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ARTICLE

The Gasteruptiidae of the Maltese Islands, with the description of a new species of *Gasteruption* LATREILLE, 1796 from Malta and Italy (Hymenoptera: Evanioidea)

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Abstract
The gasteruptiid fauna of the Maltese archipelago is reviewed for the first time. Four species of *Gasteruption* are found to inhabit the Maltese Islands, and *Gasteruption tanyakronum* n. sp. VAN ACHTERBERG is described on the basis of material collected from Malta and Sardinia (Italy).

Keywords | Gasteruptiinae • new records • Mediterranean • taxonomy • parasitoid wasps

Les Gasteruptiidae des îles maltaises, avec la description d'une nouvelle espèce de *Gasteruption* LATREILLE, 1796 de Malte et d'Italie (Hymenoptera : Evanioidea)

Résumé
La faune des Gastéruptiides de l'archipel maltais est révisée pour la première fois. Quatre espèces de *Gasteruption* habitent les îles maltaises, et *Gasteruption tanyakronum* n. sp. VAN ACHTERBERG est décrit sur la base de matériel collecté à Malte et en Sardaigne (Italie).

Mots-clefs | Gasteruptiinae • nouveaux enregistrements • méditerranéen • taxonomie • guêpes parasitoïdes

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INTRODUCTION

The Evanioidea of the Maltese Islands have only recently been the subject of scientific study, with TURRISI & RATTU (2019) providing the first record of an aulacid, *Pristaulacus galitae* (GRIBODO) from the Maltese Islands, and later, CASSAR & MIFSUD (2020) recording three evaniids from the archipelago: *Evania appendigaster* (LINNAEUS), *Zeuxevania splendidula* (COSTA) and *Brachygaster minutus* (OLIVIER). Despite the fact that the presence of gasteruptiids has been noted by amateur naturalists and photographers in the Maltese Islands, the family Gasteruptiidae has never been mentioned in any literature related to Maltese Hymenoptera.

Gasteruptiidae is a relatively small, globally distributed family with 511 species recognised as valid, belonging to six genera split into two subfamilies, the Gasteruptiinae and Hyptiogastrinae (JENNINGS & AUSTIN, 2002; MACEDO, 2009, 2011). They share some morphological features with the other two evanioid families – Aulacidae and Evaniidae – most notably the attachment of the metasoma high up on the propodeum. However, gasteruptiids are readily identified by a very slender metasoma, swollen hind tibiae and a characteristically elongated neck-like projection, the propleuron, on which the head is borne. Gasteruptiids also differ from other evanioids in their host preferences; they are predator-inquilines of solitary hymenopterans, with females often ovipositing in the nest cells of various apine, colletine and megachiline bees, where the gasteruptiid larva feeds on both the host egg/larva and the provisions collected therein (VAN ACHTERBERG, 2013; PARSLOW *et al.*, 2020). The adults themselves subsist solely on nectar, and possibly pollen, from flowers which provide easy access to these nutritive sources, especially Apiaceae (JENNINGS & AUSTIN, 2004).

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Within the Palaearctic Region, all gasteruptiid species belong to the gasteruptiine genus *Gasteruption* LATREILLE, 1796 – of which about forty species occur in Europe (VAN ACHTERBERG & SAURE, *in prep.*). Sampling of specimens from malaise traps and collection in the field have allowed the gasteruptiid fauna of the Maltese archipelago to be revealed for the first time and provided material of a hitherto undescribed species which also inhabits the Italian island of Sardinia, which is formally described here under.

