ISRAEL HIGH-TECH REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES

JOSEPH MORGENSTERN, EDITOR

April 1991 Vol.VII. Issue No.4

ISSN 0334-5307

From the Editor's Desk

Now Let's Win the Peace!

Desert Shield, Desert Storm and now Desert Peace. A lightning-fast war by an American-led coalition has restored Kuwait to its people.The military success lays the groundwork for America to assist in negotiating a broad political settlement aimed at reducing the instability of the Middle East. Key to any settlement is the reduction of mutual mistrust between nations of the region.There are no ground rules for moving towards this goal, but the clear inability of Iraq and other Arab nations to deal responsibly with modern weapons of war should show us that the massive supply of arms to Middle East nations is *not* the answer, lucrative though it may be. If peace in the Middle East is to last for more than two or three years, fundamental problems must be addressed by leaders of the nations involved.

A peace treaty with Syria is a goal made possible by Israel's policy of military restraint. Such a treaty would of course necessitate recognition of Israel as a sovereign state, and thus pave the way for similar recognition by the rest of this country's belligerent neighbors.

But the political knot isn't the only one that needs unravelling. There are many who would like to focus also on such problems as water, overpopulation, poverty and absorption of immigrants. In 1990, 200,000 immigrants arrived in Israel. All but 15,000 came from Russia.The human-resource quality of the Russians is high. As the new immigrants begin their integration, a growing number of Israelis are being won over, and are striving to absorb them into the economy. A growing labor pool of scientists, technicians and engineers is beginning to form. Israel's high-tech industries offer the main prospect for employment of the Russians. But of course, the ability of such companies to absorb new employees is dependant upon their own economic health. Investment capital in Israel is scarce, but that could change if the Government begins to lessen its perennial hold over the economy; reducing beauracratic procedures and making investing here as easy as it is in other countries which seek to attract foreign capital.

It's clear that Israeli brainpower is attractive. Investment in the shares of Israel's major high-tech companies has become the rage; prices have appreciated considerably more than the 20% rise on Wall Street since the onset of the Gulf war. Graphs presented in this issue show that profits have been reaped. Now while it's great that there's such love for Israeli milk, why can't we interest more people in investing in the Israeli cows?

For the first time we have a real chance to establish the minimum stability needed to be able to turn our attention from mere survival to the cultivation of economic prosperity. LET'S DO IT!

In this Issue

Subscription: 1 year $150.-. Bulk copy and reprint information available on request

Circulation Offices: Israel Publications Inc., 47 Byron Place, Scarsdale, N.Y. 10583, USA.
Attention: Mr. Robert M. Bruckenthal Tel.: 914- 723 8321 Fax: 914-723 8340
Editorial Offices: Asia House, 4 Weizmann Street, Tel Aviv 64239, Israel
Tel: 972-3-430817 Fax: 972-3-259445

RECENT DEVELOPMENTS

Elbit/GE Turret Control

Elbit Computers and General Electric have completed the integration of a jointly-developed turret-control system. The objective of the 18-month project is to demonstrate to the U. S. Army innovative technologies for drive and control mechanisms in the modern tank - mechanisms based on advanced electrical networks instead of problematic hydraulic systems, which can suffer from fire, fluid leakage and low reliability.

Post Desert War Comment

"The speed with which the world's arm manufacturers assimilate and incorporate the lessons of the war will be the key elements in the competition for post-war markets," says Dr. Reuven Eshel, Vice-President for Research and Development, Rafael-Armament Development Authority.

Italians Investigate Amos

Informatica, an Italian company, is considering the purchase of a telecommunications satellite from Israel Aircraft Industries (IAI). The firm is negotiating with three companies, one of which will be awarded the $200 million contract.

Informatica invests in various industries, and six years ago entered the communications field. The satellite will be used for the company's television channels, and for transmission of programs to Eastern Europe. Two satellites are being purchased, and if IAI is successful, they would be launched by French Ariene rockets.

Jump in Elisra Sales

Elisra Electronic Systems, a subsidiary of Tadiran and active in electronic warfare technology, recorded sales of $108 million in 1990, compared to 1989 sales of $75 million; profits in 1990 totaled $5 million. According to Elisra Managing Director Yitzhak Zoran, the company has a backlog of orders amounting to $340 million; the sales forecast for 1991 is $117 million, with 50% of production intended for export. Elisra employs 900 people.

Israel Aircraft Industries Flies Higher

Israel Aircraft Industries (IAI) expects 1991 sales of $1. 6 billion, 80% of which will be exports. IAI Managing Director Moshe Keret says: "Notwithstanding the Gulf war, IAI is still receiving export orders.

Keret has been chosen by *Aviation Week* to receive the "Laurel Wreath" decoration for his rescue of the company from a severe business crisis. U.S. forces in the Gulf used at least two systems manufactured by the IAI — the Pioneership-mounted drone, and Magov tanks for minefield clearance.

Exports Continue to Grow at Intel

Exports of Intel Israel, a wholly-owned subsidiary of Intel U.S.A., totaled $149 million in 1990, a 17% increase over 1989, according to Managing Director Professor Dov Fruman. Intel Electronics, the Jerusalem-based manufacturer of integrated circuits, exported $122 million of goods in 1990. Exports from the company's design center in Haifa reached $25 million, while the software group's exports were $2 million for the year.

