

Last updated: 7 June 2025

## **PALARUS**

*Palarus* Latreille, 1802b:336. Type species: *Tiphia flavipes* Fabricius, 1793 [= *Palarus rufipes* Latreille, 1812], junior secondary homonym of *Palarus flavipes* (Fabricius, 1781), by monotypy.

*Gonius* Panzer, 1806:176. Type species: *Philanthus flavipes* (Fabricius, 1804) [= *Crabro flavipes* Fabricius, 1781 = *Tiphia variegata* Fabricius, 1781], by monotypy.

*Gonius* Jurine, 1807:203, junior homonym of *Gonius* Panzer, 1806. Type species: *Philanthus flavipes* (Fabricius, 1793 [= *Crabro flavipes* Fabricius, 1781 = *Tiphia variegata* Fabricius, 1781], by monotypy.

Keys: Guichard, 1988b (Arabian Peninsula).

Important papers: R. Turner, 1911; Ahrens, 1925; Kazenas, 1994d (*Palarus pictiventris* preying on Diptera).

Review of biology: Kazenas, 2001b:163.

Revision: Pulawski and Prentice, 2008 (world species).

### **1. *ambustus* Klug**

*Palarus ambustus* Klug, 1845:[27], pl. 47, fig. 6, ♂. Lectotype: ♂, Egypt: Saqqara (ZMHU), designated by Pulawski and Prentice, 2008:378. – F. Smith, 1856:358 (in catalog of Hymenoptera in British Museum); Kohl, 1885a:424 (original description copied), 427 (in checklist of world *Palarus*); Dalla Torre, 1897:657 (in catalog of world Sphecidae); Honoré, 1941b:199 (in revision of Egyptian *Palarus*), 1942:59 (in catalog of Egyptian Sphecidae); de Beaumont, 1949d:662 (in revision of Mediterranean *Palarus*; Egypt to Morocco), 664 (as *ambustus ambustus*), 1950f:409 (southern Algeria), 1957a:140 (Morocco); de Beaumont, Bytinski-Salz, and Pulawski, 1973:17 (Israel); R. Bohart and Menke, 1976:290 (in checklist of world Sphecidae); D. Baker, 1997b:189 (in catalog of insects described by Klug, 1845); Roche, 2007a:92 (in checklist of Egyptian Crabronidae, as *ambustus ambustus*), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae, as *ambustus ambustus*); Pulawski and Prentice, 2008:378 (in revision of world Palarini); Yildirim, 2012:79 (Turkey: Erzurum: Olur); Yildirim, Ljubomirov, and Lelej, 2014:11 (distribution in Turkey by biogeographic provinces); Kaplan and Yildirim, 2021:77 (in catalog of Crabronidae of Turkey), 2023:1686 (in checklist of Sphecidae *sensu lato* of Turkey).

As *Palarus lepidus*: Honoré, 1941b:200 (in revision of Egyptian *Palarus*) and 1942:59 (in catalog of Egyptian Sphecidae), corrected to *Palarus ambustus* by de Beaumont, 1949d:662.

### **ssp. *almeriensis* Gayubo, Asís, and Tormos**

*Palarus almeriensis* Gayubo, Asís, and Tormos, 1992:27, ♀, ♂. Holotype: ♂, Spain: Almería Province: Rioja (Univ. Salamanca). – K. Schmidt and Bitsch in Bitsch et al., 2001:288 (in Sphecid Fauna of Western Europe); Bitsch, 2014:405 (new status by Pulawski and Prentice, 2008 noted); Schmid-Egger and Bitsch in Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:361 (in revision of Sphecidae *sensu lato* of Europe, subspecies status rejected). – As *Palarus ambustus almeriensis*: Pulawski and Prentice, 2008:378 (new status, in revision of world Palarini).

## 2. *arabicus* Pulawski

*Palarus arabicus* Pulawski in Pulawski and Prentice, 2008:409, ♀. Holotype: ♀, Saudi Arabia: Al Howtah near El Riyadh (BMNH). – Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:352 (in new catalog of Sphecidae of Saudi Arabia); Gadallah, 2020b:44 (in list of aculeate wasps of Arabian Peninsula).

## 3. *bernardi* de Beaumont

As *Palarus dongalensis* var. – Klug, 1845: pl. 47, fig 2, corrected to *Palarus bernardi* by de Beaumont, 1949d:644. *Palarus bernardi* de Beaumont, 1949d:644, ♀, ♂. Holotype: ♂, Libya: Fezzan: Brak (MNHN). – R. Bohart and Menke, 1976:290 (in checklist of world Sphecidae); Pulawski and Prentice, 2008:411 (in revision of world Palarini); Ben Khedher, Yildirim, Braham, and Chaaban, 2019:192 (known from Tunisia: Tozeur Province); Ben Khedher, Yildirim, and Braham, 2020a:106 (Tunisia: Tozeur Province: Nefta Oasis at 33°52'39.1"N 07°52'34.9"E).

## 4. *bisignatus* F. Morawitz

*Palarus bisignatus* F. Morawitz, 1890:587, ♂. Holotype: ♂, Transcaspia: no specific locality (ZIN). – F. Morawitz, 1897a:150 (description of ♀); Dalla Torre, 1897:657 (in catalog of world Sphecidae); F. Morawitz, 1897a:150 (description of ♀, additions to description of ♂); Myartseva, 1963b:61 (Turkmenistan: lower Murgab River), 1965:79 (Turkmenistan: Akibay); Kazenas, 1972b:160 (Kazakhstan); Myartseva, 1972a:81 (Turkmenistan); Kazenas, 1974b:109 (feeding on flowers of *Tamarix* sp., *Statice gmelini* Willd., Plumbaginaceae, and *Cynanchum sibiricum* Willd., Asclepiadaceae, in Kazakhstan), 110 (feeding on flowers of *Euphorbia* spp., Euphorbiaceae, in Kazakhstan); R. Bohart and Menke, 1976:290 (in checklist of world Sphecidae); Kazenas, 1992c:27 (Turkmenistan: Repektek Nature Reserve), 2001b:32 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:80 (geographic distribution, Kazakhstan: 20 km of Yany-Kurgan); Nemkov, 2005:246 (in revision of *Palarus* of Russia and adjacent countries); Pulawski and Prentice, 2008:389 (in revision of world Palarini); Schmid-Egger, 2011b:563 (United Arab Emirates: recorded from United Arab Emirates by Guichard, 1988b, as *rochei*); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia); Atbaei, Fallahzadeh, and Ljubomirov, 2015:19 (first record from Iran: Fars Province); S. Gess and Roosenschoon, 2016:104 (Dubai Desert Conservation Reserve, visiting flowers of *Heliotropium kotschy* Gürke, Boraginaceae, and *Limeum arabicum* Fried., Molluginaceae); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:68 (Iran: known from Fars Province); Gadallah, 2020b:44 (in list of aculeate wasps of Arabian Peninsula).

*Palarus rochei* Guichard, 1988b:135, ♀, ♂. Holotype: ♀, United Arab Emirates: Al Saad at 24°25'N 55°50'E (BMNH). Synonymized with *Palarus bisignatus* by Pulawski and Prentice, 2008:389.

## 5. *comberi* R. Turner

*Palarus comberi* R. Turner, 1911a:483, ♀, ♂. Holotype: ♂, Pakistan: Karachi (BMNH). Paratypes: India: Gujarat: Deesa (BMNH). – Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Guichard, 1988b:134 (Saudi Arabia); Pulawski and Prentice, 2008:340 (in revision of world Palarini); Schmid-Egger, 2011b:563 (United Arab Emirates: north of Ajman, Ar-Rafah), 566 (color photograph of female); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:68 (Iran: known from Sistan-o Baluchestan Province); Gadallah, 2020b:44 (in list of aculeate wasps of Arabian Peninsula); Mawadda, Girish Kumar, and Hegde, 2023:67 (India: Diu: Nagoa Beach at 20°41'52"N 70°55'37"E); Mawadda and Girish Kumar, 2023:114 (in checklist of Crabroninae of Northern India).

## 6. *confusus* R. Turner

*Astata histrio* Lepeletier de Saint Fargeau, 1845:257, ♀, junior secondary homonym of *Palarus histrio* Spinola, 1839. Holotype or syntypes: ♀, Algeria: Oran (depository?). – Lucas, 1849:260 (Algeria: Oran; original description cop-

ied with modifications); de Saussure, 1854:13 (*histrion* Lepeletier is not the same as *histrion* Spinola); F. Smith, 1856:310 (in catalog of Hymenoptera in British Museum); Acloque, 1897:94 (in Sphecidae Fauna of France and Algeria); Dalla Torre, 1897:653 (in catalog of world Sphecidae); Maidl and Klima, 1939:15 (in catalog of world Astatinae and Bembicinae); de Beaumont, 1949d:666 (as senior invalid synonym of *Palarus ambustus confusus*); R. Bohart and Menke, 1976:212 (in checklist of world Sphecidae, as valid name in *Astata*). – **As *Palarus histrion***: Ferton, 1912a:365 (new generic assignment, Algeria: La Calle; nesting habits); E. Nielsen, 1933:295 (summary of nesting habits).

*Palarus confusus* R. Turner, 1911a:482, ♀, ♂. Syntypes: Algeria: no specific locality and Aine Kriar (OXUM, E. Saunders coll.). Synonymized with *Astata histrion* Lepeletier de Saint Fargeau by de Beaumont, 1949:665. – Guiglia, 1939c:186 (Libya: Fezzan: Tin Alcun), 1942b:232 (Libya); de Beaumont, 1950f:409 (raised to species status, southern Algeria); Gayubo, Asís, and Tormos, 1992:27 (as full species; diagnostic characters); Pulawski and Prentice, 2008:381 (in revision of world Palarini); Ben Khedher, Yildirim, and Braham, 2020a:106 (Tunisia: Mahdia Province: Sidi Alouane: Oued Beja at 35°20'34.0"N 10°53'34.6"E). – **As *Palarus ambustus confusus***: de Beaumont, 1949d:665 (new status, in revision of Mediterranean *Palarus*), 1957a:140 (Morocco); R. Bohart and Menke, 1976:290 (in checklist of world Sphecidae).

As *Palarus lepidus*: Morice, 1911:107 (Algeria), corrected to *Palarus ambustus confusus* by de Beaumont, 1949d:665.

## 7. *dongalensis* Klug

As *Palarus rufipes* Olivier: Spinola, 1839:475 (Egypt), corrected to *Palarus dongalensis* by de Beaumont, 1952e:47; de Saussure, 1854:14 (variation).