MATERIAL AND METHODS

Specimens of gasteruptiids were collected in malaise traps or by net-sweeping around inflorescences of *Foeniculum vulgare* MILL. in various localities around Malta. Photographs were taken with a *Canon* 5DS camera combined with a *Canon* 65mm f/2.8 1-5× Macro lens. The photos were stacked with Helicon Focus 7 software. The type material and other specimens made reference to in this study are deposited within the following depositories: Oberösterreichisches Landesmuseum, Biologiezentrum (Linz, Austria) (BZL); the private collection of Dr Christian SCHMID-EGGER (Berlin, Germany) (CSE); Naturalis Biodiversity Center (Leiden, Netherlands) (RMNH) and the joint collection of Thomas CASSAR and David MIFSUD (Malta) (DMTCC).

RESULTS

The present study provides the first checklist of Gasteruptiidae inhabiting the Maltese Islands, followed by the description of *Gasteruption tanyakronum* n. sp. VAN ACHTERBERG from Malta and Sardinia.

Gasteruption diversipes (ABEILLE DE PERRIN, 1879)

Material examined

Malta • 1 ♀ 5 ♂♂ (DMTCC, RMNH), Marsaskala, 11 Jul. 2015, E. XUEREB *leg.*; 1 ♂ (DMTCC), Buskett, 8 Sep. 2020, T. CASSAR leg.; 1 ♂ (DMTCC), Msida, 3 Jul. 2015, E. XUEREB *leg.*

Distribution

Europe, Turkey, Iran and North Africa (YILDIRIM *et al.*, 2004; SAMIN & BAGRIACIK, 2012). In Europe, the nearest territory to Malta in which this species has been recorded is Italy, including Sardinia and Sicily (PAGLIANO & SCARAMAZZINO, 1999).

Remarks

Three host genera from two families are known for this species; *Hylaeus* (Colletidae), *Eumenes* and *Odynerus* (Vespidae) (HELLEN, 1950; OEHLKE, 1984).

Gasteruption opacum (TOURNIER, 1877)

Material examined

Malta • 3 ♀♀ 3 ♂♂ (DMTCC, RMNH), Mellieħa, St. Maria Estate, 25 Jul. - 25 Aug. 2017, malaise trap, D. MIFSUD *leg.* ; 1 ♀ (RMNH), Msida, 10 Jun. 2015, D. MIFSUD *leg.*; 1 ♂ (DMTCC), Fawwara, 15-22 May 2017, MALAISE trap, D. MIFSUD *leg.*

Distribution

Central to South Europe, Turkey and Iran (YILDIRIM *et al.*, 2004; VAN ACHTERBERG & TALEBI, 2014). In Europe, the nearest territory to Malta in which this species has been recorded is Italy, including Sardinia and Sicily (PAGLIANO & SCARAMAZZINO, 1999).

Remarks

Possibly a parasitoid of *Trypoxylon* (Crabronidae), as reported by MAGRETTI (1881), though this still needs to be confirmed.

Gasteruption schlettereri (MAGRETTI, 1890)

Material examined

Malta • 1 ♀ (DMTCC), Buskett, 5 Sep. 2020, T. CASSAR *leg.*; 1 ♀ (RMNH), id., but 5 Jul. 2020; 1 ♂ (DMTCC), Mellieħa, St. Maria Estate, 25 Jul. - 25 Aug. 2017, MALAISE trap, D. MIFSUD *leg.*; 1 ♂ (DMTCC), Binġemma, 14 Sep. 2014, T. CASSAR *leg.*

Distribution

Southeast Europe, Syria, Iran and Turkey (VAN ACHTERBERG & TALEBI, 2014). This appears to be the first record of *Gasteruption schlettereri* from the central region of South Europe (beyond the tip of the Italian Peninsula); it is not recorded from any nearby Italian territories.

Remarks

Originally described from specimens collected in Syria, the biology of this species remains unknown (VAN ACHTERBERG & TALEBI, 2014).

