

ISRAEL HIGH-TECH & INVESTMENT REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES

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The International Cooperation for Development of Biotechnology Conference, Jerusalem

October 30th - November 3rd, 1994

The Biotechnology Conference dealt with problems intrinsic to the industry in the USA, and examined how Israel is positioned as an important source of advanced research and development capabilities.

At the opening ceremony Dr. Martin Gerstel captivated those present with a humor-filled presentation of the 25-year history of Alza Corporation, and how it grew from an idea to a producer of drugs with sales of several hundreds of millions of dollars, and the many times Alza was on the verge of extinction. To "prime the pump," \$1.3 billion was raised in public financings to allow Alza to produce products employing various methods of drug delivery. Hundreds of millions of dollars in sales followed, returning \$60 million in profits over the 25 years.

"One of the lessons to be learned is that a biotechnology company should seek public financing as early as possible, or become part of a larger company," said Dr. Gerstel. A rule of thumb is that a biotechnology company, in order to survive, requires "two years of operating capital in the bank."

Alza's pioneering approach addressed the problems of over- or under-medication. The Alza approach was to ensure the correct therapeutic range by creating products that would release medicine into the body gradually over varying periods of time - up to one year, if required by the therapy.

Prof. Ephraim Katchalski-Katzir of the Weizmann

Conference statistics

Judging by the attendance at recent international conferences here, the business and scientific world is starting to beat a path to the Middle East. At the ICDB get-together, for example, there were 490 attendees from 24 countries. Conference participants came from as far as India, the US, Australia, Japan, Korea, and Singapore. And real sign of the times: two attendees came from the Gaza Strip. President Ezer Weizmann absented himself from the opening ceremonies; he was busy hosting Prince Phillip. Minister Shulamit Aloni, along with Dr. Avishai Braverman, President of Ben Gurion University, were able to make it on the last day as they returned from participating in the historic Casablanca Conference.

More than 1,800 one-to-one meetings took place over the three-day period of the Biotechnology Conference, with researchers discussing business possibilities and cooperation between the foreign visitors and their Israeli counterparts.

Four companies whose names could not be released mentioned that they are on the verge of signing important deals.

Institute of Science (and former President of Israel) pointed out that one of the key aspects of biotechnology is that there is "plenty of competition but also much cooperation, and this is what brings us all together," Conference Chairman Prof. Max Herzberg alluded to biotechnology's origin in antiquity, with products such as wine mentioned in the Bible, and stressed that there is growing concern with intellectual property rights, and of a growing awareness of biotechnology's responsibility in protecting the environment.

To Dr. Yehoshua (Shuki) Gleitman, Chief Scientist of the Ministry of Industry & Trade - whose office takes an active role in funding Israel's R&D - it is clear that, "international cooperation improves the success/failure ratio."

Dr. Gershon Metzger, Chief

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Scientist, Ministry of Science & the Arts, pointed out that "the pooling of resources and talents increases the size of the pie to be shared by all participants in the biotechnology industry." He suggested that in his view, international cooperation is the only way to deal with projects too vast to be handled by individual institutions or companies.

Studies, surveys and personal contacts with members of the flourishing Israeli biotechnology industry indicate that it has a broad range of developed proprietary technologies. The strongest areas are clinical diagnostics, agriculture, marine biotechnology, pharmaceuticals and veterinary science. As a young and rapidly growing sector, biotechnology lags in business management skills, and experience in post research and development manufacturing, clinical trials and marketing is still scanty. This weakness creates an opportunity for both the Israeli industry and multi-national companies, which could gain from accessing Israeli technologies and giving them the benefit of their skills in the registration process and in marketing.

Financing of biotechnology companies

Brief talks were delivered by Mr. Tracy Lefteroff, partner in charge, Life Sciences Industries Services, Coopers & Lybrand, U.S.A.; Dr. J.P.R. Herrmann, Senior Assoc. Bio-Science team; M.M. Rothschild Asset Management Ltd., U.K.; Dr. Charles Hsu, Advent International U.S.A.; Dr. J. Rabi of Yozma, the Israel Government Venture Capital Fund; Mr. Howard Sterling; Mr. Yadin Kaufman, Veritas Venture Capital Management; and Dr. A.I. Mlavsky, Gemini Capital Fund Management.

The consensus is that the biotechnology industry is expanding faster than the capital being created for its R&D needs. In the United States there are 1,300 biotechnology companies. In Europe, the impact of biotechnology industries, according to Ernst & Young, stands at ECU 5.1 billion. In Israel, exports of the country's 63 firms - not including pharmaceutical companies - exceeded \$250 million last year.

For a variety of reasons, Wall Street is currently disillusioned with biotechnology, and this makes public financing difficult. Until this fad passes, the main resource for financing is the venture capitalist. Dr. Joseph Rabi of Yozma described the government of Israel's participation in the venture-capital field - a participation which allows new investors to buy up government shares a number of years after a project has begun, at bank rate interest. "When things go well, outside investors increase their return, and when things go sour the government shares in that as well."

