Quaderno di Studi e Notizie di Storia Naturale della Romagna
Quad. Studi Nat. Romagna, 57: 145-150 (giugno 2023) ISSN 1123-6787

Fabio Cianferoni, Jason A. Dunlop & Filippo Ceccolini

Atypus affinis Eichwald, 1830 in Tuscany

(Arachnida: Araneae: Atypidae)

Abstract

The occurrence of *Atypus affinis* Eichwald, 1830 in Tuscany is confirmed after more than 120 years through a specimen found in Florence. The history of the only record so far available in the literature is also briefly reconstructed, adding the probable year of collecting, after correction of the collector's name.

Key words: faunistics, Mygalomorphae, new record, purseweb spider.

Riassunto

[Atypus affinis *Eichwald, 1830 in Toscana (Arachnida: Araneae: Atypidae)*]
La presenza di *Atypus affinis* Eichwald, 1830 in Toscana viene confermata dopo oltre 120 anni tramite un esemplare trovato a Firenze. Viene anche brevemente ricostruita la storia dell'unico dato disponibile finora in letteratura, aggiungendo il probabile anno di cattura, dopo aver corretto il nome del raccoglitore.

Introduction

Atypus affinis Eichwald, 1830 is a West Palaearctic species belonging to the family Atypidae and one of the few European spiders belonging to the Mygalomorphae clade (Nentwig *et al.*, 2023).
Its distribution in Italy was summarized by Pantini & Isaia (2019): in particular it occurs in Valle d'Aosta (De Angelis & Fantoni, 2008), Piedmont (Isaia *et al.*, 2007), Lombardia (Baratelli, 1996; Pesarini, 1997; Pantini, 2000; Lozzia *et al.*, 2002; Bogliani *et al.*, 2003; Isaia *et al.*, 2007), Trentino-Alto Adige (Kraus & Baur, 1974; Noflatscher, 1990, 1991; Schwendinger, 1990; Ballini, 2009), Veneto (Ballarin *et al.*, 2011; Trotta & Cherubini, 2017), Friuli-Venezia Giulia (Hansen H. & Iaconcig, 1999), Liguria (Groppali *et al.*, 2002), Emilia-Romagna (Pesarini, 1991; Miserocchi, 2012), Tuscany (Kraus & Baur, 1974), and Molise (Trotta, 2020).
In Tuscany *A. affinis* was known so far in the literature only from a single specimen from "Firenze" (Florence), without date (Kraus & Baur, 1974).

The discovery of a further specimen within the "La Specola" building (Museum of Natural History of the University of Florence) was an opportunity to enhance the records and write this short note confirming the presence of this species in the area.

Material and methods

The only Tuscan specimen of *A. affinis* known so far was published by Kraus & Baur (1974). The reference material is preserved in the Museum für Naturkunde Berlin under the repository number ZMB 12875 and was re-examined here. The new specimen in this note was photographed (uploaded on the platform iNaturalist, www.inaturalist.org), collected, and preserved in 70% ethyl alcohol. The extremely denutrite specimen had become trapped in a sink inside the Entomology department (where also spiders are preserved in the alcohol collection), in the "La Specola" (Museum of Natural History of the University of Florence).
The specimens was subsequently examined under the stereomicroscope for specific identification and the pedipalps photographed. Microscope images were taken by the first author with a Leica M205 C stereomicroscope and dedicated software Leica LAS 4.3 version for Z-stacking at the Natural History Museum of the University of Florence. Post-processing was made with Adobe Photoshop CS3 Extended 10.0 version.
Jason A. Dunlop checked the label data, shared with the co-authors an image of the pedipalp of the Berlin specimen as verification and conducted the bibliographical research for the collector and collection data.

Acronyms of the collections:
CFC = F. Cianferoni collection, Florence, Italy.
ZMB = Museum für Naturkunde [Museum of Natural Science] - Leibniz Institute for Evolution and Biodiversity Science, Berlin, Germany.

