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Notes on digger wasps and potter wasps (Hymenoptera: Bembicidae, Vespidae) in Bulgaria with first record of genus *Oryttus*

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INTRODUCTION & AIM

The hymenopteran fauna of Bulgaria is particularly diverse, with one of the main factors being its key location on the border between the Mediterranean and Central Europe. As a result, Bulgaria is an important corridor for the migration of many species, especially along natural highways like river valleys and the Black Sea Coast.

Ongoing large-scale monitoring of these corridors, including various sampling methods combined with reviews of observations on citizen science platforms, has resulted in numerous discoveries of generally rare or previously unknown local animal species.

Two such discoveries are the first country records of *Oryttus concinnus* (Fabricius, 1781) and the first observations of *Rhynchium oculatum* (Rossi, 1790) since 1967 for Bulgaria.

METHOD

Part of the material was collected in urban habitats by hand collecting or with tweezers, and deposited in the collection of the Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences (IBER). Photo-identifiable records in social media (SM) posts are also included.

RESULTS & DISCUSSION

Oryttus concinnus (Rossi, 1790)

New data: 1 ♀, Varna, 23.07.2018, M. Parushev obs. & photo (Fig. 1); 1 ♀, Sofia, 01-15.07.2021, S. Indzhov leg; 1 ♀, Sofia, 14.08.2023, V. Vassilev leg. & photo (Fig. 2); 6 ♀, Sofia, 12-27.01.2025, D. Ballabanov leg., obs. (Fig. 3, 4).

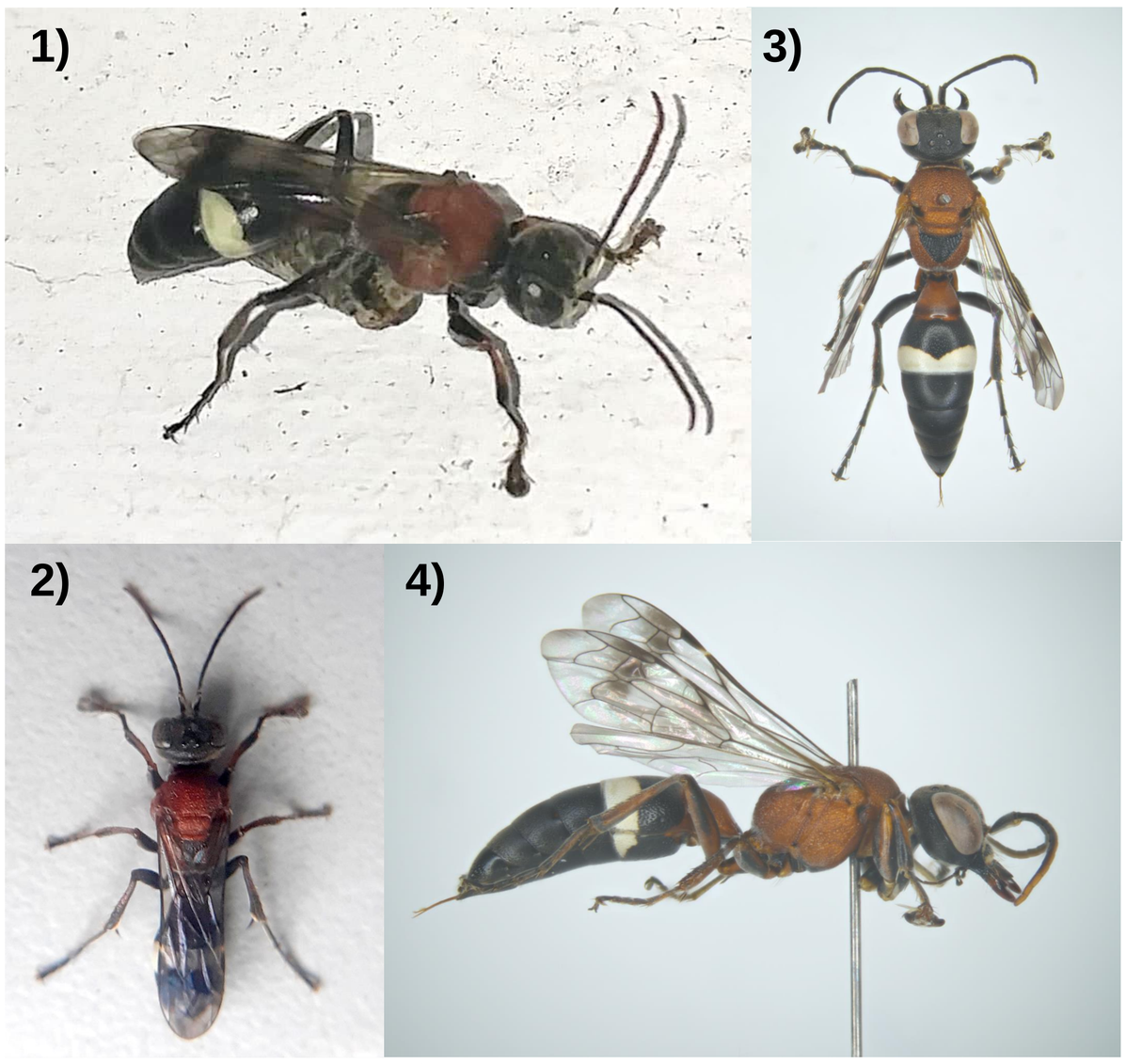

Fig. 1-4. *Oryttus concinnus* females: 1) individual from Varna, 2018, with prey, likely *Issus coleoptratus* (photo: M. Parushev); 2) individual from Sofia, 2023 (photo: V. Vassilev); 3) individual from Sofia, 2025, dorsally, and 4) laterally (photo: T. Trifonov).

