

A NEW RECORD OF A WHITE TERRESTRIAL SNAIL *Monacha obstructa* (Pfeiffer,1842),(GASTROPODA: PULMONATA) FROM THE IRAQI MARSHES

I. M. Abdul-Sahib

Marine Science Centre, University of Basrah, Basrah, IRAQ

ISSN -1817 -2695

Received 26/9/2005, Accepted 15/6/2006

ABSTRACT

In this paper, the white land snail *Monacha obstructa* (Pfeiffer,1842), is recorded for the first time in Basrah. This snail was collected from Basrah marshes, It is considered as an economical detriment animal, for its voraciousness in eating vegetables and small plants. The farmers used poisoned extermination to terminate it.

Key words: new record, land snail, *Monacha obstructa*, Gastropoda, Mollusca.

INTRODUCTION

The Mollusca, as conceived by neontologists is a large and diverse phylum, Their members are grouped into classes according to gross anatomical differences, and the main differences in the structure of the shell and foot (1). It is impossible to produce an exclusive definition of the phylum without referring to the soft parts (2). The class Gastropoda is the largest class of mollusks with a well-defined head, which is usually bears one or two pairs of tentacles. When eyes are present, they are located on the tips of the tentacles or at their base, with a flattened foot and single coiled shell. The first requirement of the land mollusks is a mantle cavity that can be turned into a lung, and the true Pulmonata are by no means the only Gastropoda that have left the water (3). Previous studies on mollusca in our area, dealt with fresh, brackish and marine waters only (4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15).

The name white terrestrial snail is creative for the difference between this snail and another new species the author named it the brown land snail which has not been identified yet, although, the former has many features distinguished it from the latter, but also the colour is in some ways important. Many people are familiar with the white terrestrial snail, they also called it the garden snail, the land snail, or the date-palm tree snail, but, no one of the biologists classified it. These snails were considered as disadvantage creatures to the environment which they live in, they cause damage to the vegetables, they nibble the lettuce, the celery, the cabbageetc. Thus, they are considered as economical detriment animals

MATERIALS AND METHODS

The specimens were collected from many farms near the Basrah marshes, during winter months 2004, brought a live to the laboratory and placed in aquarium (30x30x60 cm) to observe its behaviors, movements and feeding habits. Some of these specimens were measured, the shell length, height and width, the aperture width and height by varneir caliper to the nearest 0.02 mm. 30 specimens were weighed (the wet weight), then dried in oven at 60°C for 24 h. and weighted (the dry weight), then the same specimens were placed in a muffle furnace at 500°C for 4h., and weighed (the ash weight), by microbalance type Sartorius. I had identified this snail according to my experience, and observations of the behavior of the snails, depending on the internet advice. After the identification, some specimens were saved in 5% formaline and send to the British Museum to conform the classification to the genus level. The snail was found in Abu-Alkassib farms, Near Al-Khoura farms and on Al-Garma date-palm trees.

RESULTS AND DISCUSSION

Taxonomy: Proceed to British Museum

Class: Gastropoda

Subclass: Pulmonata

Order: Stylommatophora

Super family: Helicacea

Family: Helicidae

Monacha obstructa (Pfeiffer,1842)

Description

The shell

Shell's length was reaching 14.3 mm, the empty shell is creamy white semicircular, but not globose, depressed with 4 voluminous whorls, has a flattened spire, fragile, rounded periphery and with almost uniform in colour, diameter markedly exceeding the height, shell surface nearly smooth with moderate grooves at the upper side. There is a narrow umbilicus in the lower side, the shell has no operculum (as we expected in the other Pulmonates). Aperture horn, toothless with a thick colour in edge which makes a yellow ring and no lips. Plate 1 shows the appearance and relative size of this species.



**Plat 1. *Monacha obstructa* a new white terrestrial snail
the appearance and size.**

The body

The snail has two pairs of tentacles, the longer and upper one has pair of eyes on its tip. The snail's mouth is on the bottom of the head with large foot. There is no boundary between the head and the foot, both can be retracted within the shell.

Observations

Land snail has a ventral foot, used for movement. The foot is usually elongated, flat, highly muscular, and fitted for creeping, sometimes swimming or floating with currents. It is provided by a pedal mucous gland and their secretion when dried, becomes silver trail after the snail.

In dry weather, the head and foot are withdrawn into the shell and the aperture of the shell is sealed with a membrane of mucous with a solid surface to protect its body from drying up. This species is suitable for rhythmic research, by measuring the time and speed of its movements.

The land snail is very voracious, its scrap off leaves and flowers to eat, it nibbles living plants like lettuce and celery, it also chewing fruits. This will cause serious damages to the crops, the farmers used extermination materials against snails to protect their vegetables and plants. The diet which has been ate by the snail effect on the colour of the feaces, which easily observed and collected and could estimate the digestive rates, food preference and energy budget.

Table (1) shows the morphology of land snail which represents the main features of this species for classification, it can be additionally distinguished on the basis of shell shape and dimensions. Also it is important to measure the wet, dry, ash and ash free dry weights of the whole body (shell and flash) of the snail, as features of the soft parts (Table 2).

Table 1: Linear shell measurements (mm) of the snail *Monacha obstructa* .