Gasteruption tanyakronum n. sp. VAN ACHTERBERG

ZooBank http://zoobank.org/FE05D4A8-5952-4C65-B2D4-C83F027CEED2

Type material

Holotype, ♀, (RMNH), "**Italy**, SW Sardinia (Prov. di Cagliari), Isola di S. Pietro, N. of Carloforte, 13 Sep. 1980, Ph. PRONK (80.035)". Paratypes: 7 ♀♀ 1 ♂ (RMNH), same label data as holotype; 7 ♀♀ 3 ♂♂ (RMNH), *id.*, but 14 Sep. 1980 and 80.036; 1 ♀ (RMNH), "Italy, N. Sardinia (Prov. di Sassari), Palau, 4 Sep. 1980, Ph. PRONK (80.029)"; 1 ♀ (RMNH), *id.*, but Santa Teresa Gallura, 2 Sep. 1980, 80.028; 7 ♀♀ 2 ♂♂ (BZL, RMNH), "[Italy:] Sardinia NE, env. Obia, 4 Jul. 2000, J. HALADA"; 1 ♀ (metasoma missing; BZL), "I [= Italy:] Sardegna E, env. Lanusei, 29 Jun. 2000, J. HALADA"; 2 ♀♀ 1 ♂ (BZL), "[Italy:] NW Sardinia SA 07/14, Sassari pr., Torre del Porticciolo, camp, coastal vegetation, 26-28 May 2007, P. BANAR"; 17 ♀♀ 6 ♂♂ (CSE, RMNH), "Italy, Sardinia, 14 km NE [of] Orosei, Berchida, 40,488°N 9,800°E, 27 Jun. 2017, [C.] SCHMID-EGGER, I-sa05"; 1 ♀ 1 ♂ (CSE), "Italy, Sardinia, 10 km NE [of] Urzulei, 40,171°N 9,561°E, 10 m NN, 27 Jun. 2017, [C.] SCHMID-EGGER, I-sa11"; 6 ♀♀ 1 ♂ (CSE, RMNH), "Italy, Sardinia, 1 km NE [of] Chia, 38,920°N 8,890°E, 10 m NN, 27 Jun. 2017, [C.] SCHMID-EGGER, I-sa07"; 1 ♀ (CSE), "Italy, Sardinia, Teulada, Porto, 38,943°N 8,722°E, 10 m NN, 27 Jun. 2017, [C.] SCHMID-EGGER, I-sa08"; 3 ♀♀ 2 ♂♂ (DMTCC, RMNH), "**Malta**, Msida, 3 Jul. 2015, E. XUEREB *leg.* "on

flowers of *Foeniculum vulgare* L."; 1 ♀ (DMTCC), "Malta, Bingemma, 14 Sep. 2014, T. CASSAR *leg.*"; 1 ♀ (DMTCC), *id.*, but 18 Jun. 2014; 1 ♀ (RMNH), "Malta, Buskett, 6 Jun. 2020, T. CASSAR *leg.*"; 2 ♀♀ + 1 ♂ (DMTCC, RMNH), *id.*, 5 Sep. 2020; 1 ♂ (DMTCC), *id.*, but 5 Jul. 2020; 1 ♀ (RMNH), "Malta, Marsaskala, 10 Jul. 2015, E. XUEREB *leg.*"; 1 ♀ (RMNH), "Malta, Marfa, 14 Jun. 2020, T. CASSAR *leg.*"; 1 ♀ 1 ♂ (DMTCC), "Malta, Mellieha St. Maria Estate, 25 Jul.–25 Aug. 2017, MALAISE trap, D. MIFSUD *leg.*"; 2 ♂♂ (DMTCC, RMNH), "Malta, Imselliet, 2 Aug. 2020, T. CASSAR *leg.*"; 1 ♂ (DMTCC), "Malta, Xemxija, 12 Jul. 2020, T. CASSAR *leg.*"; 1 ♂ (DMTCC), "Malta, Mellieha, 12 Jul. 2020, T. CASSAR leg."; 1 ♂ (RMNH), "Malta, Fawwara, 8-15 May 2017, malaise trap, D. MIFSUD *leg.*"; 2 ♂♂ (DMTCC), "Malta, Mgarr, 16 May 2020, T. CASSAR *leg.*

Figures 1–2. *Gasteruption tanyakronum* n. sp., ♀, holotype.
1. Habitus (lateral). **2.** Base of antenna.

