The National Collections of Natural History
Tel Aviv University


Cover design: May Studio
Front cover photograph: Michal Samuni, Uri Roll
Back cover photograph: Michal Samuni, Uri Roll

For copies please contact: Revital Ben-David-Zaslow, 03-6409042
revitbd@post.tau.ac.il
Table of contents

- Introduction .................................................................................................................. 4
- International Scientific Advisory Board ................................................................. 8
- Nature Campus Steering Committee ........................................................................ 10
- Nature Campus Science Committee .......................................................................... 12
- Museum faculty and staff (curators, associate curators, technical assistants) ............ 14
- Public programs - Nature Campus ............................................................................. 18
- Progress at the natural history collections: ............................................................... 24
  - Collections news – A word from our collections managers .................................. 25
  - Collecting trips and expeditions ........................................................................... 34
  - New museum faculty and staff .............................................................................. 38
  - New collections ....................................................................................................... 40
- Chapters in the history of the National Collections of Natural History of Tel Aviv University- Prof. Hanan Bytinski-Salz (1903 - 1986) ................................................................. 46
- Acknowledgments ....................................................................................................... 62
- Publications ................................................................................................................ 68
- Graduate students ..................................................................................................... 96
- Fellowships and grants ........................................................................................... 106
- Awards ........................................................................................................................ 112
- Public service ............................................................................................................ 114
- Visiting scientists at the National Collections ......................................................... 124
- Support for academic and other courses .................................................................. 128
- Support for various individuals and organizations ................................................ 130
Introduction

We are pleased to present the fourth in our series of Annual Reports of the National Collections of Natural History at Tel Aviv University. It details research, conservation, and public activities of the faculty and staff of the National Collections of Natural History at Tel Aviv University during the 2005/2006 academic year.

The National Collections of Natural History at Tel Aviv University provide an active, updated, and comprehensive record of the biodiversity of our region and a significant research infrastructure for scientists worldwide. The collections comprise millions of herbarium and natural history specimens that record the biodiversity of our region in the past century, as well as the history of humankind. Steady collection development is the fruit of the research of our active scientists and graduate students who study species on land, in freshwater, and in the sea.

Because the State of Israel has no museum of natural history, nor are we aware of the existence of any such museum in the entire Middle East, our collections are of particular significance. Tel Aviv University has made a huge investment in them over the years, resulting in an important national level research infrastructure, crucial for biodiversity-based scientific research. At the same time, the collections are also of immense cultural and educational value.

Participating in this multidisciplinary project are members of the George S. Wise Faculty of Life Science (Departments of Zoology and Plant Sciences) and the Sackler Faculty of Medicine (Department of Anatomy and Anthropology); the Archeozoology and Archeobotany Laboratories of the Lester and Sally Entin Faculty of Humanities (the Sonia and Marco Nadler Institute of Archeology) are scheduled to join us when the new collections and research building is constructed.

In the past year we continued to enjoy financial support towards maintaining the collections from the Planning and Grants Committee of the Council of Higher
Education of Israel (VATAT). These funds, crucial for collections maintenance and development, were provided based on the recommendations of the Israel Academy of Sciences and Humanities. The Academy has previously recommended that our collections be declared national collections and that the Planning and Grants Committee provide annual maintenance support as well as part-time academic positions so as to encourage the university to hire the next generation of curators. Moreover, a National Steering Committee was established by the Israel Academy of Sciences and Humanities to oversee the collections' development and the use of public funds.

Three years ago, the former Chair of the Board of Governors of Tel Aviv University, Mr. Michael Steinhardt, very generously pledged 5 million dollars for the development of a proper facility to house the National Collections of Natural History at Tel Aviv University and the research and public activities associated with them. Another foundation has joined in with a generous pledge of 2.5 million dollars. Our founding father, the late Prof. Mendelssohn, has left us a more modest sum in his will and the sum total is an excellent springboard for this ambitious project. We are now working with several government ministries and agencies towards gaining the required government support.

Our collections are dedicated to the conservation of biological diversity through collecting, collection maintenance, research, teaching, and education. We are part of an active research university, the largest in Israel, and our mission focuses on collection development and scientific research. We are pleased to note that in addition to many journal papers and book chapters, our curators have published ten scientific volumes this year that are based upon our scientific collections and/or their taxonomic expertise. We are even happier to note that the overriding majority of these volumes were authored by our new immigrant taxonomists. In the past few years we have the opportunity and privilege to absorb seven new immigrant colleagues from the former Eastern Bloc, and we are gratified with our success in doing so. They have all become productive scientists in their new
homeland, and in particular contribute to the field of taxonomy, which is now of significant global interest. They also support many agricultural, environmental ecological, evolutionary, and conservation studies of scientists in various institutions of higher education as well as government ministries in Israel. This past year we were happy to hire Dr. Silvia Blumenfeld, newly immigrated from Argentina, an expert mycologist (see p. 38), and we are also very pleased that Dr. Sergei Zonstein (formerly of Kyrghyzstan) received a Giladi Fellowship for the coming two years and is well embarked on the track of successful absorption at Tel Aviv University. Dr. Yuri Katz, our Curator of Paleontology (formerly of the Ukraine), retired in the course of the past year but remains as active as ever in research.

Many scientists have used our collections in the past academic year. They have promoted the research of many TAU scientists from the Faculties of Life Sciences, Medicine, and Humanities. Dozens of TAU graduate students enrolled during the past year have used them in their theses or doctoral dissertations, with diverse research topics ranging from understanding the significance of different forestry regimes for biodiversity conservation to gaining insight into the evolution of animal domestication; from studying the use of sea shells in ancient ornaments to identifying alien invasive ant species of Israel; from understanding the functional morphology of early humans to studying the effect of restoration of Wadi Tzeelim; from understanding patterns of terrestrial biodiversity to studying archeological site formation processes; from studying the deep sea fauna of the eastern Mediterranean to assessing the impact of restoration projects in aquatic habitats; from identifying taxa from which biologically active compounds can be extracted for the pharmaceutical industry, to predicting the response of ecological communities to climate change and how to plan for conservation under future climate change scenarios. Moreover, numerous scientists from other institutions in Israel and abroad have used our collections, our taxonomic expertise, and our databases. Thus we continue to contribute to the study of our region's biodiversity.
The Faculty of Life Sciences at Tel Aviv University has a longstanding tradition of service to the Israeli school system. To this day we continue with this tradition, and Tel Aviv University has established "Nature Campus" - our education and public program whose activities take advantage of Tel Aviv University's unique research infrastructure, the I. Meier Segals Zoological Garden, the Botanic Gardens, and the teaching laboratories, and open the treasures of the National Collections of Natural History at Tel Aviv University to the public eye. More significantly, "Nature Campus" uses the unique knowledge and expertise of the faculty members of Tel Aviv University in the fields of ecology, biogeography, evolution, paleontology, conservation biology, behavior, and physiology to develop public and educational activities.

We also take pride also in our involvement in nature and environmental conservation. The Society for the Protection of Nature in Israel (SPNI), Israel's leading environmental NGO (non-governmental organization), was co-founded by the faculty of Tel Aviv University (Prof. Amotz Zahavi and Prof. Heinrich Mendelssohn), and we are particularly happy that in the past few years the SPNI has chosen to conduct part of its training course for new guides at Tel Aviv University, with Nature Campus. We feel that this training period enhances the strong links and academic support our scientists provide to nature conservation in Israel. The lobbying for conservation laws and the establishment of the Nature Reserves Authority (now INPA, the Israel Nature and Parks Authority) was also a result of the hard work of TAU faculty, in particular the influence of our founding father, the late Prof. Heinrich Mendelssohn. We work hard to follow in their footsteps by continuing the tradition of contributing to society based on our expertise in the study of nature, as well as in many other significant ways. Many members are very active in conservation and monitoring projects and on boards of public and environmental organizations. Our report lists some of these activities.

Here we share with you the progress made in the past academic year 2005/2006.
International Scientific Advisory Board

Vicki Buchsbaum, Pearse Institute of Marine Sciences, University of California, Santa Cruz, USA

Jared Diamond, Department of Physiology, University of California, Los Angeles Medical School, Los Angeles, CA, USA

Paul Ehrlich, Department of Biological Sciences, Stanford University, Stanford, CA, USA

Daphne G. Fautin, Ecology and Evolutionary Biology, Invertebrate Zoology, University of Kansas, USA

Lord Robert May, Department of Zoology, Oxford University, Oxford, UK

Peter Raven, Missouri Botanical Garden, St. Louis, MO, USA

Daniel Simberloff, Department of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, TN, USA

Edward O. Wilson, Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA
Nature Campus Steering Committee

Yoel Kloog, Dean of Life Sciences, Chair

Iris London-Zolty, Coordinator

Lea Pais, Director of the Research Authority

Amit Streit, Director of the Finance Department

Sigal Adar, Director of Friends of TAU

Abraham Hefetz, Head of the Department of Zoology

Daniel Chamovitz, Head of the Department of Plant Sciences

Yoel Rak, Head of the Department of Anatomy and Anthropology

Tamar Dayan, Director of the Natural History Collections

Arnon Lotem, Director of the I. Meier Segals Garden for Zoological Research

Jacob Garti, Director of the Botanic Gardens
Nature Campus Science Committee

Daniel Chamovitz, Head of the Department of Plant Sciences, Faculty of Life Sciences

Tamar Dayan, Department of Zoology, Faculty of Life Sciences

Israel Finkelstein, the Jacob M. Alkow Department of Archaeology and Ancient Near Eastern Cultures, Faculty of Humanities

Jonathan M. Gershoni, Head of the Department of Cell Research and Immunology, Faculty of Life Sciences

Yoav Gothilf, Department of Neurobiochemistry, Faculty of Life Sciences

Abraham Hefetz, Head of the Department of Zoology, Faculty of Life Sciences

Ayala Hochman, Department of Biochemistry, Faculty of Life Sciences

Arnon Lotem, Department of Zoology, Faculty of Life Sciences

Rafi Nachmias, Constantiner School of Education, Faculty of Humanities

Yoel Rak, Head of the Department of Anatomy and Anthropology, Faculty of Medicine

Eliora Ron, Molecular Microbiology and Biotechnology, Faculty of Life Sciences

Marcelo Sternberg, Department of Plant Sciences, Faculty of Life Sciences
# Museum staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tamar Dayan</td>
<td>Department of Zoology</td>
<td>Director</td>
</tr>
<tr>
<td>Yoram Yom-Tov</td>
<td>Department of Zoology</td>
<td>Higher Vertebrates</td>
</tr>
<tr>
<td>Yehuda Benayahu</td>
<td>Department of Zoology</td>
<td>Invertebrates</td>
</tr>
<tr>
<td>Amnon Freidberg</td>
<td>Department of Zoology</td>
<td>Entomology</td>
</tr>
<tr>
<td>Yehoshua Kugler (emeritus)</td>
<td>Department of Zoology</td>
<td>Entomology</td>
</tr>
<tr>
<td>Menachem Goren</td>
<td>Department of Zoology</td>
<td>Fishes</td>
</tr>
<tr>
<td>Lev Fishelson (emeritus)</td>
<td>Department of Zoology</td>
<td>Fishes</td>
</tr>
<tr>
<td>Dorothée Huchon</td>
<td>Department of Zoology</td>
<td>Molecular Systematics</td>
</tr>
<tr>
<td>Baruch Arensburg (emeritus)</td>
<td>Department of Anatomy &amp; Anthropology</td>
<td>Physical Anthropology</td>
</tr>
<tr>
<td>Yoel Rak</td>
<td>Department of Anatomy &amp; Anthropology</td>
<td>Physical Anthropology</td>
</tr>
<tr>
<td>Israel Hershkovitz</td>
<td>Department of Anatomy &amp; Anthropology</td>
<td>Physical Anthropology</td>
</tr>
<tr>
<td>Nissan Binyamini (emeritus)</td>
<td>Department of Plant Sciences</td>
<td>Fungi</td>
</tr>
<tr>
<td>Margalith Galun (emeritus)</td>
<td>Department of Plant Sciences</td>
<td>Lichens</td>
</tr>
<tr>
<td>Jacob Garty</td>
<td>Department of Plant Sciences</td>
<td>Lichens</td>
</tr>
<tr>
<td>Ya'akov Lipkin (emeritus)</td>
<td>Department of Plant Sciences</td>
<td>Algae</td>
</tr>
</tbody>
</table>
**Curators** (TAU faculty members; new immigrants in various absorption schemes)

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silvia Blumenfeld</td>
<td>Department of Plant Sciences</td>
<td>Fungi</td>
</tr>
<tr>
<td>Vladimir Chikatunov</td>
<td>Department of Zoology</td>
<td>Coleoptera</td>
</tr>
<tr>
<td>Vassily Kravchenko</td>
<td>Department of Zoology</td>
<td>Lepidoptera</td>
</tr>
<tr>
<td>Sergei Zonstein</td>
<td>Department of Zoology</td>
<td>Arachnidae</td>
</tr>
<tr>
<td>Andy Lerer (emeritus)</td>
<td>Department of Zoology</td>
<td>Diptera</td>
</tr>
<tr>
<td>Yuri Katz (emeritus)</td>
<td>Department of Zoology</td>
<td>Paleontology</td>
</tr>
<tr>
<td>Olga Orlov-Labkovsky</td>
<td>Department of Zoology</td>
<td>Micropaleontology</td>
</tr>
</tbody>
</table>

**Associate curators** (faculty members)

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yossi Loya</td>
<td>Department of Zoology</td>
<td>Stony Corals</td>
</tr>
<tr>
<td>Micha Ilan</td>
<td>Department of Zoology</td>
<td>Sponges</td>
</tr>
<tr>
<td>Dan Gerling</td>
<td>Department of Zoology</td>
<td>Hymenoptera</td>
</tr>
<tr>
<td>Abraham Hefetz</td>
<td>Department of Zoology</td>
<td>Entomology</td>
</tr>
<tr>
<td>Bella Galil</td>
<td>Israel Oceanographic &amp; Limnological Research - Haifa</td>
<td>Crustaceans</td>
</tr>
<tr>
<td>Danny Simon</td>
<td>Department of Zoology</td>
<td>Formicidae</td>
</tr>
<tr>
<td>Ilan Yarom</td>
<td>Hazeva Research &amp; Development</td>
<td>Diptera</td>
</tr>
<tr>
<td>Eli Geffen</td>
<td>Department of Zoology</td>
<td>Molecular Systematics</td>
</tr>
<tr>
<td>Ofer Mokady</td>
<td>Department of Zoology</td>
<td>Molecular Systematics</td>
</tr>
<tr>
<td>Elazar Kochva (emeritus)</td>
<td>Department of Zoology</td>
<td>Herpetology</td>
</tr>
</tbody>
</table>
Technical assistants (assistant curators, collection managers, technicians, taxidermist)

Ann Belinsky Department of Zoology
Revital Ben-David-Zaslow, PhD Department of Zoology
Vered Eshed, PhD Department of Anatomy & Anthropology
Tova Feller Department of Zoology
Leonid Friedman Department of Zoology
Igor Gavrilov Department of Zoology
Ermin Ionescu, PhD Department of Zoology
Henk Mienis Department of Zoology
Reuven Landsman Department of Zoology
Tzilia Shariv Department of Zoology
Nili Shinnar Department of Zoology
Alex Shlagman Department of Zoology
Tirza Stern Department of Zoology
Chemda Zigman Department of Zoology

‘Nature Campus’

Yael Gavrieli, PhD Director
Anat Feldman Content Development
Neta Servi Public Programs Coordinator
Public programs - Nature Campus

On its sixth year of operation, Nature Campus continued in its activities to advance communication of science about the natural history and living environment of Israel to children, teachers, nature guides, and the general public. In some programs, natural history collections play a key role, while in other programs artifacts such as skulls, bones, nests, eggs, live insects and stuffed animals are integrated into the learning experience.

Programs based on the natural history collections:

Public programs:
A new scientific committee was established, with scientists representing all Life Sciences departments as well as the Jaime and Joan Constantin器 School of Education and the Sonia and Marco Nadler Institute of Archaeology. The scientific committee provides fresh perspectives on environmental issues along with better cooperation with Nature Campus partners at TAU.

Nature Campus has matured and entered into a phase of ongoing activity. As part of its routine, it has continued to develop new programs, partnerships, and projects. Worthy of special mention is the further expansion of research workshops, Urban Nature programs, Nature on the Web, Zoo On-Line, and the Invasive Species Website.

During the summer of 2006, when many families from the North of Israel arrived in the center of the country, Nature Campus joined the initiative of Tel Aviv University and hosted groups and individuals at the Zoological and Botanical Gardens.

The TAU Price-Brodie initiative in Jaffa has been our partner from day one and our first educational activity. During the past six years we developed together many programs, which have since evolved to become our 'flagship' projects: the research workshops at Ironi Yod-Beit Arab High School and Urban Nature at
all Arab and Jewish public elementary schools. In the past year, Price-Brodie policy has changed from full sponsorship to partial support. The remaining cost was covered by the schools, which had to choose between different projects. We are proud that all but one, (9 schools in all), chose to continue Nature Campus programs.

As of the summer of 2006, upon the request of the Botanical Gardens and the Department of Plant Sciences, Nature Campus received full responsibility for all public programs at the Botanical Gardens. This reorganization has enlarged Nature Campus's range of activities, without increased staff or budget. In the following months, Nature Campus team has put a special effort into developing, upgrading, and adapting programs for activities at the Botanical Gardens. We find that the present operation better suits our mission statement.

Ongoing programs based on the natural history collections:

Public programs:

- **Guided Tours.** This program offers a two-hour activity at the I. Meier Segals Garden for Zoological Research or the Botanic Gardens. During 2005/2006, a new tour theme was developed – Urban Nature – and was well received by the audience.

  During the summer war, Nature Campus contributed to the national effort and opened the zoo gates to the general public; this operation required special adaptation of our visitor services. However, once the war was over, we returned to our routine policy of group visitations only. With the support of the Ministry of Science and the City of Lod, 500 children from this city took part in a three-hour tour. The Ministry covered the expenses of the tour while the municipality paid for the transportation. Thus, underprivileged youth, from Arab and Jewish schools, at times in mixed groups, were able to enjoy this activity. Their
visits were a special experience for them as well as for our staff - their interest, enthusiasm, and excitement inspired us all.

