

ISRAEL HIGH-TECH & INVESTMENT REPORT

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From Local R&D

Israel's First-Ever Candidate for a Blockbuster Drug

Israel has made many technological strides in the past decade. Among these was its participation with nations that have successfully launched a satellite and developed innovative technologies and products, including: surgical lasers, speech compression to increase telephone capacity, computerized irrigation for agriculture, and computer programs for industrial applications and computer graphics. Moreover, IBM, Motorola and Intel, all with major R&D subsidiaries in Israel, have innovated in computer chips and related fields. The formation of a high-technology sector which has expanded the country's exports to nearly all parts of the globe, is another notable achievement. Until recently, no Israeli pharmaceutical group could point to a drug as being truly blue and white, although drugs such as, interferon and human growth hormone, which originated with local drug developers, had been synthesized and engineered here.

A new drug application for Copolymer-1, a drug discovered by the Weizmann Institute of Science for the treatment of remitting multiple sclerosis, has been submitted for filing with the US Food & Drug Administration by Teva Pharmaceutical Industries Ltd.

Observers in the drug industry believe that Teva will obtain approval. This prospect has brought world attention to Teva, and attracted investors who are betting that Teva will come through with a "blockbuster" product. The company is about to invest tens of million dollars in the preparation of manufacturing facilities. The marketing of this drug in the U.S. now lies in the hands of the American drug regulators.

Multiple sclerosis is a devastating disease, attacking mainly young people between 30 and 40. It is one of the most common diseases affecting the central nervous system. Approximately one million people around the world suffer from the disease; about 300,000 in the US and an additional 350,000 in Europe.

Copolymer-1 is a synthetic polypeptide, originally prepared and tested in the early 1970s by Prof.

Michael Sela and Ruth Arnon with Dr. Dvora Teitelbaum and colleagues at the Weizmann Institute. Yeda Research & Development, the commercialization arm of the Institute, licensed the process to Teva. Copolymer-1 was initially developed during attempts to prepare synthetic antigen-polypeptides for an inflammatory condition with pathological and clinical similarities. It proved to be an effective treatment for this condition in a variety of animal species, including non-human primates.

Overall, clinical trials have demonstrated the positive therapeutic effect of Copolymer-1 in reducing the relapse rate. Furthermore, significantly more patients treated with Copolymer-1 compared with a control group showed improvement in their condition, with fewer patients becoming worse. Copolymer-1 differs in some important respects from non-specific immunological therapies such as beta-interferons, which are believed to induce widespread changes in the immune system by stimulating or suppressing whole sections of the normal immune response.

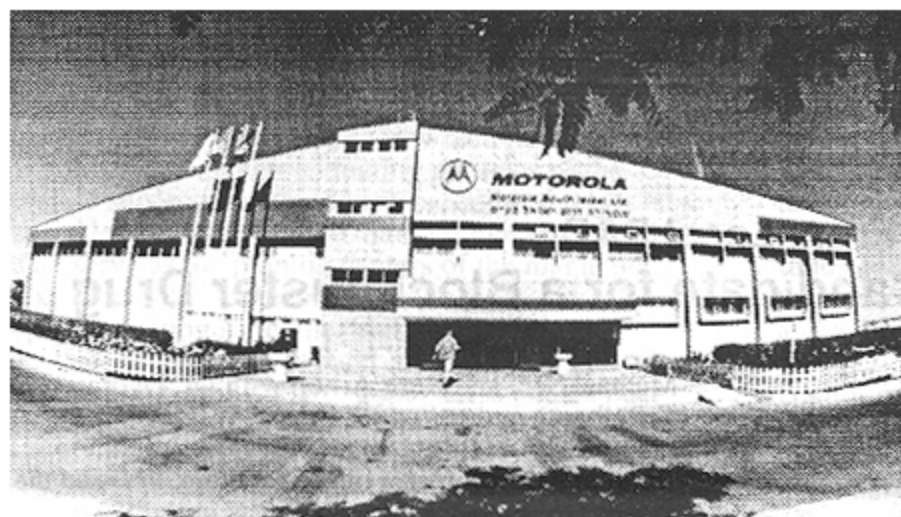
Copolymer-1 seems to intervene by stopping the immune system's attack on the myelin sheath. It is this inflammatory and degenerative process which is believed to lead to MS.

Data from more than 850 patients, representing close to 1,500 patient years of treatment, support a relatively benign safety profile and the excellent tolerability of Copolymer-1.

Teva Pharmaceuticals has submitted a "new drug"

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Silicom Ltd. a public company innovates in computer
connectivity
Company results



Motorola South Israel Awarded National Environment Prize

application (NDA) to the US FDA to obtain approval to market the product under the tradename Copaxone. According to American market analysts, when approved, Teva's sales of this product could reach \$400 million within three years.

COMPANY REPORT

Out Of The Incubator Into The Real World

"D-Pharm Ltd.", an incubator-nurtured enterprise, is the brainchild of founder Alexander Kozak, who after earning two masters degrees in Russia, immigrated to Israel in 1985 and earned his doctorate in neurobiology at the Weizmann Institute of Science in Rehovot.

D-Pharm, a development company, was hatched in an incubator. Technological incubators are part of an ambitious government program designed to support the development of new technological ideas by "marrying" innovative immigrants and Israeli entrepreneurs. Qualified candidates are provided with laboratory space, equipment, salaries and administrative assistance. Under these conditions, it is expected that enterprises will mature into viable Israeli high-technology exporting companies. Pre-clinical work on animal models is moving rapidly. Building on a 15-year-old concept, Dr. Kozak applied his new technology to the development of a drug which may alleviate suffering from cardiac infarcts, stroke and epilepsy. The company has validated these concepts on animal models by intensive testing. DP16 and VTA are the novel prodrugs which have resulted.

The Concept Behind The Technology

The company has concentrated on drug targeting, and has developed an innovative method based on

unique proprietary technology called Regulated Activation of Prodrugs (RAP), which carries the drug to the diseased area.

