

THE MEDITERRANEAN FRESHWATER CRAB: "IL-QABRU"

On the reverse side of the new £M10 note issued by the Central Bank of Malta, in the bottom left-hand corner, is a small drawing of a crab. This same crab appears on the £M20 gold coin issued by the same bank in 1975. This is the Mediterranean Freshwater Crab, variously known in Maltese as "Il-Qabru", "Granċ tal-Ilma Heġu" and "Granċ tal-Art". As its names suggest this crab is semi-terrestrial and lives in places where there is a year-round supply of freshwater. Such places are very few in the Maltese Islands so it is hardly surprising that this rather unique crab is quite rare on our Islands.

Scientifically the Mediterranean Freshwater Crab is known as *Potamon fluviatile* but in the past it has been called *Potamon edulis* and is perhaps better known by this name. The name *fluviatile* means "living in rivers" while *edulis* means "edible". The former name refers to its preferred habitat – rivers and lakes, and indeed, in those countries where rivers and lakes abound, the Freshwater Crab is so common that it is used as an article of food, hence the other name. The situation is very different in the Maltese Islands where there are no lakes or rivers and very few permanent streams. As far as is known the

Freshwater Crab has never been used as an article of food locally, or at least not on any large scale. *Potamon fluviatile* is the only species of freshwater crab in Europe and has what is called a circum-mediterranean distribution, i.e. it is found in countries bordering the Mediterranean Sea.

In the Maltese Islands the Mediterranean Freshwater Crab is found in a few localities only, invariably those watered by small year-round springs. In Malta it has been reported at Baħrija and Bingemma Valleys, at San Martin and at Gnejna while in Gozo it is found at Wied tal-Lunzjata. In all these places the crabs are found along the beds of the slow-moving streams and not far from the irrigation channels in the nearby cultivated fields. The crabs excavate burrows in the clayey soil. These burrows usually have more than one entrance, probably to give the crabs a chance to escape should some predator attempt to enter the burrow. The burrows are slanted and are some 60cm deep. At its lower end the burrow is enlarged into a small chamber which because of the nearby stream and the clayey nature of the soil is always half-flooded. It is in this end-chamber that the crabs spend most of their time when not hunting

The Mediterranean Freshwater Crab, known locally as "Il-Qabru"



for food. As far as is known each burrow is occupied by a single crab only. The crabs, particularly males, are very aggressive and defend their burrows and the surrounding territory against invasion by other individuals. Males actively seek females only during the breeding season.

The burrows with their flooded end-chambers are exceedingly important to the crabs. Crabs are marine animals and only very few species have managed to adapt to freshwater and even less to a semi-terrestrial life. Marine crabs breathe by means of feathery gills concealed in chambers on either side of the front end of the body. The crab draws in a current of water into these chambers through holes in the region where the pincer joins on to the body and after passing it over the gills expels it via the mouth region. In *Potamon* the gills have become adapted to extract oxygen for respiration from the air rather than water but to be able to do this the gills must be kept moist – should they dry out the crab soon dies. For this reason the crabs must periodically visit the burrow to wet the gills with the water contained in the end-chamber. The crabs are nocturnal (active during the night) for a related reason – there is less chance of drying out during night-time than during the hot day.

The burrows are important also when the crabs moult. Crabs have a hard, inflexible outer shell or exoskeleton which is not able to expand and to grow a crab has to shed this shell and form a new one in a process called moulting. What happens is that the old shell splits at the back end and the crab simply walks out of it rather like one walks out of a coat. The crab then imbibes water until it swells, at the same time secreting a new shell which at first is soft and flexible but after a few hours starts to harden. When completely hard the crab expels the water it has imbibed such that the animal is now “loose-fitting” inside the new shell and has room to grow. This process is repeated each time the crab becomes too large for its shell. Obviously a soft, freshly-moulted crab is particularly vulnerable to drying out and to predators and during this critical period the burrow becomes essential for its survival.

The Mediterranean Freshwater Crab breeds from May to August in the Maltese Islands. At the start of the breeding season males seek out newly-moulted females and mate with them. The female then lays some 200 spherical orange-coloured eggs which, as in all other crabs, it carries strung underneath its abdomen. What happens next has long been a mystery. In aquatic crabs the larvae hatch into tiny, almost microscopic larvae which after some 2 or 3 months swimming in the water and several moults, settle on the bottom and become young crabs. The Mediterranean Freshwater Crab does not shed its larvae in water and it was suspected that the larvae



“Il-Qabru” is also known as “Granċ tal-Ilma Helu” and “Granċ tal-Art”

are somehow retained by the female. This was finally confirmed in 1976 during studies carried out at the University of Malta. In *Potamon* the eggs are particularly large and yolky and the entire larval cycle takes place within the egg which then hatches directly into a juvenile crab, this whole process taking only 45 to 47 days. In this way the Mediterranean Freshwater Crab gets around the problem of lack of water.

The Mediterranean Freshwater Crab is an active hunter. At night the crabs leave their burrows and stalk and capture insects, snails, tadpoles and other small animals. The crabs are also scavengers and will feed on decaying animal matter although they appear not to feed on vegetable material. The very dry and hot summers we have been experiencing in recent years coupled with the fact that many freshwater streams which used to be the home of this crab have now been diverted to other uses have resulted in a serious decline in numbers of this very interesting animal. In addition, human persecution has further reduced its numbers. All efforts must be made to preserve the remaining population of this crab which is so part of our natural heritage that we even bear its image on our currency.

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FURTHER READING

- Lanfranco, G.G. (1975) *A petition for the protection of the freshwater crab in Malta*. Natural History Society of Malta (now Society for the Study & Conservation of Nature).
- Pace, F., Harris, R.R. & Jaccarini, V. (1976) “The embryonic development of the Mediterranean freshwater crab, *Potamon edulis* (= *P. fluviatile*) (Crustacea, Decapoda, Potamonidae).” *J. Zool., Lond.* 180:93 – 106.
- Savona Ventura, C. (1979) “*Potamon edulis* (Latr.) – the freshwater crab”. *Potamon* 1:2 (Society for the Study & Conservation of Nature).
- Vannini, M. & Sardini, A. (1971) “Aggressivity and dominance in the river crab, *Potamon fluviatile* (Herbst).” *Monitore zool. ital.* n.ser. 5:173 – 213.