Diagnosis

Head evenly convex dorsally (figures 3, 9), in front of occipital carina without medio-posterior depression. Fifth antennal segment of ♀ 1.4–2.0 times longer than third segment (figure 2); face comparatively narrow (figure 8). Frons and vertex with satin sheen and very finely and densely transversely aciculate, including surroundings of ocelli (figures 9, 17). Occipital carina wide lamelliform and pale brown apically, medio-dorsally its width 0.3–0.5 times diameter of posterior ocellus (figures 3, 9). Mandible brownish yellow or reddish brown (as remainder of mandible; figures 3, 8). Propleuron 0.9–1.0 times as long as mesoscutum in front of tegulae and moderately slender (figure 4). Antesternal carina narrow lamelliform but hardly wider than prepectal carina (figure 4). Middle lobe of mesoscutum transversely rugose and rugae partly interconnected, with satin sheen and no smooth interspaces, lateral lobes transversely rugulose (figure 5). Scutellum coarsely transversely rugose, but antero-laterally with some short oblique rugae (figure 5). Laterally mesosoma sparsely silvery pilose (figure 4). First subdiscal cell of fore wing mainly or entirely glabrous; hind basitarsus dark brown basally, apically narrowly brown and remainder white or ivory (figure 6). Hind tibia distinctly swollen and with subbasal ivory ring widened ventrally (figure 6). Hind basitarsus slender and 0.9 times as long as remainder of tarsus (without claws). Ovipositor sheath 0.8 times as long as body, 1.3 times as long as metasoma, 2.1 times as long as hind tibia and tarsus combined and 3.4 times hind tibia. White or ivory part of ovipositor sheath 2.8–4.5 times as long as hind basitarsus. Length of body 8.8–13.5 mm. Hypopygium largely brown or dark brown and deeply incised.

The new species is very similar to *G. jaculator* (LINNAEUS), to which it runs in the key by VAN ACHTERBERG & TALEBI (2014) and differs from it as indicated in the key proposed on page 42.

