

# **The best test of any test is your experience**

There will always be claims, counter claims, and confusion in judging between  $T_3$  and  $T_4$  tests, but the best evaluation can only come from:

- years of clinical use
- under countless conditions
- in thousands of laboratories
- throughout the world.

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Early promises of accuracy and reproducibility have been *proven in use.*

Your own experience has demonstrated their accuracy in hundreds of types of patients.

With Triosorb and Tetrasorb you have a known quantity, and can trust the answers.

**Triosorb<sup>®</sup>-125 Triosorb<sup>®</sup>-131**

$T_3$  Diagnostic Kits

**Tetrasorb<sup>®</sup>-125**

$T_4$  Diagnostic Kit

**T-7<sup>™</sup> I-125**

Diagnostic Kit



Radio-Pharmaceutical Products Division, Abbott Laboratories, North Chicago, Illinois 60064  
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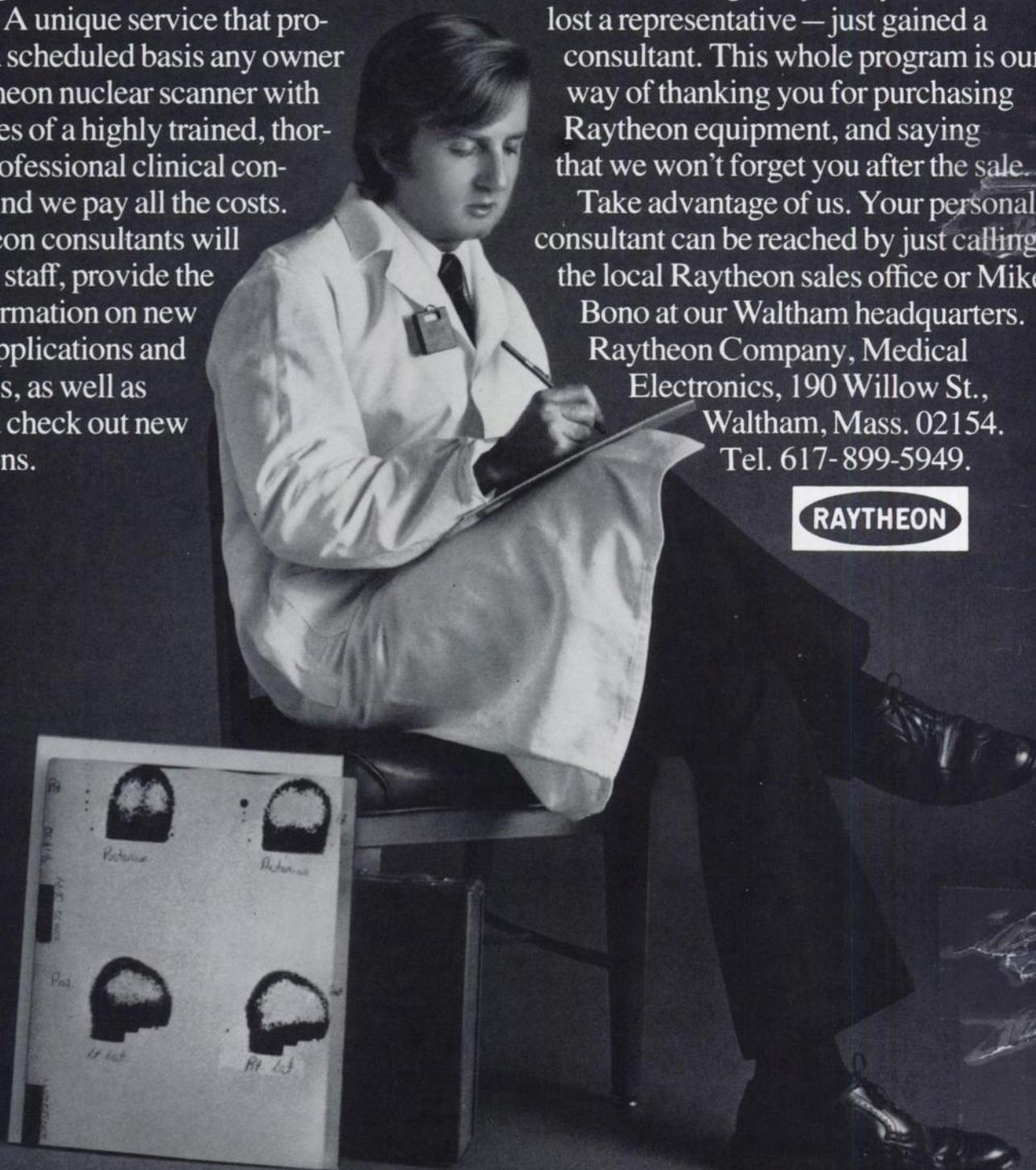
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**RAYTHEON**