- **Science Days.** The program offers a three to four-hour activity for classes at the Natural History Collections as well as at the Gardens. Most of these activities are based on the collection's artifacts. The covered themes are diverse and include, among others, Marine Biology, Nature Conservation, Biodiversity, Reproduction in Nature, Plants and their Environment, Predators and Prey, Evolution of Humans, Adaptation and Ecology of Temporary Winter Pools.

As part of our special effort to develop programs on urban nature, we developed a science day on this issue as well. This new program has received a very positive feedback.

- **Research Workshops.** A series of 3-6 science days centered on one theme, targeted for environmental or biology high-school students, is integrated into their school studies. The first workshop developed was the ‘winter pool’ workshop, which was a pilot in 2003/2004 and then in 2004/2005 as an upgraded program. Following its success, two additional workshops were developed: Ecosystems and Urban Nature. The workshops were concluded with a celebrative event in the presence of the students' parents. The students then presented their work in posters and gave short lectures. We find that this mode is especially beneficial in teaching the theme of the program as well as scientific way of thinking.

- **Urban Nature enrichment program.** This program, in its third year now, with the cooperation of the TAU Price-Brodie initiative in Jaffa elementary schools, continues to receive very positive feedbacks. The program comprises of 9-10 activity sessions at the school and its yard and 3-4 additional activities at the Zoo and the Botanic Gardens. The program focuses on the living world in the immediate environment of
the children. For the children of Jaffa, a typical inner-city sector, the program reveals a new dimension in their otherwise very urban surroundings and nurtures new attitudes towards nature.

- **Science Camps.** Science camps were held during the Hanukah, Passover, and summer school vacations. The camp, a 4-5 days program, offers scientific exploration of the biosphere for elementary school children. Each day is focused on a major phenomenon or process in the living world; for example the food web, behavioral communication, and adaptation.

- **Professional Development and Training Days.** Diverse training programs offer conservation biology enrichment for teachers and environmental organizations' staff. The professional training program is tailored according to the participants' requirements. This year's highlight was the course of the Society for the Protection of Nature in Israel: a 50-hour program in which over 100 new guides participated and leading TAU researchers gave lectures. This year's course was especially rewarding, as alumni from previous courses returned to hear lectures and/or expand their knowledge in new topics that they had missed in the past. The feedback was outstanding and we look forward to the next courses.

**On-Line resources**

Because the Collection's capacity for public visitation is very limited, we have made a special effort to develop the Nature Campus website – [www.campusteva.tau.ac.il](http://www.campusteva.tau.ac.il). This site reaches out to the public, and offers, in a language understandable to all, the wealth of scientific knowledge based on the Natural History Collections (Learning resources section).
• **Zoo On-Line** is a joint project with the I.Meier Segals Garden for Zoological Research. 6-8 cameras continuously broadcast the sights from the Zoo. The pictures are accompanied with information, updated by the Nature Campus webmaster, on the Zoo's inhabitants. The project is supported by the Israel Electric Company and Moked Emun security company.

• **Nature on the Web.** During 2005/2006, we began developing a new website and its first stage of development will be completed by February 2007. It will offer information in Hebrew about Earth systems, ecosystem services and highlights from status reports worldwide. In addition to being an open website, it will also serve as a foundation for youth competitions on sustainable development (developed with TAU's Science Oriented Youth Unit and the Ministries of Education and of Environmental Protection).
Progress at the natural history collections

Natural history collections are dynamic archives that record biodiversity. As such, they grow annually by new collecting activities and by incorporating smaller private or institutional collections. The collecting activities comprise focused collecting expeditions as well as by-products of numerous field studies conducted by scientists and their graduate students. Moreover, the Israel Nature and Parks Authority rangers collect vertebrate carcasses for the collections. Collecting, incorporating the collections, preserving and digitizing them, as well as managing the collections, the data, and the network of collectors and colleagues, is a formidable job that falls upon the shoulders of the curators, and, even more so, on those of the collections managers, technical assistants, and taxidermist. We are fortunate to have a group of active, expert, and dedicated technical staff members, who do their best, in nearly impossible physical conditions and major under-staffing, to preserve and expand this priceless record of biodiversity and to help promote scientific biodiversity research. Their work is highly specialized, their knowledge priceless; almost all have academic degrees, most have either a PhD or an MSc, and all are the crucial backbone of the national collections of natural history at Tel Aviv University.

Our overworked collections managers have also produced this report, and we are particularly grateful to the work of Dr. Revital Ben-David-Zaslow for her compiling it. Here they also give a glimpse of the behind-the-scenes of managing the collections: collections news, collecting trips and expeditions, and new collections are reported here in a nutshell.
Collections news – A word from our collection managers

The staff members of TAU Natural History Collections continue their activities to promote and preserve the various collections. As in previous years, we have put much effort into advancing our goals. We continue to collect and preserve new scientific materials, rescue and incorporate important private and historical collections, maintain the existing collections, ship scientific material and data, and assist graduate students, academic courses, and “Nature Campus” activities.

Over the last three years, the wet museum has suffered from an outbreak of mold. Most of the jars, shelves, covers and walls became covered with mold. This year we finally succeeded in solving the problem and have invested an enormous amount of work in repairing the damage. We must individually clean every jar and shelf of the collections and replace all plastic covers. This work is arduous and tiring but necessary, and our first priority in order to end the problem once and for all and to save the collections from irreparable damage.

During the academic year 2005/2006 we received and incorporated many specimens of various taxonomic groups collected worldwide by the collection curators and staff, students, rangers from the Israel Nature and Parks Authority, and others. As we reported previously, the reptile collection is now active and almost 200 new records were added this past year. Most of these were collected by graduate students during their field work. A new species of snake, *Micrelaps tchernovi*, was determined by Prof. Yehudah L. Werner, from The Hebrew University, Jerusalem, based also on the collection material.

Much work was done this year in to organize the dry vertebrate collection in the new specimen cabinets purchased with the support of VATAT funds. Some 150 new specimens have been preserved and added to the mammal collection and about 30 to the bird collection. These include specimens collected by rangers from the Israel Nature and Parks Authority.
The amphibian collection is now entirely digitized and, with the help of Dr. Sarig Gafny, we have even succeeded in taxonomically identifying the larvae. About 400 new specimens have been added to the amphibian collection.

During this year we also focused on another, previously inactive collection. The echinoderma collection is now in the process of being digitized, cleaned, replenished or having the preservation liquids changed and samples are being transferred to better storage containers and relabeled. This collection contains thousands of specimens collected mostly from the Mediterranean and the Red Sea since 1945. So far, almost 1500 specimens have been processed and we are hoping that by next year we will complete our update of the entire collection.

As in previous years, the collections made by Prof. Yehuda Benayahu have been sorted, preserved, and digitized for future research and identification. The material includes soft corals, sea anemones, sponges, tunicates, nudibranchs, and other invertebrates. As a routine procedure, tissue samples for molecular analysis were taken from most of the soft coral specimens and preserved.

We continue the fruitful cooperation with Tel Aviv University students collecting samples in the field. Collections made by students are immediately digitized in order to facilitate easy transfer of specimens to the museum in the near future. Cooperation between students and staff of the collections is excellent. We give the students support in all fields including preservation, identification, labeling, and cataloguing. Tirza Stern has developed a unique database for this purpose and continues to work with the students, adjusting it to their special needs. The students of Prof. Avital Gasith are in the process of merging their collections, consisting of freshwater invertebrates caught in various rivers in Israel, with the National Collections. Together with the samples, the collection managers are provided with the digitized database to assist their incorporation into the National Collections and to help avoid mistakes. Students of Prof. Tamar Dayan have transferred a very large
collection to the museum, containing thousands of specimens, of mammals, amphibians, reptiles, and arthropods caught in pitfall traps. The vertebrates among them have been preserved, identified, digitized, and labeled; the invertebrates have been preserved and sorted for future identification.

The archaeozoology collection was in a dreadful condition. It was held in two leaking containers and suffered from damp, rats and other pests. This collection contains many bones from some of the most important archeological digs in Israel. The collection has been transferred to two new containers and all boxes have been replaced.

Yuri Katz, curator of the paleontology collection, reports on a unique project conducted on the bottom sediment in the Gulf of Aqaba (st.RS-104, 220 m depth). More than 50,000 microfossil specimens have been obtained. From this new collection about 300 species of invertebrate fossils (Sarcodina, Porifera, Coelenterata, Vermes, Brachiopoda, Bryozoa, Echinodermata and Arthropoda) were determined, 224 of them attributed to Pacific foraminifers.

Routine work on the insect collection includes absorption and integration of donated collections; labeling and sorting of specimens from collecting trips; identification of and research on select groups (including over 40 shipments scientific specimens to specialists, mostly overseas, during 2006); and preservation activities, such as renewal of naphthalene. Special treatment was required in cases of damage caused by mold and pests. As in past years, we have continued digitizing this collection. This year we focused on the Parasitica and Lygaeidae (2000 specimens). Newly caught insects are immediately given a catalog number and digitized. During the present year, about 11,000 new insects were added to the collection. From his collecting trip, Prof. Dan Gerling collected groups of African and Brazilian whiteflies, which are now being identified. Those already known are *Aleurotrachelus attratus* and *Paraleyrodes bondari*. Andy Lerher described the Bengaliidae family as a new family for
science. Vladimir Chikatunov performed an enormous identification work on a beetle collection from pitfall traps and malaise traps in various projects and areas (South Arava and South Jordan, Mt. Carmel, Nizzanim, Adullam, Avedat and Lehavim, Coastal Plain, Nahal Shaharut, Jordan Valley and others). There is a close working relationship between the "Plant Protection and Inspection Services" (PPIS, Ministry of Agriculture) and the insect and arthropoda staff. As in previous years, the collection staff made identifications work and guided the PPIS members.

Sergei Zonstein, curator of the arthropoda collection, reports on his work. As in the previous year, field work included about 50 days in the field in various regions of Israel, primarily in the desert (Hazeva and other parts of the Arava and the Rift Valley, as well as the central coastal plain sands near Or-Akiva), collecting spiders (Arachnidae) and spider-wasps (Pompilidae). Laboratory work mainly comprised identification of collections made by students, as part of their projects, and establishing a database for these collections.

**Progress Report for the Mollusc Collection 2005-2006**

**Henk K. Mienis**

During the past academic year we continued revising of the dry mollusc material in the various extra-university collections in order to unite them in one large, systematically arranged general collection. The identifications were again carried out by Henk Mienis, while Revital Ben-David Zaslow took care of entering all the relevant data from these samples in the computer. During Revital's maternity leave, we received great help from Larissa Lerner. Chemda Zigman divided her part of the work equally between the wet and dry collection. At the moment 34,000 samples in the mollusk collection have been completely digitized.
New acquisitions

New material continued to arrive in the collection. Of special importance was the arrival of the private shell collection of the late Kalman Illes Hertz (see elsewhere in this report).

During the academic year 2005/2006 new material has been received from the following persons:

<table>
<thead>
<tr>
<th>Name</th>
<th>Brief description of the material</th>
</tr>
</thead>
<tbody>
<tr>
<td>U. Bar-Zeev</td>
<td>Terrestrial mollusks from Israel</td>
</tr>
<tr>
<td>O. Caro</td>
<td>Various marine and freshwater mollusks world wide</td>
</tr>
<tr>
<td>B. Galil</td>
<td>Marine mollusks dredged in the Eastern Mediterranean</td>
</tr>
<tr>
<td>A. Glazer</td>
<td>Marine mollusks from cooling channels of Power Stations near Haifa and Ashqelon</td>
</tr>
<tr>
<td>E.L. Heiman</td>
<td>Cypraeidae type material</td>
</tr>
<tr>
<td>J. Inchaustegui</td>
<td>Marine mollusks from the fish market in Houston, Texas, U.S.A.</td>
</tr>
<tr>
<td>D. Mienis</td>
<td>Terrestrial snails from Nahal Oren and Horvat Shallala</td>
</tr>
<tr>
<td>H.K. Mienis</td>
<td>Terrestrial and freshwater snails from Israel and the Netherlands; Miscellaneous world wide material ex-collection Mienis</td>
</tr>
<tr>
<td>Sh. Moran</td>
<td>Terrestrial and freshwater snails intercepted by inspectors of the Plant Protection and Inspection Services, Ministry of Agriculture</td>
</tr>
<tr>
<td>R. Ortal</td>
<td>Marine mollusks from Aquaculture, Elat</td>
</tr>
<tr>
<td>Y. Sharon</td>
<td>Marine mollusks from the Power Station Hadera</td>
</tr>
<tr>
<td>E. Sheffer</td>
<td>Marine mollusks from the Mediterranean coast of Israel</td>
</tr>
<tr>
<td>Y. Sinai</td>
<td>Terrestrial snails from Israel</td>
</tr>
<tr>
<td>B.S. Singer</td>
<td>Terrestrial snails from former Yugoslavia</td>
</tr>
<tr>
<td>Y. Weiss</td>
<td>Kalman Illes Hertz Collection (see elsewhere in this report)</td>
</tr>
</tbody>
</table>
**Type material**
Several samples consisting of type-material of taxa described by J.J. van Aartsen & J. Goud (Bivalvia: Diplodonta) and E.L. Heiman (Gastropoda: Cypraeidae) were received for permanent storage in the collection.

**Material sent on loan**
All the material belonging to the marine gastropod family Triviidae has been sent on loan to D. Fehse (Germany) and J. Grego (Slovakia), specialists who are revising this family globally.

The Cypraeidae in the collection are regularly studied by Dr. E.L. Heiman (Rehovot), and data are used in his many publications.

**Mollusc conservation**
The Pagoda snail *Xerocrassa davidiana picardi* (F. Haas, 1933) is an endemic subspecies confined in its distribution to several kurkar outcrops (a local sandstone formation) in the Ramat Gan and Givatayim. Owing to ever-increasing urbanization of the area, only one population still exists on the so-called "Givat HaAntennot" in Givatayim.

In the winter of 2005 surveyors started working on the hill, and after questioning, we learned there are plans to turn the hill into a building plot.

In order to save this tiny snail, named after the well-known Israeli geologist Prof. L. Picard, from extinction, some 250 living snails were collected and released on a kurkar outcrop in the Botanical Garden of the Tel Aviv University.

During rainy days in the winter of 2006/2007 we will evaluate the current state of that artificial colony. If necessary we will transfer additional snails to the botanical garden.

Participants in this project are: Dr. M. Sternberg on behalf of the Botanical Garden of the Tel Aviv University, Dr. R. Ortal, Dr. Y. Malihi and Mr. O.
Progress Report for the Fungi Collection 2006

Project: Biodiversity and conservation of Higher Basidiomycetes in Israel

Silvia Blumenfeld

Study of biodiversity of higher Basidiomycetes of Israel

In Israel, the situation of taxonomic and ecological studies of higher fungi is rather critical. Since publications of Binyamini (1975, 1984, 1987, 1993), there are no records of such of studies. Based on the Fungal Herbarium of Tel Aviv University, which has a collection of 3762 specimens developed by Prof. Nissan Binyamini during the last 40 years, I have critically revised the two main Orders of Higher Fungi: Agaricales and Aphyllophorales. All specimens were revised, and we made corrections as appropriate, for example changing some classification features. We started to screen toxic mushrooms and their mycotoxin groups. From the TAU database of mushrooms, we found 31 species of potentially toxic mushrooms; 19 of them are toxic, 9 are suspected to be toxic, and 3 are lethal. From the database we also summarized collection dates for all records.

Fungal culture collection

The use and study of mushrooms involves living cultures and the development of regional gene banks. Mushroom collections that maintain strains in pure culture, stable and viable conditions, can contribute valuable knowledge in areas such taxonomy, management and sustainable use. Proper conservation and management of germplasm require knowledge not only of the mushrooms themselves, but also of their growth and preservation techniques, properties and
potential applications, as well as the provision of an exchange service with other academic units worldwide. In the last few years there is heightened awareness of the value of mushroom culture collections both in the conservation of genetic resources and biodiversity, and in providing biological certified material for research projects and industries (Labarere, 2000). The TAUFCC will provide our researchers with a reliable place to deposit voucher specimens, because in general Israeli scientists usually deposit even type native species in international collections outside Israel (Steiman et al., 2000). I have continued to add new strains of filamentous fungi of Israel and other countries, a collection I started in 2003 in Israel. At present we have records of 51 species and 30 genera.

We affiliated the collection to the World Federation of Culture Collections (WFCC) and to the World Directory of Collections of Culture of Microorganisms (WDCM), as there is no Israeli collection of higher fungi in such an international institution, which holds the world database of microorganisms. All fungal collections associated with fungal herbaria at universities are members of the WFCC. Up to now, in Israel there were only 2 affiliated collections: WDCM 295, a collection of bacteria from the Central Laboratory of the Ministry of Health in Jerusalem, and WDCM 144, Center Rhizobium Collection of the Volcani Institute. The acronym of our collection is TAUFCC (Tel Aviv University Fungal Culture Collection) and its registration number is 899 (WDCM, 2006. www.wdcm.org/CCINFO/CCINFO.xml?899).

Chemotaxonomy of wood-rotting fungi
The chemotaxonomy of wood-rotting fungi is an interesting field in described our patent (Blumenfeld and CONICET, 1998). We screened the enzymes of the wood-rotting fungi. Cultures are deposited as voucher specimens at the Fungal Culture Collection of Tel Aviv University (TAUFCC, World Data Centre for Microorganisms, 2006). According to the TAU fungal database (3762
specimens), there are records of 112 species belonging to 47 genera of wood-rotting fungi. Characterization of enzymes that break down lignin is an enormously important chemotaxonomical application.

Biographical
Collecting trips and expeditions

A dynamic archive, our natural history collections grow annually through donations, research projects, and collecting trips and expeditions. Many research projects add numerous specimens to our collections; other collections benefit from focused collecting trips. Here we report some of the new collecting activities of our scientists.