*Palarus dongalensis* Klug, 1845:[25], pl. 47, figs. 1, 2, ♀. Lectotype: ♀, Sudan: Ambukohl, now Ambikol (ZMHU), designated by Pulawski and Prentice, 2008:416. – F. Smith, 1856:358 (in catalog of Hymenoptera in British Museum); Kohl, 1885a:424 (original description copied), 427 (in checklist of world *Palarus*); Dalla Torre, 1897:657 (in catalog of world Sphecidae); de Beaumont, 1949d:642 (in revision of Mediterranean *Palarus*), 1962c:223 (Arabia: El Riyadh); de Beaumont, Bytinski-Salz, and Pulawski, 1973:17 (Israel); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Nascimento and Overal, 1980:8 (Chile, record obviously erroneous); Roche, 1981:3 (in checklist of Sphecidae of United Arab Emirates); Guichard, 1988b:134 (Arabian Peninsula); D. Baker, 1997b:189 (in catalog of insects described by Klug, 1845); Roche, 2007a:91 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Pulawski and Prentice, 2008:416 (in revision of world Palarini); Schmid-Egger, 2011b:563 (recorded from United Arab Emirates by Guichard, 1988b, and Pulawski and Prentice, 2008); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia); S. Gess and Roosenschoon, 2016:104 (Dubai Desert Conservation Reserve, visiting flowers of *Limeum arabicum* Fried., Molluginaceae); Gadallah, 2020b:44 (in list of aculeate wasps of Arabian Peninsula).

*Palarus decipiens* Honoré, 1941b:197, ♀, ♂. Lectotype: Egypt: Sokhna on Red Sea coast (USNM), designated by Pulawski and Prentice, 2008:416. Synonymized with *Palarus dongalensis* by de Beaumont, 1949d:642. – Honoré, 1942:59 (in catalog of Egyptian Sphecidae).

## 8. *fulviventr* Latreille

*Palarus fulviventr* Latreille, 1812:651, ♂. Holotype or syntypes: ♂, Arabia according to original description, but actually Syria or Iraq (Pulawski and Prentice, 2008:421); no specific locality (lost). – Guérin-Méneville, 1827b:607 (in Dictionnaire classique d'histoire naturelle); Kohl, 1885a:424 (original description copied), 428 (in checklist of world *Palarus*); Dalla Torre, 1897:658 (in catalog of world Sphecidae); Pulawski and Prentice, 2008:420 (in revision of world Palarini); Murai and Amr, 2011:119 (first record from Syria: Al Thawrah Nature Reserve at 35°51'N 28°38'E); Schmid-Egger, 2011b:563 (recorded from United Arab Emirates by Guichard, 1988b, and Pulawski and

Prentice, 2008); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:68 (Iran: known from Ardabil and East Azerbaijan provinces); Ben Khedher, Yildirim, Braham, and Chaaban, 2019:192 (known from Tunisia: Tozeur Province); Gadallah, 2020b:44 (in list of aculeate wasps of Arabian Peninsula); Ben Khedher, Yildirim, and Braham, 2021a:61 (Tunisia: Kebili: South Kebili: Errahmat at 33°39'1.8"N 8°58'27.4"E); Gadallah and Abu El-Ghiat, 2024:88 (Saudi Arabia: Jazan Province: Abu Arish, Beish).

*Palarus spinolae* de Saussure, 1854:14, ♀, ♂ (as *Spinolae*, incorrect original capitalization). Syntypes: Egypt: no specific locality (coll. M. Spinola, Torino, or MHNG). Tentatively synonymized with *Palarus fulviventris* by de Beaumont, 1949d:639, definitely by Pulawski and Prentice, 2008:420. – F. Smith, 1856:358 (in catalog of Hymenoptera in British Museum); Kohl, 1885a:427 (original description copied), 428 (in checklist of world *Palarus*); Dalla Torre, 1897:659 (in catalog of world Sphecidae); Storey, 1916:108 (Egypt: Giza, Maadi, Zeitun); Honoré, 1941b:197 (in revision of Egyptian *Palarus*), 1942:59 (in catalog of Egyptian Sphecidae); de Beaumont, 1949d:639 (in revision of Mediterranean *Palarus*), 640 (Egypt), 1962c:223 (Arabia: El Riyadh); de Beaumont, Bytinski-Salz, and Pulawski, 1973:17 (Israel); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Guichard, 1980:228 (Oman); Roche, 1981:3 (in checklist of Sphecidae of United Arab Emirates); Guichard, 1988b:134 (Arabian Peninsula, as *spinolae spinolae*); Roche and Zalat, 1994:115 (Egypt: Sinai Peninsula); Roche, 2007a:91 (in checklist of Egyptian Crabronidae, as *spinolae spinolae*), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae, as *spinolae spinolae*); Murai and Amr, 2011:112 (Syria: Al Thawrah Nature Reserve at 35°51'N 28°38'E).

*Palarus aurantiacus* Radoszkowski, 1893:68, ♀. Lectotype: ♀, Turkmenistan: Serax (ZMHU), designated by Pulawski and Prentice, 2008:420. Synonymized with *Palarus fulviventris* by Pulawski and Prentice, 2008:420. – F. Morawitz, 1897a:151 (redescription); Dalla Torre, 1897:657 (in catalog of world Sphecidae); Myartseva, 1972a:81 (Turkmenistan), 1972b:108 (nest parasite: *Asiometopia* sp., a sarcophagid fly), 1976:80 (nesting habits); R. Bohart and Menke, 1976:290 (in checklist of world Sphecidae); Kazenas, 1978b:139 (in key to Sphecidae of Kazakhstan and Central Asia), 1992c:27 (Turkmenistan: Repetek Nature Reserve); Nazarova and Shomirsaidov, 1997:24 (Tajikistan: fruit tree orchards in Vakhsh River valley); Nazarova, 1998:41 (Tajikistan: Tigrovaya Balka Nature Reserve); Kazenas, 2001b:32 (in checklist of Sphecidae of Kazakhstan and Central Asia), 165 (review of known biology), 2002a:80 (geographic distribution, Kazakhstan: 30 km south of Chardara); Nazarova, 2005:94 (alfalfa fields in southwestern Tajikistan); Nemkov, 2005:243 (in revision of *Palarus* of Russia and adjacent countries); Kazenas, 2008a:102 (southeastern Kazakhstan: Ili River valley: 17 km northwest of Bakanas); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution).

As *Palarus* sp.: Guiglia, 1939c:187 (Libya: Ghat), corrected to *Palarus spinolae niger* by de Beaumont, 1949d:642.

*Palarus spinolae niger* de Beaumont, 1949d:642, ♀, ♂. Holotype: ♂, Libya: Tripolitania: Ghat (Mus. Milano). Synonymized with *Palarus fulviventris* by Pulawski and Prentice, 2008:420. – de Beaumont, 1958b:63 (Algeria: Tassili des Ajjer). – R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae).

*Palarus leleji* Nemkov, 2005:243, ♀, ♂. Holotype: ♀, Iran: Azarbayjan-e-Khavari: Unghyut Mugan (ZIN). Synonymized with *Palarus fulviventris* by Pulawski and Prentice, 2008:420.

## 9. *funerarius* F. Morawitz

*Palarus funerarius* F. Morawitz, 1889a:136, ♀. Holotype: ♀, China: Nei Mongol: Tsagan Buryuk (ZIN). – Dalla Torre, 1897:658 (in catalog of world Sphecidae); F. Morawitz, 1897a:150 (redescription of ♀, description of ♂); R. Turner, 1911a:480 (India: Deesa; Pakistan: Karachi); Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); R. Turner, 1917e:194 (Pakistan: Punjab: Lyallpur, now Faisalabad); Gussakovskij, 1935:433 (Tajikistan: Kulab); Myartseva, 1963b:61 (Turkmenistan: lower Murgab River), 1965:80 (Turkmenistan: Akibay; Bayram-Ali district), 1971b:180 (ranges slightly outside Turanian Province); R. Bohart and

Menke, 1976:291 (in checklist of world Sphecidae); Myartseva, 1976:81 (nesting habits); Kazenas, 1978b:139 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:229 (in key to Sphecidae of European part of USSR); Islamov, 1986:527 (Uzbekistan: Surkhandarya Oblast'); Kazenas, 1992c:27 (Turkmenistan: Repetek Nature Reserve); Wu and Zhou, 1996a:93 (in Economic Insect Fauna of China); Nazarova and Shomirsaidov, 1997:24 (Tajikistan: fruit tree orchards in Vakhsh River valley); Nazarova, 1998:41 (Tajikistan: Tigrovaya Balka Nature Reserve); Esenbekova and Kazenas, 2000:37 (southeastern Kazakhstan: seven localities); Kazenas, 2001b:32 (in checklist of Sphecidae of Kazakhstan and Central Asia), 165 (nesting habits), 2002a:80 (geographic distribution, collecting localities in Kazakhstan), 2004d:32 (Kazakhstan: Atyrau, Ryn-Pesky); Nazarova, 2005:94 (alfalfa fields in southwestern Tajikistan); Nemkov, 2005:247 (in revision of *Palarus* of Russia and adjacent countries); Hua, 2006:281 (in list of Chinese insects, geographic distribution); Ljubomirov and Yildirim, 2008:190 (in catalog of Crabronidae of Turkey); Pulawski and Prentice, 2008:391 (in revision of world Palarini); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia); Kazenas, 2013b:496 (southeastern Kazakhstan: landing place Dubun' on Ili River); Bitsch, 2014:405 (synonymy with *Palarus beaumonti* noted); Yıldırım, Ljubomirov, and Lelej, 2014:11 (distribution in Turkey by biogeographic provinces); Atbaei, Fallahzadeh, and Ljubomirov, 2015:19 (Iran: Fars Province); Koçak and Kemal, 2015:148 (in checklist of Hymenoptera of Turkey); Antropov, 2017b:243 (in catalog of Crabroninae of Russia); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:68 (Iran: known from Fars and Khuzestan provinces); Fallahzadeh, Ljubomirov, Tavakoli Roodi, and Saghaei, 2018:31 (Iran: Hormozgan: Band e Molla at 27°25'N 57°09'E); Gadallah, 2020b:44 (in list of aculeate wasps of Arabian Peninsula); Ghaderipour, Khayrandish, Madjdzadeh, Ebrahimi, and Schmid-Egger, 2020:119 (Iran: Kerman); Kaplan and Yildirim, 2021:77 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch in Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:362 (in revision of Sphecidae *sensu lato* of Europe); Mawadda and Girish Kumar, 2023:114 (in checklist of Crabroninae of Northern India); Kaplan and Yildirim, 2023:1686 (in checklist of Sphecidae *sensu lato* of Turkey); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution).

*Palarus gracilis* Kohl in Kohl and Handlirsch, 1889:277, ♂. Holotype or syntypes: ♂, Turkmenistan: Pulikhatum south of Serax near Iranian border (State Museum of Georgia, Tbilisi?). Synonymized with *Palarus funerarius* by de Beaumont, 1949d:652 (who attributed synonymy to R. Turner). – Dalla Torre, 1897:658 (in catalog of world Sphecidae).