# Bone imaging agent

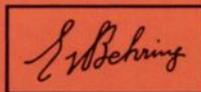
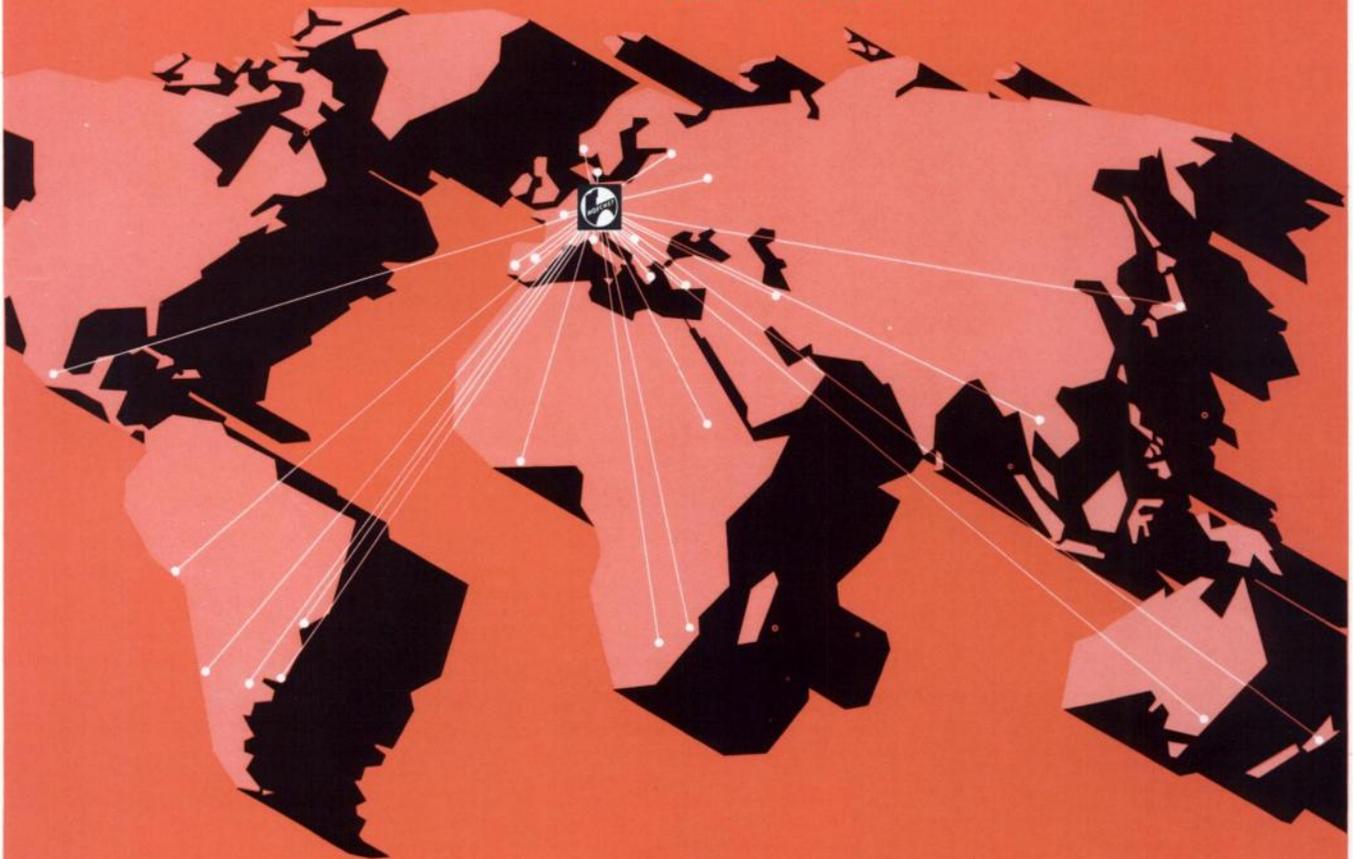