Collecting trips of the Entomology

Amnon Freidberg

Cyprus

In spring 2006 my wife and I spent five days in the Greek part of Cyprus mostly collecting insects. The official excuse for this trip was to collect specimens of a new species of Dorycera (Diptera: Ulidiidae), a genus of picture-winged flies that was recently revised by Hanan Ackerman, a M.Sc. student of mine. We had specimens from the island, mostly collected in April, that we had borrowed from European collections and we wanted to collect additional specimens before we describe this species as new. So we spent about three days at the central southern part of the island, especially up north to the peak of Mt. Olympus (nearly 2000m) of the Troodos Mountains, and some distance north of the peak, and about a day at the northwestern corner of the island at or near sea level. The landscape and vegetation reminded us of Israel, and many species are the same. However, Cyprus is noted for its high rate of endemism, and we did collect several species that apparently are endemic. Of our focal species we collected only one female, and we assume that we came a little too late in the season. Owing to previous contacts of Leonid Friedman, we have established good relationships with two amateur naturalists, Mr. Christodolus Makris and Dr. Yannis Christofides, who were very helpful during the visit and were also mobilized to help collect picture-winged and related flies for us. Altogether, we brought back about 1500 pinned specimens.
**Orient**

In conjunction with the 6th Congress of Dipterology, in Fukuoka, Japan, my wife and I also made collecting trips to the Philippines and southern India. While I was interested in collecting all flies (Diptera), my specific objectives were focused on fruit flies in three groups on which I have ongoing research: bamboo flies (tribe Gastrozonini), Acanthaceae-feeding flies (tribe Tephrellini), and Asteraceae-feeding flies of the tribe Schistopterini. I did get representatives of all three groups, although not always in large numbers. Gastrozonini and other bamboo flies are best collected by baits. The baits consist of cut bamboo shoots, preferably the growing tips. One cuts a large shoot and slices it into smaller pieces both transversely and longitudinally, leaving it in different positions at a more or less exposed place for some time. Flies are attracted usually within an hour or so, although sometimes within minutes, and keep flying in the whole day. These flies are collected, sometimes with difficulties, using a sweepnet. In the Philippines, only three species were collected, including a giant species of *Enicoptera*, a genus especially characteristic of that country. I collected a good series, but also observed them during mating and oviposition. In India, I collected about ten species, some on a small, shrubby bamboo, but mostly on a giant bamboo (*Dendrocalamys stricta*), which attains 15-20 m in height. In India, I also collected a species of *Sundaresta* that breeds in the pods of *Strobilanthus* (Acanthaceae), a showy shrub (known as Kurinji) that blooms once every 12 years. I also collected and reared from its host plant a species of *Rhabdochaeta* (apparently *R. pulchella*; Schistopterini) that was known from Java and East Africa, and the present finding is an important link within the disjunct distribution of this species. Beside these interesting collections, it was also extremely interesting to stay at a Raja (king) home in Kukkal and to observe the mixed culture, especially the combination of the Maharaja's happy and partly lost days of hunting and the growing interest in protecting the environment. Altogether we brought back about 2,500 specimens.
Benthic biodiversity surveys off the Mediterranean coast of Israel

Bella S. Galil

In 2006 eight campaigns were been conducted off the Mediterranean coast of Israel to sample the benthic biota. Bella Galil, Mel Cooper, Limor Shoval, Sima Usvyatov, and Guy Paz participated in the cruises aboard the R/V Shikmona and Etzion of the National Oceanographic Institute, IOLR. The surveys were conducted as part of baseline studies or monitoring surveys (off Palmahim, 14.09.2006, 37m depth, box core and trawl samples; 26.05.2006, 37 m depth, box core and trawl samples; 13.09.2006, 60-64 m depth, box core and trawl samples; 25.05.2006, 60 m depth, box core and trawl samples; off Ashdod, 17.09.006, 12 m depth, box core samples; 24.05.006, 12 m depth, box core samples; 17.09-19.09.2006, 5 m depth, box core samples; off Eratosthenes seamount, 20-22.06.2006, 1023-1424 m depth, box core and trawl samples). The macrofaunal samples – several hundred specimens – include rare records and species previously unknown before from the Israeli coast. All the material is currently kept in the Zoological Museum, Department of Zoology, Tel Aviv University, Israel.

Biodiversity surveys of the Penghu Island, Taiwan

Yehuda Benayahu

Comprehensive collections of soft corals were conducted by Prof. Yehuda Benayahu in Penghu Island, Taiwan. Over 125 samples were collected in various reef sites there. This was the first soft coral survey in these remote reefs. In conjunction with the fieldwork a taxonomic octocoral workshop was organized by Prof. Benayahu with a dozen of participants from Taiwan and Hong Kong.
New museum faculty and staff

This year, the national collections welcomed one new staff member.

Dr. Silvia Blumenfeld
Amram Eshel

We are proud that Dr. Silvia Blumenfeld joined the team of curators of the botanical collections. In 2002 Dr. Blumenfeld immigrated to Israel from Argentina where she had a long and successful career as a professor of Mycology and Biotechnology of Filamentous Fungi. Dr. Blumenfeld received her academic education at the University of Buenos Aires. From 1980 she served as a member of the Carrera del Investigador Cientifico y Tecnologico of the National Research Council of Argentina (CONICET) until her departure for Israel. Dr. Blumenfeld was also a member of the faculty at Universidad Nacional del Comahue, Faculty of Agronomy, Cinco Saltos, Rio Negro, Argentina where she held the rank of Assistant Professor in Phytopathology since 1986 and was promoted to Full Professor in Biotechnology of Filamentous Mushrooms in 1995. On April 1995 Dr. Blumenfeld received the Argentine National José Antonio Balseiro Prize, one of the most prestigious scientific awards in Argentina, awarded by the Argentinean President and the Forum for Science and Technology.

During her career Dr. Blumenfeld published more than 30 articles in scientific journals on fungal ecology, phytopathology and fungal taxonomy. She also published four books on fungi production and phytopathology. In her capacity as faculty member Dr. Blumenfeld taught many courses in mycology and fungal biotechnology.

Dr. Blumenfeld served as a consultant of the microbiological industrial laboratory IMEXTRADE S.A., Cinco Saltos, Rio Negro, Argentina. In this capacity she developed a process for production of edible mushrooms on
industrial waste that was patented in February 1998 (Argentinean Institute of the Industrial Property, INPI, record # 329860/91, shared with CONICET, Pat. No. 251.648).

After her arrival in Israel Dr. Blumenfeld worked for two years at the Golan Research Institute at Kazerin, Ramat Hagolan, as a phytopathologist in charge of identification of molds, yeasts and mushrooms and isolation of local strains, and identification of fruit and post-harvest diseases in vineyards.

At Tel-Aviv University, Dr. Blumenfeld assumed the role of curator of the mycological collection. This collection was founded by Prof. Nissan Benyamini, who is now retired. Building on their former scientific acquaintance, Dr. Blumenfeld established warm relationships with Prof. Benyamini. We are confident that this will ensure a smooth transition. In her capacity as the curator of the mycological collection Dr. Blumenfeld has been revising the classification of the items in this collection according to new developments in fungal taxonomy and preparing a new classification of the toxic mushrooms of this country.
New collections

The Malacological Collection of Kalman Hertz (1921-2006)
Henk K. Mienis

On 25\textsuperscript{th} July 2006 the Mollusc Collection received an important addition to its holdings: the collection of the late Kalman Hertz. This small but well-documented shell collection was donated to Tel Aviv University on behalf of the family by his long standing partner Mrs. Yehudit Weiss.

Short Biography of Mr. Kalman Hertz

Kalman Illes Hertz was born on 19th October 1921 in Arad, Transylvania. He received his formal education in Romania, where he began to study the mechanics of electricity.

During World War II he was imprisoned and sent to a Work Camp, but he managed to escape and joined a group of other young Jews. Together they made their way to Austria but were arrested as illegal residents. After another escape he managed to cross the border to Switzerland, where he met members of the Jewish Brigade. They helped him to cross into Italy and arranged a place for him on a boat taking illegal immigrants to Palestine. He arrived in 1946 and almost immediately joined the nascent Israel Defense Forces. During the War of Independence he suffered a wound to one of his eyes.

After his recovery he completed his studies in Electrical Engineering in Israel and worked in that profession until his untimely death on 8 March 2006. Professionally he was involved in several large projects in Israel, notably the building of the Habima Theater and the "Hechal Hatarbut" (the Cultural Center). Later he started his own company and specialized in making control boards for electronic systems. In 1994, at the age of 73, he suffered a work accident: he fell in an elevator shaft and smashed both his knees. He decided to give up physical work and subsequently earned his living as a consultant.
His interests in shells developed while he worked on electrical installations in Sharm el Sheik, Sinai. He enjoyed scuba diving, and this gave him the impetus to start his first collection. This one was lost when his marriage broke up. After some time he again began assembling a collection. Every time he visited a beach he did not leave it without a bucket or two of shell grit. Micro shells became his specializaty. After he published several short notes in a journal for shell collectors in Germany, he became an enthusiastic member of the Israel Malacological Society. He was also a regular visitor to the Mollusc Collection of Tel Aviv University.

While his local shell collection was donated to the university, his show collection of large foreign shells, assembled during his various visits to the Far East, will be taken care of by his family in Givatayim as a memento to him and his passion.

**His Malacological Collection**

The collection donated to the Tel Aviv University comprises about 1500 samples. Each lot consists of a single species, represented in most cases by many specimens, and is supplied with full information concerning the locality and date of collection. About 90% of the samples originate from places along the Mediterranean coast of Israel: Palmahim, Yafo-south, Tel Barukh, Herzliyya, Mikhmoret and Shiqmona. The remaining 10% of the samples had been acquired during his various journeys to Slovenia, Croatia, India & Sri Lanka, Philippines and other areas in the Far East. Noteworthy is the almost complete absence of samples from the Red Sea.

Marine shells form the major part of his collection; land- and freshwater mollusks are represented by less than 100 samples. The marine material collected on the Mediterranean beaches is rich in Lessepsian migrants and other invasive species from the Indo-Pacific. Many micro-shells belonging to such genera as *Cerithiopsis*, *Zafra* and *Chrysallida* are included. They form an
important addition to the mollusk collection. The mollusk collection also received a small collection of shell books, of which 15 turned out to be important additions to the malacological library.

At this moment the entire collection is being revised, catalogued and prepared for permanent storage. Within another few months all the data from his collection will be available in electronic form.

Acknowledgements

We thank Mrs. Yehudit Weiss for donating this important collection to the university and Mr. Uri Bar Zeev for his role as a middleman and for the transfer of the material to Tel Aviv University.

Biographical sources


Articles published by Kalman Hertz


Publications based on material in the Kalman Hertz collection

The Entomological Collection of Prof. Jacob Wahrman (1924–2005)

Ariel Leib Leonid Friedman

Prof. Jacob Wahrman was born in Frankfurt am Main, Germany, into a family that had emigrated from Galicia, in the Austro-Hungarian Empire. At the age of 10 he arrived in Palestine. His family lived in Jerusalem and he attended the Gymnasia Rehaviya high school. He went on to study at the Hebrew University of Jerusalem, where he received his Ph.D. in 1955; his dissertation was on the genetics of the Mantidae. He remained at the Hebrew University, first as a lecturer (from 1956), then as an associate professor (from 1966) and finally as a full professor (1972-1993). Concomitantly he held external academic positions as an associate researcher at the University of California, Berkeley, USA, as a visiting professor at Karolinska Inst., Stockholm, Sweden, and as a visiting professor at Yale University, USA. He retired officially in 1993, but continued his diverse researches up until his untimely death in 2005.

Prof. Wahrman's main interest lay in the field of genetics. He was a pioneer in the study of chromosomes of a wide range of organisms, devoting a large part of his genetic research to this subject: chromosome evolution; occurrence and mechanism of Robertsonian changes; the extent, kinds and function of heterochromatic segments; mechanism of meiosis; fine structure of chromosomes; gene expression during spermatogenesis; and chromosome-derived male sterility. His studies were conducted on a wide range of living organisms: insects, fish and mammals. He studied the sex mechanism of the darkling beetle genus Blaps and of different Mantidae, as well as performing research on the chromosomes and evolution of rodents (Spalax, Gerbillus), gazelles (Gazella gazella and G. dorcas), and the fish genus Tilapia. The first studies of human cytogenetics in Israel were performed in his laboratory, where he also trained most of the first generation of Israeli human cytogeneticists.
Prof. Wahrman was fond of nature and interested in the history of the Holy Land. He amassed a collection of books and photographs on the latter subject that is probably unparalleled even in major research libraries. He published several articles on various topics on the history of the Holy Land and indeed completed his final paper (together with his son) only days before he passed away.

Prof. Wahrman's diverse interests in nature, especially in the nature of the Land of Israel, turned him into one of the most important collectors of representatives of Israeli fauna, especially insects. His collecting activities spread over 50 years, in Israel (mostly in the Judean Hills and the southern part of the country), and in Turkey and Cyprus. Nine species of insects (an apterygote, a termite, two crickets, a hunting bug, two bees, a wasp, and a fly), one species of pseudoscorpion, one species of isopod and one species of Triassic ammonite have been described under the name "wahrmani" in his honor; most of these he had collected himself.

The first part of his collection (mostly beetles, flies, termites, bugs, and hymenopterans) was transferred to TAU about 12 years ago. After his death the second half (10 collection cabinets), including Orthoptera (Acrididae, Gryllidae), Blattoidea (Blattidae and Mantidae), Coleoptera (Tenebrionidae), Hemiptera, Neuroptera and Dermaptera, was delivered to TAU. The collection includes many rare species and much type material.
Chapters in the history of the National Collections of Natural History of Tel Aviv University

We continue in our tradition of honoring our scientific forefathers.

Hanan (Hans) Bytinski-Salz (1903-1986)
A. Freidberg & H.K. Mienis

Prof. Hanan Bytinski-Salz was born on June 24th, 1903 in Karlsruhe, Germany, and was educated at the universities of Berlin and Freiburg, where he received his Ph.D. degree in 1929. He continued his post-doctoral training in various branches of zoology at the German-Italian Institute for Marine Biology at Rovigno, Istria, Italy, at Yale University in the U.S.A., and at the John Innes Horticultural Institution in London, England.

In 1931 he married Paula née Lipschütz. They settled in Israel in 1939, and for several years he sought a suitable permanent job. Eventually, in 1948, he obtained a position with the Ministry of Agriculture, subsequently heading its Plant Quarantine Service. During that period he became involved in the applied aspects of entomology, while combining his research in this field with his interests in the general faunistics and taxonomy of the relevant pest groups. His last position was as Professor of Zoology at Tel-Aviv University, a post he held...
from 1954 until his retirement in 1974 as the first Professor Emeritus of the Department of Zoology.

Prof. Bytinski-Salz passed away on October 25, 1986, at the age of 83, leaving a daughter, Ruth, and three grandchildren. His death brought to an end the long career of an unusual man and scientist, whose varied interests and occupations are rarely found together nowadays in one person. As a professor of zoology, he taught and published in such varied fields as entomology, histology, embryology, sexuality, palaeontology, and evolution. Beyond the groves of academia he had great interest in and knowledge of history, archaeology and art, and he took much pleasure in traveling and hiking throughout Israel, which he loved and knew so well. A compulsive collector, he established and maintained at various times private collections of insects, fossils, books (entomological, palaeontological and rarities), archaeological artifacts (he had a sixth sense for the authenticity of the finds), works of art, stamps, and autographs. Despite his appetite for collecting, Bytinski (as his friends and colleagues called him) was not a possessive person, and was generous enough to give away items from his cherished collections to others. When he moved to Jerusalem in 1983, he donated his three main collections (insects, fossils, and scientific library) to Tel-Aviv University. In 1985 he also made a generous donation to the Entomological Society of Israel that ensured the future of the society's journal. This last gift should be viewed in the context of his activities as a founder and editor of that journal.

Bytinski published 88 papers, mostly in the field of entomology but also on histology and embryology of vertebrates. His research in entomology included papers dealing with cytogenetics and evolution, bionomics and control of pests, taxonomy, zoogeography and faunistics. He studied and described 168 new species and forms from such diverse groups as Lepidoptera, Hymenoptera, Coleoptera and Homoptera. His scientific work comprised several stages. His earlier papers were predominantly experimental and included embryological
work with amphibians and hybridization tests with Lepidoptera. The latter led him to taxonomic work on Lepidoptera.

Bytinski-Salz found in 1933 that if the sphingid *Celerio galli* males and *Celerio euphorbiae* females were cross-mated, the preimaginal stages of the resultant females failed to develop into imagines. However, if the ovaries of these hybrid females were transplanted into hybrid males (which develop normally), full-grown eggs are matured within the latter. Bytinski suggested that this effect was due to a hormonal influence from the new host. This discovery turned out to be an important forerunner of the classical studies by V.B. Wigglesworth (1936), who demonstrated the function of the corpora allata in inducing the development of eggs.

In 1938 he published his first paper on the histology and development of chromatophores in amphibians, a field in which he continued to publish sporadically throughout his career. In 1949 he published his first paper on insects other than Lepidoptera, and from then on he wrote and published on many groups of insects. Most of these papers can be classified as dealing with pests and control, or with taxonomy and faunistics, but it was the Israeli fauna, including its pest species, that received most of his attention. In 1969 the Entomological Society of Israel published a Festschrift on the occasion of his 65th birthday.

In spite of his advanced years Bytinski continued his entomological studies and published three additional important papers: "The Vespoidea of Israel" (1971, coauthored by J. Gusenleitner), "The Sphecidae of Erez Israel, III." (1973, co-authored by J. de Beaumont) and "The Halictidae of Israel, II." (1974, co-authored by A.W. Ebmer).

Two of his publications deserve special mention. Because he was a dedicated collector of fossils and educated in paleontology, it is surprising that Bytinski himself published only one short paper in this field. It dealt with the discovery
in Israel of rather recent remains of *Hippopotamus*. The other especially noteworthy publication was a small book, in Hebrew, on collecting and preparing insects. When it was published, in 1948, it filled a gap in local entomological practice, but nowadays, as it is out of print and somewhat dated, young entomologists are unfamiliar with it. Some pages are devoted to descriptions of field trips, including one in the Tel Aviv area. It is interesting to note that after 60 years, and despite the almost complete urbanization of the area, the same insects can still be found there, although some of them not as readily as before.

Shortly after he passed away, his daughter, Ruth decided both to commemorate her father and to continue his efforts to keep Israeli entomology alive by establishing at the TAU "The Bytinski Fellowship" for graduate students working on the insect collection for their degree. Several Ph.D. students have benefited from this fellowship to date, and while this biography is being written, we are preparing for the 20th anniversary and memorial ceremony that will take place toward the end of 2006.

