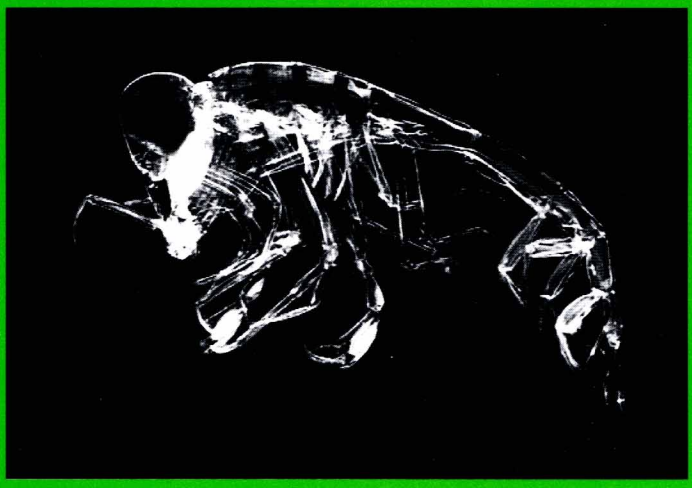
THE HEBREW UNIVERSITY OF JERUSALEM

HAASIANA

A NEWSLETTER OF THE BIOLOGICAL COLLECTIONS OF THE HEBREW UNIVERSITY

No. 2



Jerusalem, March, 2004

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Compiled by D. Golani and M.N. Ben-Eliahu

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Cover photograph of hyperiid amphipod by Dr. David Darom.

Contributions appearing in the newsletter should be considered as preliminary notes which have not been peer reviewed.

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Contents

From our director

The Biological Collections of the Hebrew University of Jerusalem have evolved hand in hand with the research programs of individual faculty members of the Hebrew University since the institution's establishment some 80 years ago. The forefathers of Israeli botany and zoology, including Israel Aharoni, Georg Haas, Alexander Eig, Michael Zohary and Naomi Feinbrun-Dothan, together with their enthusiastic technicians, students, and associates, unearthed and illuminated the rich and attractive, and sometimes secretive and elusive, flora and fauna of Palestine. Their work paved the way for ideas and views espoused by the current generation of biologists on the ecosystems of Israel, and on the role of biodiversity in shaping the structure and function of these ecosystems.

These biological collections – some of them the most complete for the Middle East region – now serve as a safe repository and reliable baseline for the biota of Israel at the wake of unprecedented global environmental changes that impact Israel and the Mediterranean basin. These changes are likely to drive modifications in environmental processes affecting and affected by the assemblage of biological species with whom we share the land of Israel. Furthermore, due to the geographic positioning of Israel at the crossroads of several bio-geographical and climatic realms, the biodiversity of Israel has the potential to serve as a sensitive indicator for larger-scale regional and global changes. Thus, the anticipated environmental changes present a challenge to both the Israeli and international research communities, of which civil society and policy-makers have high expectations.

Unfortunately, the Biological Collections lost the services of several of their curators during the last decade – we dearly miss those who passed away, and extend our best wishes to those who retired. A faithful and dedicated cadre of Collection Managers continues to maintain, preserve and make available to users these precious Collections. At the same time, to realize their mission and full potential for supporting environmental research and stewardship, the Collections await the attention of a new generation of curators, still to be recruited. The most ambitious and critical mission for the near future is to attract and enlist enthusiastic researchers at the cutting edge of ecology and evolution who will generate the knowledge required to direct a responsible stewardship of our planet and its life-supporting system.

This brochure provides a glimpse of the Biological Collections of the Hebrew University and samples the activities they have generated over the last five years. It will, we hope, serve as a guided tour and introduction for future faculty, guests, students and other users of this national asset.

Prof. Uriel Safriel, Director
February, 2004

Introduction

Haasiana, the Newsletter of the Biological Collections of the Hebrew University of Jerusalem, is hereby renewing its publication after a hiatus of nine years. The newsletter is named for the late Professor Georg Haas, one of the founders of zoological research at the Hebrew University and in Israel. The nine years that passed since the last Haasiana were problematic as concerns personnel associated with the collections: Emeritus Curators Prof. A. Ben-Tuvia, Section of Fishes and Prof. C. Heyn, Director of the Herbarium, and Curator Prof. E. Tchernov, Director of the Section of Paleontology and Comparative Osteology, Mammals and Birds passed away and several colleagues, Curators Prof. F.D. Por, Prof. Y.L. Werner, and Collections Managers, Dr. M.N. Ben-Eliahu and Dr. D. Heller retired.

Prof. Adam Ben-Tuvia, 1919-1999

Prof. Clara Heyn, 1924-1989

The renewed publication of *Haasiana* corresponds to an increase in worldwide awareness of the importance of scientific collections in the study of biodiversity and ecology. With the collections under new direction, the present issue of Haasiana indicates a renewed vitality. It presents the current status of the collections and the work accomplished during the nine unreported years.

We plan to publish *Haasiana* biannually. Each issue will present a short account of the activities and articles published since the previous issue; in addition, one of the collections will be presented in greater detail. The curator of that collection will review its history, inventory, special items of interest, and items of special scientific importance, such as type lists, etc., that are not always published in other venues due to their breadth and/or regional aspects. Due to the many years since its previous publication in 1995, the current issue of *Haasiana* cites only selected publications. This issue is dedicated to the memory of Prof. Eitan Tchernov and focuses on the Paleontology Collection.

Dr. D. Golani
Coordinator of the Collections

I. Programs common to all the Biological Collections

Integration of collection databases into the BioGIS Project

The Biological Collections of the Hebrew University are actively participating in the BioGIS project. BioGIS (Israel Biodiversity Information System) was established in order to create a national database of the flora and fauna of the state of Israel. Joint partners in BioGIS include the Hebrew University of Jerusalem (HUJ), Tel-Aviv University (TAU), the Israel Nature and Parks Authority (INPA) and the Society for the Protection of Nature in Israel (SPNI). At this stage, the Hebrew University has contributed data from the following biological databases: the Herbarium (bryophytes and vascular plants), Molluscs (land snails and marine snails), Fishes (freshwater fishes), Mammals, and Herpetology. The BioGIS database is open to the public through its website (http://www.BioGIS.huji.ac.il).

Prof. R. Kadmon
Director, BioGIS Project

Collaboration between the Biological Collections and "The Nature Park and Galleries" Museum

The Biological Collections, which formerly served primarily a research function and a teaching function within the university, have now been given the opportunity to serve a public role as well through their cooperation with the Hebrew University's new Museum, "The Nature Park and Galleries", which opened to the public in August, 2003.

In this early stage of the Museum's operation, the public's contact with the Collections occurs primarily in three ways:

- Interactive demonstrations by Museum guides to groups seated in the Museum's demonstration gallery. So far, two different demonstrations have been developed. The first is about mammalian skeletal anatomy and its wide range of adaptations, and the second is about the same subject, but with regard to molluscs. Additional subjects are now under development.
- "Please Touch" exhibits of specially selected collections items, where a Museum guide explains selected specimens to visitors and permits them to be touched.
- Behind the scenes guided tours of the collections. Here, small groups of visitors have direct contact with the curators, and they can both see and learn about how the collections function, and the wide range of research being carried out there. All the collections have contributed time and effort to these tours, which have sometimes included some laboratory experience, including training the tour guides.

Plans are in progress for additional ways of sharing the knowledge and the interest in the Collections with a wider public.

Professor Jeffrey Camhi
Director, Nature Park and Galleries

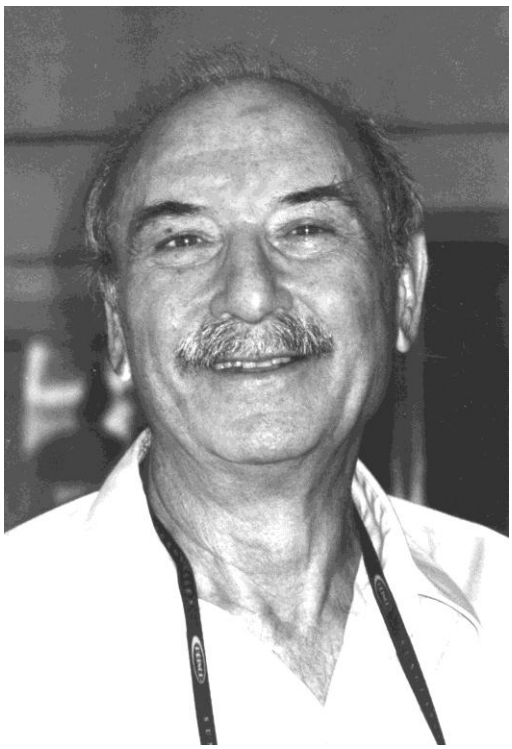
Hebrew common names for Israeli taxa

Members of the staff of the Hebrew University Biological Collections are participants in an on-going committee whose task is to advise the Academy of the Hebrew Language on providing Hebrew names for the fauna of Israel. The Committee for Zoological Terms comprises Dr. Ch. Dimentman (Chairperson), Prof. J. Heller and Dr. D. Golani. Recent decisions of the committee led to completion of the list of names for Mollusca, prepared by J. Heller (more than 800 names), freshwater fishes, updated by D. Golani (ca. 60 names) and cartilaginous fishes, prepared by D. Golani (ca. 150 names). Names for bony fishes, more than 600 taxa, are currently awaiting confirmation of the committee. The public can access the lists of Hebrew names for Israeli animals at the website of the Academy of the Hebrew Language: http://hebrew-academy.huji.ac.il/index.html.

Dr. D. Golani
Coordinator of the Collections

In memoriam, Professor Eitan Tchernov, 1935 - 2002

Prof. Eitan Tchernov, our cherished mentor, colleague and friend, passed away on December 13th, 2002 after a prolonged and valiant struggle against cancer.



Prof. Eitan Tchernov

Prof. Tchernov was born in Tel Aviv in 1935. From a very early age, he showed a keen interest in natural history. So much so, that by the time he began his studies in zoology at the Hebrew University of Jerusalem, his knowledge in this field was legendary. After completing his Ph.D. at the Hebrew University, Prof. Tchernov took up an academic appointment in this institution in 1966. He attained the position of Full Professor in the Faculty of Life Sciences in 1987. In 1991, he founded the Department of Evolution, Systematics and Ecology, aimed at promoting inter-disciplinary studies in these fields, and served as its first chairman.

Prof. Tchernov created a large and well-equipped laboratory and was successful in greatly expanding the existing collections at the Hebrew University of palaeontological, archaeozoological and comparative fauna (i.e., recent mammals and birds) from Israel. These now comprise the most comprehensive collections from the region of their kind, and students and researchers from all over the world come to Jerusalem to study them.

Prof. Tchernov participated in many palaeontological and archaeological field expeditions, including surveys and excavations of the Triassic vertebrates in Ramon erosional circle, (Negev); Miocene outcrops (Hatzeva Formation) in the Negev; and, the early Cenomian site of ‘Ein Yabrud, and in many seasons of excavations of the archaeological sites of the Kebara cave (Mount Carmel); theHayonim cave (Western Galilee); and ‘Ubeidiya (Jordan Valley). The

expeditions were typically multi-national and inter-disciplinary in nature, and the scientific reports deriving from them greatly expanded the knowledge of the history of the fauna in the area, as well as elucidating the influence of man on the biota in ancient times.

Prof. Tchernov was an inspiring and popular lecturer and was successful in conveying to students his passion and enthusiasm for all areas of biology. The courses he taught ranged over a wide field, including palaeontology, faunal communities of the Near East, biogeography and evolution. The high point of many of these courses were the field trips affording the students an opportunity of spending time with Prof. Tchernov outside the university and benefiting from his eclectic knowledge in informal discussions around the campfire.

Prof. Tchernov's academic career was notable for its interdisciplinary nature. This is expressed in the broad spectrum of his research and by the more than 150 scientific publications dealing with biogeographical history; biotic turnover; exchanges and extinction in South-West Asia; spatial and temporal changes in the structure of communities; guild structure along latitudinal gradients and chronoclines; and the effects of competitive exclusion on ecomorphological displacement; micro- evolutionary processes in birds and mammals during the Neogene and Quaternary periods; paleoenvironmental and paleoecological changes during the Neogene and Quaternary of the southern Levant; and the ecological impacts of man on the global and regional changes of the habitats; biogeography, dispersal events and paleo-distribution of hominids, and the origin of modern humans; problems in the exploitation of the resources in the history of man; sedentism, socialization and the processes of early domestication; taphonomy and site formation processes in non-anthropogenic and anthropogenic deposits; ancient DNA and phylogenetic distances in some groups of mammals; management of natural reserves, biosphere reserves and conservation ethics (see list of publications below).