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Radiopharmaceutical Division

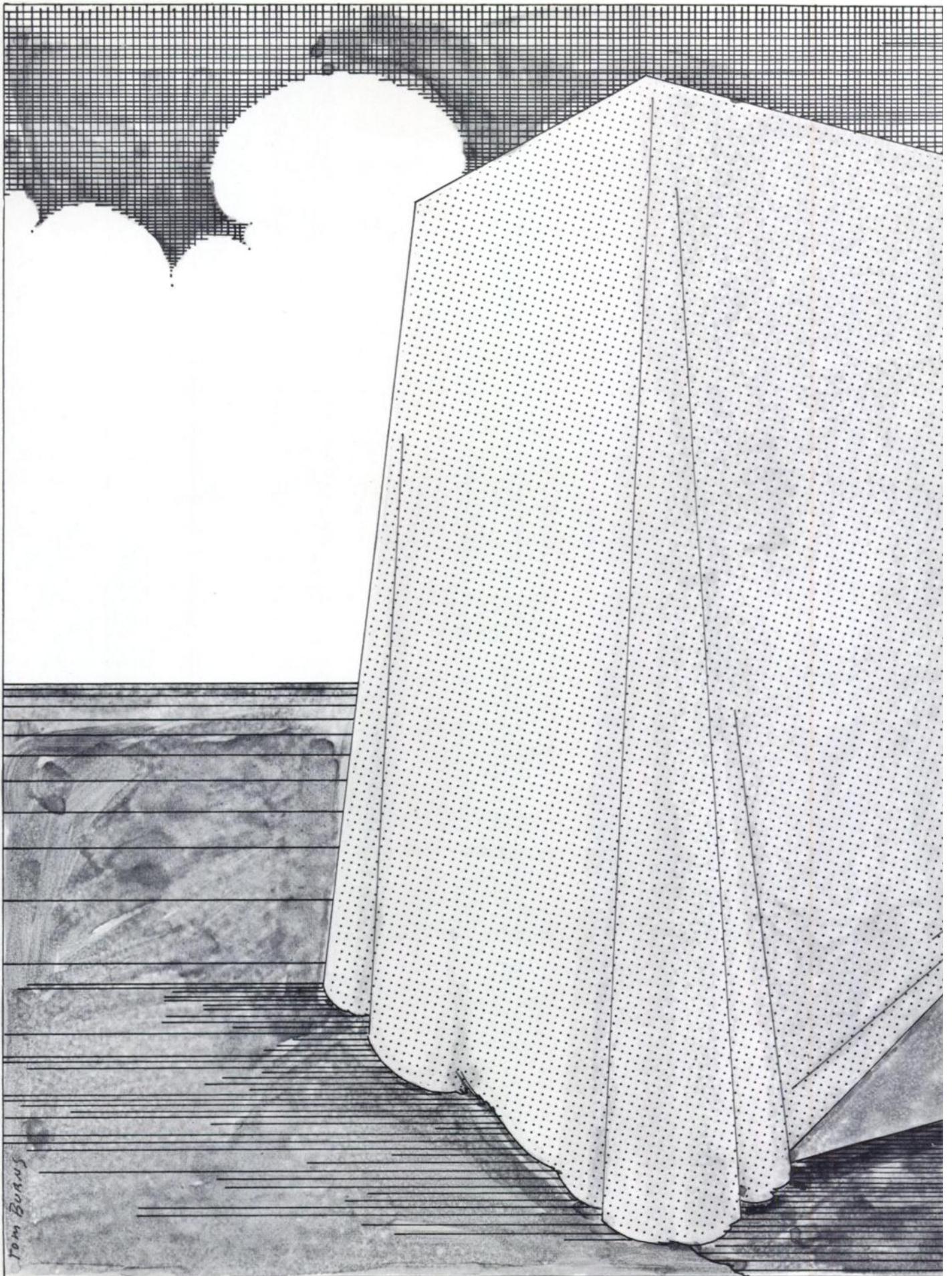
Atomlight Place, North Billerica, Mass. 01862  
Telephone (617) 667-9531