Intel employs over 990 workers in Israel, including 20 new immigrants hired during the course of 1990 17% of new workers hired. Production per employee was $130,000. The company's total investment in Israel stood at $270 million in December 1990, including $230 million invested in its Jerusalem manufacturing facility. Intel's 1991 forecast calls for $150-160 million in exports, depending on the business atmosphere in global markets.

"And they Who Dwell in Darkness Shall See a Great Light"

Our elderly live in constant fear of age-related blindness. One major cause is the proliferation of small blood vessels from the choroid, a nurturing layer of tissue between the retina and the supporting structures at the back of the eye.

The new blood vessels invade the space between the retina and the choroid, where they slowly leak blood and fluid. These accumulate under the retina, detaching it from the choroid. Deprived of nutrition, the retina and vision deteriorate.

The intense heat from a high-powered laser can cause the blood in these vessels to clot (photocoagulation) and can destroy the excess vessels and stop the bleeding. However, the problem recurs about 60% of the time. Additionally, much of the outer retina is damaged by the intense light. The vessels under the fovea, the most visually sensitive region of the retina, cannot be treated at all without blinding the patient.

MOST grantees Prof. Benjamin and Dr. Hedva Miller of the Technion-Israel Institute of Technology are pioneering a new approach to this problem, based on the photodynamic therapy (PDT) approach to treating skin cancer. The Millers inject a harmless dye that accumulates in and around the subretinal blood vessels, and remains there long after it has left

the visually sensitive retina. They then expose the eye to low levels of light with just the right wavelength to excite the dye molecules. These pass the absorbed energy to nearby oxygen molecules, exciting them into their highly energetic single state. These chemically reactive "predators" attack the cell membranes of the blood vessels, destroying them with no damage to the retina or other nearby tissue.

The MOST researchers are currently using rose bengal, which is known to produce significant amounts of single oxygen even at low light levels. It is non-toxic (at least at low levels) and selectively accumulates in the subretinal blood vessels about 45 minutes after injection. Moving from theory to practice, the Millers showed that destroying the offending blood vessels in this way causes no retinal damage in primates. They are now exploring new dyes and light sources. In particular, the small low-power lasers they use (1-10 milliwatts) are much less expensive than the large water-cooled argon and krypton lasers required in photocoagulation.

BI-NATIONAL SCIENCE FOUNDATION (BSF) 1991 PROJECTS :

A Full Numerical Thermodynamic Model of the Dead Sea

The researchers propose developing and testing thermodynamic equations and models which will improve understanding of the formation of brine, especially in the Dead Sea. This study can also improve the utilization of Dead Sea resources. The scientific community in Israel will benefit from the interaction with Prof. Pitzer from the University of California at Berkeley.

A North Atlantic Inverse Model, Using a Numerical General Circulation Model

The objective of the proposed research is to build an investor model of the North Atlantic Ocean. The model will be used to calculate mixing coefficients, and to obtain estimates of surface forces generated by wind and fluxes of heat. The methodology proposed is a combination of inverse and numerical modelling approaches.

Cooperation between Israeli and U.S. researchers is essential, since the Americans can provide the computation power not available in Israel. The benefits of this research are mainly scientific. Once the methodology is applied to other oceans, especially to the Mediterranean, it will enable us to understand its circulation and the management of waste disposal.

Ultrasonically Controlled Delivery Systems to the Brain

This study proposes to evaluate the feasibility of modulating the release of drugs from biodegradable polymers by applying ultrasound waves. The model system will involve brain-tumor treatment by certain drugs. This is a joint venture based on an ongoing collaboration. Polymers will be prepared at MIT, and initial brain implant experiments will be carried out at Johns Hopkins. The study will serve as a treatment modality for human cancer.

Neural Basis and Anatomical Localization of Sound Lateralization

The study will provide a better understanding of the anatomy and physiology of binaural interactions and the generation of brain-stem evoked response in man. This is pioneering work in the study of human localized tools for localized brainstem lesions.

Non-Linear Optical Studies of Conducting Polymers

Extensive studies of conducting polymers have led to a basic understanding of their properties in terms of a few non-linear collective excitations. The research will combine non-linear optical measurements with ESR studies.

Studies of collective excitations in conducting polymers will provide insight into the physical behavior of this very important class of systems. Non-linear optics in polymers is also of technological importance due to their physical and chemical flexibility.

Investigation of the Flow Properties of Granular Materials

The problem of granular flow is old, important and difficult, and has traditionally been studied by workers from other disciplines. The new initiative by a group of theoretical physicists is highly commended. There are anticipated benefits for rheology and fluid mechanics.

Large-Scale Motions and Dark Matter in the Universe

This proposal addresses important problems (theoretically and computationally) in cosmology. The investigators are world leaders in their field.

Topics in Ergodic Theory & Dynamic Systems

The questions dealt with in this proposal are highly original, of outstanding interest, and can be expected to produce pathbreaking results.