Results

This research has made possible to establish the collecting period of the first specimen and to confirm the occurrence of the species in Tuscany.

Atypus affinis Eichwald, 1830

Material examined: ITALY: Tuscany, Florence, "La Specola", 43.76430° N 11.24768° E (uncertainty = 3 m), 3.XI.2021, F. Cianferoni legit, 1 male (Fig. 1a), CFC; Tuscany, Florence (surroundings?), K.W. Verhoeff legit — "Florenz | Buschwald | Dr Verhoeff [handwritten] || Italien [handwritten – different calligraphy] || ZMB 12875 || *Atypus* | *affinis* | *(Eichw.)*" (Fig. 1b), 1 male, ZMB;

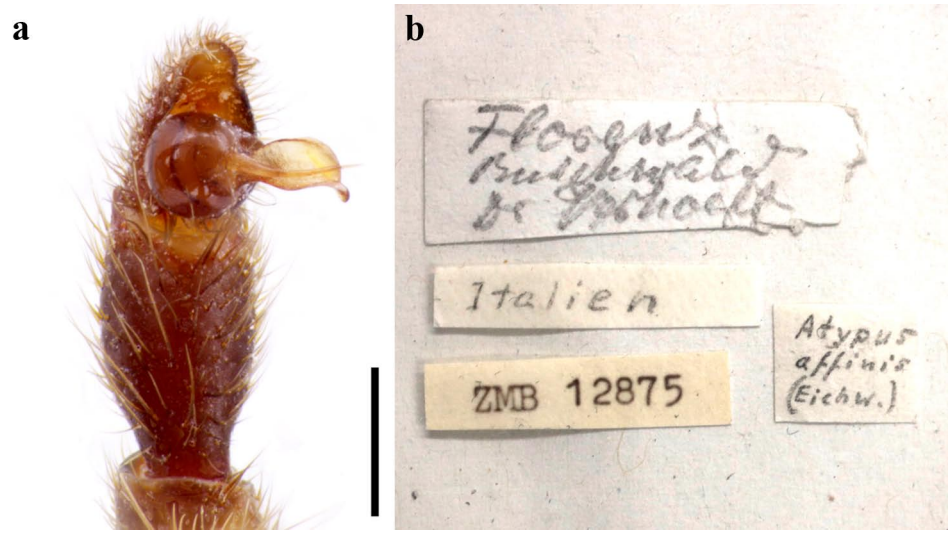

Fig. 1 - a) Distal portion of the male left pedipalp of *Atypus affinis* Eichwald, 1830 collected in Florence (Italy) in 2021. Scale bar = 0.5 mm (photo by F. Cianferoni). b) Labels of the male specimen of *A. affinis* preserved in the Museum für Naturkunde, Berlin, Germany (photo by J.A. Dunlop).

Discussion

Kraus & Baur (1974: 104), in their taxonomic revision of the Atypidae of the West Palaearctic listed a single specimen of *Atypus affinis* from Tuscany: "Italien [...] Firenze (1 ♂ ZMB 12875, Gerhoeft leg.)". After the verification of the original label we realised that these authors misread the handwritten text which actually records "Dr Verhoeff" as the collector.

From the published literature we are confident that this was the German arthropodologist Karl Wilhelm Verhoeff (1867–1945). He collected in Italy several times, but there seems to be only a single reference to Florence (Verhoeff, 1930: 776). Here he stated that he visited "the area of Florence and Vallombrosa" in October 1899, and this is the date to which it seems more likely to attribute the specimen preserved in Berlin. Verhoeff also worked at the Berlin museum from 1900–1905 which further enhances the likelihood that he deposited material from his 1899 collecting trip in their collections. The label seems to indicate "Buschwald" [= bush forest] and therefore the record is very likely from the surroundings of Florence (which could also include places very distant from the city and the municipality). However, it follows that the current discovery took place over 120 years later and therefore the Verhoeff record merited reconfirmation.

