redescription); Taschenberg, 1858:61 (in key to Sphecidae of Germany); Assmuss, 1859:606 (Russia: Moscow Governorate); Belke, 1859:71 (Ukraine: Kamieniec Podolski); Funk, 1859:59 (Germany: Bayern: Bamberg); Schenck, 1860:149 (Germany: Nassau Region); A. Costa, 1861:35 (variation in shape of third submarginal cell); Sichel, 1861:751 (Italy: Sicilia); Brischke, 1862:98 (Germany: Preussen Province, now Poland: Pomorze Region); A. Costa, 1863:65 (Italy: Calabria Ulteriore: no specific locality); Siła-Nowicki, 1864:55 (Ukraine: L'viv), 1865:55 (western Ukraine: Galicia region: no specific locality); F. Smith, 1865b:86 (Great Britain: Dorset: Bournemouth); Belke, 1866:512 (Ukraine: Kamieniec Podolski); A. Costa, 1866:24 (specimen from France in Museo Zoologico di Napoli); Taschenberg, 1866:208 (in revision of Hymenoptera of Germany); A. Costa, 1867b:77 and 1867c:21 (in revision of Italian Sphecidae); Jaenicke, 1867:147 (Germany: Hessen: Frankfurt area); Kawall, 1867:121 (prey, ants attacking nesting female); Kirchner, 1867:217 (in catalog of European Hymenoptera); Schenck, 1867a:356 (Germany: Nassau Region); Dietrich, 1868:364 (Switzerland: Zurich Canton); Jaenicke, 1868:9 (Germany: Hessen: Frankfurt and Offenbach area); Wierzejski, 1868:117 (Poland: Kraków area, and Ukraine: L'viv area, Podole region: common everywhere); Palma, 1869:37 (Italy: Sicilia settentrionale); F. Smith, 1869d:77 (Great Britain: Norfolk: Cromer); Taschenberg, 1869:433 (Germany); Aichinger, 1870:321 (Austria: Tirol); Thomson, 1870:230 (in revision of Swedish wasps); Radoszkowski, 1871:195 (Himalayas: no specific locality); F. Smith, 1871b:9 (in catalog of British Aculeata); P. Ivanov, 1872:152 (Ukraine: Kharkov Oblast': Kupyansk area); Schlechtendal, 1872:37 (Germany: Sachsen: Zwickau); Beletskiy, 1873:81 (Ukraine: vicinity of Khar'kov); Dours, 1874:141 (in catalog of Hymenoptera of France); Mocsáry, 1874:120 (Siebenbürgen, now Romania: Transylvania: no specific locality); Thomson, 1874:175 (in revision of Hymenoptera of Scandinavia); Wierzejski, 1874:258 (Poland: Kraków; Ukraine: Lviv, Podole Region: common everywhere); Marquet, 1875:208 (France: Languedoc); Beuthin, 1876:231 (Germany: Hamburg area); Schmiedeknecht, 1876:186 (Germany: Thüringen: Rothensteiner Felsen); Girard, 1878:242 (France: Calvados: Lion-sur-Mer, coastal sand dunes); Fabre, 1879:207 (nesting habits); Girard, 1879:968, 969 (morphology and habits); Kohl, 1880:183 (Austria: Tirol, and Italy: Trentino–Alto Adige), 236 (variation in wing venation); E. Saunders, 1880:247 (in revision of British Aculeata); Siebke, 1880:60 (Norway); Magretti, 1881:112 (Italy: Lombardia), 270 (in list of species discussed in this paper); Marquet, 1881:177 (southern France); Yaroshevskiy, 1881:127 (Ukraine: Khar'kiv Oblast': Khar'kiv, Kupyansk, Slavyansk); A. Costa, 1883:57 (Italy: Sardegna); Friese, 1883:203 (Germany: Sachsen-Anhalt: Kösen, Weissenfels); Kohl, 1883e:675 (Switzerland); Sickmann, 1883:86 (Germany: Niedersachsen: Wellingholthausen, prey: caterpillars of *Noctua chrysitis* L., Noctuidae, *Anarta myrtilli* L., Noctuidae); Harwood, 1884:211 (England: Essex: Colchester area); Kohl, 1884a:381 (comparison with *Ammophila fallax*); von Heyden, 1884:116 (Germany: Frankfurt am Main); Ed. André, 1886:59 (in revision of Sphecidae of Europe and Algeria); Wüstnei, 1886:43 (Germany: Schleswig-Holstein); Gasperini, 1887:18 (Dalmatia: Lissa and Brusije, now Croatia: Island of Vis and Brusje on Island of Hvar); Radoszkowski, 1887b:91 (in list of Transcaspian Hymenoptera); Ed. André, 1888:1\* (bibliographic references); Brischke, 1888a:54 (Germany: Hela Peninsula, now Poland: Hel Peninsula); Brischke, 1888b:94 (Germany: Preussen Province, now Poland: Pomorze Region); Kohl, 1888b:729 (Austria: Tirol, now Italy: Alto Adige); Brischke, 1889:204 (Germany: Steegen east of Danzig, now Poland: Stegna east of Gdańsk); Assmuss, 1892:52 (Russia: earlier record from Moscow Governorate repeated); Radoszkowski, 1892:579 (male genitalia); de Saussure, 1892:436 (Island of Réunion, record improbable for geographic reasons); Alfken, 1893:121 (Germany: Friesian Islands: Island of Juist); Kohl, 1893a:35 (Austria: Niederösterreich); F. 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Schlüter, 2002:141 (Germany: Niedersachsen: anthropogenic habitats in Ammerland District); Shkuratov, 2002b:138 (Russia: Rostov Oblast': Rostovskiy Nature Reserve at 46°27'N 42°41'E); Shlyakhtenok and Skibinska, 2002:32 (Belorussia: no specific locality); Söderman and Vikberg, 2002:50 (in list of Aculeata of Finland); van der Meer, 2002:15 (Netherlands: coastal dunes at Meijendel); Vischer, 2002:288 (Germany: Sachsen-Anhalt: vineyards in Saale-Unstrut area); von der Dunk and Amos, 2002:158 (Germany: Bayern: Schwaig near Nürnberg); Wiśniowski, 2002:68 (Poland: Ojców National Park); Ziska, 2002:7 (Germany: Berlin-Köpenick: Krumme Lake); Archer, 2003a:58 (Great Britain: Watsonian Yorkshire); Casiraghi, Polidori, Ferreri, Preatoni, Andrietti, and Martinoli, 2003:329 (closely spaced nests are more likely to be parasitized by conspecific females); Bergsten, Ekerholm, Hellqvist, Hilszczanski, Nilsson, Pettersson, and Werner, 2003:71 (Sweden: Västerbotten: Island of Romelsön); Cölln, Esser, and Jakubzik, 2003:61 (Germany: northwestern Rheinland-Pfalz: excavation sites and quarries); Drewes, 2003:133 (Croatia, France, Germany, Greece, Hungary, Italy, Sweden: miscellaneous locality records); Esser and Jakubzik, 2003:290 (Germany: Nordrhein-Westfalen: Niederrheinisches Tiefland); Generani, Pagliano, Scaramozzino, and Strumia, 2003:64 (Italy: Arcipelago Toscano); González, Gayubo, Asís, Tormos, and García, 2003:61 (Spain: Soria: Chavaler); Gorobchishin, 2003:48 (Ukraine: Kiev: botanical garden); Haeseler, 2003:339 (Germany: Niedersachsen: Island of Harriersand near Bremen); Józán, 2003: 226 (Hungary: Látányi Puszta Nature Conservation Area); Kula and Tyrner, 2003a:150 (Czech Republic: Děčín Sandstone Uplands: forest district Snežník: birch stands in air-polluted area); Lukáš, 2003:73 (Slovakia: Bratislava: old fruit orchard); Mandery, Kraus, Voith, Wickl, Scheuchl, Schubert, and Warncke, 2003:63 (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); Protsenko, 2003:68, 69 (Ukraine: Odessa Oblast': Island of Malyi Tataru in Danube delta at 45.21°N 29.00°E); Reemer, 2003:63 (Netherlands: Gelderland: Zaltbommel area); Tischendorf and Treiber, 2003:120 (Germany: Hessen: 15 km southwest of Frankfurt am Main: nesting under high power lines); von der Dunk and Niedling, 2003:181 (Germany: Bayern: Zeckern north of Erlangen); von der Heide and Metscher, 2003:101 (Germany: Niedersachsen: Emsland area); Wiśniowski in Dylewska and Wiśniowski, 2003:132 (Poland: Ojców National Park); Wiśniowski and Werstak, 2003:76 (Poland: Pieniny National Park); Aistleitner, 2004:59 (Liechtenstein: Balzers); Abenius, 2004:40 (Sweden: Norrbottens: Luleå area); Archer, 2004a:47 (Great Britain: Worcestershire: Devils Spittleful Nature Reserve), 2004h:44 (Great Britain: Watsonian West Norfolk: Roydon Common); Bergsten, Nilsson, and Hellqvist, 2004:7 (Sweden: Västerbotten: Nordmaling); Deván, 2004:146 (western Slovakia); Dorow, 2004a:127 (Germany: Hessen: Schönbuche Nature Reserve); Esser, Jakubzik, Sonnenburg, and Woydak, 2004:261 (Germany: in checklist of Sphecidae of Nordrhein-Westfalen); Field and Brace, 2004:651 (the female does not respond to *Metopia* maggots (Sarcophagidae) in the nest); Gayubo et al. 2004:130 (Spain: Madrid: Estación Biogeológica de El Ventorrillo in Sierra de Guadarrama); Heitmans in Peeters, van Achterberg, et al., 2004:353 (in Wasp and Ant Fauna of Netherlands); Hellrigl, 2004a:172 (Italy: Trentino-Alto Adige, as Südtirol: Tschöggberg, Vöran); Jakubzik, Niehuis, and Cölln, 2004:457 (Germany: Rheinland-Pfalz: Roßstein in Rhein valley at 50°06'42"N 7°43'87"E); Kazenas, 2004b:100 (Kazakhstan: western Tien Shan Mountains); Liška, 2004:89 (Slovakia: (Vah River valley near Trenčín); Litt, 2004:222 (Switzerland: Valais: Nava); Nazarova, 2004:105 (Tajikistan: Badakhshan Region: village Langar in Shakh dara River valley); Raemakers, van den Eijnde, and Kleukers, 2004:292 (Netherlands: Tungelerwalle near Weert); Shkuratov, 2004a:72 (Russia: Rostov Oblast'), 2004b:164 (Russia: Rostov Oblast': Gosudarstvennyi Muzei-Zapovednik M.A. Sholokhova); Skibińska in Bogdanowicz, Chudzicka, Pilipiuk, and Skibińska, 2004:357 (in catalog of Polish Sphecidae); Szczepko and Kowalczyk, 2004:125 (Poland: Kampinos National Park near Warszawa); van Achterberg and Peeters, 2004:30 (in checklist of Sphecidae of Netherlands); Wiśniowski, 2004:39 and 58 (in checklist of Polish Sphecidae); Wright, 2004:19 (Great Britain: Isle of Wight, as *sabulonum*); Archer,



