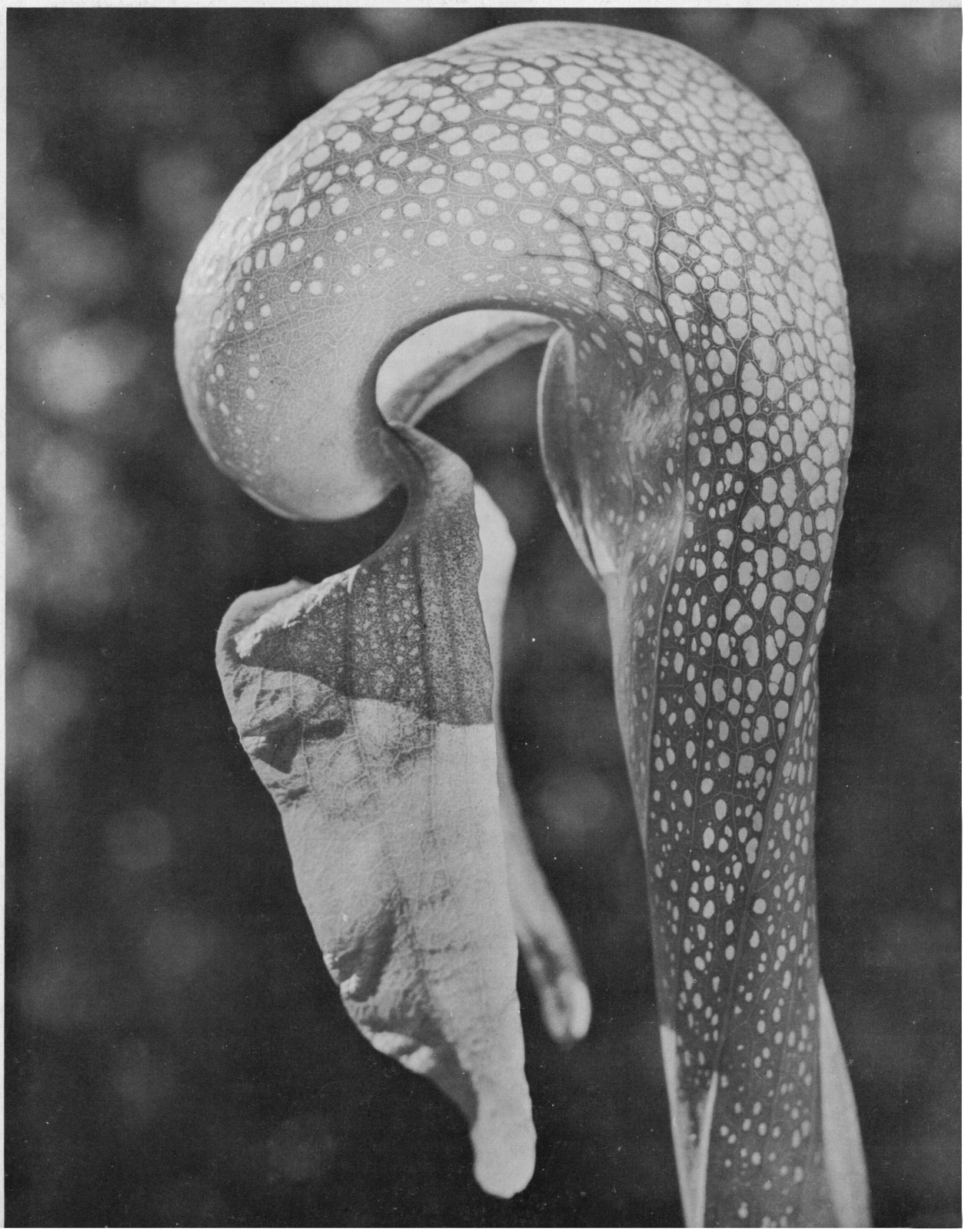
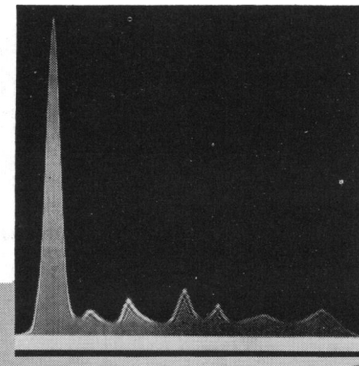
SCIENCE

25 August 1961

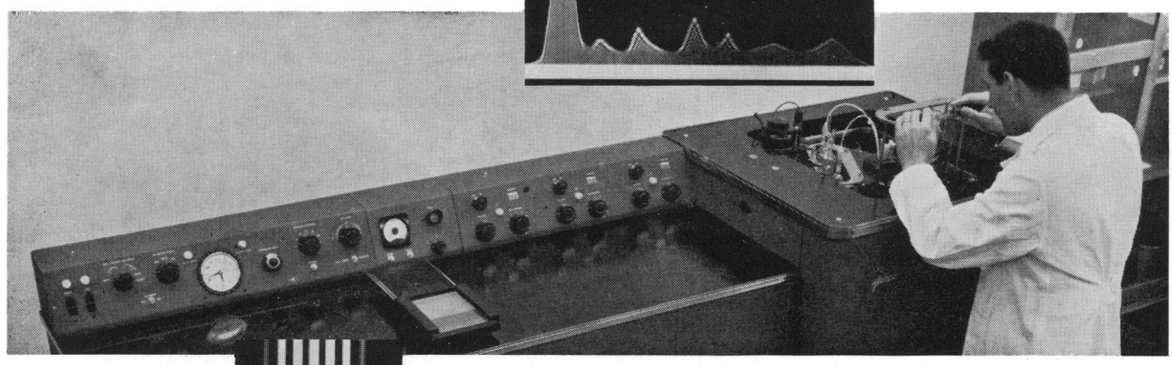
Vol. 134, No. 3478

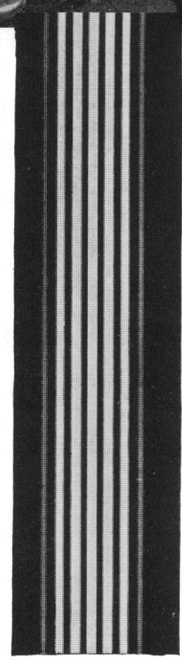
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE





Electrophoresis of human plasma diluted 1:6; ascending boundaries. Inclined knife-edge schlieren.





Portion of typical reference fringe pattern obtained from standard production model, magnified to show straightness and definition of entire pattern.

ELECTROPHORESIS AND DIFFUSION

in one precision instrument

As protein research progresses, biochemists rely more and more upon instruments of high precision for diffusion and electrophoresis studies. Especially critical are the optical measurements needed to obtain accurate diffusion coefficients, absolute electrophoretic mobilities, and information on purity.

An exceptional optical system is one of the outstanding features which have made the Spinco Model H invaluable for exacting work in both electrophoresis and diffusion. Light passes through each operating cell twice, giving double sensitivity. Patterns are sharply defined and peak positions can be precisely determined. Reproducible measurements may be made to better than 1/25 of a fringe, which corresponds to approximately .00025 percent protein.

The optical system is flexible, too. It permits measurements by five different methods — ordinary and cylindrical lens schlieren, Rayleigh and Gouy fringes, and mechanical scanning.

Further versatility is achieved by a rotary cell turret which supports three operating cells. Any combination of diffusion and electrophoresis studies may be performed simultaneously with the three cells.

We'd like to tell you more about the Model H and how it can fit the requirements of your research program. For complete details, please write Spinco Division, Beckman Instruments, Inc., Stanford Industrial Park, Palo Alto, California, for information File H-5.