Two years ago, while still in the incubator, applications were filed for broad patent protection. The patent application claimed a novel chemical modification to allow drug delivery to designated points in the human body. "The idea differs from existing approaches in that the aim is to target the disease and not the tissue," says Dr. Yaffa Beck, Vice-President and Chief Operating Officer. D-Pharm designs prodrugs, which involve the chemical bonding of a drug molecule to a carrier compound. This process is vital to the

disease-specific delivery of the drug. When the prodrug reaches the diseased area, it enters the cells and is cleaved, releasing the active drug. The key advantage of this system is that it requires low doses of drug. "A drawback of non-specific drug delivery systems is the need for high dosages, with the consequent risk of unpleasant side effects. In fact, drugs which are selectively targeted have a higher therapeutic index than those which are partially dissipated before reaching the target," explains Dr. Kozak.

Moving Toward Applications

Currently two of D-Pharm's novel prodrugs, DP16 and TVA, are being tested for efficacy. DP16 is the prodrug version of the original BAPTA medicine. In tests on animals, the company has obtained results which indicate that the prodrug is incomparably more effective with small amounts of DP16 than is the non-targeted molecule.

Financing

Besides the support of the Office of the Chief Scientist, additional R & D investments were provided by Dr. Max Herzberg, Founder and Chairman of Organics, and Dr. Yaffa Beck of Organics Ltd.

To move the project until it is ready to come before the regulatory authorities, will take time and a reservoir of capital. D-Pharm has succeeded in a round of financing by a group of venture capitalists, including Gemini, Walden and Advent.

Investments to date total more than \$2.5 million. For his part, Dr. Kozak is confident that the goals are reachable, and that the two prodrugs will be ready for marketing on schedule.

Clinical trials are scheduled to begin before the end of the year. It may be possible to considerably reduce the ten years and \$100 million usually

required to bring a new drug to market. It is estimated that two years of R&D are required for the completion of pre-clinical tests related to toxicity and related toxicology and then on to Phase I and II clinical trials.

Quo Vadis

D-Pharm currently operates in two, highly cramped rooms in the Nes Ziona-based science industrial park. These rooms serve as the laboratories,

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FINANCIAL RESULTS, SECOND QUARTER 1995

	1995	1994		1995	1994
A.G. Associates			LANNET DATA COMMUNICATIONS		
Sale	\$16.8 million.	\$10.3 million.	Sales	\$21.9 million.	\$16.5 million.
Net income	\$3.7 million.	\$0.4 million.	Net income	\$2.4 million.	\$5.4 million.
ALADDIN KNOWLEDGE SYSTEMS LTD.			LASER INDUSTRIES LTD.		
Sales	\$2.8 million.	\$1.7 million.	Sales	\$12.3 million.	\$10.26 million.
Net income	\$0.887 million.	\$0.595 million.	Net income	\$1.4 million.	\$1.0 million.
AMERICAN-ISRAEL PAPER MILLS			NETMANAGE LTD.		
Sales	\$84.4 million.	\$62 million.	Sales	\$10.0 million.	\$5.3 million.
Net income	\$4.6 million.	\$1.1 million.	Net income	N.A.	N.A.
(convenience translation to US \$)			MEDIS EL LTD.		
BIOTECHNOLOGY GENERAL			Sales	none	
Sales	\$7.3 million.	\$7.7 million.	Net Income	(\$0.56) million.	(\$0.88) million.
Net income	\$0.45 million.	\$0.44 million.	ORBOTECH		
ECI TELECOM			Sales	\$31.7 million.	N.A.
Sales	\$110.1 million.	\$93.9 million.	Net income	\$5.8 million.	\$2.4 million.
Net income	\$8.3 million.	\$4.4 million.	PEC		
EFI			Income	\$9.4 million.	\$9.1 million.
Sales	\$44.8 million.	\$30.2 million.	Net income	\$3.27 million.	\$6.17 million.
Net income	\$21.6 million.	\$18.9 million.	SCITEX CORP.		
ELBIT COMPUTERS			Sales	\$172.8 million.	\$163.9 million.
Sales	\$244.0 million.	\$179.5 million.	Net income	\$2.1 million.	\$16.2 million.
Net income	\$6.4 million.	\$9.9 million.	SILICOM LTD.		
ELRON ELECTRONIC			Sales	\$0.797 million.	\$1.03 million.
Sales	\$333.0 million.	\$273 million.	Net income	\$0.02 million.	\$0.331 million.
Net income	\$2.5 million.	\$0.8 million.	TARO PHARMACEUTICALS		
ELSCINT LTD.			Sales	\$13.0 million.	\$10 million.
Sales	\$66.1 million.	\$54.7 million.	Net income	\$1.1 million.	\$1.0 million.
Net income	\$4.9 million.	\$2.7 million.	TELEDATA COMMUNICATIONS		
GEOTEK			Sales	\$5.0 million.	\$9.4 million.
Sales	\$20.3 million.	\$16.1 million.	Net income	(\$2.7) million.	\$2.0 million.
Net income	N.A.	N.A.	TEVA PHARMACEUTICAL		
GILAT SATELLITE COMMUNICATIONS			Sales	\$156.8 million	\$146.9 million.
Sales	\$9.8 million.	\$5.9 million.	Net income	\$19.5 million	\$17.8 million.
Net income	\$1.7 million.	\$1.2 million.	TOWER SEMICONDUCTOR		
IIS INTELLIGENT INFORMATION SYSTEMS			Sales	\$20.8 million	\$11.9 million.
Sales	\$18.6 million.	\$21.5 million.	Net income	\$3.7 million	\$1.6 million.
Net income	(\$3.2) million.	\$0.5 million.	INDIGO		
INDIGO			Sales	\$42.8 million	\$7.6 million.
Sales	\$42.8 million	\$7.6 million.	Net income	(\$6.7) million.	(\$10.1) million.
Net income	(\$6.7) million.	(\$10.1) million.			

experimental areas and administrative offices. Since the company's ambitious development program requires additional personnel, it will be soon moving to a brand-new building.