The problems dealt with are of importance not only

Israeli Companies on Wall Street

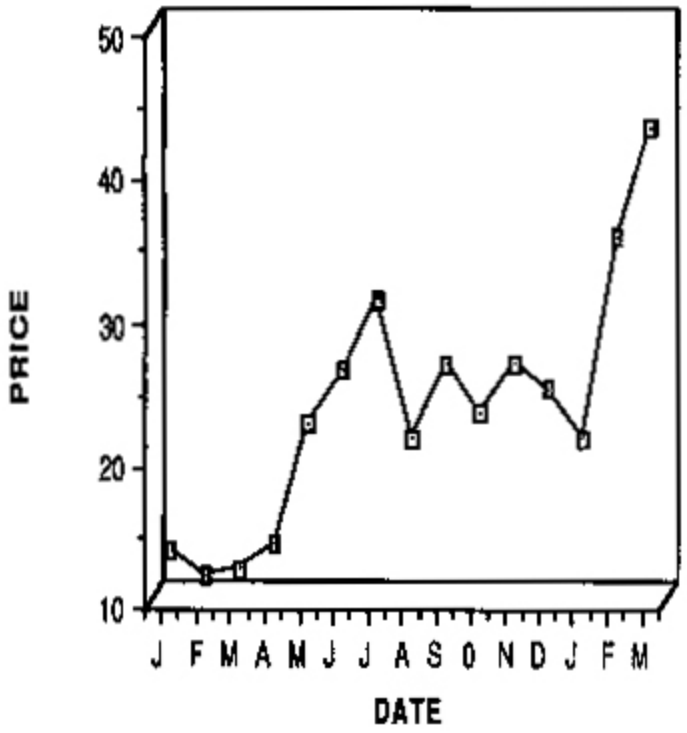
Selected income and earnings summaries for the quarters as noted , unless otherwise indicated. Nearly all of these companies are intensively export oriented. Prices are as of March 11, 1991 and the price changes relate to those a month ago.

Company	Revs (in $ mil.)	Net Income (in $ thou.)	Price (in $)	Net Change
ELBIT COMPUTERS Defense electronics ELBTF OTC	264.16 Q1-Q3	15,880	16.500	-1.500
ECI TELECOM Telecommunications ECILF OTC	74,500 Q1-Q4	15,500	43.500	+8.000
ELSCINT Medical imaging ELT NYSE	161,000 Q1-Q4	13,100	2.875	-0.125
FIBRONICS Fiberoptics FBRX OTC	45,500 Q1-Q3	2.600	9.125	-0.125
INTERPHARM LAB. Biological products IPLLF OTC	16,414 Q1-Q3	1,448	17.500	-1.750
LASER INDUSTRIES Surgical lasers LAS ASE	24,104 Q1-Q3	(1,064).	5.125	+1.000
OPTROTECH Electro-optical systems OPTKF OTC	59,937 Q1-Q3	1,030	7.500	+0.250
SCITEX LTD. Computer graphics SCIXF OTC	351,500 Q1-Q4	76,800	27.750	+1.750
IIS INTELL. Computer peripherals IISLF OTC	23,049 Q1-Q3	4,089	16.625	+2.000
TEVA PHARMACEUT. Pharmaceuticals TEVYF OTC	210,257 Q1-Q3	12,530	12.875	-0.500
ELRON ELECTRON. ELRNF OTC	265,086 Q1-Q3	5,091	8.750	-0.125

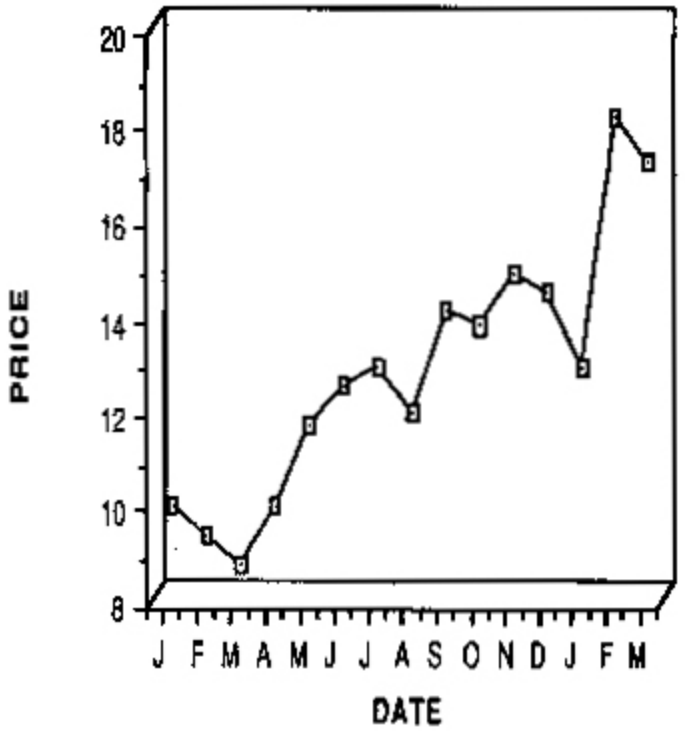
GULF WAR ENTHUSIASM FOR HIGH-TECHNOLOGY LEADS TO BUYING SPREE
SPECIAL SHARE GRAPH FEATURE

Publicly owned high-tech companies experienced strong demand for their shares. Since the beginning of Desert Storm in mid-January Wall Street equities have advanced by 20 per cent. The shares of the Israeli high-tech companies have advanced by higher margins.

