

***Principidium (Testedium) laetum* (Brullé, 1836) new to Italian fauna (Coleoptera Carabidae Trechinae Bembidiini)**

Calogero Muscarella¹ & Maurizio Pavesi^{2*}

¹Cooperativa Silene, Via D'Ondes Reggio 8A Scala G, 90127 Palermo, Italy; e-mail: calogero@silenecoop.org

²Museo di Storia Naturale, Corso Venezia 55, 20121 Milano, Italy; e-mail: maurizio_pavesi@yahoo.com

*Corresponding author,

ABSTRACT

The Mediterranean ground beetle *Principidium (Testedium) laetum* (Brullé, 1836) (Coleoptera Carabidae Trechinae Bembidiini) is herewith first recorded for Italy, on Favignana Island (Egadi Archipelago). The site of the species is a small complex of coastal temporary pools. Notes on the species and considerations on the significance of its local occurrence are given.

KEY WORDS

Egadi Islands; new species to Italy; *Principidium (Testedium) laetum*; Carabidae.

Received 27.05.2016; accepted 19.06.2016; printed 30.06.2016

INTRODUCTION

Favignana, with an area of about 20 km², is the larger island of Egadi Archipelago, west of Sicily (Trapani province). It is about 9 km in length and 4.8 km in maximum width, situated less than 10 km from the major island. The sea between the two is shallow, the depth not exceeding 13 m, so that even during minor marine regressions in the past they have been connected to each other by an emerged land bridge.

The island is crossed in its widest point by the “Montagna Grossa” range, running from North to South, reaching 302 m a.s.l. with the Mount Santa Caterina (302 m). East and west of the range there are two plains, “la Piana” (= “the Plain”) and “il Bosco” (= “the Wood”) respectively. The formerly existing woodlands have been almost completely destroyed; the landscape is at present rather bare, largely dominated by grasslands and garrigues with some typical elements of the Mediterranean maquis, such as wild olive (*Olea europaea* L.), mastic (*Pistacia lentiscus* L.), arboreal euphorbia

(*Euphorbia dendroides* L.). Nevertheless, flora includes many elements of great phytogeographic interest, as well as a number of endemic ones. A floristic survey, dating to sixties of XX century, on Egadi islands records for Favignana about 570 species (Di Martino & Trapani, 1967). Recent surveys are expected to result in increase of this number (La Rosa, pers. comm.).

The first zoological surveys on Favignana date to sixties of XX century, within the CNR “Piccole Isole” (= small islands) project. Results refer mainly to Amphibia and Reptilia (Bruno, 1970; Lanza, 1973) and to some Arthropoda groups, namely Coleoptera Tenebrionidae (Focarile, 1969; Marcuzzi, 1970), Carabidae (Magistretti, 1971), Staphylinidae (Bordoni, 1973), Curculionidae (Magnano & Osella, 1973; Osella, 1973), Chrysomelidae (Daccordi & Ruffo, 1975); Chilopoda (Matic, 1968); Diplopoda (Strasser, 1969); Araneae Dysderidae (Alicata, 1973); terrestrial Isopoda (Caruso, 1973). Since then, further contributions resulted in increased knowledge for Coleoptera Tenebrionidae (Aliquò, 1993, 1995), Rhynchota (= Hemiptera)

Heteroptera (Carapezza, 1993) and terrestrial Mollusca (Riedel, 1973; Beckmann, 2002; Fiorentino et al., 2004).

Princidium (Testedium) laetum Brullé, 1836 is a Mediterranean (extending to Macaronesia) species, whose recorded range includes Iberian peninsula, Canary Islands (type locality), North Africa, Greece and Turkey (Marggi et al., 2003), though not recorded for the latter in Casale & Vigna Taglianti (1999). It lives in warm areas, where it inhabits borders of standing, often temporary waters, including artificial basins, and also damp soils not close to open water.

In April and May 2016 one of us (CM), during a field trip in Favignana Island (Egadi Archipelago, Sicily), noticed a population of *P. laetum* in a small coastal wetland. The present record is the first one for Italy.