Characters (mm)	Range	X	± Sd	S ²	n
Shell length	6.5-14.3	10.631	1.948	3.795	45
Shell width	7.4-10.4	8.968	0.9204	0.847	22
Length/width	1.085-1.237	1.175	0.0393	0.0015	22
Shell height	3.3-7.5	5.357	1.051	1.105	30
Length/height	1.727-2.261	1.941	0.1222	0.0149	30
Aperture height	4.0-6.5	5.36	0.58895	0.347	15
Aperture width	4.5-8.4	6.287	0.991	0.98	15
Height/width	0.702-0.985	0.851	0.076	0.0057	15
Aperture width/shell width	0.587-0.808	0.694	0.066	0.0043	15

Table 2: The total weight measurements (mg) of *Monacha obstructa*.

Total weight (mg)	Range	X	± Sd	S ²	n
Wet weight	0.498-0.062	0.2325	0.132	0.0173	30
Dry weight	0.194-0.022	0.0738	0.224	0.0027	30
Ash weight	0.11-0.005	0.037	0.0316	0.001	30
Ash free dry weight	0.092-0.015	0.0363	0.0225	0.0006	30
Empty shell weight	0.082-0.1598	0.116	0.023	0.0006	30

Although the land snail is familiar and seen by plenty of people, but the anatomy and life history of this species were unknown, and many finer attributes remain unrecognized because it is a garden raider. It takes a toll on the spinach, cabbage and lettuce.

REFERENCES

1. K. J. Boss, Critical estimate of the number of recent mollusca. Occasional Papers on Mollusks, Museum of Comparative Zoology. Harvard Univ. 3:81-135.(1971).
2. E. L. Yochelson, An alternative approach to the interpretation of the phylogeny of ancient mollusks. Malacologia, 17(2): 165-191.(1985).
3. J.A. Pechenik, Biology of the invertebrates. PWS. Pub. Boston. 513 PP.(1985).
4. M.M. Ahmed, Systematic study on Mollusca from Arabian Gulf and Shatt Al-Arab. Center for Arab Gulf studies, Basrah Univ. Iraq. 75 pp. (1975).
5. J.Y. Luka, Population dynamics of *Theodoxus jordani* (Sowerby) in Shatt Al-Arab M.Sc. Thesis, Univ. Basrah. Iraq. 116 PP.(1982).
6. K. Y. Al-Dabbagh, and Y.T. Daoud, The ecology of three Gastropoda, Molluscs from Shatt Al-Arab. J. Biol. Sci. Res. 16: 155-167.(1985).
7. M.H. Al-Azzawi, La sedimentation actuelle sur la plaine de la basse mesopotamie (Iraq). Ph.D. Thesis, Orsey Univ. Paris., 923 PP.(1986).
8. A. A. Rabie, The ecology of two species of pulmonte snail *Lymnaea auricularia* (L.) and *Physa acuta* Draparanoud in Shatt Al-Arab River. M.Sc. Thesis, Coll. of Science. Univ. of Basrah, Basrah, Iraq. 115 pp.(1986).
9. A.F. Shihab.; B.A. Marina, and Y.T. Daoud, Phenotypic variation in the shell of the intertidal snail *Melanopsis nodosa* Ferrussac in the Shatt Al-Arab River. Marina Mesopotamica. 4: 43-54. (1989).

10. T.F. Al-Bassam, Phenotypic variation in the shell of the female of the snail *Neritina violacea* (Gmelin,1771). In Shatt Al-Arab region. M.Sc. Thesis, Coll. Science. Univ. of Basrah, Basrah, Iraq. 66pp.(1990).
11. I. M. Abdul-Sahib, Life history and production of two species of freshwater bivalve *Corbicula fluminea* (Müller,1774) and *Corbicula fluminalis* (Müller,1774) in Shatt Al-Arab region . M. Sc. Thesis, Marine Science Centre. Univ. of Basrah, Basrah, Iraq. 92 pp.(1989).
12. I. M. Abdul-Sahib, Characters of egg capsules of four gastropods in Shatt Al-Arab River System,with comments on the developmental stages of *Lymnaea auricularia* and *Physa acuta*. Marina Mesopotamica. 11(1): 123-138.(1996).
13. I.M. Abdul-Sahib, Energy flow in the snail *Theodoxus jordani* (Sowerby)(Gastropoda: Mollusca) in the Shatt Al-Arab River. NW. Arabian Gulf. IRAQ. Pakistan J. Mar. Biol. 7(1&2): 5-13. (2001).
14. B.A., Marina, Y.T. Daoud, and A.F. Shihab, Population biology and production of *Melanopsis nodosa* L. (Gastropoda) in Shatt Al-Arab river. Marina Mesopotamica. 9: 343-356.(1994).
15. I. M. Abdul-Sahib,; D.S. Salman and A.K.N. Jassim, Population Dynamics and Secondary production of the Asiatic Clams *Corbicula fluminea* and *C. fluminalis* (Muller) in the Shatt Al-Arab River system, Basrah, IRAQ. Marina Mesopotamica. 10(1): 1-25.(1995).

تسجيل جديد للقوقع الأرضي الأبيض (بطني القدم الرئوي) في الاهوار العراقية

ابتسام مهدي عبد الصاحب

قسم الأحياء البحرية ، مركز علوم البحار ، جامعة البصرة

الخلاصة

تم وصف وتصنيف القوقع الأرضي الأبيض (*Monacha obstructa* (Pfeiffer,1842) وتسجيله لأول مرة في مزارع أهوار محافظة البصرة، ويعتبر هذا القوقع ضارا اقتصاديا لكونه يقتات على الخضروات والنباتات الصغيرة بشراهة ، ويستخدم المزارعون المبيدات السامة للقضاء عليه .