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Frommer, 2006:37 (Germany: Hessen: Runkel area); Gadoum and Barbier, 2006:42 (France: départements of Val-d'Oise and Yvelines: Parc Naturel Régional du Vexin Français: Saint-Martin-la-Garenne); Kroupa, 2006b:26 (Germany: Bayern: Oberfranken Region); Liebig, 2006:40 (Germany: Sachsen: Muskauer Heide); Liška, 2006a:88 (Slovakia: Váh river valley near Trenčín); Magdalou, 2006a:6, 9 (France: Pyrénées-Orientales: Réserve Naturelle de la Massane), 2006b:109 (France: Pyrénées-Orientales: Mas Larrieu Nature Reserve near Argelès-sur-Mer), 2006c:7 (France: Pyrénées-Orientales: Réserve Naturelle du Mas-Larrieu); Peeters, Krekels, and Megens, 2006:22 (Netherlands: Reichswald forest near Nijmegen); Shlyakhtenok, 2006:110 (Belorussia: Polesye Radiological Nature Reserve); Standfuss and Standfuss, 2006a:86 (Germany: Nordrhein-Westfalen: Dortmund), 2006c:308 (Greece: Thessalia: Magnisia Peninsula at 39°N 23°E); Terayama and Tano, 2006:7, 15, 18 (in key to Japanese Ampulicidae and Sphecidae); Tezcan, Yildirim, Anlaş, and Beyaz, 2006:58 (Turkey: Manisa: Turgutlu: Çıkrıkçı, on flowers of *Coridothymus capitatus*); Vepřek, 2006:508 (Czech Republic: Kokořínsko area); Archer, 2007a:151 (Great Britain: Norfolk: Thetford Warren Lodge), 2007c:152 (Great Britain: South Devon coast); Baghirov, 2007:93 (Russia: southwestern Siberia); Beavis, 2007:97 (Great Britain: Tunbridge Wells and Central High Weald); Burguet, 2007:unnumbered p. 2 (France: Puy-de-Dôme: sands Girauds-Faures in Orléat commune); Cungs, Jakubzik, and Cölln, 2007:139 (Luxembourg: Haardt Nature Reserve); Dorow, 2007:263 (Germany: Hessen: Schönbusche Forest Reserve); Dvořák, Straka, Smetana, Halada, Vepřek, and Karas, 2007:167 (Czech Republic: Vyšenské Kopce National Nature Reserve); Fateryga, Ivanov, and Novikov, 2007:149 (feeding on flowers of *Scrophularia umbrosa* Dumort., Scrophulariaceae, in Crimea); Hallin, 2007b:24 (Sweden: Blekinge County); Herrmann, 2007a:51 (Germany: Niedersachsen: Ostfriesland); Jacobs, 2007:46, 47 (in key to Sphecidae of Germany); Jansen and Kaluza, 2007:22 (Germany: northwestern Sachsen); Józán, 2007:179 (Hungary: Zselic hills); Kazenas, 2007a:90 (Kazakhstan: Akkala Oblast': Kurgandzhin Nature Reserve and vicinity); Kowalczyk and Nadolski, 2007:283 (Poland: Łódź: railway areas); Saure, 2007:81 (Germany: in checklist of Aculeata of Brandenburg); Shlyakhtenok, 2007a:298 (Belorussia: Berezinsky Nature Reserve); Smit and Megens, 2007:17 (Netherlands: Noort Brabant: vicinity of Leende); G. Turrisi and R. Turrisi, 2007:115 (Italy: Sicilia: Mount Etna: Botanical Garden Nuova Gussonea and vicinity); Vago, 2007:174 (France: départements d'Aisne, Nord, Pas-de-Calais, and Somme), 176 (France: Département du Nord: Bugnicourt); Venne, Bleidorn, and Lauterbach, 2007:300 (Germany: Nordrhein-Westfalen: Bielefeld); Vepřek and Straka, 2007:199 (in catalog of Sphecidae of Czech Republic and Slovakia); Vicidomini and Pignataro, 2007:15 (Italy: Salerno Province: Acquavena); Winkler, 2007:29 (Germany: Niedersachsen: eastern Friesland); Yildirim and Ljubomirov, 2007:116 (Turkey: Erzurum: Aşkale); Anlaş, Tezcan, and Yildirim, 2008:26 (Turkey: İzmir: Bozdağ Mountains); Archer, 2008b:145 (Great Britain: South Essex: West Tilbury); Danilov, 2008:346 (Russia: Altayskiy Krai: Barnaul area); Danilov and Tshernyshev, 2008:41 (Russia: Novosibirsk Oblast': Karasuk area); Dvořák, Bogusch, Malenovský, Bezděčka, Bezděčková, Holý, Liška, Macek, Roller, Říha, Smetana, Straka, and Šima, 2008:65 (Czech Republic: Hády Hill near Brno); Gayubo, González, Tormos, and Asís, 2008:136 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia); Haeseler, 2008:307 (Germany: Friesian Islands); Kazenas, 2008b:111 (Kazakhstan: foothills of Zailiyskiy Alatau: infrequently found on loess cliffs); Kochetkov, Bol'shakova, Butenko, and Priklonskiy, 2008:262 (Russia: Ryazan' Oblast': Oka Nature Reserve); Larnhof, 2008:45 (Austria: Niederösterreich: Nature Reserve "in den Sandbergen" near Drösing); Livory, Chevin, Lair, Sagot, and Baldock, 2008:23 (France: Département de la Manche); Ljubomirov and Yildirim, 2008:37 (in catalog of Sphecidae of Turkey); Nemkov, 2008b:17 (in catalog of Sphecidae of Asiatic Russia); Pagliano, 2008:513 (specimens in M. 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Frommer, 2009a:26 (Germany: in checklist of Sphecidae of central Hessen); Gayubo, González, Tormos, and Asís, 2009:362 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:622 (Spain: Salamanca and Zamora provinces: Arribes del Duero National Park); Guéorguiev and Ljubomirov, 2009:262 (Bulgaria: Maleshevska Planina, as *sabulosa sabulosa*); Hessling, 2009:103 (Germany: Niedersachsen: Hunte River valley south of Oldenburg); Józán, 2009:164 (Croatia); Mokrousov, 2009:277 (Russia: Republic Mari El); Mokrousov, Antropov, Ruchin, and Bugayev, 2009:78 (Russia: Republic of Mordovia); Nemkov, 2009b:50 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia, as *sabulosa sabulosa*); Ødegaard, Sverdrup-Thygeson, Hansen, Hanssen, and Öberg, 2009:70 (Norway: locality records); Ruchin, Antropov, and Shibayev, 2009:168 (Russia: Republic of Mordovia); Shoreiko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Straka, Dvořák, and Bogusch, 2009:257 (Czech Republic: Jizerské Mountains and Frýdlant region); Szczepko and Wiśniowski, 2009:72 (Poland: Spała Landscape Park); van Diemen, 2009:49 (Netherlands: airbase Gilze-Rijen); Zettel, Wagner, Zimmermann, Wiesbauer, Sorger, Ockermüller, and Seyfert, 2009:10 (Austria: Oberösterreich: Pfaffstätten); Archer, 2010a:52 (Great Britain: Watsonian Nottinghamshire: Spalford Warren), 2010b:99 (Great Britain: Watsonian Staffordshire: Cannock Chase Country Park); Bitsch, 2010:107 (in supplement to vol. 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airport Tempel and Flughafenese Protected Area); Schmid-Egger, 2010a:22 (in red list of Aculeata of Germany: relatively common); Schmidt, 2010:131 (Germany: Bayern: collected along Main-Donau canal); Shorenko and Konovalov, 2010:10 (Ukraine); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:100 (Western Slovakia: recorded from Borská nížina); Mokrousov, 2010c:107 (Russia: Chuvash Republic: State Nature Reserve “Prisurskiy” and National Park “Chavash varmane”); Smit and Wijngaard, 2010:69 (in checklist of Sphecinae of Netherlands); Treiber, 2010:134 (France: départements du Bas-Rhin and du Haut-Rhin); Tüzün and Yüksel, 2010:4469 (Turkey: Niğde Province); van der Smissen, 2010a:332 (Germany: Schleswig-Holstein: locality records), 2010b:383 (France: Ardèche, Gard, and Vaucluse: locality records), 2010c:395 (Sweden: Öland and Södermanland: locality records); Wurdack and Gack, 2010:153 (Germany: Baden-Württemberg: Kaiserstuhl); Archer, 2011a:42 (Great Britain: Yorkshire: Strensall Common), 2011b:54 (Great Britain: North Norfolk sand dunes), 2011d:187 (Great Britain: Watsonian Yorkshire: Hatfield Moor and Thorne Moor); Baghirov, 2011b:139 (Russia: Altayskiy Krai: Savvushka); Cruz-Sánchez, Asís, Gayubo, Tormos, and González, 2011:497 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park: effects of wildfire); Danilov, 2011b:204 (Russia: Zabaikal'skiy Krai: Daur'skiy Nature Reserve, as *sabulosa sabulosa*); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Gogala, 2011:7 (Slovenia); Józán, 2011:178 (in checklist of Sphecidae *sensu lato* of Hungary); Mokrousov, Berezin, and Egorov, 2011:64 (Russia: Chuvash Republic); Murai and Amr, 2011:108, 118 (first record from Syria: Al Thawrah Nature Reserve at 35°51'N 28°38'E); Novozhenov, Rudoiskatel', Kostromina, Katana, and Sibiryakov, 2011:221 (Russia: Tyumen' Oblast': Khanty Mansi Autonomous Okrug: Kondino Lakes Nature Reserve); Protsenko and Drozdovskaya, 2011:90 (Ukraine: Mikolaiv Oblast': Bug'skiy Guard National Park); Rudoiskatel', 2011d:238 (Russia: central Ural Mountains); Saure, 2011c:197 (Germany: Berlin-Spandau: Fort Hahneberg), 2011d:199 (Germany: Sachsen-Anhalt: conservation area “Heide südlich Burg”); Schmid-Egger, 2011a:42 (France: Parc National du Mercantour); Shlyakhtenok, 2011:94 (Belorussia: city of Minsk); Theunert, 2011a:18 (Germany: in checklist of aculeates of Niedersachsen including city of Bremen); Tischendorf, Frommer, Flügel et al., 2011:108 (Germany: Hessen: not endangered); von der Dunk, 2011:184 (Germany: Bayern: Kaiserburg in Nürnberg); Ziska and Saure, 2011:108 (Germany: Berlin: Tegeler Fließ valley); Archer, 2012:130 (Great Britain: Watsonian Yorkshire: Allerthorpe Common); Boillat, 2012:229 (Switzerland: in checklist of insects of Canton de Genève); Burguet *in* Durand and Burguet, 2012:2 (France: Puy-de-Dôme: sands Giraults-Faures in Orléat commune); Ceccolini and Paggetti 2012b:118 (Italy: Umbria); Cölln, Jakubzik, and Kinkler, 2012:24 (Germany: Nordrhein-Westfalen: Leverkusen); Franzén, Molander, Norén, and Nilsson, 2012:26 (Sweden: Skåne: Kullaberg Peninsula); Gerth, Mayer, Hering, Wolf, Schaffer, and Bleidorn, 2012:9 (Germany: Sachsen: Bienitz in Leipzig); Japoshvili and Ljubomirov, 2012:96 (Turkey: Isparta: Gölcük Nature Park 8 km southwest of city of Isparta, as *sabulosa sabulosa*); Kazenas, 2012b:168 (Kazakhstan: Korgalzhin State Nature Reserve); Nemkov, 2012c:434 (in catalog of Sphecidae of Russian Far East, as *sabulosa sabulosa*); Prismaniy, 2012:46 (Russia: Belgorod Oblast'); Protsenko, Fateryga, Ivanov, and Puzanov, 2012:53 (Ukraine: Crimea, Kiyev); Saure, 2012b:227 (Germany: Berlin-Spandau: Spandauer Forst); Shibayev and Polumordvinov, 2012:278 (Russia: Penza Oblast'); Shlyakhtenok, 2012a:171 (Russia: Kirov Oblast': Arkhangelskoye: collected in private plots), 2012b:91 (Belorussia: Beresina National Reserve: overgrowing dry meadow); Srba and Heneberg, 2012:559 (nesting in loose soils); Strumia, Pagliano, and Gayubo, 2012:55 (Italy: Toscana: Riserva di San Rossore); Yildirim, 2012:75 (Turkey: Bayburt, Erzurum, and Tunceli provinces); Akulov and Proshchalykin, 2013:111 (Russia: Siberia: Krasnoyarsk Krai, as *sabulosa sabulosa*); Bayındır, Gürbüz, Ljubomirov, and Pohl, 2013:146 (Turkey: Isparta: Kasnak Oak Forest Nature Reserve); Bitsch, Grouet, and Savina, 2013:291 (France: Pyrénées centrales: département d'Ariège: Ascou-Pailhères); Danilov and Odintseva, 2013:332 (Russia: Western Siberia: 65 km north-northeast of Tobol'sk at 58°45'N 68°74'E); Dollfuss, 2013a:390, 400 (in key to *Ammophila* of Palearctic Region and India), 2013b:581 (locality records from Austria, Bulgaria, Croatia, Czech Republic, France, Greece, Hungary, Italy, Iran, Kazakhstan, Kyrgyzstan, Lithuania, Moldova, Mongolia, Nepal, Portugal, Romania, Russia, Serbia, Slovakia, Spain, Sweden, Turkey, Ukraine, and Uzbekistan); Dyuzhaeva, 2013:116 (Russia: Samara Oblast': Zhiguli Nature Reserve); Flügel, 2013a:120 (Germany: Brandenburg: Pimpinellenberg near Oderberg); Johansson, 2013:22 (Sweden: Gotland: island of Stora Karlsö); Kazenas, 2013a:36, 37 (color photographs of adult wasps, short information on geographic distribution and nesting habits); Mokrousov, Ruchin, and Egorov, 2013:198 (Russia: Republic of Mordovia: Mordovian State Nature Reserve); Pankov, 2013:228 (Russia: Ivanovo Oblast'); Polidori, Crottini, Della Venezia, Selfa, Saino, and Rubolini, 2013:40 (animal protein as food for larva, unable to manipulate food load, flight muscle ratio, wing loading); Saure, 2013:17 (Berlin: Treptow-Köpenick: Gosener Wiesen); A. Scholz and Liebig, 2013:16 (Germany: Sachsen: in list of Sphecidae *sensu lato*); Shlyakhtenok, 2013:132 (in annotated catalog of aculeate wasps of Belorussia); Vieira, Oliveira, Brewster, and Gayubo, 2013:15 (Portugal: Douro International Natural Park, Serras de Aire east of Candeeiros Natural Park, and Paúl do Boquilobo Nature Reserve); Wiśniowski and Piotrowski, 2013:20 (Poland: Poleski National Park); Wiśniowski and Szczepko, 2013:21 (Poland: Kampinos National Park near Warszawa); Zettel, Zimmermann, and Wiesbauer, 2013:12 (Austria: Wien: Donaupark); Danilov, 2014a:427 (Russia: Siberia: widely distributed), 2014b:519, 520 (in key to Sphecidae s.s. of Siberia); Ebrahimi, 2014:7 (Iran: Alborz, Āzarbāijān-e-Sharghi, Fārs, Gilān, Golestān, Hormozgān, Ilām, Khuzestān, Kohkiluyeh-Boyerahmad, Lorestān, Mazandarān, Semnan, and Tehrān provinces); Flügel, 2014:255 (Brandenburg: Hangelsberger Heide); U. Frommer, 2014:26 (Germany: Hessen: Lorch); Ghahari, Hayat, Lavigne, and Ostovan, 2014:1390 (prey of asilid fly *Dysmachus cephalenus* Loew), 1396 (prey of asilid fly *Machimus aradensis* Theodor); Jakovlev, Polevoi, and Humala, 2014:301 (Russia: Republic of Karelia: Zaonezhye Peninsula in Lake Onega); Józán, 2014:131 (Croatia); Kazenas, 2014a:133 (Kazakhstan: Karatau Mountain Range); U. Frommer, M. Niehuis, and O. Niehuis, 2014:1321 (Germany, Hessen: Roßstein); Hellqvist, Abenius, and Norén, 2014:90 (in catalog of Ampulicidae, Sphecidae, and Crabronidae of Sweden, by provinces); Mokrousov and Vafin, 2014:54 (Russia: Republic of Tatarstan); Ruchin and Antropov, 2014:35 (Russia: Republic of Mordovia); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces, as *sabulosa sabulosa*); Archer, 2015:202 (Great Britain: English coastal sand dunes); Dollfuss, 2015b:433 (locality records from Albania, Bulgaria, Czech Republic, France, Greece, Italy, Montenegro, and Slovakia); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Gülmez and Can, 2015:12 (usability of ITS2 and 28S-D2 gene regions for species identification); Koçak and Kemal, 2015:277 (in checklist of Hymenoptera of Turkey); Lett, 2015:5 (France: Loir-et-Cher: Gièvre); Mokrousov and Egorov, 2015:424 (Russia: Republic of Mordovia: Nature State Reserve Prisurskiy); Murao, 2015:39 (Japan: Kyushu: coast of northwestern Fukuoka Prefecture); P. Rosa and Pagliano, 2015:96 (Italy: Lombardia and Piemonte: Parco del Ticino); Samin, Bagriacik, and Monaem, 2015:194 (Iran: Hamadan: Hamadan); Saure, 2015:12 (Germany: Berlin-Lichterfelde); Simon, Lorthiois, and Macé, 2015:53 (France: alluvial terraces in Eure Department: Courcelles-sur-Seine, and Seine-Maritime Department: Anneville-Ambourville); Blažej, Macek, and Trýzna, 2016:129 (Czech Republic: České Švýcarsko = Bohemian Switzerland National Park); Bleidorn, Gerth, Hopfe, et al., 2016:11 (Germany: Sachsen: Trages circa 20 km south of Leipzig); Cölln and Jakubzik, 2016:16 (Germany: Rheinland-Pfalz: Vulkaneifel District); Else, Bolton, and Broad, 2016:50 (in checklist of Aculeata of Great Britain and Ireland: England, Scotland, Wales, Ireland); Gülmez and Dizer, 2016:59 (Turkey: Tokat Province); Le Divelec, Chapelin-Viscardi, and Larivière, 2016:108 (northern France: in agricultural landscapes); Levárdá and Matache, 2016:40 (in catalog of Sphecidae s.s. of Romania); Mandery, 2016:95 (parasite: strepsipteran *Paraxenos sphecidarum* Dufour, Xenidae); Mokrousov and Popov, 2016:561 (Russia: Krasnodarskiy Krai); Reemer and Peeters, 2016:10 (Netherlands: Hulshorsterzand); Saure, 2016b:48 (Germany: Sachsen-Anhalt: fruit orchards), 1916c:204 (Germany: center of Berlin: Großer Tiergarten Park); A. Scholz, 2016:71 (Germany: Sachsen: Kleinraschützer Heide); Shorenko, 2015:312 (in list of Sphecidae *sensu lato* of Crimea); U. Sörensen, 2016:426 (Germany: Schleswig-Holstein: der Ochsenweg south of Leck); Stolle and Saure, 2016:927 (Germany: in list of Sphecidae *sensu lato* of Sachsen-Anhalt); Vas, Szöllösi-Tóth, and Muskovits, 2016:154 (Romania: Sălaj County); Wiśniowski, 2016:126 (Poland: Ojców National Park); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:7 (Turkey: Bayburt, Erzurum, and Tunceli provinces); Arens, 2017a:637 (Greece: Peloponnesus); Burguet and Durand, 2017:9 (France: Puy-de-Dôme: basin of river Crouël); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Di Giovanni, Mei, and Cerretti, 2017:73 (Italy: Lombardia: Riserva Naturale Bosco della Fontana 5 km from Mantova at 45°12'N 10°44'E, found in canopy); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:17 (Iran: known from Alborz, East Azerbaijan, Fars, Golestan, Guilan, Hamadan, Hormozgan, Khuzestan, Kohgiluyeh-va Boyerahmad, Lorestan, Markazi, Mazandaran, Semnan, and Tehran provinces); Jansen, 2017:6 (Germany: Sachsen: Leipzig); Magdalou, 2017:14 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Forêt de la Massane, Julols, Mas Larrieu, Vallée d'Eyne); Říha, 2017:174 (Czech Republic: Brno); Shorenko, 2017:76 (in Crimea collected in May through November); Twerd,

Krzyżyński, Waldon-Rudzionek, and Olszewski, 2017:6 (Poland: Inowroclaw and Janikowo: nesting in postindustrial soda ash dumping sites); Can and Gülmez, 2018b:756 (in some males from Turkey, crossvein Irs-m is incomplete, causing partial merging of submarginal cells II and III); Creutzburg, Winter, Baumbach, and Ssymank, 2018:216 (Germany: Thüringen: Wachsenburg Nature Reserve); Franken and Berg, 2018:67 (Netherlands: North Holland: sand dunes); Jacobs and Liebig, 2018:135 (Russia: Irkutsk Oblast: Bol'shoye Goloustnoye and Sarma); Lett, 2018:202 (France: Loir-et-Cher: Gièvres at 47°16'39"N 1°41'52"E); Nicolas and Vago, 2018:12 (France: Pas-de-Calais: Mont Saint-Frieux); Shorenko, 2018:126 (Crimea, including localities, habitats, and number of specimens); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299, 301 (in key to *Ammophila* of China); Augul, 2019:493 (recorded from Iraq by Augul, Abdul-Rassoul, and Kaddou et al., 2013); Baghirov, 2019:56 (distance between postocelli equaled  $0.57-0.60 \times$  ocellular distance in 1893 and  $0.66-0.81$  in 2017; pterostigma equaled  $1.41-1.45 \times$  first sector of radial cell in 1893 and  $0.96-1.68$  in 2017); Carminati, Mora, and Cretin, 2019:28 (France: in list of Sphecidae *sensu lato* of Franche-Comté); Gülmez, 2019:3 (Turkey: Amasya, Ankara, Sivas, and Tokat provinces: no specific localities), 4 (abnormal forewing venation); Ljubomirov, 2019:102 (Bulgaria: Vrachanska Planina); Olszewski and Kowalczyk, 2019:112 (northern Poland: Pomorze Gdańskie = Gdańsk Pomerania); Ruchin and Antropov, 2019a:1319 (Russia: Mordovian State Nature Reserve), 2019b:162 (common in Mordovian State Nature Reserve); Shorenko, 2019:211 (among the commonest sphecid species in Crimea); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:95 (in Sphecid Fauna of Europe); Danilov, 2020:317 (specimens from Belorussia, Finland, Kazakhstan, Kyrgyzstan, and Russia: European, Siberia, and Kamchatka in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Gurule, Jadhav, and Gangurde, 2020:151 (India: Maharashtra: Nashik); Kejval, Blažej, and Erhart, 2020:118 (western Czech Republic); Maharramov, Mokrousov, and Proshchalykin, 2020:45 (Azarbaijan: Nakichivan Autonomous Republic); Örgel, Anlaş, and Tezcan, 2020:637 (Turkey: Manisa Province); Poláček, 2020:59 (Czech Republic: Opava District: Jakartovice: occurring on mine spoil heaps); Saure, 2020:276 (Germany: Sachsen-Anhalt: sand dunes); Shorenko, 2020:47 (Crimea: Karadag Nature Reserve); Can and Gülmez, 2021b:309 (Turkey: many localities); Cross, Baldock, and Wood, 2021:15 (in catalog of Sphecidae *sensu lato* of Portugal); Olszewski, Wiśniowski, and Ljubomirov, 2021:103 (in commented list of Sphecidae *sensu lato* of Poland); Saure, 2021:81 (Germany: Brandenburg: Nature Reserve Ferbitzer Bruch near Potsdam); Saure and Marten, 2021:134 (Germany: Sachsen-Anhalt: Nationalpark Harz); Embergenov, Élmurodova, Amirov and Kimyonazarov, 2022:47 (Uzbekistan: Khiva area, Tashkent Province: Parkent District); Jakubzik and Cölln, 2022:11 (Germany: Rheinland-Pfalz: Moselle River valley between Drohn and Kattenes); Pytel-Huta, Skyrpan, Tsaryk, Shydlovskyy, and Khamar, 2022:54 (western Ukraine); U. Frommer and Bahmer, 2023:193 (Germany: Hessen: Giessen University Botanical Garden); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey); Langfeld, 2023:61 (Germany: Mecklenburg-Vorpommern: Baltic island Greifswalder Oie).

*Sphex hortensis* Poda von Neuhaus, 1761:106, . . . Synonymized with *Ammophila sabulosa* by Kohl, 1906:335. – Haris, 2016:10 (in list of species described by N. Poda von Neuhaus from Carpathian Basin).

*Ichneumon frischii* Geoffroy *in* Fourcroy, 1785:415, sex not stated (as *Frischii*, incorrect original capitalization). Holotype or syntypes: France: Paris area (lost). Synonymized with *Ammophila sabulosa* by Kohl, 1906:336.