The D-Pharm technology could make many drugs more efficient and less toxic. Its plan and business strategy remain directed at upgrading existing drugs, and side-stepping competition by partnering. The results to-date are most impressive. The management team is expert in research and development. The product area is ripe for new ideas. Cautious observers of the drug industry will always point to possible stumbling blocks, but this young company seems to have a good chance of making an important contribution.

Walden Heads Investment Group

Walden (Israel), part of the international venture capital group, has invested \$2.5 million in ADP Ltd. Others in the group include the Moffet Fund, Quantum and individual investors such as Effie Arazi, the founder of Scitex and EFI.

ADP is a private company founded by former executives of Elscint, including Dan Ben Zeev and Dan Inbar. The company is currently completing the development of a novel imaging system based on innovative electro-optics technology. The company will attempt to enter a market which exceeds \$20 billion a year.

Walden Israel is a \$35 million venture capital fund, while the Walden group worldwide manages a \$500 million fund.

Fairchild and Yozma Invest \$2.4 million

The American Fairchild Corp. and the Israel Yozma Group are investing in a company which is producing a receiving/sending system for land-based satellite communications. The company has received Approved Enterprise status, with all the concomitant government benefits. The start-up received a \$500,000 grant from the BIRD Foundation. It is anticipated that in its first year of production it will have sales of \$3.5 million. Fairchild, a major participant in the international telecommunication market with a turnover of \$500 million a year, has placed orders for the new systems.

Trimont

Trimont Partners Corp. of Connecticut is operating the Israel Opportunities Fund, which invests up to 65% of its total assets in shares of Israeli companies on the Tel Aviv Stock Exchange.

ECI Telecom Sprint and British Telecom

ECI Telecom Ltd. (NASDAQ/NM:ECILF) have reached an agreement in principle on a five-year

purchase and distribution contract with Sprint. Under the terms of this agreement, equipment purchases could exceed \$30 million. The agreement covers the company's digital circuit multiplication system, and will later include other products, including those from Telematics International and Compression Telecommunications Corporation -- both subsidiaries of ECI Telecom Ltd.

ECI Telecom Ltd. has announced that Concert, the British Telecom/MCI global network services joint venture, has placed ECI's first order totaling approximately \$1.2 million, for QuadCoder 300 systems. The QuadCoder 300 is the latest addition to ECI's Digital Circuit Multiplication Equipment (DCME) product line.

Aladdin Maintains Record Sales And Earnings

Aladdin, which we introduced through a company report in our *IHTIR* 6/95, appears to be on course to reach our estimate of \$12 million in sales for 1995. In the first six months of the current year, sales rose by 68% to \$5.4 million, as compared with \$3.2 million for the same period a year ago. Net income jumped by 52% and reached \$1.7 million, as compared with \$1.1 in the previous year.

In the past quarter, the company has increased its distributor network to include India and Romania. It has also opened Aladdin Japan with its current distributor there.

The company's shares (NASDAQ:ALDNF) have more than doubled since May 1, 1995, and the recent price of \$22 represented a ratio of market-to-book value of 7:4.

If the company continues to increase its sales and profits by such increments, the shares may be able to maintain the levels of its current price-earnings and market value-to-book ratios.



Optimism follows breakthrough the 200 barrier

Teva's Quarterly Results Good but Not Good Enough

Teva's Pharmaceutical shares weakened even further in the aftermath of its quarterly P & L report. Ten days before the announcement that it had earned nearly \$20 million on sales of \$157 million, the company's shares were being traded at \$41. There were expectations that generic sales would propel earnings to at least \$21 million. However, the margins on the company's generic sales were lower and while more than enough sales prospects are in the pipeline, it is taking a relatively long time for the new drugs to obtain regulatory approval. Investment banker Lehman has stated that it considers Teva a strong buy on any price weakness. The big expectation is that Teva's new MS drug copaxone will become a "blockbuster" drug.

Elbit Computers Increases Sales; Profits Drop

Elbit Computers Ltd. (NASDAQ:ELBTF) is succeeding in moving away from its previously defense-driven focus. More than two-thirds of its sales now come from medical and non-medical products. In a major endeavor to introduce a new product in the medical field, Elscint and Disonics (part of Elbit) will invest \$13 million. Partners in the research will be the American company Silicon Graphics and its Israeli subsidiary. Jonathan Adereth, Elscint's President, stated: "The co-operative research is aimed at developing new ultra-sound systems which will integrate revolutionary system concepts with powerful and unique graphic capabilities." In its acquisition of new companies, however, its profits have dropped in the recent past. (see earnings table)

Pharmos-Bausch & Lomb to Market: Payment up front

Pharmos Corp. (NASDAQ:PARS) has signed an agreement with Bausch & Lomb Pharmaceuticals Inc. (NYSE/BOL) to market Lotemax™, a site-specific ocular anti-inflammatory agent recently filed for approval with the FDA.

Lotemax™ is a patented steroid with potent anti-inflammatory and anti-allergy activity. It is claimed to have a better safety profile than other steroids on the market. Pharmos estimates that the worldwide ophthalmic inflammation and allergy market is around \$750 million.

Also covered by the agreement with Bausch & Lomb Pharmaceuticals are any Lotemax™ line extension products currently being developed, including a combination product with Tobramycin, an antibiotic used to treat superficial eye infections. The marketing agreement will cover the United States. Under this pact, Bausch & Lomb Pharmaceuticals will purchase the active drug

substance from Pharmos and provide Pharmos with up to \$4 million in cash advances over the next 10 months. An additional \$2 million is being offered subject to the attainment of certain development milestones in the Lotemax™ line extension products.

Investment Banker Upbeat On Gilat Satellite

American Investment Banker Smith Barney, has released analyst Elliot Prince's comments on Gilat satellite. The analyst sees promise in the announcement that AT&T Tridom, a fully owned subsidiary of AT&T Corp., is integrating Gilat's technology into its product line, and will have a highly positive effect on the company's positioning in the market. This alliance comes on top of Gilat's relationship with GE Spacenet.