*Palarus seraxensis* Radoszkowski, 1893a:69, ♀, ♂. Lectotype: ♀, Turkmenistan: Serax (Kraków), designated by Pulawski and Prentice, 2008:391. Synonymized with *Palarus funerarius* by Nemkov, 2005:247– Dalla Torre, 1897:659 (in catalog of world Sphecidae); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia).

*Palarus incertus* Radoszkowski, 1893a:70, ♀. Lectotype: ♀, Turkmenistan: Serax (ZMHU), designated by Pulawski and Prentice, 2008:391. Synonymized with *Palarus funerarius* by Pulawski and Prentice, 2008:391. – Dalla Torre, 1897:658 (in catalog of world Sphecidae); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Nemkov, 2005:246 (as new synonym of *Palarus bisignatus*).

As *Palarus lepidus*: Radoszkowski, 1893:69 (Turkmenistan: Serax), corrected to *Palarus funerarius* by Pulawski and Prentice, 2008:391.

*Palarus quiescens* Nurse, 1903b:5, ♀, ♂. Syntypes: India: Gujarat: Deesa (OXUM? Not in BMNH). Synonymized with *Palarus funerarius* by R. Turner, 1911a:480.

*Palarus nursei* R. Turner, 1911a:481, ♂, ♀. Lectotype: ♂, Pakistan: Quetta (BMNH), designated by Pulawski and Prentice, 2008:391. Synonymized with *Palarus funerarius* by Kazenas, 2000a:51. – Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Guichard, 1988b:136 (Arabian Peninsula).

*Palarus beaumonti* Bytinski-Salz, 1957:166, ♀, ♂. Holotype: ♂, Turkey: Malatya Province: bridge over Kizil Irmak River near Balaban at 38°29'N 37°34'E (coll. H. Bytinski-Salz, now Tel Aviv Univ.). Synonymized with *Palarus funerarius* by Pulawski and Prentice, 2008:391. – de Beaumont, 1960a:20 (Greece: Rhodes Island), 1967a:337 (Turkey; possibly a synonym of *funerarius*); R. Bohart and Menke, 1976:290 (in checklist of world Sphecidae); K. Schmidt and Bitsch in Bitsch et al., 2001:289 (in Sphecidae Fauna of Western Europe); Ljubomirov and Yildirim, 2008:188 (in catalog of Crabronidae of Turkey); Koçak and Kemal, 2015:148 (in checklist of Hymenoptera of Turkey).

#### 10. *furtivus* Pulawski and Prentice

*Palarus furtivus* Pulawski and Prentice, 2008:344, ♀, ♂. Holotype: ♂, Namibia: Rehoboth District: 23 km north of Rehoboth (CAS).

#### 11. *gao* Pulawski and Prentice

*Palarus gao* Pulawski and Prentice, 2008:427, ♀, ♂. Holotype: ♀, Mali: 25 km east of Hombori (CAS). Paratypes: Burkina Faso.

#### 12. *gynaecotrichus* Pulawski and Prentice

*Palarus gynaecotrichus* Pulawski and Prentice, 2008:364, ♀, ♂. Holotype: ♀, Togo: 5 km west of Sokodé (CAS). Paratypes: Burkina Faso, Ivory Coast.

#### 13. *hastatifrons* R. Turner

*Palarus hastatifrons* R. Turner, 1919e:70, ♀, ♂. Syntypes: Israel: Khan Yunnus 12 mi southwest of Ghaza (BMNH). – de Beaumont, 1949d:658 (in revision of Mediterranean *Palarus*; Israel, North Africa), 659 (Israel, as *hastatifrons hastatifrons*); de Beaumont, Bytinski-Salz, and Pulawski, 1973:17 (Israel); de Beaumont, 1966:211 (Egypt: Alexandria area, Gebel Elba), 212 (Egypt: Abukir and Agami near Alexandria); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Pulawski and Prentice, 2008:383 (in revision of world Palarini).

*Palarus hastatifrons africanus* de Beaumont, 1949d:660, ♀, ♂. Holotype: ♀, Morocco: Imiter southwest of Ksar-es-Souk (Lausanne). Synonymized with *Palarus hastatifrons* by Pulawski and Prentice, 2008:383. – de Beaumont, 1950f:409 (southern Algeria), 1956:204 (Libya: northern Tripolitania), 1957a:139 (Morocco); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Roche, 2007a:92 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae).

*Palarus hastatifrons oceanicus* de Beaumont, 1949d:661, ♀, ♂. Holotype: ♀, Morocco: Oued Massa north of Tiznit (Lausanne). Synonymized with *Palarus hastatifrons* by Pulawski and Prentice, 2008:383. – de Beaumont, 1957a:140 (Morocco); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae).

#### 14. *histrion* Spinola

*Palarus histrion* Spinola, 1839:474, ♂, ♀. Lectotype: ♀, Egypt: no specific locality (MNHN), designated by Pulawski and Prentice, 2008:386. – Lepeletier de Saint Fargeau, 1845:233 (in revision of world Hymenoptera); Klug, 1845:pl.47, figs. 3 and 4 (color illustrations of female and male); de Saussure, 1854:13 (in list of known *Palarus*; *histrion* Lepeletier is not the same as *histrion* Spinola); F. Smith, 1856:358 (in catalog of Hymenoptera in British Museum); Radoszkowski, 1877:25 (Uzbekistan: Kyzyl Kum Desert); Kohl, 1885a:425 (original description copied), 428 (in checklist of world *Palarus*); Dalla Torre, 1897:658 (in catalog of world Sphecidae); W. Schulz, 1911b:185 (type material not found in Spinola collection); Ferton, 1912a:365 (Algeria, prey); Honoré, 1941b:199 (in revision of Egyptian *Palarus*), 1942:59 (in catalog of Egyptian Sphecidae); de Beaumont, 1949d:654 (in revision of Mediterranean *Palarus*), 1952e:47 (syntypes in Paris, not Torino), 1956a:204 (Libya: Fezzan); de Beaumont, Bytinski-Salz, and Pulawski, 1973:17 (Israel); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Casolari and Casolari Moreno, 1980:124 (specimens in M. Spinola collection, Torino as *istrio*); Guichard, 1988b:135 (Ara-



bian Peninsula), 1991a:339 (Jordan); Kazenas, 2001b:32 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:80 (geographic distribution, Kazakhstan: Kyzyl-Kum Desert); Roche, 2007a:92 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Pulawski and Prentice, 2008:386 (in revision of world Palarini); Schmid-Egger, 2011b:563 (first record from United Arab Emirates: north of Ajman, color variation); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia); ); Pagliano, 2014:117 (as *istrio*, no specimens under this label in M. Spinola collection, Torino); Schmid-Egger, 2014:586 (United Arab Emirates); Samin, Bagriacik, and Monaem, 2015:196 (Iran: Golestan: Gonbad); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:68 (Iran: known from Golestan Province); Gadallah, 2020b:45 (in list of aculeate wasps of Arabian Peninsula); Gadallah and Abu El-Ghiet, 2024:88 (Saudi Arabia: Jazan Province: Abu Arish); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution).

*Palarus histrio* Dahlbom, 1845:468, ♀, junior primary homonym of *Palarus histrio* Spinola, 1839. Holotype: ♀, Egypt: no specific locality (NRS). Synonymized with *Palarus histrio* Spinola by Dalla Torre, 1897:658, synonymy confirmed by de Beaumont, 1949:654, 657.

*Palarus lepidus* Klug, 1845:[25] pl. 47, fig. 3, ♀. Holotype or syntypes: ♀, Egypt: Saqqara (ZMHU). Synonymized with *Palarus histrio* by de Beaumont, 1949d:658. – F. Smith, 1856:358 (in catalog of Hymenoptera in British Museum); Kohl, 1885a:426 (original description copied), 428 (in checklist of world *Palarus*); Radoszkowski, 1893a:69 (Turkmenistan: Serax); Dalla Torre, 1897:659 (in catalog of world Sphecidae); Maidl, 1924:239 (Sudan); Roth, 1930:82 (Algeria: Tinikert), 1934b:189 (Algeria). Nec Morice, 1911:107 (= *ambustus confusus*); nec Honoré, 1941b:199 and 1942:59 (= *ambustus*); D. Baker, 1997b:189 (in catalog of insects described by Klug, 1845). – **As *Larrada lepidus***: Taschenberg, 1870:6 (new generic assignment, Egypt).

### 15. *inexpectatus* Pulawski

*Palarus inexpectatus* Pulawski in Pulawski and S. Gess, 2016:581, ♀, ♂. Holotype: ♂, United Arab Emirates: Dubai: Dubai Desert Conservation Reserve: Lucerne Farm at 24.77569°N 55°64268°E (Albany Museum, Grahamstown, South Africa); Gadallah, 2020b:45 (in list of aculeate wasps of Arabian Peninsula).

### 16. *interruptus* (Fabricius)

*Bembix interrupta* Fabricius, 1787:295, sex not stated. Lectotype: ♀, India: no specific locality (ZMUC), designated by Pulawski and Prentice, 2008:367. – Olivier, 1789:291 (redescription); Lichtenstein, 1796:206 (in auction catalog); Olivier, 1789:289 (in review of world *Bembex*). – **As *Crabro interruptus***: Fabricius, 1793:252 (new generic assignment, redescription), 1796:51 (in Index to his Entomologia Systematica, 1793). – **As *Liris interrupta***: Fabricius, 1804:230 (new generic assignment, redescription). – **As *Stizus interruptus***: Handlirsch, 1892:181 (new generic assignment, original description copied); Dalla Torre, 1897:526 (in catalog of world Sphecidae). – **As *Palarus interruptus***: Dahlbom, 1845:XXIII (new generic assignment, study of type material), 468 (in key to four species of *Palarus*); Kohl, 1885:425 (authorship attributed to Dahlbom, his description copied), 428 (in checklist of world *Palarus*); van der Vecht, 1961a:24 (study of type material); Pulawski and Prentice, 2008:367 (in revision of world Palarini); Mawadda, Girish Kumar, and Hegde, 2023:69 (India: locality records including first record from West Bengal); Mawadda and Girish Kumar, 2023:114 (in checklist of Crabroninae of Northern India).

*Crabro interruptus* Fabricius, 1787:295, sex not stated. Lectotype: ♀, India: no specific locality (ZMUC), designated by Pulawski and Prentice, 2008:367. Synonymized with *Liris interrupta* by Fabricius, 1804:230. – Olivier, 1792:514 (redescription); Fabricius, 1793:295 (original description copied). – **As *Vespa interrupta***: Gmelin, 1790:2762 (new generic assignment). – **As *Palarus interruptus***: Dahlbom, 1845:468 (new generic assignment, in key to four species of *Palarus*); Kohl, 1885a:425 (authorship attributed to Dahlbom, his description copied), 428 (in checklist of world *Palarus*); Cameron, 1889c:148 (listed from India); Dalla Torre, 1897:658 (in catalog of world

Sphecidae); W. Schulz, 1912:95 (Dahlbom's voucher specimen not found in Lund); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae).

