Basic Research a Luxury?

Although, as we pointed out earlier on this page (3 April 1959), science and technology form the indispensable basis for the solution of Israel's economic problems, Israeli scientists, technologists, lay citizens, and government officials do not agree about the role of basic research. The question, in its bluntest form, is: How much, if any, of the national effort should be devoted to pure research?

This question is the subject of searching discussion in Israel, and the reasons it is framed in this form are not far to seek. The country is ringed about by hostile states and must consequently devote a large share of her effort to the maintenance of her armed forces; her commitment to accept immigrants forces her to allocate another large share of her resources to preparations for housing, and finding work for, tens of thousands annually. The recent increase in immigration from Romania has forced Israel to impose upon her citizens a stiff compulsory loan on top of income taxes and import duties that dwarf those in this country. So much for the internal difficulties; there are external ones as well. Israel has an adverse balance of trade greater than $200 million per year. This dollar gap is currently filled by funds from private philanthropy, U.S. Government projects, the sale of bonds, and German reparations. But all these fluctuate in amount, and one of them at least, the German reparations, will come to an end between 1962 and 1964.

In view of these economic realities, it is not surprising to find that many government officials and some scientists with technological leanings think that Israel should devote all or nearly all of her resources for research to applied science. They contend that Israel is too limited in manpower and other resources to support basic research and that such research is a luxury the country cannot afford. Two scientists who share this attitude expressed it thus: "The country is too small to have specialized research," and "Basic science does not pay in Israel."

Those whose orientation is toward basic research take quite a different position. They think the country can, and indeed must, have both kinds of research. They take the view that even in a country that faces harsh economic problems, basic research will be practical in the long run, for without it no advanced technology can be kept vigorous; that quite aside from economic considerations, basic research is an important cultural activity; that Israel gains intangible but nevertheless valuable world recognition and status from her accomplishments in pure science; and, finally, that Israel has a historic role to play as a scientific outpost in the Middle East.

The practice of basic research in Israel antedates the formation of the state: this month the Daniel Sieff Research Institute, which formed the nucleus for the Weizmann Institute, celebrates its 25th anniversary, and the Hebrew University was founded in 1925, the Technion in 1924. These institutions have been supported in part by foreign private philanthropy and, in recent years, by research contracts from United States government agencies, among them the Department of Defense, the Atomic Energy Commission, and the National Science Foundation.

Both the strong tradition of basic research in Israel and the prospect of continuing outside support make it likely that basic research will survive the present crisis. —G. DuS.
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Geodetic Measuring

The American Geophysical Union is host for the International Association of Geodesy's Symposium on Electronic Distance Measuring Equipment that is to take place in Washington, D.C., on 5–12 May. Chauncey D. Leake, president-elect of the AAAS, will deliver the keynote address at the opening session. The technical sessions will be held in the Commerce Building. For information, write to Charles A. Whitten, Coast and Geodetic Survey, Washington 25, D.C.

AEC Test Reactor Meeting

The Atomic Energy Commission will conduct an unclassified technical information meeting on the construction, operation, and use of test reactors for representatives or organizations engaged in, or having expressed interest in, AEC and industrial test-reactor programs. The meeting will be held at the commission's National Reactor Testing Station, Idaho Falls, Idaho, 13–15 May.

Technical papers will be presented by representatives of the commission and its Argonne, Brookhaven, and Oak Ridge National Laboratories; and by representatives of the Battelle Memorial Institute, Phillips Petroleum Company, General Electric Company, Westinghouse Electric Corporation, and Pratt and Whitney Division of United Aircraft Corporation.

The meeting agenda also includes a panel discussion on the future use of test reactors in experimental programs. Commissioner John F. Floberg will be the guest speaker at a dinner to be held on 13 May.

The AEC's Idaho Operations Office and the Phillips Petroleum Company are cosponsoring the meeting. Inquiries should be sent to: Allan C. Johnson, Manager, Idaho Operations Office, Atomic Energy Commission, P.O. Box 2108, Idaho Falls, Idaho.

