Letter from Israel

from Nechemia Meyers

A CONTEMPORARY odyssey of pain, repression and, finally, of achievement, reached its climax this week at a ceremony on the Mount Scopus campus of Jerusalem's Hebrew University, in which an outstanding 26-year-old mathematician was awarded a PhD and the prestigious Aharon Katzir Prize. It began six years ago in the town square of Riga, Latvia, where that same young man, Ilya Rips, set himself on fire in order to dramatise his opposition to the Red Army invasion of Czechoslovakia and to Soviet anti-Semitism. Fortunately, passers-by snuffed out the flames and rushed him to a hospital.

Rips was subsequently sent to join other dissidents at a mental institution, where he spent over two years "under treatment". Had it not been for wave after wave of international protests, he would probably still be there. From the time he arrived here in January 1972, until this week, Rips—a naturally very reticent person—stayed out of the headlines. He was content to learn Hebrew, which he now speaks with great fluency, and then to immerse himself once again in the world of mathematics, where his work on the dimensional sub-group problem, begun in Riga, has already aroused international interest. Now he is to be a lecturer in the Hebrew University's Mathematics Department.

● Dozens of government personalities were at the Hebrew University ceremony, but few of them have any idea what is really going on in the lecture rooms and laboratories of local institutions of higher learning. Alarmed at the possible consequences of this situation, Israel's academic centres have taken it upon themselves "to educate" the country's policy-making elite. At the Weizmann Institute alone, day-long seminars on various aspects of science have recently been held for members of the Knesset (Israel's Parliament) and for senior officials of the Ministries of Finance, Commerce and Industry, Foreign Affairs and Education. Although the participants sometimes seem to be slightly bewildered by talk about polymers, antigens and quarks, they generally manage to retain their perspective. For example, when a Weizmann Institute official greeted a group of Finance Ministry officials, he earnestly explained to them that the seminar was strictly educational in character and was not being held "to sell you the institute".

"Don't worry," a Finance Ministry man replied, "we don't have the money to buy it. But perhaps you'll give us an option on the place."

● Government monetary limitations notwithstanding, official bodies are putting more money into the development of solar energy, which, as Minister of Commerce and Industry Haim Bar-Lev recently stated, they hope will give the country increased 'economic energy'.

Twenty years ago Israel was in the forefront of solar energy research, but interest in the subject rapidly declined here, as elsewhere, when low petroleum prices seemed to obviate any need for what was then a much more expensive form of energy. Nevertheless, Israel is probably at present the world's largest user, per capita, of applied solar energy.

Backing up this contention in a paper presented at a recent solar energy conference in Rehovot, Dr Harry Tabor pointed out that:

(1) The Dead Sea Works, with approximately 100 km^2 of evaporation ponds, use solar heat equivalent to about 30×10^6 tons of fuel oil per year —three times Israel's annual national consumption.

(2) Over 100,000 domestic water heaters (which save about 100,000 tons of fuel oil that would otherwise be required for heating water) represent about 0.1 m^2 of flat-plate solar collector per capita.

Tabor sees justification for using solar energy more widely to heat water, to heat and cool buildings and even to provide a power source for desalination. He argues that if solar ponds could be built for less than \$10 per m^2 —which seems feasible—it would be cheaper to use solar energy for desalination than fuel costing \$80 a ton.

● Whatever may be the value of Israeli solar energy research, local agricultural research proves its economic significance year after year. Just recently, for example, scientists at the Hebrew University's Faculty of Agriculture reported on the development of new techniques which should facilitate overseas sales of two important export crops—citrus and flowers.

Confronted with the fact that oranges grown north or south of Israel's traditional Coastal Plain citrus belt tend to have rough peels, which makes them unsaleable in Europe, Shaul Monselise, Raphael Goren and Yair Erner, of the Hebrew University, found a way 'to smooth the peels' with a synthetic growth retardant.

Peel roughness is caused by excess levels of gibberellic acid and cytokinins, hormones which control cell division and cell enlargement in the oranges (as they do in other plants). Since there is an excess of these growth regulators in the early stages of the fruit's growth, the team found that peel roughness could be controlled by spraying Alar (a growth retardant) on the citrus during that period. This cut down roughness by 30% without affecting the fruit's nutritional value or making it unsafe to eat. Now equal sucess is being achieved with a less expensive chemical (CCC).

● Israeli agricultural research is distinguished not only by its quality, but also by the fact that it reaches the farmers and the fields much more quickly than it would in other countries, even those with well organised extension services. This is partly because one-third of Israel's agricultural students are themselves settlement members, who rush back home with any promising new hybrid or hormone. In addition, local farmers are not content to wait quietly for solutions to their problems; instead, they keep pestering the professors for assistance and, moreover, they are willing to try innovative methods even when they are still experimental.

Agricultural know-how reaches Arab farmers almost as quickly as it reaches the members of Jewish settlements. The 17 Arab students at present enrolled at the Hebrew University's Faculty of Agriculture, as well as Arab graduates, bring new methods to their home villages (inside the country's 1967 borders) and to the West Bank and the Gaza Strip. Production has risen spectacularly in these latter areas since Israeli troops, closely followed by Israeli agricultural advisers, entered them eight years ago.

This rapid transfer of new forms of cultivation, new seeds, new fertilisers and new pesticides could pose a problem for Jewish farmers, because it deprives them of the technological advantage which they would otherwise have over Arab farmers. Indeed, certain crops that were once grown mainly by Jewish farmers, such as strawberries, have been taken over almost completely by Arab farmers, who have access to the same agricultural research and, at the same time, spend less on manpower because their own large families provide a bountiful source of practically free labour.

Yet the Dean of the Hebrew University's Agricultural Faculty, Professor Isaac Harpaz, is not unduly worried. He points out that the economies of Israel and the Administered Areas are closely linked, and likely to remain so whatever form of political settlement is eventually achieved. Thus prosperity for Arab farmers benefits the entire economy.