

NEW RECORDS OF THE INVASIVE SPECIES *SCELIPHRON CAEMENTARIUM* (DRURY, 1773) (HYMENOPTERA: SPHECIDAE) IN ADDITIONAL COUNTRIES AND REGIONS

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Abstract

Sceliphron caementarium (Drury, 1773) is a Nearctic mud-dauber wasp, accidentally introduced in various parts of the world. The occurrence of this species was first recorded in Algeria, Turkey, Curaçao, Colombia, and Vanuatu, as well as the island of Crete and the archipelago of Tremiti Islands. Moreover, an additional 27 regions across several countries and 11 new islands have been identified as locations where the species occurs.

KEY WORDS: faunistics, first records, invasive species, mud-dauber wasp

Introduction

Sceliphron caementarium (Drury, 1773) is a Nearctic sphecid wasp, originally distributed across southern Canada, several states in the USA, Mexico, Belize, Nicaragua, and Costa Rica (Pulawski 2024). The presence of this species in human-altered environments facilitates its accidental long-distance transportation by humans. The type locality on Antigua Island (Drury, 1770) could be outside the species' native range since defining the original distribution boundaries of this mud-dauber wasp within the Caribbean islands is challenging. The earliest confirmed record of the wasp outside its native range dates back to 1825 in Madeira (van der Vecht & van Breugel, 1968), indicating that its introduction as an alien species occurred at least two centuries ago. Due to multiple introductions, *S. caementarium* is now found in many countries all over the world. For an exhaustive review of its current distribution, see Ceccolini (2023).

The spread of this invasive species is ongoing and this study provides records for several new countries where it is now present.

Materials and Methods

The material examined consists of photographed specimens from the websites iNaturalist (IN) or observation.org (OB). The identification of *S. caementarium* is relatively easy from a photo, although some patterns in color, pubescence, and size are variable (de Saussure, 1867; Kohl, 1918; Bohart & Menke, 1963; van der Vecht & van Breugel, 1968). The species is easily recognizable by the following characters: yellow markings on the base of the antenna and on the thorax, trochanters and hind femora completely black, and hind tibiae have a broad yellow basal ring (van der Vecht & van Breugel, 1968; Pagliano & Negrisolo, 2005; Barrera-Medina & Sepúlveda-Osorio, 2014; Fernández & Castro-Huertas, 2014; Turrisi & Altadonna, 2017; Bitsch *et al.*, 2020; Díaz-Calafat, 2020; Anagha *et al.*, 2021). Each record contains the following information: locality, coordinates, date, number of specimens, author of the photo, website, and relative link. Geographical coordinates are in decimal degrees (datum WGS84). The uncertainty (abbreviated as un.) of data (in meters) is indicated according to the point-radius method (Wieczorek *et al.*, 2004). All listed records have been confirmed by the author.

Results

The records are listed geographically by continent, from west to east, starting with America. Some archipelagos are far from the mainland, so these are treated separately. Although an archipelago or island may be listed under the relative country, they are always underlined separately.

Curaçao, Island of Curaçao: 12.3388°N -69.1241°E (un. = 64 m), 19.01.2024, 1 specimen, photo by Christoffel Park (OB) (<https://observation.org/observation/297464964/>).

Colombia, Atlantico: Barranquilla, Barranquilla, Conjunto Ciudad Caribe, 10.94962°N -74.85548°E (un. = 36 m), 09.09.2024, 1 specimen, photo by "campoexpress" (IN) (<https://www.inaturalist.org/observations/240756224>).

Peru, Tacna: Tacna, Tacna, Tacna city, Parque de Topiarios Animales, -18.00548°N -70.24166°E (un. = 2 m), 12.02.2014, 1 specimen, photo by "rodcat13" (IN) (<https://www.inaturalist.org/observations/190905764>).

Chile, Atacama: Copiapó, Copiapó city, between Antuco and Puntigudo, -27.37583°N -70.30482°E (un. = 24 m), 01.12.2023, 1 specimen, photo by "diegoarr" (IN) (<https://www.inaturalist.org/observations/192726766>).

Argentina, Autonomous City of Buenos Aires: Buenos Aires, Pasaje Las Provincias, -34.6187°N -58.4800°E (un. = 14 m), 14.02.2024, 1 specimen, photo by Bauke Fokkema (OB) (<https://observation.org/observation/298893064/>).

Madeira Archipelago, Porto Santo Island: Porto Santo, near Formações Prismáticas do Pico de Ana Ferreira, 33.0508°N -16.3705°E (un. = 8 m), 02.09.2022, 1 specimen, photo by Antonio Goncalves (IN) (<https://www.inaturalist.org/observations/136738902>).

Canary Islands, Island of Lanzarote: Las Palmas, Arrecife, C. Punta de la Lagarta, 28.95661°N -13.54828°E (un. = 4 m), 24.06.2023, 1 specimen, photo by "djibich" (IN) (<https://www.inaturalist.org/observations/169475923>).