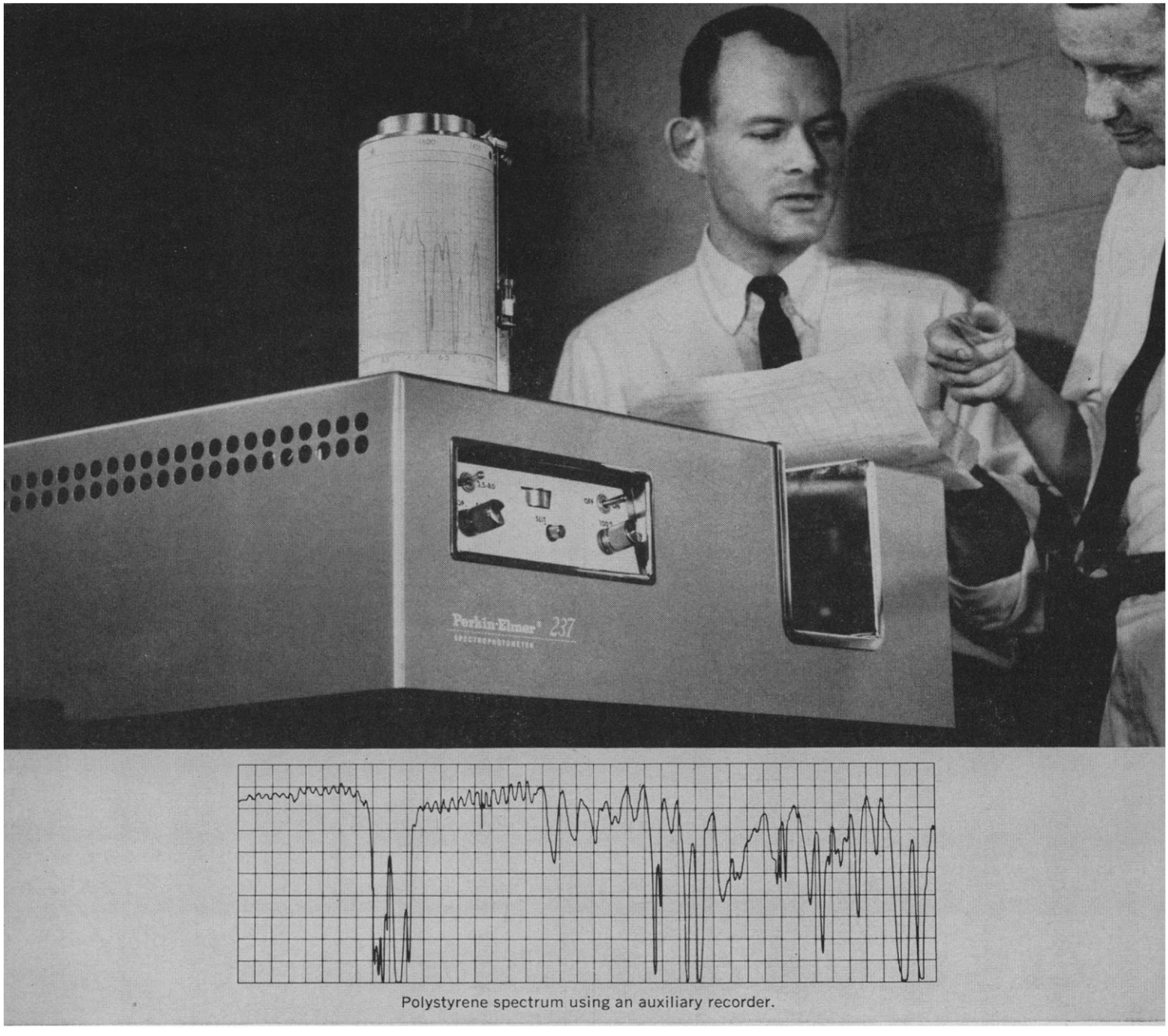
Sales and service facilities on the Model H are available on the same basis as for Spinco Ultracentrifuges, assuring prompt, efficient service for users here and abroad.

Beckman® / **Spinco Division**

Beckman Instruments, Inc.

S-53

SCIENCE is published weekly by the AAAS, 1515 Massachusetts Ave., NW, Washington 5, D C. Second-class postage paid at Washington, D.C., and additional mailing office. Annual subscriptions: $8.50; foreign postage, $1.50; Canadian postage, 75¢.



Polystyrene spectrum using an auxiliary recorder.

NOW... GRATING RESOLUTION OVER FUNDAMENTAL IR RANGE WITH NEW MODEL 237 SPECTROPHOTOMETER

You now can have the advantages of high-resolution analysis over the entire infrared spectral range of fundamental analytical importance—4000 to 625 wavenumbers (2.5 to 16 microns)... even if your budget is limited. The new Perkin-Elmer Model 237 Double-Grating Spectrophotometer, latest in P-E's low-cost Infracord line, makes this possible.

Basic to this high performance at low cost is the Model 237's grating-filter design: the dispersing power of gratings, used only in their first orders, is complemented by filters to eliminate higher orders of radiation. The result is outstanding spectral purity achieved with simplicity and dependability of mechanical operation previously not available.

Flexible Presentation. You can specify a Model 237 recording in either linear wavelength *or* linear wavenumbers, as you prefer. Full wavelength coverage is divided into two ranges—4000-1300 and 2000-625 wavenumbers; *or* 2.5-7.7 and 5.0-16 microns. The analyst selects the range he desires by the flick of a panel switch, thus assuring maximum legibility of fine structural detail.

Two scanning rates for each range are available: *fast* (8 minutes) rate for survey scans or spectra of materials with relatively few narrow spectral bands. *Slow* (24 minutes) rate provides details of very complex spectra. Here, too, a panel switch puts both speeds at the analyst's fingertips.

Optional auxiliary recorders, used above to show polystyrene spectrum, are available to give you continuous spectra at fixed wavelengths or to let you expand or compress ordinate or abscissa. The chart ordinate—a full 15 centimeters—provides maximum accuracy in recording band intensities.

Write for complete information and sample spectra.

SEE PERKIN-ELMER AT ACS AND ISA

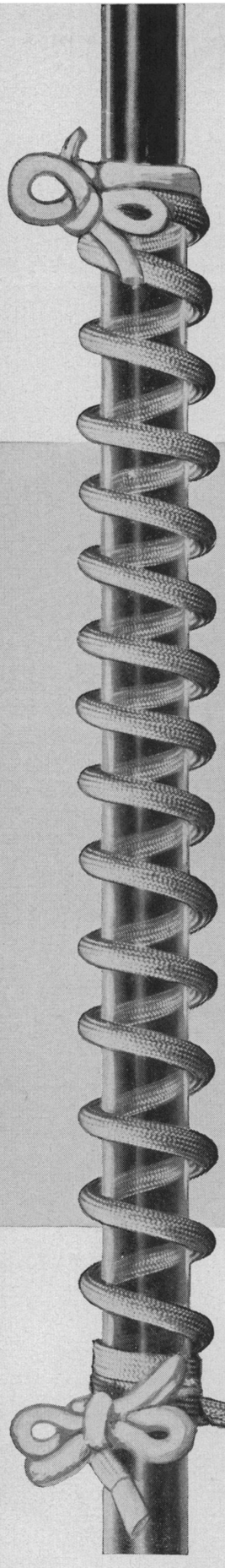
INSTRUMENT DIVISION
Perkin-Elmer *Corporation*
NORWALK, CONNECTICUT

25 August 1961, Volume 134, Number 3478

SCIENCE

Cover

Leaf of the unusual *Darlingtonia californica*, or western pitcher plant, a native of northern California and adjacent Oregon. Like other carnivorous plants of this group, the tubular base constitutes a liquid-filled trap; at the top the leaf is strikingly translucent. The general resemblance to a snake's head has suggested another common name—cobra plant. [W. H. Hodge, Kennett Square, Pa.]



High temperature in a hurry with CAL-CORD* for the lab

Just wrap it and plug it in...

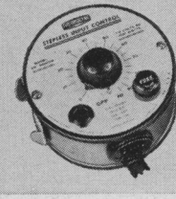
This reliable, cord-type heating unit was developed specifically for laboratory work. Easy-to-use Cal-Cord is as flexible as an appliance cord. Delivers uniform temperatures up to fabric limits of 400°C for glass fabric, or 600°C for quartz fabric. Paralleled ribbon-type heating elements terminate at one end into a single twistlock connection for joining to supply cord. No troublesome, unsafe loose terminals on the ends. Cal-Cord comes complete with power supply cord and plug. Eight new sizes now available.