MATERIAL AND METHODS

Study area

The biotope where *P. laetum* was discovered (37°56'58"N - 12°18'05"E) is situated close to Punta Faraglione, on the north-western coast of the Favignana Island (Figs. 1, 2). It is a small complex of Mediterranean temporary pools on brown soils with calcarenite and dolomite outcrops (Abate et al., 1994). It is an extremely significant environment, from biologic and conservation viewpoint, recognized by the Habitats Directive (92/43/EEC) as Site

of Community Importance (Genovesi et al., 2014). Several rare plants, *Aristolochia navicularis* Nardi, *Limonium dubium* (Guss.), *L. hyblaenum* Brullo, *L. virgatum* (Willd.), *L. bocconeii* (Lojac.) Litard., *L. lojaconoi* Brullo e.g., are found here (La Rosa, pers. comm.).

Sampling

On 5–6.IV.2016 and 13.V.2016, several *P. laetum* individuals were observed and photographed (Fig. 3) by one of us (CM), close to one single pool within the said area; some of them were collected in order to confirm determination and are now housed in the authors' collections. Beetles were found on damp soil, not far from the water edge, under stones or hidden into the crevices. No other hygrophilous Coleoptera were found to co-occur with them, and no individual was seen at the remaining pools of the area, despite of seemingly quite similar conditions.

DISCUSSION AND CONCLUSIONS

It looks quite surprising that none of the entomologists that previously collected on Favignana ever noticed such a conspicuous and unmistakable insect as *P. laetum*, no doubt one of the most handsome among European and Mediterranean ground beetles; even more because in this kind of small islands, aquatic habitats are rare, and when existing are hardly overlooked by researchers. According to



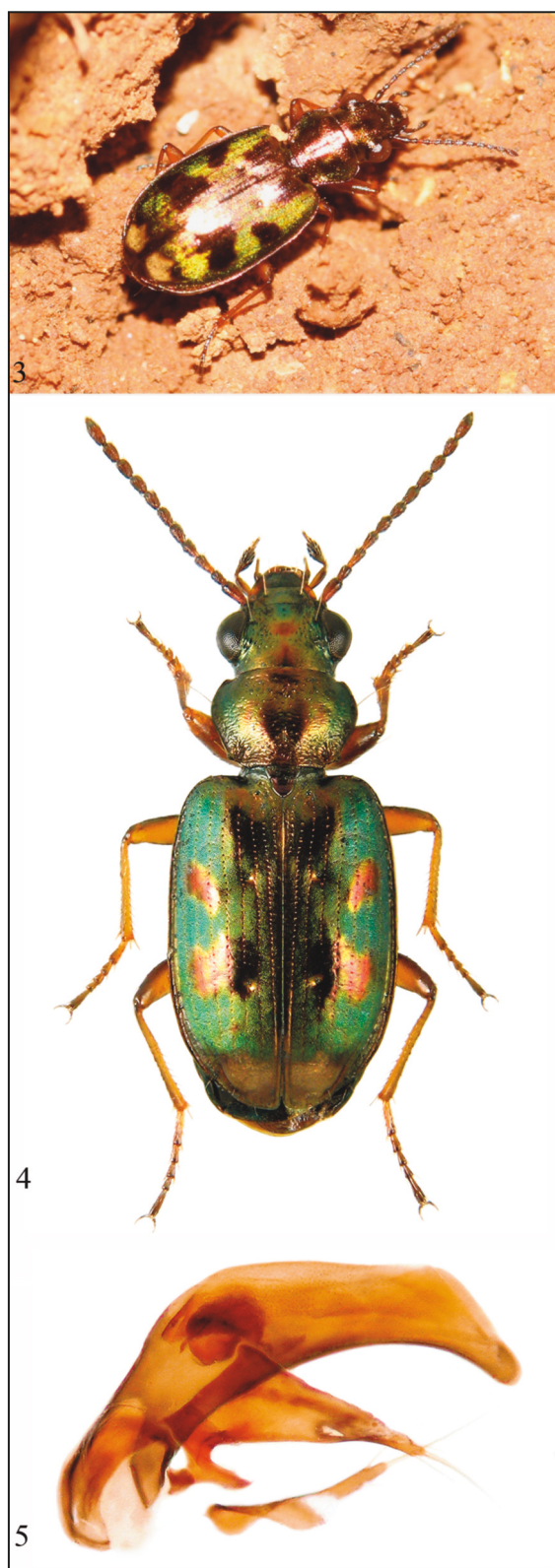
Figures 1, 2. Favignana Island: temporary pool west of Punta Faraglione, habitat of *Princidium (Testedium) laetum*.