Prof. Tchernov was an internationally recognized specialist on the Order Rodentia, and his research on micro-mammalian evolution, which began with his doctoral research on the Pleistocene rodent fauna of Israel, continued throughout his career. Seminal publications include his doctoral thesis (1968); a monograph on the Pleistocene birds of 'Ubeidiya (1980); one on East and North African crocodiles (1985); and another on the fauna from the Pre-Pottery Neolithic A site of Netiv Hagdud (1994). Prof. Tchernov also edited a volume on the fauna from the site of 'Ubeidiya (1986).

Although primarily focusing on the zoology, archaeozoology and palaeontology of Israel, Prof. Tchernov's research activities extended beyond its borders and included collaborations with international scholars in East Africa, America, France, Greece and other Near Eastern countries. His most recent field work and research focused on material from the Cretaceous site of Ein Yabrud (Israel) and included collaboration with Prof. O. Rieppel and Prof. L. Jacobs (USA) in describing a snake with vestigial limbs from this site. Their findings have led to major revisions of Ophidian taxonomy and evolution.

Prof. Tchernov was actively involved in the establishment and development of the Israel Nature Reserves Authority and served as its first ranger. In later years he was a member of its scientific advisory board as well as that of the Society for the Protection of Nature. From 1979 to 1991, he was the chairman of the "Israel National Committee on the Problems of the Environment" He continued to play a leading role in nature conservation in Israel serving as its representative on the UNESCO-committee "Man and the Biosphere" (MAB)

and the Scientific Committee on the Problems of the Environment (SCOPE). Since 1986, Prof. Tchernov was co-editor of the Hebrew magazine "Sevivot", dedicated to environment and environmental education. He was a member of the International Committee of the Cooperation of Archaeozoology from its establishment in 1975 and a member of the editorial advisory board of "Archeozoologica" and "The Holocene". In the last years Prof. Tchernov was the coordinator of the "Wolf National Research" Nature Reserves Authority project in the Golan Heights (1996-2000). Prof. Tchernov also found time to contribute in various ways to the Biblical Zoo in Jerusalem and served on its research committee.

Prof. Tchernov had a major influence on the development of the field of Archaeozoology in Israel. He was a mentor to a new generation of Israeli archaeozoologists. It is primarily due to his dedication and perseverance that Archaeozoology is now a recognized discipline in this country. With his passing, Prof. Tchernov has left an enormous void, as a teacher, colleague and friend.

Dr. R. Rabinovich

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III. THE BIOLOGICAL COLLECTIONS

1. PALEONTOLOGY, MAMMALS AND BIRDS

Staff

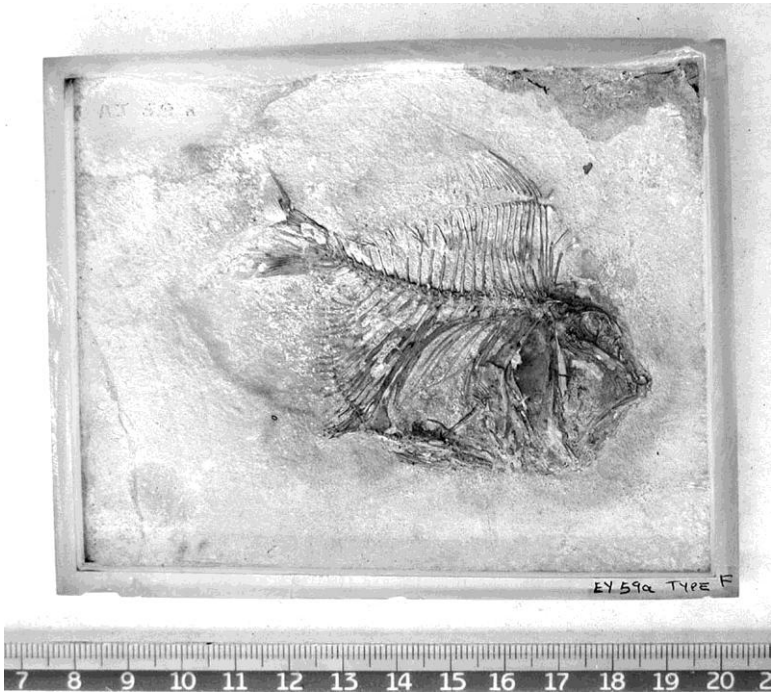
Prof. E. Tchernov Curator and Director (deceased, 2002)
Dr. R. Rabinovich (Ph.D.), Collection Manager
T. Bar-El (M.Sc.), Academic Technician
G. Beiner (M.Sc.), Conservator

Associated researchers

Dr. Sh. Ashkenazi
L.K. Horwitz

The paleontology collection

The collection holds an impressive body of information on the fossil records of the whole region, the faunal evolution of the eastern Mediterranean, its biogeographic origin, and implicitly, all the available information about the ancient climatic conditions of the area. An important site is, for example, the bone-bearing beds in Makhtesh Ramon, dated to the Triassic period. Many thousands of remains, containing the earliest known terrestrial vertebrates from the southern Levant were collected, studied and published. Another world-famous paleontological collection is that from `Ein Yabrud (north of Jerusalem) of Early Upper Cretaceous fossils. This collection yields a wealth of rare primitive crustaceans, molluscs and echinoderms, as well as rare forms of holosteans and teleosteans. Among the most remarkable fossil finds of recent years were the well-preserved remnants of three different genera of early snakes. Phylogenetically, these fossils appeared in the geological time-scale very close to the origin of snakes. Thus, the fossil snakes of 'Ein Yabrud possibly elucidate some unknown early steps in the evolution of the Ophidia.



Type specimen of fossil fish, *Aipicthyoides galeatus* Gayet, 1980, from Ein Yabrud formation.

One of the major attractions of the collection is abundant material from dozens of Quaternary sites which record the faunal history of the area. The sites represent landmarks in the history of humankind in the area from more then 1 million years BP until recent time, and their influence on the local fauna.

The recent mammalian comparative collection

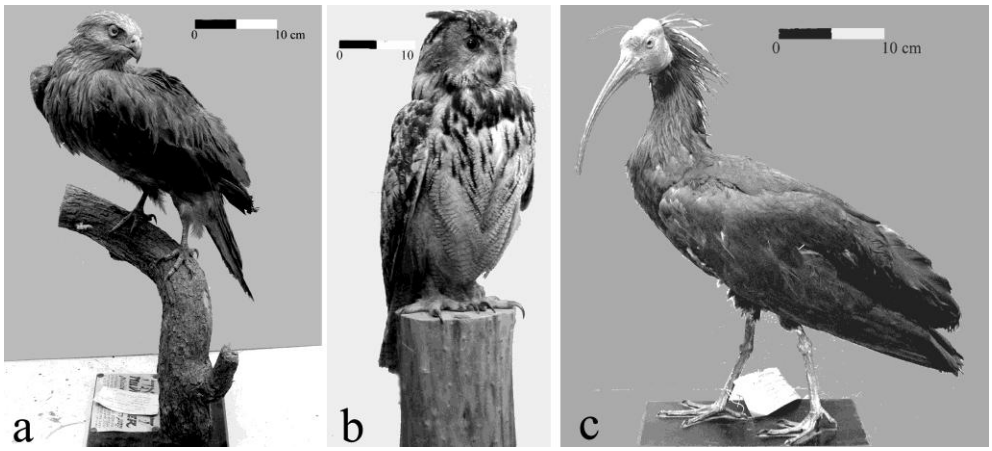
The recent mammalian comparative collection (ca. 10,000 specimens) represents mainly the local fauna of Israel and adjacent regions. It includes specimens of all taxa collected during the past 60 years. The collection represents populations from various regions of the country. Prof. I. Aharoni started the collection at the beginning of the 20th century. He was followed by researchers and students who collected animals for research and teaching. To mention just a few: Dr. D. Harrison, Prof. G. Haas, and Dr. S. Davis. During the last twenty years, the collection flourished due to the efforts of the late Prof. Eitan Tchernov and his students. Contacts with various institutions and individuals have enriched the collection. The long-lasting cooperation with the Israel Nature and Parks Authority has provided specimens from various areas, thus allowing additional tools for monitoring population changes. The collection is being computerized, and, during this process the specimens are being reviewed.

Mounted lion skeleton from the recent mammals collection compared with an ancient lion femur, ca. 40,000 years BP

Rare species, extinct species and endangered species, including type specimens, are present in the collection. From the early years, the policy of the curators was to preserve a complete skeleton, thus most specimens are complete animals. Each specimen has a number that appears on every skeletal element. Parts of the rodents (ca. 200) are preserved as a study skin collection as well as skeletal elements. Eco-morphological research of the various mammalian species is performed on the specimens in the collection. The recent mammal collection also enables comparison with the archaeozoologcial and paleontological collections, serving research and teaching purposes. It is consulted and visited by numerous researchers every year. Throughout the years, many people have contributed to enlarging the numbers of species comprising the collection. We especially acknowledge the contributions of the following active students of recent years: Dr. G. Kahila Bar-Gal, L.K. Horwitz, Dr. G. Davidowitz, Y. Motro, M. Belmaker, T. Stuker, and G. Beiner.

The recent avian comparative collection

Prof. Israel Aharoni established part of the avian collection that comprises stuffed birds, eggs and nests, at the beginning of the 20th century. Collected from Israel and the adjacent areas, it has rare, extinct and endangered species and numbers ca. 1,000 specimens. It includes specimens of all taxa collected during the past 60 years with representative populations from various regions of the country.



a. *Milvus migrans* (Black kite). b. *Bubo bubo* (Owl). c. *Geronticus eremite* (Bald ibis). *a,c* collected by I. Aharoni.

As with the mammals, complete skeletons are preserved, thus most specimens are complete animals. It serves as a key collection for osteological comparison with the archaeozoological and paleontological collections, serving research and teaching purposes.

Archaeomalacological activities in the National Mollusc Collection

More and more archaeologists have reached the conclusion that the molluscs found during their excavations may yield a wealth of information. Shells recovered at archaeological sites may have been used for such various items as food, music and/or warning instruments (shell trumpets), personal ornaments in the form of shell beads or pendants, or shell money. They may also reveal trade links or in the case of local land- and freshwater molluscs: changes in the climate. In the latter case it may help the malacologist to understand better evolutionary patterns or fairly recent changes in the distribution pattern of certain species.

The late Prof. Eitan Tchernov always encouraged collaboration between archaeologists and malacologists. As a direct result of his initiatives, archaeomalacological material is regularly reaching the National Mollusc Collection and the number of reports in this field is growing rapidly.

Both the Malacological and the Paleontological Collections play an important in these studies. The first is used intensively as a reference collection for comparing the often heavily fragmented archaeological material with much better preserved recent samples. The archaeozoological section of the second collection serves in many cases as a depository, where the studied material will be permanently stored.

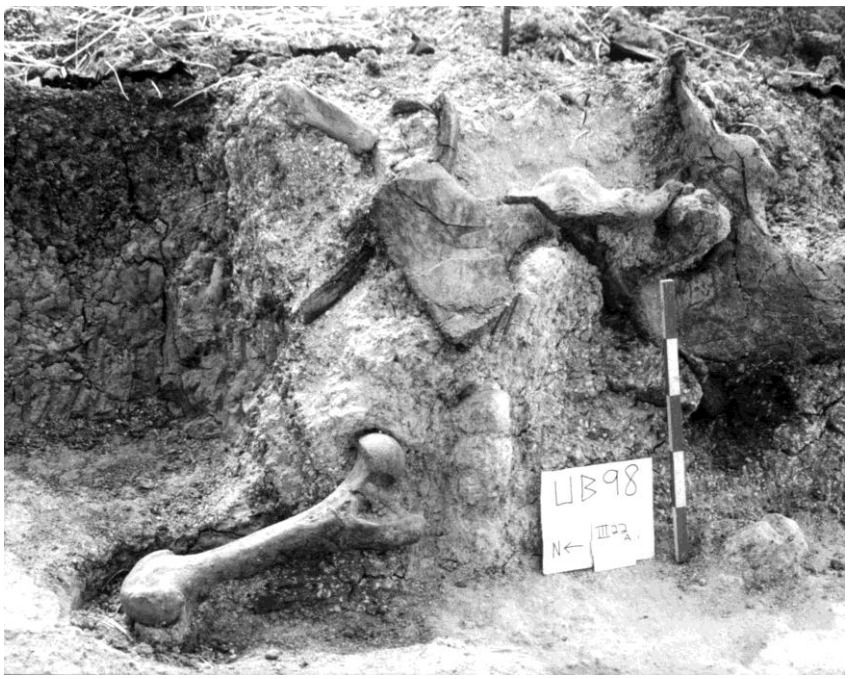
Henk K. Mienis

Activities and grants

The Cenomanian Locality of 'Ein-Yabrud, and the Cretaceous Biogeography of Southwest Asia. (ASF 2000-2004, Prof. E. Tchernov).