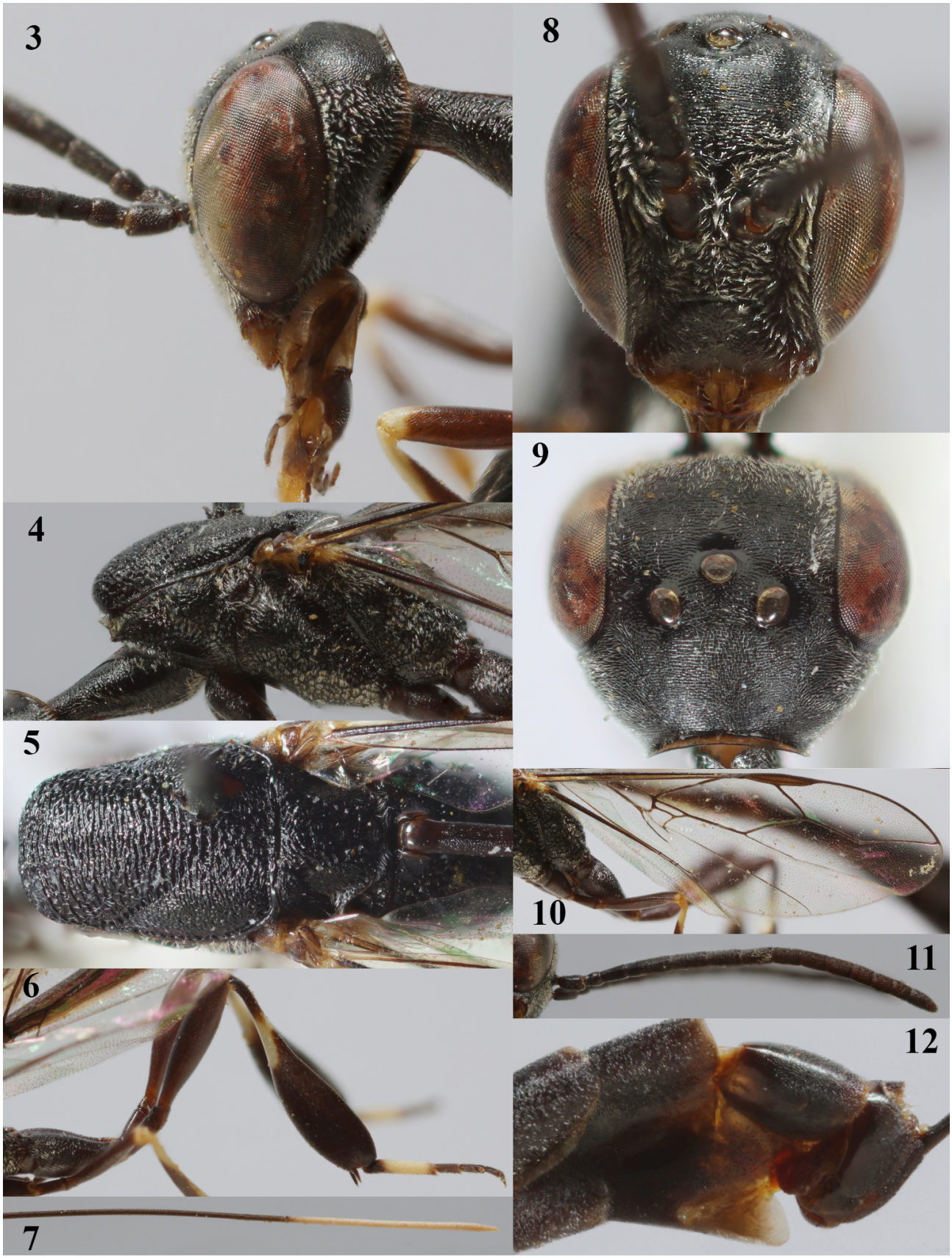
Description

• **Female**

Length of body 11.5 mm (of fore wing 4.9 mm).

Head. Head evenly convex dorsally. Face, frons laterally and temples distinctly pilose (figures 3, 8). Occipital carina wide lamelliform, medio-dorsally its width 0.3 times diameter of posterior ocellus, dark brown basally and pale brown apically (figure 9). Third and fourth antennal segments 1.9 and 3.0 times as long as second segment, apical segment 1.8 times longer than penultimate segment. Frons and vertex with satin sheen and very finely densely transversely aciculate (figure 9). Ventrally head not enlarged in anterior view (figure 8), malar space 0.2 times as long as second antennal segment.

Mesosoma. Length of mesosoma 1.9 times its height. Propleuron as long as mesoscutum in front of tegulae, moderately slender. Medio-ventrally pronotal side coarsely rugose, pronotal side with some pilosity (figure 4) and with a small tooth antero-ventrally. Antesternal carina narrow



Figures 3–12. *Gasteruption tanyakronum* n. sp., ♀, holotype.
3. Head (lateral). **4.** Mesosoma (lateral). **5.** Mesosoma (dorsal). **6.** Hind leg. **7.** Apex of ovipositor sheath. **8.** Head (anterior). **9.** Head (dorsal). **10.** Fore wing. **11.** Antenna. **12.** Hypopygium (lateral).

Figures 13–19. *Gasteruption tanyakronum* n. sp., ♂, paratype.
13. Habitus (lateral). **14.** Basal antennal segments. **15.** Head and mesonotum (dorsal). **16.** Hind leg. **17.** Head (dorsal). **18.** Apical half of metasoma (lateral). **19.** Antenna.

lamelliform but hardly wider than prepectal carina (figure 4). Middle lobe of mesoscutum transversely rugose and rugae partly interconnected, with satin sheen and no smooth interspaces, lateral lobes transversely rugulose (figure 5). Scutellum coarsely transversely rugose, but antero-laterally with some short oblique rugae (figure 5). Middle lobe moderately protuberant (figure 4).

