

SOME FRESHWATER SNAILS FROM NORTHERN IRAN

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There are many freshwater snails involve in the life cycle of parasitic flukes. Some of these animals, such as *Bulinus* spp and *Lymnaea* spp are very important in public health and veterinary medicine. For example, *Bulinus truncatus* and *Lymnaeid* snails transmit Human Bilharziosis and zoonotic Fascioliosis, respectively. For this reason most freshwater bodies of northern Iran, were searched for potential intermediate host snails of medical parasites. Thirteen mollusk taxa, i.e. 5 operculated shell-bearing versus 8 pulmonated snails were found during a snail survey, in the summer of 1992. Two taxa, viz. *Anisus leucostoma* and *Bulinus truncatus* were found to be new species for Iran and northern Iran, respectively.

Introduction

Some freshwater mollusks act as intermediate host snails of digenetic trematodes. Therefore, some of these animals, such as *Bulinus truncatus* and *Lymnaeid* snails are very important in public health and cause Urinary Schistosomiosis and zoonotic Distomatosis in human beings, respectively (11). Meanwhile, freshwater snail fauna of most parts of the world virtually covered but Iran-wide snail survey has not completely been done (14).

Therefore, 3 provinces of north of Iran, i.e. Gilan, Golestan and Mazandaran were searched in the summer of 1992 through a grant supported financially by the Tehran University of Medical Sciences, School of Public Health & Institute of Public Health Research; technically in part by the Danish Bilharziasis Laboratory & the British Museum (Natural History), respectively. Identification was based on shell characteristics, living mollusk morphology and anatomic features of

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spiriting specimens (3,10).

Materials and methods

Freshwater bodies of northern Iran, namely ponds, sidepools, marshy areas, swamps, drains, channels, bank of rivers, were searched by a standard dipnet (10) within 2 weeks in the summer of 1992. Shells and animals sorted as much as possible. Shells were put into the plastic vials and labelled; versus living animals killed first in boiling water, then transferred into the suitable jars including 70% ethanol and labelled. Labelling include name of collector, name of locality and date of collection on a piece of tracing paper with a pencil. Study of shells, living mollusk morphology and egg-masses and dissection of spirited specimens were used for identification (1,8).

Results

The list of freshwater snails found in Northern Iran are as follows :

Anisus leucostoma (5,15), *Bellamyia bengalensis* (17), *Bithynia tentaculata* (4), *Bulinus truncatus* (16), *Gyraulus Charpontier* (2), *Lymnaea gedrosiana* (6,12), *L. palustris* (4,12), *L. truncatula* (3,4), *Melanopsis doriae* (12,15), *Physa acuta* (11,12), *Planorbis planorbis* (12,17), *Theodoxus doriae* (13), *Valvata piscinalis* (5).

Most macro - & micro - habitats, namely running and standing freshwater bodies were searched during a snail survey in August 1992. Three potential intermediate host snails of *Fasciola*, viz. *Lymnaea gedrosiana*, *Lymnaea palustris*, *Lymnaea truncatula* ; and *Bulinus truncatus*, a snail host of *Schistosoma haematobium* were harvested and identified for northern Iran. *Anisus leucostoma* and *Bulinus truncatus* collected in Gilan province; while *Bellamyia spp.* and *Melanopsis doriae* in Mazandaran province. The other taxa, i.e. *Bithynia tentaculata*, *Gyraulus spp.*, *Lymnaea gedrosiana*, *Lymnaea palustris*, *Lymnaea truncatula*, *Physa acuta*, *Planorbis planorbis*, *Theodoxus doriae* and *Valvata piscinalis* were also collected in northern Iran. *Bulinus truncatus* was found to be new species for northern Iran (16) and *Anisus leucostoma* for Iran (5,15).

As seen in map 1 , these are six species which are widespread in all three provinces. Map 2 shows the distribution of seven species which are limited to some areas. A note of importance is the presence of *B.truncatus* in Anzali which is possibly brought by migrant birds from khuzistan in the southwest.