The objective of the research was to provide a biogeographical context for the Cenomanian fauna of 'Ein Yabrud, and to examine its significance for understanding broader faunal relationships between Gondwana and Laurasia in light of tectonic models of the origin of the Mediterranean Sea and adjacent land areas. The fundamental premise is that the distribution of both terrestrial and marine vertebrate fossils is essential to understanding the construction of southern Europe, and the geological history and the evolution of the Mediterranean Sea.

Paleontological, Paleoecological taphonomical and archaeozoological research of the site of 'Ubeidiya, a Lower Pleistocene Site in the Jordan Valley. (GIF and Thyssen, up to 2000, Prof. E. Tchernov).



Extinct species of Hippopotamus (*H. behemoth*) carcass from 'Ubeidiya (1.5 Ma) in situ. An endemic species found only in Ubeidiya. Photo shows femur, pelvis and foot bones. Scale 50 cm. Photograph of site by E. Tchernov.

The site of 'Ubeidiya, situated in the Jordan Valley, has been biochronologically dated to ca. 1.4 million years ago; it has a rich faunal assemblage and a long temporal sequence through out the geological sequence. Being one of the earliest hominin sites outside Africa, it can serve for the establishment of a comparative biostratigraphic baseline for the late Pliocene-early Pleistocene period, associated with the cultural chronostratigraphy and correlated with other known sequences. Building-up a model for the association between biotic and hominin dispersal events in Africa and Eurasia. Detailed faunal analysis will enable a better evaluation of the paleoecological conditions that prevailed during this period as related to global climatic changes. Another, central, goal is to understand the subsistence strategies of early southern Levantine hominids.

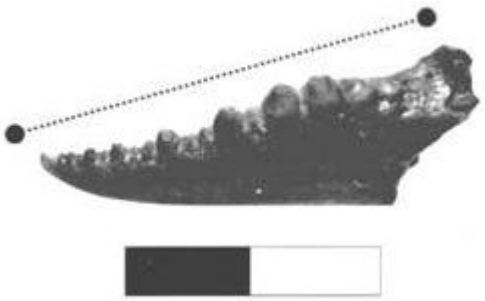
Site Formation Processes - The Role of Hominin and Natural Agents in the Formation of Striations and Cut-Marks on Bones at the Acheulian Site of Gesher Benot Ya'aqov, Israel. (GIF 2001-2004,. Prof. N. Goren-Inbar, Dr. S. Gaudzinski and R. Rabinovich).

A sample of large mammal bones originating from the Acheulian site of Gesher Benot Ya'aqov is investigated in order to gain understanding of hominin behavior and of natural processes involved in site formation processes. Striations and cut marks visible on the bones document processes that took place during the Lower/Middle Pleistocene (0.78 my BP) and later. The proposed study aims to investigate the processes that damaged the bones and

attempts to characterize each of these phenomena. The results will contribute substantially to the on-going multidisciplinary Gesher Benot Ya'aqov project. Hominin behavior and cognitive abilities are known from the lithic assemblages and will be integrated with the faunal-derived results. These will be compared with African data and enable examination of hominin adaptation patterns and specific activities along the Syrian-African Rift Valley. The taphonomic results will contribute unique data of site formation processes in the tectonically active "Levantine Corridor".

Freshwater Crab Remains from the Pleistocene Site of Gesher Benot Ya'aqov (GBY) - Natural Populations or Anthropogenic Accumulations? (Care 2003-2004, Dr. Sh. Ashkenazi)

Gesher Benot Ya'aqov (GBY), a waterlogged Pleistocene site (0.78 My), in the Northern Jordan Valley, Israel, provides important clues to environmental influenceson hominin life during the "out of Africa" migration. The site's aunal assemblage includes ca. 4,060 fragments of fossil freshwater crab remains, unusual both in quantity and density. This exceptional abundance, of which some parts seem burnt, raises the question of whether its accumulation was a result of anthropogenic impact (e.g., diet resource), a taphonomic effect of deposition by water current, or a natural dispersal pattern of the crab population *in situ*. Reconstruction of crab size is essential in any attempt to understand the reason for large accumulations of crabs in fossil material. The study suggests new comparable, easily measurable, morphometric features with straight lines show a high correlation with pincer length in both fossil and recent crab populations. These suggested parameters provide a new tool for reconstruction of body size and crab population structure in any fossil assemblage of freshwater crabs of closely-related species in the region.



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Freshwater crab remains from the Pleistocene site of Gesher Benot Ya'aqov. One of several indices used for comparing pincers of Gesher Benot Ya'aqov fossil crabs (0.78 Mya): Length of ventral pincer.

Photograph: G. Beiner.

Biochronology, Paleoecology and Subsistence of Middle Paleolithic Humans and Animals in the Levant (BSF 1998-2000, Prof. E. Tchernov and Prof. M.C. Stiner).

Investigation of the paleoenvironmental circumstances of modern human origins in relation to biotic (humans and animals) and abiotic phenomena in western Asia during the Middle Paleolithic. The research combines Paleozoology with Zooarcheology and is conducted from the general perspectives of community ecology and evolution. The materials of study are faunal remains from cave deposits, collected during various depositional phases by Paleolithic hominids, raptors and *in situ* agents.

Barn owls as biological pest controls (Y. Motro)

The enormous ecological damage and the danger to human health as a result of intensive use of pesticides has led to a proposed alternative pest control strategy for controlling rodents. It seems that barn owls may reduce the damage caused by rodent populations in agriculture areas. The strategy is to introduce barn owls into agricultural areas and increase their population density to the maximum carrying capacity of the area. The pellets of the owls are deposited in the collection.

Tito alba (Barn owl)

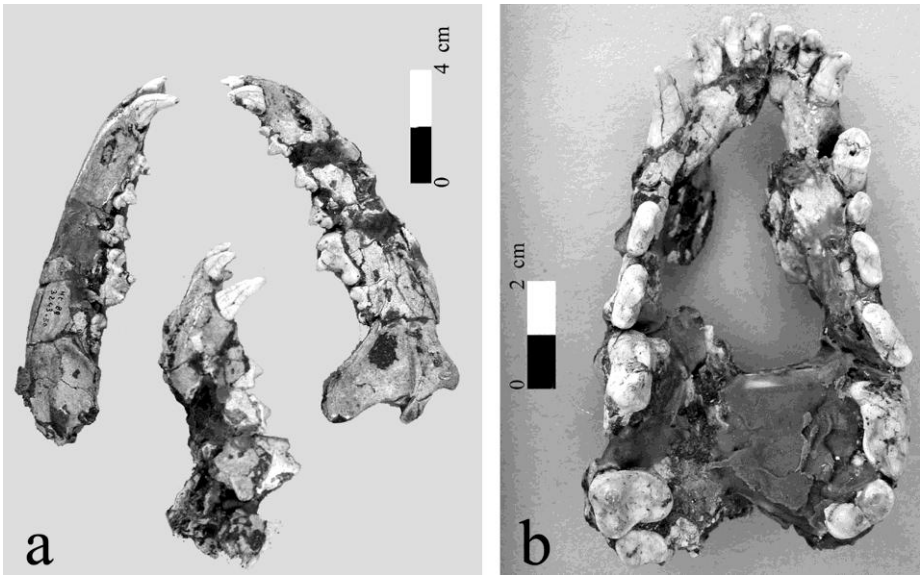
Taphonomical processes of fossil sites --ongoing research projects

Under this subject, numerous projects are ongoing:

- Pleistocene micromammal diversity and taphonomy, including an on-going research project on micromammal remains from the Epi-Paleolithic site of Ohalo II (23,000 BP).
- Sampling bias in archaeological and paleontological excavations and its effect on paleoecological interpretation.
- Carnivore role in collecting and destroying bones.
- Sorting out taphonomical agents from Lower Paleolithic sites.
- Domestication processes and faunal evidence

Ongoing research on animal domestication in the Southern Levant.

Research on faunal assemblages and re-examination of domestication characteristics both on genetic and morphological bases.



Remains of domesticated dog from Hayonim Terrace (western Galilee, Israel) dated to ca. 10,500 BP. a. Lateral view of mandible (L and R) and maxilla. b. Lingual view of mandible.

Research Students

R. Rabinovich, Ph.D. (completed, 1998). Advisors: E. Tchernov and O. Bar-Yosef.
Dissertation: Patterns of animal exploitation in Israel during the Upper Paleolithic and Epi-Paleolithic (40,000-12,000 BP).

D. Bar-Yosef Mayer, Ph.D. (completed 1999). Advisors: E. Tchernov and A. Belfer-Cohen.
Dissertation: The role of shells in the reconstruction of socioeconomic aspects of Neolithic through Early Bronze Age societies in the southern Sinai.

A. Chipman, Ph.D. (completed 2000). Advisors: E. Tchernov and O. Khaner.
Dissertation: Variation in Anuran Embryogenesis - Evolutionary aspects.

G. Kahila-Bar-Gal, Ph.D. (completed 2000). Advisors: P. Smith, E. Tchernov and S. Woodward.
Dissertation: Genetic change in the *Capra* species of Southern Levant over the past 12,500 years as studied by DNA analysis of ancient and modern populations.

M. Belmaker (Ph.D. student). Advisors: E. Tchernov, U. Motro and O. Bar-Yosef.
Dissertation: Mammalian Community Changes Through time: 'Ubeidiya, a Lower Pleistocene Site as a Case Study.

L. Kolska Horwitz (Ph.D. student). Advisors: E. Tchernov and I. Finkelstein.
Dissertation: A Diachronic Study of Patterns of Animal Exploitation in the Sinai Peninsula.

Y. Motro (Ph.D. student). Advisors: U. Safriel and Y. Yom-Tov.
Dissertation: Mechanisms of biological control of a rodent pest by a nocturnal raptor – the use of barn owls for vole control in Israel.

E. Ophir (Ph.D. student). Advisors: E.Tchernov and Y. Marder.
Dissertation: Thermoregulation in desert birds.

D. Levy, M.Sc. (completed 1995). Advisor: E. Tchernov.
M.Sc. thesis: Parental care in the Levant vole *Microtus guentheri*.

T. Shohat, M.Sc. (completed 1995). Advisor: Y. Heller.
M.Sc. thesis: Biology of the freshwater snail *Melanopsis praemorsa* in Israel.

E. Aram, M.Sc. (completed 1997). Advisor: E. Tchernov.
M.Sc. thesis: Study of the population dynamics of rodents in agriculture areas and the influence of owl predation on the rodents population.

Z. Lifshitz, M.Sc. (completed 2000). Advisors: E. Tchernov and Y. Werner**.**
M.Sc. Thesis: Functional directional asymmetry in middle ear of *Tadarida brasiliensis mexicana.*

E. Lotan, M.Sc. (completed 2000). Advisors: N. Goren-Inbar, E. Tchernov and Rivka Rabinovich.
M.Sc. Thesis: Actualistic studies - Taphonomy in the Jordan Valley**.**

H. Motro (M.Sc. student). Advisors: E. Tchernov, R. Rabinovich and R. Ellenblum.
M.Sc. Thesis: Horses at the Frankish castle of Vadum Iacob (Israel), a window to Crusaders equids exploitation in the East Mediterranean.

R. Kahati (M.Sc. student). Advisors: R. Rabinovich and Z. Weiss.
M.Sc. Thesis: Roman soldiers' diet from the Southern occupation of Ovdat.

E. Korabelnikov (M.Sc. student). Advisor: E. Tchernov.
M.Sc. Thesis: Ecology and evolution of micromammals during the Middle Paleolithic in Israel.

R. Shahak (M.Sc. student). Advisor: E. Tchernov.
M.Sc. thesis: Isotopic composition of oxygen and carbon in mammal skeletons; potential for paleoclimatic reconstruction.

Research Visitors to the Collections 1996 - 2003

Prof. A. Abramshvili, Academy of Science, Tbilisi, Georgia. Fauna of 'Ubeidiya.
S. Alexander, University of Alabama, Birmingham, U.S.A. Variability in *Ibex*.
F. Alhaique, Universita di Roma "La Sapienza", Rome, Italy. Research in zooarchaeology.
E. Arnold, University of Manitoba, Winnipeg, Canada. Research in zooarchaeology; cut-mark typology.

A. Baadsgaard, Brigham Young University, Utah, USA. Research in zooarchaeology.

Dr. D. Bar-Yosef, Peabody Museum, Harvard University, Cambridge, USA. Archaeomalacology.

Prof. L. Bartosiewicz, Department of Archaeological Sciences, Budapest, Hungary. Paleopathology.

Dr. A. Bridualt, CNRS, Archéologie enviromentale, Maison de l'Archéologie et de L'Ethnologie, Nanterre, France. Hayonim cave fauna.