Wings. First discal cell of fore wing glabrous and first subdiscal cell with few setae.

Legs. Length of hind femur, tibia and basitarsus 4.3, 4.3 and 5.8 times their width, respectively. Hind tibia distinctly swollen and ventrally curved (figure 6). Hind coxa irregularly rugose basally and remainder transversely rugose dorsally. Hind basitarsus 0.9 times as long as remainder of tarsus, widened basally in dorsal view.

Metasoma. Ovipositor sheath as long as body, 1.5 times as long as metasoma, 3.5 times as long as hind tibia and tarsus combined and 5.4 times hind tibia. Ivory apical part of ovipositor sheath 4.0 times as long as hind basitarsus.

Colour. Black. Mandible brownish yellow. Apex of fore and middle femora, base and apex of fore and middle tibiae. Hind tibia subbasally, fore basitarsus largely, basal half of middle basitarsus and most of hind basitarsus ivory, tegulae, second-fourth tergites posteriorly and hypopygium (except dark brown base) pale brown. Apex of ovipositor sheath ivory. Palpi, pterostigma, remainder of legs and veins dark brown. Wing membrane hyaline.

Variations. Length of body 8.8–13.5 mm. Propleuron 0.9–1.0 times as long as mesoscutum in front of tegulae length of ovipositor sheath 1.0-1.2 times as long as body. Ivory apical part of ovipositor sheath 2.8-4.5 times longer than hind basitarsus. Fifth antennal segment 1.4–1.6 times longer than third segment. First discal and subdiscal cells of fore wing usually glabrous, but sometimes with a few setae.

• Male

Length of body 8.0–10.5 mm. Similar to female, but propleuron more robust and mesoscutum usually coarser sculptured. Third antennal segment 1.2–1.4 (rarely 1.6) times as long as second segment, fourth segment 2.2–2.8 times third segment and 1.3–1.6 times as long as second and third segments combined, fifth segment 0.9–1.0 times as long as fourth segment (figure 14). Hind tibia and tarsus dark brown or blackish, but tibia with subbasal ivory band (figure 16). Paramere with pale brown or ivory tip dorsally (figure 18; less conspicuous in males from Malta) and inner side largely pale brown.

Distribution

Italy (Sardinia) and Malta.

Etymology

Named after the long white or ivory apical part of ovipositor sheath: *tany* is Greek for long and *akron* Greek for top or tip.

Identification key to separate *G. jaculator* and *G. tanyakronum*

1. Female (figure 1) **2**

1'. Male (figure 13) **3**

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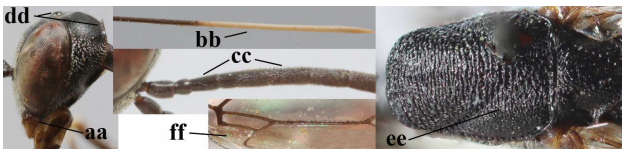
2. **a** Mandible blackish brown or infuscated basally.
b White or ivory part of ovipositor sheath 1.3-3.1 times as long as hind basitarsus, usually less than 2.8 times.
c Fifth antennal segment 1.0-1.4 times as long as third segment.
d Width of occipital carina medio-dorsally 0.5-0.6 times diameter of posterior ocellus.
e Lateral lobes of mesoscutum mainly with oblique striae or rugulae (e), or largely coriaceous.
f First subdiscal cell of fore wing sparsely setose.
..... ***G. jaculator* (LINNAEUS, 1758)**