Algeria, Oran: Oran, Oran, 35.71951°N -0.59698° E (un. = 100 m), 2.VII.2022, 1 specimen (Fig. 1), photo by Sammy Kernane (IN) (<https://www.inaturalist.org/observations/163742737>); *idem*, Misserghin, 35.58629°N - 0.78589°E (un. = 3910 m), 25.07.2015, 1 specimen, photo by “awwa”—a member of Algerian Wildlife Watching Association (AWWA)—(IN) (<https://www.inaturalist.org/observations/245141387>).



Figure 1. Specimen of *Sceliphron caementarium* from Oran, Algeria (photo by Sammy Kernane).

Portugal, Portalegre District: Avis, Avis, near Jardim General Humberto Delgado, 39.05246°N -7.89061°E (un. = 4 m), 4.VIII.2019, 1 specimen, photo by David Pereira (IN) (<https://www.inaturalist.org/observations/30161839>). Évora: Évora, Évora, Rua Joaquim da Silva Nazareth, 38.55803°N - 7.9183°E (un. = 4 m), 28.08.2024, 1 specimen, photo by “caljstreet” (IN) (<https://www.inaturalist.org/observations/238402815>).

Spain, Madrid: Madrid, Paseo de la Virgen del Puerto, 40.4070°N -3.7214°E (un. = 5 m), 30.VI.2024, 1 specimen, photo by Angel Mario Moreno (OB) (<https://observation.org/observation/316980916/>). Balearic Islands: island of Ibiza, Santa Eulària des Riu, Es Figueral, 39.0517°N 1.5926°E (un. not recorded), 14.10.2024, 1 specimen, photo by Erik Opper (OB) (<https://observation.org/observation/330842468/>).

Netherlands, Groningen: Groningen, Groningen, 53.22332°N 6.53614°E (un. not recorded), 30.07.2024, 1 specimen, photo by Mick Elliot (IN) (<https://www.inaturalist.org/observations/232657860>).

Germany, Bavaria: Upper Palatinate, Regensburg, Wilhelm-Leibl-Weg, 49.00472°N 12.08041°E (un. = 24 m), 14.08.2024, 1 specimen, photo by "ch74" (IN) (<https://www.inaturalist.org/observations/235751522>).

Austria, Vorarlberg: Bregenz, Wolfurt, near Senderstraße, 47.45565°N 9.73732°E (un. not recorded), 23.09.2024, 1 specimen, photo by Bernhard Mair (IN) (<https://www.inaturalist.org/observations/243556994>).

Italy, Calabria: Catanzaro, Catanzaro, 38.84647°N 16.608°E (un. = 8 m), 02.09.2023, 1 specimen, photo by Roberto Ritrovato (IN) (<https://www.inaturalist.org/observations/181741254>). Tuscan Archipelago: island of Pianosa, Livorno province, Campo nell'Elba municipality, loc. Vecchio Porto, 42.58834°N 10.10119° E (un. = 46 m), 31.07.2024, 1 specimen (Fig. 2), photo by Valeria Rizzo (IN) (<https://www.inaturalist.org/observations/234230050>); island of Giannutri, Grosseto province, Isola del Giglio municipality, Cala Spalmatoio, 42.25464°N 11.10848°E (un. Not recorded), 22.07.2023, 1 specimen, photo by Lorenzo Pasquali (IN) (<https://www.inaturalist.org/observations/174241553>). Tremiti Islands: island of San Domino, Foggia province, Isola Tremiti municipality, Cala degli Inglesi, 42.11747°N 15.48394°E (un. = 15 m), 20.06.2024, 2 specimens, photo by "giorgio1961" (IN) (<https://www.inaturalist.org/observations/223952919>).