Dr. M. Caldwell, Department of Geology, Field Museum, Chicago, USA. 'Ein Yabrud snake.

Dr. J. Clark. Council for British Research in the Levant, Jerusalem. Domestication of animals.

Prof. J. Clutton Brock, Journal of Zoology, London. Domestication of animals.

Dr. C. Cope, University of Rochester, N.Y. Zooarchaeology of various sites.

Dr. P. Croft, Lamba Archaeological Research Center, Lamba, Cyprus. Use of comparative bird and mammal collections.

M. Craig, Michigan, Hebrew University School of Veterinary Medicine. Research in Zoolarchaeology.

Dr. S. Davis, Institut Portugues de Arqueologia, Lisbon, Portugal. Use of comparative bird and mammal collections.

G. le Dosseur, Préhistoire Institute d'Art et d'Archéologie, Sorbonne, Paris I, France. Bone tools.

Dr. L. Dubreuil, Institute of Paleontology and Geology of the Quaternary, Talance, France. Use of comparative bird and mammal collections.

Prof. P. Ducos, S.N.R.C., Nimes, France. Animal domestication.

L. van Es, Rijksuniversiteit, Groningen. Use of comparative bird and mammal collections.

Dr. M. Faure, University of Lyon, France. Fauna of 'Ubeidiya.

Dr. A. Fradkin, Florida Atlantic University, Florida, U.S.A. Use of comparative bird and mammal collections.

Prof. L. Gabunia, Academy of Science, Tbilisi, Georgia. Fauna of 'Ubeidiya.

Dr. A. Gardeisen, CNRS, Lattes, France. Research in Zooarchaeology.

Prof. S. Gaudzinski, Römisch-Germanisches Zentralmuseum Mainz, Germany. Fauna of 'Ubeidiya and Gesher Benot Ya'aqov sites.

Prof. H. Greenfield, University of Manitoba, Winnipeg, Canada. Cut-mark typology.

A. Grossman, Toronto University, Canada. Miocene mammals.

Prof. C. Guerin, University of Lyon, France. Fauna of 'Ubeidiya.

K. Hallin, Department of Anthropology, University of Wisconsin, Madison, USA. Isotope research.

G. Hartman, Harvard University, Cambridge, USA. *Chelonia* from Gesher Benot Ya'aqov site.

Prof. L. Jacobs, Institute for the Study of Earth and Man, Southern Methodist University, Dallas, USA. 'Ein Yabrud fauna.

Dr. G. Klevezal, Institute of Development Biology, Moscow, Russia. Use of comparative bird and mammal collections.

Dr. M. Lee, University of Sydney, Australia. 'Ein Yabrud snake.

Dr. J. van der Made, Museo National de Ciencias Naturales, Madrid, Spain. Use of comparative bird and mammal collections.

Dr. B. Martinez-Navarro, Universitat Rovira, Tarragona, Spain. Early Pleistocene bovids and carnivores.

Dr. H. Monchort, Université de la Méditerranée, Marseille, France. Middle Pleistocene fauna from Holon.

Dr. N. Munro, University of Arizona, Tucson, US.A. Natufian sites: the Hayonim cave.

K. Newman, Shuler Museum of Paleontology, Southern Methodist University, Dallas, USA. 'Ein Yabrud fauna.

T. Pfeiffer, Institut für Palaeontologie der Universität Bonn, Bonn, Germany. Taxonomy of cervids.

A. Recchi, Universita di Roma "La Sapienza", Rome, Italy. Zooarcheology of birds.

Prof. O. Rieppel, The Field Museum, Chicago, USA. Early reptiles.

Dr. Z. Roček, Geological Institute, Academy of Sciences, Prague, Czech Republic. Fossil tadpoles from Wadi el Malich.

N. Samuelian, Maison de l'Archéologie et de L'Ethnologie, Nanterre, France. Spatial distribution of Hayonim fauna .

Prof. H. Schwarcz, School of Geography and Geology, McMaster Unversity, Canada. ESR dating - isotope analysis at various sites.

Dr. J. Shea, State University of New York at Stony Brook, New York, USA. 'Ubeidiya excavations.

Prof. T. Simmons, Western Michigan University, Kalamazoo, Michigan, U.S.A. Pleistocene birds.

M. Singer, University of Manitoba, Winnipeg, Canada. Cut-mark typology.

Prof. J. Speth, University of Michigan, Ann Arbor, USA. Archaeozoological research on Kebara Cave.

Prof. M. Stiner, University of Arizona, Tucson, Arizona, US.A. Archaeozoological research on Hayonim and Kebara caves.

Dr. L. Trueb, University of Kansas, Kansas, USA. Fossil frogs.

Prof. A.K. Vekua Academy of Science, Tbilisi, Georgia. Fauna of 'Ubeidiya.

Dr. A. Wasse, Council for British Research in the Levant, Amman, Jordan. Animal domestication.

Dr. P. Weinberg, North Ossetian Nature Reserve, North Ossetia. Recent mammals.

Prof. Y. Yom-Tov, Department of Zoology, Tel Aviv University. Recent mammals.

2. THE HERBARIUM

Staff

Prof. C. Heyn, Curator and Director (deceased 1998)
Prof. U.N. Safriel, Acting Curator
Dr. D. Heller, Collections Manager (until 2001)
Dr. I. Herrnstadt, Acting Collection Manager
H. Leschner, M.Sc., Collection Manager
I. Shammash, M.Sc., Academic Technician

Associated researchers

Dr. E. Ramon - Algae
Dr. B. Lundberg, Algae (until 2001)
Dr. I. Herrnstadt-Bryophytes
Prof. U. Plitmann-Flowering plants
Prof. D. Zohary
Dr. N.L. Gil-Ad
O. Cohen, Ph.D. student
Dr. A. Danin
Dr. A. Shmida

Structure of the Herbarium collections

The Herbarium of The Hebrew University comprises several sections:
I. Plants of Israel and adjacent regions, representing all the vascular plants.
II. Plants of the Middle East.
III. Plants of the Mediterranean Region.
IV. Worldwide reference plant collection.
V. Bryophytes.
VI. Algae.
VII. The collection of the late A. Aharonsohn.
VIII. The Medicinal Plants collection of the late D.V. Zaitschek.
IX. Fungi.
X. Voucher specimens of Israel Gene Bank.
XI. Seed collection mainly of the legume family.
XII. Library affiliated to the botanical collection.

The Herbarium cooperates with ca. 30 herbaria throughout the world, vis-à-vis loans, exchanges, and gifts of material. The collection serves as a teaching tool for university courses as well as other courses.

Activities and grants

Computerization of the Herbarium

Computerization of the plants of the "Flora Palaestina" using Access software tools including GIS data, within the framework of "BioGIS" (D. Zohary and N.L. Gil-Ad). The following taxonomic groups were already listed: Pteridophyta; Gymnospermae; Angiospermae, the following families were

computerized: Acanthaceae through Berberidaceae, Boraginaceae (partially), Caryophylaceae, Gramineae (partially), Labiatae, Rosaceae, Umbelliferae; wild relatives of cultivated plants and plants of economic value. Other families such as Cruciferae, Cyperaceae, Liliaceae, Papilionaceae had previously been listed with Paradox software and are awaiting transfer to Access software. Computerization of the Bryophyte collection (mosses) of Israel and adjacent regions. Adding geographical coordinates to previously listed material. Listing of 2,400 books in the library affiliated to the herbarium.

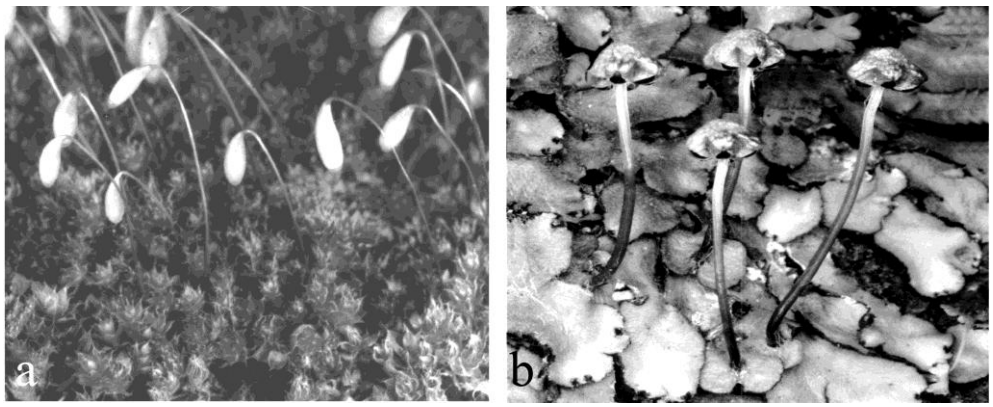
Upgrading of the herbarium collections

Incorporation of new material.

- Systematic verification of existing material: Bryophyta, Pteridophyta, Gymnospermae, Angiospermae: Acanthaceae through Berberidaceae, Boraginaceae (incomplete), Caryophyllaceae, Cruciferae, Cucurbitaceae, Cyperaceae, Gramineae (incomplete), Iridaceae, Labiatae, Rosaceae, Umbelliferae; and wild relatives of cultivated plants.
- Replacement of damaged material.

Acquisitions

- Some 5,000 specimens from Armenia, collected during an OPTIMA expedition (O. Cohen).
- Selected species of the Umbelliferae, in particular wild relatives of cultivated plants (U. Plitmann and O. Cohen).
- Rare plants from Israel collected in the framework of "The Rare Plants Survey" (A. Shmida and ROTEM team).
- Plants of Western Jordan (A. Danin, A. Shmida and others).
- New Type Material (A. Danin, O. Cohen, I, Herrnstadt, P. Ravenna).
- Voucher specimens for the Rescue Project of Wild Crop-plants Relatives.



a. *Bryun torquescens* Bruch and Schimper. Moss from Judean Mountains.
b. *Reboulia hemisphaerica* (L.) Raddi. Liverwort from Upper Galilee.
From the "Bryophyte Flora of Israel". Photographed by Dr. D. Darom.

Projects

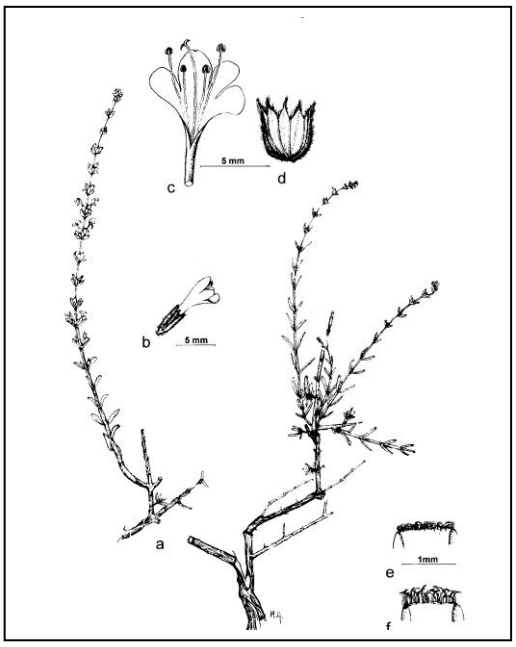
- Preparation of the volume, "Conspectus Florae Orientalis - Addenda" of the Israel Academy of Sciences and Humanities (D. Heller).
- Bryophyte Flora of Israel. Israel Academy of Sciences and Humanities (I. Herrnstadt, in press).
- Activation of voucher collections and databases connected with the Israel Gene Bank (Funding, Ministry of Science).

Participation in international activities

- Members of the herbarium staff are active in OPTIMA (Organization for the Phyto-Taxonomic Investigation of the Mediterranean Area) meetings and field excursions on a regular basis.
- Participation in symposia on "Plant Life of South-West Asia", Van, Turkey, June 2002.

Some new species in the Herbarium

Anchusa negevensis Danin, 1995
Cyperus sharonensis Danin and Kukkonen, 1995
Origanum jordanicum Danin and Kuenne, 1996
Micromeria danaensis Danin, 1997
Rubia danaensis Danin, 1997
Silene danaensis Danin, 1997
Silene alexandrina (Asch.) Danin, 1987
Teucrium leucocladum Boiss. subsp. *jordanicum* Danin, 1997
Teucrium leucocladum Boiss. subsp. *sinaicum* Danin, 1997
Satureja nabateorum Danin and Hedge, 1998
Artemisia jordanica Danin, 1999
Pycnocycla saxatilis Danin, Hedge and Lamond, 2000
Bufonia ramonensis Danin, 2001
Arundo hellenica Danin, Raus and Scholz, 2002



Saturjea nabateorum Danin and Hedge 1998. a. flowering branches. b. flower. c. opened corolla. d. calyx. e-f. leaf section showing upper leaf surface indumentum (e), compared to that of *S. thymbrifolia* (Danin and Hedge, 1998). Drawing by M. Boaz.

