ABSTRACT

The differentiation of numerous populations of *Porcellio lamellatus* Budde-Lund, 1885 (Isopoda, Oniscidea) in Sicily, Sicily-surrounding islands, Tunisia, and Portugal was studied from a morphological point of view as well as using two molecular approaches: Multi-Locus Enzyme Electrophoresis (MLEE) and Random Amplified Polymorphic DNA (RAPD) analysis, in order to assess the status of some taxa attributed to *Porcellio lamellatus*.

The morphological study showed that the characters used to define the various taxa in the literature are often found within the same population, which also appeared to include intermediate forms.

The analysis of both the DNA polymorphisms and the electrophoretic mobility of the proteins did not produce genetically significant distances between the various populations studied, not even among those that have extreme variations in morphological characters.

RIASSUNTO

E' stato studiato il differenziamento di numerose popolazioni di *Porcellio lamellatus* Budde-Lund, 1885 (Isopoda, Oniscidea) di Sicilia, isole circum-siciliane, Tunisia e Portogallo, dal punto di vista morfologico ed utilizzando due approcci molecolari: Multi-Locus Enzyme Electrophoresis (MLEE) e Random Amplified Polymorphic DNA (RAPD), per verificare il significato di alcuni taxa attribuiti a *Porcellio lamellatus*.

Lo studio della morfologia ha mostrato che i caratteri utilizzati per definire i numerosi taxa sono spesso rinvenuti all’interno della medesima popolazione che inoltre sembra includere forme intermedie.

L’analisi dei polimorfismi del DNA e della mobilità elettroforetica delle proteine non ha prodotto distanze geneticamente rilevanti tra le varie popolazioni studiate, neanche tra quelle che presentano variazioni estreme a livello dei caratteri morfologici.
**INTRODUCTION**

*Porcellio lamellatus* Budde-Lund, 1885 (Isopoda, Oniscidea) is a typical coastal species that lives under rocks near the sea or any other salty water environment, in the zone above the habitats of *Ligia*, *Tylos*, *Halophiloscia*, and *Stenoniscus*. It is present along all the coasts of the Mediterranean basin, along the northern coasts of the Black Sea, and on the European Atlantic coasts. The species is also known from the Hawaiian Islands, where it was probably introduced by man (Taiti & Ferrara, 1991; Taiti & Howarth, 1996; Taiti, 1999).

Vandel (1956) carried out a revision of the various populations of *P. moebiusi* Verhoeff, 1901, of Dalmatia (Croatia); *P. diomedus* Dollfus, 1906, of the Tremiti islands (Italy); *P. gerstaeckeri* Verhoeff, 1908, of Sicily; *P. sphinx* Verhoeff, 1931, of the Italian peninsula; which were all believed to be similar to *P. lamellatus*. In particular, he took into consideration the variations in distribution and in the number of glandular pores, as well as in the shape and extension of the median cephalic lobe. Vandel (1956) concluded that the above-mentioned species must all be attributed to *P. lamellatus*, within which he recognized only two subspecies: *P. lamellatus lamellatus* and *P. lamellatus sphinx*, and five rather ill-defined “formes”: “algerinus”, “oceanicus”, “claviger”, “ferdinandi”, and “sphinx”. According to Vandel (1956), *P. l. lamellatus* would be present along all the Maghrebian coasts, the Spanish coasts, in part along the coast of the Black Sea, and also including the small Atlantic islands (fig. 1). *P. l. sphinx* would be present along all the coasts of the northern part of the Mediterranean, including Sicily and Corsica (fig. 1).

The species also shows notable chromatic variations that seem to be due to the dominant colour of the substrate in which they live. Arcangeli (1926) described a population of *P. lamellatus* from Linosa with a dark grey colouring and stated

![Fig. 1. Geographical distribution of two subspecies of *Porcellio lamellatus* Budde-Lund, 1885 (from Vandel, 1956). Grey line, *P. lamellatus sphinx* Verhoeff, 1931; black line, *P. lamellatus lamellatus* Budde-Lund, 1885.](image-url)