*Sphex dimidiatus* Christ, 1791:313, sex not stated (as *dimidiata*, incorrect original termination), junior primary homonym of *Sphex dimidiatus* De Geer, 1773. Holotype or syntypes: origin not indicated. Synonymized with *Ammophila sabulosa* by Kohl, 1906:336. – Gimmerthal, 1836:448 (Latvia).

*Ammophila vulgaris* W. Kirby, 1798:202, [♀], not available (published as synonym of *Sphex sabulosa*, Article 11.6). Synonyms: ♀, Great Britain: Suffolk and Norfolk (depository?). Synonymized with *Ammophila sabulosa* by Lepeletier de Saint Fargeau, 1845:377. – Turton, 1801:497 (redescription); Stephens, 1829a:361 (in catalog of British insects), 1829b:33 (in checklist of British insects).

*Ammophila pulvillata* Sowerby, 1806:67, [♂]. Holotype or syntypes: Great Britain: Berkshire County: Reading (depository?). Synonymized with *Ammophila sabulosa* by F. Smith, 1855:99 and Menke *in* R. Bohart and Menke, 1976:153. – Stephens, 1829a:361 (in catalog of British insects), 1829b:33 (in checklist of British insects).

*Sphex mucronatus* Jurine, 1807:128 and pl. 8, Fig. 5, ♀ (as *mucronata*, incorrect original termination). Holotype or syntypes: ♀, Europe, probably Switzerland (MHNG). Synonymized with *Ammophila sabulosa* by Frei-Gessner, Kohl, and Kriechbauer, 1882:393. – Vander Linden, 1827:356 (bibliographic references). – **As *Ammophila mucronata***: Lepeletier de Saint Fargeau, 1845:384 (new combination, discussion of identity).

*Ammophila cyanescens* Dahlbom, 1845:430, sex not stated. Holotype: ♂, Germany: Glogau, now Poland: Głogów (Lund). Synonymized with *Ammophila sabulosa* by de Beaumont, 1953h:194. – Kirchner, 1854:310 (Czechoslovakia: Kaplitz in Budweiser District, now České Budějovice; as *cyanescens* Zeller). – **As *Ammophila sabulosa* var. *cyanescens***: Kiesenwetter, 1849:87 (new status; Germany: Kingdom of Saxony); Beuthin, 1876:231 (Germany: Hamburg area); Chyzer, 1902:33 (Hungary); Schirmer, 1912:168 (Germany: Berlin area).

? *Ammophila vischu* Cameron, 1889:98, ♀, ♂. Syntypes: India: Uttar Pradesh: Mussoorie and Pakistan: North-West Province: no specific locality (OXUM). – Cameron, 1889c:94 (in list of Sphecidae of Oriental Region); Bingham, 1897:233 (as junior synonym of *Ammophila punctata*); Dalla Torre, 1897:411 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:153 (as tentative synonym of *Ammophila sabulosa*).

*Ammophila sabulosa kamtschatica* Gussakovskij, 1932:4, ♀. Syntypes: ♀, Russia: Kamchatka: Elisovo at 39°47'N 48°2'E (Stockholm). Synonymized with *Ammophila sabulosa* by Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:388. – R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Danilov, 2016:350 (one syntype female preserved in Zoological Institute, Sankt-Petersburg, Russia).

As *Sphex lutarius* (which actually is *Mimesa lutaria*): Panzer, 1799, Heft 65:14 (in revision of German insects, illustration of habitus).

#### 204. *saengeri* Dollfuss

*Ammophila kohli* Dollfuss, 2015a:348, ♀, ♂. Holotype: ♂, Namibia: Outjo District: Ugab River 11 km southeast of Outjo (CAS). Junior primary homonym of *Ammophila kohlii* Gussakovskij, 1928, now in *Eremnophila* (Article 58.14). – Dollfuss, 2015a:311, 316 (in key to Sub-Saharan *Ammophila*), 2015b:426 (locality records from Namibia).

*Ammophila saengeri* Dollfuss, 2019b:875. Substitute name for *Ammophila kohli* Dollfuss, 2015.

#### 205. *sarekandana* Balthasar

*Ammophila sarekandana* Balthasar, 1957b:192, ♀. Holotype: ♀, Afghanistan: Badakhshan: Sarekanda (originally V. Balthasar collection, now NMPC). – R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Dollfuss, 2013a:393, 403 (in key to *Ammophila* of Palearctic Region and India), 483 (in revision of *Ammophila* of Palearctic Region and India), 2013b:583 (locality records from Kyrgyzstan); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Dollfuss, 2015b:433 (India: Kashmir: Kischtwar: Inshan at 33°30'N 75°30'E); Olszewski and Danilov, 2020:192 (first records from Tajikistan: Varzob District: 5 km northeast of Kalon at 39°05'N 68°87'E); Danilov, 2020:317 (specimens from Tajikistan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia);

As *Ammophila afghanica*: Balthasar, 1957:192, ♂ only (Afghanistan: Badakhshan: Sarekanda), corrected to *Ammophila sarekandana* by Dollfuss, 2013a:483.

#### 206. *sareptana* Kohl

*Ammophila sareptana* Kohl, 1884a:378, ♂. Lectotype: ♂, Russia: Sarepta, now Krasnoarmeysk near Volgograd (NHMW), designated by Dollfuss, 2013a:484. – Ed. André, 1886:58 (in revision of Sphecidae of Europe and Algeria), 1888:2\* (bibliographic references); Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Kohl, 1906b:333 (in revision of Palearctic Ammophilini); Gussakovskij, 1930c:205 (description of ♀, Ukraine: Crimea; Russia: Stavropol Kray; Kazakhstan: north of Alma Ata); Bytinski-Salz, 1956:223 (Turkey: Kuşehir); de Beaumont, 1967a:266 (Turkey); Kazenas, 1968b:342 (Kazakhstan: Alma Ata Oblast'), 1972b:100 (Kazakhstan); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 1978b:36 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:181 (in key to Sphecidae of European part of USSR); Dollfuss, 1989:7 (type material in NHMW); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region), 1998:48 (Ukraine: Kiev and surroundings); Kazenas, 1998b:181 (in Sphecid Fauna of Kazakhstan); Esenbekova and Kazenas, 2000:14 (southeastern Kazakhstan: 10 km northwest of Chemolgan, 12 km north of Sary-Ozek); Kazenas, 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia),

2002a:39 (geographic distribution, collecting localities in Kazakhstan); Shkuratov, 2002b:138 (Russia: Rostov Oblast': Rostovskiy Nature Reserve at 46°27'N 42°41'E), 2004:72 (Russia: Rostov Oblast'); Shorenko, 2005a:163 (Ukraine: Crimea), 2005b:97 (Ukraine: Crimea: Karadagh Nature Reserve); Kazenas, 2008a:98 (southeastern Kazakhstan: Arkharly, Malaysary, Kzyl-Agach, 12 km south of Sary-Ozek, 5-10 km northwest of Chemolgan); Ljubomirov and Yildirim, 2008:37 (in catalog of Sphecidae of Turkey); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Danilov, 2010b:44 (distribution of Tethyan type); Protsenko, Fateryga, Ivanov, and Puzanov, 2012:54 (Ukraine: Crimea); Dollfuss, 2013a:393, 403 (in key to *Ammophila* of Palearctic Region and India), 484 (in revision of *Ammophila* of Palearctic Region and India), 2013b:584 (locality records from Kazakhstan, Kyrgyzstan, and Turkey); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces); Ivanov, Fateryga, and Filatov, 2015:300 (Crimea: Karadag Nature Reserve, a protected species); Koçak and Kemal, 2015:277 (in checklist of Hymenoptera of Turkey); Shorenko, 2015:312 (in list of Sphecidae *sensu lato* of Crimea); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:7 (Turkey: Kars: Sarikamış); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Shorenko, 2017:76 (in Crimea collected in May through September), 2018:126 (Crimea, including localities, habitats, and number of specimens); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:96 (in Sphecid Fauna of Europe); Danilov, 2020:317 (specimens from Kazakhstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Shorenko, 2020:47 (Crimea: Karadag Nature Reserve); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey).

### 207. *saussurei* (du Buysson)

*Coloptera saussurei* du Buysson, 1898a:357, ♀ (as *Saussurei*, incorrect original capitalization). Holotype or syntypes: ♀, South Africa: Gauteng: Hamanskraal (MNHN). – **As *Sphecx saussurei***: Arnold, 1920:32 (new combination, in revision of southern African *Ammophila*), 1928b:259 (in revision of southern African *Ammophila*), 1930:16 (in checklist of Afrotropical Sphecidae). – **As *Ammophila saussurei***: Leclercq, 1955h:93 (new combination, bibliographic references); R. Bohart and Menke, 1976:259 (in checklist of world Sphecidae); S. Gess and F. Gess, 2003:97 (Namibia: visiting flowers of *Hermbsaedia odorata* (Butch.) T. Cooke, Amaranthaceae); Dollfuss, 2015a:310, 313 (in key to Sub-Saharan *Ammophila*), 366 (in revision of Sub-Saharan *Ammophila*; Angola, Namibia, Mozambique, South Africa, Tanzania, Zimbabwe), 2015b:434 (locality records from Mozambique, Namibia, South Africa, Tanzania, and Zimbabwe).

### 208. *schalleri* Dollfuss

*Ammophila schalleri* Dollfuss, 2015a:367, ♀, ♂. Holotype: ♂, Ethiopia: Sidamo Province: near Bitata (OÖLM). Paratypes: Burkina Faso, Kenya, Senegal. – Dollfuss, 2015a:312, 317 (in key to Sub-Saharan *Ammophila*), 2015b:434 (locality records from Ethiopia and Kenya).

### 209. *schmideggeri* Dollfuss

*Ammophila schmideggeri* Dollfuss, 2013a:485, ♀, ♂. Holotype: ♀, Israel: Negev Desert 45 km south of Beer Sheva and 5 km SSE Sede Boqer: Wadi N'Aqef at 34°48'N 30°49'E (coll. Schmid-Egger, Berlin). – Dollfuss, 2013a:392, 401 (in key to *Ammophila* of Palearctic Region and India), 485 (in revision of *Ammophila* of Palearctic Region and India).

### 210. *separanda* F. Morawitz

*Ammophila separanda* F. Morawitz, 1891a:204, ♀, ♂. Lectotype: ♀, European Kazakhstan: Ryn-Peski (ZIN), designated by Danilov, 2015a:542. – Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Kohl, 1906b:321 (as a variety of *Ammophila campestris*), 375 (original description copied); Myartseva, 1971a:77 (in key to *Ammophila* of Turkmenistan), 1971b:180 (ranges slightly outside Turanian Province); Kazenas, 1972b:101 (Kazakhstan); Myartseva, 1972a:86 (Turkmenistan); Kazenas, 1974b:109 (feeding on flowers of *Statice gmelini* Willd., Plumbaginaceae, in Kazakhstan), 111 (feeding on flowers of *Thymus marschallianus* Willd., Lamiaceae, and *Saussurea* sp., Asteraceae, in Kazakhstan); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae, as tentative synonym of *Ammophila campestris*); Kazenas, 1978b:37 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:182 (in key to Sphecidae of European part of USSR); Nazarova, 1998:40 (Tajikistan: Tigrovaya Balka Nature Reserve); Danilov, 2010b:45 (distribution of Tethyan type); Dollfuss, 2013a:394, 404 (in key to *Ammophila* of Palearctic Region and India), 486 (in revision of *Ammophila* of Palearctic Region and India), 2013b:584 (locality records from Kazakhstan and Turkmenistan); Danilov, 2014b:520, 521 (in key to Sphecidae s.s. of Siberia, not yet found in Siberia), 2015a:542 (redescription, locality records from Kazakhstan, southern part of European Russia, Tajikistan, Turkmenistan, Uzbekistan); Mokrousov, 2015:537 (southeastern European Russia); Danilov, 2016:338 (lectotype preserved in Zoological Institute, Sankt-Petersburg, Russia), 2017b:212 (in catalog of Sphecidae s.s. of Russia); Danilov, 2020:317 (specimens from Russia: Astrakhan' Oblast' and Dagestan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Maharramov, Mokrousov, and Proshchalykin, 2020:45 (Azarbaijan: Nakchivan Autonomous Republic).

### 211. *sickmanni* Kohl

*Ammophila sickmanni* Kohl, 1901d:151, ♀. Lectotype: ♀, China: Tientsin or Kalgan (NHMW), designated by Dollfuss, 2013a:487. – Kohl, 1906b:340 (in revision of Palearctic Ammophilini); Gussakovskij, 1938:3 (China: Kiangsu Province); Tsuneki, 1967j:10, 11 (in key to Ammophilini of East Asia; as *sickmanni sickmanni*), 15 (description of ♂, Korea), 1974a:360 (Korea); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Tsuneki, 1982b:14 (known from Korea); Paik, 1985:197 (in list of Sphecidae of Korea); Tsuneki, 1991:199 (Korea); Q. Li, J. Li, and J. Yang, 1994:290 (in revision of *Ammophila* of Shandong Province, China, as *sickmanni sickmanni*); Nemkov *in* Nemkov, Kazenas, Budrys, et Antropov, 1995:387 (in key to Sphecidae of Russian Far East); Wu and Zhou, 1996a:55 (in revision in Economic Insect Fauna of China, as *Ammophila sickmanni sickmanni*); Wu, Zhou, Q. Li, and Yang, 2003:809 (China: Fujian Province, as *Ammophila sickmanni sickmanni*); Q. Li and J. He, 2004:1121 (in hymenopterous fauna of Zhejiang Province, China, as *Ammophila sickmanni sickmanni*); Q. Li and L. Yang, 2005:883 (China: Gansu: Quinling Range and South Mountains, as *Ammophila sickmanni sickmanni*); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Nemkov, 2008b:17 and 2009b:50 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Danilov, 2010b:45 (distribution of eastern Palearctic type); Nemkov, 2012c:434 (in catalog of Sphecidae of Russian Far East); Dollfuss, 2013a:389, 394, 400 (in key to *Ammophila* of Palearctic Region and India), 487 (in revision of *Ammophila* of Palearctic Region and India), 2013b:584 (locality records from China and Mongolia); Danilov, 2014a:427 (Russia: Siberia: Altay Republic, Altayskiy Kray, Buryatia, Novosibirsk Oblast', Tyva), 2014b:519, 520 (in key to Sphecidae s.s. of Siberia); J.-K. Kim, 2014:417 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Kim, Yeo, and Kim, 2014:275 (in key to *Ammophila* of South Korea), 278 (in revision of Sphecidae *sensu stricto* of South Korea); Danilov, 2017b:212 (in catalog of Sphecidae s.s. of Russia); Jacobs and Liebig, 2018:135 (Russia: Primorskiy Kray: Anisimovka, Kalinovka, and Poshiga); Ch. Wang, Bashir, Q. Li, and Ma, 2018:298, 301 (in key to *Ammophila* of China); Danilov, 2020:317 (specimen from Zabaikalskiy Kray of Russia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Kochetkov, 2023:190 (Russia: Amur Oblast': Khingan Nature Reserve).

*Ammophila subassimilis* Strand, 1913a:86, ♀, ♂. Lectotype: Taiwan: Taihorin (DEI), designated by Dollfuss, 2013a:487. Synonymized with *Ammophila sickmanni* by Dollfuss, 2013a:487. – Strand, 1927:253 (in list of species described by the author); Sonan, 1942:133 (as new synonym of *Ammophila vagabunda*); nec Tsuneki, 1967i:383 (= *Ammophila formosensis*); Tsuneki, 1967j:5 (Taiwan), 10, 11 (in key to Ammophilini of East Asia), 17 (comparison with *Ammophila sickmanni wusheensis*); Oehlke and Wudowenz, 1974:425 (syntypes in DEI); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Porter, Stange, and Wang, 1999:6 (in checklist of Sphecidae of Taiwan); Hua, 2006:275 (in list of Chinese insects, geographic distribution).

*Ammophila sjoestedti* Gussakovskij, 1934a:6, ♀ (as *sjöstedti*, incorrect diacritic mark), junior primary homonym of *Ammophila sjoestedti* Cameron, 1910. Holotype: ♀, China: Gansu Province: no specific locality (NRS). Synonymized with *Ammophila sickmanni* by Dollfuss, 2013a:487. – R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Q. Li and L. Yang, 2005:884 (China: Gansu: Quinling Range and South Mountains); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Danilov, 2016:350 (one syntype female preserved in Zoological Institute, Sankt-Petersburg, Russia).

### **ssp. *wusheensis* Tsuneki**

*Ammophila sickmanni wusheensis* Tsuneki, 1967j:16, ♀, ♂. Holotype: ♀, Taiwan: Nantou Prefecture: Chienching (originally K. Tsuneki collection, now USNM). – Tsuneki, 1967j:5 (Taiwan), 10, 11 (in key to Ammophilini of East Asia), 1971f:5 (Taiwan; discussion); Murota, 1973b:116 (Taiwan); R. Bohart and Menke, 1976:153 (in checklist of world

Sphecidae); Nuhn and Menke, 1994:26 (holotype transferred to USNM); Porter, Stange, and Wang, 1999:5 (in checklist of Sphecidae of Taiwan); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2013a:487 (listed in synonymy of *Ammophila sickmanni*).