All Bulgarian records of *Oryttus concinnus* are from towns (Fig. 5), supporting the thesis that the open urban areas are particularly suitable for digger wasps and bees because of the warmer microclimate they sustain. A possible method of expansion for the species may be with human assistance through potted plants, as the most recent observation from Sofia is of females emerging from house plants, which were left outside during the summer months.

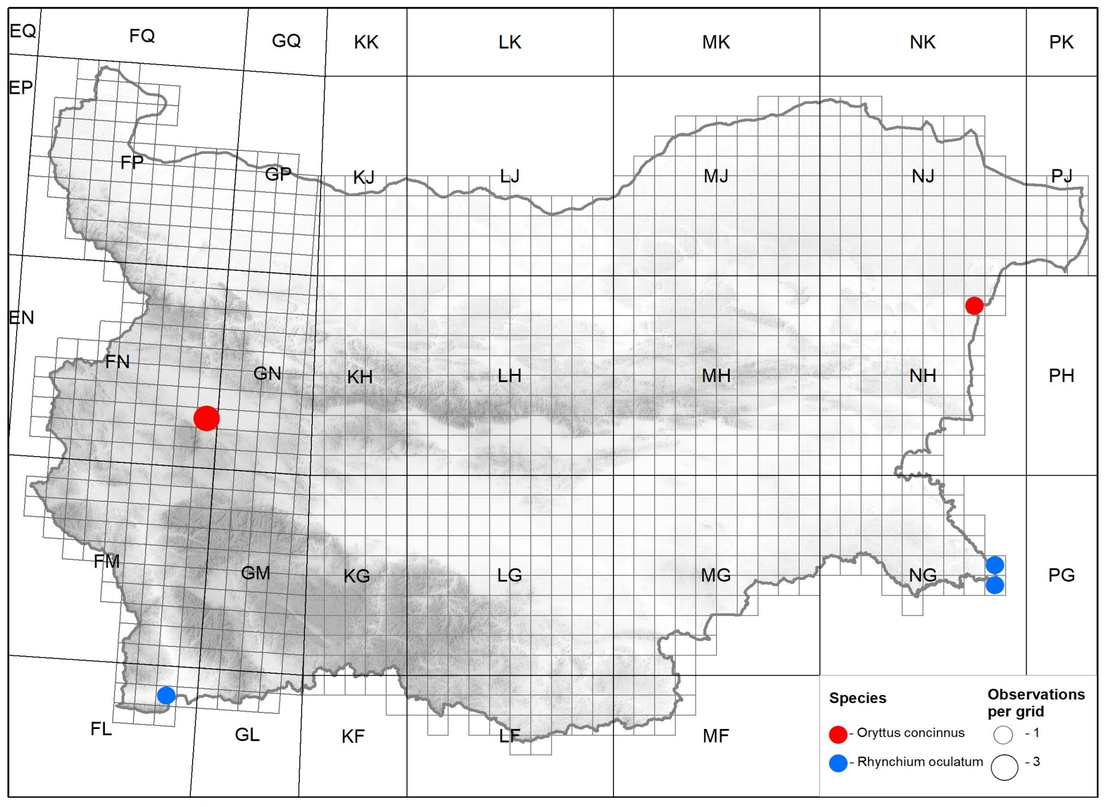

Fig. 5. Records of *Oryttus concinnus* (red dots) and *Rhynchium oculatum* (blue dots) in Bulgaria.

Rhynchium oculatum (Fabricius, 1781)

Published data: unknown indiv., Bulgaria: Blagoevgrad distr., Petrich, 1962 (Atanassov; 1962); unknown indiv., Bulgaria: location unknown, 1967 (Blüthgen, 1967).

New data: 1 ♀, Bulgaria: S Black Sea Coast, Silistar beach, 06.07.2023, V. Vassilev obs. & photo (Fig. 6 left); 1 ♀, Bulgaria: S Black Sea Coast, Rezovo vill., 11.07.2024, P. Vassilev obs. & photo (Fig. 6 right).

Fig. 6. *Rhynchium oculatum* females: Silistar, 06.07.2023 (left, photo: V. Vassilev); Rezovo, 11.07.2024 (right, photo: P. Vassilev).

The first observation of the eumenine wasp *Rhynchium oculatum* in the country was from the Struma valley, which is a well-known migration corridor in Southeastern Bulgaria. The most recent observations on the Black Sea coast, detailed above, reaffirm the expansion of *R. oculatum* through natural corridors from its native range around the Mediterranean Sea.

CONCLUSION

The observations of the two species show the potential of citizen science groups for monitoring of changes in the distributions of key species, which could complement traditional research methods tracking the impacts of climate change. This is of particular interest for countries in Southern Europe, where such impacts on species are very rapid and resources for monitoring them are limited.

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