Cal-Cord Specifications

	Cat. No.	Length	Wattage	Price
400°C Medium Cal-Cord Made of glass fabric material	C-C 2	2 ft.	80W, 115V	$ 6.50
	C-C 3	3 ft.	120W, 115V	9.00
	C-C 4	4 ft.	160W, 115V	11.00
	C-C 6	6 ft.	240W, 115V	15.00
	C-C 8	8 ft.	340W, 115V	19.00
	C-C 10	10 ft.	400W, 120V	23.00
	C-C 12	12 ft.	480W, 220V	27.00
	C-C 14	14 ft.	560W, 220V	31.00
	C-C 16	16 ft.	640W, 220V	35.00
	Cat. No.	**Length**	**Wattage**	**Price**
600°C Super Cal-Cord Made of quartz fabric material	SC-C 2	2 ft.	200W, 115V	$ 8.00
	SC-C 3	3 ft.	300W, 115V	13.75
	SC-C 4	4 ft.	400W, 115V	16.75
	SC-C 6	6 ft.	600W, 230V	19.50
	SC-C 8	8 ft.	800W, 230V	25.50

Cal-Cord Temperature Control

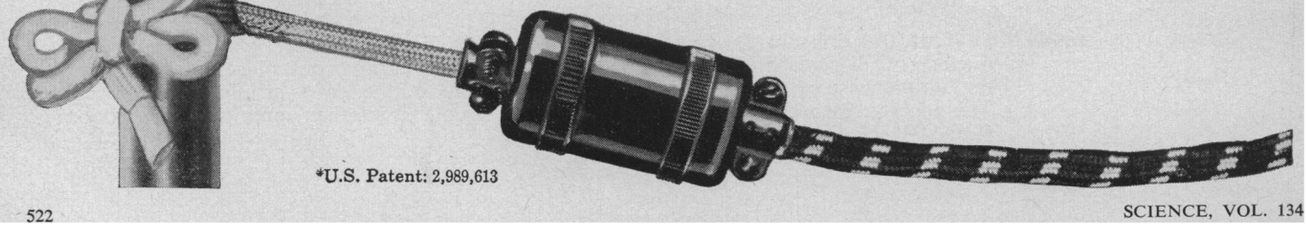
Thermolyne Stepless Type 800 temperature controller is ideally suited for use with any Cal-Cord. Specifications: 1500W, 115V; maximum amps, 13. Price $15.75.



For additional information, please write to . . .

Glas-Col Apparatus Company / Dept. SC, 711 Hulman St., Terre Haute, Indiana

World's largest manufacturer of heating mantles for laboratory, pilot plant, and chemical process heating applications



*U.S. Patent: 2,989,613

APPLICATION FOR HOTEL RESERVATIONS
128th AAAS MEETING
Denver, 26-31 December 1961

The hotels for the AAAS Denver meeting have established **special, low rates** and have reserved appropriately large blocks of rooms for this meeting. Thus everyone making room reservations for the AAAS meeting is assured substantial savings.

The list of hotels and the reservation coupons below are for your convenience in making your hotel reservation in Denver. Please send your application, *not* to any hotel directly, but to the AAAS Housing Bureau in Denver and thereby avoid delay and confusion. The experienced Housing Bureau will make assignments promptly; a confirmation will be sent you in two weeks or less.

If requested, the hotels will add a comfortable rollaway bed to any room, at $3.00 per night. Mail your application now to secure your first choice of desired accommodations. All requests for reservations must give a definite date and estimated hour of arrival, and also probable date of departure.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

For a list of the headquarters of each participating society and section, see page 197, *Science*, 21 July. The Hilton is the AAAS headquarters hotel.

Rates for Rooms with Bath*

Hotel	Single for one	Double for one	Double for two	Twin Beds for one	Twin Beds for two	Studio Twins	Suites
Hilton	$8.50	$10.00	$14.00		$14.00	$15.00	$27.00 to $55.50
Brown Palace	8.00	9.00	13.00	$10.00	15.00		24.00 to 65.00
Cosmopolitan	8.50	9.00	13.00	10.00	14.00		25.00 to 60.00
Shirley Savoy		7.50	10.00	9.00	12.00		25.00 to 40.00

* All rooms are subject to a 2% Colorado State sales tax.

THIS IS YOUR HOUSING RESERVATION COUPON

AAAS Housing Bureau
225 West Colfax Avenue
Denver 2, Colorado

Date of Application .....

Please reserve the following accommodations for the 128th Meeting of the AAAS in Denver, 26–31 December 1961:

TYPE OF ACCOMMODATION DESIRED

Single Room ..... Double-Bedded Room ..... Twin-Bedded Room ..... Studio Twins .....

Suite ..... Desired Rate ..... Maximum Rate .....

Number in party ..... Sharing this room will be: .....

(Attach list if this space is insufficient. The name and address of each person, including yourself, must be listed.)

.....

.....

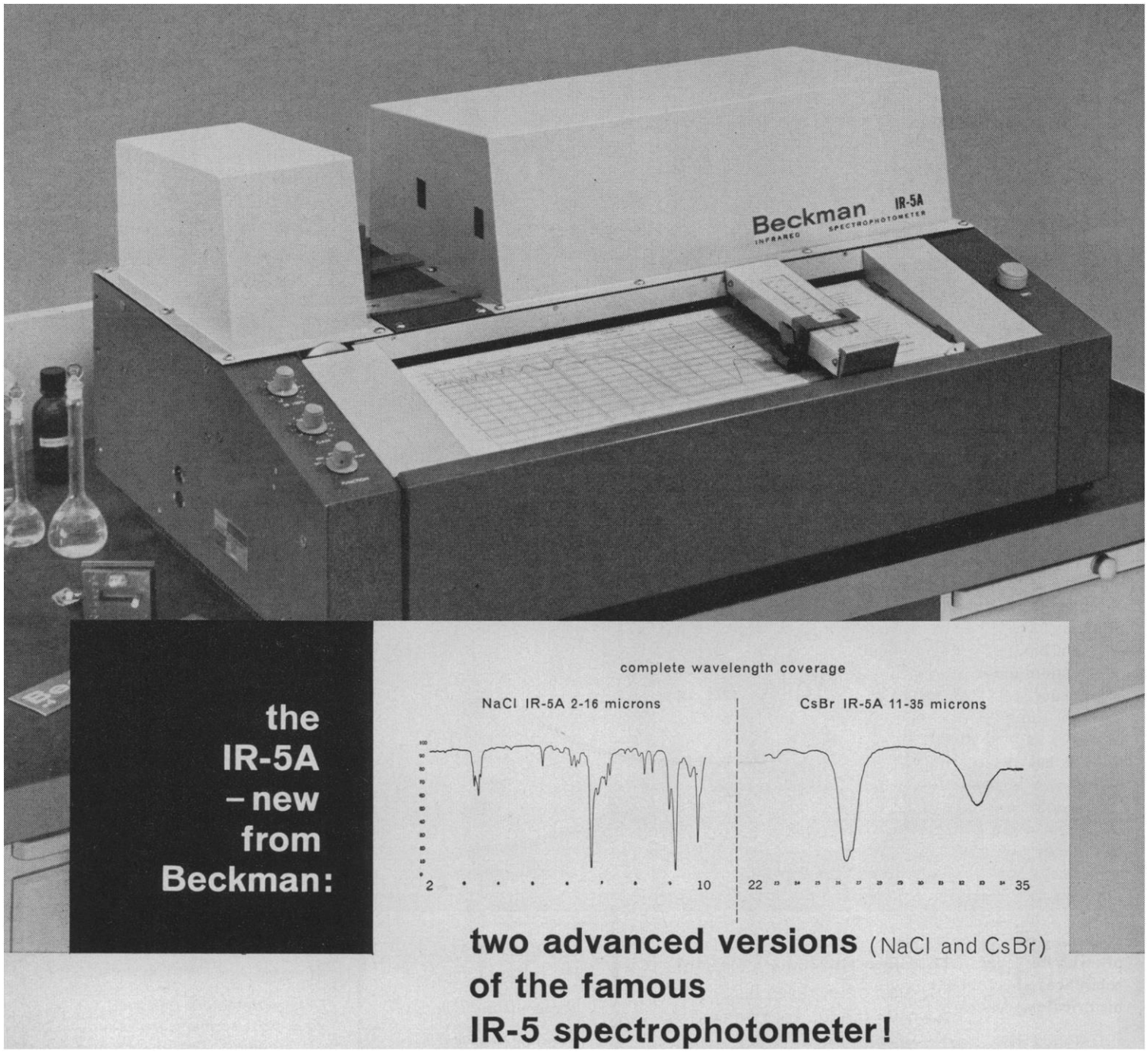
First Choice Hotel ..... **Second Choice Hotel** ..... **Third Choice Hotel** .....

