

MEDICINAL AND OTHER LEECHES (ANNELIDA, HIRUDINEA) IN THE MALTESE ISLANDS

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ABSTRACT

The identity and possible provenance of the leeches used medicinally in the Maltese Islands since the sixteenth century and particularly during the nineteenth century is discussed. Two haematophagous species have been identified as possible medicinal imports. Five other non-medicinal species of leeches have been identified as either presently occurring in the Maltese Islands, or as having been possibly introduced in the past.

INTRODUCTION

Leeches have been used medically for centuries. In Europe the use of leeches to drain off blood reached its height of popularity in the 19th century. In the Maltese Islands, the first definite documented record of the use of leeches in medicine dates to the 16th century (Parisi, 1592). After this there is increasing documentation that haematophagous leeches were regularly used for medicinal purposes throughout the subsequent centuries, and especially in the nineteenth. Their use persisted until the early decades of the twentieth century (Savona-Ventura *et al.*, in prep.).

This paper discusses the identity and provenance of the leeches that may have been used for medical purposes in Malta since the sixteenth century. It also reviews the various local and introduced leeches, updating the list given by Schembri (1986).

Records of leeches from the Maltese Islands

No leech species capable of sucking human blood is today native to the Maltese Islands. The presence of wild leeches in the Maltese Islands was first recorded in 1913, however the species concerned were not identified (Gulia, 1913).

To date, the species listed below are known to occur or have probably been imported into the Maltese Islands.

HIRUDINIFORMES

Family: Hirudinidae

Hirudo medicinalis Linnaeus, 1758 - European Medicinal Leech

Previous records: Schembri (1986).

Geographical distribution: Formerly this species' range extended from western and southern Europe to the Ural Mountains and the countries bordering the eastern Mediterranean. Today it has become extinct or endangered throughout most of its original range.

Comments: The Medicinal Leech was probably imported into Malta for medicinal purposes from European sources. A definite instance of the importation of the Medicinal Leech from Sicily occurred in the 1960s when a doctor of Sicilian origin prescribed the application of leeches over the hypochondrium of an elderly man suffering from severe congestive heart failure (Schembri, 1986; G. Zammit Maempel, personal communication 16/11/1998). However, no preserved specimens are today available for study in any of the biological collections in Malta.

Hirudo troctina Johnson, 1816 - Algerian Dragon

Previous records: none.

Geographical distribution: Originally described from Algeria, Tunisia and Morocco.

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Comments: This poorly characterised species was possibly imported into Malta for medicinal use during the 19th century from Tunis and Bone in North Africa (Medical & Health Archives, 1842-47). A further possible reference to the importation of medicinal leeches from an unspecified North African French protectorate is recorded in a Maltese historical novel (Preca, 1900). No preserved specimens are today available for study in any of the biological collections in Malta.

Limnatis nilotica (Savigny, 1820)

Previous records: Schembri (1986).

Geographical distribution: circum-Mediterranean.

Comments: In the past, leeches have reportedly been introduced into Malta accidentally with imported cattle. These leeches were often found in the drinking troughs used by the animals (e.g. Birkirkara, Malta in the 1930s), being deposited in the troughs when the drinking animals snorted. These leeches are presumed to have been *Limnatis nilotica* (Schembri, 1986; G. Zammit Maempel, personal communication 16/11/1998). However, no preserved specimens are today available for study in any biological collection in Malta. In the mid-1930s (1936-37) bovines were imported to Malta mainly from Yugoslavia (62.2% of bovine imports) and Bulgaria (20.8%). Other imports came from Tunis (6.3%), Poland (5.2%) and Turkey (4.0%), with minor contributions from Algeria (0.8%), Rumania (0.6%), Albania (0.1%) and England (0.01%) (Mercieca, 1937-38). *Limnatis nilotica* parasitises frogs but will suck mammalian blood. With poorly developed mouthparts, it is unable to pierce mammalian skin and therefore attaches itself to the soft buccal and nasal mucosa. The biology of this species makes it a very unlikely candidate for use as a medicinal leech.

Family: Haemopidae

Haemopsis sanguisuga (Linnaeus, 1758) - Horse Leech

Previous records: Schembri (1986).

Geographical distribution: Western Palaearctic – common in most of Europe, including Italy and Sicily. Known also from the Atlas Mountains in Morocco. In the Maltese Islands it is known from one locality in Gozo (Wied tal-Lunzjata), where there is perennial running water.

Comments: This species, which superficially resembles *Hirudo medicinalis*, does not suck blood. It is an amphibious macrophagous predatory leech. There is no evidence to indicate that this species is not indigenous. Although fairly common at its site of occurrence, this species is overall rare in the Maltese

Islands and is considered as 'vulnerable' in the *Red Data Book for the Maltese Islands* (Schembri, 1989).

