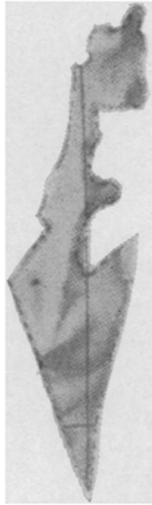


LETTER FROM TEL AVIV



Research that pays

**Israel's science will
be geared to applications,
says a Government policy**

by Macabee Dean

Israel has traditionally devoted most of its scientific research efforts to the field of pure rather than applied research. At present, Israel spends between \$37 million and \$43 million a year on scientific research but no more than \$10 million of this sum is used for applied research.

The emphasis, however, will soon be switched. A committee set up in 1966 by the late Prime Minister Levi Eshkol to investigate the state of scientific research in Israel has just recommended that the Israeli Government take the lead in financing applied research.

The committee, headed by Prof. Efraim Katchalski of the Weizmann Institute, has also recommended the creation of a Research and Development Authority to advise the Government on applied research projects and to supervise the projects. The Government has already approved the committee's recommendations.

Prof. Katchalski believes that Israel can no longer depend on the applied research being done in other countries. "We must," he says, "adapt our work to our specific climatic conditions; to our natural resources; to our available manpower. Methods worked out for agriculture abroad, for example, cannot be adapted wholesale to our problems. We must pinpoint our farming problems and solve them by ourselves."

Another practical reason for emphasizing applied research is that new developments, especially in the industrial field, can be marketed more profitably than standardized items. Prof. Katchalski would like to see Israel produce a constant stream of new ideas to stimulate exports. Hopefully, the new emphasis will be attracted to Israel's own scientific workers as well.

The Government feels that it has a large reservoir of skilled and trained manpower which it would hate to lose through emigration.

Having worked for years in the field of amino acids, and then as chief scientist of the Ministry of Defense, Prof. Katchalski is familiar with both pure and applied research. He believes pure research has so heavily overshadowed applied research because much of the scientific work done in Israel has been sponsored by grants from abroad. The donors to Israel's institutes of higher learning have been interested in, for example, financing projects which will help understand genetics in general, but not in financing projects to improve specific strains of vegetables of interest to Israeli farmers.

The Weizmann Institute, for example, receives much of its funding from individuals scattered all over the world, and is focused mostly upon pure research. When the Weizmann Institute was created in 1944, it incorporated an earlier research institute devoted to agricultural and pharmacological research, since overshadowed.

If Israel is to expand its work in applied research, the Government will have to take on most of the financial responsibility. "We don't have a Bell Telephone, or any other industrial giant of similar magnitude," Prof. Katchalski says. "Our industrial concerns are small, and unable to bear the financial burden of supporting applied research."

As it is, the Government of Israel puts up 48.2 percent of the funds going into applied research. By comparison to other countries, this is not a high percentage; the United States Government is responsible for 63.8 percent of applied research and development funds spent there. In France, the Government is responsible for 63.6 percent, and in the United Kingdom, for 56.6 percent.

Among developing nations (and Israel considers itself a developing nation) the percentages of government-sponsored research and development funds are even higher, as a rule: The Greek government supplies 82 percent of the funds, the Spanish Government 73.7 percent, and the Portuguese Government more than 70 percent.

The Israeli Government spends 1.1 percent of its gross national production on applied research. The United States spends 3.4 percent; the United Kingdom, 2.3 percent; West Germany, 1.4 percent; and Japan, 1.5 percent.

Actually, the Israeli percentage is probably higher than the figures indicate, since Israel, unlike most countries, does not include its defense spending in its estimates. Israel separates its civilian from its defense research, and keeps the latter secret.

What is certain is that the Israeli Government intends to increase its spending. Most of the Government ministries will acquire chief scientists, who will also be represented on the new Research and Development Authority.

The chief scientists will act as advisors to the ministers. They will draw up projects for the ministries, select the personnel to carry out the projects and see to it that the results of the projects are transformed into useful developments.