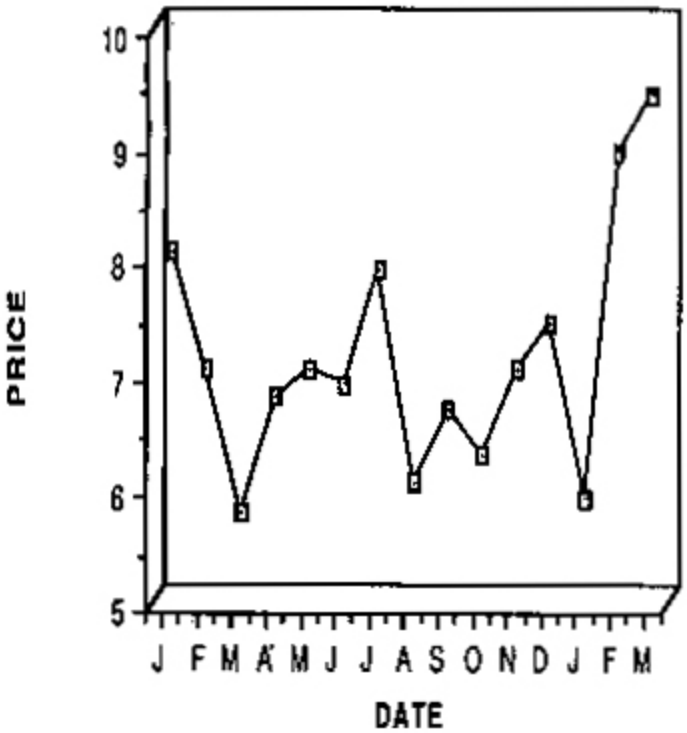
"ECI TELECOM 1990-1991"



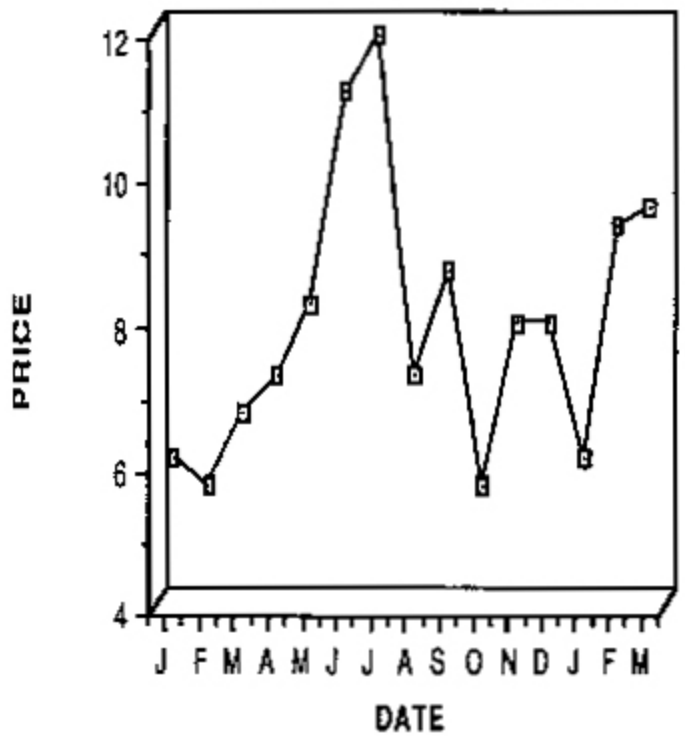
"ELBIT 1990-1991"



"ELRON 90/91"



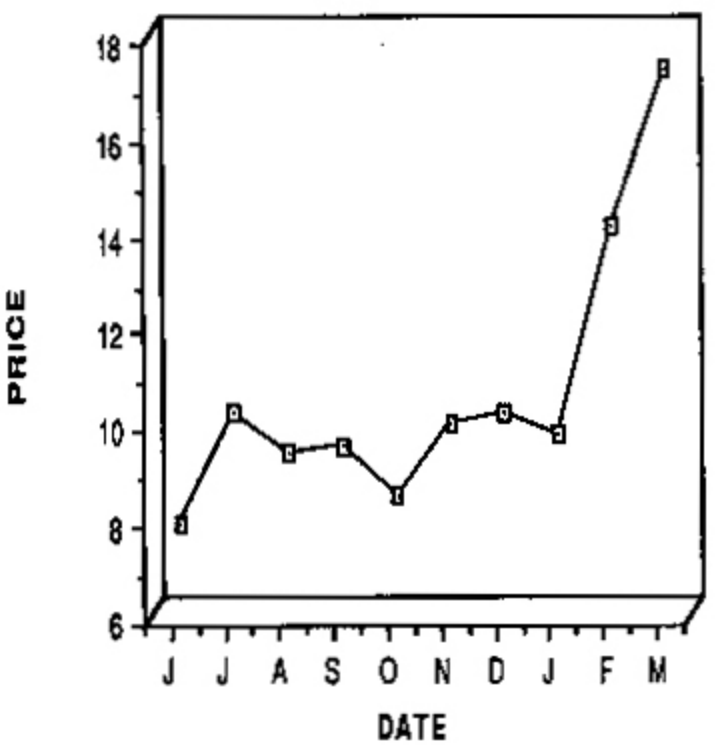
"FIBRONICS 1990-1991"