Research Visitors to the Herbarium

Scientists from El-Quds University of Abu-Dis, the Palestinian Authority. Establishing a herbarium at El-Quds University.

Prof. D. Al-Eisawi, University of Jordan, Amman. Flora of Jordan.

Dr. M. Blecher, Ein Gedi Nature Reserve. Plants in the Dead Sea area.

Dr. T.A. Campbell, Agricultural Research Center Beltsville, Maryland. U.S.A. Review Flora of Arabian Peninsula and Yemen.

Dr. S. Coles, University of Patras, Greece. The genus *Cicer.*

Dr. V. Dorofeyev, Komarov Botanical Institute, St.-Petersburg, Russia. Cruciferae of the Mediterranean region.

Prof. F. Ehrendorfer, University of Vienna. Exchange project between the Hebrew University of Jerusalem and Vienna University.

Dr. M. Ewing, University of western Australia, Perth. Annual and perennial legumes of Israel and the region.

Dr. R. Fritsch, Zentral Institut für Genetik und Kulturpflanzen Forschung der Akademie der Wissenschaften. Gatersleben, Germany. Subject. The Genus *Allium*.

Dr. P. Hein, Botanical Garden and Botanical Museum, Berlin. Research on Compositae.

Dr. F. Khassanov, Tashkent Institute of Botany. *Allium.*

Prof. M. Kislev, Faculty of Life Sciences, Bar-Ilan University. Archaeological botany --comparing archeological finds with recent material.

T. Krestorskaya, Komarov Botanical Institute, St.-Petersburg. the genus *Stachys.*

Dr. S. Lev-Yadin, Department of Botany, University of Haifa, Oranim; Research on spiny species of the Compositae and the Umbeliferae.

Dr. J. Lipkin, Tel Aviv University. Algae and literature on algae.

Dr. N. Maxted, University of Birmingham, U.K. Leguminosae.

Prof. R. Pankhurst, Royal Bot. Garden, Edinburgh. Computing of herbarium material.

Dr. R. Prasse, University of Hannover, Germany. Plants of Lebanon from Israel.

Dr. A. Rabinovitch, Nature Reserves and Parks Authority. Rare plants.

Prof. P. Ravenna, University of Santiago, Chile. Lidiaceae, Amaryllidaceae.

Dr. U. Siderlund, The Finnish Environmental Institute, Finland. Judean plants.

Dr. T.N. Smekalova, Herbarium of N.I. Vavilov. St.-Petersburg, Russia. The genus *Lathyrus.*

Dr. R. Steiner, Yeshiva University, New York, U.S.A. Sycamore.

Dr. B. Tenbergen, University of Münster, Germany. Desert plants in the Negev.

3. AQUATIC INVERTEBRATES, WITH THE ARACHNID AND THE MEDICAL PARASITOLOGICAL COLLECTION

Staff

Prof. Emeritus F.D. Por, Emeritus Curator and Director
Dr. M.N. Ben-Eliahu, Collections Manager until IV.2000 (emerita). Presently, Acting Collections Manager of the section (as volunteer).
Dr. G. Levy, Collections Manager of the Arachnida, emeritus.

Associated Researchers

Dr. Ch. Dimentman, The Department of Evolution, Systematics and Ecology.
Dr. E. Zelickman (until 2000). The Department of Evolution, Systematics and Ecology.
Dr. S. Ashkenazi, The Department of Evolution, Systematics and Ecology.

The extensive collection of marine and inland-water invertebrates comprises several millions of specimens belonging to 120 major taxa (animal groups). The marine collections, with some specimens dating from the early 1930s, include benthos collections of benthos and plankton from the Mediterranean, Suez Canal and Red Sea Gulfs of Suez and Elat, the southern Red Sea and other locations; the material was collected as part of general surveys, or as part of research projects on specific taxa. Inland-water collections from the Lake Kinneret and Hula wetlands (both before its Lake Hula's having been drained and from monitoring of Lake Agmon, formed after partial reflooding of the Hula Valley); fauna of catchments and reservoirs; stygofauna from karstic areas mainly from the Jordan-Dead Sea aquatic ecosystem as well as from caves and springs in the Judean hills and other regions. The National Arachnological collection is under our care. The collections also house the Acarological collections of Prof. B. Feldman-Muhsam and the late Prof. M. Costa, and the helminth collections of the late Prof. G. Wertheim and the collection and library of the late Prof. G. Wittenberg.

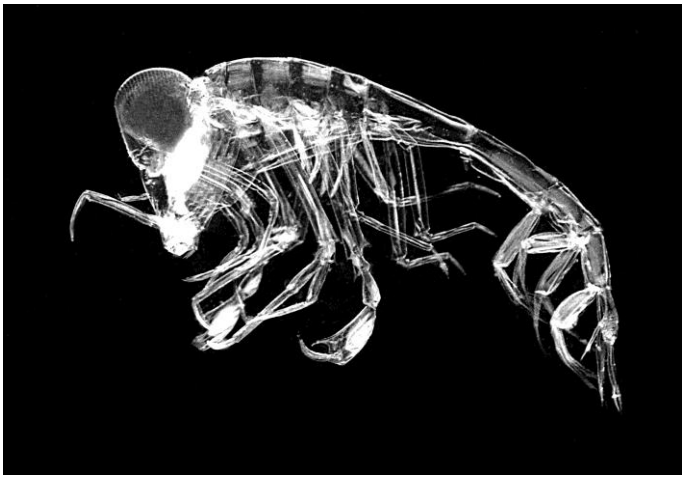
Activities

Computerizing the collection

The Section of Aquatic invertebrates lost a full-time staff position when Dr. M.N. Ben-Eliahu retired in April 2000. Subsequently, the regular work of the section has been continued on a low-level, mostly on a *volunteer basis,* in order to maintain the specimens, to enable research of the above-mentioned associated scientists to continue and to afford continued access of the collections to visitors. The lack of regular assistance has greatly impacted on the computerization of the collection. As in the other sections, the database program was changed from Paradox to Access software. Thus far, only ca. 4,500 lots, mostly of macro-benthic taxa have been recorded in the database. Catalogues of the copepod-types and of the invertebrates type specimens exist in draft form.

A pictorial atlas of the Hyperiidea (Crustacea, Amphipoda) of Israel

The pictorial atlas by Dr. E. Zelickman is a volume in the Fauna et Flora Palaestina" series published by the Israel Academy of Sciences and Humanities (edited by Prof. F.D. Por). This atlas is based on the plankton collections of the DCPE (Data Collecting Program Eilat) of Z. Reiss and the B. Kimor collection in the Section of Invertebrates. Eighty-eight species of hyperiid amphipods are presented, of which 52 species are new reports for the Mediterranean, in addition to the previously reported 46 species.



Photograph of hyperiid amphipod by Dr. D. Darom

Scientific Expeditions

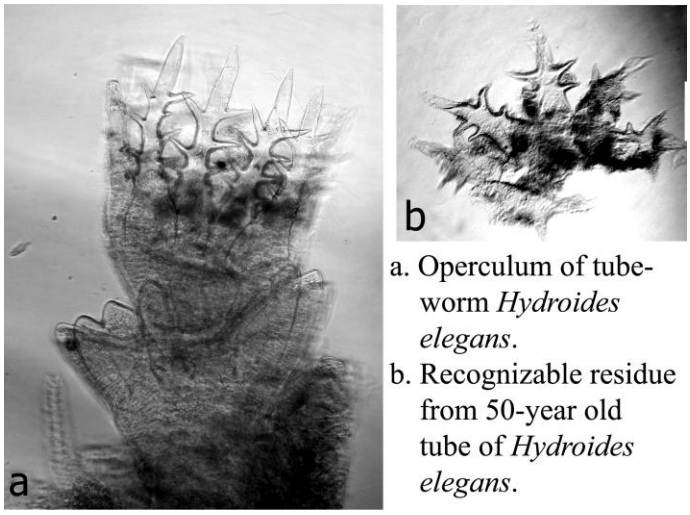
1995. **"A survey of the edaphic fauna of Israel".** Two expeditions funded by the Israel Academy of Sciences and Humanities, Fauna and Flora Palaestina Committee and the Institute of Speleology of the Romanian Academy, "Emil Racovitza" Speleological Institute. Fieldwork organized by Ch. Dimentman, with participation of F.D. Por and a Romanian team led by V. Decu. The expedition added material to the micro-crustacean collections. Several orders of terrestrial arthropods were collected and studied for the first time in Israel. Prof. Stefan Negrea prepared several publications on the Chilopoda and is preparing a monograph on this taxon for the "Fauna et Flora Palaestina" series.

1997. **An expedition to collect serpulid tubeworms (Annelida) from the southern coast of Cyprus (May, 1997)** . The expedition, carried out to evaluate whether Lessepsian tubeworm migrants found along the Levant Coast had expanded their ranges to Cyprus (not collected by Israeli sampling thirty years earlier), was modeled on a survey carried out along the Israeli coast in 1990 by M.N. Ben-Eliahu and H.A. ten Hove. The samples enabled making comparisons between the shallow (0-24 m) serpulid fauna of southern Cyprus and of Israel. Although no living Lessepsian migrants were found in this expedition; some empty tubes were attributed to a common and wide-spread migrant, *Spirobranchus tetraceros*, one of two migrant serpulid taxa reported from the northern Turkish coastline by H. Zibrowius (pers. comm.). Differences were noted in relative abundances of taxa between the two coasts (M.N. Ben-Eliahu and G. Payiatas, 1999).

On-Going Research Projects

M.N. Ben-Eliahu focused on serpulid tubeworms from the Mediterranean, Suez Canal, and Red Sea in collaboration with H.A. ten Hove of the Zoological Museum, University of Amsterdam, and D. Fiege of the Forschungsinstitut Senckenberg. The present focus is on material from the Red Sea and the Suez Canal. November, 1999 was spent at the Zoölogisch Museum, Amsterdam. In 2001, research visits were carried out to the U.S. National Museum, Washington D.C.; the American Museum of Natural History; the Peabody Museum, Yale University, and to the Zoölogisch Museum, Amsterdam. These visits led to the subsequent introduction of digital microphotography into the serpulid research; and rather a lot of time has been devoted to acquiring basic graphics techniques. The microphotography has enabled a start at documenting color in Mediterranean and Red Sea serpulid species.

Ben-Eliahu's 2003 visit to the Zoölogisch Museum, Amsterdam, included a joint visit with H.A. ten Hove to the Naturalis Museum in Leiden to look for any 1950 serpulid material from the Suez Canal to be found on mollusc shells collected by C. Beets. This dry, 53 year old material yielded some identifiable taphonomic residues to be included in a joint monograph chronicling the Suez Canal Serpulidae.



a. Operculum of tube-worm *Hydroides elegans*.
b. Recognizable residue from 50-year old tube of *Hydroides elegans*.

Operculum and taphomic residue of operculum photographed by M.N. Ben-Eliahu

Dr. Ch. Dimentman continues his research on the limnological and biotic succession in the area of the Hula Valley which was re-flooded five years ago (In cooperation with Prof. F. D. Por and H.J. Bromley-Schnur and scientists from Austria, France and Turkey). The emphasis is on Copepoda and on Cladocera. Many first records have resulted and several species presumed lost with the Hula drainage in 1957 have been found.

Dr. G. Levy continues his research on spiders of Israel.

Prof. F.D. Por continues his work on a monograph on the recent history of the Mediterranean area and human impact as well as preparing a pictorial presentation of the main biomes of Brazil.

Grants

- Zooplankton and zoobenthos of the reflooded Hula area (Lake Agmon), Hula Authority, Ministry of Agriculture and J.N.F. (Coordinated by MIGAL), (Ch. Dimentman, H.J. Bromley-Schnur and F.D. Por, 1995-99).
- Typology of the mosquito fauna of the Hula Valley. Ministry of the Environment, Hula Authority, Ministry of Agriculture and J.N.F. (Coordinated by MIGAL), (Ch. Dimentman, U. Shalom, H. Pener and H.J. Bromley-Schnur, 1997-1999).
- Serpulidae of the Red Sea, Gulf of Elat and Suez Canal-- Large Scale Facility Grant of the European Community to carry out joint research with H.A. ten Hove at the Zoölogische Museum, Amsterdam, Nov. 1999 (M.N. Ben-Eliahu, 1999).
- Eradication of zooplankton in Reservoirs. Mekorot Water Company, 2003 (Ch. Dimentman, U. Shalom, H. Pener and H.J. Bromley-Schnur, 1997-1999).