### 212. *sinensis* Sickmann

*Ammophila sinensis* Sickmann, 1894:17, ♀. Syntypes: China: Hopei Province: Tientsin (Münster). – Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Kohl, 1906b:334 (in revision of Palearctic Ammophilini); Gussakovskij, 1930c:207 (Russia: Chita and Stavropol oblast's; Kazakhstan: Semipalatinsk Oblast', now Semey Oblast'); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 1978b:36 (in key to Sphecidae of Kazakhstan and Central Asia); Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:386 (in key to Sphecidae of Russian Far East); Kazenas, 1998b:182 (in Sphecidae Fauna of Kazakhstan), 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:39 (geographic distribution, collecting localities in Kazakhstan); Yildirim and Ljubomirov, 2005:1788 (first record from Turkey: Erzurum: Güngörmez); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Yildirim and Ljubomirov, 2007:116 (Turkey: Erzincan: Kemaliye: Başpınar; Erzurum: Dutçu: Komyolu); Ljubomirov and Yildirim, 2008:37 (in catalog of Sphecidae of Turkey); Nemkov, 2008b:17 (in catalog of Sphecidae of Asiatic Russia); Danilov, 2009:57 (Russia: Western Siberia: Kulundinskaya Steppe); Nemkov, 2009b:51 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Danilov, 2010b:45 (distribution of Scythian type); Yildirim, 2012:75 (Turkey: Erzurum: Tortum: Derekapı); Akulov and Proshchalykin, 2013:111 (Russia: Siberia: Krasnoyarsk Krai: Minusinsk); Dollfuss, 2013a:391, 488 (in key to *Ammophila* of Palearctic Region and India), 2013b:584 (locality records from China and Mongolia); Danilov, 2014a:427 (Russia: Siberia: several areas), 2014b:519 (in key to Sphecidae s.s. of Siberia); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces); Koçak and Kemal, 2015:278 (in checklist of Hymenoptera of Turkey); Samin, Bagriacik, and Monaem, 2015:194 (Iran: Guilan: Lahijan); Danilov, 2017b:213 (in catalog of Sphecidae s.s. of Russia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:17 (Iran: known from Guilan Province); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299, 302 (in key to *Ammophila* of China); Danilov, 2020:317 (specimens from Russia: Siberia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey).

*Ammophila planicollaris* Li and C. Yang, 1990:259, ♂. Holotype: ♂, China: Nei Mongol: Junggar Banner, Ih Ju Leage: Mount Sheshan (Beijing Agricultural University). Synonymized with *Ammophila sinensis* by Dollfuss, 2013a:488. – Hua, 2006:275 (in list of Chinese insects, geographic distribution).

### 213. *smithii* F. Smith

*Ammophila smithii* F. Smith, 1856:217, ♀ (as *Smithii*, incorrect original capitalization; authorship attributed to J.S. Baly). Holotype or syntypes: ♀, India: no specific locality (originally J.S. Baly's collection, now BMNH?). – F. Smith, 1871a:359 (in catalog of Oriental Aculeata); Cameron, 1889:94 (in list of Sphecidae of Oriental Region); Bingham, 1897:232 (original description copied); Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Nurse, 1903a:518 (redescription); Ramakrishna Aiyar, 1916:554 (reference to Nurse, 1903); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Jha and Farooqi, 1994:9 (description and illustration of male genitalia); Dollfuss, 2013a:388, 397 (in key to *Ammophila* of Palearctic Region and India), 490 (in revision of *Ammophila* of Palearctic Region and India).

### 214. *snizeki* Dollfuss

*Ammophila snizeki* Dollfuss, 2015a:369, ♀. Holotype, ♀, South Africa: Northern Cape Province: Van Zylrus (OOLM). – Dollfuss, 2015a:311 (in key to Sub-Saharan *Ammophila*).

### 215. *stangei* Menke

*Ammophila stangei* Menke, 1964a:15, ♀, ♂. Holotype: ♂, USA: California: Nevada County: Boca (UCD). – Evans, 1970:486 (Wyoming: Jackson Hole); Horning and Barr, 1970:105 (USA: Idaho: Craters of the Moon National Monument); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1594 (in catalog of North American Hymenoptera); Menke, 1983b:21 (Nebraska: Dawes County: north of Crawford); G. Ferguson, 1984a:299 (prey of *Philanthus zebratus*); Rosenheim, 1987:740 (California: Nevada County: Sagehen Creek near Hobart Mills); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Danilov, 2014:355 (a pair of paratypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:134 (in revision of North and Central American *Ammophila*).

### 216. *strenua* Cresson

*Ammophila strenua* Cresson, 1865b:459, ♀. Holotype: ♀, USA: Colorado Territory: no specific locality (ANSP). – Cresson, 1887:274 (in catalog of North American Hymenoptera); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:157 (diagnostic characters), 161 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Viereck, 1903a:68 (New Mexico: Beulah); Snow, 1906:133 (Arizona: Baboquivari, Oak Creek 20 mi. southwest of Flagstaff); Cresson, 1916:94 (holotype in ANSP); Murray *in* Muesebeck, Krombein, and Townes, 1951:977 (in catalog of North American Hymenoptera); Evans, 1970:486 (Wyoming: Jackson Hole); Horning and Barr, 1970:105 (USA: Idaho: Craters of the Moon National Monument); Steiner, 1973:26 (Canada: Northwest Territories); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Krombein, 1979b:1594 (in catalog of North American Hymenoptera); Menke, 1983b:21 (Nebraska: Dawes County: southeast of Crawford), 1986c:35 (Utah: San Juan County: southeast of Natural Bridges National Monument), 1994d:15 (California: Monterey County: Parkfield area); Blades and Maier, 1996:71 (Canada: British Columbia: Osoyoos - Mount Kobau area at 119°40'W 49°05'N); Finnamore, 1997:894 (expected to occur in Yukon); Weissmann and Kondratieff, 1999:77 (Colorado: Great Sand Dunes National Monument); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Ratzlaff, 2016:28 (Canada: British Columbia: from Krombein, 1979); Menke, 2020:78 (in revision of North and Central American *Ammophila*). – **As *Sphex strenuus***: J. Smith, 1910:677 (new combination, in new list of insects of New Jersey); Mickel, 1918b:405 (in catalog of Nebraskan Sphecidae); Fernald, 1934:136 (in revision of North American and West Indian *Ammophila*).

*Sphex dubius* Fernald, 1934:139, ♂, junior secondary homonym of *Ammophila dubia* Kohl, 1901. Holotype: ♂, USA: either Arizona: Flagstaff, or Colorado, or New Mexico (ANSP). Synonymized with *Ammophila strenua* by Menke, 1967a:3.

*Ammophila denningi* Murray *in* Muesebeck, Krombein, and Townes, 1951:975. Substitute name for *Sphex dubius* Fernald, 1934. Synonymized with *Ammophila strenua* by Menke, 1965c:1 and 1967a:3.

### 217. *striata* Mocsáry

*Ammophila striata* Mocsáry, 1879:200, ♀. Holotype: ♀, Russia: Siberia: no specific locality (TMB). – nec Kohl, 1884a:382 (= *Ammophila adelpha*); Ed. André, 1886:66 (in revision of Sphecidae of Europe and Algeria); Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Kohl, 1906b:329 (in revision of Palearctic Ammophilini); Gussakovskij, 1930c:204 (description of ♂; Russia: Primorskiy Krai); de Beaumont, 1960:4 (Turkey: Ak Chehir, Lake Wan; diagnostic characters), 1967a:267 (Turkey); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 1986:237 (rare in Kazakhstan, needs protection); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:87 (in Sphecidae Fauna of Western Europe, recorded from Spain: Albarracín in Teruel Province); Kazenas, 1998b:184 (in Sphecidae Fauna of Kazakhstan), 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:39 (geographic distribution, collecting localities in Kazakhstan), 2007a:90 (Kazakhstan: Akmala Oblast': Kurgandzhin Nature Reserve and vicinity); Kazenas, 2008a:98 (southeastern Kazakhstan: Kurday Pass in Zailiyskiy Alatau); Ljubomirov and Yildirim, 2008:37 (in catalog of Sphecidae of Turkey); Danilov, 2010b:44 (distribution of Tethyan type); Dollfuss, 2013a:391, 402 (in key to *Ammophila* of Palearctic Region and India), 491 (in revision of *Ammophila* of Palearctic Region and India); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces, as *strata striata*); Koçak and Kemal, 2015:278 (in checklist of Hymenoptera of Turkey); Danilov, 2017b:213 (in catalog of Sphecidae s.s. of Russia); Kemal and Koçak, 2018:43 (Turkey: in list of pterygot insects of Van Province); Gülmez, 2019:3 (Turkey: Ankara Province: no specific locality); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:97 (in Sphecidae Fauna of

Europe); Danilov, 2020:317 (specimen from Kyrgyzstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Can and Gülmez, 2021b:309 (Turkey: Gümüşhane: Kelkit: Ağıl); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey).

### ssp. *nadigi* Roth

*Ammophila nadigi* Roth, 1932:82, ♀ (as *Nadigi*, incorrect original capitalization). Holotype: ♀, Morocco: Ifran (originally A. Nadig collection, now Zurich). – Nadig, 1933:101 (Morocco: Ifrane; original description copied); Leclercq, 1955h:76 (bibliographic references); Giner Marí, 1959:387 (Morocco). – As *Ammophila striata nadigi*: de Beaumont, 1960e:5 (new status; diagnostic characters; Morocco, Spain: Albarracin); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Dollfuss, 2013a:491 (in revision of *Ammophila* of Palearctic Region and India).

### 218. *striaticollis* F. Morawitz

*Ammophila striaticollis* F. Morawitz, 1889a:127, ♀. Holotype: ♀, China: Hutoho [= China: Shanxi: Xinzhou Prefecture: Fanshi County at 39°13'N 113°31'E] (ZIN). – Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Kohl, 1906b:376 (original description copied), 320 (as new synonym of *Ammophila campestris*); Dollfuss, 2013a:393 (in key to *Ammophila* of Palearctic Region and India), 492 (in revision of *Ammophila* of Palearctic Region and India); Danilov, 2016:338 (holotype preserved in Zoological Institute, Sankt-Petersburg, Russia); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300 (in key to *Ammophila* of China).

### 219. *strumosa* Kohl

*Ammophila quadraticollis* var. *strumosa* Kohl, 1906:355, ♀. Lectotype: ♀, Palestine: Jericho (NHMW), designated by Dollfuss, 2013a:492. – von Schulthess, 1926b:209 (Tunisia). – As *Ammophila strumosa*: Roth, 1928:200 (new status; revision, description of ♂); Alfieri, 1946:133 (in revision of Egyptian *Ammophila*); Giner Marí, 1945b:362 (Morocco: Western Sahara: Aserifa), 1947:18 (Morocco: Western Sahara); de Beaumont, 1951e:267 (Morocco); de Beaumont and Bytinski-Salz, 1955:38 (Israel); Leclercq, 1955h:86 (bibliographic references); de Beaumont, 1958a:290 (illustration of genitalia); Grandi, 1959b:287 (Algeria: Goriana in Hodna district); de Beaumont, 1963b:19 (in revision of *Ammophila nasuta* species group); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Roche and Zalat, 1994:114 (Egypt: Sinai Peninsula); Roche, 2007a:18 (in checklist of Egyptian Sphecidae, redescription), 2007b:2 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Murai and Amr, 2011:118 (recorded from Syria by Kohl, 1906); Dollfuss, 2013a:388, 397 (in key to *Ammophila* of Palearctic Region and India), 492 (in revision of *Ammophila* of Palearctic Region and India), 2013b:584 (locality records from Morocco and Tunisia); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:307 (in list of Tunisian Sphecidae *sensu stricto*; new record: Tunisia: Sidi Bouzid: Bouhedma National Park).

As *Ammophila hemilauta*: Bischoff, 1933:6 (Morocco: Marrakech), corrected to *Ammophila strumosa* by de Beaumont, 1963b:20.

### 220. *tekkensis* Gussakovskij

*Ammophila tekkensis* Gussakovskij, 1930c:206, ♀, ♂. Syntypes: ♀, ♂, Turkmenistan: Kara Kum desert, and Uzbekistan: Khiva at 41°23'N 60°22'E (ZIN). – Gussakovskij, 1933b:274 (Iran); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Kazenas, 1978b:36 (in key to Sphecidae of Kazakhstan and Central Asia), 1998b:185 (in Sphecid Fauna of Kazakhstan), 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:39 (geographic distribution, collecting localities in Kazakhstan), 2008a:98 (southeastern Kazakhstan: lower course of Kurta River: village Kazakhstan); Danilov, 2010b:44 (distribution of Tethyan type); Dollfuss, 2013a:389, 391, 399, 401 (in key to *Ammophila* of Palearctic Region and India), 493 (in revision of *Ammophila* of Palearctic Region and India), 2013b:584 (locality records from Kazakhstan and Uzbekistan); Danilov, 2016:351 (syntypes preserved in Zoological Institute, Sankt-Petersburg, Russia); Danilov and Mokrousov, 2017a:111 (first record from Russia: Astrakhan Oblast', Kalmykia); Danilov, 2017b:213 (in catalog of Sphecidae s.s. of Russia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:17 (Iran: known from Sistan-o Baluchestan Province); Danilov, 2020:317 (specimens from Kazakhstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Embergenov, Élmurodova, Amirov and Kimyonazarov, 2022:47 (Turkmenistan: Karakum Desert).

### 221. *terminata* F. Smith

*Ammophila apicalis* Brullé, 1839:92, sex not stated, junior primary homonym of *Ammophila apicalis* Guérin-Ménéville, 1835. Holotype or syntypes: Canary Islands: no specific locality (MNHN?). – Brullé, 1840:pl. 3 fig.22 (illustration of whole specimen); Kohl, 1893a:35 (Austria: Niederösterreich: Arnsdorf and Oberweiden); Dalla Torre, 1897:395 (in catalog of world Hymenoptera); Antiga and Bofill, 1904:3 (Spain: Cataluña Province); Saunders, 1904a:202 (Canary Islands: Tenerife); Kohl, 1906b:331 (in revision of Palearctic *Ammophilini*); Schmiedeknecht, 1907:246 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:103 (in catalog of French Hymenoptera); Honoré, 1919:268 (France: Seine-et-Oise: Lardy); Noskiewicz, 1922a:9 (Ukraine: Lviv area); Berland, 1925d:29 (in Sphecid Fauna of France); Coulon, 1925:115 (Canary Islands); Kuznetsov-Ugamskij, 1927:249 (Kazakhstan: Auliye-Ata, now Dzhambul); Roth, 1928:192 (common in southern Europe, but very rare in North Africa), 223 (nesting habits, as var. *mocsaryi*), 1929:182 (in revision of Spanish *Ammophilini*); Schmiedeknecht, 1930:706 (in keys to Hymenoptera of North and Central Europe); Guiglia, 1932c:3 (Italy: Valle d'Aosta: Parco Nazionale del Gran Paradiso); Grandi, 1934:130 (Italy: Abruzzi: Campo Pericoli); Zavadil, 1932:96 (Czechoslovakia, forma *mocsaryi*), 1934:187 (Slovakia); Bernard, 1935:60 (France: Var: Fréjus area), 1936c:287 (France: Bouches-du-Rhône: Port-de-Bouc; Var: Fréjus); Crèvecoeur and Maréchal, 1936:249 (Belgium: Lanaecken and Laeken); J. Muller, 1936:163 (first record from Belgium); Bischoff, 1937b:1 (Canary Islands); Zavadil, Šustera, and Bat'a, 1937:213 (in catalog of Sphecidae of Czechoslovakia); Kuntze and Noskiewicz, 1938:379 (in Poland known only from Podole region, now Ukraine); Móczár, 1938d:80 (Hungary: Pótharasztpuszta); Balthasar, 1941b:112 (Czech Republic: eastern Moravia); Giner Marí, 1943a:71 (in Sphecid Fauna of Spain); de Andrade, 1949:7 (Portugal); Móczár, 1953:309 (Hungary); Nouvel and Ribaut, 1953:176 (France: Hautes-Pyrénées: Cauterets); de Beaumont, 1954b:2 (Canary Islands); Hertzog, 1954:99 (France: Bouches-du-Rhône: Camargue); de Beaumont, 1955c:56 (effects of stylopization); Harant and Leclercq, 1955:250 (France: Hérault: Palavas-les-Flots); Leclercq, 1955h:87 (bibliographic references); Vogrin, 1955:30 (Yugoslavia); Bytinski-Salz, 1956:224 (Turkey: Altinkum, Keşis, Pendik, Ulu Dag); Ceballos, 1956:359 (in catalog of Hymenoptera of Spain); Hertzog, 1956:144 (prey: geometrid caterpillars); Morel, Nouvel, and Ribaut, 1956:336 (France: Département des Pyrénées-Orientales); Bajári, 1957a:14 (in key to Hungarian Sphecidae); Morel, Nouvel, and Ribaut, 1958:8 (France: Pyrénées-Orientales: Banyuls-sur-Mer area); Pulawski, 1958a:163 (Bulgaria: Sandanski); de Beaumont, 1958c:201 (Swiss National Park); de Beaumont, 1959a:7 (Italy); Scobiola Palade, 1959:498 (first record from Romania: Constanța Region: Eforia, description and illustration of male genitalia); Noskiewicz and Pulawski, 1960:38 (in key to Polish Sphecidae, not yet found in Poland); Scobiola, 1960b:235 (Romania: several localities); Atanassov, 1962:126 (Bulgaria: Petrich area); de Beaumont, 1962:19 (Spain), 1964c:25 (in Sphecid Fauna of Switzerland); Menke, 1964:151 (nomenclatural history); de Beaumont, 1968:254 (Canary Islands); Kazenas, 1968b:342 (Kazakhstan: Alma Ata Oblast'); Benedek, 1969a:83 (Hungary; marshy meadow); Zangheri, 1969:1699 (Italy: in catalog of flora and fauna of Romagna Region); Balthasar, 1972:428 (in Sphecid Fauna of Czechoslovakia); Simon Thomas, 1972:174 (France: Gironde, Landes, Lot-et-Garonne), 1976:3 (France: Lot-et-Garonne: Forêt de Campet); Kolesnikov, 1977:317 (Russia: Bryansk Oblast'); Marion, 1978:85 (France); Schmidt, 1981:223 (Germany: specimen recorded from Kaiserstuhl by Miotk, 1979 is *Podalonia affinis*); Mingo and Gayubo, 1983:163 (Spain); Pádr *in* Šedivý, 1989a:166 (in checklist of Czechoslovakian Sphecidae), 1990:68 (Czech Republic: Praha area).

