

INNOVATION

AN INDEPENDENT REPORT ON INDUSTRIAL R&D AND HIGH TECH INDUSTRY IN ISRAEL

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THANKS AND FAREWELL

The performance of the Tel Aviv Stock Exchange during the last two years attracted considerable international attention. While major exchanges suffered serious declines, the general index of share quotations here went up by 73% in 1992 (inflation discounted), and last year different share categories gained between 25 and 74%; the average daily trading volume more than tripled between 1992 and 1993, and an unprecedented number of new issues raised more new capital than ever before.

Although some observers caution against the vagaries of a volatile market, many believe those developments to have been a reasonable reflection of Israel's economic performance and potential. The growing labor force, the skills available here and the exporters' successes in new Asian and East European markets all promise well for continuing real economic growth.

A selection of representative statistics can demonstrate the generally positive trend, with productivity, output and exports all advancing at substantial rates. In 1993, for instance, industrial employment increased by about 4%; the

output of manufacturing industries expanded by 7%, after increases of 7 to 9% annually in each of the preceding three years; industrial exports - not including diamonds - gained 10% in 1992 and almost 18% last year.

Even joblessness - long the weakest point in Israel's economy - is beginning to yield to real economic growth. The number of gainfully employed persons increased by 6% between the third and fourth quarters of 1993, to stand at 1.8 millions. Overall unemployment dropped during this period - for the first time in several years - to less than 10% of the civilian labor force.

Because of these facts, and because of hopes that negotiations will lead to peace in the foreseeable future, the economic atmosphere here tends to be very optimistic. That is not merely a local phenomenon: observers all over the world have remarked on the strength, versatility and adaptability of this country's national economy.

Not surprisingly, this has enhanced the means available for investment. Not only have securities quotations in Tel Aviv risen to unprecedented levels; the market is also mobilizing more new capital than ever before. In 1989, there had been 56 new floatations, worth a total of about NS1.27 billion; by 1991, that had increased to some NS2.26 billion, invested in 68 new issues; last year no less than NS8.9 billion (nearly \$3 billion) were raised on the strength of 280 prospectuses. To make those monetary values comparable, they are here expressed in terms of stable December 1993 prices.

Almost everybody, it seemed, could go to the market to find the capital they needed. Offerings ran the whole gamut, from multi-hundred million shekel bond and share floatations by well established public utilities, to share issues of just a few million each by kibbutz plastics plants, new software houses and specialized producers with an export potential.

Most intriguing, for the high tech sector of production, is the recent proliferation of venture capital funds, several of which are now traded on the Tel Aviv Stock Exchange. Some enjoy the

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support of large foreign firms with considerable experience in the management of risk capital, such as Advent International, Fairchild, Kyocera and Daimler-Benz; others are based on local expertise. The most recent development in this sphere is the Israel Bio Fund, set up by leading U.S. industrial investors, such as Stephen Hammerman, a Merrill Lynch VP, and the Baxter Healthcare Group. Israel Bio Fund is raising \$15m., which in order to participate in a dozen or more healthcare product projects during the next two years.

All the new funds are now beating the bushes for likely high tech projects, and that may be expected to make life just a little easier for new advanced technology startups. The road from that promising idea to its envisioned commercial application still will be long and difficult; however, at least one problem - where to find the necessary initial risk capital - has become somewhat less daunting. That change undoubtedly will support a renewed flowering of Israel's advanced technology industries.

To our regret, *INNOVATION* will not be able to report those developments. With this, our last issue, we take leave of our readers, with thanks for your interest and support during nearly twenty years. This newsletter first appeared in December 1975, when many believed high tech to be beyond the reach of Israel's business enterprises; it suspends publication when this country's leading position in several fields of advanced technology is widely acknowledged.

We do not believe that *INNOVATION* has outlived its usefulness. Quite the contrary: now, more than ever before, such a periodical is needed, to bring factual reports of new developments in Israel's science based industries to potential customers, investors and partners.