DATE OF ARRIVAL ..... DEPARTURE DATE .....
(These must be indicated—add approximate hour, A.M. or P.M.)

NAME .....
(Individual requesting reservation) (Please print or type)

ADDRESS .....
(Street) (City and Zone) (State)

Mail this now to the Housing Bureau. **Rooms will be assigned and confirmed in order of receipt of reservation.**



the IR-5A – new from Beckman:

two advanced versions (NaCl and CsBr) of the famous IR-5 spectrophotometer!

Beckman presents the new, low-cost IR-5A in two models for complete coverage of the 2 to 35 micron range. For determinations in the 2 to 16 micron range, choose the IR-5A with NaCl optics – an even more rugged, reliable, and versatile version of the IR-5, long-time laboratory workhorse for qualitative and quantitative analyses. For information in the 11 to 35 micron region – never before possible with a low-cost instrument–choose the new CsBr IR-5A.

Call your nearest Beckman Field Sales Office for a demonstration, or write for Data File 38-34-02.

DUAL SPEED • The IR-5A provides 15-minute scanning for exceptional resolution and precise information, plus 3-minute scan for 5 times as many scans when making routine surveys.

SINGLE- AND DOUBLE-BEAM OPERATION • Simply flip a switch to go from normal double-beam operation to single-beam for reaction rate studies or energy recording.

SAMPLING VERSATILITY • IR-5A accommodates all Beckman infrared sample handling accessories for micro liquid, gas, or solid sampling. And the IR-5A is the only low-cost instrument capable of handling a 10-meter multi-path gas cell for the extreme sensitivity needed to detect trace components.

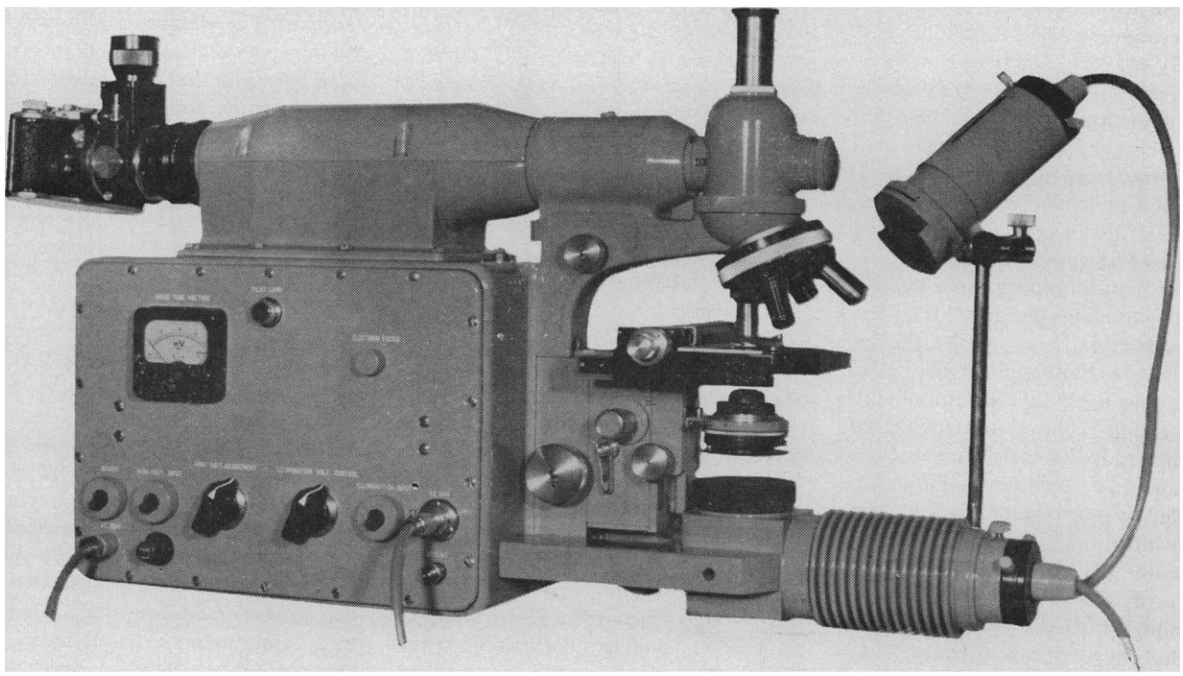
INTEGRAL PLUG FOR EXTERNAL RECORDER • An external recorder can easily be plugged into the IR-5A for simultaneous spectra recording.

Beckman INSTRUMENTS, INC.

SCIENTIFIC AND PROCESS INSTRUMENTS DIVISION
Fullerton, California

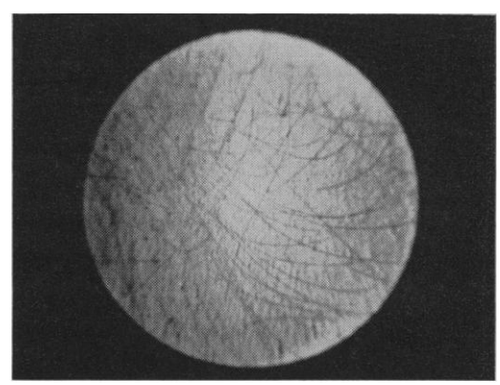
Introducing . . .

the new NEC INFRARED Microscope

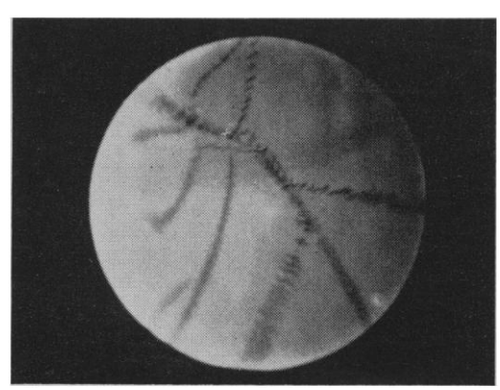


Erb & Gray Scientific is proud to present, as exclusive United States distributor, the new NEC type NV-11 Infrared Microscope. It was designed to fulfill a need for a microscope for carrying out investigations impossible with visible light microscopy. The NEC NV-11 has proven its value in crystallography research, with an emphasis on single crystals of silicon, as well as magnetic materials such as yttrium iron garnet and others. It has also proven invaluable in the fields of biology, physics, chemistry and medicine.

The NEC type NV-11 Infrared Microscope provides a magnification range of 50x through 1500x, visual, and 5x through 150x photographically, using standard film. Untrained personnel can easily operate this versatile new instrument, utilizing this versatile new instrument, utilizing not only infrared, but visible light. Please call or write for additional information.



Silicon crystal at 11x



Silicon crystal at 77x

ERB & GRAY SCIENTIFIC, Inc.