*Ammophila terminata* F. Smith, 1856:210. Substitute name for *Ammophila apicalis* Brullé, 1839. – Menke, 1964b:151, 152 (synonymy); de Beaumont, 1967a:268 (Turkey), 1968a:254 (Canary Islands: Lanzarote, Fuerteventura, Gran Canaria, Tenerife); Simon Thomas, 1969a:120 (Canary Islands: Tenerife); Kazenas, 1972b:100 (Kazakhstan), 1974b:109 (feeding on flowers of *Tamarix* sp., Tamaricaceae, *Statice gmelini* Willd., Plumbaginaceae, *Euphorbia* spp., Euphorbiaceae, in Kazakhstan), 110 (feeding on flowers of *Nitraria schoberi* L., *Peganum harmala* L., Zygophyllaceae, and *Daucus carota* L., Apiaceae, in Kazakhstan), 111 (feeding on flowers of *Lepidium crassifolium* W. et K., Brassicaceae, in Kazakhstan), 112 (feeding on flowers of *Salsola* sp., Chenopodiaceae, in Kazakhstan); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae); Báez and Ortega, 1978:191 (Canary Islands); Kazenas, 1978b:37 (in key to Sphecidae of Kazakhstan and Central Asia); Mityaev, Matesova, Kulenova, Kazenas, and Zhdanko, 1980:115 (Russia: Siberia:

Altayskiy Kray: basin of Aley River); Dollfuss, 1983a:75 (Austria: endangered in Niederösterreich), 1983b:3 (in catalog of Sphecidae of Austria), 1988:21 (Austria: Niederösterreich: Oberweiden); Chinin, 1991:111 (Russia: Samara Oblast'); Day, 1991:xii (summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:33 (in key to Sphecidae of North and Central Europe); Gorobchishin, 1993:46 (Ukraine: Kanev Nature Reserve); Hohmann, La Roche, Ortega, and Barquín, 1993:199 (detailed records from Canary Islands); Gorobchishin, 1995:17 (Ukraine: Kanev Nature Reserve); Negrisoló *in* Minelli, Ruffo, and La Posta, 1995b:2 (in catalog of Italian fauna); Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:387 (in key to Sphecidae of Russian Far East); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Minoranskiy and Shkuratov, 1996:80 (Russia: Rostov Oblast'); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Bitsch, Barbier, Gayubo, Schmidt, and Ohl, 1997:89 (in Sphecid Fauna of Western Europe); Kazenas, 1998b:186 (in Sphecid Fauna of Kazakhstan), 187 (as *terminata terminata*); Anan'eva and Kochetkov, 1999:6 (Russia: Ryazan Oblast': no specific locality); Zehnder and Zettel, 1999:131 (Switzerland: recolonization of flooded area in Valais Canton); Blösch, 2000:137 (in Sphecid Fauna of Germany: may occur in Germany); Esenbekova and Kazenas, 2000:14 (southeastern Kazakhstan: 8 km east of Bakanas, 3 km northeast of Borandysu, 10 km northwest of Chemolgan, 10 km northwest of Chundzha, near Kapchagay); Shkuratov, 2000:54 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Zettel, 2000:24 (Austria: Drösing); Kazenas, 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia), 114 (review of known biology); Kazenas and Esenbekova, 2001:133 (Kazakhstan: Almatinskiy Nature Reserve); Kazenas, 2002a:39 (geographic distribution, collecting localities in Kazakhstan); Shkuratov, 2002b:138 (Russia: Rostov Oblast': Rostovskiy Nature Reserve at 46°27'N 42°41'E); Shlyakhtenok and Skibinska, 2002:32 (Belorussia: no specific locality); Hellrigl, 2004a:172 (Italy: Trentino-Alto Adige, as Südtirol: Vinschgau = Val Venosta: Sankt Martin in Kofel); Kazenas, 2004b:100 (Kazakhstan: western Tien Shan Mountains), 2004d:28 (Kazakhstan: northern Caspian region); Majzlan and Deván, 2004:32 (Slovakia: Malacky-Široké); Shkuratov, 2004a:72 (Russia: Rostov Oblast'), 2004b:164 (Russia: Rostov Oblast': Gosudarstvennyi Muzei-Zapovednik M.A. Sholokhova); Gülmez and Tüzün, 2005:51 (Turkey: Ankara Province); Straka, 2005a:399 (endangered in Czech Republic); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Alieva and Humbatov, 2007:77 (nesting and prey, from literature); Jacobs, 2007:46, 47 (in key to Sphecidae of Germany, not yet found in Germany); Kazenas, 2007a:90 (Kazakhstan: Akmala Oblast': Kurgandzhin Nature Reserve and vicinity); Vepřek and Straka, 2007:199 (in catalog of Sphecidae of Czech Republic and Slovakia, known from Moravia and Slovakia only), 211 (record from Bohemia by Zavadil, 1937, is unreliable and not accepted; vaucher specimen could not be located); Danilov, 2008:346 (Russia: Altayskiy Kray: Barnaul area); Danilov and Tshernyshev, 2008:41 (Russia: Novosibirsk Oblast': Karasuk area); Dvořák, Bogusch, Malenovský, Bezděčka, Bezděčková, Holý, Liška, Macek, Roller, Říha, Smetana, Straka, and Šima, 2008:65 (Czech Republic: Hády Hill near Brno); Kochetkov, Bol'shakova, Butenko, and Priklonskiy, 2008:262 (Russia: Ryazan' Oblast': Oka Nature Reserve); Larnhof, 2008:45 (Austria: Niederösterreich: Nature Reserve “in den Sandbergen” near Drösing); Nemkov, 2008b:17 (in catalog of Sphecidae of Asiatic Russia); Baños-Picón, Asís, Gayubo, and Tormos, 2009:310 (Spain: frequency of specimens collected with hand nets and Malaise traps); Danilov, 2009:57 (Russia: Western Siberia: Kulundinskaya Steppe); Nemkov, 2009b:51 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Danilov, 2010b:45 (distribution of transpalearctic type); Rudoiskatel', 2010:147 (Russia: southern Ural Mountains); Shorenko and Kononov, 2010:10 (Ukraine: Khar'kov, Zaporozhskaya, and Luganskaya oblast's); Smetana, Roller, Beneš, Bogusch, Dvořák, Holý, Karas, Macek, Straka, Šima, Tyrner, Vepřek, and Zeman, 2010:100 (Western Slovakia: recorded from Borská nížina); Tüzün and Yüksel, 2010:4469 (Turkey: Niğde Province); Baghirov, 2011b:139 (Russia: Altay Republic: Onguday); Danilov, 2011b:205 (Russia: Zabaikal'skiy Kray: Daur'skiy Nature Reserve); Feoktistov, 2011:85 (Russia: Mordovian Nature Reserve); Wiesbauer and Zettel, 2011:269 (Austria: Niederösterreich: March = Morava lowland); Boillat, 2012:229 (Switzerland: in checklist of insects of Canton de Genève); Kazenas, 2012b:168 (Kazakhstan: Korgalzhin State Nature Reserve); Prisiy, 2012:46 (Russia: Belgorod Oblast'); Protsenko, Fateryga, Ivanov, and Puzanov, 2012:54 (Ukraine: Crimea); Akulov and Proshchalykin, 2013:111 (Russia: Siberia: Krasnoyarsk Kray: Minusinsk); Dollfuss, 2013a:392, 393, 402, 403 (in key to *Ammophila* of Palearctic Region and India), 494 (in revision of *Ammophila* of Palearctic Region and India), 2013b:585 (locality records from China, Czech Republic, France, Hungary, Kazakhstan, Kyrgyzstan, Mongolia, Portugal, Slovakia, Spain, Tunisia, and Turkey); Kazenas, 2013a:15 (color photograph of male, short information on geographic distribution and nesting habits); Shlyakhtenok, 2013:134 (in annotated catalog of aculeate wasps of Belorussia); Danilov, 2014a:427 (Russia: Siberia: several areas), 2014b:519, 521 (in key to Sphecidae s.s. of Siberia); Kazenas, 2014a:133 (Kazakhstan: Karatau Mountain Range); Koçak and Kemal, 2015:278 (in checklist of Hymenoptera of Turkey); Shorenko, 2015:312 (in list of Sphecidae *sensu lato* of Crimea); Levárdá and Matache, 2016:40 (in catalog of Sphecidae s.s. of Romania); Yildirim, Ljubomirov, Özbek, and Yüksel, 2016:7 (Turkey: Bayburt: Kopdağı, as *terminata terminata*); Danilov, 2017b:213 (in catalog of Sphecidae s.s. of Russia); Shorenko, 2017:76 (in Crimea collected in September); Jacobs and Liebig, 2018:135 (Russia: Buryat Republic: East Sayan: 30 km northwest of Mondy); Shorenko, 2018:126 (Crimea, including localities, habitats, and number of specimens); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299, 302 (in key to *Ammophila* of China); Baghirov and Nesterovitch, 2019:45 (Russia: Western Siberia: Yamalo-Nenets Autonomous District: near Khanymey village); Gülmez, 2019:3 (Turkey: Ankara and Sivas provinces: no specific localities); Ruchin and Antropov, 2019a:13219 (Russia: Mordovian State Nature Reserve, determination tentative); Ben Khedher, Yildirim, Braham, and Ljubomirov, 2020a:308 (in list of Tunisian Sphecidae *sensu stricto*; new records: Tunisia: Le Kef and Mahdia provinces); Bitsch, Barbier, and Jacobs *in* Bitsch, Barbier, Gayubo, Jacobs, Leclercq, and Schmidt, 2020:97 (in Sphecid Fauna of Europe); Danilov, 2020:317 (specimens from Hungary, Kazakhstan, Kyrgyzstan, Mongolia, and Russia: European and Siberia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia, as *terminate terminata*); Olszewski and Danilov, 2020:193 (Spain: Valencia: Petrer); Saure, 2020:276 (Germany: Sachsen-Anhalt: sand dunes); Shorenko, 2020:47 (Crimea: Karadag Nature Reserve); Can and Gülmez, 2021b:309 (Turkey: Gümüşhane: Kelkit: Ağıl); Cross, Baldock, and Wood, 2021:15 (in list of Sphecidae *sensu lato* of Portugal); Embergenov, Akhmedov, and Medetov, 2023:24 (Uzbekistan: southern Lake Aral region); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey, as *terminate terminata*).

*Ammophila mocsaryi* Frivaldszky, 1876:352, [♀, ♂] (as *Mocsáryi*, incorrect original capitalization and diacritic mark).

Syntypes: Hungary: Budapest and Temes Komitat (now: Romania: Timiș District): Grebenács (TMB). Synonymized with *Ammophila apicalis* Brullé by Kohl, 1906:331, synonymy confirmed by Dollfuss, 2013a:331. – Kohl, 1880:183 (Austria: Bozen area, now Italy: Trentino–Alto Adige: Bolzano), 1880:237 (description of ♂); Marquet, 1881:177 (southern France, as *Moksari*); Sajó, 1882:5 (Hungary); Kohl, 1883e:675 (Switzerland); von Heyden, 1884:116 (Germany: Frankfurt am Main); Ed. André, 1886:68 (in revision of Sphecidae of Europe and Algeria), 1888:2\* (bibliographic references); Medina, 1894a:259 (Spain: Pozuelo de Calatrava); Dalla Torre, 1897:404 (in catalog of world Hymenoptera); Mocsáry, 1897:79 (Kingdom of Hungary, some localities are in today's Romania and Slovakia); Medina, 1898:153 (Portugal: Mamede); Ferton, 1905:97 (homing); Olivier, 1910:163 (Algeria: Bou Saâda); Strand, 1915:97 (Italy: Calabria: Aspromonte); Ferton, 1923:80 (malaxation of prey), 111 (material from nest is evacuated in flight and deposited on narrow area), 294 (easily finds nest when carrying prey); Haris, 2016:14 (in list of species described by J. Frivaldszky from Carpathian Basin). – **As *Podalonia apicalis* var. *mocsaryi***: Bischoff, 1931:8 (new combination, new status, Spain). – **As *Ammophila apicalis* var. *mocsaryi***: Bischoff, 1933:6 (Morocco); Šnoflák *in* Zavadil and Šnoflák, 1948:99 (in key to Sphecidae of Czechoslovakia); Ceballos, 1956:359 (in catalog of Hymenoptera of Spain); Diniz, 1959:26 (Portugal: Lisboa, Quinta do Mato). – **As *Ammophila apicalis mocsaryi***: de Andrade, 1949:7 (new status, Portugal); Ceballos, 1964:86 (in supplement to catalog of Spanish Sphecidae); Diniz, 1965:2 (Portugal: seven localities); Isensee, Lesemann, and Röseler, 1965:611 (Spain: Gerona: no specific locality); Suárez, 1969:27 (Spain: Almería Province); Benedek, 1979:227 (Hungary: Bakony Hills). – **As *Ammophila terminata mocsaryi***: R. Bohart and Menke, 1976:153 (new subspecific combination, in checklist of world Sphecidae); Gayubo, 1981a:142 (northern Spain: Sierra de Béjar), 1983c:234 (Spain: Salamanca Province); Pagliano, 1984:368 (Italy); Chevin and Chevin, 1985:38 (France: Aude); Gayubo, 1985c:167 (Spain: Valladolid: Puenteuro, San Miguel de Arroyo, Traspinedo); Józán, 1985a:180 (Hungary), 1985b:55 (Hungary south of Lake Balaton), 76 (floral records), 83 (ecological and zoogeographic characteristics); Pagliano, 1985:16 (Italy); Gayubo, 1986b:37 (Spain: Andalucía), 1986c:30 (Spain: Zamora Province); Gayubo and Heras, 1986:33 (Spain: Segovia Province; floral records); Gayubo and Sanza, 1986:33 (Spain: Burgos); Gayubo and Tormos, 1986a:10 (Spain: Castellón de la Plana); Józán, 1986:368 (Hungary: Kiskunság National Park); Asís and Jiménez, 1987:25 (Spain: Castellón Province); Karsai, 1988:99 (Hungary: Kiskunság National Park); Gayubo, Asís, and Tormos, 1990a:13 (Spain); Pagliano, 1990:61 (in catalog of Italian Sphecidae); Gayubo, Borsato,

and Osella, 1991:396 (Italy: Calabria), 1991:280 (Greece); Józán, 1991:602 (Hungary: Bátorliget Nature Reserve); Hamon, Tussac, and Fonfria, 1992:407, 410 (in key to French Ammophilini), 412 (distribution in France); Józán, 1992b:171 (Hungary: Boronka-melléki Protected Area); Torregrosa, Gayubo, Tormos, and Asís, 1993:11 (Spain: Alicante Province); Józán, 1995:104 (Hungary: projected Duna-Dráva National Park); Negrisolo *in* Minelli, Ruffo, and La Posta, 1995b:2 (in catalog of Italian fauna); Józán, 1998:310 (Hungary: Duna-Dráva National Park); Gayubo, García, Torres, and González, 1999:89 (Spain: Soria Province); Gonzáles, Gayubo, and Torres, 1999:354 (Spain: Valladolid: Viana de Cega); Gayubo, González, and Torres, 2000:184 (Spain: Salamanca Province); Józán, 2001:277 (Hungary: Somogy County); Drewes, 2003:133 (Italy: Bolzano–Alto Adige; Spain: Figueras); Gayubo and Özbek, 2005:13 (Turkey: Erzurum: University campus, Tortum); Józán, 2003: 226 (Hungary: Látrányi Pusztá Nature Conservation Area); Pagliano and Negrisolo, 2005:69 (in Sphecidae Fauna of Italy); Magdalou, 2006b:109 (France: Pyrénées-Orientales: Mas Larrieu Nature Reserve near Argelès-sur-Mer), 2006c:7 (France: Pyrénées-Orientales: Réserve Naturelle du Mas-Larrieu); G. Turrisi and R. Turrisi, 2007:115 (Italy: Sicilia: Mount Etna: Botanical Garden Nuova Gussonea and vicinity); Ljubomirov and Yildirim, 2008:39 (in catalog of Sphecidae of Turkey); Gayubo, González, Tormos, and Asís, 2009:362 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero); González, Gayubo, Asís, and Tormos, 2009:622 (Spain: Salamanca and Zamora provinces: Arribes del Duero Natural Park); Józán, 2011:178 (in checklist of Sphecidae *sensu lato* of Hungary); Yildirim, 2012:75 (Turkey: Bayburt: Kop Mountain; Kars: Sarıkamış: Karakurt); 2014:30 (Turkey: distribution by biogeographic provinces); Magdalou, 2017:14 (France: Pyrénées-Orientales: Réserves Naturelles Catalanes: Mas Larrieu); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey).

*Ammophila minuta* Frivaldszkyi, 1877:352 (as Mocsáry's MS name), not available (proposed in synonymy of *Ammophila mocsaryi*, Article 11e).

*Ammophila rhaetica* Kohl, 1879:400, ♀. Lectotype: ♀, Austria: Sankt Justina and Vierglberge near Bozen, now Italy: Alto Adige: Bolzano area (NHMW), designated by Dollfuss, 2013a:495. Synonymized with *Ammophila mocsaryi* by Kohl, 1880:183. – Ed. André, 1886:67 (in revision of Sphecidae of Europe and Algeria), 1888:2\* (bibliographic references); Kohl, 1889a:20 (as valid species).

*Ammophila julii* Fabre, 1879:322, [♀] (as *Julii*, incorrect original capitalization). Syntypes: France: no specific locality (MNHN). Synonymized with *Ammophila apicalis* by Dalla Torre, 1897:404. – von Dalla Torre, 1881:155 (original description translated into German); Fauvel, 1883:162 (original description copied); Berland, 1923a:173 (*Ammophila julii* is a synonym of *apicalis*).

*Ammophila kirgisisca* F. Morawitz, 1891a:203, ♀, ♂. Syntypes: European Kazakhstan: Ryn-Peski: Kirgizskaya (ZIN). Synonymized with *Ammophila apicalis* by Kohl, 1906:332, synonymy confirmed by Dollfuss, 2013a:495. – Dalla Torre, 1897:403 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae, as tentative synonym of *Ammophila terminata mocsaryi*); Danilov, 2016:337 (syntypes preserved in Zoological Institute, Sankt-Petersburg, Russia).

*Ammophila gegen* Tsuneki, 1971k:171, ♂, ♀. Holotype: ♂, Mongolia: Central Gobi Aymag: Delgerhangay ul (TMB). Synonymized with *Ammophila terminata* by Nemkov *in* Nemkov, Kazenas, Budrys, and Antropov, 1995:387, synonymy confirmed by Dollfuss, 2013a:494. – R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Wu and Zhou, 1996a:50 (in revision in Economic Insect Fauna of China).