*Vespa indica* Gmelin, 1790:2769. Substitute name for *Vespa interrupta* (Fabricius, 1787:286) Gmelin, 1790:2769, junior secondary homonym of *Vespa interrupta* (Fabricius, 1787:295) Gmelin, 1790:2762.

*Palarus orientalis* Kohl, 1885a:422, ♂. Holotype: ♂, Sri Lanka: no specific locality (NHMW). Synonymized with *Palarus interruptus* by van der Vecht, 1961a:24. – Kohl, 1885a:428 (in checklist of world *Palarus*); Cameron, 1889c:148 (listed from Sri Lanka); Bingham, 1896a:444 (bibliographic references), 1897:214 (original description translated into English); Dalla Torre, 1897:659 (in catalog of world Sphecidae); W. Schulz, 1911b:186 (description of ♀); R. Turner, 1911a:483 (India: Deesa); Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); Cherian and Mahadevan, 1937:65 (India: apicultural pest in Madras); Piek and Spanjer, 1986:186 (in list of Sphecidae with known prey); Dollfuss, 1989:11 (type material in NHMW).

### 17. *jaxartes* Pulawski and Prentice

*Palarus jaxartes* Pulawski and Prentice, 2008:430, ♀, ♂. Holotype: ♀, Kazakhstan: Chardara (Kraków). Paratypes: Turkmenistan.

### 18. *klugi* Menke

*Palarus indicus* Nurse, 1903b:4, ♂, junior secondary homonym of *Palarus indicus* (Gmelin, 1790). Holotype: ♂, India: Gujarat: Deesa (BMNH). – R. Turner, 1911a:480 (probably a subspecies of *Palarus dongalensis*); Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); R. Turner, 1917e:194 (India: Deesa, Pusa).

*Palarus klugi* Menke in R. Bohart and Menke, 1976:291. Substitute name for *Palarus indicus* Nurse, 1903. – Pulawski and Prentice, 2008:433 (in revision of world Palarini); Mawadda and Girish Kumar, 2023:114 (in checklist of Crabroninae of Northern India).

### 19. *laetus* Klug

*Palarus laetus* Klug, 1845:[26], pl. 47, fig. 4 and 5, ♀, ♂. Lectotype: ♀, Egypt: Ghiza Governorate: Saqqara (ZMHU), designated by Pulawski and Prentice, 2008:397. – Kohl, 1885a:425 (original description copied); Dalla Torre, 1897:658 (in catalog of world Sphecidae); R. Turner, 1911a:481 (synonymy); von Schulthess, 1926b:215 (Tunisia, determination tentative); Nadig, 1933:85 (Morocco: Agadir); Honoré, 1941b:200 (in revision of Egyptian *Palarus*), 1942:59 (in catalog of Egyptian Sphecidae); Giner Marí, 1945b:362 (Morocco: Western Sahara: El Aiun); de Beaumont, 1949d:667 (in revision of Mediterranean *Palarus*); Pulawski, 1964:112 (Egypt: Abu Rawash, Dahshur, Ghiza, Kom Osheim, Maadi); de Beaumont, Bytinski-Salz, and Pulawski, 1973:17 (Israel); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Guichard, 1980:228 (Oman); Roche, 1981:3 (in checklist of Sphecidae of United Arab Emirates, as *laetus laetus*); Guichard, 1988b:135 (Arabian Peninsula); Al-Houty, 1989:160 (Kuwait: Al-Wafra); Roche and Zalat, 1994:115 (Egypt: Sinai Peninsula); Al-Houty, 1997:161 (Kuwait: no specific locality); D. Baker, 1997b:189 (in catalog of insects described by Klug, 1845); Roche, 2007a:92 (in checklist of Egyptian Crabronidae, as *laetus laetus*), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae, as *laetus laetus*); Pulawski and Prentice, 2008:397 (in revision of world Palarini); Schmid-Egger, 2011b:563 (United Arab Emirates: Al Alban, north of Ajman, Dubai/al-Awir, Jebel Hafit south of Al-Ain, Sharjah Desert Park, Um al-Quwain, Wadi Bih, color variation). 567 (color photographs of male and female); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia); Schmid-Egger, 2014:586 (United Arab Emirates); Yıldırım, Ljubomirov, and Lelej, 2014:11 (distribution in Turkey by biogeographic provinces); S. Gess and Roosenschoon, 2016:105 (Dubai Desert Conservation Reserve, visiting flowers of *Aerva javanica* (Burm. f.), Amaranthaceae, of *Leptadenia pyrotechnica* (Forssk.) Decne., Apocynaceae, of *Centa-*



*rea pseudosinaica* Czerep., Asteraceae, of *Arnebia hispidissima* (Lehm.) D.C. and of *Heliotropium kotschy* Gürke, Boraginaceae, of *Prosopis cineraria* (L.) Druce, Fabaceae, and of *Tribulus macropterus* Boiss., Zygophyllaceae; Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:69 (Iran: known from Sistan-o Baluchestan Province); Madl, 2018:940 (in catalog of Hymenoptera of Djibouti); Ben Khedher, Yildirim, Braham, and Chaaban, 2019:192 (known from Tunisia: Tozeur Province); Gadallah, 2020b:45 (in list of aculeate wasps of Arabian Peninsula); Kaplan and Yildirim, 2021:78 (in catalog of Crabronidae of Turkey); Mawadda and Girish Kumar, 2023:114 (in checklist of Crabroninae of Northern India); Kaplan and Yildirim, 2023:1686 (in checklist of Sphecidae *sensu lato* of Turkey).

*Larra annulata* Walker, 1871:26, ♂, junior primary homonym of *Larra annulata* Klug, 1845. Lectotype: ♂, Djibouti: Tajura (BMNH), designated by Pulawski and Prentice, 2008:397. Synonymized with *Palarus laetus* by R. Turner, 1911a:481.

*Stizus walkeri* Handlirsch, 1892:177, ♂ (as *Walker*, incorrect original capitalization). Substitute name for *Larra annulata* Walker. – Dalla Torre, 1897:534 (in catalog of world Sphecidae).

*Palarus fabius* Nurse, 1903b:6, ♀, ♂. Lectotype: India: Gujarat: Deesa (BMNH), designated by Pulawski and Prentice, 2008:397. Synonymized with *Palarus laetus* by Pulawski and Prentice, 2008:397. – R. Turner, 1911a:481 (diagnostic characters); Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); Morice, 1921:823 (Iraq: Amara); de Beaumont, 1970c:16 (Iran: Baluchistan); Al-Ali, 1977:92 (Iraq: no specific locality). – **As *Palarus laetus fabius***: de Beaumont, 1949d:652 (new status); Menke in R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae).

As *Palarus* sp.?: Morice, 1911:107 (Algeria, ♀), corrected to *Palarus laetus disputabilis* by de Beaumont, 1949d:670.

*Palarus disputabilis* Morice, 1911:108, ♂. Holotype: Algeria: Biskra (OXUM). Synonymized with *Palarus laetus* by Pulawski and Prentice, 2008:397. – **As *Palarus laetus disputabilis***: de Beaumont, 1949d:670 (new status, in revision of Mediterranean *Palarus*); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae).

*Palarus eximius* Honoré, 1941b:201, ♂. Holotype: ♂, Egypt: Hawamdieh (Entomol. Soc., Cairo?). Tentatively synonymized with *Palarus laetus* by de Beaumont, 1949d:669, definitely by Pulawski and Prentice, 2008:397. – Honoré, 1942:59 (in catalog of Egyptian Sphecidae).

## 20. *latifrons* Kohl

*Palarus latifrons* Kohl, 1884a:362, ♀. Lectotype: ♀, South Africa: Western Cape Province: Cape Town (NHMW), designated by Pulawski and Prentice, 2008:370. – Kohl, 1885a:426 (original description copied), 428 (in checklist of world *Palarus*); Dalla Torre, 1897:659 (in catalog of world Sphecidae); Brauns, 1899:407 (description of ♂; South Africa: Eastern Cape Province: Port Elizabeth area), 1911a:117 (preying on *Apis mellifera* and other aculeates, serious apicultural pest); R. Turner, 1912c:420 (South Africa, Zambia, Malawi, Tanzania); Arnold, 1923c:5 (in revision of Afrotropical *Palarus*), 1930:7 (in checklist of Afrotropical Sphecidae); Schouteden, 1930:91 (Zaire); Guiglia, 1943c:76 (Ethiopia: Gamo Gofa: Sagan – Omo region), 1950:249 (Ethiopia: Gamo Gofa: Caschei); Skai-fe, 1953:334 (preying and nesting habits, damage to apiculture); Botha, 1975:16 (damage to apiculture); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Gess, 1981:20 (South Africa: 18 km west-northwest of Grahamstown; nesting in friable soils), 40 (use of foretarsal rake); Clauss, 1985:157 (predation on honeybee in Botswana); Piek and Spanjer, 1986:186 (in list of Sphecidae with known prey); Dollfuss, 1989:11 (type material in NHMW); S. Gess, 1996:282 (floral records); Wcislo, 1998:181 (proportions of antennae in relations to parasitic/non-parasitic behavior); S. Gess and F. Gess, 2003:107 (Namibia, South Africa: visiting flowers of *Asclepias buchenaviana* Schinz, Apocynaceae, *Athanasia trifurcata* (L.) L., Asteraceae, *Limeum argute-carinatum* Wawra and Peyr., Molluginaceae); Pulawski and Prentice, 2008:370 (in revision of world Palarini); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia); Gadallah, 2020b:45 (in list of aculeate wasps of Arabian Peninsula).

*Palarus curvilineatus* Cameron, 1905m:212, ♂. Holotype: ♂, South Africa: Eastern Cape Province: Steynsburg (AMG). Synonymized with *Palarus latifrons* by Meade-Waldo in Meade-Waldo, Morley, and R. Turner, 1915:336, and by Brauns, 1917:240.

*Palarus lineatifrons* Cameron, 1905m:213, ♀. Lectotype: ♀, South Africa: Eastern Cape Province: Somerset East (AMG), designated by Jacot-Guillarmod, 1961:13 (referred to as holotype). Synonymized with *Palarus latifrons* by Arnold, 1923c:5.

## 21. *maculatus* Dahlbom

*Palarus maculatus* Dahlbom, 1845:468, ♀. Holotype or syntypes: ♀, South Africa: Cape Province: no specific locality (lost). Neotype: lectotype of *Palarus handlirschi*, designated by Pulawski and Prentice, 2008:346. – Kohl, 1885a:426 (original description copied, as *maculatus*), 428 (in checklist of world *Palarus*); Dalla Torre, 1897:659 (in catalog of world Sphecidae); W. Schulz, 1912:95 (type not in Lund); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Pulawski and Prentice, 2008:346 (in revision of world Palarini).