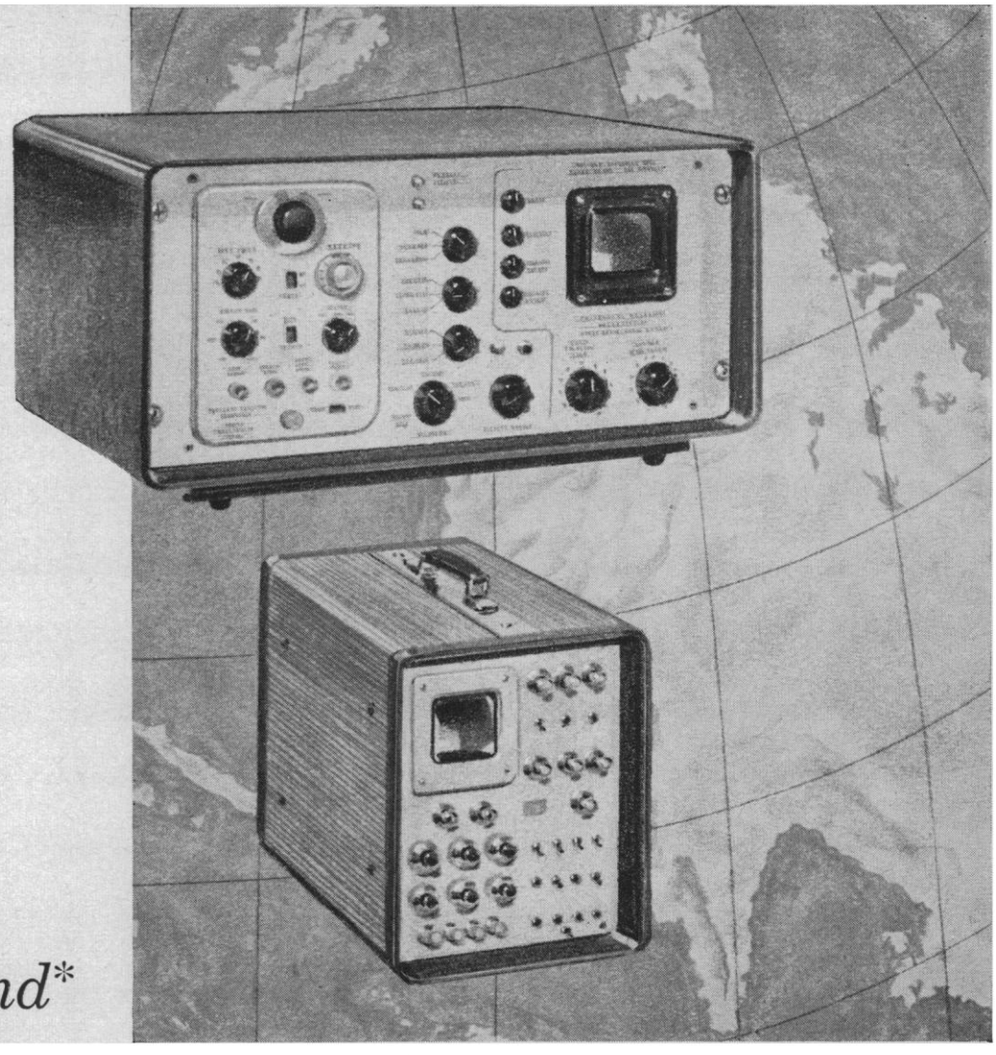
5927 Riverdale Ave.,
New York 71, N.Y.

•

1103 Westgate Ave.,
Oak Park, Ill.

854 South Figueroa St., Los Angeles 17, Calif.

*What's good for nuclides in New Haven is good for those in New Zealand**



We think the reason people all over the world buy TMC pulse analyzers is pretty much the same reason they're widely purchased and used here: competently designed, bug-free circuits . . . straightforward operation with the same performance and stability today as yesterday . . . easy access to sub-assemblies and uncomplicated servicing if needed. Another way of putting it is the instruments give the user the information he wants in *his* work — with predictable behavior—regardless of where his site, lab or plant may be located. Here are two current examples:

The TMC CN-110 256 channel analyzer offers 7 interchangeable plug-in logics, including pulse height, time of flight, pulsed neutron, multiscaler, mass spectrometer, and coincidence pair. This widely used and thoroughly proven analyzer (over 100 units have been delivered) employs all-transistorized circuitry. Analog, binary, octal and decimal readout may be used. Data can be recorded on strip chart or X-Y recorders, printed paper tape, punched paper tape, or punched cards.

The Model 404 is a compact, 400-channel analyzer you can use anywhere there's a wall outlet and one square foot to put it down. It has a magnetic core memory that can be used in sub groups of two or four; four separate inputs and associated amplifiers; internal pulse routing circuity; pushbutton data transfer and display overlap; power requirement of *only 25 watts*, and many "system" advantages. While its versatility is a little less than the CN-110's, so are its size, price and purpose quite different from the 110's. Each does its *own* job well.

**Also wherever TMC Pulse Analyzers are used... in Canada, Brazil, Australia, Japan, Yugoslavia, France, Italy, Germany, Belgium, Sweden, Denmark, Switzerland, Israel, Formosa . . . as well as the United States.*

WRITE FOR LITERATURE.

TMC TECHNICAL MEASUREMENT CORPORATION
441 WASHINGTON AVE., NORTH HAVEN, CONN. • CE 9-2501

25 August 1961, Volume 134, Number 3478

SCIENCE

SCIENCE, now combined with THE SCIENTIFIC MONTHLY, is published each Friday by the American Association for the Advancement of Science at National Publishing Company, Washington, D.C. SCIENCE is indexed in the *Reader's Guide to Periodical Literature.*

Editorial correspondence should be addressed to SCIENCE, 1515 Massachusetts Ave., NW, Washington 5, D.C. Manuscripts should be typed with double spacing and submitted in duplicate. The AAAS assumes no responsibility for the safety of manuscripts. Opinions expressed by authors are their own and do not necessarily reflect the opinions of the AAAS or the institutions with which the authors are affiliated. For detailed suggestions on the preparation of manuscripts, see *Science* **125**, 16 (4 Jan. 1957).

Advertising correspondence should be addressed to SCIENCE, Room 1740, 11 West 42 St., New York 36, N.Y.

Change of address notification should be sent to 1515 Massachusetts Ave., NW, Washington 5, D.C., 4 weeks in advance. Furnish an address label from a recent issue. Give both old and new addresses, including zone numbers.

Annual subscriptions: $8.50; foreign postage, $1.50; Canadian postage, 75¢. Single copies, 35¢. Cable address: Advancesci, Washington.

A Machineless Teaching Machine

Instructions: Cover the items below with a piece of paper, lowering the paper item by item as you read. For each item fill in the blank spaces. The words in parentheses that preface the *next* item give the correct response. Use reasonable judgment in deciding whether your response is synonymous with the printed response. Now, read the items.

To determine whether a student has understood a point, a teacher may _____ him a question.

(ask) If the student gives an incorrect answer, the teacher may tell him the _____ answer.

(correct) Sometimes a teacher will _____ a student a question and then, if necessary, tell him the _____ answer.

(ask, correct) Confirmation of success is also a part of pedagogy. If the student gives the correct answer, then he receives _____ of success.

(confirmation) If the student answers correctly, his success is _____; if he answers incorrectly, the teacher tells him the _____ answer.

(confirmed, correct) A fast learner likes to advance rapidly, while a slower learner is happier at a slower rate, each student advancing best at his own _____.

(rate) It would require an individual tutor for each student to insure that each student advanced exactly at his _____ rate.

(own) The teacher of a classroom is not able to insure that each student advances exactly at his _____ _____.

(own rate) A teaching machine presents a sequence of statements, one at a time, to the student. The student writes his responses on a strip of paper accessible through an opening in the machine. Each statement, in effect, _____ the student a question.

(asks) The student then operates the machine to make his written response inaccessible, but visible through a window, and to reveal the correct response for comparison. If the student is correct, his success is _____; if he is incorrect he is told the _____ answer.

(confirmed, correct) A teaching machine is like a teacher in that the student is _____ questions, his successes are _____, and his mistakes are _____.

(asked, confirmed, corrected) A teaching machine has the advantage of an individual tutor in that each student proceeds at exactly his _____ _____.

(own rate) An ordinary textbook also allows each student to proceed at his _____ _____, insofar as he is able to proceed by himself.

