(*Continued from page 255*)

the regents authority over only appropriated funds in the universities' budgets is counted on to minimize friction, however. The regents face a formidable task in persuading the Ohio legislature not only to provide increased funds for space and services for the influx of undergraduates but also to make the heavy investments necessary to expand and upgrade graduate and professional education and to establish a viable system of community colleges and technical institutes.

It can fairly be said that, compared to California, Ohio and the other Midwestern states have been laggardly in organizing to provide the coordinated system of low-cost, accessible, and diversified public higher education for which a heavy demand has developed since World War II. To maintain perspective it should be noted, however, that Ohio, on the one hand, does not have California's rocketing population to cope with and, on the other, has a much solider foundation to build on in public higher education than the Northeastern states, for example, where opportunities in public higher education have been decidedly limited, both in quality and in quantity.

But even if the educational planners in Ohio bring about a reconstruction of public higher education on terms now seen as optimum, it is a safe bet that the ideal of equilibrium between supply and demand won't be achieved, for experience elsewhere has shown that this is one field where increasing the opportunities seems automatically to create excess demand.—JOHN WALSH

Announcements

The National Science Foundation last week announced establishment of a **division of engineering**. John M. Ide, former director of the NATO Antisubmarine Warfare Research Center, Spezia, Italy, has been named director. National Science Foundation support for engineering research heretofore was directed by a subordinate section of the Division of Mathematical, Physical, and Engineering Sciences.

The National Aeronautics and Space Administration requests proposals from scientists for scientific experiments to be carried out on five Advanced Technological Satellites (ATS) scheduled for launching from 1966 through 1968.

The primary mission of the ATS spacecraft is to evaluate advanced communication techniques, meteorological components, and gravity gradient stabilization systems. There will be payload space available on each satellite for additional scientific experiments. The launch vehicle will be the Atlas-Agena. Additional information on the program is available from Robert H. Pickard, spacecraft manager, Building 6, Goddard Spacecraft Center, Greenbelt, Md. Proposals should be sent to Harold Zaret, Procurement Division, Building 8, Goddard Spacecraft Center.

Recent Deaths

Joseph Bunim, 58; clinical director of the National Institute of Arthritis and Metabolic Diseases; 8 July.

Zaccheus Daniel, 89; retired astronomer at Allegheny Observatory of the University of Pittsburgh; 30 June.

A. Raymond Dochez, 82; professor emeritus of medical and surgical research at Columbia University College of Physicians and Surgeons; 30 June.

Henry Doubilet, 57; associate professor of surgery at the New York University–Bellevue Medical Center school of medicine; 6 July.

Isidor Fankuchen, 59; head of the division of applied physics at the Polytechnic Institute of Brooklyn; 28 June.

Leland Griggs, 86; professor emeritus of zoology at Dartmouth; 28 June.

Elizabeth W. Kidwell, 65; scientific director of Willcox Research Institute; 8 July.

Ross MacCardle, 62; research biologist at the Laboratory of Pathology, National Cancer Institute; 23 June.

Ralph McBurney, 81; professor emeritus of bacteriology, Medical College of Alabama; 21 June.

M. Morris Pinckney, 58; president-elect of the Richmond Academy of Medicine; 14 June.

Charles M. Pomerat, 58; director of research at the Pasadena Foundation for Medical Research; 18 June.

Waldemar J. A. Wickman, 63; former assistant chief of the Public Health Service's division of hospitals; 18 June.

Herman Yagoda, 51; of the Air Force Cambridge Research Laboratories, Massachusetts; 27 June.

Erratum. The first word in the title of the report by T. P. Rooney and P. F. Kerr (*Science*, 19 June, p. 1453) should have been "Clinoptilolite." This word was also misspelled in the index issue (26 June).

New Products

Fiber optics and light wires are explained and applications suggested in an information package supplied by the manufacturer. Inspection and illumination applications are described which suggest a multitude of applications in biological and medical research. Standard light wires that do not transmit images are available at low cost.—R.L.B. (Bausch & Lomb, Dept. S291, 635 St. Paul St., Rochester, N.Y.)