Forthcoming Events

May


17–21. American Ceramic Soc., 61st annual, Chicago, Ill. (C. S. Pearce, ACS, 4055 N. High St., Columbus 14, Ohio.)

17–21. AIST (Nat'l. Soc. for Medical Technologists, 19th annual, Philadelphia, Pa. (C. S. Lawrence, IFT, 176 W. Adams St., Chicago 3, Ill.)


18–20. Instrumental Methods of Analysis, 5th natl. symp., Houston, Tex. (H. S. Kindler, Director of Technical and Educational Services, ISA, 315 Sixth Ave., Pittsburgh 22, Pa.)

19–23. American Assoc. of Mental Deficiency, Milwaukee, Wis. (N. A. Dayton, Mansfield State Training School & Hospital, Mansfield, Conn.)


21–22. American Assoc. for the History of Medicine, 32nd annual, Cleveland, Ohio. (Miss E. H. Thomson, Yale Univ. School of Medicine, New Haven, Conn.)

21–27. Veterinary Cong., 16th intern., Madrid, Spain. (J. Jensen, General Secretary of Permanent Committee, Beltraa 168, Utrecht, Netherlands; or W. A. Hagan, Dean, Cornell Univ., New York State Veterinary College, Ithaca, N.Y.)

24–27. Chemical Inst. of Canada, 42nd annual conf., Halifax, Nova Scotia. (Chemical Inst. of Canada, 18 Rideau St., Ottawa 2, Ontario)


25–27. Chemical Inst. of Canada, 42nd annual conf., Halifax, Nova Scotia. (Chemical Inst. of Canada, 18 Rideau St., Ottawa, Ontario, Canada.)


27–28. Legal Environment of Medical Science, 1st natl. conf. (Nat'l. Soc. for Medical Research and Univ. of Chicago), Chicago, Ill. (Nat'l. Soc. for Medical Research, 920 S. Michigan Ave., Chicago 5.)


29–30. International Assoc. for Bronchology, 9th cong., Madrid Spain. (J. Abello, IAB, Lagascar 13, Spain.)

30–5. Applications of Atomic Energy to the Petroleum Industry, symp., 5th
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World Petroleum Congress, New York, N.Y. (C. E. Davis, General Secretary, 5th World Petroleum Congress, 527 Madison Ave., New York 22.)


June

1–3. Evolution, symp., annual, Saskatoon, Saskatchewan, Canada. (Mrs. L. C. Metivier, Royal Soc. of Canada, Natl. Research Bldg., 100 Sussex Drive, Ottawa, Ontario.)


1–4. Spectroscopy, 10th annual symp., Chicago, Ill. (G. W. Bailey, Borg-Warner Research Center, Des Plaines, Ill.)

1–5. International Silk Assoc., cong., Munich, Germany. (H. Bonvallet, 25, Place Tolozan, Lyon 1, France.)

1–6. International Commission for Northwest Atlantic Fisheries, 9th annual (by invitation), Montreal, Canada. (ICNAF, Forest Blvd., Carlebon St., Halifax, Nova Scotia.)


3–7. American Assoc. of Bioanalysis, Cincinnati, Ohio. (L. D. Hertert, 490 Post St., Room 1049, San Francisco 2.)

3–7. American College of Chest Physicians, Atlantic City, N.J. (M. Kornfeld, 112 E. Chestnut St., Chicago, Ill.)


4–9. Electrolytes, intern. symp., Trieste, Italy. (Societa Italiana per il Progresso delle Scienze, Rome, Italy.)


6. American Acad. of Tuberculosis Physicians, Atlantic City, N.J. (O. S. Levin, P.O. Box 7011, Denver 6, Colo.)

6. International Cardiovascular Soc. (North American Chapter), Atlantic City, N.J. (P. T. DeCamp, 3503 Prytania St., New Orleans, La.)

6–7. American Diabetes Assoc., Atlantic City, N.J. (E. Paul Sheridan, 1 E. 45 St., New York 17.)


6, 20, and 27. Recent Advances in Medical Technology, symp., Staten Island, N.Y. (N. Colosi, Wagner College, Staten Island, N.Y.)

