

## **MOLLUSCS INTERCEPTED AT THE BORDERS OF ISRAEL IN 2014**

*By Svetlana Vaisman & Henk K. Mienis*

Israel is probably the only country in the world where the entire phylum Mollusca is protected by law. Not only living molluscs but also their empty shells are covered by that law. Collecting, rearing, trading and so on is only possible by obtaining a permit issued by the Israel Nature and National Parks Protection Authority.

At first glance it looks as if the molluscs in Israel have VIP status, yet they are constantly endangered by changes in their habitats and recurring cases of pollution. This has led already to the extinction of quite a number of land and freshwater molluscs (Mienis, 2009a).

The constant arrival of alien mollusc species in the form of illegal imports for the aquarium trade or hitchhikers on a large variety of commodities has only worsened the situation faced by local species. In many instances allochthonous species have completely replaced autochthonous species. For example, if a student is asked to bring snails and/or slugs living in their parents' or neighbours' garden to school, 80-90 % are of foreign origin. The same is true for lawns, parks, ponds and lakes in urban areas. To give only a few examples: *Cornu aspersum*, *Eobania vermiculata*, *Prietocella barbara* and *Lehmannia valentiana*, all introduced species, are the most abundant garden snails and slugs seen in Israel. Most aquatic habitats in Israel are dominated by the permanent presence of *Physella acuta* often accompanied by *Pseudosuccinea columella* and *Planorbella duryi*, all species of North American origin. In all these cases, on land and in the water, these aliens replace local species.

The only organization in Israel that can curb the constant influx of additional allochthonous species is the Plant Protection and Inspection Services (PPIS) of the Ministry of Agriculture, stationed at the borders of Israel. Although their main function is to prevent the import of agricultural pests they also prevent the introduction of possible alien faunal and floral elements that may endanger or alter the biodiversity of Israel. As such it is an important tool in the conservation of the local mollusc fauna of Israel.

Inspectors of the PPIS stationed at Ben Gurion Airport near Lod, the Mediterranean harbours of Haifa and Ashdod and the border crossing with Jordan near the Allenby Bridge (King Hussein Bridge) have each provided in 2014 (as of the time of writing) one sample of intercepted land and freshwater molluscs.

The material was handed over to Mrs. Svetlana Vaisman of the mollusc identification unit of the PPIS in Bet Dagan. She brought the samples to Mr. Henk K. Mienis for final verification and permanent storage in the mollusc collection of the Steinhardt Museum of Natural History and National Research Center of Tel Aviv University.

The four samples arrived from three countries: France (2), Jordan (1) and Thailand (1), and contained nine taxa: six species of terrestrial snails and three species of freshwater snails (Table 1).

Shipment	Origin	Species intercepted (number of specimens)	Date
apples	France	<i>Cerņuella virgata</i> (1)	9 January
luggage	Jordan	<i>Monacha obstructa</i> (1) <i>Helix engaddensis</i> (1) <i>Levantina spiriplana caesareana</i> (1)	26 January
luggage	Thailand	<i>Filopaludina m. martensi</i> (~360) <i>Filopaludina javanica continentalis</i> (~40) <i>Pomacea canaliculata</i> (79)	9 April
apples	France	<i>Oxyloma elegans</i> (4) <i>Cochlicopa lubrica</i> (1)	26 May

Regarding terrestrial snails, the import of apples (*Malus* species, mainly of the variety Pink Lady) from France is often accompanied by the discovery of land snails in the pedicel notch. That notch forms an excellent hideout for snails. *Cerņuella virgata* was intercepted from a container with 22.4 tons of apples that had arrived in the harbour of Ashdod. This hygromiid species has been intercepted before in a shipment of apples arriving from France. In that case the entire shipment, more than 23 tons, was returned to France because *Cerņuella virgata* is considered a serious agricultural pest in areas with a Mediterranean climate (Mienis & Vaisman, 2010).

Also in the current case the shipment of apples was returned to France.

A second shipment of apples that arrived in Haifa contained three specimens of *Oxyloma elegans*, a species that is also known to occur in Israel naturally, and one specimen of *Cochlicopa lubrica*, which has never been encountered before in Israel. The latter is a Holarctic species and it is doubtful whether it can establish a viable population under natural conditions in Israel.

The three living snails of as many species found in the luggage of a Chinese tourist crossing the Jordanian-Israeli border were confiscated because all molluscs (alive or dead) are protected by law in Israel as soon as they enter the country. The import, transfer, sale or any other handling of molluscs in Israel without a permit is strictly forbidden. We do not know what the Chinese tourist intended to do with the snails.

Regarding freshwater snails, an inspector of the PPIS stationed in the arrival hall at Ben Gurion Airport discovered in the luggage of a temporary worker from Thailand several plastic bags filled with 4.6 kg of living freshwater snails. He brought the snails to Israel with the intention of growing them for food. In this sample, the apple snail *Pomacea canaliculata* was represented by 79 specimens. All the other snails, several hundred (!), belonged to the genus *Filopaludina*. The majority (90 % or about 360 specimens) belonged to *Filopaludina martensi martensi*, which not only had been intercepted several times in the past (Mienis, 2009b) but also has been found recently in a commercial pond and aquarium fish centre in Tel Mond, Israel (where temporary Thai workers are employed!). The remaining 10 % (or about 40 specimens) belonged to *Filopaludina javanica continentalis*, which has never been seen before in Israel.

Both *Filopaludina* species are well known intermediate hosts of Echinostomatidae, which may cause severe infections in humans (Brandt, 1974). Not only from a legal but also from a medical and zoological point of view it is prohibited to import such snails into Israel.

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2. Mienis, H.K. 2009a. Causes of extinction among land and freshwater molluscs in Israel during the last 15,000 years. *Tentacle* 18: 25-26.
3. Mienis, H.K. 2009b. An updated review of attempts to smuggle freshwater snails from Thailand into Israel. *Ellipsaria* 11(1): 21-22.
4. Mienis, H.K. & Vaisman, S. 2010. The presence of live specimens of *Monacha cartusiana* (O.F. Müller, 1774) and *Cerņuella virgata* (Da Costa, 1778) (Mollusca, Gastropoda, Hygromiidae) has prevented the import of 23 tons of apples from France into Israel. *MalaCo* 6: 268-269.

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