

First and southernmost records of *Tetramesa stipae* De Stefani, 1901 (Hymenoptera: Eurytomidae) from Tunisia: a new addition to the African Chalcidoidea

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Primeros y más meridionales registros de Tetramesa stipae De Stefani, 1901 (Hymenoptera: Eurytomidae) de Túnez: una nueva incorporación a los Chalcidoidea africanos

La avispa eurítomida fitófaga *Tetramesa stipae* (De Stefani, 1901) es una nueva avispa registrada en África. Fue recolectada dos veces en abril y junio de 2023 en dos localidades muy distantes de Túnez (norte de África). La especie induce agallas en *Stipella capensis* que crece en setos de olivares y en comunidades florísticas termófilas ruderales. En primer lugar, se presentan los datos preliminares d'este taxón junto con las mediciones morfológicas de sus agallas. Además, también se proporcionan ilustraciones en color de las agallas tunecinas.

Palabras clave: Nuevo registro; Avispas calcidoideas; Distribución geográfica; Poaceae; Túnez.

Abstract

The phytophagous eurytomid wasp, *Tetramesa stipae* (De Stefani, 1901) is newly recorded from Africa. It was collected twice on April and June 2023 in two very distant localities in Tunisia (North Africa). The species inducing galls on *Stipella capensis* growing in the hedges of olive groves and within ruderal thermophilous floristic communities. Preliminary data for this taxon together with morphological measurements of its galls are here firstly presented. Moreover, coloured illustrations of the Tunisian galls are also provided.

Key words: New record; Chalcidoid wasps; Geographical distribution; Poaceae; Tunisia.

Introduction

Insects of the stem-galling wasp genus *Tetramesa* Walker (= *Isosoma* Walker; = *Harmolita* Motsch.) (Hymenoptera: Eurytomidae) are small (ca. 2–3

mm in length), winged, generally black coloured, and feed on nectar as adult wasps. In their larval stage, they are phytophagous developing on various cereals and grasses (Poaceae) where the eggs being laid mainly on the stems of their hosts



(Yoshimoto 1984, Claridge & Dawah 1994). Some species form distinct galls on the stem of their hosts [e.g. *T. calamagrostidis* (von Schlechtendal)] or flowering parts [e.g. *T. hyalipennis* (Walker)], while others live singly in or above the nodes of flowering stems [e.g. *T. longicornis* (Walker)], with no real evidence of a galling habit (Claridge 1961). *Tetramesa* genus is cosmopolitan and counts 204 described species, and numerous presently undescribed species world-wide (Holarctic, Afro-tropical) (Burks 1971, 1979, Sutton *et al.* 2021). Among known species, about 63 are recorded from America, north of Mexico (Peck 1963), 61 species recorded from the former Soviet Union (Zerova 1976, 1978) and 37 species from the British Isles (see e.g. Claridge 1961, Fitton *et al.* 1978, Claridge & Dawah 1994). Unfortunately, it still no exact censuses known neither for the Mediterranean area nor for the African continent. Species of the *Tetramesa* genus are known to be species-specific and their host-range is generally restricted to a single grass species, a genus or, in a few cases, on closely related genera (see e.g. Phillips 1936, Claridge 1961, Dawah 1987).

In Tunisia, until now and despite numerous surveys, the Eurytomidae (Chalcidoidea) fauna have been very scarcely studied. The record of only two genera and three species [*Eurytoma morio* (Boheman, 1836), *E. plotnikovi* (Nikolskaya, 1934), *E. samsonowi* (Vassiliev, 1915), *Macrorileya inopinata* (Silvestri, 1920), and *Sycophila biguttata* (Swederus, 1795), *Systole conspicua* (Erdos, 1951), *Tetramesa tunetana* (Masi, 1924)] of the subfamily Eurytominae (Walker, 1832) were mentioned in a fragmentary studies (see e.g. Masi 1925, Erdös 1951, Bouček 1958, Arambourg 1964, Jerraya 1977, Braham *et al.* 2010, Pujade-Villar *et al.* 2010, Wannassi *et al.* 2022). Only one *Tetramesa* species [the endemic *T. tunetana* (Masi, 1924)] is known in Tunisia whereas few records of this genus (ca. 29) within the whole African continent were mentioned including Algeria, South Africa and Uganda with no precisions of species identity (Djouama *et al.* 2018, Seghir 2023, the online Global Biodiversity Information Facility database abbreviated as GBIF 2025).

Our contribution presents first records of the phytophagous eurytomid wasp, *Tetramesa stipae* De Stefani, 1901 (Eurytominae, Eurytomidae) for the Chalcidoidea diversity of the African continent from Tunisia.