Public outreach

- 1997. **F.D. Por,** invited speaker, UNESCO, Symposium on Mediterranean marine diversity, Nicosia, Cyprus, April 30- May 3rd.
- 1997. **An international symposium,** "The Levant as a biogeographic bridge - land, sea and air", held at the Israel Academy of Sciences and Humanities on June 23, 1997 to mark Prof. F.D. Por's 70 birthday (Dr. M.N. Ben-Eliahu, Dr. Ch. Dimentman and Prof. J. Heller, Organizers).
- 1997-1998. **Preparation of a Festschrift** (festive volume), in honor of Prof. Por, mostly originating from the Symposium, published by the Israel Journal of Zoology (Vol. 45, 1999) (Guest-eds., Dr. M.N. Ben-Eliahu and Dr. Ch. Dimentman).
- 2000. F.D. Por organized and chaired the XVIII International Congress of Zoology in Athens.
- 2004. F.D. Por, Member, Organizing Committee of XIV International Congress of Zoology in Beijing.

Research Students

Farstey, V., Ph.D. (completed, 2001). Advisors: F.D. Por, M.S.Almeida Prado-Por and A. Genin.
Dissertation: Feeding and vertical distribution of the calanoid copepods *Rhincalanus nasutus* Giesbrecht and *Pleuromamma indica* Wolfenden in the seasonally mixed water column in the northern part of the Gulf of Aqaba.

Azoulay, B.R., Ph.D. (completed, 2003). Advisors: F.D. Por and M. Gophen.
Dissertation: Autecology of *Eudiaptomus drieschi* in Lake Kinneret.

Research Visitors to the Collections

Dr. A. Dotan, Beit Berl College. Identification of Serpulidae from the "Frutarom-Project".
Prof. W. Hummon, Ohio University, Athens, Ohio. Gastrotricha of Israel.
Prof. S. Negrea, Institute of Speleology of the Romanian Academy, "Emil Racovitza" Speleological Institute, Bucharest. Chilopoda, Cladocera of Israel.
Prof. J. Prozynski, Muzeum I Instytut Zoologii PAN, Warsczaza, Poland. Salticidae (Araneae).
A. Tsemel, Haifa University. Identification of fouling Serpulidae from Elat.

4. MOLLUSC COLLECTION

Staff

Prof. J. Heller, Curator
H.K. Mienis, M.Sc., Collection Manager

The National Mollusc Collection of the Hebrew University may be divided roughly into two sections: the local collections of land-, freshwater- and marine molluscs from the Middle East, i.e., the Levant, eastern Mediterranean and Red Sea, and the general collection consisting of the former collections of G.S. Coen (Italy); R. Neuville (France), A. Blok (England) and minor contributions from all corners of the world. Both collections are of international importance due to the fact that the local land- and freshwater collection (mainly Israel and Jordan) is by far the largest in the Middle East, while the general collection contains several hundreds of type lots of taxa described by numerous malacologists the world over.

Activities

- Identification and preparation for permanent storage of newly acquired material.
- Revision of various taxonomic groups already present in the collection.
- Maintenance and expansion (mainly by means of exchange and donation) of the specialized malacological library.
- Location, verification and separation of type material in the former collections of G.S. Coen and A. Blok (several thousand samples!).
- Maintaining contacts with numerous institutes abroad, including loan of material and exchange of publications.

Services

- Identification and permanent storage of molluscs intercepted by inspectors of the Department of Plant Protection, Ministry of Agriculture (contact person, Dr. Sh. Moran).
- Identification and permanent storage of molluscs collected by rangers of the Israel Nature Protection and National Parks Authority (contact person, Dr. R. Ortal).
- Identification and permanent storage of material collected for the Hula Agmon-project (contact person, Dr. Ch. Dimentman).
- Identification of various archaeomalacological material recovered during excavations carried out by archaeologists associated with the Israel Antiquities Authority and the Departments of Archaeology of the Hebrew University of Jerusalem and Tel Aviv University.

Ongoing research projects

- Taxonomy and distribution of freshwater and terrestrial molluscs (H.K. Mienis).
- Alien land- and freshwater molluscs in Israel and the Netherlands (H.K. Mienis).
- Natural enemies of land- and freshwater molluscs in Israel and the Netherlands (H.K. Mienis).
- Land- and freshwater molluscs of North Holland and the Isle of Terschelling, the Netherlands in cooperation with the "Atlasproject Nederlandse Mollusken/EIS-Nederland" (H.K. Mienis).
- Lessepsian migration and settlement of other Indo-Pacific molluscs in the eastern Mediterranean (H.K. Mienis).
- Revision of various groups of Red Sea molluscs (H.K. Mienis).
- Parthenogenetic versus sexual reproduction in freshwater snails (J. Heller).
- Sperm and egg structure in parthenogenetic gastropods (J. Heller).
- Recovery of land snail populations after bush fires (J. Heller).
- Mapping distribution patterns of land snails by use of modern GIS techniques (J. Heller).
- Mollusc remains from the Late Bronze Age of ancient Haifa (J. Heller).
- Feeding ecology of freshwater snails (J. Heller).
- Systematics of freshwater snails (J. Heller).
- Reconstructing palaeo-environments of the Jordan Valley, via mollusc faunas (J. Heller).
- Biological control of snail outbreaks by use of molluscivorous fish (J. Heller).
- Rates of trematode infection in freshwater snails (J. Heller).
- Terrestrial gastropods of Jordan (J. Heller).

Grants

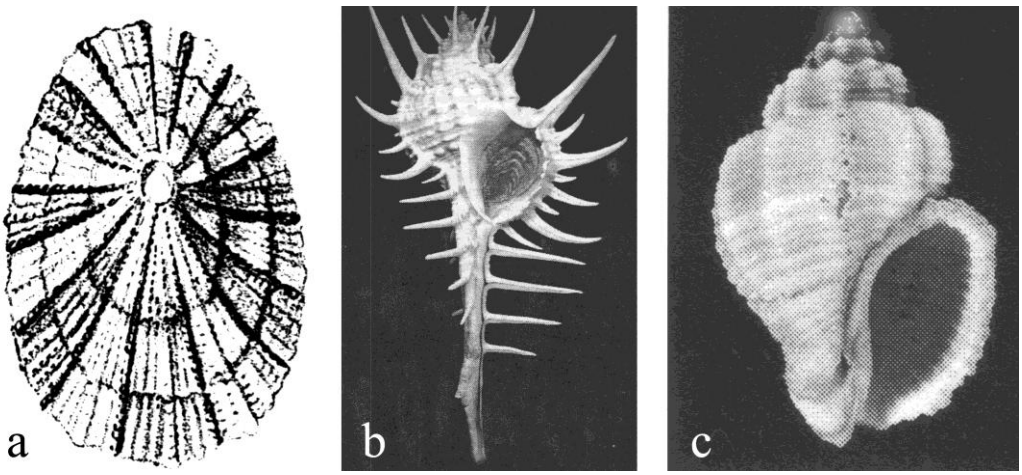
- Biological control of snails in freshwater reservoirs (Mekorot; grant to Frida Ben Ami, M.Sc. student of J. Heller, 1996 – 1997).
- Fire ecology of land snails in Mediterranean habitats (Jewish National Fund: to E. Lachman, Ph.D. student of J. Heller, 1998 – 2001).
- Revision of the Ellobiidae from the Red Sea and Mauritius. Large Scale Facility Grant European Community to carry out research at the Zoological Museum Amsterdam (H.K. Mienis, 1999).
- Revision of the Genus *Nerita* in the collection of the Zoological Museum Amsterdam. Large Scale Facility Grant European Community to carry out research at the Zoological Museum Amsterdam (H.K. Mienis, 2000).
- The National Research Foundation, International Science Liaison, Rhodes University, South Africa (travel grant to Frida Ben Ami, Ph.D. student of J. Heller, 2000).
- Systematics and evolution of fresh water snails in the Jordan Valley. American Friends of the Hebrew University (J. Heller, 2000 – 2002).
- Horwitz Foundation Fellowship, for Academic Excellence (to Frida Ben Ami, M.Sc. student of J. Heller, 2000 – 2003).
- Systematics and historical evolution of the fresh water gastropods in the Jordan Rift Valley area. The Israel Science Foundation: (J. Heller, 2002).
- Minerva Short-Term Research Grant to the University of Hamburg, Germany (to Frida Ben Ami, Ph.D. student of J. Heller, 2003).
- Maurice Hatter Fellowship for Marine Studies, University of Haifa (to I. Baruch, M.Sc. student of J. Heller, 2000).
- Fraenkel Research Grant of the University of Haifa (to I. Baruch, M.Sc. student of J. Heller, 2000).
- Oren Berco Scholarship of the Interuniversity Institute of Elat (to I. Baruch, M.Sc. student of J. Heller, 2001).

Lessepsian migrants and other Indo-Pacific molluscs continue to invade the Mediterranean off Israel [1]

During the past eight years the National Mollusc Collections at the Hebrew University of Jerusalem and the Tel Aviv University received some interesting mollusc material, which had been collected along the Mediterranean coast of Israel. Among this material were some species from the Red Sea and the Indo-Pacific, which had not been reported before from the Mediterranean Sea. Also several species were encountered alive in fairly large numbers, of which so far only a few empty shells had been reported. Reports concerning these recent findings have been published in a large number of short faunistic notes.[1] Although all these notes are listed in the "Zoological Record", they are often difficult to trace. Therefore these recent invaders have been enumerated here into two separate lists: the first mention of the species, which managed to get a foothold in the eastern Mediterranean off Israel, the second is a list of species, of which so far only very few, usually empty shells have been found.

[1] A complete listing of the new mollusc records published by H.K. Mienis (370 since the previous "Haasiana" in 1995), can be obtained by contacting mienis@netzer.org.il.

It is noteworthy that one of these recent invaders: *Cellana rota*, seems to be successful in rapidly replacing the native limpet, *Patella caerulea* Linnaeus, 1758. Similarly, Lessepsian migrants taking the place of related, autochthonous species, have also been found among the Mytilidae, Spondylidae, Chamidae and Cerithiidae. The continuous arrival of additional migrants shows only that we are still far from an equilibrium and that we may expect still many additional Red Sea and other Indo-Pacific molluscs to reach the eastern Mediterranean in the near future.



Three Lessepsian migrants. a. *Diodora funiculata* (Reeve, 1850). b. *Murex forskoehlii* Röding, 1798. c. *Cantharus tranqebaricus* (Gmelin, 1791).

I. Recently reported well-established species along the Mediterranean coast of Israel

Gastropoda
Diodora funiculata (Reeve, 1850)
Cellana rota (Gmelin, 1791)
Cerithium egenum Gould, 1849
Palmadusta lentiginosa (Gray, 1825)
Murex forskoehlii Röding, 1798

Bivalvia
Mactra lilacea Lamarck, 1818
Gafrarium pectinatum (Linnaeus, 1758)
Timoclea marica (Linnaeus, 1758)

Cephalopoda
Sepia pharaonis Ehrenberg, 1831
Octopus cyanea Gray, 1849

II. Recently reported occasional new visitors along the Mediterranean coast of Israel

Gastropoda

Cerithium columna Sowerby, 1834
Cerithium echinatum Lamarck, 1822
Cerithium nodulosum adansonii Bruguière, 1792
Canarium mutabilis (Swainson, 1821)
Notocochlis gualteriana (Récluz, 1844)
Cantharus tranquebaricus (Gmelin, 1791)
Latirus polygonus (Gmelin, 1791)

Bivalvia

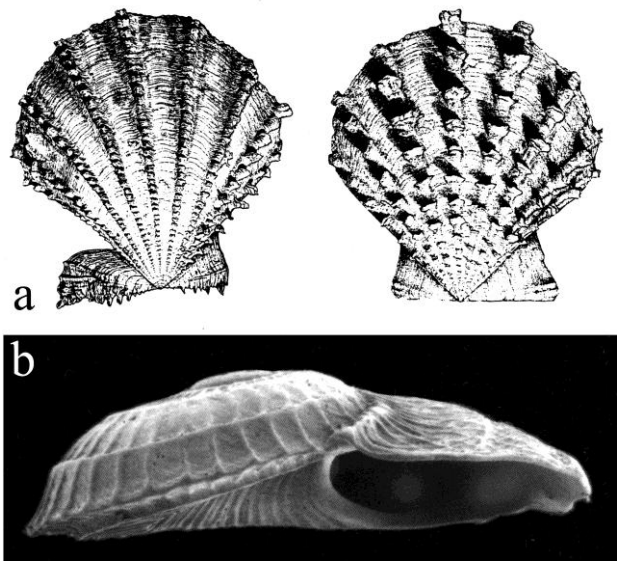
Mactrinula tryphera Melvill, 1899
Circenita callipyga (von Born, 1778)

Henk K. Mienis

Type specimens deposited in the National Mollusc Collection, 1995-2003

Type specimens of fourteen (sub)species of molluscs: thirteen gastropods and one bivalve, described in the period 1995-2003, have been deposited in the National Mollusc Collection of the Hebrew University of Jerusalem (HUJ).