2'. **aa** Base of mandible pale yellowish or reddish brown (as remainder of mandible.
bb White or ivory part of ovipositor sheath 2.8–4.5 times as long as hind basitarsus.
cc Fifth antennal segment 1.4–2.0 times longer than third segment.
dd Width of occipital carina medio-dorsally 0.3–0.5 times diameter of posterior ocellus.
ee Lateral lobes of mesoscutum with transverse striae or rugulae.
ff First subdiscal cell of fore wing mainly or entirely glabrous.
..... ***G. tanyakronum* n. sp. VAN ACHTERBERG**



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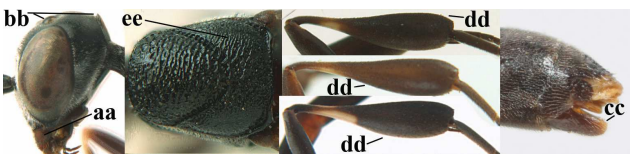
3. **a** Base of mandible blackish brown or infuscated.
b Occipital carina medio-dorsally 0.5–0.6 times as wide as diameter of posterior ocellus.
c Inner side of parameres black or dark brown and apex pale brown and parameres dark brown or blackish dorsally.
d Hind tibia slenderer.
e Striae or rugulae of lateral lobes of mesoscutum (as far as present) mainly oblique.
..... ***G. jaculator* (LINNAEUS, 1758)**

3'. **aa** Base of mandible pale yellowish, pale brown or reddish brown (as remainder of mandible).
bb Occipital carina medio-dorsally 0.3–0.4 times as wide as diameter of posterior ocellus.
cc Inner side of parameres pale brown and apex yellowish or brownish dorsally.
dd Hind tibia slightly less slender.
ee Striae or rugulae of lateral lobes of mesoscutum (as far as present) transverse.
..... ***G. tanyakronum* n. sp. VAN ACHTERBERG**



DISCUSSION

The gasteruptiid fauna of the Maltese Islands is found to consist of at least four Palaearctic species, two of which are widely distributed throughout Europe, Western Asia and/or North Africa, and one of which is described as new to science from two South European islands. However, another species is recorded for the first time from the central region of South Europe – *Gasteruption schlettereri*, which had previously been recorded to occur solely in Southeast Europe and Western Asia. This disjunct distribution may indicate that this species is overlooked elsewhere in Europe. *Gasteruption tanyakronum* n. sp. is known only from Sardinia and Malta; on the island of Sicily and mainland Italy, the closely related *G. jaculator* (LINNAEUS, 1758) occurs. The fact that the Maltese Islands are found to be inhabited by only four species of *Gasteruption* is in contrast with nearby Euro-Mediterranean countries such as Italy or France, in which about twenty-one species occur. Considering the fact that Malta was well-sampled in the present study, and that the Maltese archipelago is home to considerably less host taxa than these countries, the number of Maltese *Gasteruption* species is not expected to be much greater than that represented by the list provided in the present work.

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REFERENCES

CASSAR, T. & D. MIFSUD (2020). The ensign wasps (Hymenoptera: Evaniidae) of the Maltese Islands. *Bulletin of the Entomological Society of Malta*, **11**: 17–21. https://www.um.edu.mt/library/oar/handle/123456789/68256 [accessed 15 May 2021]

HELLÉN, W. (1950). Die Evaniiden Finnlands (Hym.). *Notulae Entomolgicae*, **30**: 1–5. https://pistiaistyoryhma.myspecies.info/sites/pistiaistyoryhma.myspecies.info/files/Hellen%201950%20Die%20Evaniiden%20Finnlands.pdf [accessed 15 May 2021]

JENNINGS, J. T. & A. D. AUSTIN (2004). Biology and host relationships of aulacid and gasteruptiid wasps (Hymenoptera: Evanioidea): a review. pp.187–215. *In* K. RAJMOHANA, K. SUDHEER, P. GIRISH KUMAR & S. SANTHOSH (eds.) *Perspectives on Biosystematics and Biodiversity*. University of Calicut, Kerala, India, 666 pp. https://www.researchgate.net/publication/257957838_Biology_and_host_relationships_of_aulacid_and_gasteruptiid_wasps_Hymenoptera_Evanioidea_a_review [accessed 15 May 2021]

