First record of the sea anemone *Diadumene lineata* (Verrill, 1869) from the Chilean coast

(Cnidaria, Anthozoa, Actiniaria)

Vreni Häussermann, Carlos Spano, Martin Thiel & Karin B. Lohrmann


The orange-striped green sea anemone *Diadumene lineata* (Verrill 1871) was originally described from Japan but has been recorded as an invasive species from temperate and tropical coasts all over the world, being presumably transported on ship hulls or with seafood shipments. Here, we report the occurrence of this species for the first time from the South East Pacific, specifically on the coast of Coquimbo, northern Chile. Two specimens were spotted in 2012 and approximately 15 individuals were collected and examined in 2014. Most specimens were identified both externally and internally, confirming the cnidome described for the species in several individuals. Generally, the greenish-brown specimens had a pedal disc diameter of up to 7 mm and possessed between 2 and 11 irregularly distributed orange stripes. Since *D. lineata* is known to proliferate quickly, it is strongly recommended to start monitoring the area for possible outbreaks.

Vreni Häussermann, Pontificia Universidad Católica de Valparaíso, Escuela de Ciencias del Mar, Avda. Brasil 2950, Valparaíso, Chile; and Huinay Scientific Field Station, Chile; e-mail: v.haussermann@gmail.com

Carlos Spano (corresponding author), Programa Doctorado de Sistemática y Biodiversidad, Departamento de Zoología, Facultad de Ciencias Naturales y Oceanográficas Universidad de Concepción, Barrio Universitario s/n, Casilla 160-C, Concepción, Chile; e-mail: Spanoperez.ca@gmail.com

Martin Thiel, Facultad Ciencias del Mar, Universidad Católica del Norte, Larrondo 1281, Coquimbo, Chile; e-mail: thiel@ucn.cl; and Millennium Nucleus Ecology and Sustainable Management of Oceanic Island (ESMOI), Coquimbo, Chile; and Centro de Estudios Avanzados en Zonas Áridas (CEAZA), Coquimbo, Chile

Karin B. Lohrmann, Universidad Católica del Norte, Facultad de Ciencias del Mar, Coquimbo, Chile

Introduction

The orange-striped green anemone (Cnidaria, Anthozoa, Actiniaria), *Diadumene lineata* (Verrill, 1869), was originally described from Japan as *Sagartia lineata* but has already been recorded for North America and Northern Europe by the end of the 18th and early 19th century (Fautin 2013). Dispersal out of Asia is supposed to have occurred by attachment to ship hulls or seaweed, mussel and oyster shipments (Shick & Lamb 1977, Gollasch & Riemann-Zürneck 1996). During the last decades *D. lineata* has been spotted at many temperate and tropical coasts all over the world, mainly in the northern hemisphere (Fautin 2013). In the southern hemisphere, it has only been reported from the South West Atlantic, specifically in Brazil (Belem & Monteiro 1977, Zamponi et al. 1998, Farrapeira et al. 2007) and Argentina (Excof-
None of the examined specimen of *Diodon lineata* had reproductive tissue. The fact that the photographed specimens have between 2 and 11 irregularly distributed stripes suggests that they were most probably produced by asexual reproduction.

Other sea anemone species we have recorded on the rocks of La Herradura in our surveys since 1998 were *Anthothoe chilensis* (Lesson, 1830), *Anemonia alicemartinae* Häussermann & Försterra, 2001, *Phymactis papillosa* (Lesson, 1830), *Phymantuea plusiva* Carlgren, 1959, and *Anthopleura hermphroditica* Carlgren, 1899, which also were common during the surveys in September–December 2014.

**Discussion**

The most common, distinctive and eye-catching colour morph of *Diodon lineata* has a greenish-brown column with orange stripes (in regular forms there are 12 stripes, but the number of stripes can be irregular due to asexual reproduction, see Fig. 1); other varieties have 48 paired white stripes or, rarely, no stripes (Shick & Lamb 1977). Within its native range, specimens of *D. lineata* have a diameter of up to 40 mm (oral disc including tentacles when alive) and reproduce sexually. In areas where they are introduced, individuals are smaller since they mostly reproduce by longitudinal fission and occasionally by pedal laceration (Shick & Lamb 1977, Carlton 1979, Molina et al. 2009).

*Diodon lineata* is a common member of fouling communities (Farrapeira et al. 2007). It can be found in the intertidal and shallow subtidal zone, both on solid substrata, as well as on roots and stems in protected marshland areas (Molina et al. 2009). Specimens are highly tolerant to intertidal exposure where they withstand low tide conditions up to twice a day for six hours each, even in summer heat (Molina et al. 2009). They form cysts in freezing climates, acclimatize to very low salinities and survive extreme fluctuations of temperature and salinity (Verrill 1898, Shick & Lamb 1977). The species often appears suddenly and is able to proliferate very quickly (Stephenson 1935) which makes

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![Fig. 1. Specimens and sampling site of *Diodon lineata* from the mid intertidal zone of La Herradura beach, Coquimbo, Northern Chile. A. Sampling site at La Herradura beach. B, C. Specimens of *D. lineata* in situ (B. retracted specimen, C. expanded specimens). D–F. Specimens of *D. lineata* in laboratory (D, expanded specimen from above, E. expanded specimen from side, F. specimen from above, after disturbance, arrows: released acontia). Photos: Carlos Spano (A–B: May 2012), Javier Sellanes (C–F: December 2014). Scale bar: 2 mm.](image-url)
it a successful colonizer. However, it has also been reported to vanish quickly from an area with no warning in short time (Stephenson 1935).

Since *D. lineata* is known to proliferate quickly it is necessary to start monitoring the area for possible outbreaks.

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**References**