Furthermore, the record has a certain relevance also because south of the

Apennines the species is known so far only for two areas: in Central Italy, in Florence (Tuscany) and in Southern Italy, from some close sites in low mountains in Casacalenda, Campobasso (Molise) (Trotta, 2020). It is quite evident that there is an important lack of research in peninsular Italy and further study could probably lead to the discovery of the species in other regions of the country. However, it is useful to make some considerations: the northernmost gravitation of this species (less thermophile) probably causes it to gradually become rarer in peninsular Italy proceeding south (and probably occurring at higher altitudes), and that its distribution range could progressively move further north in future, due to global warming.

References

Ballarin F. & Petri I., 2021 - Contributo alla conoscenza dell'araneofauna urbana nella città di Verona. *Memorie del Museo Civico di Storia Naturale di Verona, 2. serie, Monografie Naturalistiche*, 6: 95-102.

Ballarin F., Pantini P. & Hansen H., 2011 - Catalogo ragionato dei ragni (Arachnida, Araneae) del Veneto. *Memorie del Museo Civico di Storia Naturale di Verona, 2. serie, sezione biologica*, 21: 1-151.

Ballini S., 2009 - Arborikole und epigäische Spinnen (Arachnida: Araneae) in Laubmischwäldern bei Lana und Burgstall (Südtirol, Italien). *Gredleriana*, 9: 187-212.

Baratelli D., 1996 - Indagine sul popolamento araneologico della Valganna (Prealpi Varesine, Lombardia). *Atti della Società italiana di Scienze Naturali e del Museo civico di Storia naturale di Milano*, 136 (1995) (1): 73-85.

Bogliani G., Bontardelli L., Giordano V., Lazzarini M. & Rubolini D., 2003 - Biodiversità animale degli ambienti terrestri nei parchi del Ticino. *Consorzio Lombardo Parco della Valle del Ticino*, Pontevecchio di Magenta, Milano, 176 pp.

De Angelis S. & Fantoni A., 2008 - Contributo alla conoscenza della fauna araneologica (Arachnida, Araneae) del Parco Naturale Mont Avic con una nuova segnalazione per la fauna italiana. *Revue valdôtaine d'histoire naturelle*, 61-62: 109-116.

Groppali R., Marinone M. & Pesarini C., 2002 - Appunti sui ragni di Celle Ligure e Varazze (Provincia di Savona): importanza della distanza dalla costa e ricolonizzazione di ambienti incendiati (Arachnida, Araneae). *Atti della Società italiana di Scienze Naturali e del Museo civico di Storia naturale di Milano*, 142 (2001) (2): 227-241.

Hansen H. & Iaconcig M., 1999 - Contributo alla conoscenza dell'aracnofauna di alcuni biotopi in prossimità della foce del Tagliamento, NE-Italia (Arachnida Araneae). *Bollettino del Museo Civico di Storia Naturale di Venezia*, 49 (1998): 99-109.

Isaia M., Pantini P., Beikes S. & Badino G., 2007 - Catalogo ragionato dei ragni (Arachnida, Araneae) del Piemonte e della Lombardia. *Memorie dell'Associazione Naturalistica Piemontese*, 9: 9-161.

Kraus O. & Baur H., 1974 - Die Atypidae der West-Paläarktis: Systematik, Verbreitung

und Biologie (Arach.: Araneae). *Abhandlungen des Naturwissenschaftlichen Vereins in Hamburg*, 17 (N.F.): 85-116.

Lozzia G.C., Pesarini C. & Bolchi Serini G., 2002 - Reperti di ragni in comprensori viticoli dell'Italia settentrionale (Arachnida, Araneae). *Bollettino di Zoologia agraria e Bachicoltura*, Ser. II, 34 (2): 261-264.

Miserocchi D., 2012 - Segnalazione faunistica 115 - *Atypus affinis* Eichwald, 1830 (Arachnida Araneae Atypidae). *Quaderno di Studi e Notizie di Storia Naturale della Romagna*, 35: 172.