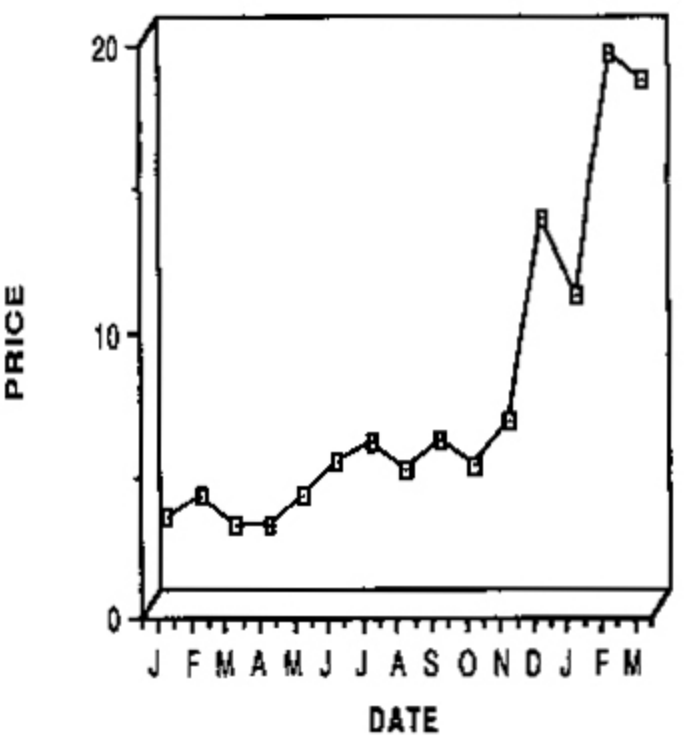
GULF WAR ENTHUSIASM FOR HIGH-TECHNOLOGY LEADS TO BUYING SPREE
SPECIAL SHARE GRAPH FEATURE

Publicly owned high-tech companies experienced strong demand for their shares. Since the beginning of Desert Storm in mid-January Wall Street equities have advanced by 20 per cent. The shares of the Israeli high-tech companies have advanced by higher margins.

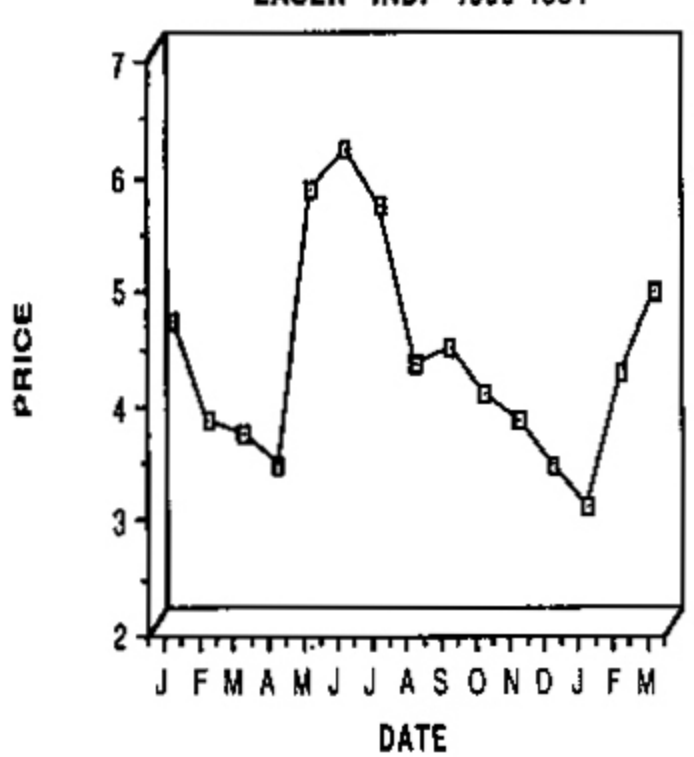
"I.I.S. INTEL. 1991"