Croatia, Koprivnica-Križevci County: Koprivnica, Ulica Gibanična, 46.16915°N 16.83652°E (un. = 6 m), 18.06.2024, 1 specimen, photo by Luka Marić (IN) (<https://www.inaturalist.org/observations/223585298>). Požeško-Slavonska: Pleternica, Kuzmica, 45.33094°N 17.75579°E (un. 4 m), 07.09.2023, 1 specimen, photo by Marija Kovačević (IN) (<https://www.inaturalist.org/observations/182175332>); *idem*, Poloje, 23.07.2022, 1 specimen, photo by Marija Kovačević (IN) (<https://www.inaturalist.org/observations/140344380>); Primorje-Gorski Kotar: island of Lošinj, Veli Lošinj, 44.52503°N 14.48992°E (un. = 561 m), 30.07.2024, 1 specimen, photo by "ajvi" (IN) (<https://www.inaturalist.org/observations/237260677>); *idem*, 44.5213°N 14.5011°E (un. not recorded), 03.09.2024, 1 specimen, photo by Melly Trunk (OB) (<https://observation.org/observation/326864767/>); island of Ilovik, Ilovik, 44.46189°N 14.54668°E (un. = 35 m), 30.08.2022, 1 specimen, photo by "cgbolas" (IN) (<https://www.inaturalist.org/observations/134606351>). Zadar: island of Dugi Otok, Veli Rat, 44.14175°N 14.85229°E (un. = 219 m), 20.07.2024, 1 specimen, photo by "claudiaixi" (IN) (<https://www.inaturalist.org/observations/232074335>); *idem*, near Uvala Striznja Telaščica, 43.87696°N 15.18091°E (un. not recorded), 25.09.2024, a specimen, photo by "mikele718" (IN) (<https://www.inaturalist.org/observations/243962023>); *idem*, near the church Crkvice Gospe od Tarca, 43.82881°N 15.26732°E (un. not recorded), 12.08.2024, 1 specimen, photo by Luka Praprotnik (IN) (<https://www.inaturalist.org/observations/235389162>). Dubrovnik-Neretva: island of Mrčara, 42.77158°N 16.79346°E (un. = 23 m), 16.06.2024, 1 specimen, photo by Jacob Littlejohn (IN) (<https://www.inaturalist.org/observations/243293076>); island of Prežba, 42.76964°N 16.83034°E (un. = 4 m), 23.VIII.2022, 1 specimen, photo by "fanica" (IN) (<https://www.inaturalist.org/observations/132255216>).



Figure 2. Specimen of *Sceliphron caementarium* from island of Pianosa, Italy (photo by Valeria Rizzo).

Montenegro, Podgorica: Donja Gorica, 42.4181°N, 19.20054°E (un. = 12 m), 12.06.2023, 1 specimen, photo by "donmaier" (IN) (<https://www.inaturalist.org/observations/166963479>).

Greece, Central Macedonia: Thessaloniki, Thessaloniki, near Church of Holy Silas and Timothy, 40.63582°N 22.96366°E (un. not recorded), 30.06.2024, 1 specimen (Fig. 3), photo by Michael Knapp (IN) (<https://www.inaturalist.org/observations/226755042>). Ionian Islands: island of Paxos, 39.20602°N 20.18361°E (un. = 4 m), 01.07.2024, 1 specimen, photo by "charlieboul" (IN) (<https://www.inaturalist.org/observations/226389295>). Crete: the island of Crete, near Laloumas, 35.11228°N 24.86937°E (un. = 61 m), 20.06.2019, 1 specimen, photo by "alexblanke" (IN) (<https://www.inaturalist.org/observations/145902972>).



Figure 3. Specimen of *Sceliphron caementarium* from Thessaloniki, Greece (photo by Michael Knapp).

Slovakia, Prešov: Bardejov, Hervartov municipality, Hervartov, 49.24853°N 21.20747°E (un. = 86 m), 06.06.2024, 1 specimen, photo by Branislav Tej (IN) (<https://www.inaturalist.org/observations/224040754>).

Hungary, Central Transdanubia: Veszprém, Tihany, Lepkesor, 46.92604°N 17.86085°E (un. = 4 m), 08.07.2023, 1 specimen, photo by Sergey Khm (IN) (<https://www.inaturalist.org/observations/171811617>); *idem*, Pisky sétány, 46.91459°N 17.88941°E (un. = 3 m), 29.07.2023, 1 specimen, photo by B.A. Fidor (IN) (<https://www.inaturalist.org/observations/190716955>); *idem*, Balaton-felvidéki Nemzeti Park, 46.91361°N 17.89255°E (un. = 47 m), 3.VII.2024, 1 specimen, photo by “tothabris” (IN) (<https://www.inaturalist.org/observations/226864806>); *idem*, Szentantalfa, Fő utca, 46.90905°N 17.67652°E (un. = 5 m), 22.06.2024, 1 specimen, photo by “pantanico” (IN) (<https://www.inaturalist.org/observations/224345647>); *idem*, Balatonudvari, Fövényesi Strand, 46.89422°N 17.79317°E (un. = 13 m), 21.08.2023, 2 specimens, photo by “felicitytopping” (IN) (<https://www.inaturalist.org/observations/179527731>); Fejér, Vajta, Vajta city, near Kossuth utca, 46.72405°N 18.66147°E (un. not recorded), 02.07.2023, 1 specimen, photo by David Horváth (IN) (<https://www.inaturalist.org/observations/170733395>). Southern Great Plain: Bács-Kiskun, Kiskunhalas, Kiskunhalas city, 46.43213°N 19.46643°E (un. = 4 m), 23.VIII.2024, 1 specimen, photo by “kisstamas” (IN) (<https://www.inaturalist.org/observations/238850486>).