*Palarus handlirschi* Brauns, 1911a:117 (preying on aculeates and bee-like Diptera). Nomen nudum.

*Palarus handlirschi* Brauns, 1912:653, ♀, ♂. Lectotype: ♀, South Africa: Eastern Cape Province: Willowmore (TMP), designated by Pulawski and Prentice, 2008:346. Synonymized with *Palarus maculatus* by Pulawski and Prentice, 2008:346. – Arnold, 1923c:7 (in revision of Afrotropical *Palarus*), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); S. Gess and F. Gess, 2003:107 (Namibia: visiting flowers of *Trianthema parvifolia* E. Mey ex Sond, Aizoaceae, *Limeum argute-carinatum* Wawra and Peyr., Molluginaceae, and *Zygophyllum simplex* L., Zygophyllaceae).

## *ssp. nigrrior* Arnold

*Palarus handlirschi* var. *nigrrior* Arnold, 1923c:8, ♀. Holotype: ♀, Zimbabwe: Sawmills or Victoria Falls (SAM). – Arnold, 1930:7 (in checklist of Afrotropical Sphecidae), 1935a:498 (Botswana: Gemsbok Pan). – **As *Palarus handlirschi nigrrior***: R. Bohart and Menke, 1976:291 (new status, in checklist of world Sphecidae). – **As *Palarus maculatus nigrrior***: Pulawski and Prentice, 2008:349 (new subspecific generic assignment, in revision of world Palarini).

## 22. *nama* Pulawski and Prentice

*Palarus nama* Pulawski and Prentice, 2008:351, ♀, ♂. Holotype: ♀, South Africa: Northern Cape Province: 21 km south of Kenhardt (SAM). Paratypes: Namibia.

## 23. *obesus* Arnold

*Palarus obesus* Arnold, 1951:161, ♀. Lectotype: ♀, Mauritania: Podor (BMNH), designated by Pulawski and Prentice, 2008:353. – R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Pulawski and Prentice, 2008:353 (in revision of world Palarini).

## 24. *occidentalis* Arnold

*Palarus handlirschi* race *occidentalis* Arnold, 1929c:398, ♀, ♂. Lectotype: ♂, Namibia: Outjo District: Kaross Farm at 19°23'S 14°40'E (SAM), designated by Pulawski and Prentice, 2009:356. – Arnold, 1930:7 (in checklist of Afrotropical Sphecidae). – **As *Palarus handlirschi occidentalis***: R. Bohart and Menke, 1976:291 (new status, in checklist of world Sphecidae). – **As *Palarus occidentalis***: Pulawski and Prentice, 2008:356 (new status, in revision of world Palarini).

## 25. *oneili* Brauns

*Palarus oneili* Brauns, 1899:408, ♀, ♂ (as *O'Neili*, incorrect original capitalization and apostrophe). Lectotype: ♀, South Africa: Eastern Cape Province: Sunday River near Port Elisabeth (TMP), designated by Pulawski and Pren-

tice, 2008:436. – Bingham, 1902:210 (South Africa: Rustenburg); Brauns, 1911a:117 (preying on *Myzine* and small bees); Arnold, 1923c:11 (in revision of Afrotropical *Palarus*), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Gess, 1981:20 (South Africa: 18 km west-northwest of Grahamstown; nesting in friable soils); Pulawski and Prentice, 2008:436 (in revision of world Palarini).

*Palarus rothschildi* Magretti, 1908:190, ♂ (as *Rothschildi*, incorrect original capitalization). Holotype or syntypes: ♂, Ethiopia: Endessa in upper Awash River area (MNHN). Synonymized with *Palarus oneili* by Pulawski and Prentice, 2008:436. – Arnold, 1923c:12 (original description copied), 1930:7 (in checklist of Afrotropical Sphecidae); Scott in Arnold 1933a:369 (known from Ethiopia); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae).

*Palarus rothschildi croesus* Arnold, 1951:160, ♀, ♂. Lectotype: Ethiopia: Ufdem, now Afdem (BMNH), designated by Pulawski and Prentice, 2008:436. Synonymized with *Palarus oneili* by Pulawski and Prentice, 2008:436. – Not listed by Bohart and Menke (1976).

*Palarus multiguttatus* Arnold, 1960b:472, ♂. Lectotype: Kenya: Kacheliba: Suk (SAM), designated by Pulawski and Prentice, 2008:436. Synonymized with *Palarus oneili* by Pulawski and Prentice, 2008:436. – R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae).

## 26. *parvulus* de Beaumont

*Palarus parvulus* de Beaumont, 1949d:672, ♀, ♂. Holotype: ♂, Algeria: Ghardaia (MNHN, P. Roth coll.). – de Beaumont, 1950f:409 (southern Algeria); de Beaumont, Bytinski-Salz, and Pulawski, 1973:17 (Israel); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Roche, 1981:3 (in checklist of Sphecidae of United Arab Emirates); Guichard, 1988b:135 (Arabian Peninsula); Roche, 2007a:93 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Pulawski and Prentice, 2008:403 (in revision of world Palarini); Schmid-Egger, 2014:587 (United Arab Emirates); S. Gess and Roosenschoon, 2016:105 (Dubai Desert Conservation Reserve, visiting flowers of *Polycarpea repens* (Forssk.) Asch. and Schweinf., Caryophyllaceae, and of *Limeum arabicum* Fried., Molluginaceae); Gadallah, 2020b:45 (in list of aculeate wasps of Arabian Peninsula); Ben Khedher, Yildirim, and Braham, 2021a:61 (first record from Tunisia: Tataouine: Ghomrasen: Ghordhab at 33°5'6.4"N 10°29'46.2"E).

## 27. *pentheri* Brauns

*Palarus pentheri* Brauns, 1899:403, ♂ (as *Pentheri*, incorrect original capitalization). – Holotype or syntypes: ♂, South Africa: Cape Province: "Tamatsetse in territorio Khamâs" (TMP). – Brauns, 1911a:117 (South Africa north of Orange River, nesting in hard soil); Arnold, 1923c:9 (in revision of Afrotropical *Palarus*), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); S. Gess and F. Gess, 2003:107 (Namibia, South Africa: visiting flowers of *Deverra denudata* (Viv.) Pfisterer and Podl., Apiaceae, and *Limeum fenestratum* (Feinzl.) Heimerl, Molluginaceae); Pulawski and Prentice, 2008:441 (in revision of world Palarini).

## 28. *pictiventris* F. Morawitz

*Palarus pictiventris* F. Morawitz, 1890:589, ♀. Syntypes: ♀, Transcaspia: no specific locality (ZIN). – Dalla Torre, 1897:659 (in catalog of world Sphecidae); Myartseva, 1963b:61 (Turkmenistan: lower Murgab River), 1965:80 (Turkmenistan: Bayram-Ali district, Imam Baba, Ashkhabad), 1972a:81 (Turkmenistan); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Kazenas, 1992c:27 (Turkmenistan: Repetek Nature Reserve), 1994d:115 (prey: syrphid *Paragus tibialis* Flln. and bombyliid *Heterotropus sulphureus*); Esenbekova and Kazenas, 2000:38 (southeastern Kazakhstan: near landing place Dubun' on Ili River, 30 km south-southwest of Koktal); Kazenas, 2001b:33 (in checklist of Sphecidae of Kazakhstan and Central Asia), 2002a:80 (geographic distribu-

tion, collecting localities in Kazakhstan); Nemkov, 2005:248 (in revision of *Palarus* of Russia and adjacent countries); Kazenas, 2008a:102 (southeastern Kazakhstan: 65 km west of Bakanas, 20 km north of Aydarly, 30 km southwest of Koktal); Pulawski and Prentice, 2008:406 (in revision of world *Palarini*); Kazenas, 2013b:496 (southeastern Kazakhstan: landing place Dubun' and 30 km south-southwest of Koktal on Ili River); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution).

## 29. *rufipes* Latreille

*Tiphia flavipes* Fabricius, 1793:224, ♀, junior secondary homonym of *Palarus flauipes* (Fabricius, 1781), Article 58.4. Holotype or syntypes: Barbaria, now northwestern Africa: no specific locality (depository?). – Coquebert, 1801:53 (original description copied), pl. XIII Fig 1 (illustration of Fabrician type); Fabricius, 1804:232 (redescription); de Beaumont, 1949d:649 (junior secondary homonym in *Palarus*); J.Ch. Bradley, 1919a:65 (*Tiphia flavipes* Fabricius, 1793 is the type species of *Palarus*).

*Palarus rufipes* Latreille, 1812:651, ♀. Substitute name for *Tiphia flavipes* Fabricius. – Guérin-Ménéville, 1827b:607 (in Dictionnaire classique d'histoire naturelle); nec Spinola, 1839:475 (= *Palarus dongalensis*); de Saussure, 1854:13 (in list of known *Palarus*), 14 (variation); F. Smith, 1856:358 (in catalog of Hymenoptera in British Museum); Kohl, 1885a:426 (original description copied), 428 (in checklist of world *Palarus*); Dalla Torre, 1897:659 (in catalog of world Sphecidae); W. Schulz, 1905b:66 (taxonomic history, redescription); Honoré, 1941:202 (in revision of Egyptian *Palarus*: unrecognizable species); de Beaumont, 1949d:647 (in revision of Mediterranean *Palarus*; Tunisia, Algeria, Morocco), 1950f:409 (southern Algeria, Morocco), 1957a:139 (Morocco); Casolari and Casolari Moreno, 1980:124 (specimens in M. Spinola collection, Torino); Pulawski and Prentice, 2008:445 (in revision of world *Palarini*); Pagliano, 2014:117 (specimens in M. Spinola collection, Torino, are *Palarus dongalensis*); Samin, Bagriacik, and Monaem, 2015:196 (Iran: Golestan: Gonbad); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:68 (Iran: known from Golestan Province); Ben Khedher, Yildirim, Braham, and Chaaban, 2019:192 (known from Tunisia: Tozeur Province); Ben Khedher, Yildirim, and Braham, 2020a:106 (Tunisia: Kebilli, Mahdia, Nabeul, and Tozeur provinces).

*Palarus humeralis* Dufour, 1854a:379, ♀, ♂. Lectotype: ♂, Algeria: Pontéba, now Oumm ed Drou (MNHN), designated by Pulawski and Prentice, 2008:445. Synonymized with *Palarus rufipes* by W. Schulz, 1905:66. – de Saussure, 1854:13 (in list of known *Palarus*); F. Smith, 1856:358 (in catalog of Hymenoptera in British Museum); Walker, 1871:26 (Egypt: Cairo); Kohl, 1885a:422 (in revision of Larrinae), 425 (original description copied), 428 (in checklist of world *Palarus*); Schmiedeknecht, 1896:163 (Algeria: Hammam-Bou-Hadjar); Dalla Torre, 1897:658 (in catalog of world Sphecidae); Morice, 1911:107 (Algeria: Biskra, Médéa); Ferton, 1912a:365 (Algeria, prey); Innes Bey, 1912:112 (specimens recorded by Walker, 1871, now destroyed by dermestids, were collected in unknown locality); von Schulthess, 1926b:215 (Tunisia); Nadig, 1933:85 (Morocco: Asni, Marrakech); E. Nielsen, 1933:295 (summary of nesting habits); Guiglia, 1940a:288 (Libya: El-Hag), 1942b:232 (Libya).