Filter colorimeter uses silicon photocells, coupled directly to the indicating meter, eliminating electronic amplification. The optical and measuring system is double-beam for stability, eliminating effects of line-voltage changes. Intensity of a light beam passing through the sample is electrically compared with the intensity of an identical beam passed through a reference solution. The same tungsten lamp is the source of both beams, so any change in source affects both equally. Line-voltage changes of + 10 percent produce only ±0.5 percent transmittance variation in the reading. Photocell outputs are compared in a potentiometer circuit, which uses a zero-centered taut-band null meter instead of a galvanometer as its balance indicator. Supplied with each instrument is a new six-place filter wheel that permits change of filters in a few seconds. The same filter modifies both sample and reference beams, eliminating the possibility of mismatching. The wheel comes supplied with three optical-glass filters—red, green, and blue—with maximum transmittance at 650 mμ, 525 mμ, and 425 mμ, respectively. These filters cover more than 90 percent of all standard industrial and clinical tests. Yellow and blue-green filters are available as accessories, but any 1¼-inch diameter disk-type filter can be used. A push button on the front panel can be used to override the normal lamp intensity, providing high intensity for narrow band-pass filters. The 7-inch dual-scale dial shows transmittance directly from 10 to 100 percent, absorbance from 0 to 1, with a reproducibility of better than ±0.5 percent. The instrument uses standard round, square, and rectangular cells and cuvettes ranging from 4 to 60 ml. Optical paths from 2 mm to 50 mm are available. A flow-thru cell permits a sample to be read and pumped out of the cuvette and the next sample poured in and read in seconds. Drainage is complete: there is no measurable carry-over to the next sample. A magnetic stirrer assembly (accessory) enables the user to utilize the sensitivity of the instrument to detect indicator color-change at titration end points more reproducibly and accurately than the unaided eye. This assembly is easily installed under the sample cuvette well, for operation by a switch on the rear of the case. The Electrophotometer II comes in models for 115-volt 50/60 cy and 230-volt 50/60 cycle a-c.—D.J.P. (Fisher Scientific Co., Dept. S281, 415 Fisher Bldg., Pittsburgh 19, Pa.)

Soundproof chamber is designed for the acoustical isolation of birds (or other small animals) for experimental purposes, particularly for investigations of the development of vocalizations. The chamber consists of three nested units, each constructed from ¾-inch hardwood veneer plywood. All joints are rabbeted, glued, and nailed for rigidity, except that the backs of the units are removable for assembly and disassembly. The three doors are fitted with ¼-inch plate glass windows so that all parts of the interior are visible. The windows and doors are sealed with sponge-rubber gaskets. The inner unit is illuminated by two 6-watt fluorescent lamps mounted at the sides between the walls of the inner and middle units to minimize heating of the interior. The lamps and wiring are shielded to attenuate radiated radio frequencies. A screen-covered shelf is built into the inner unit at the upper rear to provide protected space for the location of microphones and speakers. Cables for this equipment are installed in the ventilation system, with receptacles in the walls of the outer baffle. The inner unit is also provided with a drawer which facilitates feeding, watering, and cleaning. The ventilation system is composed of two lined baffles (one on top of the inner unit, the other on the back of the outer unit), two pairs of baffle connectors, a wall-mounted fan cabinet, and a 6-ft plastic hose that conducts air from the outer baffle to the fan cabinet. The fan is a 10-inch axial flow model with a capacity of 450 ft^3/min at zero static pressure. All surfaces of the chamber are treated with wood sealer, and all surfaces that are visible after assembly are finished with two coats of flat enamel. For standard chambers, the internal dimensions of the inner unit are 12¼ inches high by 19½ inches wide by 18½ inches deep; the outside dimensions of the outer unit are 26 by 32 by 37 inches. Caster-mounted bases are supplied for groups of chambers.—R.L.B. (William R. Fish, Dept. S285, 5548 Linda Lane, Carmichael, Calif.)

Syringe pumps with continuously variable flow rates are reproducible to within ±0.5 percent regardless of changes in back pressure and line voltage. The Model 237 accepts syringes up to 10 ml in capacity. The Model 255 accepts syringes of up to 100-ml capacity and covers a flow-rate range of 48 to 1 with a single syringe. By using syringes of different sizes, additional flow-rate ranges may be covered, and a single pump can encompass an overall range of 5000 to 1. Three different versions of the Model 255 thus offer flow ranges from 0.02 to 118 ml/day, 0.02 to 98 ml/hr, and 0.005 to 29 ml/min. Each pump comes complete with its own separate control box. The controller has a ten-turn potentiometer dial with readings linear, proportional, and precise. A setting of 1000 thus yields the maximum flow rate for a particular syringe, a setting of 500 gives 50 percent of that flow,

The material in this section is prepared by the following contributing writers:

Robert L. Bowman (R.L.B.), with the assistance of Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

Joshua Stern (J.S.), Basic Instrumentation Section, National Bureau of Standards, Washington 25, D.C. (physics, computing, electronics, and nuclear equipment).

