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SOME NEW SPECIMENS FOR ZOOLOGICAL TEACHING COLLECTIONS INTRODUCED FROM MOROCCO IN THE FACULTY OF AGRICULTURE – U.A.S.V.M. BUCHAREST, ROMANIA

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Abstract

Completing the collections for a zoology laboratory, as part of obligatory student's instruction, proves to be a long and ongoing process, in which passion, altruism, patience and some kind of self-sacrifice are often involved. Year after year since its beginning, the Biology specialization's laboratory from University of Agronomic Sciences and Veterinary Medicine of Bucharest reached an important number of vertebrates and macroinvertebrates specimens, most of them belonging especially from field sampling during personal trips or summer practices. For the pedagogical purpose, our collections received recently important help from Dakhla expedition (March-April 2012). Some interesting and well-preserved animal specimens from Morocco/Western Sahara, like whole mollusc shells (Solen, Mytilus, Fissurella, Patella) with barnacles attached, scorpions (Buthus), myriapods, an Raja clavata egg, turtles (Mauremys), and many others, never owned before by U.A.S.V.M. Bucharest, will represent an useful tool in the university practical lessons.

Key words: *teaching collections, zoology, Morocco.*

INTRODUCTION

Around the world, each respectable university with a biological profile holds a zoology department enriched with numerous collections, used for study, research or access of a broader public segment. Teaching collections are of great importance for science instruction at any level (Riccardo et al., 2012). The Biology specialization of the Faculty of Agriculture within University of Agronomic Sciences and Veterinary Medicine of Bucharest, in the short history from its establishment, has managed to achieve various zoological pieces, serving as a teaching collection, useful day by day in the educational process, in the light of fundamental character of the zoology disciplines, for training prospective biology and forestry students. Our specimens can be grouped in three categories: micro slides stored in appropriate slide cases (protozoans, metazoans), invertebrates (the bulk of the resources) and chordates. The majority of specimens are stored in liquid preservatives, alcohol or formaldehyde, sealed in glass jars being old enough to claim at some point their reconditioning. The macroinevertebrates covers the most important systematic groups studied within this academic discipline (sponges, coelenterates, polychaetes, molluscs, chelicerates, crustaceans, insects, echinoderms), representing local but also worldwide in origin fauna. However, acquisition of new species by donations is always welcome. In order to completing the collections, one effort is not enough; in this process, have participated and will continue to do so with enthusiasm: teachers, students, volunteers and friends who understand our approach. Taking care of any kind of collection requires a special kind of passionate people (Verschelde and Adriaens, 2012). The actions involves completion of some phases, often delicate: field trips, sampling, preparation, installation, conservation, identification, labelling and the display of the animals that will serve as teaching support.

Among the exhibits from various places of the world, our laboratory collection recently added some specimens brought from the scientific expedition Dakhla, in Morocoo/Western Sahara, between 15th of March and 21th of

April 2012, organized and funded by "Grigore Antipa" National Museum of Natural History of Bucharest, "Oceanic Club" Society of Oceanographical Exploration and Protection of the Marine Environment and the TV channel Da Vinci Learning.

MATERIALS AND METHODS

Some of the animals sampled on the coast of Eastern Atlantic were whole preserved, on the spot, in alcohol 90%, subsequently transported to the "Grigore Antipa" National Museum of National History of Bucharest laboratories. Much later, one or more specimens of species recorded for the Morocco area, were donated to the Faculty of Agriculture from U.A.S.V.M. Bucharest. The main collecting sites from Africa were represented by the following points: Cap Sim, Sidi Kaouki and Dakhla (Figure 1).

RESULTS AND DISCUSSIONS

The zoological material brought to the laboratory of our faculty comes from both lagoons and intertidal areas but also from desertic zones from Northern Africa.

