

REINFORCING TIES

Many Israeli families trace their origins to Eastern Europe and feel at ease with East European languages, outlooks and culture. This, and a commonality of scientific interests, may account for the continuing close scientific ties between Israel and Eastern Europe. By 1990 the Israel Academy of Sciences and Humanities already had active scientific agreements with Hungary, Poland, Bulgaria, Czechoslovakia and the USSR. After the political breakup of the last two entities, Israel entered into separate agreements with the Czech and Slovak Republics, the Russian Federation, Estonia and the Ukraine. Most agreements provide for, and support, the travel of scientists between participating countries.

Interest has been intense on both sides and typically 80-90% of all allowed travel time is used each year, an exceptionally high rate of utilization. Many visiting scientists come only after detailed joint planning with specific research collaborators, others seek to contact other scientists in their field to develop joint plans and grant proposals, still others hope to use unique scientific facilities or to learn new scientific techniques. There are also regular, higher-level, formal visits by delegations to discuss binational scientific relations as a whole.

The Academy also encourages joint Israeli workshops with East European counterparts. For example, a Czech-Israeli *Symposium on Structure and Dynamics in Chemistry and the Biodisciplines* was organized by (then) Israel Academy President Prof. Joshua Jortner, Prof. Rafi Levin (Israel), Prof. Rudolph Zahradnik, President of the Czech Academy of Sciences, and Prof. Pavel Hobza (Czech Republic). The participants met at the Villa Lanna outside Prague (April 1996) for formal scientific presentations and wide-ranging informal

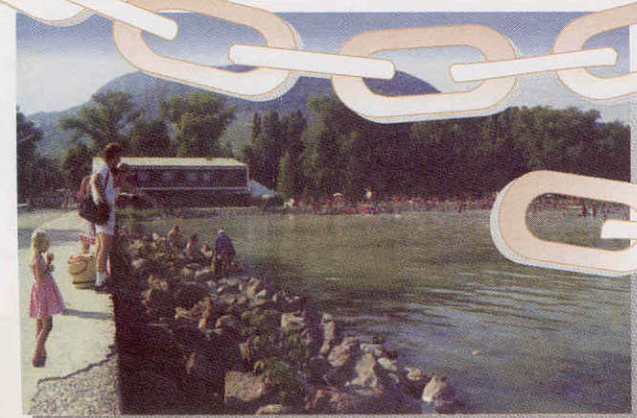
discussions. A similar conference with Romania is in the planning stages.

Dr. Werner Ekhert, a biogeochemist at the internationally respected Israel Oceanographic and Limnological Research Institute (IOLR), has been working with Hungarian colleagues since 1990. "Tom Berman (IOLR) and I were called in," he recalls, "by a group of Israelis working on a prefeasibility study for Hungary's proposed Kish Balaton Project. They were assessing the potential impact of reflooding drained swamplands surrounding Lake Balaton (lower left photograph).

I was impressed by Dr. Vera Istvanovich and my other Hungarian colleagues at the Balaton Research Institute, and we decided to write a grant proposal together. I have visited them twice since. The last time (1990), I sent ahead special equipment we could use to study phosphorus release from lake sediments at the sediment water interface and its effect on algal growth. We then spent a week doing joint experiments together." Tom Berman has also maintained contact with his Czech counterparts and his colleague, David Whynn, is currently investigating water pollution in the Czech Republic.

Dr. Maria Piotrkiewicz of the Polish Institute of Biocybernetics and Biomedical Engineering (Warsaw) first met Prof. Aryeh Gillai of the Allyn Clinic (Jerusalem) at a series of international meetings in Europe. They shared an interest in the proper use of electromyograms, recordings of the sporadic electrical activity of skeletal muscles, in clinical diagnosis. Careful analysis of the noise-like spikes can help differentiate between patients with normal muscles and those with such diseases as muscular dystrophy. Dividing the record into small time segments, and plotting the average number of reversals ("spikes," turns) in the electrical

Many
East European
countries resemble
Israel in population
and share the
common challenges
faced by small
industrialized
countries.



WITH EASTERN EUROPE

signals versus their average amplitude for each segment gives a "cloud" of data-points. A standard delimiting curve is drawn on the plot to define normality. "Gillai felt that the shape of the delimiting curve itself was incorrect," Piotrkiewicz notes, "and I had developed, almost a decade ago, a detailed computer model for studying muscle physiology. The Israel and Polish Academies of Sciences have an exchange agreement which helped me visit Israel in 1994, and we have since worked together, using computer simulations to show that the current curve is indeed incorrect, especially at higher frequencies." This work, which should improve diagnosis, will soon be published in a joint scientific article.



Serendipity is an important part of many initial encounters. In 1996 Prof. Rami Rachimimoff, a prominent neurophysiologist at the Hebrew University, was asked to deliver a lecture at the beautiful Black Sea resort of Sozopol, Bulgaria. Learning of his plans, Prof. Radomir Radomirov, Director of the Bulgarian Institute of Physiology, asked him to deliver a series of lectures on neurotransmitter release and synaptic transmission at his Institute in Sofia, on the way. "I was very impressed," Rachimimoff recalls. Their equipment was often old or inadequate, but their scientists were excellent. Radomir and Dr. Christina Ivancheva, a Research Fellow in his Institute are now here visiting us under an Academy-sponsored exchange program (upper photograph). We are doing a feasibility study to see if we can use our techniques and equipment with their autonomous nervous system preparations."

Serendipity
is an important
part of many
i n i t i a l
e n c o u n t e r s .

countries. More surprisingly, even Russia (population 149.6 million) has several similar social problems, for which it looks to Israel as a model. Many newly independent states of the former USSR are pressuring large numbers of ethnic Russian professionals, now seen as foreign "colonialists," to return to the Russian Federation. Several visiting Russian social scientists have been studying Israel's success in absorbing large numbers of immigrant scientists from the former USSR, using "technology incubators" and other innovative techniques.

Many East European countries resemble Israel in population and share the common challenges faced by small industrialized

Impressive Israeli presentations at international conferences, scientific publications and other contacts have convinced East European scientists that Israel is a good country to work with. Thanks to the Israel Academy's active program of visits and exchanges, Israeli scientists are now discovering that, in many cases, surprisingly good science is being done in Eastern Europe as well. One can expect these linkages to expand to the mutual benefit of both sides.

