

New record of the species *Spongilla lacustris* L. (Porifera) in Iraq

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Abstract

The species *Spongilla lacustris* was identified for the first time in Iraq, it was found during winter 1998 in an irrigation canal within the campus of the University of Baghdad (Jadiriya), water is drawn from Tigris river. The specimens were found in water samples of sizes ranging between 5-50 cm³, with yellowish color. It was found in two habitats, one as attached on submerged aquatic plant *Ceratophyllum* sp., and the other on the canal bottom (concret material). Some physico- chemical characters were determined including conductivity, salinity, pH, total alkalinity, total hardness, Ca, Mg, and dissolved oxygen. Water quality was fresh, alkaline, hard and well aerated.

Introduction

Demospongia is the largest class among most of the sponges with diverse and complicated structures. *Spongilla* is probably the best known genus of the fresh water sponge (3,4). Species of this genus grow in streams, ponds and lakes as irregular encrusting masses on sticks and stones. They grow up to the size of a hand and are usually yellow or brown in color (2). They belong to the family Spongillidae. They could be found through out the world streams, lakes and ponds, as low irregular encrusting or slightly branching masses on stones, sticks, plants and other submerged objects. They may also be found on the soft muddy bottoms (4).

Materials and Methods

During winter 1998 water samples of sizes ranging between 5-50 cm³ were collected from an irrigation canal within the campus of the University of Baghdad (Jadiriya), water is drawn from Tigris river. Submerged objects were examined for sponges by wading in shallow water, and dragging the samples from deep water with a hooked wood pole. Spicules were freed from the sponges and prepared for microscopic examination according to the method of Pennak (6). Samples were placed on a microscope slide, few drops of nitric acid were added, and the slide was heated on a hot plate until organic digestion was completed, then Canada

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balsam was placed as a mounting medium. Some of the fresh water parameters such as, conductivity, salinity, pH, total alkalinity, dissolved oxygen and total hardness, Ca, Mg were determined according to methods indicating by APHA(1).

Classification and Discussion

Water parameters were as follows; salinity 0.19 parts per thousand, conductivity 1002 $\mu\text{sem}\cdot\text{cm}^{-1}$, pH 7.8, alkalinity 168 $\text{mg}\cdot\text{l}^{-1}$ CaCO_3 , hardness 341 $\text{mg}\cdot\text{l}^{-1}$ CaCO_3 , Ca 99 $\text{mg}\cdot\text{l}^{-1}$, Mg 35 $\text{mg}\cdot\text{l}^{-1}$ and dissolved oxygen 10.52 $\text{mg}\cdot\text{l}^{-1}$.

The sponge classification is based largely on the skeletal structure and the number of spicule's axes or rays of the spicules and their shape and distribution (5). According to Kotapl (4), demospongia comprises three subclasses:

1. Tetractinellida.
2. Monaxonida.
3. Keratosa.

The species *Spongilla lacustris* belong to Monaxonida. By following Edmondson (7) and Kotpal (4), the full classification of this species will be as the following:

Kingdom :Animalia.

Phylum :Porifera.

Class: Demospongia.

Sub-Class :Monaxonida.

Order: Halosclerina.

Family :Spongillidae.

Sub-Family: Spongillinae.

Genus: Spongilla.

Species: *Spongilla lacustris*

The sample's spicules belong to one kind, two-rayed pointed at both ends, slightly curved and without special arrangement, the sponge fibers are present. It was found in fresh water habitat from the irrigation canal carrying

Tigris River water to irrigate the land of Baghdad University. The samples were between 5-50 cm^3 in size, and bright yellow in color with several small apertures which are scattered over a very rough thin dermal membrane overlying large subdermal cavities (Fig 1A). The sponge was attached to the submerged plant. The skeleton was found to consist of the typical needle-like (rod-like) spicules (Fig. 1B). Figure (1C) shows the photograph of the fine structure of the fresh prepared spicules as seen in the microscope. According to Edmondson (7) at page 300, these features indicate that the sponge is *S. lacustris* (Linnaeus), 1759.

The sponge is usually green in color, frequently giving off long cylindrical fingerlike branches. Skeleton spicules are smooth amphioxi, straight or slightly curved. Dermal spicules are slender amphioxi, microspined. Gemmule spicules as found to be subcylindrical, pointed or rounded, variably curved or straight, spined, arranged variably (7).

The identified species *S. lacustris* is considered as a new record for the Iraqi fauna. The fresh water ecology in Iraq is rich with many aquatic invertebrates which need more investigations to cover them.

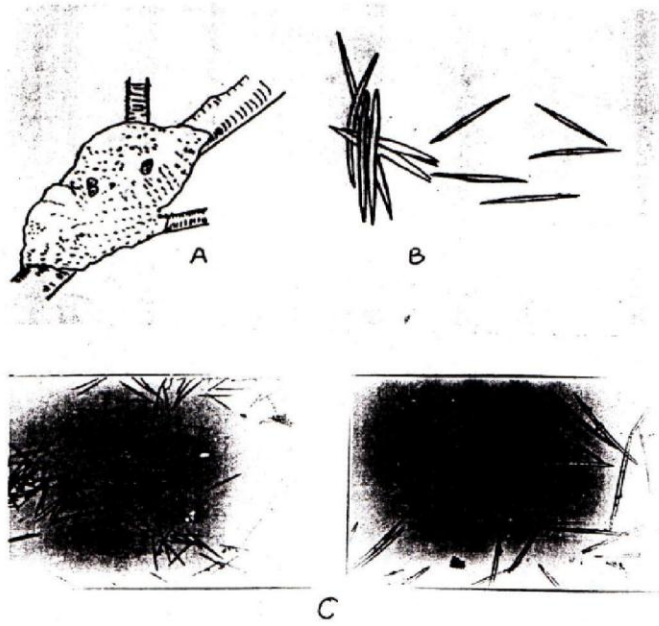


Fig (1):
A. Colony of *Spongilla*.
B. Monaxon spicules of CaCO₃.
C. Photographic picture of a fresh monaxon spicules.

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تسجيل جديد للنوع *Spongilla lacustris* L

من الاسفنجيات للاحياء المائية العراقية

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الخلاصة

شخص النوع *Spongilla lacustris* L. في نهر دجلة (القناة الاروائية في الجادرية) خلال شتاء ١٩٩٨ لأول مرة. تراوح حجم النماذج المجموعة بين ٥ - ٥٠ سم^٣ وكانت ذات لون اصفر فاتح. وجدت النماذج المجموعة في حالتين: الاولى متعلقة على النباتات المائية (*Ceratophyllum* sp.) والثانية ملتصقة على القاع الكونكريتي للقناة الاروائية. درست بعض العوامل البيئية الفيزيائية والكيميائية منها التوصيلية الكهربائية والاس الهيدروجيني والملوحة والقاعدية الكلية والعسرة والاكسجين. كانت المياه عذبة عسرة قاعدية وذات تهوية جيدة.