To our regret, we shall not be able to act on this conviction; the public agencies, whose support made this newsletter possible between 1975 and 1992, decided not to continue the allocation of the modest amounts which they dedicated to this purpose until about a year ago.

Thus publication of *INNOVATION* will cease with the present issue. A. G. Publications will continue to serve through the preparation and publication of English translations of Israel

laws. We shall also be happy to respond to our former readers' requests for specific information about Israel high tech and about this country's economy in general.

CAUSES OF MAJOR CLIMATIC CHANGE UNKNOWN

Rehovot - The world's climate may change radically within relatively short periods of time, for reasons that are not yet understood. That is the conclusion of a Weizmann Institute study, headed by the late Prof. Mordechai Magaritz.

Prof. Magaritz and his associates compared precipitation levels over the last 7,000 years, as deduced from present day indicators in four widely separated areas. These cover the advance and retreat of Alpine glaciers; the width of salt cave passages in Mount Sdom, on the Dead Sea; the oxygen isotope composition of mollusk shells from the eastern Mediterranean; and the size of Lake Chad in Africa. Although these places are very far apart, analyses of the relevant data indicate that precipitation fluctuated in all of them simultaneously.

Existing climatic models, based almost exclusively on factors such as temperature and the concentration of gases in the atmosphere, cannot explain those developments. These measures are believed to remain stable over millenia, while the study shows that rainfall patterns changed radically within a few centuries.

In order to gain some understanding of these processes and their causes, Prof. Magaritz proposed that precipitation models be developed, which take account of interactions with a short response time, such as the influence of the oceans on the atmosphere's water content, and the balance of heat between them.

The conclusions of the present study, and the research efforts that will take their departure from them, are likely to have far-reaching implications. For some years, many have been concerned about the effect human activities exert on the globe's weather; in order to deal with that problem, however, a better understanding of other causes of cyclical climate changes is urgently needed.

NEW PLANT MANUFACTURES CAVIAR SUBSTITUTE

Migdal Haemek - Delitech Ltd. last month inaugurated a new production plant in this town, to raise output of its "Kosher Caviar" to six tons per month. Having gained considerable market acceptance in Israel, the firm is now moving toward the development of an export business.

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Delitech (see *INNOVATION* 174, May 1990) commercializes the work of a group of Technion food industry experts, who concocted an innovative seafood preparation, using a blend of high quality food fish, vegetable oil and salt. The result closely matches Caspian Sea caviar in taste, texture and appearance, but is incomparably less expensive. Delitech's caviar substitute now costs about \$15 a pound, while the "original" sells for thirty or forty times that amount.

The new Israel preparation has two additional advantages: on the one hand, it is not tainted by the pollution, which greatly troubles sturgeon fishing in the Caspian; on the other, it is made of fish varieties which, unlike the sturgeon, are deemed kosher, enabling religiously observant Jews to partake of this delicacy.

In a separate, but concurrent development, Kibbutz Dan has begun to grow Caspian Sea sturgeons in its cold water ponds on an experimental basis. Success in this endeavor could also make "real" caviar an Israel export product, of course at a much higher price than Delitech commands.

COMPUTER SUPPORT FOR INFECTIOUS DISEASE DIAGNOSIS

Ramat Hasharon - The diagnosis of infectious diseases has become a task that sorely taxes the individual physician's unassisted memory. In the past, most medical practitioners only had to identify the fairly limited number of infections, which were common in their own neighborhoods; now doctors almost anywhere are also likely to face the challenge of rare ailments from distant continents.

This is one result of modern mass transportation and of large scale human migration, which not only bring people to distant lands, but also carry bacteria, viruses and parasites far beyond their customary areas of incidence. The diagnostician should be able to take those possibilities into account, but most will find it difficult to master the vast body of knowledge necessary for this purpose.