Discussions

Four snails of *Melanoïdes tuberculata*, *Melanopsis doriae*, *Lymnaea auricularia* (= *L.gedrosiana*), and *Planorbis planorbis* for Caspian Sea areas was reported of Iran (15). Besides *Melanoïdes tuberculata*, the other snail are the same in my collection, but I didn't collect any *Melanoïdes tuberculata* in northern Iran. L. Forcart (4) contributed also 4 taxa of *Bithynia tentaculata*, *Lymnaea palustris*, *Lymnaea truncatula*, and *Planorbis planorbis* for Mazandaran province that conform with data of this study. M. Eliazian (3) recorded 5 species of freshwater mollusks; *Lymnaea gedrosiana*, *Lymnaea palustis*, *Lymnaea pereger*, *Physa acuta*, and *theodoxus lituratus* for northern Iran. Besides *lymnaea pereger* and *theodoxus lituratus*, the other taxa conform with my identification. It seems, M Eliazian differentiated snails on shell characteristics, and came up with the wrong decision.

Shell morphology of *Lymnaea gedrosiana*, and *Lymnaea pereger* are very similar and almost impossible to discriminate those snails according to shells. The only reliable judgement based on snail dissection ; a long duct of seminal receptacle for *Lymnaea gedrosiana*, versus a very short one for *Lymnaea pereger* reveals the right identification (6). Same rule also runs for *Theodoxus lituratus*. Innerside of *Theodoxus doriae operculum* has a tendon-like projection so called "Rib" ; against 2 protrusions, namely "Rib and peg" for *Theodoxus euphraticus*. The 3 above-mentioned Authors contributed totally 9 freshwater snail taxa, against 13 species in my collection. None of contributors recorded *Anisus leucostoma* and *Bulinus truncatus* for northern Iran. The former was found to be new species for Iran, versus the latter, new species for northern Iran which occasionally searched in a few limited foci of Anzali, Gilan province, in Summer of 1992 (Fig. 1).