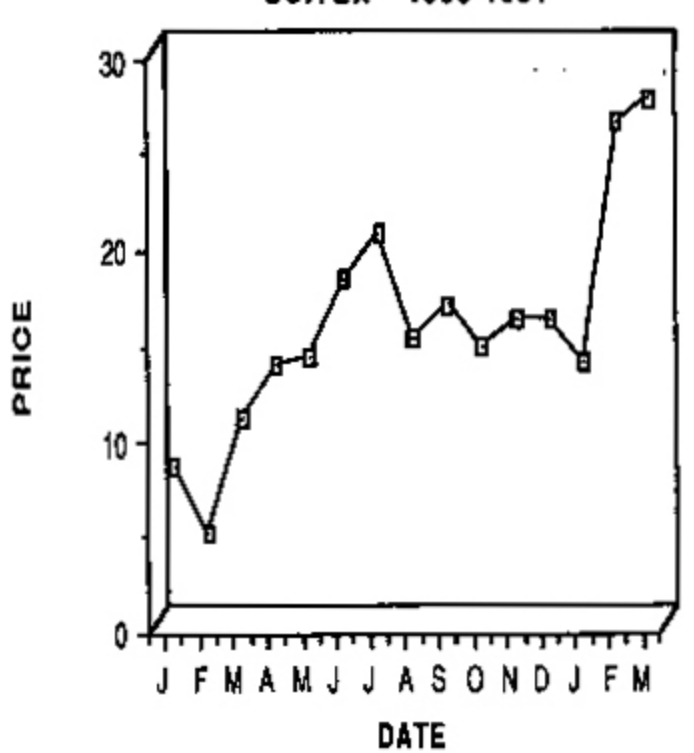
"INTERPHARM 1990-1991"



"LASER IND. 1990-1991"



"SCITEX 1990-1991"



to ergodic theory, but also to a variety of other subjects, such as dynamical systems. The investigators are leaders in this area of mathematical research. They have together revolutionized the fields of ergodic theory, dynamical systems and related subjects.

A Geometrical Misconception: Development, Schooling and Training Effects

The investigators intend to provide a detailed understanding of a geometrical misconception, elucidating the place of domain-specific knowledge and general reasoning.

Three main benefits will accrue; (1) a comprehensive analysis, (2) the effects of two treatments (different populations and training) on the misconception, and (3) instructional implications. The first two are of benefit to the cognitive development community, and the third is of benefit to math educators.

NEW $14-MILLIONS DSP GROUP DESIGN CENTER

The DSP Group will invest $14 million in a new design center to develop semiconductor components for Digital Signal Processing. The investment plan was approved by the Investment Center of the Ministry of Industry and Commerce.

The new center, located at Givat Shmuel, is called DSP Semiconductors Ltd. and will be managed by Asher Kamiker. Newly developed components will be exported to the electronic consumer products market, mainly to Japan.

David Gilo, President of the DSP Group, said: "Hi-tech technology is an area where Israel has shown its ability to get high scores, and the new center will set new standards".

TEFEN INDUSTRIALI PARK

An innovative concept and an important vehicle for encouraging entrepreneurship in high-technology industries, Tefen Industrial Park gives the new entrepreneur an opportunity to act as if he is a medium-size business: assisting him in the first crucial years under modernized "greenhouse" conditions: enabling appropriate development and growth.

Tefen Industrial Park is on a hilltop in the Western Galilee. Fifteen entrepreneurs are currently operating export-based industrial enterprises in the fields of computers, quartz tools, hard metals, composites materials, medical equipment, electronics and more.

ISRAELI COMPANIES ON WALL STREET

ECI Telecom Announces Record Fourth Quarter and Full Year 1990.

Sales in the United States grew by 71% compared with 1989, in Europe by 40% and in the Far East and Australia by 35%. Interest in the company's ISDN compatible products is on the increase, with orders received in 1990 reaching approximately $10 million. Another encouraging development has been the progress of field trials with certain carriers in the U.S. The company will shortly inaugurate its new production line using Surface Mount Technologies (SMT) for high-speed placing of miniature electronic components. The line is one of the most modern of its type in the world, and is capable of placing 14,000 components per hour. The availability of SMT will improve quality and productivity while allowing for more compact design of the company's products.

The company's DTX-240F for 6-fold facsimile compression is being shipped to certain carriers in the current quarter.

ECI Telecom

ECI Telecom is splitting its stock on a two-for-one basis. This means an increase from 9 million 20 million ordinary shares.

Teva Pharmaceutical Net Up 16% for Year on 10% Sales Increase

Teva Pharmaceutical Industries Limited (NASDAQ: TEVTY), Israel's largest pharmaceutical company, has reported that net income for the year ended December 31, 1990 increased 16%. Sales for the year rose 10% to $295 million.

Sales outside Israel amounted to $18.6 million fully diluted, $0.79 per American Depository Receipt (ADR). Last year's net income amounted to $1.45, fully diluted per ADR.

Israel High-Tech Report Index*

218.65 + 1.02 %

*ISRAEL HIGH-TECH REPORT INDEX is a weighted index made up of the shares of leading high-tech companies.
BASE=100 AS OF Sep 30,1984

Eli Hurvitz, Teva President, says improved performance in the fourth quarter had a significant impact on the year's results, and he expects this trend to continue.

The board of directors increased the quarterly dividend 13% to $0.05. Gross research and development expenses for the year increased 13% to a record $16.6 million.

The war in the Gulf caused some increase in domestic sales. Hurvitz stated that Teva has had no difficulty in maintaining increased production to meet both domestic and export market demands.