Diagnosis has also come to depend on a variety of technological developments, such as sophisticated imaging procedures and complex laboratory tests. In order to pin down the cause of a patient's complaint, the attending physician may have to resort to those measures, but he should not do so when that is unnecessary: their excessive use may be wasteful of precious resources.

C.Y. Informatics has now developed an interactive computer program - "GIDEON" (Global Infectious Disease & Epidemiology Network) - which

can support the examining physician's efforts by putting all the available information at his fingertips. It runs on MS DOS on most modern personal computers (386 and up), requires 4MB of RAM and only 6MB of hard disk space. GIDEON for Windows is under development and will be released later this year.

Based on Bayesian theory, the program analyzes the appearance of up to 115 clinical and laboratory findings, in order to identify some three hundred infectious diseases, both common and exotic, from more than two hundred countries. The program not only uses diagnostic findings fed into it; it also suggests what tests should be conducted, in order to pin down the cause of the complaint.

GIDEON incorporates three additional modules of major importance. One presents the

Dear Reader,

As we informed you in the past, we are forced to discontinue the publication of this newsletter. Although we have done our best to return our circulation figures to a level that would justify the continuation of our work, those efforts have not been successful. To our deep regret, the current issue - No. 219, April 1994 - will be the last of *INNOVATION*.

If your subscription has not yet run out, we shall contact you directly about our outstanding obligations to you.

Many of you have asked us for other sources of information on Israel's rapidly growing high tech industries. After surveying the field, we strongly recommend the *Israel High-Tech & Investment Report*, a well informed independent newsletter, published by Israel Publications Ltd. and edited by Joe Morgenstern, an experienced journalist and financial analyst familiar with the ins and outs of the Israel economy.

The emphasis of the *Israel High-Tech & Investment Report* differs somewhat from that of *INNOVATION*. While we tended to concentrate on technological aspects, that publication focuses on the role advanced technology ventures play in the Israel economy, presents financial analyses and brings detailed investor information.

We suggest that you seriously consider subscribing to the *Israel High-Tech & Investment Report*. Israel Publications Ltd. may be contacted at 47 Byron Place, Scarsdale, NY 10583, or P.O. Box 33633, 61336 Tel Aviv.

The Publisher

global distribution, as well as the clinical and epidemiological profile of each disease. The second covers therapy and lists the treatment appropriate to each diagnosis, taking into account the patient's age, dosages, drug toxicity and interactions. The fourth module covers microbiological data and identifies more than 550

DIRECTORY

The names and addresses of many of the firms and institutions mentioned in these pages are listed below, for our readers' convenience.

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Rendix Ltd., P.O. Box 1270, 36111 Kiryat Tivon, Tel. 972-4-896-570, Fax 972-4-830-552

Tadiran Communications Group, Rehov Hasivim 18, 49517 Petah Tikva, Tel. 972-3-926-2262, Fax 972-3-926-1991

Technion Entrepreneurial Incubator Ltd., Technion City, 32000 Haifa, Tel. 972-4-325-386, Fax 972-4-320-845

Tower Semiconductor Ltd., P.O.B. 619, 10556 Migdal Haemek, Tel. 972-6-506-611, Fax 972-6-547-788

human pathogens and commensals on the basis of an interactive list of 85 key phenotypic characteristics. It also allows two or more bacteria to be compared, in which case it provides a list of all the relevant discriminative tests and results.

The program is based on a vast body of professional medical literature, including all English language peer review journals, periodic WHO publications and standard infectious disease textbooks. It is serviced and updated four times a year, so that the latest information will always be at its users' fingertips.

TADIRAN IN STRATEGIC AGREEMENT WITH DANISH FIRM

Tel Aviv - A strategic agreement for the cooperative development of new products and markets has been concluded between Tadiran and NKT. Tadiran is one of Israel's most important communications equipment manufacturers; NKT is a noted Danish developer of advanced data transmission networks.