Dr. Charles Hsu suggested that industry participation should not be discouraged but a more cautious stance

towards biotechnology is being assumed by venture capitalists. Hsu complimented Israel as being one of the three or four most productive countries in the biological sciences. "Not enough is known by the international community of what is going on in Israel," asserts Dr. Hsu. As to the shortage of capital, he warned that in spite of hundreds of venture capital firms active in the U.S., there are only 20 venture capital funds active in biotechnology financing, and some of these may soon withdraw from further participation. He sounded a recurrent theme heard at the conference: that Israeli firms should recognize "that it is essential to build a company with deep technology, broad applicability, strong management and sound financial controls to compete for venture capital. Israeli companies should try to avoid making the mistakes of some of the American companies. Among the most common pitfalls to avoid: one-product strategy, a narrow technology base, approaching venture capitalists without enough data, management teams with no business experience, lack of understanding of potential markets, an indifference to competing approaches."

Hsu suggested that Israeli firms focus on what happens in the American health industry vis a vis the future development of biotechnology. "There will be a rationing of healthcare on the basis of who can pay," he predicted, alluding to the growing role of management healthcare companies, which will in five years be responsible for the approval of healthcare and drug payments. Today this role is still split 50/50 between doctors and the healthcare firms.

And what of the future? The areas which are particularly "hot" today are *in vitro* evolution, catalytic nucleic acid, artificial intelligence, multiple gene delivery vectors, signal transducers, transgenic antibodies, rapid sequencing, and drug delivery of pharmaceuticals.

"As a result of the continuing collapse of the equity capital markets and the subsequent difficulty in funding many biotechnology companies, the industry is being forced to slash R&D spending, inevitably delaying or terminating the development of treatments for such diseases as Alzheimers, AIDS, and various cancers," said Mr. Lefteroff. He and other speakers mentioned the great successes in raising capital in the 1990 - 1991 heyday. Young outfits should seek the safety of the larger pharmaceutical companies, which see biotechnology as a research and development function. The drug firms have come to the conclusion that they themselves are not suited to biotechnology research. And what do people consider most carefully when considering investing in biotechnology R & D units? "The breadth of technology, whether the company is single or multi-product, and whether they are

offering a molecule or a technology," stated Mr. Lefteroff.

Dr. Hermann recounted how Victor Rothschild in the mid 1980s established the largest European fund for biotechnology investments. Some of the caveats:

"After gene cloning has been achieved, make sure you ask a process engineer whether they can make it work; and to our Israeli friends, whose technology is so great, make sure that somebody is not already in the market."

Dr. Joseph Rabi recounted the Israeli government's role in the setting up of eight venture capital funds, all with foreign partners. "Of the original capital of \$100 million, \$70 million has already been spent, and our new direction will take us to direct investment in companies together with the partners," stated Dr. Rabi.

Mr. Yadin Kaufman pointed out that high technology represents only 12% of European venture capital portfolios. In the US this figure is 66%, but in Israel it is 100%.

And what does an Israeli venture capitalist look for?

"I look for good entrepreneurial talent, but encounter many companies which are short of experienced entrepreneurial managers. Some biotech companies are led by 'entre-professors'." He questioned whether the university licensing system is more a hindrance than a help. "One of the drawbacks for the biotechnology field is that Israel has many pilots whose passions are chips, codes and cells, but not molecules. They compete for the attention of the venture capitalist."

Mr. Kaufman also reported that in spite of the competition by electronic companies for capital, two of the venture capital funds with which he is associated have investments in no fewer than eight Israeli firms, either in health care or biotechnology.

Meanwhile, in Casablanca...

While the Biotechnology Conference was going on, the Casablanca Conference was bringing Israel and Moslem countries together - some for the first time - at an international venue.

Dr. Avishay Braverman, President of the Ben Gurion University of the Negev, flew back from the conference to deliver a talk on desert development in the Middle East. He was very upbeat on the prospects of cooperation between Israel and its neighbors, especially Jordan and Egypt. He also foresaw eventual cooperation with Turkey and Syria.

Possible solutions to the limited water resources of the area could be the import of water from Turkey; and the desalination of seawater. The scenario which he foresaw was a combination of sun, water and sea, which currently costs \$1.10/cu.m. but could drop to \$0.70 by the year 2,000. The cost of the various other approaches, such as treatment of

sewage, would require an investment of \$3 billion - equivalent to the amount required to set up adequate desalination plants, according to Dr. Braverman.

Mr. Jordan Baruch of Washington is one of the founders of the well-known US-Israel Financial and Development Foundation, and presented a novel model for cooperation - the Middle East Science and Technology for International Development Foundation (MESTID).

