

JPRS 79067

DATE 7.20.2406

NE/NA 2406

9129/81

ISRAEL

## RESEARCH MOVES INTO BIOTECHNOLOGY, ROBOTICS

Jerusalem THE JERUSALEM POST in English 18 Aug 81 p 10

[Article by Aryeh Greenfield]

[Text]

Israel's industrial researchers are entering two new, and potentially important fields: biotechnology and robotics.

In both areas, efforts now stand more or less where this country's electronics industry stood in the mid-1960s. In both rapid growth seems likely, leading to extensive production and very large exports by the end of this decade.

University research in biotechnology in Israel has a history of many decades, and Israel scientists are abreast of the latest international developments in genetic engineering and other advanced technologies. All that, however, has not yet resulted in significant economic activity.

Two firms have been operating in the field for some time in Rehovot and Nes Ziona. The one, Interpharm, is a subsidiary of Ares Applied Research Systems, a Swiss-based company with extensive high technology interests. Interpharm produces human growth hormone; it projects its exports of that substance at \$1.5m. a year.

That, of course, does not satisfy anyone. Only recently the company raised \$6m. in new share capital in the New York over-the-counter market, much of it to finance additional research. Significantly, three fourths of the firm's 32-

member staff work on R and D projects.

Inter-Yeda is a joint venture of Interpharm and the Weizmann Institute's Yeda Company. Its efforts are devoted to the production of commercial quantities of Interferon, a substance which already has proven its efficacy against certain viral infections. Some scientists believe it also holds promise as remedy for certain types of cancer.

The third business venture in this general sphere was officially inaugurated in Rehovot only last week. Based largely on capital raised by New York financier Frederick Adler, and on previous research at the Weizmann Institute and the Hebrew University, Biotechnology General (Israel) plans to develop and manufacture four preparations that can be of revolutionary importance to agriculture.

One is a novel vaccine against foot-and-mouth disease; a second — bovine growth hormone — is expected to raise milk production by as much as 15 per cent without necessitating an increase in feed consumption. The third will be a biological disease control agent, based on a soil fungus (trichoderma) which destroys many disease-bearing fungi.

Most interesting is the fourth programme, which aims at the development of nitrogen-fixing bacteria. Adding those micro-organisms to grain crop seeds will enable plants to fix nitrogen directly from the atmosphere, rather than requiring large quantities of nitrate fertilizers. Success in this effort will not only reduce farm production costs, but will also eliminate one of the most difficult sources of water pollution.

In the field of robotics, work is only now starting, although the subject has been studied for some time at the Technion. There also are beginnings of robot utilization in some factories.

A Robotics Research Institute is being established within the Technion's Mechanical Engineering Department, to research the subject and to train specialists.

At the same time, the Chief Scientist's Office, in the Industry and Trade Ministry, has announced approval of its first R and D grant in the field of robotics. One of Israel's large manufacturing firms has embarked on a three-year project for the development of a welding and assembly robot. Other projects in this field may well grow out of this country's fairly developed production of computerized numerical control equipment for the machine building industry.

CSO: 4300/111