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither *Science* nor the writers assume responsibility for the accuracy of the information.

Address inquiries to the manufacturer, mentioning *Science* and the department number.

and so forth. Clinical applications include chemotherapy, intravenous feeding, lymphangiography, and similar uses where precise control of uniform flow is necessary. Research and laboratory applications include analytical techniques such as atomic absorption spectrophotometry, chromatography, and titration. A chief virtue of the syringe pump is its ability to drive easily sterilized, quickly interchanged syringes.—D.J.P. (Sage Instruments, Inc., Dept. S286, 2 Spring St., White Plains, N.Y.)

Three-way, disposable stopcocks of polypropylene designed for clinical application have luer tapers for attachment to infusion sets and hypodermic needles. The design, however, is extremely versatile, so that it may be used with ordinary small-bore plastic tubing and applied to the large number of applications where the standard grease-sealed, brass-body medical stopcocks found limited application. In addition to the usual selection and regulation of either of two flow paths, a rubber septum for needle sampling or injection connects to the common paths. Removal of the septum provides an additional port to the common path. The stopcocks are supplied capped and sterile in peel-apart containers. The taper seal is adjustable by means of a collar, and an arrow point on the handle clearly indicates the open channel.—R.L.B. (Becton, Dickinson and Co., Dept. S290, Rutherford, N.J.)

Hot plate accessory consists of a hot plate assembly with a bimetallic thermostatic control which may be mounted on the standard Cenco-Lerner Lab-Jack. Mounting is accomplished by means of four projecting studs which fit into four holes on the Lab-Jack topplate, or the hot plate may be permanently installed with the use of screws. The 6- by 5½-inch heating surface may be continuously operated at its maximum temperature of 800°F without melting or warping. The unit operates off 115 volts a-c/d-c with a maximum power consumption of 400 watts. It can be used for laboratory tasks where a combination heat source and adjustable laboratory support are required. The Lab-Jack support is continuously adjustable from 2¾ to 10¼ inches and will rigidly support 100 pounds.—D.J.P. (Central Scientific Co., Dept. S283, 1700 W. Irving Park Rd., Chicago, Ill. 60613)