Mr. Baruch acknowledged that differing levels of technological sophistication can conceivably create barriers between Israel and its neighbors. "Under such conditions, how can you have partners?" he asked. His answer came from a visit to the Eilat Maritime Institute, which, in his view, is "top drawer." Next to the institute is a fish farm, which he also visited. The interaction between the two represented "two levels of sophistication, and yet the situation exists in which both sides need each other. This could as easily be done in Jordan. Middle East partnerships can work by taking advantage of each country's special situation - whereby Jordan has access to salt water, Egypt to sweet water while Israel has some of both as well as the technology. to enhance the partners' assets. The needs of the individual countries can be solved by mutual cooperation," said Mr. Braverman.

Editors note: It was not possible to cover all of the presentations at the Casablanca conference, but the complete abstracts have been published. If you are interested in obtaining further information, fax us at 972-3-5227799 or the Conference Committee at 972-3-510010.

Blech related shares fall precipitously

The career of D. Blech & Co. - US based investment bankers to the biotechnology industry - came to an abrupt end on Thursday September 23, when it was notified by a leading Wall Street firm that they would no longer "settle" brokerage transactions handled by D. Blech. The investment bankers had financed small biotechnology companies, and had effectively arranged for mergers between clients. Reportedly they had raised more than \$750 million. In the process, D. Blech expanded into brokerage and "made a market" in the shares of biotechnology companies, apparently the same companies that were its investment banking clients. The day before the transfer of the business of D. Blech to another company, approximately nine companies had their market valuations sliced by as much as 76%. They had become pawns, according to *The Wall Street Journal*, in a struggle of short-sellers who "since April 1994 were short selling shares associated with D. Blech."

Among the victims are three Israeli biotechnology companies whose shares were invested in by

D. Blech, and which had benefited from D. Blech's ability to raise equity capital. The companies are BioTechnology General, Ecogen and Pharmos Corp. The first was in a middle of a financing by D. Blech. From a planned \$32 million capital raising round, only \$10 million was obtained by BTGC.

BioTechnology is selling its products and has a stream of income. Pharmos was also in the process of raising capital, and its management quickly concluded an independent financing which raised \$5.6 million rather than the \$9.0 million D. Blech placement. Pharmos is still 18-24 months away from an anticipated flow of money from Bausch & Lomb, which has contracted to produce and market Pharmos' ophthalmic product. Pharmos has meanwhile adopted cost-cutting measures, including a 20% decrease in personnel. It is closing its New York office and transferring it to its Florida site. President S. Streber has resigned and Dr. Haim Aviv has undertaken additional responsibilities.

If you believe in the skills of the biotechnologist, in the genetic engineer, in the promises of management to succeed in bringing valuable pharmaceuticals to market, you may consider reviewing the equities of the above companies. They are now, in some instances, priced at record low levels. i.e. BioTechnology under \$2 and Pharmos at \$1.25.

Prof. Arkadii Aronov joins Weizmann Institute

Mesoscopic physics - research which deals with small systems, and which may eventually help create minuscule electronic devices - has been bolstered by

the decision of Prof. Aronov to join the Institute faculty. The world-famous expert in the field, formerly of Russia, chose the Weizmann despite offers received from several major American universities. "Prof. Aronov has made seminal, and in some cases revolutionary, contributions to our understanding of electronic properties of disordered conductors," said Prof. Yoseph Imry, one of the founders of mesoscopic physics.

Indigo NV. reports third-quarter results

It is reported that total revenue for the third quarter, which ended September 30, 1994, increased to \$25.7 million, compared with \$3.2 million for the same quarter last year.

Indigo develops, manufactures, markets and services Digital Offset Color printing products, including the Indigo E-Print 1000 and related consumable products.

Broomrape, or "the rape of the vegetable crops"

Broomrape - a parasite of the roots of major vegetable and field crops - is threatening to devastate crops in the developed as well as the developing countries, now that soil sterilization by methyl-bromide fumigant is being phased out. A four-year regional project, sponsored by the US AID, with annual meetings to be held alternately in Egypt and Israel, is aimed at controlling these weeds. In Israel, the project is coordinated by Prof. Jonathan Gressel of the Weizmann Institute's Department of Plant Genetics, and involves scientists of the

STARTUP

Collatech Pharm Ltd. develops processes for healing dermal tissue and bone

Collatech Pharm was established early in 1993 at an industrial incubator in Israel. It has developed processes for the efficient extraction of natural collagen, and patented new applications for collagen in both medicine and cosmetics.

New processes for the healing of damaged dermal tissue and bone are an exciting area of opportunity. The value of collagen-based products in this field is increasing rapidly, and the possibilities are immense.

Collagen is the connective fiber that makes up 80% of human skin. The benefits of this substance has long been known, but was curtailed by the high cost of extraction and limited efficacy, but Collatech Pharm believes it has the solutions for higher purity and lower production costs. Combining the attributes of efficient collagen extraction with its unique approach to creating new end-products, the company has acquired a valuable competitive edge.