\$600,000 Order From Renault

Tecnomatix Technologies Ltd. (NASDAQ-NM: TCNOF) recently announced that it had delivered part of a \$600,000 order for multiple ROBCAD/Spot licenses, as a follow-up order from Renault. Renault, one of the major European automotive manufacturers, started using ROBCAD/Spot in 1989, and today operates 23 ROBCAD licenses as a mainstream CAPE (Computer-Aided Production Engineering) solution. The number of ROBCAD systems at Renault's suppliers is also steadily growing.

Across Data System's Debut

Across Data System (NASDAQ:ACRS) is one of the more recent companies to sell its shares publicly. In the first week of August it raised \$7 million in a public offering. The issue price was \$5.50, but in the first week of trading it rose to over \$7. The company's main activity is the development of business software. In the first quarter its sales were \$4.3 million, with a net margin of just under 10%. The increase in profits from \$78,000 a year ago was helped by the sale of two newly-acquired companies. Part of the funds received is being used to retire a long term debt.

Mutual Funds Move Ahead Slowly

In the six-month period ending June 30, the country's mutual funds appreciated by 3.5% or 0.8% more than the 2.7% rise in the C.o.L. index during that period. Mutual funds have been held back, especially in June, by net redemptions, yet the three best performing funds in the first half of the year showed 20%-28% gains. All three were invested mainly in Israeli companies on Wall Street, which have been flying high since the beginning of the year.

The General Share Index rose by 5% in the

half-year, with most of the gain coming in June. In July the three funds, which were leaders for that month, were also invested primarily in Israeli companies on Wall Street.

We are repeatedly told that some private brokers and portfolio managers have been active in the share market for the past few months joining foreign companies which, until July, had invested millions of dollars on the Tel Aviv Stock Exchange. As the summer season was drawing to an end, there was an underlying thread of optimism that the General Share Index would breach the 200 mark. However, trading turnovers have stayed under NIS 100 million a session, indicating that the public had not yet returned to the market place.

Point Of Sale Continues To Expand

Point of Sale is a public company with shares traded on the Tel Aviv Stock Exchange. Founded and directed by immigrants from South Africa, the firm is beginning to make a ripple internationally in supplying software and hardware systems at points of sale. It automates many of the procedures required by supermarkets and other chain stores. The company has recently won a tender for the supply of its equipment and software to Super Kozert, a well known food chain in Hungary, owned by the Israeli Supersol company. The installation will include the automatic updating of stock positions of all items. The contract with the Hungarian chain calls for the computerization of 24 supermarkets with 120 points of sale. Previously, the company obtained a contract from Tesco, the largest supermarket chain in the United Kingdom, to computerize its self-service gas stations. Beside the gasoline station, Point of Sale will supply Tesco Supermarkets and their fast-service food stores. Altogether, 40 sales points will be computerized.

Key Managerial Changes at ECI Telecom

In 1993 and 1994 ECI Telecom Ltd. (NASDAQ/NM: ECILF) reorganized its marketing, sales, research, development and engineering activities in Israel into three strategic business units -- one for Digital Circuit Multiplication Equipment (DCME), one for Synchronous Digital Hierarchy (SDH) and a third to handle Access Network products.

To enable David Rubner, President and CEO, to focus more attention on strategic marketing and product issues as well as on the operation and integration of the company's activities abroad, a chief operating officer to oversee all three Israeli business units as well as the company's manufacturing and logistics operations in Israel has been appointed. He is Doron Zinger, previously Vice-President and GM for DCME and now

promoted to Senior VP and Chief Operating Officer, Israel Operations -- a new position under David Rubner. Management responsibilities of the President and CEO as well as other executives of the company remain unchanged.

Software Industry Continues To Boom

According to reports from the Israel Association of Software Houses, there are more than 200 software companies operating in Israel. Exports for 1994 were about of \$220 million, compared with only \$80 million in 1990. The Israeli software developers, instead of offering a variety of programs, have concentrated on niche products. These include anti-virus protection, database management systems, interactive educational software, and application generators. Microsoft, the world's best-known software company, is using a disc compression program developed in Israel in its Microsoft DOS 6.0 application. Motorola, Intel and IBM have established a major presence in Israel, and are highly active in software R&D. Carmel Software, a program which protects against computer viruses, is selling very successfully in the USA.

Accent was reviewed in the US and given high marks as a superb product for anyone who needs to correspond in more than one language. At Accent, management credits its aggressive developers, especially its new immigrants, with the creation of software which has resulted in the ability to produce written text in any one of 30 languages. Magic Software has succeeded in entering the large market for database application development. The company's software enables users to rapidly develop databases.

The software industry is blessed with highly capable manpower including Israelis and graduates from institutes of higher learning who have had experience in the US and have returned home, and new immigrants from the former Soviet Union.

Weizmann Appoints Brilliant Physicist

Physicist Prof. Alexander Finkelstein, until recently on the staff of the famed Landau Institute in Moscow, has been appointed to the Chair of Theoretical Physics at the Weizmann Institute. Prof. Finkelstein's decision to work at Weizmann has contributed to the advancement of the institute's studies in the physics of ultra-small systems, which may eventually help create minuscule electronic devices. In particular, he has greatly promoted the understanding of the transition of matter from a conducting to an insulating state -- a phenomenon that underlies the operation of modern transistors. The background to the current efforts to commercialize its equipment goes back to 1984,

when researchers Drs. Arieh Weinberg and Motti Deutsch developed the original CellScan technology. At that time Bar Ilan University, in order to exploit the invention, entered into an agreement with an investor for development of the product. The development were then transferred to Israel Aircraft Industries and subsequently IAI signed them over to Medis El.

COMPANY REPORT

Medis El may provide the answer to early diagnosis

The beating of swords into ploughshares has become the motto of some of Israel's defense industries which have turned from weapons manufacturing to the civilian market. Though Medis El is a public company, with shares registered for trading on NASDAQ, its major investor is the Israel Aircraft Industries.