## 30. *saundersi* Morice

*Palarus saundersi* Morice, 1897:310, ♂. Holotype: ♂, Egypt: Koubbeh near Cairo (OXUM). – Honoré, 1941b:198 (in revision of Egyptian *Palarus*), 1942:59 (in catalog of Egyptian Sphecidae); de Beaumont, 1949d:649 (in revision of Mediterranean *Palarus*; description of ♀; Egypt to Morocco), 1957a:139 (Morocco), 1960b:246 (Libya: Tripolitania); de Beaumont, Bytinski-Salz, and Pulawski, 1973:17 (Israel); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Guichard, 1988b:134 (Saudi Arabia); Al-Houty, 1989:162 (Kuwait: Al-Wafra, Sulabiya), 1997:161 (Kuwait: no specific locality); Nemkov, 2005:243 (in revision of *Palarus* of Russia and adjacent countries); Roche, 2007a:91 (in checklist of Egyptian Crabronidae), 2007b:6 (in checklist of Egyptian Ampulicidae, Sphecidae, and Crabronidae); Pulawski and Prentice, 2008:450 (in revision of world *Palarini*); Gadallah,

Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia); Gadallah, 2020b:45 (in list of aculeate wasps of Arabian Peninsula).

### 31. *turneri* Brauns

*Palarus turneri* Brauns, 1912:655, ♀. Holotype: ♀, South Africa: Eastern Cape Province: Willowmore (TMP). – Arnold, 1923c:8 (in revision of Afrotropical *Palarus*), 1930:7 (in checklist of Afrotropical Sphecidae); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); S. Gess and F. Gess, 2003:107 (Namibia: visiting flowers of *Trianthema parvifolia* E. Mey. ex Sond., Aizoaceae, *Limeum argute-carinatum* Wawra and Peyr., *Limeum myosotis* H. Walter, and *Limeum* sp., Molluginaceae, and of *Tribulus* sp. and *Zygophyllum simplex* L., Zygophyllaceae); Pulawski and Prentice, 2008:358 (in revision of world Palarini).

### 32. *variegatus* (Fabricius)

*Tiphia variegata* Fabricius, 1781:451, sex not stated. Holotype: ♀, Russia: Siberia: no specific locality (BMNH: Banks coll.). – Fabricius, 1787:279 (redescription), 1793:225 (redescription), 1804:233 (redescription). – **As *Larra variegatus***: Casolari and Casolari Moreno, 1980:113 (new generic assignment, specimens in M. Spinola collection, Torino). – **As *Palarus variegatus***: Girard, 1879:951 (new generic assignment, morphology and habits); R. Turner, 1909:484 (study of type), 1911a:480 (*variegatus* is the correct name); Morice and Durrant, 1917:438 (*Palarus variegatus* has priority over *auriginosus* and *flavipes*); de Beaumont, 1949:637 (in revision of Mediterranean *Palarus*); Móczár, 1952:119 (nesting habits); de Beaumont, 1954a:64 (Italy); Hertzog, 1954:101 (France: Bouches-du-Rhône: Camargue); Bajári, 1957a:57 (in key to Hungarian Sphecidae); Pulawski, 1958a:185 (Bulgaria: Sandanski, Varna); de Beaumont, 1959a:29 (Italy), 1961b:275 (Afghanistan); van der Vecht, 1961a:24 (discussion of type material); Evans, 1963a:149 (immunity to wasp venom), 1968c:119 (discussion of larva's description by Grandi); de Beaumont, 1965a:55 (Greece); Myartseva, 1965:79 (Turkmenistan: Akibay in Bayram-Ali district, Kushka); de Beaumont, 1967a:337 (Turkey); Benedek, 1968:73 (Hungary, visiting flowers of *Angelica silvestris* L.), 1969a:84 (Hungary; hygrophilous meadow); Tsuneki, 1969b:19 (nesting habits; as *variegatus variegatus*), 1971m:34 (China: Inner Mongolia: Apaka; as *variegatus variegatus*); Kazenas, 1972b:160 (Kazakhstan); Myartseva, 1972a:81 (Turkmenistan); Simon Thomas, 1972:183 (France: Lot-et-Garonne); Tsuneki, 1972e:408 (Mongolia); Kazenas, 1974b:109 (feeding on flowers of *Tamarix* sp., *Statice gmelini* Willd., Plumbaginaceae, and *Cynanchum sibiricum* Willd., Asclepiadaceae, in Kazakhstan), 110 (feeding on flowers of *Euphorbia* spp., Euphorbiaceae, and *Peganum harmala* L., Zygophyllaceae, in Kazakhstan), 111 (feeding on flowers of *Saussurea* sp., Asteraceae, *Lepidium crassifolium* W. et K., Brassicaceae, and *Barbarea vulgaris* R. Br., Brassicaceae, in Kazakhstan), 112 (feeding on flowers of *Salsola laricifolia* Turcz., Chenopodiaceae, in Kazakhstan); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Simon Thomas, 1976:5 (France: Lot-et-Garonne: Forêt de Campet); Kolesnikov, 1977:319 (Russia: Bryansk Oblast'); Kazenas, 1978b:139 (in key to Sphecidae of Kazakhstan and Central Asia); Pulawski, 1978:229 (in key to Sphecidae of European part of USSR); Benedek, 1979:231 (Hungary: Bakony Hills: Balatonalmádi); Mityaev, Matesova, Kulenova, Kazenas, and Zhdanko, 1980:116 (Russia: Siberia: Altayskiy Kray: basin of Aley River); Pagliano, 1980:128 (Italy: Calabria, Piemonte); Dollfuss, 1983a:75 (endangered in Niederösterreich, Austria), 77 (endangered in Burgenland, Austria), 1983b:11 (in catalog of Sphecidae of Austria); Józán, 1983:100 (Hungary); Gayubo and Tormos, 1984:16 (Spain: Valencia); Józán, 1985a:181 (Hungary), 1985b:57 (Hungary south of Lake Balaton), 78 (floral records), 83 (ecological and zoogeographic characteristics); Radović, 1985:65 (sting apparatus analyzed); Scobiola-Palade, 1985:96 (Romania: delta of Danube); Gayubo and Sanza, 1986:50 (Spain: Burgos); Gayubo and Tormos, 1986a:17 (Spain: Castellón de la Plana); Islamov, 1986:528 (Uzbekistan: Tashkent Oblast'); Józán, 1986:370 (Hungary: Kiskunság National Park); Gayubo and Heras, 1986:45 (Spain: Valladolid Province; floral records); Steiner, 1986:104 (references to papers on nesting habits); Tormos and Jiménez, 1987a:124 (Spain: Valencia), 1987b:316 (Spain: Valencia Province: Dehesa de El Saler); Dollfuss,

1987:21 (Austria); Asís and Jiménez, 1988:273 (Spain: Castellón Province); Dollfuss, 1988:24 (Austria: Niederösterreich: Oberweiden); Karsai, 1988:100 (Hungary: Kiskunság National Park); Kuznetzova, 1990:20 (Russia: Voronezh Oblast': Galich'ya Gora Nature Reserve); Pagliano, 1990:107 (in catalogue of Italian Sphecidae); Chinin, 1991:111 (Russia: Samara Oblast'); Day, 1991:xvii (in summary of European Endangered Hymenoptera Lists); Dollfuss, 1991:113 (in key to Sphecidae of North and Central Europe); Gayubo, Borsato, and Osella, 1991:403 (Italy: Veneto); Gayubo, Borsato, and Osella, 1992:283 (India: Karakorum: Shigartang in Indus valley); Józán, 1992b:173 (Hungary: Boronka-melléki Protected Area), 1992c:289 (Hungary: Zselic Hills); Gorobchishin, 1993:46 (Ukraine: Kanev Nature Reserve); Maldès, Bouguet, and Teulou, 1993:225 (distribution in France); Torregrosa, Gayubo, Tormos, and Asís, 1993:18 (Spain: Alicante Province); Dollfuss, 1994:98 (endangered in Austria); Tormos, Asís, and Gayubo, 1994:188, 209 (Spain: Albacete Province); Gorobchishin, 1995:18 (Ukraine: Kanev Nature Reserve); Józán, 1995:105 (Hungary: projected Duna-Dráva National Park); Negrisoló, 1995a:19 (visiting flowers of *Echinophora spinosa* L., Apiaceae), 23 (Italy: Veneto); Negrisoló in Minelli, Ruffo, and La Posta, 1995b:9 (in catalog of Italian fauna); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:413 (in key to Sphecidae of Russian Far East); Scharrer, 1995:24 (Austria: Niederösterreich: Jedlese, Oberweiden; Germany: Bayern: Obernau; Hungary: Budapest area); Gorobchishin, 1996:53 (Ukraine: Kanev Nature Reserve); Minoranskiy and Shkuratov, 1996:82 (Russia: Rostov Oblast'); Voblenko, Gorobchishin, and Nesterov, 1996:14 (Ukraine: Polesye Region); Wu and Zhou, 1996a:92 (in revision in Economic Insect Fauna of China, as *variegatus variegatus*); Dollfuss, Gusenleitner, and Bregant, 1998:515 (Austria: summary of collecting records from Burgenland); Gorobchishin, 1998a:49 (Ukraine: Kiev and surroundings); Józán, 1998:311 (Hungary: Duna-Dráva National Park); Blösch, 2000:238 (in Sphecid Fauna of Germany: not occurring in Germany); Esenbekova and Kazenas, 2000:38 (southeastern Kazakhstan: ten localities); Józán, 2000:108 (Hungary: Bakony Mountains); Ljubomirov, 2000:10 (Bulgaria, specimens in N. Nedelkov collection); Shkuratov, 2000:59 (Russia: Rostov Oblast': Vëshenskaya village area at 49°37'N 41°45'E); Józán, 2001:279 (Hungary: Somogy County); Kazenas, 2001b:32 (in checklist of Sphecidae of Kazakhstan and Central Asia); K. Schmidt and Bitsch in Bitsch et al., 2001:290 (in Sphecid Fauna of Western Europe); Ohl et al., 2001:142 (recorded from Germany but not occurring there); Shkuratov, 2001:17 (list of prey); Zettel, Gross, and Mazzucco, 2001:72 (Austria: Wien); Józán, 2002:53 (Hungary: Mecsek Mountains); Kazenas, 2002a:80 (geographic distribution, collecting localities in Kazakhstan); Shkuratov, 2002b:141 (Russia: Rostov Oblast': Rostovskiy Nature Reserve at 46°27'N 42°41'E); Gayubo, Özbek, and Yıldırım, 2003:90 (Turkey: six localities); Józán, 2003:227 (Hungary: Látványi Puszta Nature Conservation Area); Gorobchishin and Protsenko, 2004:40 (Ukraine: Kherson Oblast': Chernomorskiy Nature Reserve); Kazenas, 2004b:105 (Kazakhstan: western Tien Shan), 2004d:32 (Kazakhstan: northern Caspian area); Shkuratov, 2004a:78 (Russia: Rostov Oblast'; prey: *Andrena* sp., *Bembecinus tridens* (Fabricius), *Camptopeum friesei* Mocsáry, *Ectemnius confinis* Walker, *Podalonia luffii* Saunders, and *Pterocheilus phaleratus* (Panzer)), 2004b:167 (Russia: Rostov Oblast': Gosudarstvennyi Muzei-Zapovednik M.A. Sholokhova); Ebrahimi, 2005:126 (in key to selected Iranian Sphecidae); Jacobs, 2005a:448 (Bulgaria: Ivanski near Shumen, Sandanski); Mokrousov and Selivanova, 2005:754 (Russia: Voronezh Oblast'); Nemkov, 2005:245 (in revision of *Palarus* of Russia and adjacent countries); Pagliano and Negrisoló, 2005:387 (in Sphecid Fauna of Italy); Shoreiko, 2005a:164 (Ukraine: Crimea); Straka, 2005a:398 (critically endangered in Czech Republic); Yıldırım and Ljubomirov, 2005:1799 (Turkey: Erzurum and Kars provinces); Gorobchishin, 2006:111 (Ukraine: several localities in Cherkasy Oblast', also Kyiv); Hua, 2006:281 (in list of Chinese insects, geographic distribution); Jacobs, 2007:101 (in key to Crabronidae of Germany, not yet found in Germany); Józán, 2007:179 (Hungary: Zselic hills); Kazenas, 2007a:91 (Kazakhstan: Akmalá Oblast': Kurgandzhin Nature Reserve and vicinity); Vepřek and Straka, 2007:203 (in catalog of Sphecidae of Czech Republic and Slovakia, known only from Moravia and Slovakia); Danilov, 2008:350 (Russia: Altayskiy Kray: Barnaul area, as *variegatus variegatus*); Kazenas, 2008b:113 (Kazakhstan: foothills of Zailiyskiy Alatau: sometimes found on loess