The Market

Dr. Toperman initially focused his research on the development of wound dressings - the most promising business opportunity for collagen today - and pre-clinical tests on animals have proved successful. The current market worldwide is estimated at over \$7 billion, growing some 9% annually. The potential for technological innovation in biological skins and dressings is believed to be enormous. To date, this class of product has been plagued by skin rejection problems and high cost. However, sophisticated technologies, offering more rapid healing at economic costs, should overcome this problem.

Through treatment of bovine hides, pure natural collagen will be available in commercial quantities.

institute, Tel Aviv University and the Agricultural Research Organizations of Volcani Center, Beit Dagan, and Neve Ya'ar near Haifa.

This year's opening reception, held at the Weizmann Institute, Rehovot, in early November, was attended by the Egyptian Ambassador to Israel, Mr. Mohamed Bassiouny. Ten of the 25 participants at the workshop came from Egypt.

New ways of eradicating this treacherous weed were reported. One approach was to endow crops with genes for herbicide resistance to enable the irradiation of the broomrape while sparing the crops - a method which had succeeded in trial plots.

Shrinking of Tumors by Breast Cancer Drug

The Weizmann Institute and Sheba Medical Center researchers have recently clarified one of the most puzzling aspects of the widely used breast-cancer drug TAMOXIFEN, which shrinks estrogen-sensitive tumors yet is unable to kill cells

from these tumors in tissue culture. In a paper in the November 1994 issue of *Cancer Research*, the Israeli researchers report that TAMOXIFEN operates by reducing the ability of the tumor to sustain its blood capillary network. Without an adequately functioning life-support system, cancer cells die and the tumor shrinks.

Anglo American Ventures Capital Fund Enlarged by \$9 million

Anglo American Ventures, (AAV) specializing in investments in Israeli high-technology, has raised an additional \$9 million from a group of companies associated with the South African giant Anglo-American.

AAV was founded with seed money from Anglo-American and De Beers. AAV executive Jack Holmes, in announcing the additional investment, expressed "great satisfaction" with AAV's performance, and hopes the additional sums will allow the fund to lead in investments in the dynamic atmosphere of the Israeli high-technology sector. AAV is managed by Yadin Kaufman and Gideon Tolkowsky.

PUBLIC COMPANIES

Further growth at ECI Telecom

Sales for the third quarter of 1994 grew to \$99.2 million, compared with \$77.8 million in the third quarter of 1993 - an increase of 28%. Gross profit for the period increased by 15%, to \$51 million compared with \$44.4 million in the same period of 1993. Net income rose 19% to \$19.5 million, compared with \$16.4 million in the third quarter of 1993.

In the third-quarter, development of the new Digital Circuit Multiplication Equipment product, the Quadcoder, was completed, and field testing is to start shortly in Germany and Israel. In the same quarter, the Access Network Group was selected as a supplier of high-bit-rate, digital subscriber line products by a major European company.

ECI also announced the successful installation, commissioning and traffic operation of an 850 km fiber optic link in China. Investors in most companies would be grossly satisfied with such results, but in the case of ECI there was a sharp run-up in the price of shares prior to the announcement, and a 7% drop after the results were announced!

Shortly after the release of its business results, ECI announced that the Philippine Long Distance Telephone Company has placed an order for \$3.8 million worth of access multiplexers to be incorporated in its network in Manila. The access multiplexers will be deployed in a hybrid fibre-copper local loop configuration. According to an ECI spokesman, the order is the company's first major penetration into the local network in the Philippines. PLDT has previously adopted ECI's digital circuit multiplication equipment (DCME). At the same time, PLDC placed an additional order of \$4.9 million for the DCME.

ECI Telecom continues to be Israel's premier telecommunication company.

What is holding up the Israel-China Research Agreement?

As of today, and in spite of strenuous efforts to implement a bi-national research agreement with China, it has not been done. In May of this year, two representatives of the Chinese government met in Israel with the Minister of Science, Technology and the Arts (MOSTA), and a dialogue was developed with a view to having both governments enter a multiple year agreement. More recently, Foreign Minister Shimon Peres, during a visit to Beijing, agreed that each country would provide \$1.1 million for research.

Mr. Xie Gaofeng at the Chinese Embassy in Tel Aviv indicated that the agreement had not been implemented, though the funds are available, because of delays on the Israeli side.

Mr. Michael Wolf of MOSTA explained that his ministry is more than ready to conclude and implement the agreement, but his ministry only funds basic research while the Chinese are asking for projects which would result in products within 12 months. If the Chinese are intent on carrying out applied research and development rather than basic research, they should contact the Office of the Chief Scientist at the Ministry of Industry & Trade in Jerusalem, which specializes in funding applied R&D projects, including bi-national arrangements.