The two firms agreed to invest in the joint development of a family of innovative products, which will integrate cable TV and telephone services in a single network. Many observers believe that the next generation of communications equipment will combine several services, which now are supplied separately, including telephones, data communications and entertainment broadcasts.

DEVELOP MORE VERSATILE AND FLEXIBLE X-RAY GENERATORS

Kiryat Tivon - Development of a line of innovative X-ray generators has been completed at Rendix Medical Systems here, and their sale has begun. Offering substantial economies - in terms of basic cost, maintenance and so forth - the new generators also simplify procedures and make them significantly safer.

In order to cause X-ray tubes to emit useful roentgen radiation, electricity must be supplied to them at a precisely defined voltage and wattage; for many applications, pulse length and the number of pulses per second also must be accurately controlled. The X-ray generator meets those requirements, drawing the required power from the mains and converting it, as needed.

The three "Harmonix" generator models now offered by Rendix incorporate the latest in high frequency technology and produce 30, 60 and 80KW. They revolve around a software controlled monitor, which uses a touch screen as its highly flexible operating panel. At any one time, only those functions are shown which are necessary for the

selected operation, simplifying operator tasks and eliminating the danger of human error.

Each generator can control up to eight programmable image receptors in a variety of selected combinations. The system also accommodates different computer aided imaging programs: the anatomical program, for instance, helps the operator to define radiographic parameters in accordance with the part of the body to be examined. Automatic exposure control and a fluoroscopy mode - either manual or automatic - are optional.

Harmonix generators are compact, easily installed and compatible with almost all X-ray tubes now on the market. Their operation is simple and requires only a minimum of personnel training. Rendix is interested in entering into relationships with qualified firms, who are prepared to introduce Harmonix X-ray generators to their markets.

ANTONOV AND I.A.I. IN JOINT VENTURE

Lod - An innovative surveillance plane, designed specially for use by naval and coast guard units, has been developed jointly by aircraft builders in Russia and Israel. The participating firms are Antonov and Israel Aircraft Industries.

The new plane, designated the "P-72", is suitable for extensive patrols of national borders, coast lines and the open sea; it is equipped with an array of advanced detection and surveillance systems and can control extensive anti-incursion and anti-smuggling operations.

Most of the body of this aircraft is manufactured by Antonov, long known as builders of large military and civilian planes. Israel Aircraft Industries provides sophisticated navigation, communication and detection systems, some of them acquired from other high tech firms in this country.

I N S H O R T

* An order for \$45m. worth of its PCM-2 digital pair gain system was recently received from a leading European communications authority by ECI Telecom. The company, which also reported the first order, which it ever received from India's government owned overseas telecommunications company, increased its sales by 30% and net earnings by 16% in 1993.

* Mennen Medical, of Rehovot, has received an order from authorities in China to supply some \$5.5m. worth of intensive care monitors and related medical equipment to forty hospitals in that country.

* Pratt & Whitney has acquired complete ownership of Carmel Forge, a Haifa area manufacturer that produces high precision aircraft engine components. The U.S. company formerly held 42% of Carmel, but now has taken full control.

* The Israel Fund of Britain, launched by Barclays Bank, reports receiving more than five hundred applications from interested investors. With an initial capital now estimated at 150 million pounds sterling, I.F.B. is expected to play an active role in the Israel securities market.

* An innovative all plastic hydraulic valve, capable of operating with even highly corrosive water, has been developed and is now produced by Dorot Valve Manufacturers.

* A new moist disinfectant tissue is now available from Bosmat, of Kibbutz Hafetz Haim. Tradenamed "Bactisidal", it has been shown to be capable of killing viruses, including HIV, on contact.

* Amiad Filtration, makers of high tech water filters and fertigation systems, has established a distributorship for Australia and New Zealand in partnership with Vetter Dynamics and A.B. Products.