**Biographical sources**


**Publications by Hanan (Hans) Bytinski-Salz (in chronological order)**

The following list of publications, authored by Hanan (Hans) Bytinski-Salz, is primarily based on the bibliographic information provided by Rivnay (1969) and Kugler (1986). All records have been checked with either the original publications or citations in the "Zoological Record". Errors in the existing
bibliographies have been corrected and a few overlooked publications have been added.


Remark 1:
The first reference fits the pagination of part I of that article, the second reference that of the part II. We searched in vain among the reprints of Bytinski-Salz for the III and IV part of that article. These works are also not cited in the "Zoological Record".

Remark 2:
This circular was authored by the "staff" of the Agricultural Research Station. Bytinski-Salz placed this work among the papers of which he was the (co-) author, therefore we have included it in his list of publications.

New Taxa described by Hanan (Hans) Bytinski-Salz (in chronological order)
Prof. Bytinski-Salz decribed in 14 articles 168 new taxa, these include generic, specific, subspecific and infrasubspecific names. The infrasubspecific taxa include races, varieties (var.), forms (f.) and aberrations (ab.). Today such infrasubspecific entities are no longer accepted in zoological nomenclature; however, in the years Bytinski-Salz described them they were commonly in use to indicate many differences below the rank of subspecies. In a few cases incorrect spellings have been emended in order to fit the requirements of Art. 32.5.2 of the International Code of Zoological Nomenclature.

Ein Beitrag zur Kenntnis der Lepidopterenfauna Sardiniens: 
Acronycta euphorbiae var. acerbata ab. farinosa Bytinski-SAlz, 1934
Anaitis sardalta Bythinski-Salz, 1934
Cidaria (Euphyia) bistrigata ab. beata Bytinski-Salz, 1934
Cidaria (Euphyia) bistrigata ab. paulae Bytinski-Salz, 1934
Cidaria (Euphyia) bistrigata ab. selmae Bytinski-Salz, 1934
Porphyria (Talpochares) elychrysi var. dannehli Bytinski-Salz, 1934
Porphyria (Talpochares) elychrysi var. schawerdae Bytinski-Salz, 1934
Tephrina (Eubolia) assimiliaria var. sardalta Bytinski-Salz, 1934
Tephrina (Eubolia) assimiliaria var. sardalta ab. delineate Bytinski-Salz, 1934

New Heterocera from Asia Minor:
Amathes hypotaenia Bytinski-Salz, 1935
Amathes hypotaenia var. wiltshirei Bytinski-Salz, 1935
Archanara wiltshirei Bytinski-Salz, 1935
Archanara wiltshirei f. brunea Bytinski-Salz, 1935
Bryophila ravula f. mediochracea Bytinski-Salz, 1935
Cerura hoeferi Bytinski-Salz, 1935
Diaphora mendica malatiana Bytinski-Salz, 1935
Phytiometra generosa f. malatiana Bytinski-Salz, 1935
Praestilbia armeniaca f. designata Bytinski-Salz, 1935
Pygaera pigra var. ferruginea f. flavidior Bytinski-Salz, 1935
Zygaena corycia race wiltshirei Bytinski-Salz, 1935
Zygaena corycia race amseli Bytinski-Salz, 1935

New Lepidoptera from Iran:
Abraxas wehrlii Bytinski-Salz & Brandt, 1937
Abraxas wehrlii ab. asignata Bytinski-Salz & Brandt, 1937
Adopaea pfeifferi Bytinski-Salz & Brandt, 1937
Aegle iranica Bytinski-Salz, 1937
Anaitis obsitaria var. pseudopallidata Bytinski-Salz & Brandt, 1937
Armada tarachoides Bytinski-Salz & Brandt, 1937
Brandtina Bytinski-Salz & Brandt, 1937
Brandtina albonigra Bytinski-Salz & Brandt, 1937
Bryophila argentacea Bytinski-Salz & Brandt, 1937
Catocala (Blepharum) fredi Bytinski-Salz & Brandt, 1937
Chilades trochylus persa Bytinski-Salz & Brandt, 1937
Chilades trochylus persa ab. pauper Bytinski-Salz & Brandt, 1937
Cymatophora osthelderii Bytinski-Salz & Brandt, 1937
Cymatophora osthelderii ab. farinosa Bytinski-Salz & Brandt, 1937
Eilicrinia cordiaria f. astigmaria Bytinski-Salz & Brandt, 1937
Eulocasta schah Bytinski-Salz & Brandt, 1937
Euoxa temera leucotera Bytinski-Salz & Brandt, 1937
Lithostege griseata var. gigantea Bytinski-Salz & Brandt, 1937
Lithostege griseata var. gigantea f. transversaria Bytinski-Salz & Brandt, 1937
Lycaena (Glaucopsyche) panagaea ahasveros Bytinski-Salz & Brandt, 1937
Ortholitha elbursica Bytinski-Salz & Brandt, 1937
Pieris ergane elbursina Bytinski-Salz & Brandt, 1937
Secondo contributo alla conoscenza della lepidotterofauna della Sardegna:

Agrotis puta predotai Bytinski-Salz, 1937
Agrotis schawerdai Bytinski-Salz, 1937
Anaitis corsalta var. pseudoplagiata Bytinski-Salz, 1937
Antitype canescens asphodeli f. limbara Bytinski-Salz, 1937
Aporophyla australis morosa f. transversa Bytinski-Salz, 1937
Autophila beriai Bytinski-Salz, 1937
Boarmia bastelicaria f. aestivalis Bytinski-Salz, 1937
Bryopilia muralis ab. turatii Bytinski-Salz, 1937
Celerio euphorbiae dahlii ab. mediofascia Bytinski-Salz, 1937
Cerastis faceta ab. livida Bytinski-Salz, 1937
Cerastis witzenmanni plumbina ab. castaneonigra Bytinski-Salz, 1937
Cerastis witzenmanni plumbina ab. castaneotransversa Bytinski-Salz, 1937
Cerastis witzenmanni plumbina ab. nigra Bytinski-Salz, 1937
Cerastis witzenmanni plumbina ab. olivinotransversa Bytinski-Salz, 1937
Cerastis witzenmanni plumbina ab. plumbinotransversa Bytinski-Salz, 1937
Cidaria basocharasiata f. annulata Bytinski-Salz, 1937
Cidaria basocharasiata f. transversa Bytinski-Salz, 1937
Cidaria frustata griseoviridis f. transversa Bytinski-Salz, 1937
Cidaria malvata f. bimaculata Bytinski-Salz, 1937
Cidaria malvata f.interrupta Bytinski-Salz, 1937
Cidaria malvata f. mediofumata Bytinski-Salz, 1937
Cidaria malvata f. nigrofasciata Bytinski-Salz, 1937
Compsotera opacaria ab. intermediaria Bytinski-Salz, 1937
Euchloris sardinica ab. ocellata Bytinski-Salz, 1937
Euchloris sardinica ab. schleppniki Bytinski-Salz, 1937
Gnophos benesignata f. uniformis Bytinski-Salz, 1937
Hemerophila japygiaria f. pseudosagarraria Bytinski-Salz, 1937
Horismes predotai Bytinski-Salz, 1937
Horismes predotai ab. nigra Bytinski-Salz, 1937
Horismes tersata ab. insularis Bytinski-Salz, 1937
Hydroecia xanthenes f. lecerci Bytinski-Salz, 1937
Hydroecia xanthenes ab. umbra Bytinski-Salz, 1937
Lithina binaevata f. adustata Bytinski-Salz, 1937
Lithina binaevata f. transversata Bytinski-Salz, 1937
Lithosia sordidula f. nana Bytinski-Salz, 1937
Metrocampa honoraria var. reisseri Bytinski-Salz, 1937
Pyropteron chrysidiformis f. fervens Bytinski-Salz, 1937
Ortholitha proximaria ab. angustifaciata Bytinski-Salz, 1937
Ortholitha proximaria ab. basiconfluens Bytinski-Salz, 1937
Ortholitha proximaria ab. medioconfluens Bytinski-Salz, 1937
Ortholitha proximaria ab. mediofasciata Bytinski-Salz, 1937
Rhyacia jordani rufescentior Bytinski-Salz, 1937
Rhyacia kermesina f. viridibrunnea Bytinski-Salz, 1937
Roeselia albula f. albata Bytinski-Salz, 1937
Zygaena corsica sardiniensis ab. bielongata Bytinski-Salz, 1937
Zygaena corsica sardiniensis ab. minor Bytinski-Salz, 1937

On Rhyacia festiva, Schiff., ssp. conjuncta, Tr., and ssp. thulei, Stgr.:  
Rhyacia festiva ab. conjuncta Bytinski-Salz, 1939
Rhyacia festiva ab. transversa Bytinski-Salz, 1939
Rhyacia festiva var. orkneyensis Bytinski-Salz, 1939
Rhyacia festiva var. orkneyensis ab. depicta Bytinski-Salz, 1939
Rhyacia festiva var. pseudoconflu Bytinski-Salz, 1939
Rhyacia festiva thulei ab. nigrostriata Bytinski-Salz, 1939
Rhyacia festiva thulei f. glabrina Bytinski-Salz, 1939
Rhyacia festiva thulei f. hethlandica Bytinski-Salz, 1939
Rhyacia festiva thulei f. maculata Bytinski-Salz, 1939
Rhyacia festiva thulei f. nigra Bytinski-Salz, 1939
Rhyacia festiva thulei f. primuloides Bytinski-Salz, 1939
Rhyacia festiva thulei f. rufobsoleta Bytinski-Salz, 1939
Rhyacia festiva thulei f. rufonigra Bytinski-Salz, 1939
Rhyacia festiva thulei f. unicolor Bytinski-Salz, 1939

New and little known forms of Hepialus mostly from Great Britain:  
Hepialus fuscone bubulosus ab. latefasciatus Bytinski-Salz, 1939
Hepialus fuscone bubulosus ab. ornatus Bytinski-Salz, 1939
Hepialus hecta ab. confluens Bytinski-Salz, 1939
Hepialus hecta ab. inversa Bytinski-Salz, 1939
Hepialus hecta ab. ornata Bytinski-Salz, 1939
Hepialus humuli ab. roseoornata Bytinski-Salz, 1939
Hepialus humuli thulensis f. albida Bytinski-Salz, 1939
Hepialus humuli thulensis f. uniformis Bytinski-Salz, 1939
Hepialus lupulinus ab. latemarginatus Bytinski-Salz, 1939

New and little known Asiatic Phalaenoidea:  
Chelonomorpha japona kansuana Bytinski-Salz, 1939
Eusemia adulatrix ab. postnigra Bytinski-Salz, 1939
Eusemia distincta tatsienlouica Bytinski-Salz, 1939
Eusemia lectrix ab. reducta Bytinski-Salz, 1939
Eusemia nipalensis ab. semiclara Bytinski-Salz, 1939
Eusemia nipalensis f. hainani Bytinski-Salz, 1939
Seudyra subflava japonica Bytinski-Salz, 1939

New Amatidae from Asia:
Amata compa f. szechuana Bytinski-Salz, 1939
Amata menia Bytinski-Salz, 1939
Amata sinana Bytinski-Salz, 1939
Amata sperbius gressitti Bytinski-Salz, 1939
Amata sperbius septentrionalis Bytinski-Salz, 1939
Amata susa Bytinski-Salz, 1939
Amata wiltshirei Bytinski-Salz, 1939
Callitomis dimorpha Bytinski-Salz, 1939
Callitomis dimorpha f. nigerrima Bytinski-Salz, 1939

New species and forms of Palaeartic Bombycine moths:
Arctornis l-nigrum ussurica Bytinski-Salz, 1939
Drepana curvatula f. gaedei Bytinski-Salz, 1939
Drepana falcatoria var. scotica Bytinski-Salz, 1939
Euproctis karghalica ab. depuncta Bytinski-Salz, 1939
Euproctis karghalica ab. nigrofasciata Bytinski-Salz, 1939
Exaereta ulmi var. istriaca Bytinski-Salz, 1939
Lasiocampa quercus ab. bifasciata Bytinski-Salz, 1939
Lasiocampa quercus ab. defascia Bytinski-Salz, 1939
Methystria nigromacularia ab. nigrofasciaria Bytinski-Salz, 1939
Odontosia sieversi ussurica Bytinski-Salz, 1939
Pseudomicronia tibetana Bytinski-Salz, 1939

Prianoi theca coronata Ol. freyi ssp.nov.:
Prianoi theca coronata freyi Bytinski-Salz, 1955

The Sphecidae (Hymen.) of Erez Israel. I:
Ammophila (Ammophila) pseudonasuta Bytinski-Salz in de Beaumont &
Bytinski-Salz, 1955
Ammophila (Eremochares) algira ab. bituberculata Bytinski-Salz in de
Beaumont & Bytinski-Salz, 1955
Ammophila (Eremochares) sacra Bytinski-Salz in de Beaumont & Bytinski-
Salz, 1955
Ammophila (Podalonia) marismortui Bytinski-Salz in de Beaumont &
Bytinski-Salz, 1955
Bembix cinctella enslini Bytinski-Salz in de Beaumont & Bytinski-Salz, 1955
Bembix holoni Bytinski-Salz in de Beaumont & Bytinski-Salz, 1955
Bembix joeli Bytinski-Salz in de Beaumont & Bytinski-Salz, 1955
Bembix dahlbomii sabulosa Bytinski-Salz in de Beaumont & Bytinski-Salz, 1955
Bembix turca picturata Bytinski-Salz in de Beaumont & Bytinski-Salz, 1955
Stizoides verhoefii Bytinski-Salz in de Beaumont & Bytinski-Salz, 1955
Stizus ruficornis eremicus Bytinski-Salz in de Beaumont & Bytinski-Salz, 1955

Coleoptera and Hymenoptera from a journey through Asia Minor Part II:
Palarus beaumonti Bytinski-Salz, 1957

The Sphecidae (Hymen.) of Erez Israel. II:
Philanthus (Philanthus) ammochrysus psammophilus Bytinski-Salz in de Beaumont & Bytinski-Salz, 1959
Philanthus (Philanthus) coronatus orientalis Bytinski-Salz in de Beaumont & Bytinski-Salz, 1959
Philanthus (Philanthus) schulthessi nigrinus Bytinski-Salz in de Beaumont & Bytinski-Salz, 1959
Philanthus (Philanthinus) theodori Bytinski-Salz in de Beaumont & Bytinski-Salz, 1959
Philanthus (Philanthus) variegatus nabataeus Bytinski-Salz in de Beaumont & Bytinski-Salz, 1959

Micrococcus bodenheimeri n. sp.:
Micrococcus bodenheimeri Bytinski-Salz, 1961

Towards a checklist of taxa named after Hanan (Hans) Bytinski-Salz
Between 1934 and 2002 at least 39 taxa have been described in honor of Prof. H. Bytinski-Salz: one genus, 33 species and four subspecies. These eponyms are listed in chronological order. In three instances the original specific name: bytinski-salzi, has been emended to bytinskisalzi according to Art. 32.5.2.3 of the International Code of Zoological Nomenclature

Scoparia perplexella ab. bytinskiella Schawerda in Bytinski-Salz, 1934
Eupithecia bytinskii Prout, 1939
Tephronia bytinskii Wehrli, 1939
Osmia bytinskii Mavromoustakis, 1948
Euodynerus salzi Giordani Soika, 1952
Leptochilus bytinskii Giordani Soika, 1952
Selenocephalus bytinskii Lindberg, 1953
Ammobates bytinskii Mavromoustakis, 1954
Bembecinus bytinskii de Beaufort, 1954
Bytinskia Mavromoustakis, 1954
Clytus bytinskii Heyrovsky, 1954
Colletes bytinskii Noskiewicz, 1955
Miscophus bytinskii Verhoeff, 1955
Eucharis (Eucharisca) bytinskisalzi Boucek, 1956
Athetis salzi Boursin, 1936
Sphenoptera bytinskii Obbenberger, 1956
Teratolytta bytinskii Kaszab, 1957
Zontitis bytinskii Kaszab, 1957
Chrysis bytinskii Linsenmaier, 1959
Euchrous moricei bytinskii Linsenmaier, 1959
Hedychridium bytinskii Linsenmaier, 1959
Hedychrum luculentum bytinskii Linsenmaier, 1959
Onthophagus bytinskii Balthasar, 1960
Myrmilla bytinskii Invrea, 1965
Smicromyrme bytinskii Invrea, 1965
Nannaporus bytinskii Priesner, 1966
Andrena bytinskii Warncke, 1969
Antennoseius bytinskii Costa, 1969
Decapotoma argentifera bytinskii Kaszab, 1969
Kermes bytinskii Sternlicht, 1969
Meloe (Mesomeloe) bytinskii Kaszab, 1969
Carabus (Chaetomelas) bytinskii Schweiger, 1970
Prionospio salzi Laubier, 1970
Pterocheilus bytinskii Guseleinlter, 1970
Anoxoides bytinskisalzi Petrovitz, 1971
Aphodius bytinskisalzi Petrovitz, 1971
Longitarsus bytinskii Furth, 1979
Dufourea bytniskii Ebmer, 1999
Belomicroides bytinskii Antropov, 2002
Acknowledgments

We are indebted to many friends, colleagues, and staunch supporters who are always there for us. We are particularly grateful to the former Chair of the Board of Governors of Tel Aviv University, Michael Steinhardt, and to Judy Steinhardt, for their generosity and their unwavering support and friendship. Their kindness as well as their patience and understanding, are key to our success; we are incredibly lucky to have them with us.

We are also very grateful to Lynn Schusterman for her generous gift on the event of Michael Steinhardt's birthday; it is helping us share our treasures with the public.

We thank the Minister of Environmental Protection, MK Gideon Ezra, and the Director-General of the Ministry, Shai Avital, for their commitment and initiative. Their support is invaluable. We also thank the Minister of Tourism, MK Isaac Herzog and the Director-General of the Ministry, Nachum Itzkovich, the Minister of Agriculture and Rural Development, MK Shalom Simhon, and the Director-General of the Ministry, Yael Shaaltieli, and the Director-General of the Ministry of Science, Culture & Sport, Eytan Broshi. We are grateful for their, interest, enthusiasm and good will, and hope they help us realize our chief goal – to build a proper facility for the National Collections of Natural History and the associated research and public activities.

The collections faculty and staff are part of a large and active Research University that has always been home to us. We thank Shimshon Shoshani, until recently member of the Board of Directors of Tel Aviv University, for the benefit of his wisdom, experience, and help. His advice has been invaluable.