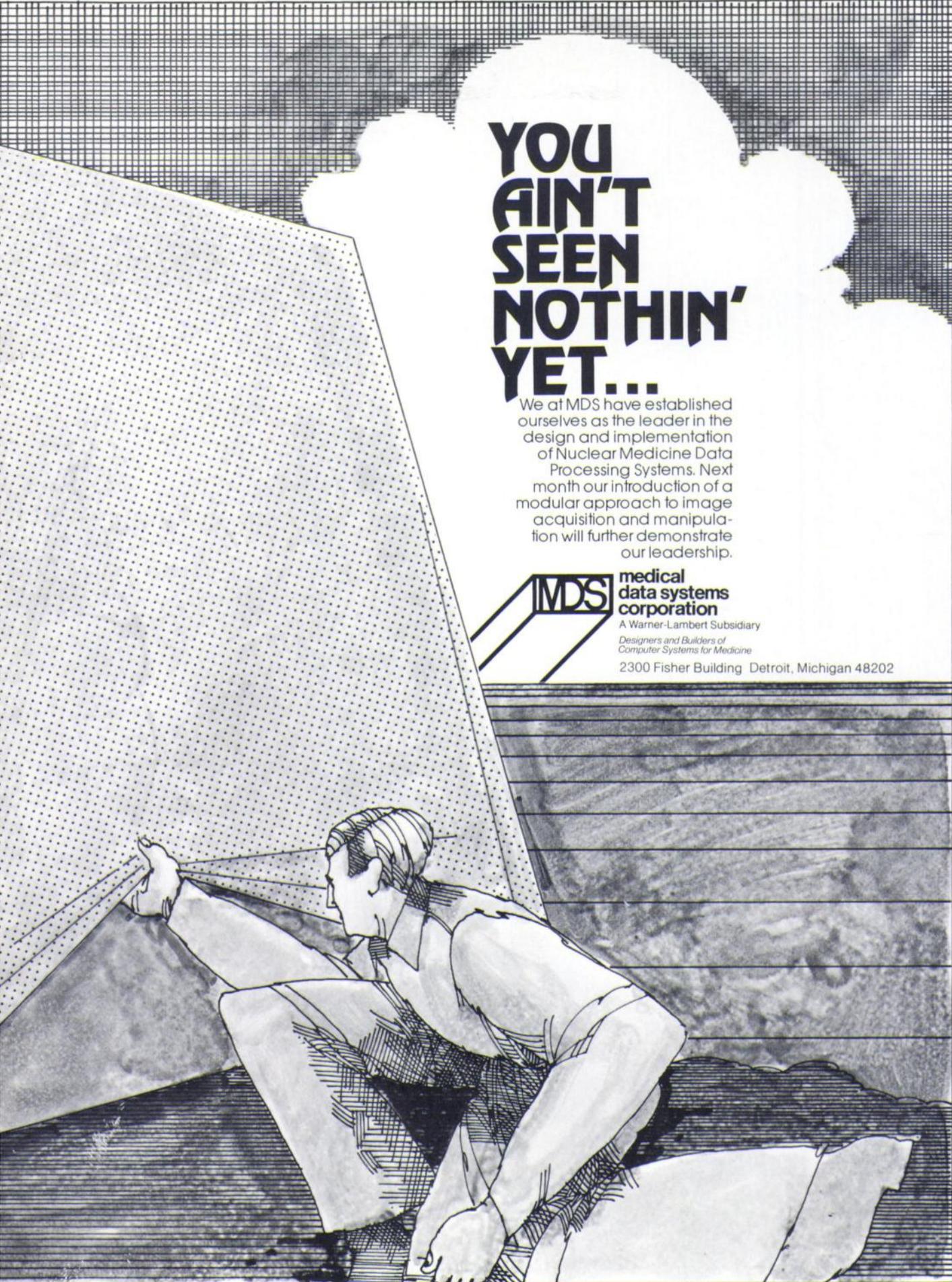
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the world



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subsidiary in your country





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We at MDS have established ourselves as the leader in the design and implementation of Nuclear Medicine Data Processing Systems. Next month our introduction of a modular approach to image acquisition and manipulation will further demonstrate our leadership.