* Hewlett Packard's reciprocal purchases in Israel amounted to \$50m. in 1993, five times more than the preceding year's procurement. HP is a major customer of Tower Semiconductors, the Migdal Haemek silicon chip manufacturing plant previously owned by National Semiconductors.

* Nineteen Israel manufacturers of farm production inputs - fertilizers, irrigation systems and so forth - are showing their wares at this month's Agro Expo China Trade Fair in Beijing.

* A new line of sealants, developed by a subsidiary of Delek Israel Fuel Corporation, can provide solutions in many places, where customary waterproofing materials proved unsatisfactory.

* After managing Bet Shemesh Engines for about two years, Ornat Industries has decided to buy the company's majority share in that company. The other partner in this jet engine manufacture is Pratt & Whitney.

Each such plane will cost between \$15 and \$20m., depending on the precise configuration required by the customer. This is expected to make it highly competitive with similar craft built elsewhere for this purpose, also in terms of price.

The P-72 was introduced to the public at the Singapore Air Show, the largest such event on the Asian continent. Some twenty Israel aerospace and electronics firms showed their wares on this occasion.

GROWING EXPORTS BY TIBERIAS BASED ANTENNA MANUFACTURER

Tiberias - Exports by Galtronics Ltd., of this Galilee city, amounted to \$17m. in 1993, almost 90% more than in the preceding year. Practically all of the company's income is derived from overseas sales.

Galtronics specializes in the development and manufacture of highly capable, but very compact antennas for use with cellular telephones and other portable communication systems.

Because of their excellent quality, Galtronics antennas have been accepted by some of the most important equipment builders in this field. Among the Israel company's customers are firms such as Motorola, Ericsson, and AEG, as well as leading communication system manufacturers in Japan and South Korea.

ELBIT GROUP REPORTS SUBSTANTIAL PROGRESS

Haifa - Sales by Elbit and its subsidiaries increased by 24% in 1993, to pass the \$600m. mark. Profitability was up by one third, with a net of \$40.8m. Elbit is the heart of the Elron Group, one of Israel's largest and most experienced high tech development and manufacturing organizations.

It appears that the company's rate of growth is accelerating. Fourth quarter sales (\$200m.) were 32%, and net profits (\$11.7m.) were 48% ahead of the corresponding period in 1992. Available information indicates that the company's growth may be expected to continue: its end of year order backlog stood at \$719m., the highest ever in its history.

About 40% of the Elbit Group's consolidated revenue in 1993 stemmed from the operations of Elscint, well known makers of medical imaging systems and an Elron subsidiary. With its moderately priced state of the art instruments, Elscint has been making its mark also in the newly opening markets of Eastern Europe and South East Asia.

These and other civilian activities account

for a steadily increasing portion of Elbit's sales total. However, the company's defense experts have also managed to adapt to rapidly changing market conditions: they now emphasize a line of low cost retrofit programs, which can make nearly obsolescent military aircraft capable of many additional years of active service.

As in the past, so also in 1993 most of Elbit's efforts were aimed at overseas markets. During the year under review, exports accounted for 82% of all sales - about two fifths to the Americas, one third to European countries and the rest to customers all over the globe.

DEVELOP EXTREMELY PRECISE MOVEMENTS AND POSITIONERS

Haifa - Two important venture capital funds - Marathon and Dovrat-Shrem - committed \$2.2m. to acquire 29.3% of the shares of NanoMotion Ltd. That new start up, initiated within the framework of the Technion Entrepreneurial Incubator Company, thus has taken a major step toward the commercialization of its developments.

The satisfactory operation of many advanced technology systems, including robots, depends on precisely controlled linear motion. The stepping motors now commonly used for this purpose cannot provide the accuracy, which certain sophisticated applications require.

NanoMotion seems to have broken that impasse by developing an innovative system that converts high frequency electromechanical oscillation - 100,000Hz, or 100,000 reciprocating movements per second - into linear motion. Integral electronic circuitry makes it possible to control the number of oscillations, and the linear movement generated by them, to very narrow limits.