We thank our President, Itamar Rabinovich, and Director-General, Gideon Langholtz, for their ongoing interest and involvement in our project. We are deeply indebted to the Rector of Tel Aviv University, Dany Leviatan, for his
commitment and activities to secure the future of the National Collections of Natural History at Tel Aviv University as an active research infrastructure. We are also very grateful to the Vice-Rector, Raanan Rein, for his interest and support.

We are deeply grateful to our many friends in Tel Aviv University's administration, from top echelons down, whose friendship and support have helped us through difficult days; sharing information, editing documents, providing organizational wisdom, financial understanding, and psychological insight, offering sage advice and empathy, they have brightened our days, have helped us endure hardships with a smile, and have given us the strength to persevere.

We are part of a robust academic community that cares for our activities, and we are grateful to our many colleagues in the Departments of Zoology, Plant Sciences, and Anatomy and Anthropology, with whom we teach and collaborate in research, and who are ever ready to support our endeavors. We are particularly indebted to the Heads of these Departments – Abraham Hefetz, Daniel Chamovitz, and Yoel Rak - for their friendship, support, and collegiality. We are also pleased at the increasing cooperation with the Institute of Archeology and Ancient Near Eastern Cultures.

In the past years we have received financial support as well as curatorial positions from VATAT, the Planning and Grants Committee of the Council of Higher Education of Israel. Moreover, the Head of VATAT, Shlomo Grossman, has been active in helping us raise funds for a proper collections facility. We are very grateful to him, as well as to other VATAT members. We also thank the Director-General of VATAT, Steven Stav, and his dedicated staff – Merav Shaviv, Avital Blajwas, Shira Navon, Yael Siman-Tov, Amir Gat, and Uri Solomonovich – for their constructive and professional attitude as well as their enthusiasm and warmth.
The Israel Academy of Sciences and Humanities has been involved for many years in attempts to safeguard the collections and to ensure their academic future. Menahem Yaari, President of the Israel Academy of Sciences and Humanities, and Ruth Arnon, the Vice President, are both involved with and supportive of our project. We are also grateful to Alex Levitzki, Head of the Science Division of the Israel Academy of Sciences and Humanities for his commitment to promoting biodiversity research and conservation. Yehudith Birk, Chair of the Academy's Steering Committee for the National Collections of Natural History, has guided us time and again with her wisdom and valuable experience; we are, as ever, indebted to her for her patience, commitment, and mentoring. Rafael Meschoulam continued his constructive activity towards promoting the collections and we are as ever grateful to him as well as to the other committee members and observers – Reuven Merhav, Aharon Kaplan, Yael Lubin, Ehud Spanier, and Yossi Loya – for their time, support, and initiative. We are also deeply indebted to Yossi Segal who has dedicated so much time, thought and effort to this project.

Our collections enjoy the support of many friends outside Tel Aviv University. We thank the Deputy Director-General of the Ministry of Environmental Protection, Yoram Horowitz, and the comptroller, Tzahi Malach, for their enthusiasm and support and for guiding us through the intricacies of government bureaucracy. We also thank Ofer Kol and Guy Samet for their help and advice. And of course, we are as ever grateful to our longstanding friends, Yeshayahu Bar-Or, the Chief Scientist of the Ministry, and Menachem Zalutzki, head of the Open Space Division of the Ministry of Environmental Protection, for their interest, support, and scientific cooperation.

We also recognize our colleagues and friends in government ministries for their growing interest and cooperation. We are very grateful to the Chief Scientist of the Ministry of Science, Culture & Sport, Mina Teicher, for her interest and input. We are especially indebted to Husam Massalha of the Ministry of
Science, Culture & Sport for his longstanding support and collegiality, and to Idit Amihai, Head of the Museums and Virtual Arts Department, for her interest, advice and support. We thank our many friends in the Israel Nature and Parks Authority who collect specimens and contribute greatly to our efforts to record the natural history of Israel, as well as to our colleagues and friends in other Israeli universities and research institutions, who enrich our collections and provide scientific support.

Nature Campus is a joint project in which the I. Meier Segals Zoological Garden and the Botanic Gardens take an active part. Their directors, Arnon Lotem and Jacob Garty, are our allies and partners in our efforts to promote biodiversity research and literacy.

We acknowledge the support of the Steering Committee of Nature Campus, Chaired by the Dean of Life Sciences, Yoel Kloog, coordinated until recently by Iris London-Zolty, and whose members are Lea Pais, Director of the TAU Research Authority, Amit Streit, Director of the Finance Department, Sigal Adar, Director of Friends of TAU, Abraham Hefetz, Head of the Department of Zoology, Daniel Chamovitz, Head of the Department of Plant Sciences, Yoel Rak, Head of the Department of Anatomy and Anthropology, Tamar Dayan, Director of the Natural History Collections, Arnon Lotem, Director of the I. Meier Segals Garden for Zoological Research, and Jacob Garty, Director of the Botanic Gardens. We are also grateful for the enthusiasm and constructive attitude of the members of the Nature Campus Scientific Committee: Daniel Chamovitz, Head of the Department of Plant Sciences, Israel Finkelstein from the Jacob M. Alkow Department of Archaeology and Ancient Near Eastern Cultures, Jonathan M. Gershoni, Head of the Department of Cell Research and Immunology, Yoav Gothilf from the Department of Neurobiochemistry, Abraham Hefetz, Head of the Department of Zoology, Ayala Hochman from the Department of Biochemistry, Arnon Lotem from the Department of Zoology and Director of the I. Meier Segals Garden for
Zoological Research, Rafi Nachmias from the Constantiner School of Education, Yoel Rak, Head of the Department of Anatomy and Anthropology, Eliora Ron from Department of Molecular Microbiology and Biotechnology, Marcelo Sternberg from the Department of Plant Sciences, and Tamar Dayan from the Department of Zoology and Director of the Natural History Collections.

Yehudit Shvili of the Price-Brodie initiative has aided our fruitful cooperation with the community and schools of Yafo. We thank Daniel Bar-Eli of the UNESCO office in Israel, and the education teams of the Society for the Protection of Nature in Israel and the Israel Nature and Parks Authority for their support, their friendship, and their constructive engagement in many of our projects.


Finally, it is our pleasure to thank Martin Weyl, a longstanding and very special friend of the collections who has been there for us for some years now sharing his experience and expertise with us. His friendship and support have been invaluable.
Publications

The national collections of natural history are an important research infrastructure, used by scientists within and outside of the university. Approximately a decade ago we compiled the list of publications based on our natural history collections, and arrived at over 1200 publication produced by over 550 scientists. This list was incomplete, for technical reasons related to reconstructing this record, and because it did not include the sizable list of publications based upon the anthropological collections. Our current list of the 2005/2006 publications, alas, is also incomplete; it includes all publications of TAU members affiliated with the collections (whether they are directly collections-based on not), and under-represents publications of individuals from other institutions, since our follow-up is far from complete.

Refereed articles


18. Delfino, M., Bar-Oz, G. and Weissbrod, L. Anuran remains from a Bronze Age Burial Cave in Israel: archaeological evidence for the recent shrinkage of the range of the Eastern Spadefoot Toad. *Zoology in the Middle East*.


53. Kravchenko, V., Orlova, O., Fibiger, M., Mooser, J., Chuang, Li and Müller, G. 2006. The Acronictiniae, Bryophilinae, Hypenodiniae and

55. Laron, Z., Korenreich, L., Hershkovitz, I. 2006. Did the small-bodied Hominins from Flores (Indonesia) suffer from a molecular defect in the growth hormone receptor (Laron Syndrome)? Pediatric Endocrinol Rev 3:345-346.


Annual Report 2005/2006  74


151. Perkol-Finkel, S., Zilman, G., Sella, I., Miloh, T. and Benayahu, Y.  
Floating and fixed artificial reefs: the effect of substratum motion on  
benthic. Communities in a coral reef environment. Marine Ecology  
Progress Series 317:9-20

152. Pinter, N., Dayan, T., Kronfeld-Schor, N. and Eilam, D. Aggressive  
interactions between competing spiny mouse species. Journal of  
Mammalogy 87:48-53.

in determining activity patterns of rodents. Evolutionary Ecology  

154. Rosenfeld, M., Shemesh, A. Yam, R. and Loya, Y. 2006. 18 O record of  
Porites spp. corals during the 1998-bleaching event in Sesoko Island  
, Okinawa , Japan. Marine Ecology Progress Series 314:127–133.

155. Rot, C., Goldfarb, I., Ilan, M. and Huchon, D. 2006. Putative cross-  
kingdom horizontal gene transfer in sponge (Porifera) mitochondria. BMC  
Evolutionary Biology 6: 71.

B: two new rearranged spongian diterpenes from the marine sponge  

new diterpenoid from the soft coral Sinularia erecta Tetrahedron Letters  
47:2937-2939.

responses of red foxes (Vulpes vulpes) to the presence of golden jackal  

exotic oyster: Alectryonella crenulifera, from the Mediterranean coast of  
Israel. Triton 12:5-6.

dynamics of the coral Oculina patagonica. Marine Ecology Progress  
Series 294:181-188.

dynamics of zooxanthellae during a bacterial bleaching event Coral  

Triton 13:15-16.

Triton 13:35.


Accepted for publication

11. Goren, M. Can Advanced Civilization Preserve Biodiversity in Marine Systems?
18. Munasik, S. Kazuhiko and Loya, Y. The solitary coral *Fungia fungites* is a gonochoric brooder in Okinawa, Japan. *Coral Reefs*.
21. Rak, Y, What else is the tall mandibular ramus of the robust australopithecines good for? *Hylander Volume Contribution*.

Annual Report 2005/2006  83


Books


Accepted for publication


Chapters in books


Accepted for publication


**Professional Reports**


**Papers presented in scientific meetings**

2005 "Egg a day barrier" in spinal canal dimensions. Sixth Research Fair, Sackler Faculty of Medicine, Tel-Aviv University. Abstract Book, p.9 (Alperovitch-Nejenson D, Robinson D, Masharawi Y, Hershkovitz I.).


2005 Cervical vertebral body (C3-C7) morphology: A skeletal population study. Sixth Research Fair, Sackler Faculty of Medicine,

2005 Is specific body structure a prerequisite for dancers? Sixth Research Fair, Sackler Faculty of Medicine, Tel-Aviv University. Abstract Book, p.8 (Steinberg N, Siev-Ner I, Peleg S, Dar G, Been E, Ezra D, Masharawi Y, Madleg B, and Hershkovitz I.).

2005 Normal Asymmetry in the Human Vertebrae along the thoracolumbar spine: Characterization and Interpretations. Sixth Research Fair, Sackler Faculty of Medicine, Tel-Aviv University. Abstract Book, p.3 (Masharawi Y, Rothschild B, Salame K, Dar G, Peleg S, Steinberg N, Alperovitch-Najenson D, Ezra D, and Hershkovitz I.).

2005 Osteopathological changes in the thoracic vertebral bodies and their relation to Scheuermann Kyphosis (SK) and Kyphoscoliosis (KS). Sixth Research Fair, Sackler Faculty of Medicine, Tel-Aviv University. Abstract Book, p.10 (Peleg S, Dar G, Steinberg N, Been E, Masharawi Y, Ezra D, Madleg B, Arensburg B, Hershkovitz I.).

2005 Rapid biodiversity assessment at the local scale: is the higher taxa approach a reliable shortcut. Proceedings of the 1-st DIVERSITAS Open Science Conference, Mexico (Mandelik, Y., Dayan, T., Chikatunov, V. and Kravchenko, V.).

2005 Sacral inclination as a predictive diagnostic tool in spinal deformities Sixth Research Fair, Sackler Faculty of Medicine, Tel-Aviv University. Abstract Book, p.6 (Peleg S, Dar G, Been E, Steinberg N, Masharawi Y, Ezra D, Madleg B, Arensburg B, Hershkovitz I.).

2005 The 18th Convegno Annuale della Societá Lichenologica Italiana (SLI), Trieste, Italy (Garty, J.).

2005 The distribution, phenology and ecology of the Noctuidae (Lepidoptera) found in the Israeli and Jordanian part of the Rift Valley south of the Dead Sea. XIV European Congress of...

The phenomenon of sacroiliac joint bridging in the human spine. Sixth Research Fair, Sackler Faculty of Medicine, Tel-Aviv University. Abstract Book, p.4 (Dar G, Peleg S, Masharawi Y, Steinberg N, Ezra D, Medlej B, Hershkovitz I.).


The 13th International Biodeterioration and Biodegradation Symposium (IBBS-13), Madrid, Spain (Garty, J.).

The 7th International Conference on Acid Deposition, Acid Rain 2005, Prague, Czech Republic (Garty, J.).

42nd meeting of the Zoological Society of Israel, Rehovot, Israel (Y.Gavrieli).


Arthropods in pine plantations vs. natural maquis – comparing the community composition of spiders, beetles and moths. 42nd meeting of the Zoological Society of Israel, Rehovot, Israel (Levanony, T., E. Columbus, Y. Mandelik, V. Chikatunov, S. Zonstein, V. Kravchenko and T. Dayan).

Biodiversity Conservation – a Theme of Environmental Education. At the Quebec Labrador Foundation First Alumni Congress. Hungary (Y.Gavrieli).

Can fish eat stones? The Third Annual Meeting of the Israeli Association for Aquatic Studies. May 23rd. Haifa, Israel. (Gueta Y. and M. Goren)


Comparative skeletal features between Homo Floresiensis and patients with Laron Syndrome. XVI Paleopathology Association
European Meeting, Santorini, Greece (Hershkovitz, I., Kornreich, L., Laron, Z.).


2006 Did the small-bodied Hominins from Flores (Indonesia) suffer from Laron Syndrome? Sevens Research Fair, Sackler Faculty of Medicine, Tel-Aviv University (Laron Z, Kornreich L, Hershkovitz I.).

2006 Did the small-bodied Hominins from Flores (Indonesia) suffer from a molecular defect in the growth hormone receptor (Laron Syndrome). Reserarch summaries: The most groundbreaking studies presented during the endocrine society 88th annual meeting, ENDO 06, p. 7 (Z. Laron, L. Korenreich, I. Hershkovitz).


2006 Facet and interfacet shape and orientation in spondylolysis: a skeletal study. The SSE Annual Meeting EuroSpine; Istanbul, Turkey (Masharawi Y; Dar G; Peleg S; Steinberg N; Medleg B; Ezra D; Alperovitch-Najenson D; Hershkovitz I.).

2006 Facet and interfacet shape and orientation in spondylosis: a skeletal study. Sevens Research Fair, Sackler Faculty of Medicine, Tel-Aviv University (Masharawi Y, Dar G, Peleg S, Steinberg N, Medleg B, Ezra D, Alperovitch-Najenson D, Hershkovitz I.).

2006 Feeding strategy of fishes in the Jordan River system. The 42nd Conference of the Zoological Society of Israel. January, 1st, Rehovot, Israel. (Gueta Y. and M. Goren.)


2006  Ossous changes with age in the vertebral foramen of the cervical spine (C3-C7): a skeletal population study. Sevens Research Fair, Sackler Faculty of Medicine, Tel-Aviv University (Ezra D, Salame K, Peleg S, Been E, Marom A, Steinberg N, Alpeprovich-Najenson D, Dar G, Medlej B, Hershkovitz I.).


2006  Rhynchitidae and Attelabidae (Coleoptera: Curculionoidea) of Israel. The 25-th Meeting of the Entomological Society of Israel. Hebrew University, Rehovot, Faculty of Agriculture. (Friedman, A. L. L. and Legalov A. A.).


2006  Seasonal and spatial distribution of Noctuidae Moths (Noctuidae: Lepidoptera) in Northern and Central Arava Valley, Israel. The 25th Meeting of the Entomological Society of Israel. 18.10.2006, Hebrew University, Rehovot, Faculty of Agriculture. (Kravchenko, V., Müller, G., Freidberg, A. and Yarom, I.).

2006  The ecology of the Plusiinae (Lepidoptera: Noctuidae) of Israel with special reference to pest species. The 25th Meeting of the Entomological Society of Israel. 18.10.2006, Hebrew University, Rehovot, Faculty of Agriculture. (Seplyarsky, V., Kravchenko, V. and Müller, G.).

2006  The effects of competition and predation risk on the foraging behavior of three species of rocky desert rodents. 42nd meeting of the Zoological Society of Israel, Rehovot, Israel (Levy, O., T. Dayan, and N. Kronfeld-Schor).
2006 The faunal remains from the Early Pre-Pottery Neolithic site of Motza – gazelle hunting and exploitation patterns. 42nd meeting of the Zoological Society of Israel, Rehovot, Israel (Sapir, L., G. Bar-Oz, and T. Dayan).


2006 The zoogeography and habitat preferences of the Catocalinae (Lepidoptera: Noctuidae) of Israel. The 25th Meeting of the Entomological Society of Israel. 18.10.2006, Hebrew University, Rehovot, Faculty of Agriculture. (Seplyarsky, V., Kravchenko, V. and Müller, G.).


2006 ARC Centre of Excellence- first scientific annual board meeting, Townsville, Australia. (Y. Loya).


2006 The 4th International Workshop on Biomonitoring of Atmospheric Pollution (with emphasis on trace elements). Agios Nikolaos, Greece (Garty, J.).


Graduate students

Much active scientific research is conducted by graduate students. Here we list the graduate students of faculty members affiliated with the National Collections of Natural History at Tel Aviv University. We list also a few graduate students from other institutions of higher education, but names and affiliations of many others from Israel and abroad who used the collections are unknown to us.

PhD students

1999- Liora Glass (E. Geffen and T. Dayan)
The ecology of jungle cats in natural and anthropogenic habitats in Israel.

1999- 2006 Vered Shimony (O. Mokady)
Establishment and maintenance of the head region in colonial hydroids.

2000- Sharon Gild (O. Mokady)
Invertebrate allorecognition.

2000- Reuvat Nitzan (T. Dayan and A. Ar)
Population dynamics of the chukar partridge in Israel.

2001-2006 D. Ezra (I. Hershkovitz)
Aging of the cervical spine.

2001- Tamar Feldstein (O. Mokady)
Molecular level markers for biomonitoring the coastal environment.

2001- N. Knopp (I. Hershkovitz)
Dancer's injuries.

2001-2006 Lee Koren (E. Geffen and O. Mokady)
Vocalization as an indicator of individual quality in rock hyrax.