UPDATE**ARGOMED LTD****Recent Developments**

Argomed is a development-stage company about to become industrialized as it has scaled up its manufacturing facilities to produce complete units and disposable parts on a large scale. The units, and the disposable parts which are made in a "clean room", are produced at its Israeli-based facilities.

"The results of initial clinical trials in Israel are most promising," says Uzi Eshel, innovator of Thermoflex™, and Argomed's President and CEO. Clinical trials have been conducted at one hospital in England and at two hospitals in Israel. Patients have responded favorably with an improvement in their condition. "The procedure with Thermoflex™ is suitable for males suffering from benign enlargement of the prostate. The treatment is performed in a clinic or at a practitioner's office on an ambulatory basis without the need of anesthesia," states Professor Zvi F. Braf, Chairman of Surgery and Chief of Urology at the Sourasky Medical Center, Tel Aviv's largest municipal hospital, teaching and research center.

A survey of patients treated with Thermoflex™ revealed that each reported improvement. The study also noted that the average peak flow rate increased by 39% from 9.7 ml/second to 13.5 ml/second, post-void residual urine decreased by 69% from 123 ml to 38 ml, and that the "American Urological Association symptoms score" improved by 44% from 18 to 10.

Background

The international headquarters of Argomed Ltd. are located in the High-Technology Industrial Center, Herzliya, Israel. Argomed is a development stage company. After four years of intensive research and development activity it has begun production and marketing of Thermoflex™, a unique system, for ambulatory treatment of urological conditions of the prostate.

An American patent has been granted. Thermoflex™ is a partial alternative to the widely practiced surgical procedure TURP (Trans Urethral Resection of the Prostate).

The System

Argomed has developed a technology whereby very hot water is circulated through a patented catheter with a thermally insulated shaft and a thermally transmissive dilation balloon. The advantage over other thermal therapy techniques such as microwave, RF and ultrasound is that Thermoflex™ employs heat applied at a predetermined temperature and accurately controlled outside of the body. Thermoflex™ has overcome the problem of regulation of temperatures liable to occur in other techniques which depend on converting various forms of energy into heat at point of application.

Simplicity of Use

In clinical use the dilation balloon is inflated to remain in close contact with the prostatic tissue ensuring that the circulating hot water transfers heat

uniformly throughout the whole balloon surface resulting in a zone of coagulative necrosis. However, since the balloon has been matched to the length of the prostate the desired amount of coagulative necrosis is achieved. Typically the treatment takes one hour, in the office of the practitioner.

The Market

The demand for prostate surgery for BPH is among the highest of all medical treatments and its total cost to the healthcare sector is substantial. The cost of TURP procedures in western countries is \$6,000, on the average. The Argomed system is cost effective because it is low priced. Argomed targets a market which includes an estimated two million TURP procedures and eight million other sufferers who are awaiting non-surgical solutions.

Vital Company Statistics

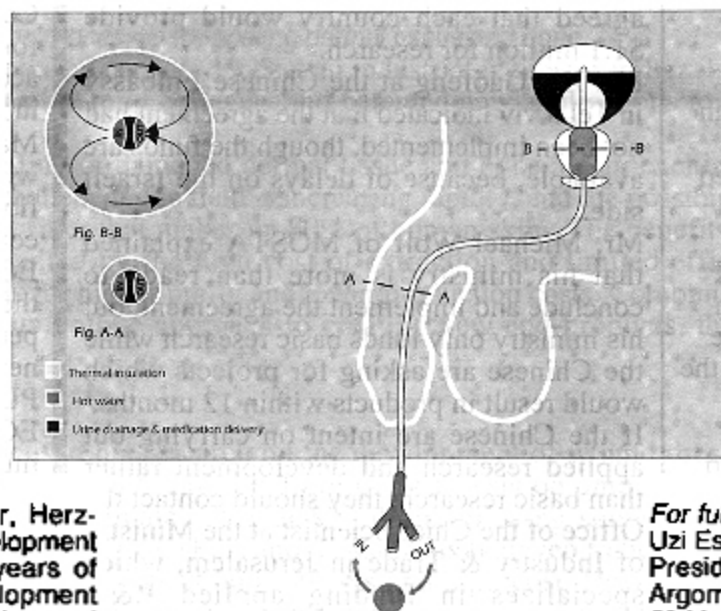
Argomed's activities have been financed from private sources. The Government of Israel has granted the company the status of an Approved Enterprise. This status assures Argomed of the broad benefits that the State of Israel extends to its high-technology industries.

Goals

Argomed's management is keenly aware of the vast market potential for its product and related future products. It is also sensitive to the vast cost of effective global marketing. A corporate planning decision is to identify a joint venture strategic partner. It is now actively pursuing this course of action.