### **ssp. turanica Kazenas**

*Ammophila terminata turanica* Kazenas, 1998b:188, ♀, ♂. Holotype: ♀, Kazakhstan: near Ayak-Kalkan in Ili River valley 35 km northeast of Chilik (ZIN). – Dollfuss, 2013a:495 (listed in synonymy of *Ammophila terminata*); Danilov, 2020:317 (specimens from Kazakhstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

*Ammophila terminata turanica* Kazenas, 2000d:18, ♀, ♂. Objective synonym of *Ammophila terminata turanica* Kazenas, 1998b:188.

### **222. theryi (Gribodo)**

*Coloptera theryi* Gribodo, 1894a:3, ♀, ♂ (as *Theryi*, incorrect original capitalization). Lectotype: ♂, Algeria: Biskra (Genoa), designated by Dollfuss, 2013a:496. – Zavattari, 1913a:4 (omitted from Dalla Torre's catalog, 1897); de Beaumont, 1950e:261 (study of female syntype); Penati and Mariotti, 2015:124 (in list of Hymenoptera described by G. Gribodo). – **As *Ammophila barbara theryi***: de Beaumont, 1950e:261 (new combination, new status), 1960c:4 (subspecific status confirmed; diagnosis). – **As *Ammophila theryi***: R. Bohart and Menke, 1976:154 (full species status, in checklist of world Sphecidae); Dollfuss, 2013a:395, 404 (in key to *Ammophila* of Palearctic Region and India), 496 (in revision of *Ammophila* of Palearctic Region and India), 2013b:586 (locality records from Jordan, Morocco, and Syria), 2015a:310, 314 (in key to Sub-Saharan *Ammophila*), 369 (in revision of Sub-Saharan *Ammophila*); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:17 (Iran: known from Sistan-o Baluchestan Province); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey).

*Ammophila judaeorum* Kohl, 1901d:149, ♀, ♂. Lectotype: ♀, Palestine: Jericho (NHMW), designated by Dollfuss, 2013a:496. Synonymized with *Ammophila theryi* by Dollfuss, 2013a:496. – Kohl, 1906b:318 (in revision of Palearctic Ammophilini); nec Morice, 1911:73 and Giner Marí, 1945b:362 (= *Ammophila barbara*); Roth, 1928:187 (comparison with *Ammophila barbara*); Gussakovskij, 1933b:274 (Iran); Balthasar, 1954b:281 (Palestine: Wadi el Kelt near Jericho); de Beaumont and Bytinski-Salz, 1955:36 (Israel); R. Bohart and Menke, 1976:152 (in checklist of world Sphecidae); Dollfuss, 1989:7 (type material in NHMW). – **As *Ammophila barbara judaeorum***: de Beaumont, 1960e:4 (new status); Roche and Zalat, 1994:114 (Egypt: Sinai Peninsula); Ljubomirov and Yildirim, 2008:33 (in catalog of Sphecidae of Turkey); Yildirim, 2014:30 (Turkey: distribution by biogeographic provinces); Kaplan and Yildirim, 2023:1691 (in checklist of Sphecidae *sensu lato* of Turkey). Nec *Ammophila judaeorum* (= *Ammophila barbara*): W. Schulz, 1905b:32; Morice, 1911:73; Giner Marí, 1945b:362, 1947:18.

*Ammophila barbara* var. *airensis* Berland, 1950:296, ♀. Holotype: ♀, Niger: Air: Agadez (MNHN). Synonymized with *Ammophila theryi* by Dollfuss, 2013a:496. – de Beaumont, 1960e:4 (diagnostic characters). – **As *Ammophila airensis***: R. Bohart and Menke, 1976:150 (new status; in checklist of world Sphecidae).

### **223. touareg Ed. André**

*Ammophila touareg* Ed. André, 1886:65, ♀, ♂ (as *Touareg*, incorrect original capitalization). Syntypes: Algeria: Sebdo in Oran Province (MNHN). – Ed. André, 1888:2\* (bibliographic reference); Kohl, 1889a:20 (as new synonym of *Ammophila sabulosa*); Dollfuss, 2013a:391, 400 (in key to *Ammophila* of Palearctic Region and India), 497 (full species status, in revision of *Ammophila* of Palearctic Region and India), 2013b:586 (Algeria: Bouira, Morocco: Ifrane); Fresno, 2018:226 (first record from Europe and Spain: Salamanca: Béjar). – **As *Ammophila sabulosa* var. *touareg***: Nadig, 1933:100 (new status, Morocco: Ifrane). – **As *Ammophila sabulosa touareg***: Roth, 1928:193 (new status, in revision of North African Ammophilini), 222 (habitat), 231 (nocturnal resting); Giner Marí, 1945b:359 (e. Morocco: Ain Zorah); de Beaumont, 1950f:396 (Morocco), 1951e:265 (Morocco); Giner Marí, 1959:387 (Morocco); Suárez *in* Giner Marí, 1959:400 (name correctly used by Giner Marí, 1959:387); R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae).

*Ammophila oraniensis* Roth, 1928:194, ♀. Holotype: ♀, Algeria: Oran (MNHN). Synonymized with .. – Leclercq, 1955h:76 (bibliographic reference).

### **224. tsunekii Menke**

*Ammophila tomentosa* Tsuneki, 1971k:174, ♀, junior secondary homonym of *Ammophila tomentosa* (Arnold, 1920). Holotype: ♀, Mongolia: Central Gobi Aymag: Hoot Bulag (TMB).

*Ammophila tsunekii* Menke *in* Bohart and Menke, 1976:154. Substitute name for *Ammophila tomentosa* Tsuneki. – Dollfuss, 2013a:393, 403 (in key to *Ammophila* of Palearctic Region and India), 498 (in revision of *Ammophila* of Palearctic Region and India), 2013b:586 (locality records from Mongolia); Danilov, 2020:318 (specimens from Mongolia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

### **225. tuberculiscutis (Turner)**

*Sphex tuberculiscutis* Turner, 1919c:396, ♀, ♂. Syntypes: Kenya: Kibwei, Masongaleni, Mtito Andei [as Mitto Andei], and Tanzania: Ukamba (BMNH). – Arnold, 1928b:260 (in revision of southern African *Ammophila*), 1930:16 (in checklist of Afrotropical Sphecidae). – **As *Ammophila tuberculiscutis***: Leclercq, 1955h:94 (new combination, bibliographic references); R. Bohart and Menke, 1976:154 (in checklist of world Sphecidae); Dollfuss, 2015a:309, 313 (in key to Sub-



Saharan *Ammophila*), 371 (in revision of Sub-Saharan *Ammophila*; Kenya, Namibia), 2015b:434 (locality records from Kenya).

### 226. *turkestanica* Kohl

*Ammophila apicalis* var. *turkestanica* Kohl, 1906:332, sex not stated. Lectotype: ♀, Kazakhstan: border of Kyzylkum desert and Golodnaya Steppe on Syr Darya River, approximately 41°11'N, 67°54'E (ZIN), designated by Danilov and Odintsev, 2022b:17. – Kohl, 1906:254 (in key to Palearctic Ammophilini, misspelled *turkestanica*). – **As *Ammophila terminata turkestanica***: R. Bohart and Menke, 1976:154 (new status, in checklist of world Sphecidae); Kazenas, 1978b:37 (in key to Sphecidae of Kazakhstan and Central Asia, misspelled *turkestanica*), 1998b:188 (in Sphecidae Fauna of Kazakhstan), 2001b:18 (in checklist of Sphecidae of Kazakhstan and Central Asia); Dollfuss, 2013a:392, 402 (in key to *Ammophila* of Palearctic Region and India), 495 (in revision of *Ammophila* of Palearctic Region and India: Kazakhstan: 10 km east of Djambul), 2013b:585 (locality records from China and Kazakhstan); Danilov, 2020:317 (specimens from Kazakhstan in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia). – **As *Ammophila turkestanica***: Danilov and Odintsev, 2022b:17 (raised to full species status, redescription of ♀, description of ♂, locality records).

### 227. *turneri* Dollfuss

*Ammophila turneri* Dollfuss, 2015a:372, ♀, ♂. Holotype: ♂, South Africa: Western Cape Province: Swellendam (BMNH). – Dollfuss, 2015a:311, 315 (in key to Sub-Saharan *Ammophila*), 2015b:434 (South Africa: Eastern Cape Province: 70 km southwest of Queenstown at 32°07'S 26°16'E).

### 228. *tyrannica* Cameron

*Ammophila tyrannica* Cameron, 1890:pl. IX, Fig. 11. ♀. Holotype: ? India: no specific locality (BMNH or OXUM). – Dalla Torre, 1897:411 (in catalog of world Hymenoptera); R. Bohart and Menke, 1976:154 (in checklist of world Sphecidae).

### 229. *unita* Menke

*Ammophila unita* Menke, 1965c:1, nomen nudum. Objective synonym of *Ammophila unita* Menke, 1966b.

*Ammophila unita* Menke, 1966b:35, ♀, ♂. Holotype: ♂, USA: Colorado: Moffat County: Castle Park in Dinosaur National Monument (USNM). – R. Bohart and Menke, 1976:154 (in checklist of world Sphecidae); Krombein, 1979b:1594 (in catalog of North American Hymenoptera); Menke, 1994f:21 (Utah: Calf Creek Falls State Park and Monticello area); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:135 (in revision of North and Central American *Ammophila*).

### 230. *untumoris* Yang and Q. Li

*Ammophila untumoris* Yang and Q. Li, 1989:108, ♀. Holotype: ♀, China: Shaanxi Province: Ganquan County: Quingquan (Beijing Agricult. Univ.). – Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2013a:499 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese into English); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299 (in key to *Ammophila* of China).

### 231. *urnaria* Dahlbom

*Ammophila urnaria* Dahlbom, 1843:14, ♀, ♂ (authorship attributed to Klug). Lectotype (sex not stated): USA: Pennsylvania or South Carolina: no specific locality (ZMHU), designated by Menke, 1965c:1. – Dahlbom, 1845:430 (in key to *Ammophila*); F. Smith, 1856:223 (in catalog of Hymenoptera in British Museum); Cresson, 1863:319 (in catalog of North American Hymenoptera); A. Costa, 1864b:111 (specimen from Carolina, USA, in Museo Zoologico di Napoli); Taschenberg, 1869:433 (Illinois); Cresson, 1887:274 (in catalog of North American Hymenoptera); Dalla Torre, 1897:411 (in catalog of world Hymenoptera); G. Peckham and E. Peckham, 1898:6 (nesting habits); Ashmead, 1899d:354 (in checklist of North American Sphecidae); J. Smith, 1900:524 (in list of insects of New Jersey); Melander, 1903:157 (diagnostic characters), 161 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); Viereck, 1903d:121 (Maryland: Chestertown); G. Peckham and E. Peckham, 1905:18 (popular account of nesting habits); Barth, 1910:119 (nest structure); E. Nielsen, 1921:325 (review of the Peckhams observation on prey paralyzing); Picard, 1925b:161 (review of observations on stinging sequence); G. Carpenter, 1930b:292, 295, 297 (nest closure); Frisch, 1940:345 (use of tool described by the Peckhams, 1898, is not unique to this species and is innate, instinctive act); Murray *in* Muesebeck, Krombein, and Townes, 1951:977 (in catalog of North American Hymenoptera); Evans and Lin, 1956a:146 (description of larva); Evans, 1959d:462 (nesting behavior, as *Ammophila urnaria urnaria*), 1963a:153 (photograph of female with prey), 1963c:Fig. 7 after p. 38 (photograph of female with prey), 58 (homing); Kurczewski and Kurczewski, 1963:147 (Pennsylvania: Presque Isle State Park, as *urnarius*); Evans, 1975a:264 (slow colonizer of new habitats); R. Bohart and Menke, 1976:154 (in checklist of world Sphecidae); Krombein, 1979b:1594 (in catalog of North American Hymenoptera); Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino); Finnamore, 1982:36 (in Sphecidae Fauna of southern Quebec); Menke, 1983b:21 (Nebraska: Cherry County: Valentine and Nenzel areas, and Dawes County: southeast of Crawford); Brockmann, 1985b:312 (nest closure summary); Piek and Spanjer, 1986:179 (in list of Sphecidae with known prey); Steiner, 1986:99 (references to papers on nesting habits); O'Brien, 1989b:213 (distribution in Michigan); Spofford, Kurczewski, and Downes, 1989:256, 260, 261 (nest parasites: *Hilarella hilarella* (Zetterstedt), *Senotainia vigilans* Allen, and *Sphenometopa tergata* (Coquillett), miltogrammine flies, and undetermined Miltogrammini); Kurczewski and Acciavatti, 1990:60 (New York: Cayuga County); Spofford and Kurczewski, 1990:745, 749, 750 (nest parasites: *Hilarella hilarella* (Zetterstedt), *Senotainia vigilans* Allen, *Sphenometopa tergata* (Coquillett), and unknown species of Miltogrammini, Sarcophagidae), 1992:996 (species of miltogrammine parasites listed), 1002 (counter-cleptoparasitic behavior: freeze-stop and face-off, diversionary flight), 1003 (chasing flight), 1004 (post-larvipositional counter-cleptoparasitic behavior: abandon burrow), 1005 (abandon prey, clean burrow); Ahlstrom, 1995:107 (in checklist of insects of North Carolina); Kurczewski, 1998d:250 (pine barrens in upstate New York); Kurczewski and Spofford, 1998:99 (alternative nesting strategies); Sugar et al., 1998:15 (Canada: southern Ontario); Buck, 2004:24 (Canada: in checklist of Sphecidae of Ontario); McCravy, Bara, Hessler, Luxmore, Stinebaker, and Jenkins, 2009:113 (Illinois: Hancock County: Alice L. Kibbe Life Science Station); Miller, Pearce, and O'Neill, 2009:3 (known to be parasitized by *Paraxenos lugubris* (Pierce), Strepsiptera); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Dollfuss, 2015b:434 (locality records from Michigan); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Lechner, 2019:153-154 (Iowa: Sioux City, parasitized by strepsipteran *Paraxenos lugubris* Pierce); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:104 (in revision of North and Central American *Ammophila*). – **As *Sphex urnarius***: J. Smith, 1910:677 (new combination, in new list of insects of New Jersey, as *urnaria* Klug); J. Parker, 1915:75 (nesting habits); Rohwer, 1916b:682 (in catalog of Hymenoptera of Connecticut, as *urnaria* Klug); Mickel, 1918b:402 (in catalog of Nebraskan Sphecidae); Rohwer *in* Viereck, 1925:682 (in key to Sphecidae of Connecticut); Hendrickson, 1930:159 (Iowa); G. Carpenter, 1930b:292 (nest closure); Fernald, 1931a:447 (as new synonym of *Sphex arvensis*), 1934:121 (in revision of North American and West Indian *Ammophila*); Krombein, 1936:98 (New York: Buffalo; floral records); Brimley, 1938:444 (North Carolina: statewide, as *urnaria*); Britton, 1938:149 (in addition to checklist of insects of Connecticut); Murray, 1938:30 (redescription); Dreisbach, 1944:269, 270 (in key to *Ammophila* of Michigan), 274 (Michigan: locality records); Strickland, 1947:129 (Canada: Alberta); Krombein, 1952a:94 (USA: Virginia: Westmoreland State Park); Krombein and Evans, 1954:234 (Florida); Krombein, 1958a:52 (USA: West Virginia: Lost River State Park), 1958f:192 (in supplement to catalog of North American Hymenoptera: description of larva by Evans and Lin, 1956a, reported), as *urnarius urnarius*, 1963f:276 (Maryland: Plummers Island near Washington, D.C.).

*Ammophila inepta* Cresson, 1873:209, ♀. Lectotype: ♀, Texas: no specific locality (ANSP), designated by Cresson, 1916:94. Synonymized with *Ammophila urnaria* by Murray, 1938:30. – Cresson, 1887:274 (in catalog of North American Hymenoptera); Dalla Torre, 1897:403 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); J. Smith, 1900:524 (in list of insects of New Jersey); Fernald, 1931a:447 (as new synonym of *Sphex arvensis*).

*Sphex arvensis floridensis* Fernald, 1933:236. Nomen nudum (prey carrying).

*Sphex floridensis* Fernald, 1934:126, ♀, ♂. Holotype: ♀, USA: Florida: Orlando (originally H. Fernald collection, now USNM). Synonymized with *Ammophila urnaria* by R. Bohart and Menke, 1976:154. – Fernald, 1943a:290 (Florida). – **As *Sphex urnarius floridensis***: Murray, 1938:36 (new status); Krombein and Evans, 1954:234 (Florida: Paradise Key),

1955:233 (Florida). – **As *Ammophila urnaria floridensis***: Murray in Muesebeck, Krombein, and Townes, 1951:977 (new combination, in catalog of North American Hymenoptera).

As *Ammophila conditor*: Harrington, 1902:224 (Canada: Ontario: Ottawa), corrected to *Ammophila urnaria* by Buck, 2004:75.

As *Sphex conditor*: Faull, 1913:384 (new combination, Canada: Toronto region), corrected to *Ammophila urnaria* by Buck, 2004:75.