Poland, Masovian: Warsaw, Warsaw city, Kamionek, 52.24333°N 21.06487°E (un. = 268 m), 15.VIII.2024, 1 specimen, photo by "sylvester_k" (IN) (<https://www.inaturalist.org/observations/235945290>); *idem*, Ujazdów, 52.21754°N 21.02817°E (un. = 212 m), 24.06.2024, 1 specimen, photo by "sylvester_k" (IN) (<https://www.inaturalist.org/observations/225158242>); *idem*, Powsinek, 52.15824°N 21.09856°E (374 m), 1 specimen, photo by "sylvester_k" (IN) (<https://www.inaturalist.org/observations/236734168>).

Romania, Maramureş: Covasna, Săcălăşeni, Coltău, 47.60274°N 23.53112°E (un. = 3 m), 15.06.2024, 1 specimen, photo by "erdonmezon" (IN) (<https://www.inaturalist.org/observations/229474774>). Botoşani: Curteşti, Lebădă, 47.70897°N 26.68479°E (un not recorded), 31.07.2024, 1 specimen, photo by "emi83ro" (IN) (<https://www.inaturalist.org/observations/233047469>). Mureş: Târgu Mureş, Kövesdomb, 46.52889°N 24.55389°E (un not recorded), 05.06.2020, 1 specimen, photo by "erdonmezon" (IN) (<https://www.inaturalist.org/observations/107942062>).

Bulgaria, Plovdiv: Plovdiv, Parvomay, Dobri Dol, 42.13191°N 25.31011°E (un. = 1 m), 24.07.2022, 1 specimen, photo by "SteveM4560" (IN) (<https://www.inaturalist.org/observations/142356524>).

Ukraine, Čerkas'ka: Čerkasy, Zelenyi, Pasterivs'ka vulytsia, 49.42397°N 32.06126°E (un. not recorded), 09.08.2024, 1 specimen, photo by Roman Tsynda (IN) (<https://www.inaturalist.org/observations/235506298>). L'viv: L'viv, Yavoriv, Ivano-Frankove, 49.92948°N 23.73571°E (un. = 301 m), 06.08.2024, 1 specimen, photo by Yuriy Strus (IN) (<https://www.inaturalist.org/observations/234376978>).

Turkey, Marmara: Istanbul, Tuzla, 40.9344°N 29.3279°E (un. = 3960 m), 19.04.2024, 1 specimen, photo by Yasemin Doğan (IN) (<https://www.inaturalist.org/observations/234310997>).

South Korea, Gyeongsangnam: Geochang, Geochang, Gangnam-ro, 35.68391°N 127.91357°E (un = 20 m), 15.07.2023, 1 specimen, photo by Rob Macfie (IN) (<https://www.inaturalist.org/observations/172996798>).

Australia, Victoria: Mornington Peninsula, Mount Martha, The Briars, -38.26976°N 145.04313°E (un. = 228 m), 15.11.2023, 1 specimen, photo by Rachel Devlin (IN) (<https://www.inaturalist.org/observations/191066991>).

Vanuatu, Island of Tanna: Lowanotom, -19.505°N 169.24645°E (un. not recorded), 15.02.2023, 1 specimen, photo by Dominik Maximilián Ramík (IN) (<https://www.inaturalist.org/observations/149183737>).

Discussion

In addition to reporting the first occurrence on the Caribbean Island of Curaçao, this study provides the first record in South America for Colombia with a specimen from Barranquilla, also adding some new regional records in other countries where *S. caementarium* had already been recorded. Peru is the country where the species is most widespread. The first occurrence records in Peru were reported by van der Vecht and van Breugel (1968) based on some specimens collected in Sullana (Department of Piura) in 1954 and 1955. However, the mud-dauber initially does not seem to have acclimatized, as no new records were reported for several decades. In recent years, likely following at least one new introduction, *S. caementarium* has reappeared in Peru, this time successfully acclimatizing and spreading, with its presence now reported in several departments in the western part of the country. For a summary of the distribution of the species in Peru, see Ceccolini (2021, 2023). With the first record from Tacna, the wasp is now known to occur in seven regions

of Peru: Piura, La Libertad, Lima department, Lima province, Ica, and Arequipa. In Chile, *S. caementarium* was known only in the regions of Arica y Parinacota and Santiago Metropolitan (Barrera-Medina & Sepúlveda-Osorio, 2014). The specimen from Copiapó represents the first record for the Atacama region. In Argentina, *S. caementarium* was previously reported only once, in 2022, from the La Pampa region (Ceccolini, 2023). The new record from Buenos Aires marks the second occurrence of the species in the country.