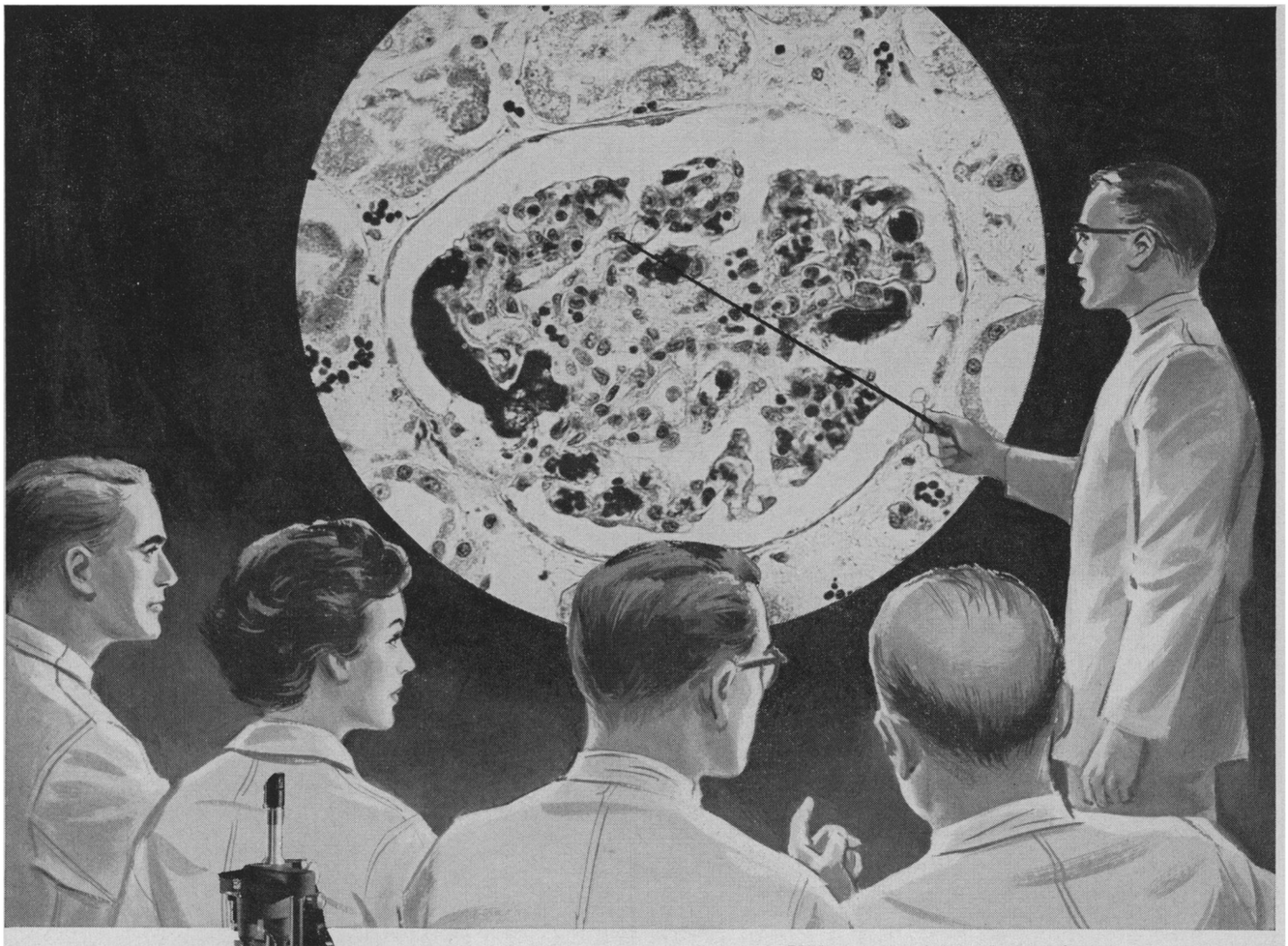
(own rate) But in an ordinary textbook the student is not _____ questions, nor are his successes _____, nor are his mistakes _____.

(asked, confirmed, corrected) James G. Holland and B. F. Skinner in their *The Analysis of Behavior,* published by McGraw-Hill, now offer a new kind of textbook that does offer these features. The book is, in effect, a machineless _____ _____.

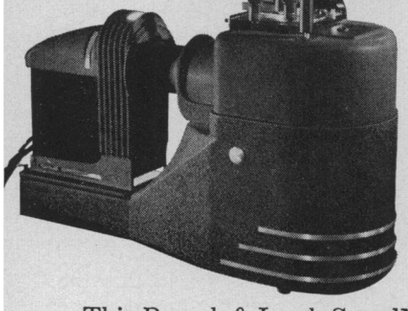
(teaching machine) The sequence of items that you are now reading is an example of the technique used in either a real teaching machine or in a _____ teaching machine.

(machineless) The new book makes for truly unforgettable reading, and we recommend that you _____ it.

(read).—J.T.



Kidney, 300X (Rochester General Hospital)



Consultation needs this BETTER, BRIGHTER VIEW

This Bausch & Lomb SpeedMatic Microprojector fills the screen with the sharpest consultation-size images you've ever seen of microscope slide detail. You can fit the magnification to the specimen—from 75X to 3000X at a projection distance of only 12 feet. Superior optics plus a color-free glass heat-absorbing filter project the specimen image in its true colors. Only with extremely heat-sensitive materials is additional absorption required.

You get today's most vivid views, for consultation, group discussion, instruction—with the easiest-to-use projector on the market! So much of it is automatic—like the synchronization of the *right* condenser with the objective you select; and like the self-adjusting carbons that burn evenly for an hour or more without attention from you. See for yourself!

Made in America, to the world's highest standards.

BAUSCH & LOMB
SINCE 1853

BAUSCH & LOMB INCORPORATED
77420 Bausch Street, Rochester 2, N. Y.

☐ Please demonstrate SpeedMatic.
☐ Please send Catalog E-246.

Name .....

Title .....

Professional Address .....

.....

Examples of Current Projects at Two Institutes of the National Academy of Sciences in Moscow

Vernadsky Institute

A. P. Vinogradov: radiocarbon dating; sulfur isotopes; geochemistry of tungsten; titanium content of bauxites; chemical evolution of the earth.

N. I. Khitarov: reactions at high temperatures under hydrothermal conditions; solubility of water and carbon dioxide in silicate melts; pressure-volume-temperature relations in the system H_2O–CO_2; conditions of formation of zeolites.

A. I. Tugarinov: geochronology; lead isotopes; ratios of rare-earth metals and hafnium-zirconium in minerals and rocks.

G. P. Malyuga: geochemical and biogeochemical prospecting.

A. B. Ronov: distribution of rare metals in sedimentary rocks of the Russian platform; paleogeochemical maps; geochemical history of atmosphere and hydrosphere.

V. V. Scherbina: behavior of trace metals in the weathering zone; concept of acidity in silicate melts.

V. L. Barsukov: geochemistry of tin and boron.

Institute of the Geology of Ore Deposits

F. V. Chukhrov: occurrence and mineralogy of clay deposits.

D. S. Korzhinsky: theoretical thermodynamics, especially thermodynamics of open systems; thermodynamics applied to magmatic processes, metamorphism, and ore deposits.

I. I. Ginzburg: geochemistry of weathering; origin of laterites and bauxites; geochemical prospecting.

A. A. Saukov: geochemistry of mercury; prospecting for metals and oil.

G. D. Afanasiev: geochronology, igneous rocks, and ore deposits of the Caucasus.

A. A. Ostrovsky: solid-state phase relations at high temperatures and pressures.

G. S. Gorshkov: geochemistry of volcanic exhalations in Kamchatka and the Kuril Islands off the coast of Japan.

L. N. Ovchinnikov: ore deposits of the Urals; hydrology of northeast Siberia.

onous food, the inadequate housing, the crowded stores with dull show-window displays—is remarked by every tourist from the West. There was no argument on this point by my geologist friends; they know enough of the West, either through personal visits or through conversations with foreigners, to realize how low the Russian standard of living is by comparison. Their reaction was simply that a low living standard is not important as long as conditions are improving. "Look at the primitive conditions we started from," they insist. "Remember that only recently we fought a disastrous war in which much of our land was overrun by the enemy. We have made great strides already, and now progress is visible from month to month, almost from day to day." The feeling of steady improvement, the joy of seeing more and more goods available in stores, the satisfaction of watching apartment houses materialize almost overnight, are enough to nurture enthusiasm despite present scarcities.