### 232. *vagabunda* F. Smith

*Ammophila vagabunda* F. Smith, 1856:218, ♀. Syntypes: China: Tei-tung and Foo-chou-foo; Indonesia: Sumatra: no specific locality; and northern India: no specific locality (BMNH). – F. Smith, 1871a:359 (in catalog of Oriental Aculeata); Cameron, 1889:94 (in list of Oriental Sphecidae); Bingham, 1897:231 (in revision of wasps and bees of British India, now India and Pakistan); Dalla Torre, 1897:411 (in catalog of world Hymenoptera); Sonan, 1942:132 (in revision of Ammophilini of Taiwan); Dollfuss, 2013a:389, 390, 400 (in key to *Ammophila* of Palearctic Region and India), 500 (in revision of *Ammophila* of Palearctic Region and India, as full species), 2013b:586 (locality records from China, Japan, Korea, Mongolia, Russia: Vladivostok, Tajikistan, and Turkey); Danilov, 2014b:519, 520 (in key to Sphecidae s.s. of Siberia, not yet found in Siberia); J.-K. Kim, 2014:417 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Kim, Yeo, and Kim, 2014:275 (in key to *Ammophila* of South Korea), 279 (in revision of Sphecidae *sensu stricto* of South Korea); Danilov, 2017b:213 (in catalog of Sphecidae s.s. of Russia); Jacobs and Liebig, 2018:135 (Russia: Primorskiy Krai: Anisimovka, Novonezhino, and Poshiga); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299, 301 (in key to *Ammophila* of China); Danilov, 2020:318 (specimens from Japan and eastern Russia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia); Komeda, 2021b:63 (Japan: Honshu: Yamanashi Prefecture); Terayama, 2021:18 (Japan: Port of Tokyo Wild Bird Park); Kaplan and Yildirim, 2023:1692 (in checklist of Sphecidae *sensu lato* of Turkey); Kochetkov, 2023:190 (Russia: Amur Oblast': Khingan Nature Reserve). – **As *Ammophila sabulosa vagabunda***: R. Bohart and Menke, 1976:153 (new status, in checklist of world Sphecidae); Zhou and Wu, 1993a:670 (China: Wuling Mountains), 1993b:725 (China: Longqi Mountain Nature Reserve); Q. Li and C. Yang, 1995b:573 (China: Zhejiang Province: Baishanzu Mountain), 1995c:271 (China: Zhejiang Province: Gutianshan); Wu and Zhou, 1996a:54 (in revision in Economic Insect Fauna of China); Porter, Stange, and Wang, 1999:5 (in checklist of Sphecidae of Taiwan); Q. Li and He, 2001:755 (China: Tianmushan Nature Reserve at 30°22'N 119°26'E); Wu, Zhou, Q. Li, and Yang, 2003:808 (China: Fujian Province Q. Li and He, 2004:1121 (China: in hymenopterous fauna of Zhejiang Province); Hua, 2006:275 (in list of Chinese insects, geographic distribution).

*Ammophila solowiofkae* Matsumura, 1911:111, ♀. Syntypes: Russia: Island of Sakhalin: Solovievka and Galkinovskoye, now Dolinsk (depository?). Synonymized with *Ammophila vagabunda* by Dollfuss, 2013a:500. – R. Bohart and Menke, 1976:153 (in checklist of world Sphecidae, possibly senior synonym of *Ammophila sabulosa nipponica*). – **As *Ammophila sabulosa solowiofkae***: Nemkov, 2005a:141 (new status, Russia: Island of Sakhalin), 2006b:166 (Russia: Primorskiy Krai: Kedrovaya Pad' Nature Reserve); Hua, 2006:275 (in list of Chinese insects, geographic distribution); Nemkov, 2007b (Russia: Kuril Islands: Island of Kunashir), 2007c:997 (in Appendix to Key to identification of Sphecidae of Far East of Russia); Nemkov, 2009b:50 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2009c:235 (Russia: Primorskiy Krai: Lazovskiy Nature Reserve), 2012c:434 (in catalog of Sphecidae of Russian Far East).

As *Ammophila sabulosa*: Sickmann, 1895:216 (China: Tientsing), corrected to *Ammophila sabulosa nipponica* by Tsuneki, 1971m:2.

As *Ammophila infesta*: Yasumatsu, 1942c:103 (China: Beijing), corrected to *Ammophila sabulosa nipponica* by Tsuneki, 1971m:2.

*Ammophila sabulosa nipponica* Tsuneki, 1967j:23, ♀, ♂. Holotype: ♀, Japan: Fukui Prefecture: Ohno (originally K. Tsuneki collection, now?). Synonymized with *Ammophila sabulosa solowiofkae* by Nemkov, 2005a:141.– Tsuneki, 1967j:11, 12 (in key to Ammophilini of East Asia); Haneda, 1968a:45 (Japan); Nambu, 1968b:26 (Japan: Saitama Prefecture); Tsuneki, 1968i:3 (nesting habits), 1968j:1 (diagnostic characters), 1968k:8 (nesting habits), 1968l:50 (South Korea: Island of Quelpart, now Island of Cheju), 1969e:24 (Japan: specimens in Osaka Museum of Natural History), 1969i:59 (Japan: Fukui Prefecture: Taichōdzi temple); Tano, 1971:82 (Japan: Shikoku: Mount Tsurugi, as *Ammophila sabulosa japonica*); Tsuneki, 1971m:2 (China: Peking: Tiendang), 1974a:360 (North Korea); Nambu, 1975b:70 (Japan: Saitama Prefecture); Tsuneki, 1976d:288 (China: Heilungkiang), 1979d:9 (Japan); Kazenas, 1980e:81 (Russia: Far East); Tsuneki, 1982b:2 (Korea: status confirmed), 14 (known from Korea), 1982g:56 (known from Ryukyu archipelago); Paik, 1985:197 (in list of Sphecidae of Korea); Piek and Spanjer, 1986:179 (in list of Sphecidae with known prey); Steiner, 1986:99 (references to papers on nesting habits); Sk. Yamane and Ikudome, 1990:102 (distribution in Ryukyu Islands, Japan); Tsuneki, 1991:199 (Korea); Nemkov, 1992b:244 (Russia: Far East: Khingan Nature Reserve); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:387 (in key to Sphecidae of Russian Far East); Wu and Zhou, 1996a:54 (in revision in Economic Insect Fauna of China); Haneda, 2003:3 (Japan: Nagasaki Prefecture: Tsushima); Haneda and Tano, 2003:11 (Japan: Nagasaki Prefecture: Tsushima); Kurokawa, 2003:60 (Japan: city of Fukui: Egamichou); Haneda, Nosaka, Tano, Kurokawa, and Murota, 2004:30 (Japan: Gifu Prefecture); Suda, 2004:36 (Japan: Yamanashi Prefecture); Haneda, Inoue, Nozaka, Tano, Kurokawa, H. Murota, and T. Murota, 2005:64 (Japan: Fukui Prefecture: Mount Monju); Haneda, Nozaka, Tano, Kurokawa, and Murota, 2005:43 (Japan: Gifu Prefecture); Kinota, Haneda, and Tano, 2005:29 (Japan: Hokkaido); Negoro, Haneda, and Tano, 2005:43 (Japan: Toyama Prefecture); Haneda, Nozaka, Tano, Kurokawa and Murota, 2006a:18 (Japan: Toyama Prefecture), 2006b:47 (Japan: Nagasaki Prefecture: Tsushima); Ohkusa and Tajima, 2008:74 (Japan: central Honshu: Aichi Prefecture), 2010:11 (Japan: Island of Honshu: Shiga Prefecture); N. Yamamoto, 2011:11 (Japan: Kyūshū: mainland Nagasaki Prefecture).

### 233. *varipes* Cresson

*Ammophila varipes* Cresson, 1865b:457, ♀, ♂. Lectotype: ♀, USA: Colorado Territory: no specific locality (ANSP), designated by Cresson, 1916:95. – Cresson, 1868:378 (New Mexico), 1875:714 (Colorado, New Mexico), 1876:208 (Utah: Spring Lake), 1887:274 (in catalog of North American Hymenoptera); Cameron, 1888a:19 (Mexico, redescription); Ashmead, 1890:34 (in checklist of Hymenoptera of Colorado); W. Fox, 1893d:9 (Mexico: Baja California); Dalla Torre, 1897:411 (in catalog of world Hymenoptera, as *variipes*); Ashmead, 1899d:354 (in checklist of North American Sphecidae, as *variipes*); Viereck, 1903a:68 (New Mexico: Beulah); Snow, 1906:7 (Arizona: Humphrey's Peak, Oak Creek 20 mi. southwest of Flagstaff); Strand, 1910:13 (Texas, as *variipes*); Hendrickson, 1930:159 (Iowa); Fernald, 1931a:448 (as new synonym of *Sphex breviceps*); Murray in Muesebeck, Krombein, and Townes, 1951:977 (in catalog of North American Hymenoptera); R. Bohart and Menke, 1976:154 (in checklist of world Sphecidae); Kumar, Lavigne, Lloyd, and Pfadt, 1976:51 (USA: Colorado: Pawnee National Grassland); Krombein, 1979b:1594 (in catalog of North American Hymenoptera); Menke, 1983b:21 (Nebraska: Hooker County: Mullen area, and Dawes County: north of Crawford), 1994f:21 (Arizona: Snowflake); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Menke, 2020:79 (in revision of North and Central American *Ammophila*).

*Ammophila comanche* Cameron, 1888a:19, sex not stated. Holotype or syntypes: Mexico: northern Sonora: no specific locality (BMNH). Synonymized with *Ammophila varipes* by Fernald, 1931a:448, and by Menke, 1965c:1, and 1967a:3 (as new synonym). – Dalla Torre, 1897:398 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:160 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution).

### 234. *vetuberosa* Q. Li and J. Yang

*Ammophila vetuberosa* Q. Li and J. Yang in Q. Li, J. Li, and J. Yang, 1994:290, ♂. Holotype: ♂, China: Shandong Province: Dongying City: Xianhe Town (Shandong Agricult. Univ.). – Dollfuss, 2013a:403 (in key to *Ammophila* of Palearctic Region and India), 501 (in revision of *Ammophila* of Palearctic Region and India, China: Nei Mongol: Odos); Danilov, 2014a:427 (Russia: Siberia: Irkutsk Oblast': railroad station Mal'ta), 2014b:519, 521 (in key to Sphecidae s.s. of Siberia), 2015a:543 (description of ♀, redescription of ♂, locality records from China, Mongolia, and Russia: Irkutsk Oblast'), 2017b:213 (in catalog of Sphecidae s.s. of Russia); Ch. Wang, Bashir, Q. Li, and Ma, 2018:300, 302 (in key to *Ammophila* of China); Danilov, 2020:318 (specimens from Mongolia in Institute of Systematics and Ecology of Animals, Novosibirsk, Russia).

**235. vulcania du Buysson**

*Ammophila vulcania* du Buysson, 1897:256, ♂. Holotype or syntypes: South Africa: Gauteng: Makapan near Johannesburg (MNHN). – Guiglia, 1943c:76 (Ethiopia: Gamo Gofa: Sagan – Omo region), 1950:245 (Ethiopia: Gamo Gofa: Caschei); Leclercq, 1955h:88 (bibliographic references); R. Bohart and Menke, 1976:154 (in checklist of world Sphecidae); Gess, 1981:19 (South Africa: Hilton Farm 18 km west-northwest of Grahamstown; nesting in friable soils); Weaving, 1988:327-349 (prey selection), 1989a:1-16 (South Africa; nesting habits: one large caterpillar per cell), 1989b:847-871 (habitat selection and nest construction); S. Gess and F. Gess, 2003:97 (Namibia: visiting flowers of *Emilia marlothiana* (O. Hoffm) C. Jeffrey, Asteraceae, *Geigeria* sp., Asteraceae, and *Anchusa capensis* Thunb., Boraginaceae); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Dollfuss, 2015a:310, 314 (in key to Sub-Saharan *Ammophila*), 373 (in revision of Sub-Saharan *Ammophila*; Benin, Namibia, Senegal, South Africa, Tanzania, Zambia, Zimbabwe), 2015b:434 (locality records from Benin, Namibia, Senegal, South Africa, Tanzania, Zambia, and Zimbabwe); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care). – **As *Sphex vulcania***: Arnold, 1920:35 (new combination, in revision of southern African *Ammophila*, description of ♀), 1928b:262 (in revision of southern African *Ammophila*), 1930:17 (in checklist of Afrotropical Sphecidae)

**236. wahlbergi Dahlbom**

*Ammophila wahlbergi* Dahlbom, 1845:431, sex not stated (as *Wahlbergi*, incorrect original capitalization). Holotype or syntypes: South Africa: Port Natal, now Durban (Lund). – Dalla Torre, 1897:411 (in catalog of world Hymenoptera); Leclercq, 1955h:93 (bibliographic references, as species incertae sedis); R. Bohart and Menke, 1976:154 (in checklist of world Sphecidae). – **As *Sphex wahlbergi***: Arnold, 1920:25 (new combination, unrecognizable species).

**237. wrightii (Cresson)**

*Coloptera wrightii* Cresson, 1868:378, ♀ (as *Wrightii*, incorrect original capitalization). Holotype: ♀, USA: New Mexico: no specific locality (ANSP). – Cresson, 1887:274 (in catalog of North American Hymenoptera); E. Schwarz, 1896:24 (sleeping aggregations); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:164 (bibliographic references, geographic distribution); H. Smith, 1908b:328 (in revision of Nebraskan Sphecidae); Cresson, 1916:95 (holotype in ANSP); Mickel, 1918b:400 (in revision on Nebraskan Sphecidae). – **As *Sphex wrightii***: Fernald, 1934:38 (new combination, in revision of North American and West Indian *Ammophila*); Hicks, 1934b:150 (nesting habits). – **As *Ammophila wrightii***: Dalla Torre, 1897:412 (new combination, in catalog of world Hymenoptera); Melander, 1903:162 (in key to North American Ammophilini); Murray *in* Muesebeck, Krombein, and Townes, 1951:977 (in catalog of North American Hymenoptera); Powell, 1964b:242 (review of Hicks, 1934 observations); Menke, 1965b:259 (Hicks, 1934b, correctly identified this species); Hurd and Linsley, 1975:116 (Arizona: Cochise County: Douglas; on flowers of *Larrea tridentata* (De Candolle) Coville, Zygophyllaceae); R. Bohart and Menke, 1976:154 (in checklist of world Sphecidae); Kumar, Lavigne, Lloyd, and Pfadt, 1976:51 (Colorado: Pawnee National Grassland); Krombein, 1979b:1594 (in catalog of North American Hymenoptera); Rust, Hanks and Bechtel, 1983:406 (Nevada: Churchill County: Blow Sand Mountains); Brockmann, 1985b:312 (nest closure summary); Menke, 1986c:35 (Arizona: Navajo County: Hopi Reservation), 36 (Arizona: Cochise County: 3 mi. east of Willcox); Steiner, 1986:99 (references to papers on nesting habits); Menke, 1994f:21 (Arizona: Snowflake); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Ohl and Linde, 2003:149 (number of ovarioles); Field, Ohl, and Kennedy, 2011:734 (in molecular cladistic analysis of Ammophilini); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion); Dollfuss, 2015b:434 (locality records from Texas); Field, Shreeves, Kennedy, Brace, and Gilbert, 2015:1899 (sex-biased parental care and sexual size dimorphism); Field, Gonzalez-Voyer, and Boulton, 2020:7 (evolution of parental care); Menke, 2020:136 (in revision of North and Central American *Ammophila*).

**238. xinjiangana Q. Li and Ch. Yang**

*Ammophila xinjiangana* Q. Li and Ch. Yang, 1989:34, ♂. Holotype: ♂, China: Xinjiang Province: Urumqi (Beijing Agricult. Univ.). – Hua, 2006:275 (in list of Chinese insects, geographic distribution); Dollfuss, 2012a:501 (in revision of *Ammophila* of Palearctic Region and India, original description translated from Chinese to English); Ch. Wang, Bashir, Q. Li, and Ma, 2018:299 (in key to *Ammophila* of China).

**239. yaroslavi Danilov**

*Ammophila yaroslavi* Danilov, 2018:326, ♀, ♂. Holotype: ♂, Turkmenistan: Repetek at 38°34'N 63°10'E (ZIN). Paratype: Kazakhstan.

**240. zambiensis Dollfuss**

*Ammophila zambiensis* Dollfuss, 2015a:75, ♂. Holotype: ♂, Zambia: North-Western Province: 150 km south of Mwinilunga at 13°11'S 24°14'E (OÖLM). – Dollfuss, 2015a:318 (in key to Sub-Saharan *Ammophila*), 375 (in revision of Sub-Saharan *Ammophila*), 2015b:434 (locality records from Zambia).

**241. zanthoptera Cameron**

*Ammophila zanthoptera* Cameron, 1888a:8, ♀. Holotype or syntypes: Guatemala: Calderas (BMNH). – W. Fox, 1895c:266 (Mexico: Baja California Sur); Melander, 1903:160 (in key to North American Ammophilini), 163 (bibliographic references, geographic distribution); R. Bohart and Menke, 1976:154 (in checklist of world Sphecidae); Krombein, 1979b:1594 (in catalog of North American Hymenoptera); Brockmann, 1985b:312 (nest closure summary); Steiner, 1986:99 (references to papers on nesting habits); Menke, 1994f:20 (New Mexico: Zuni); Amarante, 2002:67 (in catalog of Neotropical Sphecidae); Ruíz Cancino, Coronado Blanco, Varela Fuente, and Horta Vega, 2002:669 (in checklist of Mexican Sphecidae); Stevens and Menke, 2014:220 (Arizona: Grand Canyon ecoregion). – **As *Ammophila zanthoptera***: Dalla Torre, 1897:412 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Snow, 1906:133 (Arizona: Oak Creek 20 mi. southwest of Flagstaff); Murray *in* Muesebeck, Krombein, and Townes, 1951:977 (in catalog of North American Hymenoptera); Evans, 1959d:465 (observations on nesting by Hicks, 1932).

*Ammophila trichiosoma* Cameron, 1888a:11, ♂. Holotype or syntypes: ♂, Guatemala: Capetillo (BMNH). Synonymized with *Ammophila zanthoptera* by Menke, 1965c:1 and by R. Bohart and Menke, 1976:154 (as new synonym). – Dalla Torre, 1897:410 (in catalog of world Hymenoptera); Ashmead, 1899d:354 (in checklist of North American Sphecidae); Melander, 1903:162 (in key to North American Ammophilini), 164 (bibliographic references, geographic distribution); Murray *in* Muesebeck, Krombein, and Townes, 1951:977 (in catalog of North American Hymenoptera); Amarante, 2005a:14 (correction to his 2002 catalog). – **As *Sphex trichiosomus***: Fernald, 1934:105 (new combination, in revision of North American and West Indian *Ammophila*).