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Key elements of the Thermoflex™ unit

Ares-Serono - success with Native Human Interferon Beta

The Ares-Serono Group, announcing the six-month interim study on the treatment of relapsing remitting multiple sclerosis with native human interferon beta, showed a 67% reduction in the number of active lesions as measured in T1 and T2 weighted MRI (magnetic resonance imaging) scans. The clinical parameters representing the secondary endpoints of this study were also very positive.

These results come from an open, multi-center, randomized, controlled, clinical trial which took place in Spain.

Interferon beta is believed to counteract the immune deregulation seen in multiple sclerosis patients, thus reducing the frequency of attacks and possibly preventing the deterioration of the central nervous system and limiting the ensuing disability. Interferon beta is thought to offset the disease-enhancing effects of gamma interferon - another type of interferon which is thought to trigger attacks of multiple sclerosis, as well as boosting the effects of T-suppressor cells, which counteract the undesirable immune reactions seen in attacks.

The Ares-Serono Group is carrying out a comprehensive worldwide program in multiple sclerosis that includes more than 1,000 patients in over 15 countries. The program includes five major Phase II/III trials with both its native and recombinant interferon beta in both relapsing-remitting and secondary progressive multiple sclerosis, as well as a trial in early-onset multiple sclerosis which is scheduled to start in the near future. The native human interferon is produced in Israel by InterPharm Ltd., Israel's leading producer of biotechnology substances: Its annual production is in excess of \$50 million. Its common shares are traded on NASDAQ.

Peri Ltd. commercializes Israel's brilliant agro-technology advances

Peri Ltd. is the commercialization arm of R&D originating in Israel's famed Agricultural Research Organization (ARO). The ARO is responsible for more than 75% of Israel's agricultural research. It is staffed by scientists and engineers whose work has earned Israel its reputation as a world leader in agriculture. The scope of activity includes innovative use of land and water, genetic engineering, machine engineering, pest control, environmental control, and specialized crop breeding. Peri Ltd. acquires the title and licenses of innovations and inventions, and establishes agreements for the transfer of ARO know-how. It also seeks joint ventures and sources of capital from the Israeli and foreign capital industry.

From time to time, we shall present some of these

advances in our monthly Report. We do so with the cooperation of Peri, which will supply the information.

Not Coals to Newcastle, but Pate de Foie Gras to France

Force-feeding geese in the Middle East dates back at least to Egyptian times, but the technology was revived in Israel with the arrival of the Balkan immigrants. Research to help Israel's goose fatty liver industry grow commenced in the late 1960s. The traditional unhealthy and messy boiled corn was exchanged for dry feed, and later for ready-made pellets of ideal diets for different stages of growth. The goose farm at Bet Dagan near Rishon LeZion provides the stock for all the country's breeding farms. New breeds have been developed to cope with the stresses of changed diets, and though the livers weigh around 800 grams for market purposes, larger livers can be produced.

Most export orders come just before Christmas, and to meet this demand, the geese must be induced to have a second laying season. At present, experiments are being conducted with artificial insemination, as egg fertility in the second laying season is poor. Research is also being carried out on eliminating the use of antibiotics in the feed and extending the product's shelf life.

The livers are purchased by hotels, restaurants and pate de foie gras producers in Europe, and recently Japan has shown interest in this new product of Israel.

Special corn for special purposes

A growing interest in speciality corns is changing the entire industry. For example, multi-eared pygmy corn is eagerly sought for microwave popcorn. "Our multi-eareds have kernels that are easy-popping, high volume and variously colored," says Dr. A. Bar-Zur of the Plant Breeding Center of ARO. "Restaurants prefer to serve our whole pygmy adults rather than the hand-harvested babies from the Far East, which are expensive and inconsistent in quality."

The new ARO supersweets have been developed for areas with mild winters, the plants withstanding wind, rain and fungi and the tight husk covers protecting the kernels from insect blemishes. Research has also been carried out to produce oil-rich grain for feeding to chickens or hogs. The corns are being developed from unique resources for specific users, and maintain their identities from growth until consumption.

Freshwater farming of sea bass

The ARO Aquaculture Research Unit has been experimenting on acclimatizing sea bass to

freshwater conditions for rearing in commercial ponds. Results show that it is feasible, and the growth rate of fish actually improves. Today, the national Mariculture Center at Eilat supplies the Aquaculture Research Unit with larvae which, when 6-8 weeks old, are transferred to freshwater nurseries and later to ponds. In a little over a year, the fish are ready for market at 300-400 grams each. As the fish are ultrasensitive to handling in commercial rearing ponds, new procedures have had to be developed. "However, the major cost is feed, and studies are being carried out to improve protein utilization," said Dr. Harpaz, of the Research Unit.

Geotek Communications Inc. (NASDAQ: GEO)

Geotek is a rapidly growing provider of wireless communications services for businesses that need real-time management and control of their mobile workforces. In the USA and Europe, they provide more than 60,000 businesses with high-quality, cost-effective fleet management, dispatch, telephony and mobile data solutions - all through one user friendly subscriber unit.