Medis El is engaged in the development, clinical testing, production marketing and sales of the CellScan, a diagnostic system to screen for breast cancer, AIDS and other diseases at an earlier stage of development than other systems on the market. Medis El maintains its marketing and executive offices in a modern building adjacent to the Bar Ilan university in Tel Aviv, while its production facilities are in the Har Hahotzvim science-based industrial park, Jerusalem, a 300-meter facility for biological testing and for the assembling of the various parts required, including optic scanners, lasers and computer software. It is estimated that the systems will be offered at \$250,000-\$300,000 each.

Medis El is in its development stage. The CellScan core technology uses patented components to identify and manipulate partially immobilized cells. Some cellular events can be made optically detectable by fluorescent polarization of the cells, which can subsequently be measured and reported on. Three processes are involved:

1. The selection and localization of individual cells within a cell population;
2. Induction of changes in the cell by appropriate reagents;
3. Measuring and recording the changes.

At the company's headquarters, *IHTIR* was shown a 2ml x 2ml metallic substance (the cell carrier) and was told that it contains 10,000 openings which help to isolate cells for subsequent identification. CellScan is able to identify tumors at an earlier stage than present tests, which can identify growth only when a tumor is at least 2cm in length.

The whole testing process is simple for the patient but complicated in structure. A small blood sample is used, from which lymphocytes are extracted, dyed with a fluorescent solution and introduced to the cell carrier which, by creating a vacuum, pulls

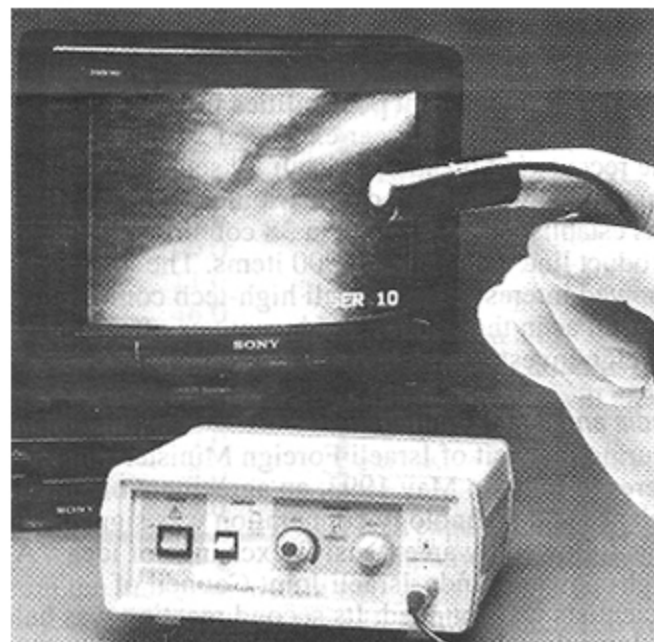
the lymphocytes into the traps of the cell carrier, so that one semi-immobilized cell is attached to each trap or opening. The cell carrier is then inserted into the CellScan machine, where a laser illuminates the cells. A reading is taken of the polarization of the light emitted from the entrapped cells and various measurements are taken by the company's proprietary software.

A breast cancer antigen -- a substance which stimulates the body's immune response -- enables comparison with results received from the patient's sample. At the company's executive and marketing offices, President Moshe Oren explained that CellScan can identify various types of cancer as long as antigens are available.

Two CellScan units are being used for research at Ichilov Hospital, (part of the Tel Aviv Sourasky Medical Center) under the supervision of Prof. S. Chaitchik, Director of the Oncology Department. The work there aims to develop breast antigens and investigate new antigens for colon and melanoma. Additional research is being carried out by Dr. Moshe Rubin at the Beilinson Medical Center in Petach Tikvah. Application research is continuing at Bar Ilan University, and a program may be started at Asaf Harofe Hospital,

The Israel Cancer Research Foundation is also studying data for applications related to the human auto-immune system. A program has begun at the Pasteur Institute in France, one of the world's leading AIDS centers, to determine the efficacy of the machine for AIDS sufferers.

At Medpat, one of the largest blood testing labs in the world, studies are being carried out to achieve early identification of infectious diseases including



Thimble Cam allows surgeons extra vision

Lime disease.

The goal is to present a multi-purpose model, including with each system a kit containing three grids (cell carrier) and an antigen for each test.

The R&D expenditure in 1994 was \$2.0 million, and this year it will be \$1.5 million.

The company employs directly 20 people, mostly scientists, engineers, software specialists and electronic specialists.

The next milestone will come at the end of 1995, when the results of the various tests will begin to flow back to the company. "If it passes all the tests, the sky's the limit," said Moshe Oren, who is already planning the expansion of manufacturing from two to three machines a month and, by 1998, to two units a week. In addition, 3,000 kits will be shipped with each unit.

HERE and THERE

Egypt, Jordan, PA and Israel Meet In Cairo

At the end of July an unusual meeting took place in Cairo. Attending were representative of the region's governments, and for the first time they were joined by heads of private organizations. Previous to this meeting Egypt and Jordan were opposed to the inclusion of a non-governmental representative.

However, since then it has been decided by Egypt, Jordan, the PA and Israel to form a Regional Business Council to represent the group at the October 1995 Amman Conference.

Heads of the Chamber of Commerce and the Israeli Industrialists Association were joined by government of Israel representatives.

Amp Executives Investigate Joint Projects

The US-based AMP, one of the largest suppliers of connectors for the electronics industry, has concluded a fact finding mission to determine joint venture or investment possibilities in Israel. The company's sales last year exceeded \$4 billion. Until the recent visit it satisfied itself by selling to Israeli customers through a local distributor RDT. AMP has established a presence in 38 countries. Its product line includes 150,000 items. The visitors showed interest in the Israeli high-tech community as well as in the program of incentives offered to foreign investors.

India and Israel Cooperate

During the visit of Israeli Foreign Minister Shimon Peres to India in May 1993, an agreement on science and technology cooperation was signed, and was followed by an extensive exchange of ideas. A high-powered Indo-Israeli Joint Council of Scientists was founded. Its second meeting was held in Jerusalem July 9 - 13. The Indian delegation, comprising heads of government and industrial,

scientific and R&D departments, was led by Prof. C.N.R. Rao, President of the Jawaharlal Center for Advanced Scientific Research.