S. caementarium is well known from the Atlantic archipelagos of Madeira and the Canary Islands. In Madeira, the species has been acclimatized for a long time (Saunders, 1903; van der Vecht & van Breugel, 1968; Lomholdt, 1975; Leclercq, 1976; Erlandsson, 1978; Smit, 2000; Ceccolini, 2023); however, the specimen from Porto Santo is the first record for this island. Only one record was previously known from the Canary Islands, from Tenerife (Ceccolini, 2023), and the specimen from Arrecife marks the first record for the island of Lanzarote.

In Africa, based on a 1968 record, *S. caementarium* was recorded only once by Dollfuss (2016) from Eritrea (without exact locality). No additional records have been reported on the continent until now (Ceccolini, 2023). The records from Algeria are particularly significant, and it will be important to monitor whether the species spreads to other countries of North Africa in the future.

Europe is the continent where *S. caementarium* has the widest distribution outside its native range, with its presence reported in nearly all countries. For a review of its distribution across the continent, see Ceccolini (2023). The spread of this mud-dauber continues across various parts of Europe, with several new regions and islands documented in this work. In mainland Portugal, the first records of *S. caementarium* have been reported for Portalegre District and Évora, bringing the total number of regions where the species is known to eleven. These include Porto, Aveiro, Viseu, Coimbra, Leiria, Lisboa, Santarém, Setúbal, Faro (Ceccolini, 2023). In mainland Spain, the first record of *S. caementarium* for Madrid is given and it is the first in central Spain, as it had previously been found only in the southern and eastern parts of the country, specifically Navarra, Aragon, Catalonia, Comunidad Valenciana, and Andalusia (Ceccolini, 2023). In the Balearic Islands, the species was previously known only from Mallorca (Diaz-Calafat, 2020; Ceccolini, 2023) and the record from Santa Eulària des Riu is the first for the island of Ibiza. In the Netherlands, Groningen is now the sixth region where *S. caementarium* has been recorded, joining North Holland, Flevoland, Overijssel, North Brabant, and Limburgsee (Schmitz, 2015; Ceccolini, 2023). In Germany, the specimen from Regensburg represents the first record for Bavaria, adding to the five other regions where the species had been previously documented: Schleswig-Holstein, North Rhine-Westphalia, Hesse, Rhineland-Palatinate, and Baden-Württemberg (Tischendorf *et al.*, 2011; Burger, 2015; Ceccolini, 2023). In Austria, where the species was previously known in five regions – Carinthia, Styria, Burgenland, Lower Austria, and Vienna (Gusenleitner, 2002; Zettel *et al.*, 2014; Ceccolini, 2023) – the record from Wolfurt is the first occurrence for Vorarlberg. In Italy, where *S. caementarium* was first recorded in 1990 (Pagliano, 1992), the wasp is now known in all regions, with the first record from Calabria (Ceccolini, 2023). Additionally, Pianosa and Giannutri are newly reported among the islands of the Tuscan Archipelago where the species has been recorded, joining Elba, Montecristo, and Giglio (Ceccolini and Paggetti, 2012; Strumia, 2012; Ceccolini, 2023). The record from the island of San Domino is the first for the Tremiti Islands. In Croatia, where occurrences of *S. caementarium* have been well documented, particularly in the eastern part of the country, the Koprivnica-Križevci County and Požeško-Slavonska regions are now added to the areas where the species is known. These areas join Istria, Primorje-Gorski Kotar, Karlovac, Zagreb, Krapina-Zagorje, Varaždin, Osijek-Baranja, Lika-Senj, Zadar, Šibenik-Knin, Split-Dalmatia, and Dubrovnik-Neretva (Ceccolini, 2023). Additionally, first records are reported for the islands of Lošinj, Ilovik, Dugi Otok, Mrčara, and Prežba. In Montenegro, the specimen from Donja Gorica represents the first record for Podgorica, making it the fifth region in the country where *S. caementarium* has been found, following Herceg Novi, Kotor, Budva, and Bar (Demetriou *et al.*, 2022). In mainland Greece, *S. caementarium* was previously known only from Thessaly and Attica

(Demetriou *et al.*, 2022). Central Macedonia is now the third region with its occurrence. Additionally, Paxos and Crete are newly recorded islands where *S. caementarium* has been intercepted (Demetriou *et al.*, 2022; Ceccolini, 2023). In Slovakia, Prešov is now added to the five regions where *S. caementarium* was previously found. These regions are Bratislava, Trnava, Nitra, Trenčín, and Košice (Demetriou *et al.*, 2022; Ceccolini, 2023). With the addition of Central Transdanubia and Southern Great Plain, the occurrence of *S. caementarium* is now documented in all statistical regions of Hungary, except for Budapest (Vas and Józán, 2014; Hírek, 2015; Ceccolini, 2023). In Poland, the occurrence of *S. caementarium* was previously known only in two southern regions, Lesser Poland and Subcarpathian Voivodeships (Kosibowicz, 2021; Demetriou *et al.*, 2022). The new records from Masovian Voivodeship document the presence of the species in the central part of the country. In Romania, where records have been scattered across five regions (Bihar, Cluj, Olt, and Dâmbovița) (Gagiu, 2012; Ceccolini, 2023), specimens from Maramureș, Botoșani, and Mureș now confirm the species' first occurrence in these regions. The presence data for the species are also scattered across various regions in Bulgaria, including Bucharest district, Sofia City, Sofia, Kărdžali, Ruse, Varna, and Burgas (Gradinarov, 2017; Bogusch, 2022; Ceccolini, 2023). The record from Plovdiv is the first for this region. Finally, Čerkasy and Lviv are added to the Ukrainian regions where *S. caementarium* has been recorded, joining Zakarpatska, Odesa, Mykolaïv, Dnipropetrovska, and the Autonomous Republic of Crimea (Antropov, 1993; Ceccolini, 2023).