ERPOBDELLIFORME

Family: Erpobdellidae

Barbronia ?assiuti Hussein and El-Shimy, 1982

Previous records: none, but see Schembri (1992).

Geographical distribution: known only from the type locality in Egypt.

Comments: This species (tentatively identified as *B. assiuti*) was accidentally imported into Malta with tropical freshwater fish and on occasion relatively large populations have become established in heated tropical aquaria. It is predatory on benthic invertebrates. There is no evidence that this species has established itself in the wild in the Maltese Islands.

RHYNCHOBDELLIDA

Family: Glossiphoniidae

Batracobdella algira (Moquin-Tandon, 1846) - Frog Leech

Previous records: Schembri (1989, 1992).

Geographical distribution: North Africa, Iberian Peninsula, Balearic Islands, Corsica and southern Europe including the Crimea.

Comments: This species is an ectoparasite of various frogs and urodeles, including the Painted Frog *Discoglossus pictus*, which is the only amphibian in the Maltese Islands. This leech has only been recorded once from Malta, from a garden pond, and it is not known if it is a true native or has been accidentally introduced.

Family: Piscicolidae

Pontobdella ?muricata (Linnaeus, 1758) – Skate Leech

Previous records: Schembri (1995).

Geographical distribution: Mediterranean and East Atlantic.

Comments: This marine species is occasionally found attached to the gills or body of skates *Raja* spp. and other fish.

DISCUSSION

Since no leeches haematophagous on mammals have been described as being found in the wild on the

Maltese Islands, it must be presumed that the use of these animals for medicinal purposes required their importation. There is to date no information as to the source of leeches before the nineteenth century, but historical sources suggest that the major trade links included most of the cities around the Mediterranean littoral, but little contact with North African countries (Mallia-Milanes, 1971; Vassallo, 1997). It is thus likely that the medicinal leeches imported during these centuries were the European Medicinal Leech *Hirudo medicinalis*. Trade-links changed significantly at the turn of the eighteenth century when the Islands fell under British dominion. Maltese mercantile interests abroad started being provided for by Great Britain's wider and better-organised consular system. During the nineteenth century, the leeches used in the Maltese charitable institutions were purchased after a public call for tenders was issued. The contractor, who had to submit a sample of fifty leeches before being awarded the contract, bound himself to supply the quantity required for a whole year (Anon., 1884). Interruptions in the provision of leeches sometimes occurred either because of their inferior quality, or because of the exhaustion of the reserve stock, or because of delay in their importation from Tunis and Bone on account of bad weather (Medical & Health Archives, 1842-47). The owners of merchant ships reportedly imported the medicinal leeches to Malta. In 1900 the Maltese novelist A. Preca records a fictional dialogue between two merchant ship owners in a Maltese harbour setting in circa 1885. One owner remarks that he had imported leeches from a French protectorate ("*Kala Franza*"). These he had bought from an Arab who had supposedly collected them himself by the simple expedient of putting his bare leg in the mud near the river's edge (Preca, 1900). The species reportedly imported from Tunis and Bone in the nineteenth century may have been the North African Leech *Hirudo troctina*. Early accounts refer to this species as originating from 'western North Africa', but it has barely been mentioned for about 150 years. The species imported from Sicily in the 1960s was most likely *Hirudo medicinalis*.

The modern Maltese word for leech is *SANGISUG*. The Maltese language is generally considered to be a mixed Romance/Semitic one. '*Sangisug*' is of Romance derivation and means 'bloodsucker' (cf. Italian '*sanguisuga*'; Latin '*sanguisuga*') (Schembri, 1995; Aquilina, 1987). The original Semitic Maltese word for leeches which had apparently fallen into disuse by the nineteenth century has been recorded in several 18th century dictionaries as "*Għalaq*" (plural "*egħilqa*") meaning 'handle', 'leech', or 'something that hangs on to something else'. The derivation is from the Arabic root "gh-l-q" (cf. Arabic "*ghalaqa*") which means 'to hang on to something' (Thezan, c.1721; Agius de Soldanis, c.1750; Vassali, 1796).

The presence of a Semitic word for leeches in the Maltese language may reflect the possibility that leeches were imported to Malta even prior to the sixteenth century, when the Arabic influence on the Maltese language was more dominant. It may also suggest that these animals may have been previously indigenous to the Maltese Islands. There is definite palaeontological, archaeological, toponymic and historical evidence for the past presence of freshwater and brackish water wetlands in Malta. With the extensive alteration of habitat that has occurred on the islands over the centuries, the wetland-associated biota has become rare in Malta and some species, including leeches, may even have become extinct (Schembri and Lanfranco, 1993; Haslam and Borg, 1998).

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