An important ingredient in the world outlook of Russian scientists is the idea that their government has given them freedom in large and increasing measure. This attitude came as a shock to my Western ears, so long accustomed to hearing the West described as the "free world," in contrast to the "slave world" of the Communists. Far from acting like slaves, my Russian acquaintances boasted of their freedom, maintaining even that in some respects freedom under communism is superior to that in the West. They seemed genuinely puzzled by the assurance of Westerners that true freedom exists only outside the Soviet world. The confusion arises in large part from a difference in usage of the word *freedom*—or more precisely, a difference in the kinds of freedom that seem particularly important on the two sides of the Iron Curtain.

Perhaps uppermost in the minds of my Russian acquaintances when they speak of freedom is freedom of opportunity—opportunity to get an education and then to work at a job and in a place of one's own choosing. Every Russian, I was repeatedly told, as part of his elemental rights is guaranteed a free education up to the limit of his abilities—and the opportunity does not depend on the size of his father's fortune or the color of his skin. If a Russian is trained in a profession he is expected to work for a few years in that profession (this seems reasonable inasmuch as the state has paid for his schooling), but subsequently he can change employment as he wishes. His opportunity to move to another job in another city is limited only by the scarcity of housing, which in some parts of the country is still acute.

Freedom from fear of arbitrary arrest is another blessing that my friends rated very high, perhaps especially high because it is a freedom that has come to the Soviet Union only recently. Political prisoners have been released from the notorious Siberian camps, I was told by two geologists who have worked in Siberia, and the camps are now used only for common criminals. Two geologists went so far as to maintain that Soviet law ensures greater protection for individual rights than do the laws of Western nations. What measure of truth there is in these assertions I will not here attempt to judge, but they are articles of belief among Russian scientists.

Freedom from another kind of fear, the fear of economic insecurity, has been very largely attained in Russia, I was told, for the government guarantees employment, medical care, and old-age support. So accustomed are my friends to regarding continuous employment as a basic right of every citizen that they find unemployment in Western states hard to comprehend.

Meetings

International Andean Year

On the initiative of UNESCO and by invitation of Angel Establier (head of the organization's Scientific Office in Latin America, located in Montevideo), who was interested in this project from its very beginning, a meeting was held in Buenos Aires on 3 and 4 April 1961 to discuss the planning of an International Andean Year, during which an intensive study would be carried out on the range of mountains known as the Cordillera de los Andes, which extends from Panama to the southern part of the Continent.

Scientists from various interested countries participated in the meeting—H. O'Reilly Sternberg (Brazil); Guillermo Mann (Chile); Tobías Lasser (Venezuela); Ovidio Suarez (Bolivia); and Eduardo Baglietto, M. Olascoaga, F. Bonorino Udaondo, J. Roederer, Angel Cabrera, M. Sadosky, B. A. Houssay, and V. Deulofeu, all from Argentina. Unfortunately, A. Hurtado, from Peru, could not attend the meeting. Angel Establier represented UNESCO, and his office will be the center for the various groups in preparing the project.

After a few words of welcome by M. Sadosky, vice-dean of the faculty of exact and natural sciences, University of Buenos Aires, Venancio Deulofeu was elected chairman; Establier acted as advisory secretary. Four sessions were held in all.

All present agreed that the project to institute an International Andean Year was of great importance, not only because of its extent and because of the scientific results which could be obtained but also because of the number of scientists involved and the expected participation by countries outside South America. It was also felt that a project of this magnitude would have a favorable impact on the progress of science and the future scientific development of most of the South American countries.

Discussions dealt with the fields in which it would be desirable to have activities during the International Andean Year. It was tentatively decided that it would be possible and convenient to work in the following subject areas: geology; botany; geophysics; human biology; zoology; human ecology; geomorphology, including glaciology; high-altitude physics; soil sciences; geography; agronomic sciences (in collaboration with the U.N.'s Food and Agriculture Organization); sociology and ethnography (both in collaboration with the Social Sciences Institutes); archeology; anthropology; and economics [in collaboration with the Economic Commission for Latin America (CEPAL)].

In each of these fields some subdivisions were outlined, and, as examples of the type of work which would be involved, some specific projects were mentioned. For instance, it was suggested that in studying the geology of the Andes it would be desirable to concentrate on the evolution of the Andean range, especially the tectonic and magmatic cycles of the Andean syncline; on tertiary and quaternary vulcanism; and on magmatic provinces in the Andes.

A larger meeting was planned for December 1961. This will be held in Santiago de Chile, to consider some reports to be presented by the scientists participating in the meeting in Buenos Aires and to elaborate and develop the specific projects in each scientific field.

In the meantime, the UNESCO Scientific Office in Montevideo will start compiling a bibliography on research done on the Andes and collecting the names of scientists who have been active in that field, or who, because of their training, will be able to participate in the activities planned for the International Andean Year.

Further information on this project can be obtained from Dr. A. Establier, Centro de Cooperación Científica de la UNESCO para América Latina, Boulevard Artigas 1320, Montevideo, Uruguay.

V. DEULOFEU
Parera 77, Buenos Aires, Argentina

Forthcoming Events

September

11–15. Radioecology, symp., Fort Collins, Colo. (Miss A. Barker, American Inst. of Biological Sciences, 2000 P St., NW, Washington 6)

11–16. International Union for the Scientific Study of Population, 12th congr., New York, N.Y. (C. V. Kiser, Milbank Memorial Fund, 20 Wall St., New York 5)

11–16. University of Hong Kong, intern. scientific congr., Hong Kong. (University of Hong Kong, Hong Kong)

11–19. International Congr. of Navigation, 20th, Baltimore, Md. (E. W. Adams, Jr., 22 Light St., Baltimore 2)

11–21. International Cloud Physics Conf., Canberra and Sydney, Australia. (E. G. Bowen, Commonwealth Scientific and Industrial Research Organization, University Grounds, Sydney)

12–13. International Federation of Surgical Colleges and Societies, 4th annual Oslo, Norway. (K. Cassels, IFSC Office, Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C.2)

12–15. International Pharmaceutical Federation, 19th general assembly, Athens, Greece. (J. H. M. Winters, Alexanderstraat 11, The Hague, Netherlands)

12–15. Mass Spectrometry, conf., Oxford, England. (W. J. Brown, Instrumentation Div., A.E.I. (Manchester) Ltd., Trafford Park, Manchester 17, England)

13–16. European Congr., of Gerontology, 3rd, Amsterdam, Netherlands. (A. J. S. Douma, Haanplein 8, The Hague, Netherlands)

14–17. Chemotherapy, 2nd intern. symp., Naples, Italy. (P. Preziosi, Casella postale 266, Naples)

14–20. High Energy Physics, intern., Aix-en-Provence, France. (E. W. D. Steel, European Organization for Nuclear Research, Geneva 23, Switzerland)

15–20. World Medical Assoc., 15th general assembly, Rio de Janeiro, Brazil. (L. H. Bauer, 10 Columbus Circle, New York 19)

16–20. German Soc. for the History of Medicine, Physical Science and Technology, Augsberg, Germany. (G. Mann. Secretary, Wilhelmplatz 7, Bonn, Germany)

16–27. International Scientific Film Assoc., 15th congr., Rabat, Morocco. (M. Afifi, 85 Ibn Toumert, Rabat)

18–2. World Meteorological Organization, Commission for Aerology, 3rd session, Rome, Italy. (WMO, 1 Avenue de la Paix, Geneva, Switzerland)

18–20. Applied Spectroscopy, 8th symp., Ottawa, Canada. (R. Lauzon, Div. of Pure Chemistry, National Research Council, Ottawa, Ont.)

