Lithurgus pullatus Vachal, 1903 (Hymenoptera, Megachilidae) new for the Fauna of the Arabian Peninsula

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Zusammenfassung

Christian Schmid-Egger, Wold-Harald Liebig: Lithurgus pullatus Vachal, 1903 (Hymenoptera, Megachilidae) neu für die Fauna der Arabischen Halbinsel. Während einer gemeinsamen Sammelreise nach Dhofar im Süden des Oman konnten wir Lithurgus pullatus neu für die arabische Halbinsel und damit auch für die die paläarktische Region nachwiesen. Die Art ist sonst im östlichen und südlichen Afrika weit verbreitet. Sie wurde von uns mit einer Ausnahme an Sandstränden an den Blüten von *Ipomoea pes-caprae* (Convolvulaceae) gefunden. Die Gattung Lithurgus ist vergleichsweise artenarm und hat eine weite Verbreitung in Eurasien, Afrika und Australien. Vier Arten sind aus Afrika südlich der Sahara bekannt und fünf aus der paläarktischen Region. Al-Shahat et al. (2020) melden die ostpaläaktische Lithurgus collaris aus Ägypten. Wir gehen davon aus, dass es sich hierbei um eine Fehldetermination handelt und es sich auch um Lithurgus pullatus handelt.

Summary

During a joint collecting trip to Dhofar in southern Oman, we were able to record *Lithurgus pullatus* for the first time for the Arabian Peninsula and thus also for the Palaearctic region. The species is otherwise widespread in eastern and southern Africa. With one exception, it was found by us on sandy beaches on the flowers of *Ipomoea pes-caprae* (Convolvulaceae). Al-Shahat et al. (2020) report the eastern Palaearctic *Lithurgus collaris* from Egypt. We assume that this is a misidentification and that it is also *Lithurgus pullatus*.

Introduction

During a joint collecting trip to Dhofar in the south of Oman, we were able to find a striking species of a nearly black bee. This turned out to be the species Lithurgus pullatus, which is widespread in eastern and southern Africa. The current findings are the first records for the Arabian Peninsula and thus also for the Palearctic region. The find is described in detail below. The genus Lithurgus is comparatively species-poor and has a broad distribution in Eurasia, Africa and Australia (Michener 2007). Four species are known from sub-saharan Africa (Eardley 1988) and five from the Palearctic region (v.d. Zanden 1986) Lithurgus sublaevis Pérez, 1897 from Spain is seen as a synonym of L. chrysurus (Ortiz-Sánchez et al. 2007). Al-Shahat et al. (2020) mention the eastern Palaearctic L. collaris Smith, 1873 from Egypt, which is probably based on a misidentification and this record also may refer to Lithurgus pullatus.

Lithurgus pullatus Vachal, 1903

Records: Oman, Dhofar province: 17 33 4 9927.IX.2023 75 km SWW Salalah, Kharfat beach 16.7621° N, 53.5121° E; 1 92 28.IX.2023 Taqah beach 17.0340° N, 54.3798° E; 2 99 28.IX.2023 8 km NW Mirbat, beach 17.0276° N, 54.6300° E; 1 92 29. IX.2023 80 km W Salalah, Wadi near road 16.8565° N, 53.4105° E (leg. and coll. Schmid-Egger & Liebig).

Recognition

The female of *L. pullatus* is unique amoung species from the western Palaearctic region by a black scopa and black setae on tergum 6 (figs 1–2). It is reddish or white in remaining species, with red setae on tergum 6. Pilosity of face, pronotum and tergal bands is white, remaining pilosity brown to black. The denticles on the hindtibia are arranged in two rows, at least in the apical part, whereas in the other species they are evenly distributed over the entire outer side of the tibia.



Fig. 1: *Lithurgus pullatus*-[♀], dorsal (photo: W.-H. Liebig).



Fig. 2: *Lithurgus pullatus*-[♀], lateral (photo: W.-H. Liebig).