BLOOD TEST PROVIDES RELIABLE CANCER DIAGNOSIS

Tel Aviv - The innovative "CellScan" diagnostic system, developed and marketed by Medis El Ltd. here, makes it possible to determine with a high degree of certainty whether an organism does, or does not suffer from cancer. The tests do not involve any discomfort to the patient and even do not require his presence; he merely has to give a small sample of his blood.

Based on research originally carried out at Bar Ilan University (see *INNOVATION* 180, November 1990), the system uses a special "cell carrier", which is placed in the receptacle of its scanning system. That system monitors and analyzes changes of polarization of light emitted from fluorescently marked cells, which have been illuminated by a low power laser beam. Research

has demonstrated that there is a statistically significant difference between the light emitted by lymphocytes exposed to a cancer tumor in the patient's body, and those that have not been so exposed.

CellScan is presently undergoing clinical tests, preliminary to its makers' application for FDA approval. Several systems already have been sold to scientific institutions, for use in biological research.

Medis El reported sales of \$566,000 in the first three quarters of last year, with a gross profit of \$290,000. However, large research outlays and other expenses resulted in a net loss of just over \$1.5m.

INNER COATING APPLIED *IN SITU* TO FLOATING PIPELINES

A corrosion resistant plastic coating can now be applied to the interior surfaces of floating pipelines. Methods to achieve that at reasonable cost were developed jointly by the Dead Sea Works, major extractors of potash and table salt from Dead Sea brines, and Golan Plastics, of Kibbutz Shaar Hagolan, an experienced producer of technical plastic products.

Steel pipes used for the transportation of mineral rich solutions are subject to rapid wear. In the case at hand, the concentrated salt in Dead Sea brines attacks the bare metal and corrodes it quite rapidly, making frequent and expensive replacements necessary.

Tests have shown that Golan Plastics' cross linked polyethylene tubes withstand that corrosive action for very long periods; however, they lack the mechanical rigidity required of the Dead Sea Works' extensive floating pipeline systems. The best solution found so far is to insert the kibbutz firm's Pexol tubing into new steel pipes before their installation.

The present development, however, goes an important step beyond that procedure. It makes it possible to "retrofit" plastic liners even to pipelines that have been in use for some time, thus extending their useful lifespan for additional periods.

COMPUTERIZED "GAMBLING" GAMES EMULATE THE CASINO EXPERIENCE

Kiryat Gat - A line of sophisticated computer games, which closely resemble games of chance, has been developed and is now available from K.G.E. 2000 Ltd. This recently founded firm already has won considerable attention in overseas markets.

Computers, most people would think, represent

the very opposite of the uncertainty inherent in gambling. Their responses to a very broad range of inputs is always predictable: pushing the same buttons in the same sequence is invariably expected to yield the same result.

But is this always true? The experts of K.G.E. use sophisticated algorithms to introduce that degree of unpredictability to their computer systems, which is the very heart of every game of chance. That approach already has been converted into marketable devices, including computerized roulette and other casino games with considerable market appeal.

The products of the Kiryat Gat firm already have been accepted by a number of casino operators, both large and small. One important customer is now setting up a new operation in an Eastern European resort, and several systems also have been sold to a well known establishment in Las Vegas.

EMERGENCY RESPONSE SYSTEM BRINGS PEACE OF MIND

Kfar Saba - Any home connected to the public telephone network can also be equipped with an easy to operate emergency response system. The "Carephone" developed to that end by Moked Enosh International Ltd., will be of great value to chronically ill persons, to the disabled, to the elderly and to anyone who needs the security of knowing that he can call for help.

A compact instrument is installed in the home and connected to the telephone line, to provide an

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almost instantaneous connection with an emergency center. The call may be made by pushing a contact on the instrument, or by activating a water resistant portable "panic button" anywhere within the confines of the home.