Elscint Improves Image

Sources close to Elscint, producer of medical imaging products and systems whose shares are traded on the New York Stock Exchange, estimate 1990 earnings will be close to $13 million. Sales for all of 1990 are expected to exceed $161 million. Elscint's 1989 revenues were nominal, after recovering from heavy losses and being on the verge of liquidation. After the turnaround, Elbit acquired Elscint.

Soviet Immigrant Believes Side Effects of Anti-Tumor Drugs Can Be Reduced

Thanks to research carried out by Soviet immigrant Lev Weiner, who this year joined the Weizmann Institute's research staff, it might be possible to reduce the negative side effects of the antitumor drugs adriamycin and daunomycin. Prof. Weiner's research may also open the door to the production of new antitumor drugs, and to more effective drug testing.

The drugs are based on quinoces - chemical compounds that exert their anticancer effect by producing a cut, or "scission," in the DNA of the affected tissue, thereby preventing malignant cells from multiplying. However, these scissions do not always occur in the most appropriate locations in the DNA sequence; in addition, quinones often interact with normal cells as well, resulting in damaging side effects.

Prof. Weiner has proposed a method of producing scissions at specific DNA sites. His technique involves the binding of a natural or synthetic quinone to the end of a specially designed DNA fragment (olignonucleotide) that is complementary to a specific segment of cellular DNA. Because the quinone-modified oligonucleotide sticks only to the chosen DNA segment, it may encourage scission at a specific site.

Prof. Weiner's technique may also allow the use of new antitumor quinone drugs which would be much too toxic in their unmodified form.

Prof. Weiner has also done pioneering work in the application of electron spin resonance (ESR) spectroscopy to biological ends. This technique provides information on the distribution of unpaired electrons in a molecule. Using ESR, Prof. Weiner determined that when quinones accept free electrons from the electron-transfer molecules that abound in all cells, they form reactive oxygen radicals containing an unpaired electron — the entities directly responsible for DNA scission. He also used ESR to measure the quantity and chemical activity of these radicals, an approach that may facilitate the evaluation of potential antitumor drugs.

One of the most dangerous side effects of chemotherapeutic agents or radiation therapy is a dramatic drop in the level of glutathione, a compound that helps regulate body metabolism and is essential to the operation of many enzymes. Prof. Weiner has developed an ESR approach to quantitate glutathione and to measure the level of glutathione-dependent enzymes in cells. Unlike current methods used for this purpose, ESR enables the detection of glutathione in turbid solutions, or even in living cells suspended in a culture medium. Moreover, measurements he has obtained using as few as 50 to 100 cells are comparable to those derived through standard optical techniques that require some ten million cells.

Born in Dolinsk, USSR in 1946, Prof. Weiner received a Ph.D. in Molecular Biophysics from the Institute of Catalysis, USSR Academy of Science (1975). He served as Head of the Biophysics Department at the Institute of Chemical Kinetics and Combustion, Novosibirsk, until 1989, and moved to Israel with his wife and daughter in December of that year.

Novel Storage Battery Aids Alternative Energy Production

An important zinc-bromine storage battery, designed to provide back-up power for solar, wind, and other electricity-generating schemes, has been developed by researchers at the Weizmann Institute and the State University of New York, Syracuse. Although still in the demonstration stage, this inexpensive battery appears to meet the requirements for large energy-storage banks that could enhance the capabilities of electrical power plants, increase the utilization of home-based solar electricity, or power practical electric automobiles.

According to Prof. Joost Manassen, who developed the battery with Prof. Israel Cabasso of

SUNY, the improved zinc-bromine cell compares favorably with the best of other inexpensive water-based storage batteries. Energy efficiency - the amount of energy stored as a result of energy invested in charging - approaches a healthy 81%. And the stability of the cells is demonstrated by the fact that hundreds of charge/discharge cycles have no effect on battery performance. Although development work is still required to increase battery size and total energy-storage capability, as well as to build higher voltage units composed of multiple cells, the battery is extremely flexible and easily scaled up. A demonstration unit the size of a standard D-cell flashlight battery has been produced.

Patents on the advanced zinc-bromine storage cell have been filed in various countries by Yeda Research and Development Company, which holds title to all inventions, innovations and know-how arising from research at the Weizmann Institute.

Researchers the world over have been working for 20 years to develop rechargeable storage batteries that can improve on the familiar lead-acid motor vehicle battery. Cheap, reliable storage of electric energy is essential to expand the use of environmentally friendly solar or wind generators. For these systems, back-up batteries are necessary to provide power at night or during windless periods. In addition, battery assemblies can increase the usefulness of standard electrical power plants by allowing the storage of excess energy produced when consumer demand is low, such as on weekend evenings. This 'saved' energy can then be released to the power grid when demand exceeds generating capacity. About two years ago a California utility initiated an experiment using 8,256 lead-acid battery cells for this very purpose.

However, lead-acid batteries are not the ideal solution. For one thing, the cells must be able to withstand repetitive, near-complete discharge - usage that severely damages normal lead-acid cells or involves skyrocketing costs for specially designed deep-discharge units. Moreover, there is concern about safe disposal of the large amounts of lead that would be introduced into the environment were lead-acid battery use further expanded.