2001-2006 Shimrit Perkol (Y. Benayahu)
Spatial and temporal interactions between artificial and natural reefs.
2002- Yoav Motro (Y. Yom-Tov and U. Safriel)
Mechanisms of biological control of a rodent pest by a nocturnal
raptor: the use of barn owls for vole control in Israel.

2002- Hadass Schteinitz (Y. Yom-Tov and T. Dayan)
Estimating the effect of global warming on the distribution of
Israeli animals.

2003- Andrey Aaronov (M. Goren)
Ecology of fishes in Mediterranean rocky habitats.

2003- B. Bahaa (I. Hershkovitz)
Macro and microstructure of the annulus fibrosus.

2003 - Leon Novak (M. Ilan)
Engineering a bacterial expression system to produce large
amounts of known and of modified naturally occurring bioactive
compounds of pharmacological interest.

2003- Noa Shenkar (Y. Loya)
Bioactivity of Mediterranean and Red sea tunicates.

2003- Merav Weinstein (T. Dayan and A. Hefetz)
Invasive ants of Israel.

2003- Gidon Winters (Y. Loya)
Photoinhibition in corals – effects of UV, PAR and temperature.

2004- Shai Barkan (Y. Yom-Tov and A. Barnea).
Memory of resident and migratory birds.

2004- G. Dar (I. Hershkovitz)
Spondyloarthropathy.

2004- Liat Gahanama (A. Freidberg)
A revision of the *Schistopterum* clade of Schistopterini.

2004- Efrat Gavish (Y. Lubin, Ben Gurion University)
Description of new spiders species from the family Linyphiidae.

2004- Constantin Grach (A. Freidberg)
Ecology and biology of costal dune insects.

2004- Mati Halperin (Y. Benayahu)
2004 - Boaz Mayzel (M. Ilan)
Magnetoreception in sponges.

2005- Rachel Armoza (Y. Loya)
Ecological and physiological aspects of sex hormones in corals.

2005 - B. Blihoghe (M. Ilan)
Natural products from sponge associated microorganisms.

2005- Motti Charter (Y. Leshem)

2005 - M. Haber (M. Ilan)
Biosynthesis and function of Natural products from sponge associated microorganisms.

2005- O. Hay (I. Hershkovitz)
Evaluating lumbar spine condition via CT in individuals with lower back pain.

2005- Yaron Krotman (M. Goren)
Fish biodiversity and ecology in oasis habitats in the Dead Sea Valley.

2005- Tal Levanony (T. Dayan)
Patterns of biodiversity in natural and cultural landscapes: a model Mediterranean forest ecosystem.

2005- Ofir Levy (T. Dayan and N. Kronfeld-Schor)
Modeling climate effects on temporally-partitioned rocky desert rodents: from basic principles to community structure.

2005- R. Sarig (I. Hershkovitz)
Interproximal wear.

2005- Amy Shlesinger (Y. Loya)
Predator-prey interactions between nudibranchs and their sea-anemone prey.

2005- Orit Skutelsky (T. Dayan and E. Feitelson)
Biodiversity conservation in biosphere reserves of Israel: the switch from a market led to conservation oriented agriculture.
2005- Assaf Zevoluni (Y. Loya)
Coral community dynamics in bleached and non-bleached coral reefs (Zanzibar vs. Élat).

2006- Eran Levin (Y. Yom-Tov and N. Kornfeld).
Ecophysiology of free-tailed bats.

2006- Uri Roll (T. Dayan).
The influence of roads on the fauna and flora of Israel.

2006- Lidar Sapir (T. Dayan and G. Bar-Oz, University of Haifa).
Animal bones, ancient populations, and site formation processes: A test case of Dor, a coastal Levanite site.

**MSc students**

2001-2006 N. Bachrach (I. Hershkovitz)
The last Natufian inhabitants from El-Wad Terrace: Anthropological study.

2001-2006 G. Samora (I. Hershkovitz)
Cribra orbitalia in historic populations.

2002-2005 Ifat Guata (M. Goren)
Energy flow in anthropogenic affected fish communities in Jordan River Basin.

2002-2006 Neta Dasa (M. Goren)
Reproductive aspect in riverine fish.

2002-2006 Arian Wallach (M. Inbar and U. Shanas, Oranim Academic College)
Re-introduction of Roe Deer.

The diet of the long-eared owl (*Asio otus*) and the barn owl (*Tyto alba*) in the Negev.

2003-2005 Lior Shine (J. Garty and A. Hochman)
The biochemical and physiological response of lichens to air pollution.

The effect of human disturbance on rodent communities in the southern coastal plain.
Shunit Gal (D. Gerling)
Variations within a species - *Bemisia tabaci* (due to parasitic bacteria).

Amir Gur (M. Ilan)
Iron deposition in sponges.

Larisa Lerner (A. Freidberg)
Studies of Carpomyina (Tephritidae).

Alon Rothschild (O. Mokady)
Molecular biomonitoring of toxic metals in the Kishon.

Victoria Semyatich (J. Garty and A. Hochman)
The biochemical response of lichens to environmental stress.

Yotam Bar (M. Goren)
Stability of fish community in Shiqmona.

Allen Daniel (Y. Loya)
Community structure of deep (50 m) scleractinian corals in Elat, Red Sea.

Ronit Justo-Hanani (T. Dayan and A. Tal)
Comparative legislation of invasive species.

Sara Cohen (M. Goren)
Diversity and dynamic of fish catch by trawlers off the Mediterranean Israeli coast.

Roee Segal (Y. Loya)
Molecular characteristics of the bleaching phenomenon of the Mediterranean stony coral Oculina patagonica.

Jonathan Sharon (Y. Benayahu with Prof. Y. Loya)
Benthic communities associated with an invasive bivalve in the Israeli Mediterranean Sea.

Haim Biala (V. Soroker, The Agricultural Research Organization of Israel)
Ants associated with banana aphids.
2004- Noam Cohen (M. Inbar and I. Izhaki, Oranim Academic College)
The effects of secondary metabolites in nectar on ants.

2004- Shani Inbar (D. Huchon)
Identification of new nuclear markers to solve sponge phylogeny.

2004- Inbal Ginsburg (Y. Benayahu)
Farming of soft coral for reef rehabilitation purposes.

2004- Ariella Gotlieb (T. Dayan)
Ecological restoration of the Ze'elim wadi bed, near the Dead Sea.

2004- Michal Meir (A. Freidberg and M. Sternberg)
Flower color variation in the thistle, *Syllibum marianum*.

2004- Adi Ramot (E. Groner and P. Bar, Ben Gurion University)

2004- Shachar Samra (A. Freidberg and D. Gerling)
Biology and taxonomy of selected Parasitica (Hymenoptera).

2004- Ido Sella (Y. Benayahu)
Cultivation of the soft coral *Sarcophyton glaucum*.

2004- Amir Shitenberg (M. Goren)
Geographical variation in selected cichlid fish.

2004- Daniel Yashunski (M. Goren)
Succession of fish community in planted corals in Elat.

2004- Yael Zaldam (Y. Benayahu)
Colonization of fixed and floating artificial marine structures at Elat (Red Sea).

2004- Dror Zurel (Y. Benayahu)
Specificity of algal symbionts in horizontally acquired system.

2005- J. Abass (I. Hershkovitz)
Ligamentum flavum and spinal stenosis.

2005- Ada Alamaro (Y. Loya)
Ecological and cellular aspects of color morphs in the coral *Stylophora pistillata*. 
2005- Ayelet Dadon (Y. Loya and M. Fine)  
Mechanisms of bleaching in the Mediterranean coral *Oculina patagonica*.

2005- Kfir Gaier (M. Goren)  
The impact of grazing fish on invertebrate communities in eastern Mediterranean.

2005- Gali Gingold  (Y. Yom-Tov and E. Geffen)  
The effect of dogs on gazelles in the Golan Heights.

2005- Michal Grosovich (Y. Benayahu)  
Habitat partitioning of three azooxanthellate soft corals in Elat (northern Red Sea).

2005- I. Khalfin (M. Ilan)  
Function of natural products from sponge associated fungi.

2005- Nimrod Lazarus (Y. Loya)  
Induction of metamorphosis in nudibranch larvae.

2005- Mustaga Mahagna (D. Gerling)  
Identity of the whitefly *Aleurolobus marlatti* in Israel and its relationship with *A. niloticus*.

2005- Osnat Maor (M. Goren)  
Reproductive biology the cyprinid fish Garra rufa in the Jordan River basin.

2005- H. May (I. Hershkovitz)  
Hyperostosis Frontalis Interna.

2005- Erez Maza (T. Dayan)  
Climate and land-use patterns in biodiversity.

2005- Ido Mizrachi (Y. Loya)  
Sclerochronology of bleached and non-bleached corals.

2005- Keren Shachar (Y. Benayahu)  
Initial colonization phases of fixed and floating artificial marine structures at the Israeli Mediterranean coast.

2005- Oren Shelef (E. Groner and M. Shachak, Ben Gurion University)
2005- Tamir Shelhav (E. Groner and M. Shachak, Ben Gurion University)

2005- Rosin Shemesh (Y. Loya and E. Rosenfeld)
Possible causes of white band disease in Faviid corals at Elat.

The origin and timing of some migratory birds passing through Israel.

2005- Ina Stierberg (T. Dayan)
Climatic gradients in biodiversity.

2005- Kineret Toktan (Y. Yom-Tov)
Phylogeography of the orange-tufted Sunbird *Nectarinia osea*.

2005- Maya Weizel (Y. Loya)
Bleaching patterns in a Red Sea scleractinian coral population.

2005- Rafi Yaabetz (Y. Loya)
Reproductive cycle of a nudibranch.

2006- Frida Belinky (D. Huchon and A. Lotem)
Metazoan phylogeny and its implications for genome evolution.

2006- O. Bergman (M. Ilan)
Sponge farming for natural products.

2006- Z. Kochva (M. Ilan)
Sponge associated bacteria and their role in production of natural products.

2006- Shay Rotich (T. Dayan).
The effect of artificial illumination on a rocky desert rodent community.

2006- Bat Sheva Rotman (M. Goren)
The biology the balitórid fish *Nemacheilus jordanicus* in the Jordan River basin.

2006- Raj Singh (D. Huchon, Visiting Phd student)
Mitochondrial genome of Sylvioidea.

2006- Karin Tamar (T. Dayan).
Archeozoology of Tel Bet Shemesh.
2006- G. Tirosh (M. Ilan)
Sponge community in the Israeli Mediterranean coast.

**Post-doctoral fellows**

2006-2007 Yael Mandelik (T. Dayan)
2006 P. Sauleu (M. Ilan)
2004- Noam Leader (Y. Yom-Tov)
Fellowships and grants

Support for collections-based research is provided by fellowships and grants. Here we list the fellowships and grants of faculty members of Tel Aviv University who are affiliated with the collections. Needless to say, the many colleagues from other research institutions in Israel and abroad also receive fellowships and grants that hinge, at least in part, on work in the natural history collections. These data, however, are not available to us.

While these fellowships and grants and others cannot support collections maintenance, they are crucial for collection development since they provide the funds for active collecting, which are otherwise unavailable in the State of Israel. We do our best to help scientists use the collections and to promote collections-based biodiversity research.


2001-2005  Research grant from the Israel Scientific Foundation. The roles of ecological and physiological selective forces in shaping rhythm biology and community structure in a rocky desert rodent system (four year; $50,000 per annum) (T. Dayan and N. Kronfeld-Schor).

2001-2006  Joint German-Israeli Research Program in Environmental Research (GLOWA); as part of a proposal entitled: Impacts of global change on East-Mediterranean environs: an integrated assessment of hydrological, agricultural, ecological and socio-

economic aspects (five year grant; $45,000 per annum) (T. Dayan, M. Goren, and A. Freidberg).

2002- On-going grant from the Nature and Parks Authority to "rescue" insects on the Golan and Hermon (V. Chikatunov and A. Freidberg).

2002-2005 International Arid Lands Consortium (IALC) ($100,000) (E. Geffen, M. Kam and G. Roemer).

2002-2005 International Arid Lands Consortium (IALC) ($100,000) (E. Geffen, M. Kam and G. Roemer).

2002-2005 Research grant from the Israeli Ministry of the Environment. Ecological impact assessment: Tools for evaluating the effects of development on biodiversity (three year grant at 80,000 NIS (ca. $18,000) per annum) (T. Dayan and Y. Mandelik).

2002-2006 BSF. Response of lichens to oxidative stress exerted by environmental adversities. 152,000 USD) (J. Garty, A. Hochman and B. Bradley).


2003-2005 Research grant from the Jewish National Fund: The influence of different forestry regimes on biodiversity (Three year grant at 40,000 NIS (ca. $8,500) per annum) (T. Dayan and Y. Mandelik).


2003-2010 The World Bank/UNESCO/IOC International Targeted Group of Experts on "indicators of coral bleaching". A group which is composed of 15 scientists as follows: from USA (3) Hawaii (1), England (2), Australia (2), Kenya (3), Israel (1), Philippines (1), Mexico (1) and France (1). The group meets and works together 2-3 weeks every year at 4 reef sites: Heron Island (Great Barrier Reef, Australia), Puerto Morelos (Mexico), Philippines (exact
location to be determined) and Zanzibar (Y. Loya Co-Chairman with Prof. O. H. Guldberg).

2004-2006 Marie Curie European Reintegration Grant (Brussels, Belgium) (M. Ilan and Y. Loya).

2004-2007 Grant from the Israel Scientific Foundation. Exploitation and hunting patterns of Mountain Gazelle (Gazella gazelle) and Persian Fallow Deer (Dama mesopotamica) during the Late Pleistocene - Early Holocene of the Southern Levant: Testing the hypothesis of cultural control (3 year grant; ca. $30,000 per annum (G. Bar-Oz and T. Dayan [C:I]).


2005 Ministry of Justice: Department of the Public Trustee and the Official Receiver (P.I.). For science for all publications on the internet. (80,000 NIS ca. $18,000) (Y. Gavrieli).

2005 The Antiquities Authority research grant: Ongoing analysis of the faunal remains from the Neolithic of Motza (22,000 NIS [ca. $5000]) (T. Dayan).


2005 Ministry of Science (P.I.). For science for all program – Arab and Jewish children and Parents from Lod visiting Nature Campus. (15,000 NIS ca. $3,300) (Y. Gavrieli).

2005-2006 Israel Nature and National Parks Protection Authority (P.I). For developing booklet and lesson plans on nature and antiquities
conservation for Israel Defense Forces. (20,000 NIS ca. $4,400) (Y. Gavrieli).

2005-2007 Grant from the USDA (and other donators) to develop the Parasitica collection (D. Gerling).


2005-2007 Resolving the higher-level phylogeny of rodents using nuclear genes and SINEs retrotransposons. The United States-Israel Binational Science Foundation (start-up grant program) ($30,000 per year) (D. Huchon and R.W. DeBry).

2005-2008 GLOWA Jordan River research grant: Modeling the impact of global climate change on terrestrial biodiversity in the Jordan River Basin: Testing planning scenarios and climate change scenarios (3 year grant; ca. EURO 35,000 per annum) (T. Dayan, P.I. of subproject).

2005-2009 The Israel Science Foundation (488/05); 4 years. Vocalization as an indicator of individual quality in the rock hyrax ($180,000) (O. Mokady, E. Geffen and M. Kam).


2006 Ministry of Environment (P.I.). For developing learning resources for the public on issues of Sustainable Development on the Internet. (150,000 NIS ca. $33,300) (Y. Gavrieli).

2006 Nature Reserves Authority. Biological documents and management programs of eight marine reserves along the Mediterranean coast of Israel (M. Goren).
2006  New-Faculty Equipment Grants. The Israel Science Foundation ($ 35,000). (D. Huchon).

2006  Grants from the Ministry of the Environment and the Israel Nature and Parks Authority "Survey of the little fire ant in Israel" (total of 45,000 NIS [ca. $10,000]) (T. Dayan and A. Hefetz).

2006  Ministry of Environment (P.I.). For developing an Internet site on Invasive Species of Israel. (20,000 NIS ca. $4,000) (Y. Gavrieli).


2006-2007  Has habitat fragmentation and rainpools geographic distance caused genetic variation among populations of the Syrian spadefoot toad Pelobates syriacus syriacus in Israel? Israel Nature Reserve and Parks Authorities. 80,000 NIS (S. Gafny and A. Freidman).


2006-2008  Bridging the Rift Foundation research grant. Biodiversity in human-dominated landscapes in the Arava Rift Valley (2 years of post-doctoral fellowship [T. Dayan and Y. Mandelik] at $22,000 per annum plus $25,000 per annum for research).

2006-2008  German-Israeli Foundation for Scientific Research and Development grant: Patterns of biodiversity in natural and cultural landscapes: a model Mediterranean forest ecosystem (3 year grant; total sum EURO 158,000) (T. Dayan and T. Assmann).

2006-2009  Israel Science Foundation research grant. Animal bones, ancient populations, and site formation processes: A test case of Dor, a coastal Levantine site (3 year grant; 225,000 NIS [ca. $50,000] per annum) (T. Dayan and G. Bar-Oz C.I.)

2006-2010  Israel Science Foundation (M. Ilan, S. Carmeli and O. Yarden).
2006-2010 Sponge (Metazoa: Porifera) phylogenetics using novel molecular markers. The Israel Science Foundation (NIS 270,000 per year). (D. Huchon).
Awards

1996- The Dr. Israel Cohen Chair in Environmental Zoology (Y. Yom-Tov).

1997- The Raynor Chair in Environmental Conservation Research at Tel Aviv University (Y. Loya).

1999- The Igor Orenstein Chair for Gerontological Research at Tel Aviv University (Y. Rak)
Public service

1953- Member of the Zoological Society of Israel (L. Fishelson).

1965- Member of the Zoological Society of Israel (Y. Yom-Tov).


1970- Member of the American Society of Ichthyologists and Herpetologists (L. Fishelson).

1970- Member of the Israel Ecological Society (M. Goren).

1970- Member of the Zoological Society of Israel (M. Goren).


1971- Honorary Associate, Dept. of Malacology, Zoological Museum Amsterdam, Amsterdam, the Netherlands (H.K. Mienis).

1972- Member of the Entomological Society of Southern Africa (A. Freidberg).

1973- Member of the IAL (International Association for Lichenology) (J. Garty).