A symposium on biotechnology for crop improvement was held during that visit, and the Indian delegation also visited scientific centers such as the Technion and the Weizmann Institute.

It was agreed to cooperate in the fields of biotechnology in crop improvement, materials technology, information technology and electro-optics including lasers, and to set up exchange programs for various levels of scientists -- from senior scientists (up to two weeks) to post-doctoral scientists (for up to a year). Over 100 scientists from both countries are expected to join. An Indo-Israeli symposium is to be held in Israel in early 1996, and later the same year India will host the next joint council meeting and a joint biotechnology workshop.

Clinical Trials Begun on New Cancer Drug

The oncology department at the Hadassah Ein Kerem Hospital is participating in multi-national clinical trials of a new cancer drug for the digestive tract.

The drug is produced by Swiss Debiopharm, and was first developed by Prof. Kidami of Japan. Dr H. Lotan of Hadassah has suggested that the cancer drug should be taken in conjunction with 5FU, a chemotherapeutic substance known for its minimal side effects.

The new drug does not cause hair to fall out, has little effect on blood cells, and only a slow effect on bone marrow. Worldwide, 400 patients are participating in the trials.

Joint Authority For Science And Technology Approves \$30 million In Grants

The Joint US-Israel Authority for Science & Technology announced another three projects chosen by the Joint Committee for applied development of technologies which will be of benefit to both nations. The meetings, which were held in Washington, included leading academicians as well as the Executive Officers of Teva, ECI Telecom and Elron Electronics.

The first three projects, announced in February 1995, were in the fields of nuclear medicine, biotechnology and solar energy.

Other fields being considered for grants are telecommunications, electronics, micro-electronics, data processing, ecology, energy and agriculture.

Collective Settlements Urged To Expand Industrialization

Israel's kibbutzim, unique collective settlements, are being urged by government officials to expand

their industrial bases. While the population of the kibbutzim represent only 2% of the country's total, they are responsible for more than half of Israel's high-tech exports. The government has been developing infrastructure adjoining development areas, and Regional Councils have been established to assist the kibbutzim.

An example is the local council of the Jezreel Valley Industrial Area, which has allocated a 290-acre park for industrial activities. Another park at Kaduri has 150 acres, and in the southern part of the country there are parks at Sderot and Sha'ar HaNegev. Altogether the total industrial areas under the supervision of the Regional Council is in excess of 1,600 acres. The Minister of Industry & Trade, Micha Harish, pointed out that from 1992-1995, the government approved 208 industrial enterprises (total value \$552 million) which are expected to provide more than 4,600 jobs. In the same period, the Office of the Chief Scientist approved \$17.5 million in grants for R&D activities by the kibbutzim, of which \$12.4 million has already been paid out.

Export Prize and Outstanding Exporters

Annual awards were presented by President Ezer Weizman and Trade and Industry Minister Micha Harish to those companies which achieved the largest increase in exports for the year 1994. The firms honored have shown that they are capable of understanding the needs of the export markets by offering acceptable product design and quality. The Export Prize for 1994 was awarded to Telrad Telecommunications & Electronics Ltd. with exports of \$155 million.

Honorary mention was made of LID Diamonds, the \$35 million diamond exports of which went to customers in the Far East (mainly China).

Company Name	Description	Exports in \$ mil.
Electra Consumer Products	Electrical products	41.0
ELTA Electronic Industries	Radar, communications	200.0
Arad Ltd.	Water measurement systems	11.0
Lachish Industries	Agricultural implements	46.0
Lanoptics Ltd.	Concentrators for computers	20.5
AVCO-Cam	Textile auxiliaries	9.0
Raviv Plastics	Customized dyes for injection molding	5.0
Taste of Israel	Sweets	7.0
Abu Gosh Industries Ltd.	Textile garments	4.0
Rachel Levy Diamonds	Diamonds to China & FE	35.0

The Other America

An Israeli government official has suggested that Israeli businessmen have "discovered America for the first time". The comment was connected to a

recent group of Israeli businessmen who travelled to Argentina and Columbia to investigate joint venture possibilities. Israel exported goods worth \$570 million to the Latin American countries in 1994, and imported \$270 million. The two-way trade in 1995 is expected to exceed \$1 billion.

It has been noted that trade with Latin America has become easier as a result of the stabilization of economies. Israel's exports have concentrated mainly on agricultural equipment, telecommunication systems and medical equipment.

Businesses Hatched From Incubators

Dr. Klara Vinokur, a former physicist of the Georgian Academy of Scientists, immigrated to Israel four years ago. At that time there were very few research jobs available in the country, and it was only through her persistence that she was accepted as a senior researcher at a three-year-old company Fabia Engineering Ltd. The firm used her know-how and ideas for making liquid crystals, the vital components of watches, computers, and other electronic devices, that are considerably faster than those which exist today and are unique in that they possess a memory.

Fabia originated in the Kiryat Weizman's Incubator for Technological Entrepreneurship. The incubator is one of 30 which has been established throughout Israel to help Israeli-born and immigrant entrepreneurs develop their ideas from the laboratory to the marketplace. It has already received orders from customers in a number of countries. Most recently Dr. Klara Vinokur received the 1995 Excellence Award, presented to an outstanding incubator project.

Dr. Malca Lindner, a third-generation Israeli, came from Israel Aircraft Industries, where she worked on airplane fire detection systems and established

Ofir Ltd., which is now leaving the Weizman Institute incubator to begin the production of forest fire detectors which work over long distances. They are also working on an ultra-violet radiation monitor which will alert workers against excessive exposure to the sun.

It is expected that a company will graduate from the incubator within two years. Of the 149 projects hatched up to May 1995, more than 100 or 70% are now acting independently, either as a result of private investments, profits from sales, or both.