cliffs), 2008c:255 (Kazakhstan: village Koktum south of Lake Alakol'); Ljubomirov and Yildirim, 2008:190 (in catalog of Crabronidae of Turkey); Nemkov, 2008b:19 (in catalog of Crabronidae of Asiatic Russia); Pulawski and Prentice, 2008:455 (in revision of world Palarini); Baños-Picón, Asís, Gayubo, and Tormos, 2009:312 (Spain: frequency of specimens collected with hand nets and Malaise traps); Nemkov, 2009b:80 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia); Shorenko, 2009:367 (in list of Sphecidae *sensu lato* of Crimea); Rudoiskatel', 2010:153 (Russia: southern Ural Mountains), as *variegatus variegatus*; Shorenko and Kononov, 2010:22 (Ukraine); Tüzün and Yüksel, 2010:4473 (Turkey: Niğde Province); Baghirov, 2011b:149 (Russia: Altayskiy Kray: Savvushka); Gogala, 2011:16 (Slovenia: Bizelijsko); Józán, 2011:180 (in checklist of Sphecidae *sensu lato* of Hungary); Bogusch and Straka, 2012:84 (in Czech Republic nesting in postindustrial habitats); Kazenas, 2012b:169 (Kazakhstan: Korgalzhin State Nature Reserve); Prisiy, 2012:48 (Russia: Belgorod Oblast'); Akulov and Proshchalykin, 2013:114 (Russia: Siberia: Krasnoyarsk Kray: Minusinsk, as *variegatus variegatus*); Kazenas, 2013a:72, 73 (color photographs of adult wasps, short information on geographic distribution and nesting habits), 2013b:496 (southeastern Kazakhstan: many localities in deserts, in Ili River valley, in foothills, and in low mountains); Mokrousov, Ruchin, and Egorov, 2013:202 (Russia: Mordovian Republic: Mordovian State Nature Reserve); Shlyakhtenok, 2013:170 (in annotated catalog of aculeate wasps of Belorussia); Dunford, Turbyville, and Leavengood, 2014:10 (listed as medically important in Afghanistan); Ebrahimi, 2014:40 (Iran: Āzarbāijān-e Gharbi and Khorāsān provinces); Ghahari, Hayat, Lavigne, and Ostovan, 2014:1395 (prey of asilid fly *Eutolmus mordax* (Loew)), 1435 (prey of asilid fly *Stenopogon sabaudus* (Fabricius)); Kazenas, 2014a:136 (Kazakhstan: Karatau Mountain Range); Koçak and Kemal, 2015:148 (in checklist of Hymenoptera of Turkey); P. Rosa and Pagliano, 2015:104 (Italy: Lombardia and Piemonte: Parco del Ticino); Shorenko, 2015:326 (in list of Sphecidae *sensu lato* of Crimea); Mokrousov and Popov, 2016:583 (Russia: Abkhazia, Krasnodarskiy Kray); Samin and Bagriacik, 2016:496 (Iran: West Azarbaijan Province: Salmas); Yildirim, Ljubomirov, and Lelej, 2014:11 (distribution in Turkey by biogeographic provinces); Antropov, 2017b:243 (in catalog of Crabroninae of Russia, as *variegatus variegatus*); Jahantigh, Rakhshani, Mokhtari, and Ramroodi, 2017:69 (Iran: known from Khorasan-e Razavi and West Azerbaijan provinces); Shorenko, 2017:77 (in Crimea collected in July and August), 2018:128 (Crimea, including localities, habitats, and number of specimens); Mokrousov, Proshchalykin, Aliyev, and Maharramov, 2019:15 (Azerbaijan: Nakhichevan Autonomous Republic); Ruchin and Antropov, 2019a:13235 (Russia: Mordovia State Nature Reserve); Danilov, Odintseva, and Odintsev, 2021:22 (Russia: Omsk Oblast'); Kaplan and Yildirim, 2021:78 (in catalog of Crabronidae of Turkey); Schmid-Egger and Bitsch in Bitsch, Antropov, Gayubo, Leclercq, Schmid-Egger, K. Schmidt, and Straka, 2021:363 (in revision of Sphecidae *sensu lato* of Europe); Pytel-Huta, Skyrpan, Tsaryk, Shydlovskyy, and Khamar, 2022:54 (western Ukraine); Kaplan and Yildirim, 2023:1686 (in checklist of Sphecidae *sensu lato* of Turkey); Medetov, Embergenov, Kholmatov, Elmurodova, Rakhimov, and Tajibaeva, 2024:423 (Uzbekistan: distribution); Pytel-Huta and Franchuk, 2024:84 (Ukraine: Rivno Nature Reserve); Gülmez, Çubuk, and Can, 2025:175 (Turkey: Çanakkale: Kelkit River Valley).

*Crabro flauipes* Fabricius, 1781:470, sex not stated. Holotype: ♀, Italy: no specific locality (ZMUC). Synonymized with *Palarus variegatus* by R. Turner, 1909:484. – Fabricius, 1787:295 (redescription); Olivier, 1792:513 (redescription); Rossi, 1792:136 (Italy: Toscana: Pisa area). – **As *Philanthus flauipes***: Fabricius, 1790:225 (new generic assignment, erroneously "in Daniae floribus"), 1793:290 (redescription, Italy); Panzer, 1801, Heft 84:24 (in revision of insects of Germany, illustration of habitus, as *flavipes*); Latreille, 1806:pl. XIV, fig. 1 (illustration); Dahlbom, 1845:XXIV (specimens in Fabricius collection examined); Peets, 1909-1911:67 (*Philanthus flauipes* of Panzer = *Palarus flauipes*). – **As *Gonius flavipes***: Panzer, 1806:178 (new generic assignment, in critical review of his previous work); Jurine, 1807:205 (listed) and pl. 10, Fig. 24 (illustration of habitus); Billberg, 1820:105 (specimens from Sweden in collection Billberg, obviously in error); Frei-Gessner, Kohl, and Kriechbaumer, 1882:393 (Jurine's specimens are *Palarus flavipes*). – **As *Palarus flavipes***: Latreille, 1805:296 (new generic assignment), 1812:651 (no-