1973- Member of the Israel Zoological Society (Y. Benayahu).

1973- Member of the The Israel Ecological Society (J. Garty).


1975- Member of the Israel Ecological Society (L. Fishelson).

1976- Curator of the Fish collection, Zoological Museum, Tel Aviv University (M. Goren).


1976- Member of the Entomological Society of Israel (A. Freidberg).

1977- Member of the Sociedad Argentina de Botánica (S. Blumenfeld).
1977- Member of the Intecol - International Ecological Society (L. Fishelson).

1978- Member of the La Societe Francais d'Ichthyologie (M. Goren).

1979- Member of the editorial board of Marine Ecology Progress Series (Y. Loya).

1979- Member of the Entomological Society of Washington (A. Freidberg).


1981- Israel Anthropological Society (Hershkovitz I.).

1981- Israel Society for Anatomical Sciences (Hershkovitz I.).

1981- Member of the Israel Society for Electron Microscopy (J. Garty).

1982- Member of the Advisory Board of the Israel Journal of Zoology (Y. Yom-Tov).

1982- Member of the European Ichthyological Union (M. Goren).

1982- Member of the European Union of Ichthyologists (L. Fishelson).

1983- Curator of the Invertebrate collections, Zoological Museum, Tel Aviv University (Y. Benayahu).


1984- Member of the Israel Zoological Society (M. Ilan).

1984- European Anthropological Association (Hershkovitz I.).

1984- Israel Prehistoric Society (Hershkovitz I.).

1985- Curator of the Entomological collections, Zoological Museum, Tel Aviv University (A. Freidberg).

1985- Member of the Committee for Fauna and Flora of Israel - The Israel Academy of Sciences and Humanities (M. Goren).

1985- Member of the Israel Society for Aquaculture (M. Goren).
1986 - Member of the Board of the Regional Central Asia Committee of Stratigraphy (O. Orlov-Labkovsky).

1986- Member of the editorial board of Marine Biology (Y. Loya).

1986- Member of the International Society for Reef Studies (Y. Benayahu).

1986- Member of the the Botanical Society of Israel (J. Garty).

1986- Member of the Zoological Society of Israel (T. Dayan).

1987 Member of the Asociacion Argentina of Micologia (S. Blumenfeld).

1987- Curator of Birds and Mammals, Zoological Museum, Tel Aviv University (Y. Yom-Tov).

1987- Member of the Israel Society of Prehistory (T. Dayan).

1988- Member of the International Society for Reef Studies (USA) (M. Ilan).

1988- Member of the Ecological Society of America (T. Dayan).

1988- Member of the Fauna and Flora Committee, Israel Academy of Sciences and Humanities Curator of Birds and Mammals (Y. Yom-Tov).

1988- Member of the Israel Society for Ecology and Environmental Quality (Y. Benayahu).

1988- Member of the Society of Invertebrate Reproduction (Y. Benayahu).

1989- Member of the Zoological Society of Israel (O. Mokady).

1989- Paleoanthropology Society (Hershkovitz I.).

1989- Pre-clinical Advisor for New York Program medical students (Y. Rak)


1990- Deutsche Gesellschaft für Tropenökologie (A. Freidberg).

1990- Member of the American Society of Mammalogists (T. Dayan).
1990- Member of the International Council of Archaeozoology (T. Dayan).
1990- Member of the International Ornithological Committee (Y. Yom-Tov).
1990- Member of the Pacific Science Association (Y. Benayahu).
1990- Member of the Society of Vertebrate Paleontology (T. Dayan).
1991 Member of the Sociedad Chilena de Fitopatología (S. Blumenfeld).
1991- Smithsonian Institution Entomology, Research Associate (A. Freidberg).
1991- Member of the Ichthyological Society of Japan (M. Goren).
1991- Member of the Society for Research on Coelenterates (USA) (M. Ilan).
1992- Member of the Board of Publications, Senckenberg Institute, Germany (L. Fishelson).
1993- Member of the Ecology Graduate Program Committee, Faculty of Life Sciences, Tel Aviv Univ (T. Dayan).
1993- Member of the Israel Society for the Study of the Origin of Life (IL-SOL) (J. Garty).
1993- Member of the IUCN Canid Specialist Group (E. Geffen).
1993- Paleopathology Association (Hershkovitz I.).
1993- Scientific Advisor to the Yarqon River Authority (M. Goren).
1994 Member of the Asociacion Latinoamericana de Micología (S. Blumenfeld).
1994 Member of the Asociacion Micológica Carlos Spegazzini (S. Blumenfeld).
1994- Dental Anthropology Association (Hershkovitz I.).
1994- Member of the American Association of Anatomists (L. Fishelson).
1994- Member of the Curriculum Committe (Y. Rak)
1994- Research Associate of the Oceanographic Research Institute, Durban, South Africa (Y. Benayahu).

1995- American Associations of Physical Anthropology (Hershkovitz I.).

1995- Human Biology Association (Hershkovitz I.).

1995- Member of the American Society for Integrative and Comparative Biology (Y. Benayahu).

1995- Member of the Director of the National Collections of Natural History at Tel Aviv University (T. Dayan).

1995- Member of the Fisheries Society of Africa (M. Goren).

1995- Member of the Museum Committee in the Zoology Department (Y. Benayahu).

1996- Editor of the Journal of International Wildlife Law and Policy, Corresponding (M. Ilan).

1996- Member of the American Microscopical Society (Y. Benayahu).

1997- Member of the International Society for Research on Symbiosis (USA) (M. Ilan).

1997- Member of the scientific steering committee of the Institute for Nature Conservation Research (M. Ilan).

1997- Adopting a scientist for a Shapiro Stipend, Prof. A. Lehrer (A. Freidberg).

1997- Chair of the Raynor Chair for Environmental Conservation Research, Tel Aviv University (Y. Loya).

1997- Member of the British Ornithologists' Union (Y. Yom-Tov).


1998- Scientific co-convenor of DIVERSITAS (An international programme of Biodiversity Science) STAR element 9 on “Inventory and Monitoring of Inland Water Biodiversity” (M. Goren).


1998- Member of the American Fisheries Society (M. Goren).
1998- Member of the Departmental Committee, Department of Zoology, Tel Aviv University (T. Dayan).

1998- Member of the Societas Internationalis Limnologiae (SIL) (M. Goren).

1999- Co-Chair of the committee for Fauna and Flora of Israel - The Israel Academy of Sciences and Humanities (M. Goren).


1999- Member of the Society of Systematic Biologists (D. Huchon).

1999- Member of the Board of Directors of the Inter-university Institute (IUI), Elat (Y. Benayahu).

1999- Member of the Committee for terms in ecology and environmental quality, The Academy for Hebrew Language (Y. Benayahu).

1999- Member of the International Society for the Study of the Origin of Life (ISSOL) (J. Garty).

1999- Member, National Committee for the environmental curriculum in high schools (L. Fishelson).

2000 - Member of the steering committee of the Department of Biology, Israel Oceanographic and Limnological Research, Haifa (M. Ilan).

2000- 2005 Head of the Faculty of Life Sciences Teaching committee (M. Ilan).

2000- Member of the steering committee of the Department of Biology, Israel Oceanographic and Limnological Research, Haifa (M. Ilan).

2000- Member of the Japanese Coral Reef Society (Y. Benayahu).

2000- Adopting a scientist for a Gil’adi program (A. Freidberg).

2000- Director of Nature Campus, Tel Aviv University, Tel Aviv (Y.Gavrieli).

2000- Member of the Academic Planning Committee, Tel Aviv University (Y. Loya).

2000- Member of the Board of Directors of the Inter-university Institute (IUI), Elat (Y. Loya).
2000- Member of the Israel Society for Oxygen and Free Radical Research (J. Garty).

2000- Member of the Scientific Advisory Board of the International Institute (Peoples) (T. Dayan).

2000- Member of the Scientific Review Board - Coral bleaching Project, Research Institute for the Subtropics (RSI), Okinawa, Japan (Y. Loya).

2000- Member of the Zoological Society of Israel (R. Ben-David-Zaslow).

2001- Member of Man and Biosphere Committee, UNESCO (Y. Gavrieli).

2001- Member of the executive committee of the Zoological Society of Israel (M. Goren).

2001- Chair of the Israel MAB (Man and Biosphere) UNESCO Committee (T. Dayan).

2001- Co Chairman - International Targeted working group on coral bleaching under the auspices of the World Bank, in collaboration with IOC/UNESCO (Y. Loya).


2001- Head of the National Center for High Throughput Screening of Novel Bioactive Compounds (M. Ilan).

2001- Member of the Advisory committee for the Minister of the Environment’s award for volunteers (T. Dayan).

2001- Member of the Board of Directors, Society for the Protection of Nature in Israel (Y. Yom-Tov).

2001- Member of the Israel IGBP (International Geosphere Biosphere Program) Committee (T. Dayan).

2001- Member of the Museum Committee (Chair), Department of Zoology, Tel Aviv University (T. Dayan).

2001- Member of the Steering Committee for Nature Campus, Public Programs, Exhibitions and Education at the National Collections.
of Natural History, the I. Meier Segals Garden for Zoological Research and the Botanic Gardens (T. Dayan).

2001- Member of the UNESCO World Heritage Committee, Israel (T. Dayan).

2001- Member of the International Council of Museums (Y. Gavrieli).

2001- Member of the Israel Council of Museums (Y. Gavrieli).

2002- Board member of the Water Environment Forum, Israel Water Association (S. Gafny).

2002- Member of the Societa Lichenologica Italiana (Honorary member) (J. Garty).


2002- Member of the Department Committee in the Department of Zoology (Y. Benayahu).

2002- Member of the editorial board of Marine Pollution Bulletin (Y. Loya).

2002- Member of the Society for Conservation Biology (T. Dayan).

2003- Chair of the National Biodiversity Planning sub-committee for education and public awareness. (Y. Gavrieli)

2003- Curator of the Molecular Systematics collections, Zoological Museum, Tel Aviv University (D. Huchon).


2003- Head of the Department of Zoology (Y. Benayahu).

2003- Member of the Board of Directors of the Nature and National Parks Protection Authority of Israel (INPA), and Chair of the Science Committee of the Board (T. Dayan).

2003- Member of the Great Rift Valley task force of the UNESCO World Heritage Committee (T. Dayan).

2003- Member of the Israeli Society for aquatic research (M. Goren).
2003- Member of the Professional committee for biology teaching in the Ministry of Education, Israel (T. Dayan).

2003- Member of the Steering committee for "The environmental voice at the Judean Foothills", environmental community action in an area planned as a biosphere reserve (T. Dayan).

2004 - Member of the Society for Conservation Biology (Y. Gavrieli).


2004- Chair of the Strategic Planning Committee for the Open Lands Institute on behalf of Yad Hanadiv Foundation (T. Dayan).

2004- Editor in Chief of Electronic Journal of Ichthyology (M. Goren).

2004- Member of the Advisory Committee on "Man and the Environment", Yad Yizhak Ben-Zvi (T. Dayan).

2004-2006 Member of the Board of Directors, the Uri Maimon Hugey Siyur, Keren Kayemet Le'Israel (KKL) (Y.Gavrieli).

2004- Member of the Central Nomination Committee of Tel Aviv University (Y. Loya).

2004- Member of the National Parks and Nature Reserves Council of Israel (T. Dayan).

2004- Member of the steering committee of the Red Sea monitoring program. Ministry of the Environment (M. Ilan).


2005- Co-chair (with J. Gershoni) of the Nature Campus Science Committee, TAU (T. Dayan).

2005- Head of the Faculty of Life Sciences Graduate School (M. Ilan).


2005- Member of the steering committee for the National Collections of Natural History, under the auspices of the Israel National Academy of Sciences and Humanities (T. Dayan).
2005-2006  Planning Committee for a joint building for the natural history collections and the Porter School of the Environment, TAU (T. Dayan).

2005-2007  Member of the selection committee for Fulbright post-doctoral fellowships (T. Dayan).

2006-  Chair, Forum on Biodiversity and the Environment, under the auspices of the Israel Academy of Sciences and Humanities (T. Dayan).

2006-  Member of a scientific steering team assembled by the KKL Forest Department for the restoration of the forests in the north of Israel (T. Dayan).

2006  Member of the local organizing committee for a congress "Deserts & Desertification: Challenges & Opportunities" (T. Dayan).

2006-  Member of the Zoological Society of Israel (D. Huchon).


2006 Sep  Visiting Scientist in the Institute of Marine Sciences, University of Dar es Salaam (M. Ilan).


2006-  Member of the Inter-University Institute Teaching committee (M. Ilan).
Visiting scientists at the National Collections

The attached list includes visitors from institutions other than Tel Aviv University who came personally to use the natural history collections of Tel Aviv University in the past academic year. Much use is made of the collections by additional scientists who did not visit them in person. Some scientists get identification services for their research projects and others have lists of specimens and locations mailed to them for various types of research. Moreover, during this period many parcels containing scientific materials were mailed abroad for researchers in their home institutions.

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Institute</th>
<th>Country</th>
<th>Taxonomic group</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2006</td>
<td>Y. Nagar</td>
<td>Israel Antiquity Authority</td>
<td>Israel</td>
<td>Anthropology</td>
</tr>
<tr>
<td>2005 Dec</td>
<td>U. Bar-Ze’ev</td>
<td>I.M.S.</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2005 Dec</td>
<td>H. Lubinevsky</td>
<td>University of Haifa</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2005 Dec</td>
<td>O. Hazofe</td>
<td>Israel Nature and Parks Authority</td>
<td>Israel</td>
<td>Birds</td>
</tr>
<tr>
<td>2005 Dec</td>
<td>R. Milgalai</td>
<td>Hebrew University</td>
<td>Israel</td>
<td>Birds</td>
</tr>
<tr>
<td>2006 Jan</td>
<td>Y. Sinai</td>
<td>Israel Nature and Parks Authority</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Jan</td>
<td>T. Pavlicek</td>
<td>University of Haifa</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Jan</td>
<td>U. Galili</td>
<td>Israel Antiquity Authority</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Jan</td>
<td>Z. Brosh</td>
<td>Israeli Air Force</td>
<td>Israel</td>
<td>Birds</td>
</tr>
<tr>
<td>2006 Feb</td>
<td>N. Lev-Tov</td>
<td>Hebrew University</td>
<td>Israel</td>
<td>Anthropology</td>
</tr>
<tr>
<td>2006 Feb</td>
<td>U. Galili</td>
<td>Israel Antiquity Authority</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Feb</td>
<td>D. Zvieli</td>
<td>The Israeli Navy</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Feb</td>
<td>A. Gorzalczany</td>
<td>Israel Antiquity Authority</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Feb</td>
<td>Y. Nechushtai</td>
<td>Hebrew University</td>
<td>Israel</td>
<td>Invertebrates</td>
</tr>
<tr>
<td>Date</td>
<td>Name</td>
<td>Institute</td>
<td>Country</td>
<td>Taxonomic group</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>2006 Feb</td>
<td>O. Hazofe</td>
<td>Israel Nature and Parks Authority</td>
<td>Israel</td>
<td>Birds</td>
</tr>
<tr>
<td>2006 Mar</td>
<td>E. Sheffer</td>
<td>IOLR - Haifa</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Mar</td>
<td>D. G. Furth</td>
<td>National Museum of Natural History, Smithsonian Institution</td>
<td>USA</td>
<td>Entomology</td>
</tr>
<tr>
<td>2006 Mar</td>
<td>Y. Sinai</td>
<td>Israel Nature and Parks Authority</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Mar</td>
<td>R. Ortal</td>
<td>Israel Nature and Parks Authority</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Mar</td>
<td>Z. Brosh</td>
<td>Israeli Air Force</td>
<td>Israel</td>
<td>Birds</td>
</tr>
<tr>
<td>2006 Apr</td>
<td>U. Galili</td>
<td>Israel Antiquity Authority</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Apr</td>
<td>J. Webo</td>
<td>Leo poldina Hospital</td>
<td>Germany</td>
<td>Anthropology</td>
</tr>
<tr>
<td>2006 Apr</td>
<td>B. Rosen</td>
<td>University of Haifa</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 May</td>
<td>K. Szpila</td>
<td>Nicolaus Copernicus University, Toruń</td>
<td>Poland</td>
<td>Entomology</td>
</tr>
<tr>
<td>2006 May</td>
<td>C. Bystrowski</td>
<td>Forest Research Institute, Warsaw</td>
<td>Poland</td>
<td>Entomology</td>
</tr>
<tr>
<td>2006 May</td>
<td>T. Kurz</td>
<td>University of Michigan, Department of Anthropology</td>
<td>Israel</td>
<td>Reptiles</td>
</tr>
<tr>
<td>2006 May</td>
<td>Y. Shrir</td>
<td>University of Haifa</td>
<td>Israel</td>
<td>Mammals</td>
</tr>
<tr>
<td>2006 May</td>
<td>A. Retner</td>
<td>University of Haifa</td>
<td>Israel</td>
<td>Mammals</td>
</tr>
<tr>
<td>2006 May-</td>
<td>D. Radovcic</td>
<td>University of Michigan, Department of Anthropology</td>
<td>USA</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Jun</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006 Jun</td>
<td>R. Pinhasi</td>
<td>School of Human &amp; Life Sciences, Roehampton University, London</td>
<td>England</td>
<td>Anthropology</td>
</tr>
<tr>
<td>2006 Jun</td>
<td>P. Shur</td>
<td>Israel Antiquity Authority</td>
<td>Israel</td>
<td>Birds</td>
</tr>
<tr>
<td>2006 Jun</td>
<td>Y. Ben-Michael</td>
<td>Israel Antiquity Authority</td>
<td>Israel</td>
<td>Birds</td>
</tr>
<tr>
<td>2006 Jun</td>
<td>G. Bar-Oz</td>
<td>University of Haifa</td>
<td>Israel</td>
<td>Mammals</td>
</tr>
<tr>
<td>2005 Jun</td>
<td>A. Stutz</td>
<td>University of Michigan</td>
<td>Israel</td>
<td>Mammals</td>
</tr>
<tr>
<td>Date</td>
<td>Name</td>
<td>Institute</td>
<td>Country</td>
<td>Taxonomic group</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
<td>------------------------------------------------</td>
<td>----------</td>
<td>-----------------</td>
</tr>
<tr>
<td>2005 Jun</td>
<td>N. Munro</td>
<td>University of Connecticut</td>
<td>Israel</td>
<td>Mammals</td>
</tr>
<tr>
<td>2005 Jun</td>
<td>R. Shafir</td>
<td>University of Haifa</td>
<td>Israel</td>
<td>Mammals &amp; Birds</td>
</tr>
<tr>
<td>2006 Jul</td>
<td>E. Heiman</td>
<td>I.M.S.</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Aug</td>
<td>F. Bocquentin</td>
<td>CNRS University of Bordeaux</td>
<td>France</td>
<td>Anthropology</td>
</tr>
<tr>
<td>2006 Aug</td>
<td>I. Baruch</td>
<td>Israel Antiquity Authority</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Aug</td>
<td>A. Glaser</td>
<td>Israel Electricity Company</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Aug</td>
<td>D. Kerem</td>
<td>University of Haifa</td>
<td>Israel</td>
<td>Mammals</td>
</tr>
<tr>
<td>2006 Sep</td>
<td>U. Bar-Ze’ev</td>
<td>I.M.S.</td>
<td>Israel</td>
<td>Molluscs</td>
</tr>
<tr>
<td>2006 Sep</td>
<td>D. Teger</td>
<td>Eretz Israel Museum</td>
<td>Israel</td>
<td>Mammals</td>
</tr>
<tr>
<td>2006 Sep</td>
<td>R. Rabinovich</td>
<td>Hebrew University</td>
<td>Israel</td>
<td>Mammals</td>
</tr>
<tr>
<td>2005 Sep</td>
<td>O. Hazofe</td>
<td>Israel Nature and Parks Authority</td>
<td>Israel</td>
<td>Birds</td>
</tr>
<tr>
<td>2006 Sep</td>
<td>M. Kovacic</td>
<td>Natural History Museum Rijeka</td>
<td>Croatia</td>
<td>Fishes</td>
</tr>
<tr>
<td>2006 Sep</td>
<td>D. Golani</td>
<td>Hebrew University</td>
<td>Israel</td>
<td>Fishes</td>
</tr>
<tr>
<td>2006 Oct</td>
<td>M. Wastaway</td>
<td>Department of Archaeology and Anthropology</td>
<td>Australia</td>
<td>Anthropology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Australia National University</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006 Oct</td>
<td>L. Cowgill</td>
<td>Washington University st. Louis Department of anthropology</td>
<td>USA</td>
<td>Anthropology</td>
</tr>
<tr>
<td>2006 Oct</td>
<td>A. Oren</td>
<td>Faculty of Agricultural, Food and Environmental Quality Sciences</td>
<td>Israel</td>
<td>Mammals</td>
</tr>
<tr>
<td>2006 Dec</td>
<td>R. Pinhasi</td>
<td>School of Human &amp; Life Sciences, Roehampton University, London</td>
<td>England</td>
<td>Anthropology</td>
</tr>
</tbody>
</table>
### Support for academic and other courses