Geotek is to expand its operation in the US through the introduction of cost-effective digital technology. Their digital communications system - called GEONET TM - is based on FHMA TM, an advanced spread spectrum digital radio technology which provides a highly efficient use of the radio spectrum, generating capacity gains of 25-30 times existing analog technologies. The wide-area macrocell radio architecture significantly reduces infrastructure and operating costs per subscriber, compared with other multi-cellular technologies.

To advance its vision of added-value wireless communications networks for business, Geotek has forged important strategic alliances with RAFAEL, Vanguard Cellular, Mitsubishi and the Soros Group. RAFAEL, the world's leading authority on spread spectrum radio technology, formed a J/V in Israel with Geotek called POWER

SPECTRUMTECHNOLOGY LTD., which developed the commercial FHMA TM system. VANGUARD CELLULAR SYSTEMS INC., one of the largest independent cellular companies in the US, invested \$30 million in Geotek, and holds options to invest an additional \$167 million over the next four years. VANGUARD also provides Geotek with operational and marketing support in connection with the roll-out of the US Geotek TM network.

MITSUBISHI CONSUMER ELECTRONICS AMERICA will be manufacturing and marketing Geotek subscriber units.

THE SOROS GROUP invested \$50 million in Geotek, and formed a strategic alliance to acquire licenses and construct digital networks in various overseas markets.

Science and Industry in Action

Detectors designed at the Weizmann Institute are to be manufactured in Israel, and Japan will play a major role in the hoped-for identification of a major missing link in particle physics - the particles responsible for endowing matter with mass. They will be used at the LHC proton-proton collider accelerator built by the European Laboratory for Particle Physics (CERN) in Geneva, and supported by 19 European countries, with pledged contributions from the US, Canada, India, Israel, China, Russia and Japan. With the demise of the superconducting supercollider (SSC) project in the US, the Large Hadron Collider (LHC) proton-proton collider will be the state-of-the-art tool for particle physics research of the coming decade.

The decision to adopt Weizmann detectors for the ATLAS experiment was strongly influenced by their successful use by CERN since 1989 for detection of the Z⁰ particle - the neutral carrier of the weak nuclear interaction. (The ATLAS is one of the two large detectors that will be operating at the LHC.) Some 8,000 square metres of these ultrafast radiation detectors will be constructed on the Weizmann Institute campus, as well as in Japan. A Japanese delegation recently visited the institute to observe the assembly line construction procedure.

According to Prof. Giora Mikenberg of the institute's Department of Particle Physics, and a member of the CERN committee that decides on the experimental program of the LHC, the final decision is expected soon on the construction of the powerful, technologically advanced \$2 billion accelerator. It will be built within the 27-kilometer tunnel that houses CERN's presently operating LEP accelerator - an installation at which Weizmann Institute physicists have been working since 1981.

Aside from the benefits to the Israeli scientific community from participation in CERN research, the country's high-tech industry is also reaping fruits of this collaboration, which has enabled it to enter new fields. Local companies, for example, have supplied CERN with an advanced radio-frequency control system for tracking particles circulating in the 27-kilometer-long accelerator; cables sheathed with PVC-free insulation, which does not release toxic fumes in case of fire; and environmentally friendly Freon-free chemical systems for treating and cleaning vacuum-related systems used in the accelerators. In addition, Israeli-manufactured computer-network and telephone exchange systems are also being purchased by CERN.

Answering in seven languages

A local firm, Voice Response, a representative of Missing Link, has developed a voice response system which is connected by telephone and

computer to a hotel's main communications system, and accessed by telephone inside or outside the hotel. An unusual feature of the program is that it works in no fewer than seven languages. Each guest in the hotel receives his own electronic box, with his own secret code. Messages can be left in the box, and withdrawn externally. On checking out, the box closes automatically.

Leapfrogging into the next generation

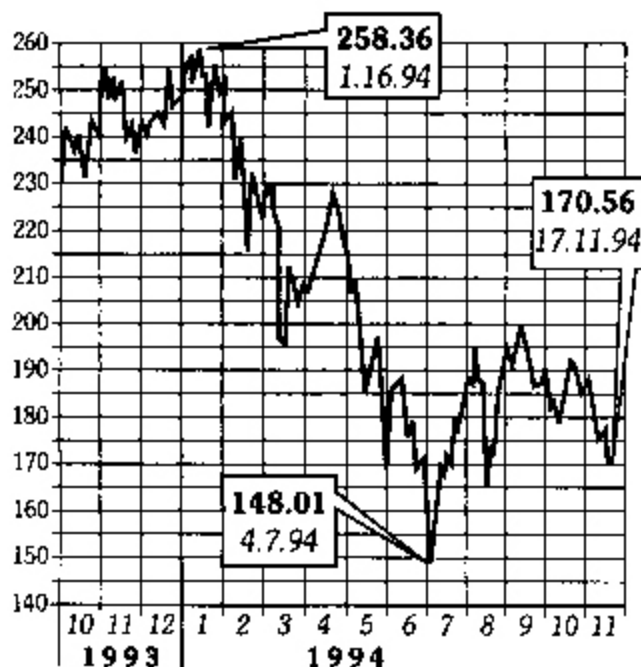
Magic Software Industries has announced a new strategy related to its products for future Windows applications. The leading two steps in developing Version 6 will come after the forthcoming announcement of Magic's Version 5.7. The company has called its approach "leapfrogging."