Focarile (1969) and Osella (1973), Favignana was visited in March, May-June and October, i.e. in periods at least partly suitable for findings of this species. At least the former author should have visited this or some such habitat, since Magistretti (1970), upon Focarile's materials, records for Favignana (sub *Bembidion tethys* Net.) *Phyla tethys* (Netolitzky, 1926), a hygrophilous ground beetle. Incidentally, with possible exception of *Distichus planus* (Bonelli, 1813), listed sub *Scarites planus* Bon., that may be found either at the pools (more likely) or at seashore, no other hygrophilous ground beetles (*Dyschiriodes* Jeannel, 1941 s.l., *Bembidion* Latreille, 1802 s.l., *Tachys* Dejean, 1821 s.l., *Pogonus* Dejean, 1821 s.l., *Chlaenius* Bonelli, 1810 s.l., e.g.) are recorded for the island.

In our opinion it seems not unlikely that at the time *P. laetum* simply did not exist there, and that its occurrence may result from a recent colonisation from airborne individuals (aeroplankton). In genera related to (and by several authors treated as subgenera of) *Bembidion*, most species are good fliers, probably unable to fly actively over very long distances, yet no doubt able to stay on flight for several hours, reaching even quite far areas when supported by southern winds. The minimum distance between Tunisian coast, where *P. laetum* occurs, and Favignana is less than 150 km, clearly at reach of such fliers. Anyway, the fair number of individuals seen together, only in a small spot, excludes that all of them may have come from overseas, and proves at least occasional local breeding. The local absence of potential competitors may have favoured the subsequent settlement. It is at present unknown whether the species permanently occurs on Favignana, or only does so as a temporary occurrence, not to persist in the next future.

ACKNOWLEDGEMENTS

We wish to thank Michele Zilioli (Museo di Storia Naturale, Milano, Italy) for the pictures of the prepared specimen. We also thank Paolo Neri (Forlì, Italy) for informations about the species, Alfonso La Rosa (Palermo, Italy) for communication of unpublished floristic data about Favignana and Paolo Balistreri (Favignana, Italy) for accompanying one of us (CM) on trips around the Favignana Island.



Figures 3–5. *Princidium (Testedium) laetum*, from Favignana. Fig. 3. Living animal in situ. Fig. 4. Idem, habitus. Fig. 5. Idem, aedeagus.