In Asia, the record from the Tuzla district of Istanbul is the first for Turkey. The record from Geochang is the first for the South Gyeongsang Province, making it the sixth region in South Korea where *S. caementarium* has been found (Kim *et al.*, 2014; Ceccolini, 2023).

In Australia, some occasional records of *S. caementarium* have been reported, with the oldest dating back to 1956 (van der Vecht & van Breugel, 1968). However, the species does not seem to have acclimatized in the country (Ceccolini, 2023). The record from Mont Martha, the first from Victoria state, raises the question of whether it is an isolated occurrence or if *S. caementarium* will establish itself in Australia.

Finally, among the Pacific islands, where *S. caementarium* has been introduced multiple times across different islands (Ceccolini, 2023), the record from Tanna is the first one for Vanuatu.

The mud-dauber *S. caementarium* has managed to spread across several countries worldwide, sometimes very quickly, demonstrating its remarkable adaptability as a species. Further research is needed to understand the dynamics of invasive *S. caementarium* populations, to determine whether this wasp will continue to spread, and to assess its role as an ecological competitor to native *Sceliphron* species.

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References

- Anagha, S., Girish Kumar, P., Binoy, C., Mazumdar, P. C., & Sureshan, P. M. (2021). A review of the mud-dauber wasps of genus *Sceliphron* Klug (Hymenoptera: Sphecidae) from India. *Zootaxa*, 4969(1), 61-85. <https://doi.org/10.11646/zootaxa.4969.1.3>
- Antropov, A. V. (1993). Notes on three little known Palaearctic species of digger wasps (Hymenoptera, Sphecidae). *Zoologicheskiy Zhurnal*, 72(10), 156-158. [in Russian with abstract in English]
- Barrera-Medina, R., & Sepúlveda-Osorio, J. (2014). Primer reporte de *Sceliphron caementarium* (Drury, 1773) (Hymenoptera: Sphecidae) para Chile. *Boletín de la Sociedad Entomológica Aragonesa*, 55, 295-297.
- Bitsch, J., Barbier, Y., Gayubo, S. F., Jacobs, H.-J., Leclercq, J., & Schmidt, K. (2020). *Hyménoptères sphéciformes d'Europe. Généralités—Heterogynaidae, Ampulicidae, Sphecidae, Crabronidae. 1re Partie. Vol. 1. Faune de France 101*. Paris: Fédération Française des Sociétés de Sciences Naturelles, 372 pp.
- Bogusch, P. (2022). Nesting preferences of native and non-native mud dauber wasps (Hymenoptera: Sphecidae: *Sceliphron*) do not completely overlap. *Journal of Insect Conservation*, 26, 549-558. <https://doi.org/10.1007/s10841-022-00394-3>
- Bohart, R. M., & Menke, A. S. (1976). *Sphecid Wasps of the World*. Berkeley, Los Angeles and London: University of California Press, 695 pp. <https://doi.org/10.1525/9780520309548>
- Burger, F. (2015). Nachweise der Großen Mörtelgrabwespe *Sceliphron destillatorium* in Mannheim und Angaben zur aktuellen Verbreitung der neozoischen Grabwespen *Sceliphron curvatum*, *S. caementarium* und *Isodontia mexicana* in Rheinland-Pfalz (Hymenoptera: Sphecidae). *Pollichia-Kurier*, 31(1), 13-19.
- Ceccolini, F. (2021). New records for the alien mud-dauber wasp *Sceliphron caementarium* (Drury, 1773) (Hymenoptera: Sphecidae) in Peru. *Revista Chilena de Entomología*, 47(4), 951-954. <https://doi.org/10.35249/rche.47.4.21.20>
- Ceccolini, F. (2023) The worldwide occurrence of *Sceliphron caementarium* (Drury, 1773) outside its native range, with new records (Hymenoptera: Sphecidae). *Zootaxa*, 5242(1), 1-63. <https://doi.org/10.11646/zootaxa.5242.1.1>
- Ceccolini, F., & Paggetti, E. (2012). Nuovi dati corologici per alcune specie di Sfecidi in Umbria (Hymenoptera: Sphecidae). *Onychium*, 9, 117-120. [2011-2012]
- Demetriou, J., Díaz-Calafat, J., Kalaentzis, K., Kazilas, C., Georgiadis, C., Turrisi, G. F., & Koutsoukos, E. (2022). The alien Black-and-yellow Mud Dauber, *Sceliphron caementarium* (Drury, 1773) (Hymenoptera, Sphecidae), continues its spread: new citizen-science records from Eastern Europe and the Balkans. *Check List*, 18(3), 535-543. <https://doi.org/10.15560/18.3.535>
- de Saussure, H. (1867). Hymenoptera. Familien der Vespiden, Sphegiden, Pompiliden, Crabroniden und Heterogynen. In: B. von Wüllerstorff-Urbair (Ed.), *Reise der österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorff-Urbair*. Zoologischer Theil. Zweiter Band. Kaiserlich-königlichen hofund staatsdruckei, Wien, pp 1-138, pls. I-IV.
- Díaz-Calafat, J. (2020). Primer registro de *Sceliphron caementarium* (Drury, 1773) (Hymenoptera: Sphecidae) en las Islas Baleares, con una clave de identificación para las especies del archipiélago del género *Sceliphron* Klug, 1801. *Ecosistemas*, 29(1), 1939, 1-5. <https://doi.org/10.7818/ECOS.1939>
- Dollfuss, H. (2016). The Chloriontinae, Sceliphrinae and Sphecinae Wasps of the “Biologiezentrum Linz”—collection in Linz, Austria including the genera *Chalybion* Dahlbom, *Chlorion* Latreille, *Dynatus* Lapeletier de Saint Fargeau, *Penepodium* Menke, *Podium* Fabricius, *Sceliphron* Klug, *Stangeella* Menke and *Trigonopsis* Perty (Hymenoptera, Apoidea, Sphecidae) and description of the new