The company indicates that Version 6 will include some revolutionary features which will place it at the leading edge of such programs.

Dunn & Bradstreet shows its muscle.

Before the recent Casablanca Conference, Dunn & Bradstreet supplied Israel's Foreign Ministry with information on all of the 750 companies participating. To do so, it searched through its databases, which contain information on 35 million companies throughout the world. An interesting sidelight was the conclusion that among the 750 participants were international conglomerates with billions of dollars of sales as well as representatives of private companies the annual turnover of which was only several tens of thousands of dollars.

Two Sided Index (Mishtanim)



Financial Results for Public Companies

	1994	1993
Eibit Computers Ltd		
Sales	\$ 500.0 mil	\$ 400.0 mil
Net income	\$ 27.3 mil	\$ 29.1 mil
(Nine months ending Sep. 30)		
Eiron Electronic Industries Ltd		
Revenues	\$ 693.0 mil	\$ 544.0 mil
Net income	\$ 5.2 mil	\$ 8.5 mil
(Nine months ending Sep. 30)		
Elscint Ltd		
Net revenues	\$ 167.9 mil	\$ 177.7 mil
Net income	\$ 9.0 mil	\$ 22.4 mil
4th Dimension Software Ltd		
Revenues	\$ 21.0 mil	\$ 18.3 mil
Net income (loss)	(\$ 11.2 mil)	\$ 4.8 mil
(Nine months ending Sep. 30)		
Biotechnology General Corp		
Sales	\$ 15.3 mil	\$ 9.3 mil
Net loss	\$ 3.31 mil	\$ 8.9 mil
(Nine months ending Sep. 30)		
Gilat Satellite Technologies Ltd		
Sales	\$ 17.7 mil	\$ 11.6 mil
Net income	\$ 3.8 mil	\$ 7.5 mil
(Nine months ending Sep. 30)		
Endunetics		
Sales	\$ 2.3 mil	\$ 3.0 mil
Net income	(\$ 0.72 mil)	\$ 1.2 mil
(Nine months ending Sep. 30)		

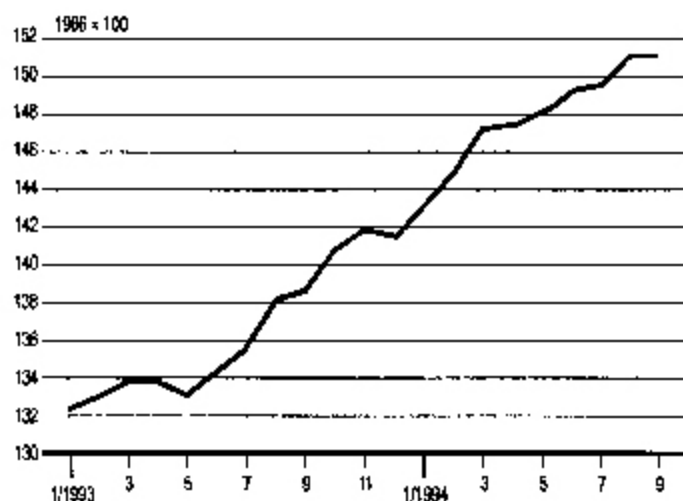
Economic Statistics for 1993 - 1995

	1995	1995*	1995**
	(% real change)		
National Accounts			
Gross Domestic Product	3.4	6.7	4.6
Gross Domestic Business Product	3.5	8.0	5.0
Private Consumption	7.7	10.0	4.5
Domestic Public Consumption	1.2	5.4	3.0
Gross Investment in Economic Sectors	16.9	14.2	6.0
Investment in Residential Construction	-27.1	1.4	9.0
Export of Goods and Services	10.6	7.8	8.0
	12.8	12.9	7.0
Additional Data			
Population	2.7	2.3	2.3
Civilian Work Force	4.8	3.9	3.2
Number of Persons Employed	6.1	6.5	3.4
Unemployment (% of civilian work force)	10.0	7.7	8.0
Exchange Rate of Currency Basket	6.3	8.0	8.0
Inflation	9.4	13.5	12.0

* Official preliminary estimates for 1994

** Bank leumi's forecast for 1995

STATE OF THE ECONOMY INDEX



Source: Bank Leumi

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