menclatural history, redescription); Guérin-Méneville, 1827b:607 (in Dictionnaire classique d'histoire naturelle); Vander Linden, 1829:20 (bibliographic references, southern France, Germany, Italy); Dufour, 1841a:498 and 1841b:236 (digestive tract), 1841a:503 and 1841b:239 (male reproductive system), 1841a:507 and 1841b:243 (female reproductive system), 1841c:354 (list of prey); Dahlbom, 1843:124 (in revision of Sphecidae and Pompilidae), 1845:468 (in key to four species of *Palarus*); Lepeletier de Saint Fargeau, 1845:232 (in revision of world Hymenoptera); de Saussure, 1854:13 (in list of known *Palarus*); Fabre, 1856a:138 (France: Vaucluse: Avignon area, prey); F. Smith, 1856:357 (in catalog of Hymenoptera in British Museum); Schenck, 1857:199 (in revision of fossorial wasps of Germany); Taschenberg, 1858:83 (in key to Sphecidae of Germany); A. Costa, 1864c:124 (Italy: Campania: Benevento area); Taschenberg, 1866:201 (in revision of Hymenoptera of Germany); A. Costa, 1867b:92 and 1867c:36 (in revision of Italian Sphecidae); Schenck, 1867a:356 (known from southern Germany); Wierzejski, 1868:117 (Ukraine: Podole Region: Sinków, now Synkiv); P. Ivanov, 1872:152 (Ukraine: Khar'kov Oblast': Kupyansk area); Dours, 1874:140 (in catalog of Hymenoptera of France); Mocsáry, 1874:120 (Hungary: Siebenbürgen, now Romania: Transylvania: no specific locality); Wierzejski, 1874:258 (Ukraine: Podole region: Sinków, now Synkiv); Marquet, 1875:203 (France: Hérault: Cette, now Sète); Frivaldszky, 1877:352 (Hungary: Temes Komitat: Grebenáč, now in Timiș District in Romania); Radoszkowski, 1877:24 (Kazakhstan: Chardara); Marquet, 1881:180 (southern France); Yaroshevskiy, 1881:126 (Ukraine: Khar'kiv Oblast': Khar'kiv, Kupyansk, Slavyansk); Kohl, 1883e:672 (Switzerland, record not confirmed by subsequent authors), 1885a:419 (in revision of Larrinae), 428 (in checklist of world *Palarus*); Radoszkowski, 1887a:44 (China: Tsinghai: Tsaidam region: no specific locality, male genitalia); Kohl, 1888b:728 (Austria: Tirol, now Italy: Alto Adige); F. Morawitz, 1891a:209 (European Kazakhstan); Kohl, 1893a:32 (Austria: Niederösterreich: Wien: Türkenschanze); Baldini, 1894:64 (Italy: Modena area); Nicolas, 1894:39 (prey: *Halictus* sp.); Laboulbène, 1895:180 (preying on Hymenoptera such as *Odynerus* and *Polistes*); Acloque, 1897:93 (in Sphecid Fauna of France and Algeria); Dalla Torre, 1897:657 (in catalog of world Sphecidae); Chyzer, 1902:33 (Hungary: Szöllöske; Slovakia: Szomotor); Adlerz, 1904:137 (known prey: Hymenoptera); Antiga and Bofill, 1904:9 (Spain: Cataluña Province); W. Schulz, 1904b:102 (Hungary: Somotor; Kazakhstan: Semipalatinsk, now Semey); Kohl, 1905c:233 (Turkey: Kayseri: Erciyes Dağı); Vängel, 1905:166 (Hungary: Budapest, Félégyháza, Kömlöd); Schmiedeknecht, 1907:230 (in key to Hymenoptera of Central Europe); de Gaulle, 1908:121 (in catalog of French Hymenoptera); Faussek, 1906:34 (use of forelegs for nest digging); Mercet, 1910b:162 (listed from Spain); Smits van Burgst, 1913a:319 and 1913b:6 (Tunisia: no specific locality, in error); Dusmet, 1915:88 (Spain: Aragón); Ahrens, 1925:57 (nesting habits); Berland, 1925d:105 (in Sphecid Fauna of France); Coulon, 1925:120 (material in Elbeuf Museum); Fries, 1926:163 (in key to Sphecidae of Central Europe, short morphological and biological characteristics); Grandi, 1928a:19 (nest excavation); Schmiedeknecht, 1930:691 (in keys to Hymenoptera of North and Central Europe); Bischoff, 1931:9 (Spain: Llerida: Pobla de Segur); Grandi, 1931:58 (Italy: Emilia-Romagna: Cervia); Giordani Soika, 1932a:22 (Italy: Lido di Venezia); E. Nielsen, 1933:295 (summary of nesting habits); Giner Marí, 1934:132 (Spain); Gussakovskij, 1934a:10 (Mongolia, China: Alashan); Zavadil, 1934:187 (Slovakia); Zavadil, Šustera, and Bat'a, 1937:199 (in catalog of Sphecidae of Czechoslovakia); Kuntze and Noskiewicz, 1938:378 (in Poland known only from Podole region, now Ukraine); Móczár, 1939:5 (Hungary: Jászberény); Balthasar, 1941b:112 (Czech Republic: eastern Moravia); Yasumatsu, 1942c:111 (China: Nei Mongol: Apaka at 44°N 114.96°E); Giner Marí, 1943a:148 (in Sphecid Fauna of Spain); Guiglia, 1944b:24 (Italy); Balthasar, 1948:142 (Slovakia: Kovačov, Parkan); Zavadil in Zavadil and Šnoflak, 1948:166 (in key to Sphecidae of Czechoslovakia); Ceballos, 1949:101 (Spain); Scobiola, 1950:20 (Romania); Móczár, 1953:310 (Hungary); Grandi, 1954:169 (prey capture, nesting habits, list of prey), 174 (description of larva); Lehrer, 1955:262 (Romania: Moldova: Iași, Recea in Iași District); Vogrin, 1955:36 (Yugoslavia); Ceballos, 1956:378 (in catalog of Hymenoptera of Spain); Čingovski, 1960:6 (Macedonia: Kumanovo, Matka, Skopje Park); Noskiewicz and Puławski, 1960:120 (in key to Polish Sphecidae, not yet found in Poland); Grandi,

1961:185 (nesting habits), 491 (description of larva); Myartseva, 1963b:61 (Turkmenistan: lower Murgab River); Scobiola-Palade, 1966b:392 (Romania: Tulcea District: C.A. Rosetti, Periprava); Balthasar, Hrubant, and Hrubant, 1967:174 (Bulgaria: Slanchev Bryag near Nessebar); Scobiola-Palade, 1967b:43 (Romania), 1968b:142 (Romania: Island of Letea in delta of Danube), 1968c:385 (Romania: Budești, Frătești, Giurgiu); Romanova, 1969:134 (Russia: North Caucasus); Atanassov, 1972a:191 (Bulgaria: Stara Planina Mountains), 1972b:32, 48, 53 (Bulgaria: Stara Planina Mountains); Balthasar, 1972:415 (in Sphecid Fauna of Czechoslovakia); Scobiola-Palade, 1972a:148 (Romania: delta of Danube: Caraorman), 1974:145 (Romania: Sărăturile sandbank in Danube delta); Casolari and Casolari Moreno, 1980:124 (specimens in M. Spinola collection, Torino); Steiner, 1986:103 (references to papers on nesting habits); Pádr in Šedivý, 1989a:168 (in checklist of Czechoslovakian Sphecidae); Scobiola-Palade, 1989:87 (Romania: delta of Danube); Blagoveshchenskaya, 1994:93 (Russia: Ul'yankovsk Oblast'); Pagliano, 2014:117 (specimens in M. Spinola collection, Torino, are *Palarus variegatus*).

*Palarus auriginosus* Eversmann, 1849:384, sex not stated (authorship attributed to Pallas). Lectotype: ♀, Russia: Orenburg (ZIN), designated by Pulawski and Prentice, 2008:455. Synonymized with *Palarus flavipes* by Kohl, 1885a:420. – Becker, 1880:153 (Russia: Sarepta, now Krasnoarmeysk south of Volgograd); Radoszkowski, 1890b:507 (Armenia: Mount Ararat), 1892:591 (male genitalia).

*Palarus affinis* F. Morawitz, 1893b:414, ♂. Holotype: ♂, Tajikistan: Takfan in Yagnob River valley (ZIN). Synonymized with *Palarus variegatus* by Nemkov, 2005:245. – F. Morawitz, 1894:344 (Turkmenistan: Koshlagar, description of ♀); Dalla Torre, 1897:657 (in catalog of world Sphecidae); Gussakovskij, 1935:433 (Tajikistan: Kulab); Myartseva, 1963b:61 (Turkmenistan: lower Murgab River), 1965:79 (Turkmenistan: Akibay), 1972a:81 (Turkmenistan). – **As *Palarus variegatus affinis***: Pulawski, 1965c:575 (new status); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae); Kazenas, 1992c:27 (Turkmenistan: Repetek Nature Reserve); Nazarova and Shomirsaidov, 1997:24 (Tajikistan: fruit tree orchards in Vakhsh River valley); Nazarova, 1998:41 (Tajikistan: Tigrovaya Balka Nature Reserve); Kazenas, 2001b:32 (in checklist of Sphecidae of Kazakhstan and Central Asia).

*Palarus fortistriolatus* Cameron, 1907d:91, ♀. Lectotype: ♀, Pakistan: Baluchistan: Quetta (BMNH), designated by Pulawski and Prentice, 2008:455. Synonymized with *Palarus variegatus* by Pulawski and Prentice, 2008:455. – R. Turner, 1911a:480 (diagnostic characters); Ramakrishna Aiyar, 1916:553 (in catalog of Indian aculeates described after Bingham, 1897); R. Bohart and Menke, 1976:291 (in checklist of world Sphecidae).

As *Palarus guttatus* (= *flavipes*): Mocsáry, 1897:78 (Kingdom of Hungary, some localities are in today's Romania); Móczár and Henter, 1907:205 (Hungary: Hatvan, Tiszaalpár).

### **ssp. varius Sickmann**

*Palarus flavipes* var. *varius* Sickmann, 1894:215, ♀, ♂. Syntypes: China: Hopei Province: Tientsin (Münster). – Dalla Torre, 1897:657 (in catalog of world Sphecidae); Yasumatsu, 1942c:111 (China: Beijing). – **As *Palarus variegatus varius***: Tsuneki, 1964l:61 (new status, in key to Larrinae of Japan and Korea), 1969b:17 (nesting habits), 1971m:34 (China: Beijing: Tiendang), 1964l:61 (in key to Larrinae of Japan and Korea); Kazenas, 1980e:89 (Russia: Far East); Tsuneki, 1982b:15 (known from Korea); Paik, 1985:199 (in list of Sphecidae of Korea); Nemkov, 1992b:245 (Russia: Far East: Blagoveshchensk); Nemkov in Nemkov, Kazenas, Budrys, et Antropov, 1995:413 (in key to Sphecidae of Russian Far East); Wu and Zhou, 1996a:93 (in Economic Insect Fauna of China); Nemkov, 2005:246 (in revision of *Palarus* of Russia and adjacent countries); Hua, 2006:281 (in list of Chinese insects, geographic distribution); Pulawski and Prentice, 2008:459 (in revision of world Palarini); Nemkov, 2009b:80 (in new catalog of Sphecidae and Crabronidae of Asiatic Russia), 2012c:439 (in catalog of Crabronidae of Russian Far East); J.-K. Kim, 2014:437 (in catalog of Sphecidae *sensu lato* of Korean Peninsula); Antropov, 2017b:243 (in catalog of Crabroninae of Russia).

*Palarus saishiuensis* Okamoto, 1924:202, ♀. Holotype: ♀, South Korea: Island of Quelpart, now Island of Cheju: no specific locality (depository?). Synonymized with *Palarus variegatus varius* by Tsuneki, 1971m:34. – Sato, 1926:36-39 (nesting habits), corrected to *Palarus variegatus varius* by Tsuneki, 1971m:34; Piek and Spanjer, 1986:186 (in list of Sphecidae with known prey).

**sp.**

Bischoff, 1933:4 (Morocco); Guiglia, 1939c:187 (Libya: Fezzan: Gat), 1942b:233 (Libya); Giner Marí, 1947:26 (Río de Oro); Bytinski-Salz, 1956:226 (Turkey: Balaban Bridge); de Beaumont, 1962c:223 (Arabia: El Riyadh), 1967b:510 (South Africa); Roche, 1981:3 (in checklist of Sphecidae of United Arab Emirates); Guichard, 1988b:134 (Saudi Arabia); Gadallah, Al Dhafer, Aldryhim, Fadl, and Elgharbawy, 2013:353 (in new catalog of Sphecidae of Saudi Arabia, species of *variegatus* group); Gadallah, 2020b:45 (in list of aculeate wasps of Arabian Peninsula, three species).

**NOMEN NUDUM IN PALARUS**

*Palarus tricolor*: Casolari and Casolari Moreno, 1980:124 (specimens in M. Spinola collection, Torino); Pagliano, 2014:117 (specimens in M. Spinola collection, Torino).