Nentwig W., Blick T., Bosmans R., Gloor D., Hänggi A. & Kropf C., 2023 - Spiders of Europe. Version March.2023. Online at https://www.araneae.nmbe.ch, accessed on 21 March 2023. https://doi.org/10.24436/1

Noflatscher M.T., 1990 - Zweiter Beitrag zur Spinnenfauna Südtirols: Epigäische Spinnen an Xerothermstandorten bei Säben, Guntschna und Castelfeder (Arachnida: Aranei*). Berichte des Naturwissenschaftlich-Medizinischen Vereins in Innsbruck*, 77: 63-75.

Noflatscher M.T., 1991 - Beiträge zur Spinnenfauna Südtirols - III: Epigäische Spinnen an Xerotherm-Standorten am Mitterberg, bei Neustif und Sterzing (Arachnida: Aranei). Berichte des Naturwissenschaftlich-Medizinischen Vereins in Innsbruck, 78: 79-92.

Pantini P., 2000 - I ragni del Sebino Bergamasco (Italia, Lombardia) (Araneae). *Memorie della Società Entomologica Italiana,* 78 (2): 361-378.

Pantini P. & Isaia M., 2019 - Araneae.it: the online Catalog of Italian spiders with addenda on other Arachnid Orders occurring in Italy (Arachnida: Araneae, Opiliones, Palpigradi, Pseudoscorpionida, Scorpiones, Solifugae). *Fragmenta Entomologica*, 51 (2): 127-152. Online at www.araneae.it, accessed on 21 March 2023.

Pesarini C., 1991 - Primo contributo per una fauna araneologica del ferrarese (Arachnida: Araneae). *Quaderni della stazione di ecologia del civico museo di storia naturale di Ferrara*, 4: 5-34.

Pesarini C., 1997 - I Ragni (Arachnida Araneae) del Monte Barro (Italia, Lombardia, Lecco). *Memorie della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano*, 27 (2): 251-263.

Schwendinger P.J., 1990 - A synopsis of the genus *Atypus* (Araneae, Atypidae). *Zoologica Scripta*, 19 (3): 353-366

Trotta A., 2020 - Spiders from Molise (Italy): state of knowledge, new faunistic data and taxonomic notes (Arachnida: Araneae). *Fragmenta entomologica*, 52 (1): 77-83.

Trotta A. & Cherubini A., 2017 - Contributo alla conoscenza dei ragni (Arachnida, Araneae) del Veneto. *Bollettino del Museo Civico di Storia Naturale di Verona, Botanica Zoologia*, 41: 55-86.

Verhoeff K.W., 1930 - Zur Kenntnis der Geographie und Ökologie der Diplopoden, namentlich Mittelitaliens. 120. Diplopoden-aufsatz. *Zeitschrift für Morphologie und Ökologie der Tiere*, 19 (4): 774-823.

World Spider Catalog, 2022 - World Spider Catalog. Version 23.5. Natural History Museum Bern, online at http://wsc.nmbe.ch, accessed on 21 September 2022. https://doi.org/10.24436/2

Authors' addresses:

Fabio Cianferoni
Consiglio Nazionale delle Ricerche (CNR), Istituto di Ricerca sugli Ecosistemi Terrestri (IRET), via Madonna del Piano 10, I-50019 Sesto Fiorentino (Firenze), Italy
Museo di Storia Naturale dell'Università degli Studi di Firenze, "La Specola", Zoologia, via Romana 17, I-50125 Firenze, Italy
e-mail: fabio.cianferoni@cnr.it

Jason A. Dunlop
Museum für Naturkunde
Leibniz Institute for Evolution and Biodiversity Science
Invalidenstrasse 43, D-10115 Berlin, Germany
e-mail: jason.dunlop@mfn.berlin

Filippo Ceccolini
Museo di Storia Naturale dell'Università degli Studi di Firenze, "La Specola", Zoologia, via Romana, 17, I-50125 Firenze
e-mail: ceccolinif@virgilio.it