*Ammophila zanthoptera* Cameron, 1900:xi. Unjustified emendation of *Ammophila zanthoptera*. – **As *Sphex zanthopterus***: nec Hicks, 1932c:193, 1933c:49, and 1934a:39 = *Ammophila placida*; Fernald, 1934:63 (in revision of North American and West Indian *Ammophila*).

**242. zapoteca Menke**

*Ammophila zapoteca* Menke, 2020:62, ♀. Holotype: ♀, Mexico: Oaxaca: 1 mi. northwest of Huajuapán (Kansas State University, Manhattan, Kansas).

**243. zetteli Dollfuss**

*Ammophila zetteli* Dollfuss, 2015a:376, ♀, ♂. Holotype: ♂, Kenya: Mount Kenya: west of Chogoria, Chog-Route (coll. H. Zettel, Wien, Austria). Paratypes: Angola, Cameroon, Kenya, Zaire, Zambia. – Dollfuss, 2015a:311, 316 (in key to Sub-Saharan *Ammophila*), 2015b:435 (Zambia: 50 km east of Mwinilunga at 11°43'S 24°47'E).

**244. zimmermannae Dollfuss**

*Ammophila zimmermannae* Dollfuss, 2013a:502, ♀, ♂. Holotype: ♂, Kazakhstan: Darbaza 40 km north of Tashkent (OÖLM). – Dollfuss, 2013a:388, 396 (in key to *Ammophila* of Palearctic Region and India).

**sp.**

C. Robertson, 1892:104 (visiting flowers of *Lycopus sinuatus* Ell., Lamiaceae); W. Fox, 1894c:101 (Mexico: Baja California); Sickmann, 1894:216 (China: Hopei Province: Tientsin); Snow, 1906:133 (Arizona); Ducke, 1908b:82 (Brazil: Ceará State); Titus, 1909:319 (Michigan: Lake Superior: Isle Royale); C. Turner, 1911:13 (nesting habits); R. Turner,

1911b:369 (Seychelles Islands); Hungerford and Williams, 1912:245 (Kansas, nesting habits); Ferton, 1912a:367 (presence of foreign egg in nest); 366 (unusual prey: a hairy caterpillar); Broomley, 1914:197 (prey of asilid *Deromyia umbrina* Loew at Southbridge, Massachusetts); Poulton, 1918:xxxvi (Brazil, prey); Rau, 1933:183 (Panama: Island of Barro Colorado); de Beaumont, 1953a:172 (Mauritania, sp. aff. *rubripes*); Bytinski-Salz, 1956:223 (Turkey: Uludagh, sp. aff. *campestris*); de Beaumont, 1961e:2 (Iraq; sp. near *propinqua*), 1964a:290 (Swiss Alpes, sp. near *campestris*); Powell, 1964b:256 (species 1b of Menke, nest construction, nest closure, prey: geometrid caterpillars, progressive provisioning); de Beaumont, 1967a:266 (sp. aff. *gracillima*), 268 (Turkey, sp. aff. *campestris* and sp. aff. *terminata*), 1967b:504 (South Africa), 1969:81 (Turkey); I. Robertson, 1969:480 (Tanzania: Ilonga, sp. near *ferrugineipes*); de Beaumont, 1970a:388 (Afghanistan, sp. aff. *heydeni*, sp. aff. *gracillima*), 1970c:2 (Iran: Baluchestan, sp. aff. *gracillima*), 3 (Iran: Baluchestan, sp. aff. *heydeni*); Kazenas, 1972b:101 (Kazakhstan); Esmaili and Rastegar, 1974:46 (Iran); Simon Thomas, 1976:3 (France: Lot-et-Garonne: Forêt de Campet, sp. aff. *heydeni*); Báez and Ortega, 1978:191 (Canary Islands, sp. aff. *concolor*); Heithaus, 1979:193 (Costa Rica: Guanacaste: Hacienda las Ciruelas 30.5 km northwest of Cañas); Guichard, 1980:225 (Oman); Hilchie, 1982:107 (Alberta: Empress); Kingsley, Bailowitz, and R. Smith, 1987:18 (Arizona: Organ Pipe Cactus National Monument: Quitobaquito Springs area); F. Fernández, 1990:24 (Colombia: Meta: Parque Nacional Natural La Macarena); Amarante, 1993:19 (northeastern Brazil); Naumann, 1998:182 (Australia: northwest Queensland: Musselbrook area, approximately 18°40'S 138°23'E, sp. near *aurifera*); Meagher and Mitchell, 1999:368 (collected in pheromone- and synthetic floral volatile-baited traps), Esenbekova and Kazenas, 2000:14 (southeastern Kazakhstan, sp. aff. *tekkensis*); Peñavar and Martínez-Delclós, 2000:111 (*Ammophila* aff. *sabulosa*, Lower Miocene of Spain: Castellón: Ribesalbes); Meagher, 2001a:78 (effectiveness of different colored pheromone-baited traps), 2001b:291 (Florida: Alachua County: collected in traps baited with pheromone and synthetic floral volatile compound); Skevington et al., 2001:127 (Canada: Ontario: Lambton County); S. Gess and F. Gess, 2003:97 (Namibia: visiting flowers of *Psilocaulon glareosum* (Berger) Dinter and Schwant. and *Limeum myosotis* H. Walter, Molluginaceae), and *Zygophyllum stapffii* Schinz, Zygophyllaceae); Q. Li and He, 2004:1119 (China: in hymenopterous fauna of Zhejiang Province); Gayubo and Özbek, 2005:13 (Turkey, *Ammophila gracillima* species group); Ruíz Cancino, Coronado Blanco, and Horta Vega, 2005:170 (Mexico: recorded from Tamaulipas); Horta Vega, Pinson Domínguez, Barrientos Lozano, and Correa Sandoval, 2007: 47 (Mexico: Tamaulipas); Gayubo, González, Tormos, and Asís, 2008:136 (Spain: Salamanca: Parque Natural de Las Batuecas – Sierra de Francia, sp. near *rubriventris*); Ljubomirov and Yildirim, 2008:39 (in catalog of Sphecidae of Turkey); Gayubo, González, Tormos, and Asís, 2009:362 (Spain: Valladolid: Reserva Natural Riberas de Castronuño – Vega del Duero, near *Ammophila rubriventris*); Silvestre, Demétrio, Trad, de Oliveira Lima, Auko, and de Souza, 2014:70 (Brazil: Mato Grosso do Sul: dry forests in Bodoquena Mountain Range and Brazilian Chaco, two species); Dollfuss, 2015b:435 (locality records from South America); Jahan-tigh, Rakhshani, Mokhtari, and Ramroodi, 2017:17 (Iran: known from Markazi and Sistan-o Baluchestan provinces); Vardy, 2017:14 (Argentina, prey carying); Cope, Campbell, Grodsky, and Ellis, 2019:6 (Florida: collected in emergence traps); Lechner, 2019:152-154 (Iowa: Sioux City, parasitized by strepsipteran *Paraxenos lugubris* Pierce); Weiser, 2019:10 (Germany: Baden-Württemberg: Schwetzingen Hardt: colonization of deforested area); Gadallah, 2020d:80 (in list of aculeate wasps of Arabian Peninsula).

## SPECIES OF UNCLEAR IDENTITY

*Ammophila arenaria*: Cabrera La Rosa, 1993:72 (Peru: La Molina).

## FOSSIL AMMOPHILA

### **amnosa** Heer

*Ammophila amnosa* Heer, 1865:.. Miocene. Nomen nudum?

### **antiquella** Cockerell

*Ammophila antiquella* Cockerell, 1906: 49, sex not stated. Holotype: USA: Colorado: Florissant, Lower Oligocene (MCZ).

### **inferna** Heer

*Ammophila inferna* Heer, 1865:.. Miocene.

### **sp. aff. sabulosa** (Linnaeus, 1758)

*Ammophila* aff. *sabulosa* (Linnaeus, 1758) Peñalver and Martínez-Delclós, 2000:111, sex unknown. Holotype: sex unknown. Spain: Castellón: Ribesalbes (Manuel Saura Vilar, Onda, Castellón, Spain, personal collection). Age: Lower Miocen.

## NOMINA NUDA IN AMMOPHILA

*Ammophila argentea* Brullé, 1839:93. – F. Smith, 1856:211 (listed as synonym of *Ammophila argentea* Lepeletier de Saint Fargeau); Dours, 1874:141 (in catalog of Hymenoptera of France).

*Ammophila argentilatera* Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:514 (specimens in M. Spinola collection, Torino).

*Ammophila caetিনosa* Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:510 (specimen in M. Spinola collection, Torino, is a *Podalonia*).

*Ammophila coromandelica* Pagliano, 2008:514 (specimen in M. Spinola collection, Torino).

*Ammophila cretica* Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:514 (specimens in M. Spinola collection, Torino).

*Ammophila cyanigastera* Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:512 (specimens in M. Spinola collection, Torino).

*Ammophila chalybeate* Casolari and Casolari Moreno, 1980:100 (specimens in M. – Pagliano, 2008:510 (specimens in M. Spinola collection, Torino).

*Ammophila cubensis* Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:513 (specimens in M. Spinola collection, Torino).

*Ammophila eurystoma* Kohl: Dollfuss, 1989:7 (type material in NHMW).

*Ammophila flavipennis* Pagliano, 2008:513 (specimens in M. Spinola collection, Torino).

*Ammophila fulvicaulis* Harris, 1835. Catalog of the insects of Massachusetts, 2<sup>nd</sup> edit. – Cresson, 1863:318 (in catalog of North American Hymenoptera).

*Ammophila gigantea* Schoberlin, 1888:61, sex not stated. Holotype or syntypes: Switzerland?: Oeninger Beken (location unknown). Fossil.

*Ammophila guatemalensis* Cameron: Dollfuss, 1989:7 (type material in NHMW).

*Ammophila impressicollis* Kohl: Dollfuss, 1989:7 (type material in NHMW).

*Ammophila lateralis* Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:511 (specimens in M. Spinola collection, Torino).

*Ammophila lineatocollis* Cameron: Brauns, 1917:241.

*Ammophila lugubris* Harris, 1835. Catalogue of the insects of Massachusetts, 2<sup>nd</sup> edit. – Cresson, 1863:318 (in catalog of North American Hymenoptera).

*Ammophila melicena* Casolari and Casolari Moreno, 1980:100 (specimen in M. Spinola collection, Torino). – Pagliano, 2008:510 (specimen in M. Spinola collection, Torino, is a *Podalonia*).

*Ammophila minima* Schoberlin, 1888:61, sex not stated. Holotype or syntypes: Switzerland?: Oeninger Beken (location unknown). Fossil.

*Ammophila minor* Lepeletier de Saint Fargeau: R. Bohart and Menke, 1976:152. Lepeletier (1845:379) used the word “Minor” in the Latin diagnosis as a size descriptor of a variety, translating it “Plus petit” in French.

*Ammophila punctuosa* Kohl: Dollfuss, 1989:7 (type material in NHMW).

*Ammophila reichei* Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:511 (specimen in M. Spinola collection, Torino).

*Ammophila rubra* Dours, 1874:141 (in catalog of Hymenoptera of France: Corse).

*Ammophila rubricollis* Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:514 (specimens in M. Spinola collection, Torino).

*Miscus stygicus* Harris, 1835. Catalogue of the insects of Massachusetts, 2<sup>nd</sup> edition. – Cresson, 1863:317 (in catalog of North American Hymenoptera).

*Ammophila vestita* Casolari and Casolari Moreno, 1980:101 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:514 (specimen in M. Spinola collection, Torino).

*Ammophila waltlii* Casolari and Casolari Moreno, 1980:100 (specimens in M. Spinola collection, Torino). – Pagliano, 2008:512 (specimens in M. Spinola collection, Torino).

## SPECIES DESCRIBED IN *AMMOPHILA* AND TRANSFERRED TO OTHER GENERA

*algira* Kohl, 1901 = *Parapsammophila*

*alpestris* Cameron, 1888 = *Podalonia*

*andrei* F. Morawitz, 1889 = *Podalonia*

*apicata* , 1897 = *Isodontia*

*arenaria* Latreille, ... = ?; Duméril, 1860:950 (example of *Sphex*).

*argentata* Lepeletier de Saint Fargeau 1845 = *Podalonia tydei argentata*

*argentifrons* Cresson, 1865 = *Podalonia*

*atriceps* F. Smith, 1856 = *Podalonia*

*aureonotata* Cameron, 1888 = *Eremnophila*

*bimaculigera* Strand, 1910 = *Eremnophila opulenta* (Guérin Méneville, 1838)

*bocandei* Spinola, 1831 = *Chalybion*

*bolanica* Nurse, 1903 = *Podalonia hirsuta mervensis* (Radoszkowski, 1887)

*brasiliana* Brèthes, 1909 = *Eremnophila binodis* (Fabricius, 1798)

*caelebs* Kohl, 1901 = *Parapsammophila algira* Kohl, 1901

*cementaria* F. Smith, 1856 = *Podalonia violaceipennis* (Lepeletier de Saint Fargeau, 1845)

*clypeata* Mocsáry, 1883 = *Hoplammophila*

*communis* Cresson, 1865 = *Podalonia atriceps* F. Smith, 1856

*concolor* Brullé, 1839 = *Podalonia affinis concolor*

*confalonierii* Guiglia, 1932 = *Podalonia minax* (Kohl, 1901)

*cyanea* Cameron, 1908 = *Chalybion ammophiloides* Hensen, 1988

*cyanipennis* Lepeletier de Saint Fargeau, 1845 = *Parapsammophila*

*durga* Nurse, 1903 = *Podalonia*

*ebenina* Spinola, 1839 = *Podalonia*

*elegans* F. Smith, 1856 = *Eremochares dives* (Brullé, 1833)

*erythrocephala* F. Smith, 1856 = *Parapsammophila*

*erythropus* F. Smith, 1856 = *Podalonia*

*eugenia* F. Smith, 1856 = *Eremnophila eximia* (Lepeletier de Saint Fargeau, 1845)

*eximia* Lepeletier de Saint Fargeau, 1845 = *Eremnophila*

*festiva* F. Smith, 1856 = *Eremochares dives* Brullé, 1833

*foeniformis* Perty, 1833, in *Ammophilus* = *Penepodium*

*foleyi* de Beaumont, 1956 = *Parapsammophila*

*friedrichi* Schrottky, 1909 = *Eremnophila eximia* (Lepeletier de Saint Fargeau, 1845)

*fumigata* Perty, 1833 = *Podium*

*funerea* Nurse, 1903 = *Parapsammophila*

*fuscipennis* F. Smith, 1870 = *Parapsammophila*

*gibba* Alfieri, 1961 = *Parapsammophila algira* (Kohl, 1901)

*grandis* Gistel, 1857 = *Hoplammophila armata* (Illiger, 1807)

*grossa* Cresson, 1872 = *Podalonia*

*guiana* Cameron, 1912 = *Eremnophila binodis* (Fabricius, 1798)

*hirticeps* Cameron, 1889 = *Podalonia*

*hirticeps* F. Morawitz, 1893 = *Podalonia turcestanica* (Dalla Torre, 1897)

*iridipennis* Cameron, 1888 = ? *Eremnophila melanaria* (Dahlbom, 1843)

*jason* Cameron, 1888 = *Podalonia*

*klugii* Lepeletier de Saint Fargeau, 1845 = *Podalonia tydei* (Le Guillou, 1841)

*kohlii* Gusakovskij, 1928 = *Eremochares*

*limbata* Kriechbaumer, 1869 = *Eremochares dives* Brullé, 1833

*lanuginosa* Marquet, 1879 = *Podalonia tydei* (Le Guillou, 1841)

*longipilosella* Cameron, 1908 = *Podalonia canescens* (Dahlbom, 1843)

*luctuosa* F. Smith, 1856 = *Podalonia*

*ludovicus* F. Smith, 1856 = *Parapsammophila*

*mandibulata* W.F. Kirby, 1889 = *Podalonia*

*melanaria* Dahlbom, 1843 = *Eremnophila*

*melanopus* Lucas, 1849 = *Eremochares dives* Brullé, 1833

*mexicana* de Saussure, 1867 = *Podalonia*

*merceti* Kohl, 1906 = *Podalonia*

*miliaris* Cameron, 1888 = ? *Eremnophila melanaria* (Dahlbom, 1845)

*montana* Cameron, 1888 = *Podalonia*

*morrisoni* Cameron, 1888 = *Podalonia*

*nigra* Brullé, 1839 = *Podalonia affinis concolor* (Brullé, 1839)

*nigritaria* Walker, 1871 = *Eremochares dives* (Brullé, 1833)

*nigrohirta* Kohl, 1888 = *Podalonia*

*opulenta* Guérin-Méneville, 1838 = *Eremnophila*

*piceiventris* Cameron, 1888 = ? *Podalonia atriceps* (F. Smith, 1856)

*ponderosa* Gerstaecker, 1871 = *Parapsammophila*

*psilocera* Kohl, 1888 = *Podalonia*

*quadridentata* Cameron, 1888 = *Podalonia*

*reticollis* A. Costa, 1864 = *Parapsammophila cyanipennis* (Lepeletier de Saint Fargeau, 1845)

*rhinoceros* Strand, 1913 = *Hoplammophila aemulans* (Kohl, 1901)

*spinipes* F. Smith, 1878 = ? *Podalonia tydei* (Le Guillou, 1841)

*strenua* Walker, 1871, junior primary homonym of *Ammophila strenua* Cresson, 1865= ? *Podalonia dispar* (Taschenberg, 1869)

*robusta* Cresson, 1865 = *Podalonia*

*sonorensis* Cameron, 1888 = *Podalonia*

*suspiciosa* F. Smith = *Podalonia*

*trimaculigera* Strand, 1910 = *Eremnophila eximia* (Lepeletier de Saint Fargeau, 1845)

*turcestanica* Dalla Torre, 1897:411 = *Podalonia*

*valida* Cresson, 1865 = *Podalonia*

*violaceipennis* Cameron, 1889 = ? *Parapsammophila erythrocephala* (Fabricius, 1782)

*violaceipennis* Lepeletier de Saint Fargeau, 1845 = *Podalonia*

*walkeri* Dalla Torre, 1897 = *Podalonia dispar* (Taschenberg, 1869)