These taxa are enumerated below in systematic order.



Some type specimens in the National Mollusc Collection. a. *Mirapecten yaroni* Dijkstra and Knudsen, 1998, endemic in the Red Sea. b. *Tornus mienisi* van Aartsen, Carrozza and Menkhorst, 1998. endemic in the eastern Mediterranean

Gastropoda

Family Trochidae
Clanculus korkosi Singer, Mienis and Geiger, 2000
Holotype: EGYPT, "Blue Hole", 11 km north of Dahab, leg. D. Korkos, 1989 (HUJ 40656/1). Paratypes: EGYPT, "Blue Hole", 11 km north of Dahab, 40 m depth, leg. D. Korkos, 1993 (HUJ 40657/1); ibidem, 20 m depth, leg. D. Korkos, 1998 (HUJ 40658/1).

Stomatolina danblumi Singer and Mienis, 1999
Holotype: EGYPT, "Blue Hole", 11 km north of Dahab, 20 m depth, leg. D. Blum, 1985 (HUJ 40620/1). Paratypes: EGYPT, "Blue Hole", 11 km north of Dahab, 20 m depth, leg. D. Blum, 1985 (HUJ 40621/2).

Family Neritidae
Nerita (Cymostyla) luteonigra Dekker, 2000
Paratypes: ERITREA, Dahlak Archipelago, Entedebir Island, Amphioxus Bay, leg. ISRSE 62/2032, 21 March 1962 (HUJ 40561/4); ibidem, Museri Island, leg. ISRSE 65/3600, 30 October 1965 (HUJ 40560/6).

Family Tornidae
Tornus mienisi van Aartsen, Carrozza and Menkhorst, 1998
Paratypes: ISRAEL, NW off Acco, 54 m depth, leg. Sea Fisheries Research Station (SFRS) #722 (HUJ 35578/5); off Gaza, 27 m depth, leg. SFRS #538 (HUJ 35579/2); Tantura, beach, leg. G. Haas, July 1949 (HUJ 35580/4); Shavé Ziyyon, beach, 1950 (HUJ 35581/9); Haifa, Qishon Beach, leg. G. Haas, March 1937 (HUJ 35582/4); Shavé Ziyyon, beach, leg. T. Felsenburg, February 1972 (HUJ 35583/7); Tel Aviv, Sheraton Beach, leg. H.K. Mienis, September 1971 (HUJ 35584/2).

Family Strombidae
Euprotomus aurora Kronenberg, 2002
Paratypes: ISRAEL, Elat, leg. S. Lavy, 1982 (HUJ 32541/1); ibidem, Laguna, leg. J. Heller, 11 April 1983 (HUJ 32356/1); ibidem, Coral Beach, leg. J. Rapoport, before 1967 (HUJ 36210); EGYPT, Dahab, off lighthouse, 36 m depth, on gravel bottom at foot of sloping gravel drop-off, leg. M. Fainzilber, 31 August 1986 (HUJ 12240/1); East coast of Sinai, raised Pleistocene coral reefs, 1993 (HUJ 31984/1).

Family Cypraeidae
Blasicrura teres elatensis Heiman and Mienis, 2002
Holotype: ISRAEL, Elat, leg. E. Heiman (HUJ 40830/1).

Cypraea pantherina rasnasraniensis Heiman and Mienis, 2001
Holotype: EGYPT, Ras Nasrani, 25 km north of Sharm el Sheikh, leg. E. Heiman (HUJ 7968/1).

Erronea caurica nabeqensis Heiman and Mienis, 2000
Holotype: Egypt, Nabeq, shallow water, leg. E. Heiman (HUJ 40637/1).

Lurida pulchra sinaiensis Heiman and Mienis, 2000
Holotype: ISRAEL, Elat (HUJ 6651/1).

Lyncina camelopardalis sharmiensis Heiman and Mienis, 1999
Holotype: EGYPT, Ras Nasrani near Sharm el Sheikh (HUJ 31867/1). Paratype: EGYPT, Ras Nasrani near Sharm el Sheikh, on wreck, leg. J. Rapoport, July 1993 (HUJ 39164/1).

Family Muricidae
Pterymarchia elatica Houart, 2000
Holotype: ISRAEL, off Elat, 20 m depth, 1991 (HUJ 37845).

Family Nassariidae
Nassarius dekkeri Kool, 2001
Paratypes: ISRAEL, Elat, leg. G. Haas, May 1949 (HUJ 2639/14); ibidem, 1955 (HUJ 2641/16); ibidem, leg. H. Steinitz, 1956 (HUJ 2640/79); ibidem, leg. I. Paperna, 1961 (HUJ 2664/1); ibidem, leg. B. Sheinberg, 1973 (HUJ 36859/4); ibidem, Bet Williams, October 1951 (HUJ 39987/1); ibidem, E56/152 (HUJ 40312/3); ibidem, among weeds on sand, 1992 (HUJ 40321/6); ibidem, northern beach, leg. R. Ortal, 3 March 1994 (HUJ 40464/1 and 40465/2); ibidem, from under fishcages, leg. D. Engel (HUJ 8176-8185/55); EGYPT, Dahab, 1956 (HUJ 40445/1).

Family Pyramidellidae
Odostomia (Auristomia) nofronii Buzzurro, 2002
Paratype: NORTHERN CYPRUS, Girne (HUJ 9190/1).

Bivalvia

Family Pectinidae
Mirapecten yaroni Dijkstra and Knudsen, 1998
Paratypes: ISRAEL, Elat (HUJ 35744/3 valves); JORDAN, Aqaba (HUJ 35743/3 valves).

Henk K. Mienis

Research Students

O. Ben Yehuda, Ph.D. (completed 1995). Advisor: J. Heller
Dissertation: Factors limiting the distributionof *Trochoidea simulata* into Mediterranean regions.

F. Ben Ami, Ph.D. student. Advisor: J. Heller
Dissertation: Parthenogenetic versus sexual reproduction in the snail *Melanoides tuberculata.*

E. Lachman, Ph.D. student. Advisors: J. Heller, Z. Arad and I. Yitzhaki.
Dissertation: Population dynamics and ecophysiology of land snails following wildfire in a Mediterranean habitat.

T. Shohat, M.Sc. (completed 1995). Advisor: J. Heller.
M.Sc. thesis: Biology of the freshwater snail *Melanopsis praemorsa* in Israel.

F. Ben Ami, M.Sc.(completed 1997). Advisor: J. Heller
M.Sc. thesis: Biological control of freshwater snails by the black carp *Mylopharyngodon piceus*.

S. Mualem, M.Sc. (completed 2000). Advisor: J. Heller.
M.Sc. thesis: Copulatory behavior in the terrestrial gastropod *Helix engadensis*.

G. Ribak, M.Sc. (completed 2000). Advisors: J. Heller and A. Genin.
M.Sc. thesis: Ecology of *Dendropoma maxima* (Gastropoda: Vermetidae): The success of a unique feeding mode in a marginal habitat.

O. Steinitz, M.Sc. (completed 2003). Advisors: J. Heller and R. Kadmon.
M.Sc. thesis: Predicting patterns of species similarity using environmental and geographical distances.
I. Baruch, M.Sc. student (completed 2002). Advisors: J. Heller and M. Artzi.
M.Sc. thesis: Mollusc fauna from the Late Bronze and Iron Age strata at Tel A0bu Hawam.

Research Visitors to the Collection

Dr. Sh. Ashkenazi, Hebrew University. Identification of fossil molluscs from Gesher Benor Ya'aqov.
Dr. D.E. Bar-Yosef Mayer, Peabody Museum, Harvard University. Identification of archaemalacological material from various excavations in Israel.
I. Baruch, Haifa University. Identification of archaeo-malacological material.
R. Ceron-Carrasco, University of Edinburgh, Scotland. Identification of archaeomalacological material from excavations in Jordan.
Dr. Ch. Dimentman, Hebrew University of Jerusalem. Identification of inland molluscs from the Hula Valley.
Dr. A. Dotan, Beit Berl College. Identification of molluscs from the "Frutarom-Project".
Dr. E.L. Heiman. Israel Malacological Society. Study of Cypraeidae from the Red Sea in general and the Gulf of Aqaba in particular.
Dr. Z. Lewy, Geological Survey of Israel. Molluscs from brackish habitats along the Mediterranean coast of Israel.
Z. Orlin, Qiriyat Motzkin. Israel Malacological Society. Identification of world-wide marine molluscs.
Dr. R. Ortal, Israel Nature Protection and National Parks Authority. Identification of inland molluscs from Israel.
M. Potesman, Haifa University. *Glycymeris* along the Mediterranean coast of Israel and from archaeological sites.
Dr. M. Ra'anan, David Yellin College, Jerusalem. Commercial cultivation of Muricidae for the production of 'Tekhelet'.
B.S. Singer, Israel Malacological Society. Revision of Red Sea Scaphopoda.

5. FISHES

Staff

Dr. D. Golani, Collection Manager
Prof. A. Ben-Tuvia, Emeritus Curator (deceased, 1999).

The fish collection consists of more than 21,000 lots of marine and freshwater fishes, mainly from Israeli waters (Mediterranean, Red Sea and inland waters). In addition, the collection holds material from expeditions outside of Israel, including the eastern Mediterranean countries of Cyprus, Greece and Turkey. There is also a large collection of fish specimens from Eritrea in the southern Red Sea. Other large collections include specimens from the inland waters of Europe, the Seychelles in the Indian Ocean, and from the United States.

Activities

Computerization of the Collection

The computerization project has been completed. Currently the database of the collection is being transformed to match the format of the BioGIS (Israel Biological Geographical Information System) that was established in order to create a national database of the flora and fauna of Israel and can be seen at its Internet website: http: //anima.bot.huji.ac.il/biogis/static/en/index.html. At the present time, the data on the freshwater fish specimens have been integrated into BioGIS.

Type Collection

The type collection has been reorganized. Nearly all the material that had been sent on loan to other research institutes has been returned. A full list of all types will appear in a future issue of *Haasiana*.

CLOFMED

A Checklist of the Mediterranean Fishes of Israel was completed in June 2003. The checklist compiles all known publications concerning occurrence of fish species in Israeli waters. Citations of publications are coded according to the main subject of each publication.

Documenting color in Mediterranean and freshwater fish species.

The collection has undertaken the project of photographing fresh specimens of Mediterranean and freshwater species, in order to document their natural color. This activity is in cooperation with Dr. David Darom of the Hebrew University Scientific Illustration and Photography Unit.

Scientific Expeditions

Dr. D. Golani participated in three overseas expeditions organized by the Interuniversity Institute for Marine Sciences in Eilat:

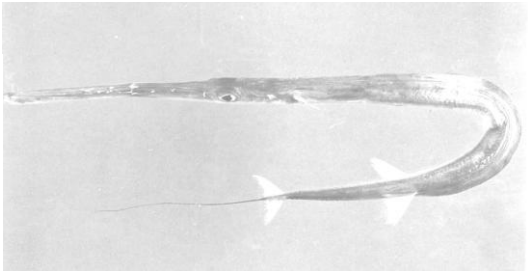
- 1995. **The Israeli-Eritrean Expedition to the southern Red Sea (May 1995).** A large collection of fish was collected in collaboration with Eritrean scientists and deposited in the Hebrew University collections
- 1998. **The 1st Interuniversity Institute – Seychelles Expedition (December 1998).** Collected mostly on Alphonse Island (Amirantes Islands).
- 2002. **The 2nd Interuniversity Institute – Seychelles Expedition** (**January 2002).** Collected in various islands in the Seychelles. These expeditions contributed a large amount of material to the Collection.

Grants

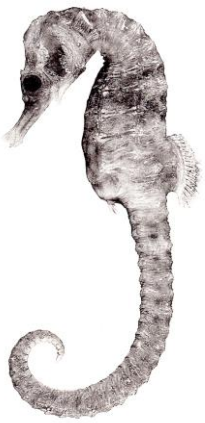
- Effects of power stations thermal effluent on nearshore communities. The Israel Electric Company Ltd., 2000 – 2002.
- Marine organism communities associated with artificial structures of the coal jetty of power stations as a model for artificial reefs – The Israel Electric Company, Ltd., 2001 – 2002.
- Survey of the ichthyofauna in the northern Gulf of Eilat with reference to mariculture activity in the region – Fisheries Department, Ministry of Agriculture, Israel, 2000 -continuing.