- species *Chalybion ohli* from Madagascar. *Linzer Biologische Beiträge*, 48(2), 1149-1185. <http://doi.org/10.5281/zenodo.5354686>
- Drury, D. (1770). *Illustrations of natural history. Wherein are exhibited upwards of two hundred and forty figures of exotic insects, according to their different genera; very few of which have hitherto been figured by any author, being engraved and coloured from nature, with the greatest accuracy, and under the author's own inspection, on fifty copper-plates. With a particular description of each insect: interspersed with remarks and reflections on the nature and properties of many of them. To which is added, a translation into French. Vol. I.* B. White, London, XXVII + 130 pp, 50 pls. <https://doi.org/10.5962/bhl.title.65766>
- Erlandsson, S. (1978). Notes of aculeate Hymenoptera from the Macaronesian Islands. *Vieraea*, 7(2), 201-206. [1977]
- Fernández, F., & Castro-Huertas, V. (2014). Las avispas del género *Sceliphron* Klug en Colombia (Hymenoptera: Sphecidae). *Caldasia*, 36(2), 393-408. <https://doi.org/10.15446/caldasia/v36n2.47495>
- Gagiu, A. (2012). *Sceliphron caementarium* (Hymenoptera, Sphecidae), new to the Romanian fauna. *Nymphaea*, 39, 105-109.
- Gradinarov, D. (2017). First records of the American wasps *Sceliphron caementarium* (Drury, 1770) and *Isodontia mexicana* (de Saussure, 1867) (Hymenoptera: Sphecidae) from Bulgaria. *ZooNotes*, 118, 1-4.
- Gusenleitner, J. (2002). Hymenopterologische Notizen aus Österreich-15 (Insecta: Hymenoptera aculeata). *Linzer Biologische Beiträge*, 34(2), 1132-1126.
- Hírek, R. (2015). A feketenyelű lopódarázs (*Sceliphron caementarium* Drury, 1773) megfigyelése Dunakeszin. *Rovarász Híradó*, 80, 8-9.
- Kim, D.-W., Yeo, J.-D., & Kim, J.-K. (2014). Revision of the family Sphecidae (Hymenoptera: Apoidea) in South Korea. *Entomological Research*, 44(6), 271-292. <https://doi.org/10.1111/1748-5967.12078>
- Kohl, F. F. (1918). Die Hautflüglergruppe "Sphecinae". IV. Die natürliche Gattung *Sceliphron* Klug (= *Pelopaeus* Latr.). *Annalen des k. k. Naturhistorischen Hofmuseums*, 32, 1-171. <https://doi.org/10.5962/bhl.part.2204>
- Kosibowicz, M. (2021). Pierwsze stwierdzenie *Sceliphron caementarium* (Drury, 1773) (Hymenoptera: Sphecidae) w Polsce. *Wiadomości Entomologiczne*, 40(3), 1-2. <https://doi.org/10.5281/zenodo.5336429>
- Leclercq, J. (1976). *Sceliphron caementarium* (Drury) s'établit en Europe (Hymenoptera Sphecidae). *Bulletin des Recherches Agronomiques de Gembloux, Nouvelle Série*, 10, 371.
- Lomholdt, O. (1975). Notes on the Sphecidae of Madeira (Hymenoptera Aculeata). *Boletim do Museu Municipal do Funchal*, 29, 5-11.
- Pagliano, G. (1992). *Sceliphron caementarium* (Drury) (Hymenoptera: Sphecidae) specie nuova della penisola italiana. *Hy-Men*, 3, 5.
- Pagliano, G., & Negrisolo, E. (2005). *Fauna d'Italia. Vol. XL. Hymenoptera Sphecidae*. Bologna: Edizioni Calderini, 559 pp.
- Pulawski, W. J. (2024). Catalog of Sphecidae sensu lato. California Academy of Sciences, Golden Gate Park, San Francisco, California (Last updated 5 October 2024). Available from: <https://www.calacademy.org/scientists/projects/catalog-ofsphecidae>
- Saunders, S. (1903). Hymenoptera aculeata collected by the Rev. Alfred E. Eaton, M.A., in Madeira and Tenerife, in the spring of 1902, including notes on species taken by late T. Vernon Wollaston and F.A. Bellamy. *The Transactions of the Entomological Society of London*, 1903, 207-218. <https://doi.org/10.1111/j.1365-2311.1903.tb01135.x>

