This is a close-up view of a rack of microslides undergoing staining on the Autotechnicon. The process is completely automatic, and geared to split-second timing. The slides are now descending into one staining-fluid beaker: at the precise moment when the required immersion period has been completed, they will be promptly raised, and rapidly shifted to the next station in the sequence . . . automatically, infallibly. During immersion the slides are rotated gently within the fluid, thus assuring rapid, even stain permeation.

Any technique prescribed by the pathologist may be employed. Once the master dial has been set for the correct time intervals, the method may be repeated time after time, without the minutest variation, and independent of any supervision. Each batch of slides put through is stained in exactly the same way, resulting in unvarying uniformity.

Autotechnicon staining is not only convenient, dependable, time-saving...it produces "Sunday-best" slides . . . every day.

**Autotechnicon**

*Trade Mark Registered U.S. Patent Off*

**automatic tissue processing...fixation, dehydration, infiltration, washing, staining**

**THE TECHNICON COMPANY**

215 East 149th Street • New York 51, N.Y.
A New High in Metering Efficiency

MAISCH
Stainless Steel Metering Pumps

These pumps are designed and built for those requiring the utmost in accuracy and dependability in the metering of small volumes of liquid. They provide for precision control in the dispensing of hot or cold viscous or non-viscous liquids such as soaps, oils, perfume, liquid fat, wax, glue, beverages, fruit juices and numerous chemicals. And they have been found equally valuable for the control of biological fluids and other sterile solutions.

The flow of the Maisch Pump is continuous, smooth and non-pulsating. Variable speed is instantly adjustable to the exact amount desired from zero/ml sec to the maximum capacity of the pump. The simple design permits easy disassembly for cleaning and sterilizing.

Materials used in Maisch Pumps are non-pyrogenic and remain sterile while dispensing sterile liquids. They resist corrosion and chemical reaction of most liquids and do not contaminate or otherwise affect the quality and flavor of beverages.

Maisch Pumps are available in a wide variety of types and capacities ranging from zero to 4.8 gallons per minute. Write today for complete details and prices.

CENTRAL SCIENTIFIC COMPANY
1700 IRVING PARK ROAD • CHICAGO 13, ILLINOIS
CHICAGO NEWARK BOSTON WASHINGTON DETROIT SAN FRANCISCO
SANTA CLARA LOS ANGELES TORONTO MONTREAL VANCOUVER OTTAWA

REFINERY SUPPLY COMPANY
621 EAST FOURTH STREET • TULSA 3, OKLAHOMA
2215 MCKINNEY AVENUE • HOUSTON 3, TEXAS
These signals find the way

When you dial a telephone number, high-speed switching mechanisms select your party and connect you. Through a new development of Bell Telephone Laboratories, similar mechanisms do a similar job in private wire teletypewriter systems which America’s businesses lease from the telephone company.

Company X, for example, operates an air transportation business with offices all over America. At one office, an operator wishes to send a message, let us say, to Kansas City. Ahead of the message, she types the code letters “KC”. The letters become electric signals which guide the message to its destination.

Any or all stations in a network, or any combination of stations, can be selected. Switching centers may handle 50 or more messages a minute...some users send 30,000 messages a day. Delivery time is a few minutes.

Defense manufacturers, automobile makers, airlines and many other American businesses are benefiting by the speed and accuracy of the new equipment—another example of how techniques developed by the Laboratories for telephone use contribute to other Bell System services as well.

BELL TELEPHONE LABORATORIES
Improving telephone service for America provides careers for creative men in scientific and technical fields.
RESEARCH BIOCHEMICALS
For INVESTIGATIONAL USE

AMINO ACIDS

A complete selection of more than 90 amino acids of maximum purity including:

DL ALPHA ALANINE
BETA ALANINE
L ALANINE
DL ALPHA AMINO-n-BUTYRIC ACID
L ARGININE (HCl, Free Base)
ASPARAGINE (L, DL, D)
ASPARTIC ACID (L, DL, D)
BETAININE
DL CITRULLINE
CREATINE
CREATININE
CYSSTEINE (HCl, Free Base)
CYSTINE (L, DL)
DL DOPA
DOPANALIC ACID
DL ETHIONINE
GLUTAMIC ACID (L, DL, HCl)
GLUTAMINE
GLYCYL GLYCINE
HISTIDINE (L, DL, D)
DL HOMOCYSTEINE
DL HOMOCYSTINE
HYDROXY-L-PROLINE
ISOLEUCINE (L, DL, D)
LEUCINE (L, DL, D)
LYSINE (L, DL, D)
LYSINE HCl (L, DL)
METHIONINE
METHIONINE SULFOXIDE
DL NОРYLANINE
ORNITHINE HCl (DL, L)
PHENYLALANINE (L, DL, D)
PHENYLACETIC ACID
PROLINE (L, DL)
SARCOSINE
DL SERINE
B PHENYL SERINE
TAURINE
THEONINE (L, DL, D)
DL ALLO THEONINE
TRYPTOPHANE (L, DL, D)
TYROSINE (L, DL)
VALINE (L, DL, D)

ALSO—A SELECTION OF 20 PEPTIDES

WRITE FOR

NEW CATALOGUE

#S 975
Listing over 600 Research Biochemicals

Nutritional Biochemicals Corporation
Cleveland 6, Ohio

CANCER the subject of outstanding A.A.A.S. Symposium Volumes:

MAMMARY TUMORS IN MICE, 1945:
10 contributors, viii + 223 pages, 7 1/2 x 10 1/4, clothbound, double column, illustrated, $3.50. Cash order price to A.A.A.S. members, $3.00. Coordinated knowledge of cancer of the breast in mice. It cannot fail to stimulate interest and further research efforts in one of our most fascinating and important biological problems. Prepared by members of the staff of the National Cancer Institute.

APPROACHES TO TUMOR CHEMOTHERAPY, 1947:
93 contributors, x + 442 pages, 7 1/2 x 10 1/4, clothbound, double column, illustrated, $7.75. Cash order price to A.A.A.S. members, $6.50. A progress report, addressed largely to future workers. An important and trustworthy reference book. Planned under the auspices of National Cancer Institute, Memorial Hospital of New York, Sloan-Kettering Institute for Cancer Research, Lankenau Institute of Philadelphia, and others.

TO: AAAS PUBLICATIONS
1515 Mass. Ave., N.W., Washington 5, D. C.

Enclosed is $. Please accept my order for

☐ MAMMARY TUMORS in MICE
☐ APPROACHES to TUMOR CHEMOTHERAPY
Sanborn two-channel instruments for the simultaneous recording of two physiological phenomena*

* Phonocardiogram of DIAGNOSTIC quality with High-deflection-speed electrocardiogram

OR, two other physiological phenomena in combination.

PHOTOGRAPHIC Twin-Beam

CARDIETTE

Equipped with one ECG amplifier and one heart sound amplifier. Both are removable and interchangeable.

Additional ECG amplifier available if recording of cardiograms and/or other physiological phenomena in combination is desired.

Paper speeds 2.5, 25 and 75 mm/sec.

AC power operated. 6cm. bromide paper.

* Electrocardiogram with one other physiological phenomenon

OR, two other physiological phenomena in combination.

DIRECT WRITING Twin-Viso

CARDIETTE

Each of the two channels may include either a Carrier Type or General Purpose Amplifier, or the latter in combination with either ECG or DC Preamplifiers. Amplifiers and preamplifiers interchangeable.

Five dual sets of speeds -5 and 0.5, 10 and 1, 25 and 2.5, 50 and 5, 100 and 10 mm/sec.

5 inch recording Permapaper.

For further information on either or both of these instruments, address Sanborn Company CAMBRIDGE 39, MASSACHUSETTS January 2, 1953
Both models of Aminco Electrophoresis Apparatus constitute complete electrophoresis laboratories in single, compact units. They incorporate precise schlieren optics in an air-conditioned space, automatic integral refrigeration system, built-in line-voltage-regulated and current-stabilized high-voltage power supply, rapid internal dialysis facilities, and temperature-regulated water bath.