Under the incubator program, over and above professional guidance and administrative support which is given to the project, 85% of total funding up to a maximum of \$130,000 a year, is provided by the government of Israel.

COMPANY REPORT

Silicom Ltd

Redefining the company's direction from a supplier of electronic parts for original equipment

manufacturers, to a producer of defined products under its own name, for connecting laptop or power computers to local area networks, was a major change of direction for Kfar Saba based Silicom Ltd. In 1992 it moved from producing only integrated circuits for mainframe IBM computers to connectivity products for various local area network environments and protocols.

The company was founded by Avi Eizenman in 1987, in partnership with Yehuda Zisapel, founder of Lannet Data Communications, one of the more successful of Israel's computer companies, and Zohar Zisapel, founder of RAD.

The connecting of individual computers to other computers or mainframe computers has undergone radical changes in recent years. The technology of less than a decade ago required the moving of information onto a floppy disk and then inserting the disk into the recipient computer, where it was read into the memory. Subsequently it was possible for a group of computers to share information from a large database, or to even use one printer for several computers. This was a step forward, and local area networks grew by leaps and bounds, due to their cost effectiveness in reducing the need for hardware and increasing the speed of resource sharing.

When laptop computers began to become popular there was a need to provide a connection to other PC's. The Silicom executives decided to bet on the future of connectivity to Local Area Networks (LAN). Ahead of the surging growth of sales of laptop computers they designed and brought to the market connectivity products using ASIC standard integrated circuits. In the first quarter of 1993 the product was offered to laptop owners who required a connection with LAN. Today these products make up 80% of the company's annual sales. The lead product was the modular pocket LAN adapter and parallel port multiplexors. The adapters were developed and engineered to operate on Ethernet, Token Ring and ARCNet protocols.

Somewhat more than a year later, after extensive research and development, the company introduced its second new line. It consisted of credit card-sized connectivity LAN add-in cards which comply with standards of PCMCIA (Personal Computer Memory

Card International Association).

An alternative solution for connecting to LANs is the use of a designed miniature modem or connection to a compact disk.

"The field is highly competitive. If we have a relative advantage it is our flexibility. The life cycle of these products is extremely short and new standards are constantly evolving. We are continuously investing in research and development. (Between 1992 and 1994 \$1.5 million was invested in R&D). Our close relationship with one of the largest American laptop manufacturers, which we supply under contract, keeps us abreast of market developments. We are developing items to suit new models in 1996. Another major laptop manufacturer has indicated that we are the only ones in the market with a PCMCIA card. The feedback from these companies helps us identify new product directions at an early stage.

We are working on an Ethernet connector which we hope to have ready by year's end. This one will be ten times faster than our previous model. The human resources of the company include 15 in research and development, six in manufacturing, in premises in Yokneam, the home of a number of high-tech companies, five in marketing in Israel and eight people in the company-owned American marketing subsidiary," says Eizenman.

The company is liquid, with more than \$5 million in cash. Most of it came from a February 1994 initial public offering of shares and warrants in the United States. The ordinary shares are quoted on the NASDAQ Small Capitalization market under the symbol SILF and the warrants under the symbol SILFZ. The shares have recently been quoted at \$ 3 and the warrants at about \$0.50.

"Presently we have less than 1% of the rapidly expanding market, and when we reach 5% we will be viewed as visible entrants. The expansion of sales is connected with identifying and appointing new distributors. Now we have 40, primarily in the UK, Israel, Germany, South Africa, New Zealand and Australia. We see a strong potential in South America.

"Our flexibility and strong technical capability are our real strengths," says Mr. Eizenman.

Summary and conclusions

There is very little trading activity in Silicom shares or warrants.

Potential investors seeking a degree of liquidity should keep in mind that this situation may persist into the foreseeable future. The common shares of the company are in the hands of a small group of investors. This is indicative of the confidence that the founders and some institutional investors have in the company. More than 60% of the 3.8 million

shares are owned by officers or board members of Silicom. Nearly a third, as of the end of 1994, were in the hands of long-term investors in the US. This leaves only a small number of shares for trading. The market for connectors is rapidly changing due to product differentiation. At the same time the market is growing so quickly that a young company with a good technical and managerial base could experience rapid growth in a high-margin business.

EU Committees accept Israeli participation

European Union countries have accepted Israel's participation as an observer on member nation R&D committees. Israel was excluded from participation due to the Arab boycott. It is hoped that recent negotiations between Israel and the EU will lead to improved business relations, and a narrowing of the trade gap between Israel and the Common Market, which has now reached \$7.5 billion.

Silicon Detectors Probing the Fundamental Structure of Matter

Silicon detectors and other technologies used to probe the fundamental structure of matter, were discussed at an international conference held in Israel recently. The Fourth International Workshop of Vertex Detectors - organized by Weizmann Institute physicists Drs. Eilam Gross and Ronen Mir brought together some 35 scientists from several countries, including the United States, Russia, Italy, France, Switzerland, the UK, Brazil and Israel. Vertex detectors, which consist of concentric layers of silicon wafers, make it possible to measure, with great accuracy, the trajectories of particles emerging from high-energy collisions of electrons and positrons, or from collisions of protons. Such measurements enable researchers to identify new types of particles and understand the forces acting between them.

Among the silicon detectors to be discussed are those developed with the help of Weizmann Institute scientists for the European Laboratory for Particle Physics (CERN) in Geneva. Their successful use of CERN and elsewhere has prompted the recent decision to incorporate them into a major future experiment involving nearly 1,300 researchers from some 30 countries, which will be conducted in Geneva and will be aimed, among other things, at searching for an essential missing link in particle physics, the particle responsible for endowing matter with mass.

Solar Furnace for Ceramic Superconductor

Frictionless ball bearings and other improved mechanical devices may one day be manufactured using a superconducting material produced at the Weizmann Institute with the aid of a powerful beam

of concentrated sunlight. This clean and fast method of producing a superconductor, was developed by Prof. Shimon Reich of the Department of Materials and Interfaces. The current issue of Applied Superconductivity describes this first time use of sunlight to produce a superconductor.