The male of *L. pullatus* can be recognized amoung the species of the western Palaearctic region by a white and spares pilosity on face and mesoscutum (brown in somes specimens) in combination with black or dark brown pilosity of legs and mesopleuron (figs 3–4). Remaining species have a dense and light brown pilosity on mesosoma and legs. Hind tibial spur is half as long as hindbasitarsus in *L. pullatus*, and distinctly shorter in other species (at most 0,3x as long). Pilosity of face, upper mesosoma and tergal bands are white, remaining pilosity brown to black.



Fig. 3: Lithurgus pullatus-♂, dorsal (photo: W.-H. Liebig).



Fig. 4: *Lithurgus pullatus*-♂, lateral (photo: W.-H. Liebig).

The female of *L. collaris* from Japan, China and Taiwan also has a black scopa, as well as *L. sparganotes* (Schletterer, 1891) from Central and West Africa, and both males have a black pilosity on legs. For a detailed description of *L. pullatus* see Eardley (1988) and Al-Shahat et al. (2020, here as *L. collaris*). Body length of female is 9–13 mm, the male measures 9–12 mm.

The Omani species were compared with photos from *L. pullatus* from Tansania, provided by Alain Pauly. They agree in all details, however seven males from Oman have a pale brown pilosity on upper head, upper mesosoma and tergum 1, instead of white in remaining specimen. However, morphology is similar and and the colour difference may be caused by individual variation.

Discussion of the distribution

The species is widespread in southern and eastern Africa, a record also comes from Somalia (Eardley 1988). The present findings in southern Oman are therefore close to the known distribution area and thus confirm the picture of many other species of Aculeata Hymenoptera species, which are distributed from southern and eastern Africa to the Arabian Peninsula (Schmid-Egger, in prep.) (fig. 5–6).



Fig. 5: General distribution of *Lithurgus pullatus* in Arabian Peninsula (figure: W.-H. Liebig, Kartengrundlage MultiBaseCS: Web-Tile Map).



Fig. 6: Collecting places of *Lithurgus pullatus* in Dhofar region in southwest Oman (figure: W.-H. Liebig, Kartengrundlage MultiBaseCS: Web-Tile Map).

Al-Shahat et al. (2020) mention *L. collaris* Smith, 1873 from the Nile Valley in Egypt. Since they only refer to the identification key of v.d. Zanden (1986) and do not mention the work on the African species (Eardley 1988), apart under the references, it is reasonable to assume that the Egyptian specimens are misidentified. *L. collaris* is an eastern Palaearctic species whose occurrence in Egypt is extremely unlikely, unless one assumes that it was introduced by humans. *L. pullatus*, on the other hand, as an African species, could very well have spread to northern Egypt via the Nile Valley. The identification characters listed by the authors and the description also fit in all details with the specimens from Oman. The finds from Egypt should be verified.

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Life history

All Omani specimens were collected on flowering Ipomoea pes-caprae (Convolvulaceae) (fig. 7), also known as bayhops, beach morning glory, railroad vine, or goat's foot, a very conspicuous pantropic plant species of sandy beaches with large red funnel-shaped flowers. Both males and females flew very quickly and in large numbers around and into the flowers, but only stayed there for a few seconds and were therefore difficult to catch. The behavior was reminiscent of species of the bee genus Systropha Illiger, 1805. We have always caught this species on sandy beaches (figs 8-9), apart from one female which was collected 12 km north of the coast in a stony wadi at 1000 m above sea level. Nothing is known about the nesting claims, but there were always numerous trees or palm trees nearby, so that the species could also nest in wood as other species of the genus. Alain Pauly (in litt.) suspects that the species could be oligolectic on *Ipomoea pes-caprae*. However, in order to confirm this, it would still be necessary to clarify what the species collect on that are not found at the coast but in inner Africa. One female is very densely covered with mites on propodeum, mesoma laterally, propodeum and tergum 1.



Fig. 7: *Ipomoea pes-caprae* (Convolvulaceae), food plant of *Lithurgus pullatus* (Foto C. Schmid-Egger)

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Fig. 8: Collecting location on Kharfat beach near the Yemeni boarder (photo: W.-H. Liebig)



Fig. 9: Collecting location on Taqah beach east of Salalah (photo: W.-H. Liebig)

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