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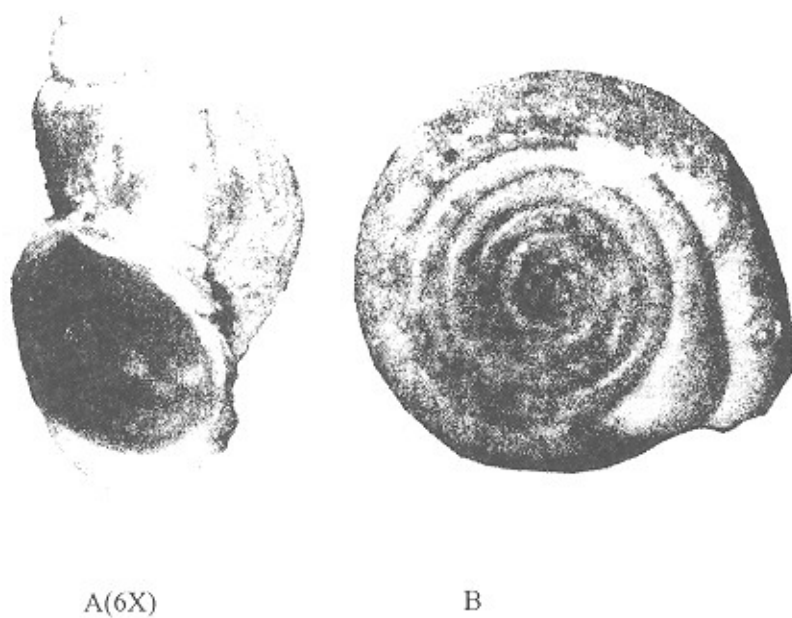
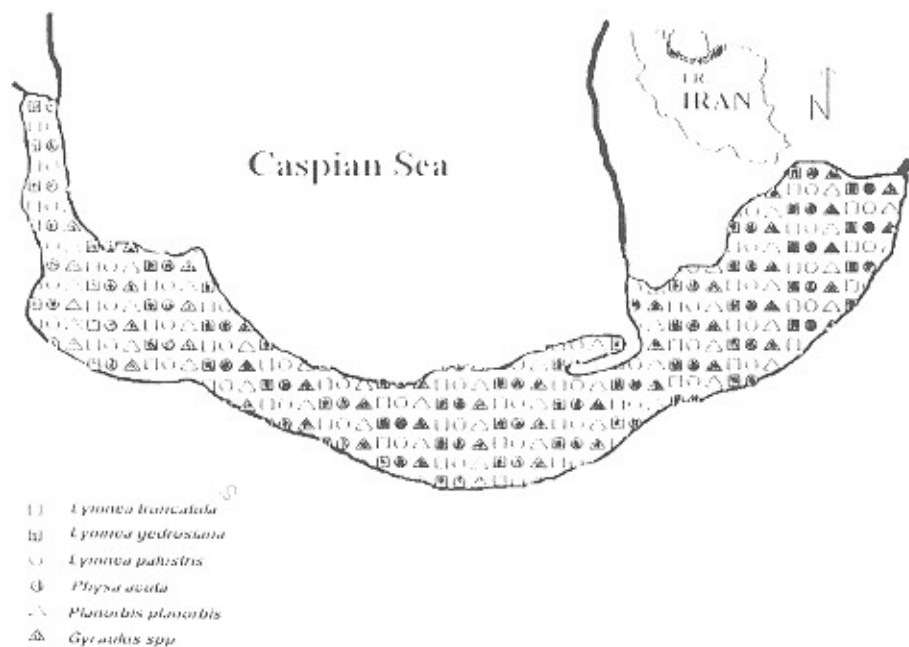
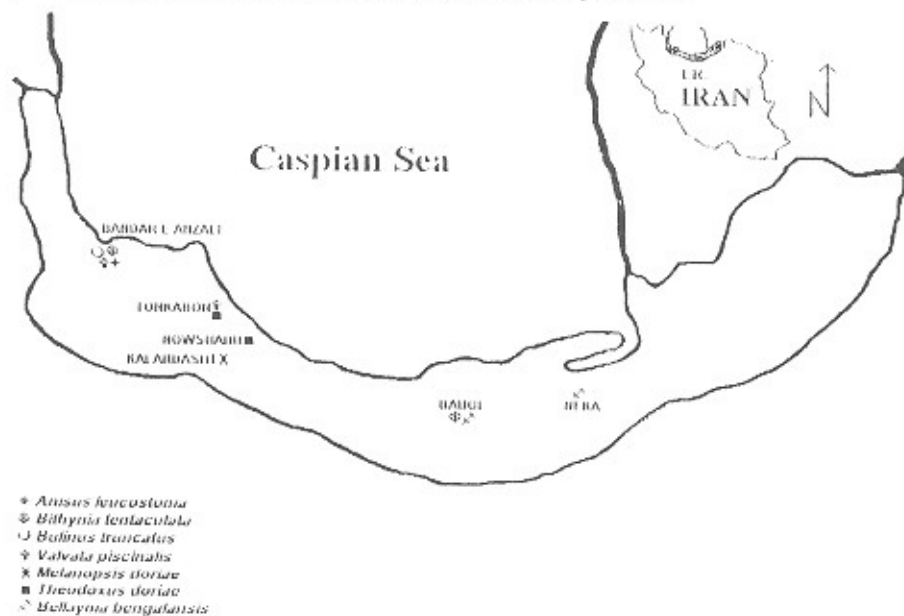


Fig. 1- Important characteristic features of *bulinus truncatus*
A- *B. Truncatus* shell : no truncation at columellar margin
B- *Anisus Leucostoma* (Scale line: 1mm)



Map 1- Distribution of six species widespread in Caspian area



Map 2- Place of collection of some snails with limited geographical distribution in Caspian littoral area

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