Produced by the regular method of oxide sintering, the material - a ceramic superconductor called yttrium barium copper oxide - carries a current of only a few hundred amperes per sq.cm. in medium magnetic fields at - 196 °C. (the temperature of liquid nitrogen, used to cool down the material to a superconducting state). In contrast, the same material prepared in the solar furnace can carry a current of about 40,000 amps./sq.cm. at the same temperature and magnetic field strength. In addition, the material prepared in the solar furnace possesses a strong pinning property, a phenomenon in which magnetic flux is trapped inside the superconductor, making it possible to suspend magnets in midair. Moreover, this material becomes a superconductor at the relatively high temperature of - 181 °C., as compared with intermetallic materials that reach a superconducting state at temperatures below - 250 °C.

These characteristics make the "sun-melted" ceramic superconductor suitable for a variety of applications, including design of superconducting magnetic ball bearings of very low friction for high speed turbines and manufacture of efficient magnetic dampers of mechanical vibrations. In these devices, parts that normally glide or bang against each other would be separated by a cushion of air about 1/8th of an inch thick and held in place by a magnetic field. Due to pinning, the field enables the two parts to interact with one another without touching and producing friction. In addition, the superconductor could be used to manufacture magnetic clutches with no direct contact between the parts that need to be engaged or disengaged. It may also serve to produce quasi-permanent superconducting magnets referred to as replica magnets.

To obtain the ceramic superconductor, Prof. Reich's team "cooked" the material in the Schaefer Solar Furnace, the major feature of which is a large spherical concentrating dish that focuses sunlight onto a single spot. The sunlight beam used in the procedure - at a temperature exceeding 1,000 °C., was 11,000 times more concentrated than the regular sunlight rays reaching the Earth.

The researchers suspended rods made of a mixture of silver and YBCO ceramic in a quartz vacuum tube positioned in the focal spot of the furnace's concentrating dish. When exposed to the concentrated solar beam, the rods melted instantly, drops of the molten material fell on silver nodules at

the bottom of the vacuum tube and froze immediately upon contact.

This material was then sintered and oxygenated in a furnace to achieve the desired brick-like grain structure of the superconductor, which includes micron-size nonsuperconducting particles of the ceramic superconductor. These particles, "sprinkled" throughout the material like raisins in a cake, serve as the pinning centers of the magnetic flux; When the "cake" is cooled to a superconducting state, the "raisins" continue to function as an ordinary material resistant to electric current. If a relatively strong magnet is placed near the superconductor "cake", its magnetic field is trapped by the "raisins" causing the magnet to be suspended in midair.

Prof. Reich's approach to obtaining high temperatures goes back more than 2,000 years. In the year 212 BC, Archimedes used sun-rays focused by a large parabolic mirror to set fire to the Roman fleet which lay siege to Syracuse. Temperatures at the focal spot of such beams may have exceeded 2,000 °C.

The Israeli and the Foreign Investor

In the past few months activity on the Tel Aviv Stock Exchange was moderate. Small trading turnovers of over NIS 65 million (about \$22 million) appeared and included buy blocks from foreign investors. The English company Cable and Wireless, just one of many examples, acquired a 10% stake in Israel's telecommunications company Bezek. They did this by open market operations. Their buying activity created general buying interest. Some members of the Israeli Parliament appeared aghast and expressed some concern about possible future interference by C&W. However, Bezek management as well as the local business community were upbeat as they saw the English firm as a potential strategic partner rather than a passive investor. The welcome mat was out for foreign investors and this was not lost on financial institutions which invest throughout the world, wherever they see opportunities for profit with as little risk as possible.

Foreign investments in local Israeli companies gave support to a share market which most analysts considered as undervalued. Eventually the Mishtanim index, the index of the 100 largest capitalized public companies, moved through the 200 level which was considered a major testing point and a psychological barrier which needed to be breached to give confirmation to an upward moving market. Trading turnovers advanced and NIS 165 million (about \$55 million) was a recent new high by mid-August. At the current level there are many companies whose share market valuations

are still below their economic worth. Economic statistics indicate that inflation may be held to 7-8% in 1995. For an economy which was used to double digit inflation this would be a satisfactory figure even to Jacob Frenkel, the Governor of the Bank of Israel, a proponent of using high real interest rates to curb inflation.

While international investors, emerging market funds and global mutual funds invested in what they described as a "country with a strong economy and a movement towards regional peace", local investors were indifferent to the share market. Portfolio managers entered the market but the Israeli mutual funds, whose purchases are fueled to the extent that general public is in the market were only marginally active.

The question arises why are foreign investors buying while local investors are staying out of the market, at least for the time being? The answer to that paradox is connected to the other choices available to the Israeli investor. Earlier in 1995 interest rates for Government paper yielded anywhere between 18-21%. These instruments, such as bonds and Makamim (Treasury Notes), offered a high net yield without risk. Other investors took advantage by investing in Savings Schemes that provided a real yield of 4-5%, after adjusting for the rate of inflation. Though the Governor of the Bank of Israel has lowered interest rates to a prime of 15.75%, at these levels one can obtain net yields on the capital market of 13.5%-14.5%.

Barring any major negative political developments the economy appears strong enough to attract foreign investments directly or by way of the Tel Aviv Stock Exchange as we move to the early fall period. Should interest rates be lowered further it could bring with it increased local investment and further rise in valuations.

The Israeli or Israeli related companies whose shares are traded on the American stock exchanges, to a great extent represent the equities of Israel's vaunted high-tech sector. Since the beginning of this year they have participated in the great American Bull Market for technology issues. Shares of EFI, Indigo, Tower Semiconductors, Gilat Satellite Communications, Aladdin Knowledge Systems, Opal, A.G. Associates and others, have risen by tens of percentage points. Since many of these companies are in the process of expanding their market share internationally and increasing their profit margins they are seen as not being overpriced. Israelis have increased their investment activities in this sector. Initial public offering of the high-tech companies are drawing large demand and this could continue as long as the conditions on the American market remain buoyant.