- Schmitz, H. (2015). Een langsteelgraafwesp (*Sceliphron caementarium*). *De Klepper*, 47(2), 17-18.
- Smit, J. (2000). The Wasps of Madeira (Hymenoptera: Chrysididae, Pompilidae, Vespidae, Sphecidae). *Entomofauna*, 21(13), 165-180.
- Strumia, F., Pagliano, G., & Gayubo, S. F. (2012). Hymenoptera Spheciformes observed in San Rossore Reserve (Pisa Province, Tuscany, Italy). *Atti della Società Toscana di Scienze Naturali. Memorie, Serie B*, 119, 55-60.
- Tischendorf, S., Frommer, U., & Flügel, H.-J. (2011). *Kommentierte Rote Liste der Grabwespen Hessens (Hymenoptera: Crabronidae, Ampulicidae, Sphecidae). Artenliste, Verbreitung, Gefährdung*. Wiesbaden: Hessische Ministerium für Umwelt, Energie, Landwirtschaft und Verbraucherschutz, 240 pp. [in cooperation with Dorow, W., Reder, G. & Schmalz, K.-H.]
- Turrisi, G. F., & Altadonna, G. (2017). A report on two alien invasive species of the genus *Sceliphron* Klug, 1801 (Hymenoptera Sphecidae) from Sicily, with a brief faunistic update on the native species. *Biodiversity Journal*, 8(2), 753-762.
- van der Vecht, J., & van Breugel, F. M. A. (1968). Revision of the nominate subgenus *Sceliphron* Latreille (Hymenoptera, Sphecidae) (Studies on the Sceliphronini, Part I). *Tijdschrift voor Entomologie*, 111(1), 185-255.
- Vas, Z., & Józán, Z. (2014). Új adatok és határozókulcs Magyarország lopódarázs faunájához (Hymenoptera: Sphecidae). *Natura Somogyiensis*, 24, 157-163.
- Wieczorek, J., Guo, Q., & Hijmans, R. J. (2004). The point-radius method for georeferencing locality descriptions and calculating associated uncertainty. *International Journal of Geographical Information Science*, 18(8), 745-767. <https://doi.org/10.1080/13658810412331280211>
- Zettel, H., Ockermüller, E., & Wiesbauer, H. (2014). Weitere interessante Funde von Grabwespen (Hymenoptera: Sphecidae, Crabronidae) aus Wien und Niederösterreich. *Beiträge zur Entomofaunistik*, 14, 159-175.

НОВИ ПОДАЦИ О ИНВАЗИВНОЈ ВРСТИ *SCELIPHRON CAEMENTARIUM*
(DRURY, 1773) (HYMENOPTERA: SPHECIDAE)
ЗА НОВЕ ЗЕМЉЕ И РЕГИОНИЕ

FILIPPO CECCOLINI

Извод

Sceliphron caementarium (Drury, 1773) је неарктичка оса грнчарица, случајно унета у разне делове света. Присуство ове врсте први пут је забележено у Алжиру, Турској, Курасау, Колумбији и Вануатуу, као и Криту и архипелагу острва Тремити. У раду су по први пут објављени подаци о распрострањењу ове врсте у додатних 27 региона у неколико земаља и 11 острва, нових локација на којима је утврђена *S.caementarium*.

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