The natural history collections are university-based and, as such, their role is also to promote higher education. Some courses are TAU courses, several of which are our compulsory first- and second-year courses, taught to hundreds of students; however, other universities (Technion, University of Haifa, Open University) use our facilities for their specialized courses, as does the Avshalom Institute. Many Nature Campus activities also take place using the collections for varied audiences.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Name</th>
<th>Institute</th>
<th>Taxonomic group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faunistics of birds and Amphibian (academic course)</td>
<td>Y. Yom-Tov</td>
<td>Tel Aviv University</td>
<td>Birds, Amphibia, Taxidermist and Museum Class</td>
</tr>
<tr>
<td>Systematic of Beetles</td>
<td>T. Assmann and C. Drees</td>
<td>Tel Aviv University Ben Gurion University</td>
<td>Entomology</td>
</tr>
<tr>
<td>Insects the Flagship of Biodiversity (academic course)</td>
<td>A. Freidberg and D. Simon</td>
<td>Tel Aviv University</td>
<td>Entomology</td>
</tr>
<tr>
<td>Faunistica (academic course)</td>
<td>M. Inbar</td>
<td>Technion</td>
<td>Birds, Mammals and Museum Class</td>
</tr>
<tr>
<td>Vertebrates Anatomy (academic course)</td>
<td>D. Eilam, M. Ovadia and U. Oron</td>
<td>Tel Aviv University</td>
<td>Reptilia, Mammals and Taxidermist</td>
</tr>
<tr>
<td>Introduction to Animal Kingdom: Invertebrates and Vertebrates (academic course)</td>
<td>M. Ovadia and A. Gasith</td>
<td>Tel Aviv University</td>
<td>Mammals and Entomology</td>
</tr>
<tr>
<td>The Invertebrates: Comparative Functional Biology (academic course)</td>
<td>M. Ilan, Y. Benayahu and A. Abelson</td>
<td>Tel Aviv University</td>
<td>Invertebrates, Entomology and Histology</td>
</tr>
<tr>
<td>Osteology And Anthropology (academic course)</td>
<td>I. Hershkovitz</td>
<td>Tel Aviv University</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Purpose</td>
<td>Name</td>
<td>Institute</td>
<td>Taxonomic group</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>-------------</td>
<td>-----------------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Physical Anthropology (academic course)</td>
<td>Y. Rak</td>
<td>Tel Aviv University</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Human Evolution: fossil evidences (academic course)</td>
<td>Y. Rak</td>
<td>Tel Aviv University</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Chapters in Human Evolution (academic course)</td>
<td>Y. Rak</td>
<td>Tel Aviv University</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Ichthyology (academic course)</td>
<td>M. Goren</td>
<td>Tel Aviv University</td>
<td>Fishes and Museum Class</td>
</tr>
<tr>
<td>Biology and Systematic of Marine Invertebrates: (academic course)</td>
<td>Y. Benayahu</td>
<td>Interuniversity Institute for Marine Sciences</td>
<td>Invertebrates</td>
</tr>
<tr>
<td>Bird Fauna (academic course)</td>
<td>N. Leader</td>
<td>Open University</td>
<td>Birds and Museum Class</td>
</tr>
<tr>
<td>Guiding Students</td>
<td>G. Bar-Oz</td>
<td>University of Haifa</td>
<td>Mammals and Museum Class</td>
</tr>
<tr>
<td>Bird-Watching</td>
<td>T. Shariv</td>
<td>Avshalom Institute</td>
<td>Birds and Museum Class</td>
</tr>
<tr>
<td>Various seminars</td>
<td>North District</td>
<td>Israel Nature and Parks Authority</td>
<td>Mammals, Birds and Museum Class</td>
</tr>
<tr>
<td>Various seminars</td>
<td>Nature Campus</td>
<td>Tel Aviv University</td>
<td>Mammals, Birds, Entomology and Museum Class</td>
</tr>
<tr>
<td>Guided tours to schoolchildren</td>
<td>Nature Campus</td>
<td>Tel Aviv University</td>
<td>Mammals, Birds, Entomology and Museum Class</td>
</tr>
</tbody>
</table>
Support for various individuals and organizations

The TAU natural history collections function as a national collection, by providing services to the scientific committee, as well as to other organizations and, to the best of our abilities under currently constrained conditions, also to the general public. Here we list a sample of the services provided by the collections in the past academic year. We apologize that the list is incomplete, but in the current conditions of under-staffing we are unable to dedicate the person-power to monitor and record all such activities.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Name</th>
<th>Institute</th>
<th>Taxonomic group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxonomic guidance</td>
<td>V. Spriarsky</td>
<td>PPIS of the ministry of Agriculture</td>
<td>Entomology</td>
</tr>
<tr>
<td>(learning the procedure)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>A. Gasith</td>
<td>Tel Aviv University</td>
<td>Entomology and Invertebrates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>E. Nevo &amp; T. Pavlicek</td>
<td>University of Haifa</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>M. Finkel</td>
<td>University of Haifa</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>M. Vonshak</td>
<td>University of Haifa</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td></td>
<td>Plant Protection and Inspection Services</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td></td>
<td>Israel Nature and Parks Authority</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>E. Groner</td>
<td>Ben-Gurion University</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>I. Hoffman</td>
<td>Ben-Gurion University</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>I. Renan</td>
<td>Ben-Gurion University</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>U. Shanas</td>
<td>Oranim Academic College</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>M. Inbar</td>
<td>Oranim Academic College</td>
<td>Entomology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>E. van dan Brink</td>
<td>Israel Antiquity Authority</td>
<td>Molluscs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purpose</td>
<td>Name</td>
<td>Institute</td>
<td>Taxonomic group</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------------</td>
<td>-------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>U. Galili</td>
<td>Israel Antiquity Authority</td>
<td>Molluscs</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>R. Ortal</td>
<td>Israel Nature and Parks Authority</td>
<td>Molluscs</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>T. Oron</td>
<td>Israel Nature and Parks Authority</td>
<td>Molluscs</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>S. Moran</td>
<td>Plant Protection and Inspection Services</td>
<td>Molluscs</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>A. Glaser</td>
<td>Israel Electricity Company</td>
<td>Molluscs</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>E. Sheffer</td>
<td>IOLR - Haifa</td>
<td>Molluscs</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>M. Charter</td>
<td>Tel Aviv University</td>
<td>Molluscs</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>North Distric</td>
<td>Israel Nature and Parks Authority</td>
<td>Fishes</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>I. Zohar</td>
<td>Tel Aviv University</td>
<td>Fishes</td>
</tr>
<tr>
<td>Taxonomy Identification</td>
<td>M. Sade</td>
<td>Tel Aviv University</td>
<td>Birds</td>
</tr>
<tr>
<td>Taxidermist services</td>
<td>D. Eilam</td>
<td>Tel Aviv University</td>
<td>Birds, Mammals</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>and Taxidermist</td>
</tr>
<tr>
<td>Taxidermist services</td>
<td>A. Lotem</td>
<td>Tel Aviv University</td>
<td>Birds and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Taxidermist</td>
</tr>
<tr>
<td>Taxidermist services</td>
<td>Y. Leshem</td>
<td>Tel Aviv University</td>
<td>Birds and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Taxidermist</td>
</tr>
<tr>
<td>Taxidermist services</td>
<td>Nature Campus</td>
<td>Tel Aviv University</td>
<td>Mammals, Birds</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>and Taxidermist</td>
</tr>
<tr>
<td>Taxidermist services</td>
<td>O. Hazofe</td>
<td>Israel Nature and Parks Authority</td>
<td>Birds and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Taxidermist</td>
</tr>
<tr>
<td>Photography</td>
<td>Israeli television</td>
<td>Aruz 2 News</td>
<td>All Collections</td>
</tr>
<tr>
<td>Photography for the Public Affairs Administration</td>
<td>Rava Eleasari</td>
<td>Tel Aviv University</td>
<td>All Collections</td>
</tr>
<tr>
<td>Electronic Data</td>
<td>B. Shaham</td>
<td>Hebrew University</td>
<td>Reptilia</td>
</tr>
<tr>
<td>Electronic Data</td>
<td>Neil</td>
<td>University of Malasia</td>
<td>Reptilia</td>
</tr>
<tr>
<td>Purpose</td>
<td>Name</td>
<td>Institute</td>
<td>Taxonomic group</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Electronic Data</td>
<td>G. Kachila</td>
<td>Hebrew University</td>
<td>Mammals</td>
</tr>
<tr>
<td>Electronic Data</td>
<td>R. Rabinovich</td>
<td>Hebrew University</td>
<td>Mammals</td>
</tr>
<tr>
<td>Electronic Data</td>
<td>U. Motro and Y. Leshem</td>
<td>Hebrew University and Tel Aviv University</td>
<td>Birds</td>
</tr>
<tr>
<td>Electronic Data</td>
<td>M. Fain</td>
<td>University of Haifa</td>
<td>Invertebrates</td>
</tr>
<tr>
<td>Electronic Data For Biologic survey of 12 Marine Reserves</td>
<td>Science Division</td>
<td>Israel Nature and Parks Authority</td>
<td>Fishes and Invertebrates</td>
</tr>
<tr>
<td>Data and Tissue Samples</td>
<td>N. Leader</td>
<td>Tel Aviv University</td>
<td>Birds, Reptalia and Mammals</td>
</tr>
<tr>
<td>Shipment of Tissue Samples</td>
<td>R. W. DeBry</td>
<td>University of Cincinnati, Ohio</td>
<td>Molecular Systematics</td>
</tr>
<tr>
<td>Shipment of Tissue Samples</td>
<td>J. Schmitz</td>
<td>University of Muenster, Germany</td>
<td>Molecular Systematics</td>
</tr>
<tr>
<td>Shipment of Tissue Samples</td>
<td>R. Barrientos</td>
<td>Spain</td>
<td>Molecular Systematics</td>
</tr>
<tr>
<td>Shipment of Tissue Samples</td>
<td>S. Willows-Munto</td>
<td>Evolutionary Genomics Group, South Africa</td>
<td>Molecular Systematics</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>A. Driskell</td>
<td>Smithsonian Institution, USA</td>
<td>Invertebrates: Tunicates and Molecular Systematics</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>R.M. da Rocha</td>
<td>Universidade Federal do Parand', Brasil</td>
<td>Invertebrates: Tunicates</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>X. Turon</td>
<td>University of Barcelona, Spain</td>
<td>Invertebrates: Tunicates</td>
</tr>
<tr>
<td>Shipment of Specimens and Tissue Samples</td>
<td>R.J. Toonen</td>
<td>University of Hawaii at Manoa</td>
<td>Invertebrates: Soft Corals and Molecular Systematics</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>I.M. Mendez</td>
<td>Department of Cell Biology, Spain</td>
<td>Invertebrates: Soft Corals</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>A. Andouche</td>
<td>Museum National d'Histoire Naturelle, France</td>
<td>Invertebrates: Soft Corals</td>
</tr>
<tr>
<td>Purpose</td>
<td>Name</td>
<td>Institute</td>
<td>Taxonomic group</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>C-f. Dai</td>
<td>Institute of Oceanography, Taiwan</td>
<td>Invertebrates: Soft Corals</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>Y. Benayahu</td>
<td>National Museum of Natural History, Leiden, Netherlands</td>
<td>Invertebrates: Soft Corals</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>L. van Ofwegen</td>
<td>National Museum of Natural History, Leiden, Netherlands</td>
<td>Invertebrates: Soft Corals</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>F. Monniot</td>
<td>Museum National d'Histoire Naturelle, France</td>
<td>Invertebrates: Tunicates</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>R. van Soest</td>
<td>Zoological Museum, University of Amsterdam</td>
<td>Invertebrates: Sponges</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>J.-P. Legrand</td>
<td>France</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>K. Nadein</td>
<td>Universitetskaya nab, Russia</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>Ho-Yeon Han</td>
<td>Yonsei University, Korea</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>O. Lonsdale</td>
<td>University of Guelph, Canada</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>B. C. Schlick-Steiner and F. M. Steiner</td>
<td>Universitaet fuer Bodenkultur, Austria</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>A. Tinaut</td>
<td>Facultad de Ciencias, Spain</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>P. Brandmayr,</td>
<td>Universita della Calabria, Italy</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>R. Fabbri</td>
<td>Museo Civico di Storia Naturale Via De' Pisis, Italy</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>D. K. McAlpine</td>
<td>Australian Museum, Australia</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>P. Chandler</td>
<td>England</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>J. Pelletier</td>
<td>France</td>
<td>Entomology</td>
</tr>
<tr>
<td>Purpose</td>
<td>Name</td>
<td>Institute</td>
<td>Taxonomic group</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>W. N. Mathis</td>
<td>Smithsonian Institution, Washington, USA</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>O. Karlsholt</td>
<td>Zoological Museum, Denmark</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>L. Voronyanskogo</td>
<td>Belarus</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>M. Fibiger</td>
<td>Denmark</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>M. Gates</td>
<td>Smithsonian Institution, Washington, USA</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>W. Speidel</td>
<td>Zoologisches Forschungsinstitut und Museum, Germany</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>P. Oosterbroek</td>
<td>Universiteit van Amsterdam Zoölogisch Museum, Netherlands</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>B. R. Stuckenberg</td>
<td>Natal Museum, South Africa</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>A. Emeljanov</td>
<td>Universitetskaya nab, Russia</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>L. Ronkay</td>
<td>Hungary</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>R. zur Strassen</td>
<td>Forschungsinstitut Senckenberg Entomologie, Germany</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>C. Bystrowski</td>
<td>Forest Research Institute, Poland</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>K. S. Nicolaus</td>
<td>Copernicus University Institute of Ecology and Environmental Protection, Poland</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>M.A. Ashraf</td>
<td>Plant Protection Research Institute, Egypt</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>B. Pakyürek</td>
<td>Üniveritesi Fen-Edebiyat, Turkey</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>Y. G. Arzanov</td>
<td>Russia</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>D. W. Dunckerstr</td>
<td>Germany</td>
<td>Entomology</td>
</tr>
<tr>
<td>Purpose</td>
<td>Name</td>
<td>Institute</td>
<td>Taxonomic group</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>A. H. Kirk-Spriggs</td>
<td>Albany Museum, South Africa</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>Y. Dorchin</td>
<td>Israel</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>M. Langer</td>
<td>Germany</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>M. Ebejer</td>
<td>England</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>I. MacGowan</td>
<td>Scottish Natural Heritage Battleby, Scotland</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>B. Merz</td>
<td>Muséum d'histoire naturelle, Switzerland</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>G. Alziar</td>
<td>Muséum d'Histoire Naturelle, France</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>K. Schön</td>
<td>Czach Republic</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>S. Ziani</td>
<td>Italy</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>A. Velázquez</td>
<td>Spain</td>
<td>Entomology</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>M. Kovacic</td>
<td>Natural History Museum Rijeka, Croatia</td>
<td>Fishes</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>R. Winterbottom</td>
<td>Department of Natural History, Canada</td>
<td>Fishes</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>J. Freyof</td>
<td>Leibniz Institute of Freshwater Ecology and Inland Fisheries, Germany</td>
<td>Fishes</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>C. Almada</td>
<td>Unidade de Investigacao em Ecolologia, Portugal</td>
<td>Fishes</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td>J. E. Randall</td>
<td>The state museum of natural and cultural history, Hawaii</td>
<td>Fishes</td>
</tr>
<tr>
<td>Shipment of Specimens</td>
<td></td>
<td>J.L.B. Smith Institute, South Africa</td>
<td>Fishes</td>
</tr>
</tbody>
</table>