First record of *Aplysia dactylomela* (Opisthobranchia: Aplysiidae) from the Egadi Islands (western Sicily)

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The alien mollusc *Aplysia dactylomela* is recorded for the first time from the Egadi Islands marine protected area (western Sicily). This species has been widely reported in the Mediterranean and has established populations in Sicily. The presence of a few specimens let us suppose that its occurrence in this area is a recent event and that soon new populations will be sighted in the whole Egadi Islands and on the western and southern coasts of Sicily.

**Keywords:** Mediterranean Sea, western Sicily, Egadi Islands marine protected area, biological invasions, Mollusca, *Aplysia dactylomela*

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**INTRODUCTION**

*Aplysia dactylomela* Rang, 1828 is a large yellowish-brownish opisthobranch with black rings and a reticulation. Until recently, it was known to be distributed worldwide in tropical and warm temperate waters (e.g. Bebbington, 1977; Wirtz, 1999; Dekker & Orlin, 2000; Ortea et al., 2001; Burn, 2006). However, a recent molecular study showed that the Indo-Pacific populations may belong to another morphologically similar species, *Aplysia argus* (Rüppel & Leuckart, 1828) (Alexander & Valdés, 2013). The species, considered an alien in the Mediterranean, was first recorded in the Mediterranean Sea, from the Island of Lampedusa (AG), Sicily Channel (Trainito, 2003). The actual distribution of *A. dactylomela* is restricted to the central and eastern Mediterranean (Pasternak & Galil, 2010; Crocetta et al., 2013), thus suggesting it to be of Indo-Pacific origin (Yokes, 2006; Crocetta & Galil, 2012; Kout, 2012; Pirkenseer, 2013).

However, the molecular studies conducted on the Mediterranean specimens revealed that in the Mediterranean there is only *A. dactylomela*, originating from the Atlantic (Valdés et al., 2013). At present it remains still unresolved if the introduction of *A. dactylomela* has been a human-mediated or a natural event, even though the second hypothesis seems to be the more likely (Valdés et al., 2013) thereby changing its status from alien to new comer. Sicilian records of this species include till now the eastern Sicilian shores from Messina to Syracuse (see Table 1).

**RESULTS AND DISCUSSION**

A total of 18 specimens were found along the coasts of the Island of Favignana (Egadi Islands marine protected area, western Sicily) in July 2013 (Figure 1; Table 2). At first, two specimens of *Aplysia dactylomela* were recorded at Cala Monaci, on the southern coast of the Island (Figure 2). One specimen was found at a depth of 75 cm on a rocky shore characterized by high sedimentation and
Table 1. Records of *Aplysia dactylomela* in Sicily.

<table>
<thead>
<tr>
<th>Site</th>
<th>Record coordinates</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Island of Lampedusa</td>
<td>35°31′24″N 12°35′24″E</td>
<td>Trainito, 2003</td>
</tr>
<tr>
<td>Acitrezza, Catania</td>
<td>37°33′58″N 15°09′53″E</td>
<td>Scuderi &amp; Russo, 2005</td>
</tr>
<tr>
<td>Giardini Naxos</td>
<td>37°49′32″N 15°16′20″E</td>
<td>Greco, 2006</td>
</tr>
<tr>
<td>From Messina to Syracuse</td>
<td>37°10′36″–38°13′47″N</td>
<td>Crocetta &amp; Colamonaco, 2008</td>
</tr>
<tr>
<td>Strait of Messina</td>
<td>38°12′29″N 15°38′08″E</td>
<td>Crocetta <em>et al.</em> 2009</td>
</tr>
<tr>
<td>Island of Lampedusa, Island of Pantelleria, Messina</td>
<td>–</td>
<td>Crocetta &amp; Galil, 2012</td>
</tr>
</tbody>
</table>

Table 2. Records of *Aplysia dactylomela* in the Egadi Islands.

<table>
<thead>
<tr>
<th>Island</th>
<th>Sites</th>
<th>Coordinates</th>
<th>Specimen number</th>
<th>Substrate</th>
<th>Depth (m)</th>
<th>Length (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favignana</td>
<td>Cala Monaci</td>
<td>37°55′7.14″N12°19′32.67″E</td>
<td>3</td>
<td>Rocky with algae or bare rock</td>
<td>0–0.75</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Cala Pirreca</td>
<td>37°55′4.48″N12°18′3.07″E</td>
<td>11</td>
<td>Rocky with algae</td>
<td>1.0</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Scalo San Nicola</td>
<td>37°56′7.34″N12°20′48.13″E</td>
<td>2</td>
<td>Rocky with algae</td>
<td>0.30</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Scalo Cavallo</td>
<td>37°55′54.13″N12°20′58.38″E</td>
<td>1</td>
<td>Rocky with algae</td>
<td>0.15</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Lido Burrone</td>
<td>37°55′2.79″N12°20′15.72″E</td>
<td>1</td>
<td>Rocky and sandy</td>
<td>1.5</td>
<td>6</td>
</tr>
<tr>
<td>Marettimo</td>
<td>Scalo Vecchio</td>
<td>37°58′9.73″N12°4′21.42″E</td>
<td>3</td>
<td>Rocky with algae</td>
<td>5.0</td>
<td>20</td>
</tr>
</tbody>
</table>

Fig. 2. *Aplysia dactylomela* from Cala Monaci (Island of Favignana): (A) specimen (35 cm length) feeding on algae; (B) specimen (35 cm length) resting on algae.

Fig. 3. *Aplysia dactylomela* from Cala Pirreca (Island of Favignana): (A) specimen (35 cm length) at rest; (B) specimen (35 cm length) feeding on algae.
feeding on algae, and we know that *A. dactylomela* is able to convert secondary metabolites from algae into chemical deterrents (Bezerra *et al.*, 2004; Kamio *et al.*, 2010). The ability to make itself protected by local predators might facilitate and accelerate the establishment and expansion of this alien species. It is likely that soon new populations will be sighted in the whole Egadi Islands and on the western and southern coasts of Sicily.

**REFERENCES**


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**Fig. 4. Aplysia dactylomela**: specimen (20 cm length) from Scalo San Nicola (Island of Favignana) (photograph by Alessandro Bevilacqua).  
**Fig. 5. Aplysia dactylomela**: specimen (20 cm length) from the Island of Maretimo (photograph by Stefano Melchioni).


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