Lessepsian Migration – Documentation

The Fish Collection of the Hebrew University has continued to be in the forefront of research and documentation of the process of Lessepsian migration of fishes. Since the publication of the previous issue of *Haasiana*, three new migrants from the Red Sea have been recorded and deposited in the Fish Collection:

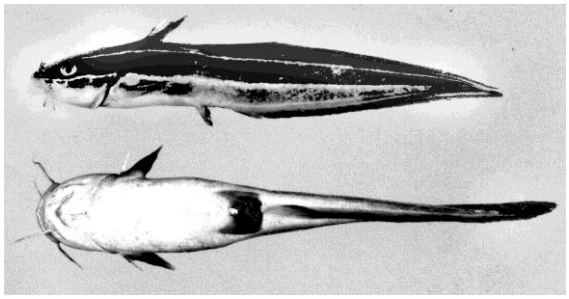


Family Fistularidae
Fistularia commersonii Rüppell 1835. HUJ 18538. 516 mm SL, 10 January 2000, Ashdod-Jaffa, trawl at 35 m (Golani, 2000).



Family Syngnathidae
Hippocampus fuscus Rüppell 1838. HUJ 18651. 144 mm TL, 19 July 2001, port of the Hadera power station. Collected during SCUBA dive at 4 m (Golani and Fine, 2002).

Family Plotosidae
Plotosus lineatus
(Thunberg, 1787). HUJ 18665 (17 specimens). 152 – 177 mm TL, 11 November 2001, Ashdod-Ashqelon, trawl at 20 m (Golani, 2002).



Research Students

A. Chauat, M.Sc. (completed 1997). Advisors: D. Golani and A. Ben-Tuvia.
M.Sc. thesis: The influence of power plant hot water effluent on fish assemblages on sandy shore in Haifa Bay.

N. Toretzky, M.Sc. (completed 2002). Advisors: D. Golani and U. Ritte.
M.Sc. thesis: Genetic comparison of the populations of two fish species, the Red Mullet (*Mullus barbatus*) and the Hake (*Merluccius merluccius*) in the eastern Mediterranean.

Research Visitors to the Collection

Dr. S. Appelbaum, Ben Gurion University. Ontogeny of eels.
Dr. A. Baranes, Interuniversity Institute for Marine Science, Eilat. Chondricthyes fish taxonomy.
Dr. A. Diamant, Israel Oceanographic and Limnological Research, Eilat. Eilat siganids and parasitology.
O. Gon, South African Institute for Aquatic Biodiversuty, Grahamstown, South Africa. Apogonidae taxonomy.
Dr. M. Goren, Tel- Aviv University. Taxonomy of fresh-water fishes.
Prof. O. Lernau, Shaarei Tzedek Hospital, Jerusalem. Fish osteology.
N. Levy, Tel Aviv University, Taxonomy of *Acanthobrama* complex.
R. Ogorek, Tel Aviv University.Taxonomy of Blennidae,
Dr. U. Zajons, Senckenberg Research Institute, Frankfurt, Germany. Deep-water fishes of the Red Sea.

6. THE HERPETOLOGICAL COLLECTION (AMPHIBIANS AND REPTILES)

Staff

Prof. Emeritus Y.L. Werner, Curator and Director (until 1998).
B. Shacham, Collection Manager (since October 2001).
N. Sivan, M.Sc., Collection Manager (until October 2001).

The Herpetology Collection houses almost 20,000 cataloged specimens of reptiles and amphibians from all over the world. Most of the specimens in the collection are from Israel and Sinai, and it is considered the best and most extensive regional record of Middle Eastern taxa. The better part of the inventory (ca. 85%) is preserved in ethanol, the minority consists of stuffed or dry specimens, skeletons and skins. Since the early 1990's, tissue samples from fresh specimens have been preserved separately for DNA analysis in the future (several hundred samples). Several hundred uncataloged items (sloughed skins, faeces, fragments of animals) are also included in the collection.

Activities

Computerization of the section of Amphibians and Reptiles.

The collection is fully cataloged by hand. Preliminary computerization of the catalog was made during the early 1990's using Paradox software (ca. 1500 specimens). Since 2002, the software was replaced by an MS-Access application, and the current computerized database consists of ca. 14,500 specimens of the ~20,000 included in the catalog. As the computerizing of the herpetological catalog progresses, the data is gradually integrated into the BioGIS project, a web-based application for public accessibility to the scientific databases (botanical and zoological) of Israel. At the moment circa 4,500 catalog items from the Hebrew University of Jerusalem Herpetological collection have been uploaded to this project (website: www.BioGIS.huji.ac.il).

Public relations.

During 2002-2003 the Herpetological Collection appeared twice in the televised Israeli media: in summer 2002, an article about prevention of snakebite hazards; and on the Arabic-language news program, an article regarding the Nature Halls and Galleries of HUJ.

Sources of new material in the Herpetological Collection.

For several years now the collection has reduced the number of new accessions from deliberate collecting in the field. Most of the new material, ca. 250-300 specimens each year is obtained through donations from various sources:

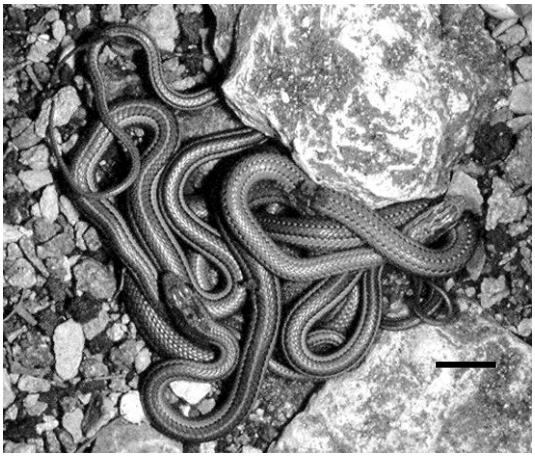
- Student expeditions, mainly undergraduate courses (the previous expedition took place in summer of 1999).
- Local donations from the Israel Herpetological Information Center (IHIC); the Society for Protection of Nature in Israel (SPNI), park rangers of the Israel Nature and Parks Authority (INPA); students; and the general public. Often, the Collection is instrumental in helping

concerned members of the public by identifying and educating regarding the snakes of Israel.

- Local field surveys and projects that involve collection of animal remains (e.g., from pitfalls, Ramat Beit Shemesh, Israel, coll. by E. Shani, 1996).
- Private breeders and enthusiasts outside Israel (e.g., M. Rickert, Germany, 2000).

News from the Herpetological Collection

- The tiny-gecko of Israel and Sinai has been re-identified as *Tropiocolotes nattereri*, not *T. steudneri*, as speculated in Haasiana #1 (Shifman, Shacham and Werner, 1999).
- The populations of saw-scaled lizard in the loess plains of the northern Negev were re-described as *Acanthodactylus beershebiensis*, endemic to this region and distinct from the African *A. pardalis* (Moravec et al., 1999).
- Polymorphism in a litter of *Psammophis schokari* from a female collected on a student excursion to the Nizzanim sand dunes (southern coastal plain, Israel). Of 4 hatchlings, two were of the darkly striped morph and the other two were an intermediate morph between the darkly striped and unstriped morphs (Shacham, 2001).



Hatchlings of *Psammophis schokari*. Scale 1 cm. Photograph, B. Shacham.

- New taxa of the *Echis coloratus* complex were described by G. Babocsay: a new species from Oman, *E. omanensis* (Babocsay, in press), and a new subspecies from Israel, *E. coloratus terraesanctae* (Babocsay, 2003).
- A revision of the Middle-Eastern peace snakes was made, with new distinctions between *Eirenis coronella* and *E. coronelloides*, and description of a new subspecies *Eirenis coronella ibrahimi* from the Sinai (Sivan and Werner, 2003).

- The Negev desert tortoise, *Testudo werneri*, was separated from the north African *T. kleinmanni* by J. Perälä (2001). *Testudo werneri* is endemic to the Negev desert and north-western Sinai peninsula. The holotype is in the HUJ Collection (HUJR-949).

Testudo werneri from Bir Asluj sands, Negev, Israel. Scale, 1 cm. Photographed by B. Shacham.

- Data from the Hebrew University and Tel Aviv University Collections were used to help evaluate the potential need and possibility of a captive-breeding program for supplemental release of *Lacerta media israelica* in the Mount Carmel area, Israel (Shacham, 2002).

A female *Lacerta media israelica* from Mt. Hermon. Photo: B. Shacham.

Research Students

H. Seligmann, Ph.D. (completed 2002). Advisors: Y.L.Werner and A. Beiles.
Dissertation: Microevolution of proneness to tail loss in lizards.

G. Babocsay, Ph.D. student. Advisor: Y.L.Werner
Dissertation: Geographical variation of morphological characters in the venomous snake *Echis coloratus*, environmental correlates and practical implications.

Y. Bogin, M.Sc.(completed 1999). Advisors: Y.L. Werner and A. Bouskila.
M.Sc. thesis: Effects of environmental factors, predators and damaging agents (burrow destructors and invaders) on the burrowing behavior of the gecko *Stenodactylus doriae*.

B. Shacham, M.Sc. student. Advisor: Y.L. Werner.
M.Sc. thesis: Polymorphism in the schokari sand snake (*Psammophis schokari*) in the coastal sand dunes of Israel.

Yosi Schorr, M.Sc. student. Advisor: Y.L. Werner
M.Sc. thesis: Observations of males of two species of geckos – *Ptyodactylus guttatus* and *Ptyodactylus puiseuxi* –in laboratory cages.

Research Visitors to the Collection

The late distinguished herpetologist, **J.H. Hoofien**. Systematics of reptiles.
Dr. J. Moravec, National Museum, Prague. Systematics of *Acanthodactylus pardalis.*
M. Myers, University of Calgary. Variation in *Micrelaps muelleri*.
J. Perälä, University of Bristol. Systematics of *Testudo graeca*.
Dr. M. Stanner, Khon Kaen University, Thailand. Variation in *Varanus*.

Student undergraduate projects based on the herpetology collection (mostly published)

A. Almog
E. Arieli-Zangi
G. Babocsay
A. Ben-Dov
Y. Berger
Y. Bogin
H. Bonen
T. Cohen-Brosh
R. Faiman
G. Hen
K. Herman
S. Kark
E. Lachman
S. Lerner
Y. Plesser
A. Rotem
Y. Schorr
M. Segoli
H. Seligmann
B. Shacham
S. Shifman
N. Sivan
I. Warburg
M. Wolf

IV. Publications

Books

Ben-Eliahu, M.N. and Dimentman, Ch., Guest Co-Editors, 1999. The Levant as a biogeographic bridge--land, sea, and air, with additional papers on the Levant fauna. Festschrift for Prof. F.D. Por of the Hebrew University of Jerusalem. Israel Journal of Zoology 45: 1-223.

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Danin, A. 1998. Wild plants of Eretz Israel and their distribution. Carta, Jerusalem, 212 pp.

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Decu, V., Nitzu, E., Por, F.D. and Dimentman, Ch., eds. 1995. The soil fauna of Israel. 1. Editura Academiei Română, Bucharest, 155 pp.

Fahn, A., Heller, D. and Avishai, M. 1998. The cultivated plants of Israel. Hakibbutz Hameuchad Ltd., Israel (in Hebrew), 703 pp.

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Golani, D. and Darom, D. 1997. Handbook of the fishes of Israel. Keter Publishing House, Jerusalem, 269 pp. (in Hebrew).

Golani, D., **Orsi-Relini, L., Massuti, E. and Quignard, J.P.** 2002. CIESM atlas of exotic species in the Mediterranean. Vol. 1. Fishes. Briand, F., ed. CIESM Publications, Monaco, 256 pp.

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Selected Articles

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Babocsay, G. 2001. Sexual differences in geographic variation of some morphological characters in *Echis coloratus* (VIPERIDAE, OPHIDIA). In: Lymberakis, P. et al., eds. Herpetologia Candiana, pp. 39-42.

Babocsay, G. 2003. Geographic variation in *Echis coloratus* (Viperidae, Ophidia) in the Levant with the description of a new subspecies. Zoology in the Middle East 29: 13-32.

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Ben-Ami, F. **and Heller**, **J.** 2001. Biological control of aquatic pest snails by the black carp *Mylopharyngodon piceus*. Biological Control 22: 131-138.

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Ben-Eliahu, M.N. 1996. Nereid cryptofauna of intertidal vermetid reefs along the Mediterranean coast of Israel --twenty years' overview. Preservation of Our World in the Wake of Change, Vol. VI A/B. In: Steinberger, Y., ed. ISEEQS Publ., Jerusalem, Israel, pp. 592-595.

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Bucciarelli, G., Golani, D. and Bernardi, G. 2002. Genetic cryptic species as biological invaders: The case of a Lessepsian fish migrant, the hardyhead silverside *Atherinomorus lacunosus*. Journal of Experimental Marine Biology and Ecology 273: 143-149.

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Golani, D. 1997. The occurrence of an aquaculture escapee, *Morone* hybrid, along the Mediterranean coast of Israel. The Israeli Journal of Aquaculture - Bamidgeh 49: 36-38.

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