As soon as such a signal has been sent, all data relevant to the person who makes the call appear on the operator's computer screen in the Carephone center. At the same time, voice contact is established: the operator can speak to the caller, and he also hears whatever goes on anywhere in his home.

On the basis of information thus in his hands, he takes appropriate action. That may be the despatch of an ambulance, of police, of the fire department or whatever. If the caller so instructed - then or previously - the operator can also alert some other person, such as a neighbor or relative.

The Carephone may also be integrated into more extensive protection systems, such as burglar alarms and fire detection sensors. In each case, appropriate information is delivered to operator at the Carephone center, who can initiate the response appropriate to whatever emergency arose.

When combined with a personal electrocardiography unit, the system expands to provide state of the art ECG monitoring at home. It is not necessary to connect the heart monitor in any fashion with the telephone: using a wireless link, ECG readings are transmitted to the cardio-diagnostic center from any place in the house.

Carephone centers already have been set up in a number of countries, and the Israel firm is prepared to provide its knowhow and equipment for the creation of additional ones.

OFFER COMPACT, MOBILE SURGICAL LASER SYSTEM

Or Yehuda - An innovative surgical laser system - the "Pendulaser" - has been developed by Prof. Isaac Kaplan and is now manufactured by Optomedic Medical Technologies Ltd. Prof. Kaplan is an internationally noted pioneer of laser surgery.

Built around a sealed carbon dioxide laser, the system delivers a 10.6 micron beam of up to 15W, either through a two-joint telescopic arm or through flexible hollow wave guides; a sterilizable hand piece of proprietary design is provided. The Pendulaser is available in 120 VAC/60Hz and 220 VAC/50Hz versions.

With a spot diameter of 0.2mm at a distance of 50mm (about two inches), the instrument cuts cleanly through body tissues, sealing small blood vessels and lymphatics; this leaves a fine haemostatic incision with minimal damage to

residual tissue. When tissue is to be removed, that can be done by a defocused beam, or by applying it from a greater distance. The beam can also be passed through an endoscope or operated under microscopic control. The system offers STBY, continuous and single pulse modes, with pulses of 0.05 seconds duration.

The Pendulaser is a compact, mobile and affordable instrument for use in doctors' offices and small clinics, as well as in larger institutions. It will be useful for a large variety of medical applications, including general, pediatric, dental and plastic surgery, orthopedics, gynecology, urology, dermatology and so forth. It also has been found appropriate for veterinary medicine.

LUNG FUNCTIONS MONITORED IN THE PATIENT'S HOME

Rishon le-Zion - A novel monitoring system, developed and marketed by Card Guard Scientific Survival Ltd., will enable persons with even serious chronic pulmonary disorders to engage in normal activity. The company's novel "Spirophone" makes it possible to monitor lung functions at a distance, using ordinary telephone lines.

In many lung disorders, crises may occur on very short notice; if appropriately treated, they are likely to pass with few ill effects, but - in the absence of such a response - they could have dire consequences.

These facts have forced many patients to remain hospitalized over long periods of time. That not only involves great expense, but also harms the individual's general well being, by cutting him off from his accustomed environment and normal activity. The Spirophone is designed to avoid that situation, without putting the patient at risk.

That recently introduced instrument makes it possible to monitor lung functions and to transmit relevant readings over ordinary telephone lines to physicians at a pulmonary monitoring center. The data delivered in this manner enable the doctor to assess the situation and to take immediate appropriate action, which may be anything from a few words of reassurance for the patient to the despatch of a fully equipped emergency ambulance.

The Spirophone is a highly sophisticated instrument that incorporates the latest technological advances; at the same time it is compact, light and very sturdy. Its successful operation requires only a minimum of instruction.

Card Guard Ltd. has several other innovative medical monitoring products to its credit, including a very successful system for the ongoing care of chronic cardiac patients.