New Products

The information reported here is obtained from manufacturers and from other sources considered to be reliable, and it reflects the claims of the manufacturer or other source. Neither Science nor the writer assumes responsibility for the accuracy of the information. A coupon for use in making inquiries concerning the items listed appears on page 1038.

- **Optical readers** for quartz-helix microbalances allow fine detection of extension. For load capacities ranging from 2 mg to 20 g, differential weight can be detected to 0.02 percent. (Microchemical Specialties Co., Dept. 743)

- **Anemometer** measures the energy transferred to a fluid from a thin electrically heated wire maintained at constant temperature. Wire temperature is maintained by a feedback circuit in which the anemometer wire constitutes one arm of a Wheatstone bridge. Current required to maintain wire temperature is related to fluid velocity. Frequency response extends from d-c to as high as 10 kcy/sec. Wires having hot resistance between 2 and 100 ohm may be used. Maximum current is 300 ma. Voltage output is 0.01 v/ma. (Shapiro and Edwards, Dept. 740)
Integrator for electromyogram curves is designed to be connected between the recording amplifier and galvanometer and to record the integral of the absolute value of input voltage. Integration periods of 0.1, 0.5, or 4 sec can be selected. Integrator output is linear in the deflection range 5 to 25 mm. A synchronizer permits starting the presentation of stimuli at the beginning of the integration period or starting the integration at the time stimuli are presented. Integration is expressed as a stored voltage. (Medical Electronics Development Co., Dept. 744)

**High-speed centrifuge** accommodates glass or disposable plastic tubes of 1-, 0.5-, and 0.25-ml size by use of polyethylene adapters. The centrifuge operates at 13,800 rev/min. A timer automatically stops the head after a preset interval of 1 to 30 min. (Clay-Adams, Inc., Dept. 728)

**Tissue-culture dishes** for plaque, monolayer, and various organ culture studies include side arms for aseptic entry with either syringe needle or pipette. Precision ground tops are sealable with high-vacuum silicone stopcock grease. Dishes can be inverted on microscope stage for low-power observation. (Belco Glass, Inc., Dept. 742)

**Nitrogen analyzer** for nondestructive determination of nitrogen in solids operates by neutron activation. The instrument consists of an instrument console and a detection unit. A pellet source of fast neutrons is located in the sample chamber of the detection unit. The neutrons, after thermalization, activate nitrogen nuclei. Analysis of the characteristic gamma radiation emitted by decay of the activated nuclei provides information of nitrogen content. Sample size is 0.6 ft²; analysis time is 15 min. Accuracy is said to be comparable with that obtainable by the Kjeldahl method. (Schlumberger Well Surveying Corp., Dept. 735)

**Ultrimicrotome**, manufactured by C. Reichert, in Austria, achieves uniform advance of the specimen by thermal means. Total range of feed is approximately 300 µ. Section thickness of 200 A is said to be obtainable. A water-cooling device permits the system to contract rapidly. The knife holder can be used with metal or glass blades. A binocular magnifier and illuminator permit estimation of section thickness by observation of interference phenomena. Manual and motor drive are provided. (William J. Hacker & Co., Dept. 736)

**Capacitative micrometer** measures distance in terms of the capacitance change between the test surface and a noncontacting probe. The capacitance of the probe is compared with the capacitance of a reference micrometer-adjusted capacitor by means of a transformer-coupled bridge. The reference-micrometer displacement is proportional to the measuring capacitor displacement; thus the micrometer may be calibrated to read directly the distance being measured. Range of the instrument is 0 to 0.045 in. Accuracy is ± 1 percent. (Wayne Kerr Corp., Dept. 737)

**Gas analyzer** detects 10 parts per billion of pentaborane or decaborane and 100 parts per billion of diborane in air. The analyzer performs a colorimetric spot test. A test paper is prepared by applying a drop of reagent to filter paper. Air is pumped through the test paper; the number of pump strokes required to produce a color match with a reference is a measure of borane concentration. Upper concentration limits are 3 ppm of diborane and 1 ppm of pentaborane and decaborane. (Mine Safety Appliance Co., Dept. 739)

**Joshua Stern**

**National Bureau of Standards**, Washington, D.C.

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