Materials and methods

Data here presented are based on specimens collected (infested samples of Tunisian material of *Stipellula capensis*, a spontaneous therophyte with a roughly Mediterranean distribution and a winter-spring cycle that flowers from March to May) through floristic surveys and samplings performed during the last few years (since 2020) in various phytogeographic areas and districts of the Tunisian territory [mainly governorates of Beja (districts of Nefza, Teboursouk and Testour), Bizerta (districts of Mateur and Menzel Bourguiba), Jendouba (districts of Aïn Drahem, Boussalem, Fernana, and Tabarka), and Monastir (Bekalta, Jemmal, Ksar Hellal, Moknine and Sayda)]. These areas are districts mainly dominated by oak species (*Quercus* spp.) with sporadically conifers and *Oleaster* communities and at little extends with very diverse undergrowth (shrubs and bushes) and planted *Eucalyptus*. Galls were checked and the emerged wasps were preserved in 75% alcohol in the author private collections, housed in the Faculty of Pharmacy of Monastir (Insects Univ. Monastir). Occurrences in Tunisia were checked mainly in the online database GBIF (2025). Species identity was based on gall morphology and host specificity following Claridge (1961), Askew & Mifsud (2016) and Blanes-Dalmau *et al.* (2017). Measurements of galls here given were made by the author in the field for 12 galls of the infested specimens of the Tunisian *Stipellula capensis* using a digital caliper. Some of infested specimens of *Stipellula capensis* were collected and stored in the author's herbarium.

Results

Tetramesa stipae De Stefani, 1901

Synonyms. *Isosoma stipae* De Stefani, 1901, Nuov. Giorn. bot. ital. 8: 543-44.; *Isosoma stipae* Hedicke, 1920, Arch. Naturgesch. 86 (11): 77-80.; *Isthmosoma stipae* Hedicke, 1924, Zoologies 24: 666.

Gall (Fig. 1). Galls elongate spindle-shaped bulbous swellings at the base half, occurring usually on spikelets. Galls were measured in the field and have an average of 23–41 mm in length and 2.1–4.9(–5.0) mm in diameter of the swellings part, green maculate with dark brownish when young, turn to light green when mature, after drying the colour is lighter. Collected galls and in-

fested specimens of *Stipellula capensis* are deposited in the personal collection of the author (Herb. R. El Mokni) housed in the Herbarium of Monastir University (not listed yet in Index Herbariorum).

Host plant. Only on *Stipellula capensis* (Thunb.) Röser & Hamasha (sub *Stipa capensis* Thunb., Poaceae) (Askew & Mifsud 2016; Blanes-Dalmau *et al.* 2017, GBIF 2025).

Biology. The gall develops very rapidly within the inflorescence (panicle) of *Stipa tortilis* (Hedick 1924), starting to grow in mid spring, mature in June and adults emerge in late June and can be found until July (Pers. Obs.).

General distribution. *Tetramesa stipae* was known only from Italy (Sicily), Spain and Malta (De Stefani Perez 1901, Blanes-Dalmau *et al.* 2017, Mifsud & Askew 2019, GBIF 2025) with one record from Hungary (Erdős 1947), all over the world (UCD Community 2023; Noyes 2024). Records without illustrations are reported also in the description of *Stipa capensis* Thunb. from Flora of Pakistan online (www.eFloras.org, available at http://www.eFloras.org/florataxon.aspx?flora_id=5&taxon_id=250072827)

Distribution in Tunisia. First report was from Mateur (Material examined, 1♀), 37°00'56"N, 009°38'14"E, 32 m.a.s.l. (Bizerta, northeastern Tunisia), 27-IV-2023 whereas the second report was from Ksar Hellal (Material examined, 1♀), 35°38'39"N, 010°54'03"E, 25 m.a.s.l. (Monastir, centraleastern Tunisia), 07-VI-2023.

Host associations in Tunisia. For both reports, the host plant(s) was only *Stipellula capensis* (Thunb.) Röser & Hamasha (Poaceae, Subfam. Pooideae).

Discussion

Currently 8 species of phytophagous eurytomid wasps from 5 genera are known from Tunisia with three species for the genus *Eurytoma*, two species for *Tetramesa* and only one species for each of *Macrorileya*, *Sycophila* and *Systole*. The novel occurrence of *Tetramesa stipae*, given here for the first time to the whole African continent from Tunisia, highlights the need for additional research to better understand the colonization and expansion of this taxon with no doubt that further sampling will increase the number of known/new eurytomid wasp's species in Tunisia.

The only known, till now, host plant (*Stipellula capensis*, Poaceae) for *Tetramesa stipae* shows a native range from Macaronesia, Mediterranean area to India and South Africa. So, it is quite possible that this phytophagous eurytomid wasp species can be found within other countries well. Further sampling in similar habitats is required to establish its true global distribution.

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Figura 1. Agallas típicas en *Stipellula capensis* inducidas por *Tetramesa stipae* en Túnez; **A:** Localidad Ksar Hellal (Monastir, 07.VI.2023, CE Túnez); **B:** Localidad Mateur (Bizerta, 26.IV.2023, NE Túnez). Fotografías de R. El Mokni.

Figure 1. Typical galls on *Stipellula capensis* induced by *Tetramesa stipae* in Tunisia; **A:** Locality Ksar Hellal (Monastir, 07.VI.2023, CE Tunisia); **B:** Locality Mateur (Bizerta, 26.IV.2023, NE Tunisia). Photographs by R. El Mokni.

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