Figure 1. Collecting sites (map source: Google Earth)

The specimens added to our teaching collections were selected by category and identified. So far, we were able to identify the following invertebrates specimens: Mollusca, Gastropoda (*Conus*, *Fissurella*, *Osilinus*, *Patella*, *Turritella*); Mollusca, Bivalvia (*Mytilus*, *Solen*); Athropoda, Chelicerata: Scorpionides (*Buthus occitanus*); Arthropoda, Chelicerata: Araneae; Arthropoda, Crustacea: Maxillopoda, Cirripedia (*Balanus* sp.); Arthropoda, Malacostraca: Amphipoda, Gammaridea; Malacostraca: Isopoda, Oniscidea; Malacostraca: Decapoda, Brachyura; Arthropoda, Myriapoda: Chilopoda; Arthropoda, Insecta: Coleptera and Hymenoptera. Also, of the chordates, we received one egg of *Raja clavata* (Chondrichthyes, Rajiformes), a *Trachurus mediterraneus* specimen (Osteichthyes, Perciformes) and the reptiles: *Mauremys leprosa* (Testudines, Geoemydidae), *Saurodactylus* sp. (Squamata, Gekkonidae), *Stenodactylus* sp. (Squamata, Gekkonidae) and *Trapelus* sp. (Squamata, Agamidae).
The barnacles (*Balanus* sp.) are attached to molluscs like limpets (*Patella* sp.) and top snails (Trochidae) (Figure 2). Before achieving those complete specimens of *Patella* (with muscular foot) and *Solen* (with both valves still connected, leg and siphons exposed), our collection resources were based solely on dry empty shells of their kind. The reigning notion is that animals collected alive are the most beautiful of all (Bruyne, 2004).

Figure 2. Molluscs from Morocco

As regarding the scorpions, *Buthus occitanus* (Figure 3) represents a new species for our teaching collection, which contained till now one specimen of *Euscorpius carpathicus* and another one of *Pandinus* sp.

Figure 3. *Buthus occitanus*

The thirteen different sizes specimens brought from Morocco, will serve for pedagogical purposes in Invertebrate Zoology practical lessons, where students must indicate chelicerae, claws, pectines and the main regions of a scorpion's body: prosoma, mesosoma and metasoma.

New reptiles for our teaching collections are: the turtle *Mauremys leprosa* (Figure 4), the gekkonids *Saurodactylus*, *Stenodactylus* and also the agamid *Trapelus* (Figure 5, from left to right). The first shark egg of the collection dates from Dakhla expedition and belongs to *Raja clavata* (Figure 6).

Figure 4. *Mauremys leprosa* specimens

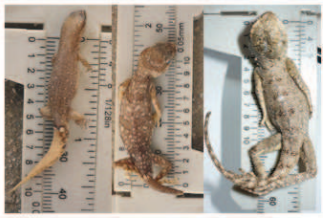

Figure 5. New squamates species for our teaching collections

Figure 6. Raja clavata egg from Cap Sim

CONCLUSIONS

Thanks to contributions from scientific expedition in Dakhla, Morocco in 2012, the Biology students from Faculty of Agriculture - U.A.S.V.M Bucharest, will be the beneficiaries of a valuable didactic material, unique and well preserved. These are essential features when it comes to apply the strict theoretical concepts learned from the zoology lessons.

Absolutely new for our zoology lab are the gekkonid specimens of *Saurodactylus* and *Stenodactylus*, agama *Trapelus*, whole limpets (*Patella* sp.), whole bivalves of *Solen* sp. and also the *Raja clavata* shark egg.

As regarding mollusks collection, the students will be able to make once and again the difference between conchology – the study of dry mollusc shells, and malacology– the study of wet, whole organisms. For this purpose, they will be able to compare, for example, the previously existing empty shells of *Patella*, *Fissurela*, *Mytilus*, *Solen* to name a few, with whole organisms of these species, recorded in Morocco.

All specimens mentioned in this paper are wet preserved in ethanol 70%, labelled and kept in transparent PVC jars with opening-closing system, in order to be easily handled, if necessary, for demonstration purposes.

In the future, we aim: finalization of the database hosted on a variety of zoological taxa in the Faculty of Agriculture; identifying, preservation and proper labelling of the older or newer significant material used for study in zoology lessons in our University; attracting people interested in contributing to our effort to enrich the collections, and also establishing new contacts with various institutions that could help in any way.

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