18–21. Embryological Conf., 5th intern., London, England. (L. Brent, Dept. of Zoology, University College, London, Grover St., London, W.C.1)

18–22. International Congr. of Neuroradiology, 6th Rome, Italy. (E. Valentino, CIT, Ufficio Congressi, Piazza Colonna 193, Rome)

18–23. Speleology, 3rd intern. congr., Vienna, Austria. (Generalsekretariat des 3rd Internationalen Kongresses für Speläologie, Obere Donaustr. 99/7/1/3, Vienna 2)

18–25. International Seaweed Symp., 4th, Biarritz, France. (M. Barriety, Centre Scientifique, B. P. 28, Biarritz.)

19–21. International Mechanical Pulping Conf., 4th, Chicago, Ill. (J. H. Perry, Norton Co., Worcester, Mass.)

19–22. Australian Conf. on Food Technology, Homebush (near Sydney), Australia. (T. B. Partridge, Australian Scientific Liaison Office, 1907 K St., NW, Washington 6)

19–22. International Office of Documentation of Military Medicine, 23rd session, Athens, Greece. (Intern. Committee of Military Medicine and Pharmacy, Hôpital Militaire, 79 rue Saint Laurent, Liège, Belgium)

19–29. International Conf. on Fish Nutrition, Washington, D.C. (FAO, Intern. Agency Liaison Branch, Office of the Director General, Viale delle Terme di Caracalla, Rome, Italy)

20–21. Industrial Electronics, symp., Boston, Mass. (W. M. Trenholme, General Electric Co., West Lynn, Mass.)

21–22. Air Pollution Control Assoc., annual, Louisville, Ky. (R. Bourne, APCA, Room 2, City Hall, Louisville)

21–22. Conference on Radiofrequency Spectroscopy in Solids, Bangor, Wales. (Physical Soc., 1 Lowther Gardens, Prince Consort Rd., London, S.W.7, England)

21–23. French Medical Congr., 33rd, Paris. (C. Laroche, 34 rue de Bassano, Paris 8)

24–27. American Inst. of Chemical Engineers, Lake Placid, N.Y. (E. R. Smoley, 30 School Lane, Scarsdale, N.Y.)

25–29. European Committee of Liaison for Cellulose and Paper, symp., Oxford, England. (British Paper and Board Makers' Assoc., Technical Section, St. Winifred's, Welcomes Rd., Kenley, Surrey, England)

25–30. Magnetism and Crystallography, intern. conf., Kyoto, Japan. (Science Council of Japan, Ueno Park, Tokyo)

26–30. European Congr. of Aviation Medicine, 6th, Paris, France. (CERMA, 5 bis Avenue de la Porte de Sèvres, Paris)

27–3. International Union of Theoretical and Applied Mechanics, Kiev, U.S.S.R. (Y. A. Mitropolsky, Scientific Committee, Kalinin pl. 6, Mathematical Inst., Kiev)

28–29. European Conf. of Chemical Engineers, Toulouse, France. (Soc. of Industrial Chemistry, 28 rue Saint-Dominique, Paris 7, France)

October

1–3. Council for Intern. Organizations of Medical Sciences. Paris, France. (CIOMS, 6 rue Franklin, Paris 16)

1–4. Process Engineers, annual, Vienna, Austria. (Osterreichischer Intenieur- und Architektenverein, Eschenbachgasse 9, Vienna 1)

1–5. Electrochemical Soc., Detroit, Mich. (Electrochemical Soc., Inc., 1860 Broadway, New York 23)

1–7. International Special Committee on Radio Interference, plenary session, Philadelphia, Pa. (S. D. Hoffman, American Standards Assoc., 10 E. 40 St., New York 16)

1–8. International Congr. of Industrial Chemistry, 33rd, Bordeaux, France. (Société de Chimie Industrielle, 28 rue Saint-Dominique, Paris 7, France)

2–4. Communications Symp., 7th natl., Utica, N.Y. (R. K. Walker, 34 Bolton Rd., New Hartford, N.Y.)

2–7. International Astronautical Federation, 12th congr., Washington, D.C. (American Rocket Soc., 500 Fifth Ave., New York 36)

2–7. Inter-Regional Leprosy Conf., Istanbul, Turkey. (WHO, Regional Office for Europe and Regional Office for the Eastern Mediterranean, 8 Scherfigsvej, Copenhagen Ø, Denmark)

2–7. Climatic Change, symp., Rome, Italy. (UNESCO, Place de Fontenoy, Paris 7, France)

2–11. International Council for the Exploration of the Sea, 49th annual, Copenhagen, Denmark. (Charlottenlund Slot. Charlottenlund, Denmark)

3–5. Physics and Nondestructive Testing, symp., Argonne, Ill. (W. J. McGonnagle, Argonne Natl. Laboratory, 9700 S. Cass Ave., Argonne)

3–8. Aerosol Congr., 3rd intern., Lucerne, Switzerland. (Federation of European Aerosol Assocs., Waisenhaustrasse 2, Zurich, Switzerland)

4–10. Latin American Congr. of Electroencephalography, 5th, Mexico, D.F. (J. Hernandez Paniche, Instituto Mexicano de Seguro Social, Hospital La Raza, Mexico, D.F.)

4–10. Latin American Congr. of Neurosurgery, 9th, Mexico, D.F. (J. H. Mateos, Tonalá No. 15, Mexico 7, D.F.)

6–7. American Medical Writers' Assoc., New York, N.Y. (S. O. Waife, P.O. Box 1796, Indianapolis 6, Ind.)

6–8. Therapeutics, 7th intern. congr., Geneva, Switzerland. (P. Rentchnick, Case Postale 229, Geneva 2)

8–10. Zooplankton Production, symp., Copenhagan, Denmark. (J. H. Frazer, Marine Laboratory, P.O. Box 101, Victoria Rd., Aberdeen, Scotland)

8–11. Society of American Foresters, Minneapolis, Minn. (H. Clepper, SAF, 425 Mills Bldg., Washington 6)

8–13. American Acad. of Ophthalmology and Otolaryngology, Chicago, Ill. (W. L. Benedict, 15 Second St., SW, Rochester, Minn.)

9–11. National Electronics Conference and Exhibition, 17th annual, Chicago, Ill. (NEC, 228 N. La Salle St., Chicago, 1)

9–12. Instrument Symp. and Research Equipment Exhibit, 11th annual, Bethesda, Md. (J. B. Davis, Natl. Institutes of Health, Bethesda 14)

9–12. Water Pollution Control Federation, 34th annual, Milwaukee, Wis. (R. E. Fuhrman, 4435 Wisconsin Ave., NW, Washington 16)

9–13. American Rocket Soc., space flight meeting, New York, N.Y. (ARS, 500 Fifth Ave., New York 36)

9–13. Luminescence of Inorganic and Organic Systems, intern. conf., New York, N.Y. (Miss G. M. Spruch, New York Univ., Washington Sq., New York 3)

10–12. Nuclear Reactor Chemistry, 2nd conf., and Analytical Chemistry in Nuclear Reactor Technology, 5th conf., Gatlinburg, Tenn. (Oak Ridge Natl. Laboratory, P.O. Box X, Oak Ridge, Tenn.)

10–20. International Committee for Biological Control, Tunis. [P. Grison, Laboratoire de Biocenotique et de Lutte Biologique, La Miniere, par Versailles (S.-et.-O.), France]

11–13. Gaseous Electronics Conf., American Physical Soc., Schenectady, N.Y. (C. J. Gallagher, General Electric Research Laboratories, Schenectady, N.Y.)

11–14. Tau Beta Pi Assoc., Cincinnati, Ohio. (R. H. Nagel, Univ. of Tennessee, Knoxville)

11–14. Western Inst. on Epilepsy, 13th annual conf., San Antonio, Tex. (F. Risch, 3097 Manning Ave., Los Angeles, Calif.)

12–13. Congress of Neurological Surgeons, New York, N.Y. (E. Weiford, 4706 Broadway, Kansas City 12, Mo.)

12–29. Pacific Intern. Trade Fair, 2nd, technical meetings, Lima, Peru. (PITF, P.O. Box 4900, Lima)

(See issue of 18 August for comprehensive list)