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## ***Sceliphron caementarium* (DRURY 1773) in the Czech Republic in 1942 – first record from Europe?**

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**A b s t r a c t :** A female of the invasive North American sphecid wasp *Sceliphron caementarium* was collected in Čelákovice in July 1942. This female represents the first known record of this species in Europe and also in the Czech Republic, as well as a proof of one unsuccessful introduction of this sphecid wasp.

**K e y w o r d s :** *Sceliphron caementarium*, Europe, Czech Republic, first record

### **Introduction**

*Sceliphron caementarium* (DRURY 1773) is a conspicuous mud dauber wasp, formerly distributed in North and Central America (BOHART & MENKE 1976). It was several times accidentally introduced to Europe, first in 1945 (BERLAND 1946). In further years the species was not observed till 1970's, that it was again recorded in France (LECLERCQ 1974, 1975; LECLERCQ & CLAPARÉDE 1978), and first in Portugal (LECLERCQ 1975), Canary Islands (ERLANDSSON 1978), Luxemburg (SCHNEIDER & PELLER 1988), Croatia (GUSENLEITNER 1996), Belgium (PAULY 1999) and Italy (PAGLIANO 1992; PAGLIANO et al. 2000). Recently, the species is expanding inland, which was confirmed by finds in Austria (GUSENLEITNER 2002). Hymenopterologists suppose that *S. caementarium* will reach central Europe (i.e. the Czech Republic, Slovakia or Poland) in a few years. The species was introduced to Europe parentally with ship cargo (yet mentioned by BERLAND 1946) and in some regions became quickly adapted to new localities and in few years strongly enlarged its area. Furthermore, it is not the only invasive sphecid wasp in Europe. Related American sphecid wasps *Isodontia mexicana* (SAUSSURE 1867) and *Chalybion zimmermannii* DAHLBOM 1843 colonized southern parts of Europe in a very similar way (BITSCH et al. 1997; PAGLIANO et al. 2000). The Asian species *Sceliphron curvatum* (SMITH 1870) was first found in Austria in 1979 and recently is presented from 13 European countries (BOGUSCH et al. 2005; SCHMID-EGGER 2005).

### **Results and discussion**

Specimen revised: Czech Republic: Bohemia centr., Čelákovice (5954), June 1942, 1 ♀, J. Pospíšil lgt., J. Macek det., coll. National Museum, P. Bogusch revid.

This female (see Fig. 1) represents the first record from the Czech Republic and apparently the first find of *S. caementarium* in Europe. It was collected in a small town near Prague in the Labe floodplain, three years before the first record of *S. caementarium* in Europe and thirty years before the acclimatization of *S. caementarium* in France. Furthermore, this species has never been recorded in the Czech Republic or former Czechoslovakia and Čelákovice is the northernmost situated locality in all Europe. The collector was an amateur hymenopterologist studying Hymenoptera all his life in the vicinity of his hometown Čelákovice. His collection was after his death in 2003 bequeathed to the National Museum in Prague. Only few specimens of his collection originate from other regions or countries, mainly southern parts of Slovakia. His collection does not contain any specimens from America. The locality label of the specimen revised is written with the same handwriting as at all other Hymenoptera in the collection. *S. caementarium* was never more collected in the Czech Republic, so it seems that female revised represents a proof of unsuccessful introduction in 1940's.

BERLAND (1946) also presents this species to be known from Funchal, the capital of Madeira, and mentions the way it was introduced. He notes that *S. caementarium* mud nests came to Madeira stucked on ships or ship cargo. The species colonized continental Europe in 1970's by the same way, settled the niches in antropogenous localities and forced autochthon species from their habitats. PIEK (1986) has published that this invasive species replaced the autochthon species *S. spirifex* (LINNAEUS 1758) in localities in southern France. In the contrary, PAGLIANO et al. (2000) have studied the speed of colonization in Italy and present that *S. caementarium* is not very fast in colonization. The speed of colonization of localities in Europe is at *S. caementarium* much slower than at Asian *S. curvatum*, which looks very aggressive and adaptive: it was introduced to Europe as the last of four invasive sphecids wasps in 1979, but now it is known from 13 European countries and forms mighty populations in towns and has the biggest distribution area in Europe (SCHMID-EGGER 2005). This sphecids wasp was brought to Europe probably by air from India; especially with furniture, books, clothes etc.

It is a big question how *S. caementarium* was brought to the Czech Republic. BERLAND (1946) has published very similar record from France, Versailles – fresh emerged female found in 1945 was probably introduced by American soldiers through the railway Brest – Paris. However, our specimen comes from year when American soldiers have not reached Europe, so it should have been introduced in a different way. There are several hypotheses that could explain the find:

- 1.) Čelákovice lie on the river Labe and the sphecids wasp could be brought by ships from Hamburg (Germany). Hamburg is an important international port and cargo originating from north and central parts of America was transported to the Czech Republic via Hamburg. However, not many ships with American cargo came from Hamburg to the Czech Republic during the early years of Second World War.
- 2.) The specimen could be introduced by plane with food coming from Central America. *S. caementarium* is widely distributed in Dominican Republic, Martinique, Cuba and other Central American countries (BOHART & MENKE 1976). This hypothesis sounds better than the first one; some kinds of food, especially tropical fruits, were often imported to the Czech Republic.
- 3.) No soldiers, but certainly several spies or envoys from the United States came to Europe during the Second World War. Some of them could by accident bring *S. caementarium* nests or imagines with them.

Origin of the specimen examined is one big question and the answer is probably not possible to find with the amount of knowledge we have. Sphecid wasps of the genus *Sceliphron* Klug, 1801 have good features to colonize: they are unspecialized spider predators, not afraid of nesting and living in human settlements and have a good kind of dispersion. There were certainly many species (not only Hymenoptera or sphecid wasps) introduced to Europe, but only several of them survived and colonized this continent. Most of the specimens of allochthone species accidentally brought to other parts of the world die sooner than they are able to form a prospering population. Female of *S. caementarium* from the Czech Republic surely represents this case. Detailed examinations of collections will surely bring more interesting finds of allochthone insects in Europe.

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### Zusammenfassung

Ein Weibchen der eingeschleppten nordamerikanischen Grabwespe *Sceliphron caementarium* wurde in Čelákovice im July 1942 gefangen. Dieses Sammlungsstück ist somit das erste in Europa nachgewiesene Exemplar dieser Art. Gleichzeitig wird damit eine damals offensichtlich erfolglose Einbürgerung dieser Art dokumentiert.

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**Fig. 1.** *Sceliphron caementarium* (DRURY 1773) female from the collection in National Museum in Prague, lateral view. Photo J. Macek.

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