JENNINGS, J. T. & A. D., AUSTIN (2002). Systematics and distribution of world hyptiogastrine wasps (Hymenoptera: Gasteruptiidae). *Invertebrate Systematics*, **16**(5): 735–811. https://doi.org/10.1071/IT01048

MACEDO, A. C. C. (2009). Generic classification for the Gasteruptiinae (Hymenoptera: Gasteruptiidae) based on a cladistic analysis, with the description of two new Neotropical genera and the revalidation of *Plutofoenus* KIEFFER. *Zootaxa*, **2075**(1): 1–32. https://doi.org/10.11646/zootaxa.2075.1.1

MACEDO, A. C. C. (2011). A revision of *Gasteruption* LATREILLE (Hymenoptera: Gasteruptiidae) in the Neotropical region. *Zootaxa*, **3030**(1): 1–62. https://doi.org/10.11646/zootaxa.3030.1.1

MAGRETTI, P. (1882). Sugli Imenotteri della Lombardia. *Bollettino della Società entomologica italiana*, **14**: 269–301.

OEHLKE, J. (1984). Beiträge zur Insektenfauna der DDR: Hymenoptera – Evanioidea, Stephanoidea, Trigonalyoidea (Insecta). *Faunistische Abhandlungen Staatliches Museum für Tierkunde in Dresden*, **11**(13): 161–190. https://www.sfu.ca/~carmean/trig/pdfs/Oehlke-1984.pdf [accessed 15 May 2021]

PARSLOW, B. A., M. P., SCHWARZ & M. I., STEVENS (2020). Review of the biology and host associations of the wasp genus *Gasteruption* (Evanioidea: Gasteruptiidae). *Zoological Journal of the Linnean Society*, **189**(4): 1105–1122. https://doi.org/10.1093/zoolinnean/zlaa005

SAMIN, N. & N. BAGRIACIK (2012). Three new records of Gasteruptiidae (Hymenoptera: Evaniopidea) from Iran. *Entomofauna*, **33**(26): 385–388. https://www.zobodat.at/pdf/ENT_0033_0385-0388.pdf [accessed 15 May 2021]

TURRISI, G. F. & R. RATTU (2019). First record of the wasp family Aulacidae (Hymenoptera) from Malta. *Bulletin of the Entomological Society of Malta*, **10**: 17–19. https://www.um.edu.mt/library/oar/handle/123456789/45695 [accessed 15 May 2021]

VAN ACHTERBERG, C. (2013). De Nederlandse hongerwespen (Hymenoptera: Evanioidea: Gasteruptiidae). *Nederlandse Faunistische Mededelingen*, **39**: 55–87. https://natuurtijdschriften.nl/pub/1002118 [accessed 15 May 2021]

VAN ACHTERBERG, C. & C. SAURE (*in prep.*). Revision of the West Palaearctic *Gasteruption* LATREILLE (Evanioidea: Gasteruptiidae: Gasteruptiinae), with the description of new species.

VAN ACHTERBERG, K. & A. TALEBI (2014). Review of Gasteruption LATREILLE (Hymenoptera, Gasteruptiidae) from Iran and Turkey, with the description of 15 new species. *ZooKeys*, **458**: 1–187. https://doi.org/10.3897/zookeys.458.8531

YILDIRIM E., S. ÇORUH, J. KOLAROV & M. MADL (2004). The *Gasteruption* (Hymenoptera: Gasteruptiidae) of Turkey. *Linzer biologische Beiträge*, **36**(2): 1349–1352. https://www.zobodat.at/pdf/LBB_0036_2_1349-1352.pdf [accessed 15 May 2021]

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