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Saskatchewan Research Council,
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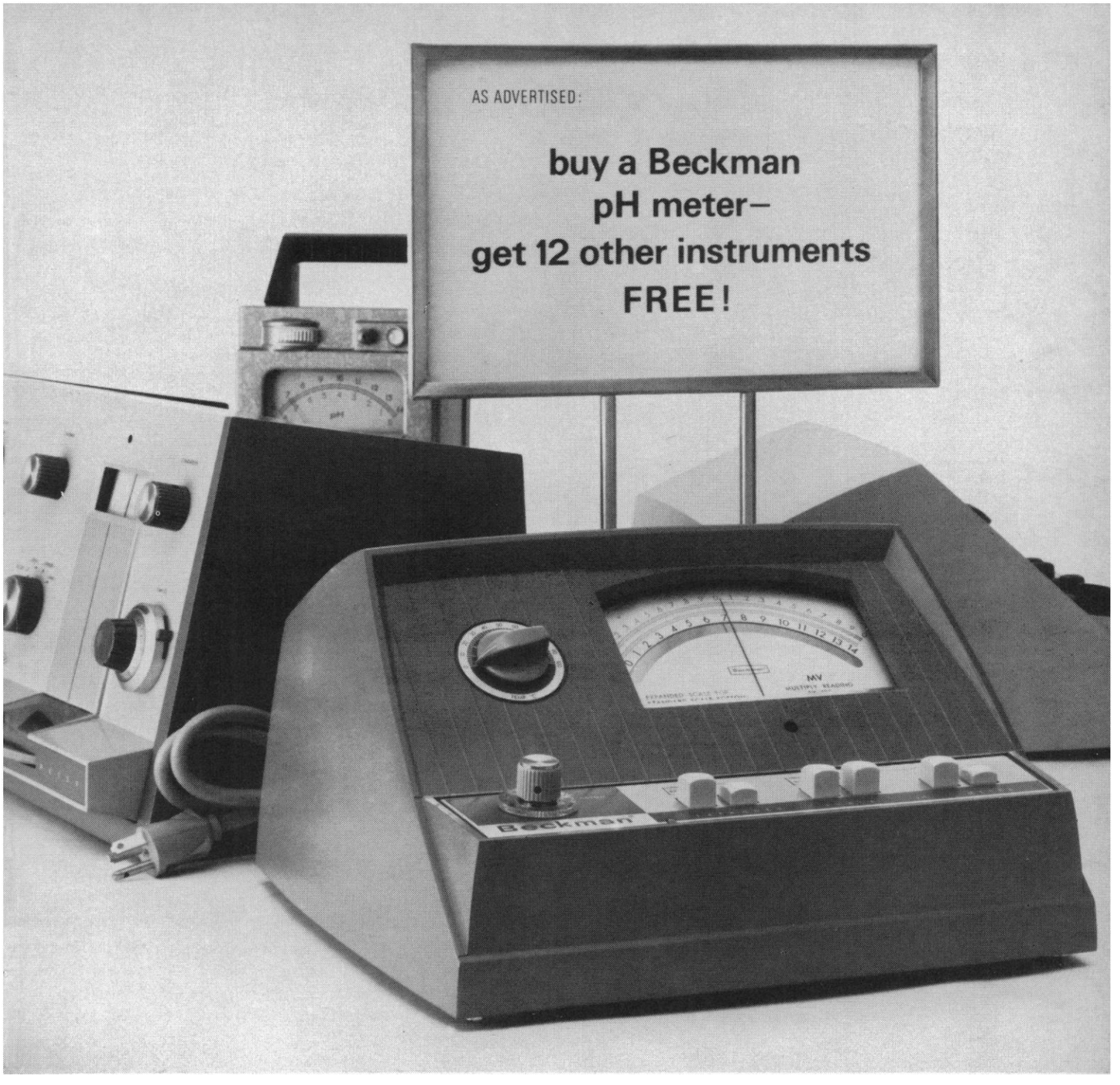

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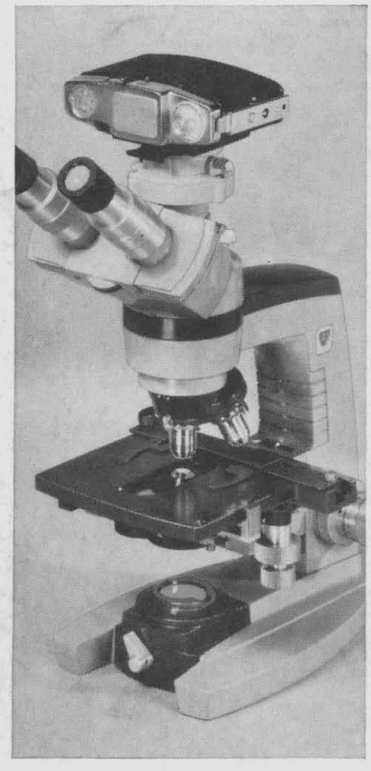

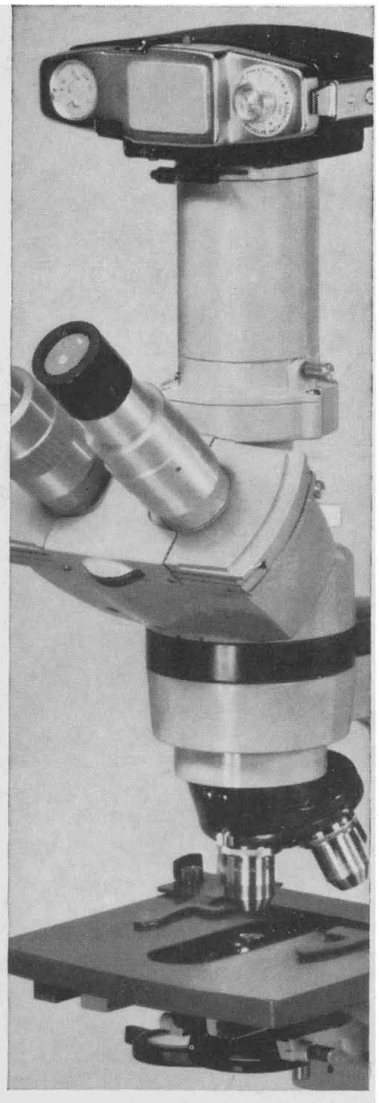

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