Aminco-Stern universal research model for large output and a wide variety of sample volumes. BULLETIN 2175-K

Aminco portable model for routine research and clinical use on a smaller scale. BULLETIN 2281-K
What GENERAL ELECTRIC People Are Saying

E. DALE TROUT
JOHN VLACH

X-Ray Department

NEW TOOL FOR MEDICAL RESEARCH: Completion of the Cobalt-60 irradiator marks the beginning of an era which medical researchers look hopefully toward.

Pile-produced isotopes for teletherapy must, among other things, emit gamma radiation and have a half-life longer than 150 days. Radioactive Cobalt-60 emits gamma radiation, has a half-life of 5.3 years, and is obtained from the waste by-products of plutonium production. A 1000-curie Cobalt-60 source should produce a radiation intensity about equal to 1500 grams of radium.

Availability and cost of the source will generally determine the future of Cobalt-60 teletherapy. Until it becomes available at much lower cost, or another artificial source is accessible, the super-voltage x-ray machine will not be supplanted by artificial radioactive sources.

General Electric Review
November, 1952

R. BLOUNT

Lamp Division

ELIMINATION OF TV CAMERA LIMITATIONS: TV pictures with three-dimensional qualities are within reach of TV engineers today. With proper lighting methods and equipment this goal is immediately obtainable.

The following methods will help in obtaining required brightness differences: 1) providing 100 vertical foot-candles of base light; 2) developing form by applying modeling light 30 to 50 per cent greater than base light; 3) separating actors from the background by applying backlight 50 to 100 per cent greater than the base light; and 4) adjusting background brightness with respect to foreground subjects.

Television Studio Clinic
Cleveland, Ohio

H. A. WINNE

Engineering

THE ATOMIC-ELECTRIC POWER INDUSTRY: It is unfortunate that our entry into the atomic energy era was by way of the atomic bomb—and when I say that I am not thinking at all of the use of the bomb. It seems to me that we may have entered the development path at the wrong end.

Most people undoubtedly feel that atomic energy development is so vastly expensive that it would not have come about unless government undertook it.

We certainly would not have had the atomic bomb, at the present time, nor submarine atomic power plants scheduled for the near future, without government financing, but I am not at all sure that we shall have a sound atomic-electric power industry sooner than we would have had if this development had taken a more normal course in the interested private industries.

Various studies now under way contemplate the possible construction of atomic-electric power plants, designed to produce plutonium, with electric power as more or less of a by-product.

This situation would not constitute a sound basis for an atomic-electric power industry. Certainly, barring war, at some time in the future our atomic bomb stockpile should reach an adequately high peak, and the government would not then be justified in continuing to purchase the plutonium output.

Atomic-electric power will be really economically sound only when it can compete with conventional electric power without requiring a government-supported weapons market. It could not do that today—unless in some very peculiar and unusual circumstances—nor, in my opinion, for a good many years to come.

AIEE Machine Tool Conference
Albany, New York

You can put your confidence in

GENERAL ELECTRIC
See it better... See it more easily...
ANY WAY YOU LOOK AT IT!

IN VISUAL RESEARCH MICROSCOPY
Complete line, with widest choice of superb apochromatic objectives for general and highly specialized studies. Slow-motion, low-position fine focusing adjustment; permanently aligned nosepiece; inclined parallel eyepieces, for strain-free observation. Adaptable to phase contrast, dark field and polarized light. Exclusive variable intensity Panfocal Illuminator, optional.

IN ALL MONOCULAR APPLICATIONS
Quickly interchangeable monocular tube adapts instrument for photomicrography, measuring, micro-projection, etc. Widest range of accessories, for maximum use.

IN ON-THE-SPOT PHOTOMICROGRAPHY
Viewing head and camera fit monocular tube. Make your own projection slides, "work-in-progress" records—completely independent of photomicro lab.

WRITE for demonstration and catalog. Bausch & Lomb Optical Co., 642-34 St. Paul St., Rochester 2, N.Y.

Bausch & Lomb Research Microscopes