With regard to electric automobiles, industry experts long discounted the use of lead-acid batteries for this purpose: the amount of energy stored per unit of weight is too little for the task, and the heavy batteries required severely hamper vehicle speeds and slash distances possible between recharges.

While the zinc-bromine battery was originally patented in Mandatory Palestine by Rudolph Bloch of the Dead Sea Works, it remained for many years a laboratory curiosity, with many technical problems to be overcome. A major drawback was the difficulty of preventing the elemental bromine produced by charging from contacting the zinc electrode, thereby leading to internal discharge and loss of stored energy.

In the Manassen-Cabasso non-flow battery, which can be completely sealed, the bromine is safely absorbed on an activated carbon electrode and separated from the zinc by a patented polyacrylamide membrane. Moreover, the second activated carbon electrode, on which the zinc is deposited during charging, prevents the characteristic problem of dendrite formation — the troublesome growth of needle-like metal structures that can damage the battery. Upon discharge the zinc metal and bromine is transformed into zinc bromide, a relatively harmless salt. A simple internal modification that prevents overcharging and gas buildup has been designed and tested.

"After many years of work in the field of photovoltaic electricity generation," recalls Prof. Manassen, "it became increasingly obvious that a major obstacle to the expanded use of solar energy for domestic electricity production was the lack of an appropriate, inexpensive storage system for production of night-time power. The new zinc-bromine battery — which we estimate would

cost no more than $50 for a one watt-hour cell — might well provide such storage capacity. The project is now ready for development into a practical storage device for solar electricity which may also find use in an electric automobile or for load leveling of large electric power stations."

Where Did the Smell Go?

The taste of food, or toothpaste, stays with us long after the food has been swallowed or the toothpaste rinsed out. Why is it then, that a smell disappears as soon as the source of the odor is removed? In an article published in the March 1991 issue of *Nature*, a Weizmann Institute researcher provides a possible answer.

Studies conducted by Prof. Doron Lancet and doctoral student Daniel Lazard have revealed the existence of enzymes that perform a previously unrecognized function in the sense of smell. These enzymes are located in a thin patch of nasal tissue called the "olfactory epithelium," which is responsible for identifying odors and conveying this information to the brain.

Most odorants are volatile, water-avoiding chemicals that rapidly penetrate oily cell membranes. As such, they should easily spread throughout the sensory epithelium, continuously stimulating the cells. From there they might even enter the brain, causing unpredictable damage. However, this evidently does not occur. In fact, scientists have recorded electrode signals from odorant-stimulated frog and rat olfactory tissue, and shown that the cells stop responding within a second after the odor source is removed — which corresponds with everyday human experience.

Prof. Lancet believes that two enzymes he discovered in the sensory tissue may be responsible for this signal termination. One of them is a novel member of the cytochome P450, which transforms an oily molecule into a water-loving one that can be readily cleared from tissues. Prof. Lancet suggests that his newly discovered olfactory enzymes, by acting similarly, may protect the central nervous system, only a few millimeters away from the sense organ, from neurotoxic damage.

At the same time, he believes, such enzymes have yet another role: the termination of odor signals. Without such a mechanism, man and animals could not function in the complex world of smells, as previously sensed odors would constantly interfere with newly encountered ones.

Prof. Lancet now hopes to determine whether genetic variations exist in the enzymes he discovered. Such alterations may modify man's sensitivity to aromas and fragrances, and thus underlie differences in food and perfume preferences.

The research of Prof. Lancet is supported by the U.S. National Institutes of Health, the U.S. Army, the Heineman Foundation, the Basic Science Foundation of the Israel Academy of Sciences and Humanities, the Minerva Foundation, and the Forschheimer Center for Molecular Genetics at the Weizmann Institute of Science.

Upgrading Science Education

"Physics is physics," says Soviet immigrant teacher Nadia Krasninski, "but the approach to teaching it in Israel differs markedly from what I'm used to, as does the subject matter emphasized here. The Weizmann Institute course in which I am participating highlights these differences and provides tools for dealing with them."

Nadia, who arrived in Israel two months ago, is one of 68 chemistry and physics teachers from the Soviet Union taking part in a five-month Institute program that gears them to teach in local high schools.

Held despite the Gulf war, this course is divided into two streams, one for chemistry teachers and the other for physics teachers. A typical eight-hour session consists of diverse lectures by science teachers (some of them veteran Soviet immigrants) and hands-on laboratory experiments.

The course is designed to acquaint participants with high-school texts and curricula, the Israeli educational system, matriculation requirements and standard laboratory equipment. Participants also familiarize themselves with the Hebrew terminology for vital concepts in their respective areas. "In addition,"says Dr. Hana Goldring, Coordinator of the physics stream, "we stress our own pedagogical methodology.

The educational system in the Soviet Union is much more centralized, with each class expected to progress at pretty much the same pace. It is also far more authoritarian; teachers in Israel must constantly convince the students that what they're saying is correct."

The course is administered by the Institute's Department of Science Teaching, which also supervises a supplementary program in which participants spend one day a week at high schools. There they observe the lessons of carefully selected teachers, who act as their personal tutors as well. During the latter half of the course, the immigrants take on some actual teaching duties.