REFERENCES

- Abate B., Incandela A. & Renda P., 1994. "Lineamenti strutturali dell'isola di Marettimo". Atti del 77° Congresso della Società Geologica Italiana, Bari, 26–28 settembre 1994: 96–98.
- Alicata P., 1973. I Dysderidae (Araneae) delle Eolie, delle Egadi e di Ustica. Lavori della Società italiana di Biogeografia (N.S.), 3 (1972): 341–353.
- Aliquò V., 1993. Dati nuovi e riassuntivi sui Coleotteri Tenebrionidi delle isole circumsiciliane (Coleoptera: Tenebrionidae). Il Naturalista siciliano, 17: 111–125.
- Aliquò V., 1995. Nuovi reperti di Tenebrionidae delle isole circumsiciliane (Insecta Coleoptera). Il Naturalista siciliano, 19: 131.
- Bordoni A., 1973. I Coleotteri Stafilinidi delle isole circumsiciliane. 21. Contributo alla conoscenza degli Staphylinidae. Lavori della Società italiana di Biogeografia (N.S.), 3 (1972): 651–754.
- Beckmann K.-H., 2002. Elemente einer Revision der endemischen Rupestrellen Siziliens. In: Falkner M., Groh K. & Speight M.C.D. (Eds.): Collectanea Malacologica: Festschrift für Gerhard Falkner, S. 49–78, ConchBooks, Hackenheim.
- Bruno S., 1970. Anfibi e Rettili di Sicilia. Studi sulla fauna erpetologica italiana, 11. Tipografia Ospizio di Beneficenza, Catania.
- Carapezza A., 1993. Eterotteri nuovi per le isole Eolie, Ustica e le isole Egadi, con nuove sinonimie (Insecta: Rhynchota). Il Naturalista siciliano, 17: 291–303.
- Caruso D., 1973. Isopodi terrestri delle Isole Eolie ed Egadi. Lavori della Società italiana di Biogeografia (N.S.), 3 (1972): 315–326.
- Casale A. & Vigna Taglianti A., 1999. Caraboid beetles (excl. Cicindelidae) of Anatolia, and their biological significance (Coleoptera, Caraboidea). Biogeographia (N.S.), 20: 277–406.
- Daccordi M. & Ruffo S., 1975. Coleotteri Crisomelidi delle Isole Egadi e descrizione di una nuova specie del genere *Pachybrachis* Chev. Bollettino del Museo civico di Storia naturale, Verona, 1: 427–437.
- Di Martino A. & Trapani S., 1967. Flora e vegetazione delle isole di Favignana e Levanzo nell'Arcipelago delle Egadi. I. Favignana. Lavori dell'Istituto di Botanica e del Giardino Coloniale di Palermo, 22 (1965): 122–228.
- Fiorentino V., Cianfanelli S., Manganelli G. & Giusti F., 2004. I molluschi non marini delle Isole Egadi (Canale di Sicilia): biodiversità e conservazione. Poster XIV congresso nazionale Società Italiana di Ecologia, Siena.
- Focarile A., 1969. Sintesi preliminare delle attuali conoscenze sui Coleotteri Tenebrionidi delle piccole isole circum-siciliane (Coleoptera Tenebrionidae). Memorie della Società entomologica italiana, 48: 402–416.
- Genovesi P., Angelini P., Bianchi E., Dupré E., Ercole S., Giacanelli V., Ronchi F. & Stoch F., 2014. Specie e habitat di interesse comunitario in Italia: distribuzione, stato di conservazione e trend. ISPRA, Serie Rapporti, 194/2014.
- Lanza B., 1973. Gli anfibi e rettili delle isole circumsiciliane. Lavori della società Italiana di Biogeografia (N.S.), 3 (1972): 755–804.
- Magistretti M., 1971. Coleotteri Cicindelidi e Carabidi delle Egadi, di Ustica e delle Eolie. Memorie del Museo civico di Storia naturale di Verona, 18 (1970): 295–306.
- Magnano L. & Osella G., 1973. La curculionidofauna delle isole circumsiciliane: alcune osservazioni zoogeografiche. Lavori della Società italiana di Biogeografia (N.S.), 3 (1972): 621–649.
- Marcuzzi M., 1970. Contributo alla conoscenza dei Tenebrionidi delle Egadi. XVI contributo alla conoscenza dei Tenebrionidi. Memorie della Società entomologica italiana, 102: 87–91.
- Marggi W., Huber C., Müller-Motzfeld G. & Hartmann M., 2003. Carabidae: Bembidiini: Bembidiina. In: Löbl I. & Smetana A. (Eds.): Catalogue of Palaearctic Coleoptera. Vol. 1. Archostemata - Myxophaga - Adephaga. Apollo Books, Stenstrup.
- Matic Z., 1968. Contributions à la connaissance des Chilopodes des îles: Favignana, Levanzo et Marettimo. Memorie del Museo civico di Storia naturale di Verona, 15: 263–267.
- Riedel A., 1973. Die Gruppen *Hyalocornea* Monterosato und *Hyalofusca* Monterosato der Gattung *Oxychilus* Fitzinger (Gastropoda, Zonitidae). Annales Zoologici Warszawa, 29: 191–207.
- Osella G., 1973. I Curculionidi delle isole Egadi (Coleoptera). Atti dell'Accademia Gioenia di Scienze naturali in Catania, CXLIX, ser. 7a, 5: 19–50.
- Strasser C., 1969. Diplopodi delle isole Eolie d'Ustica ed Egadi. Atti dell'Accademia Gioenia di Scienze naturali in Catania, 145, ser. 7a, 1: 121–143.