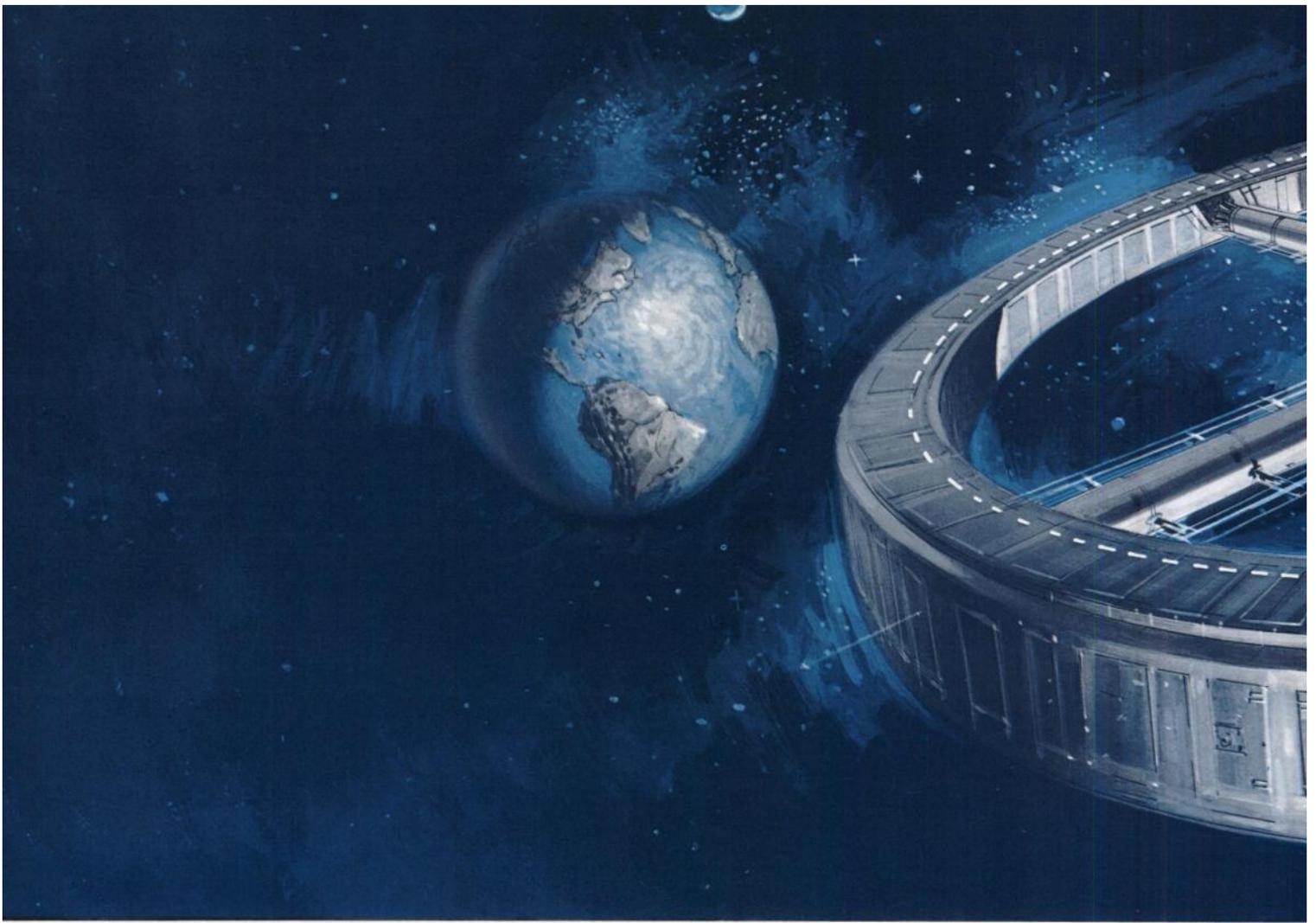


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corporation**

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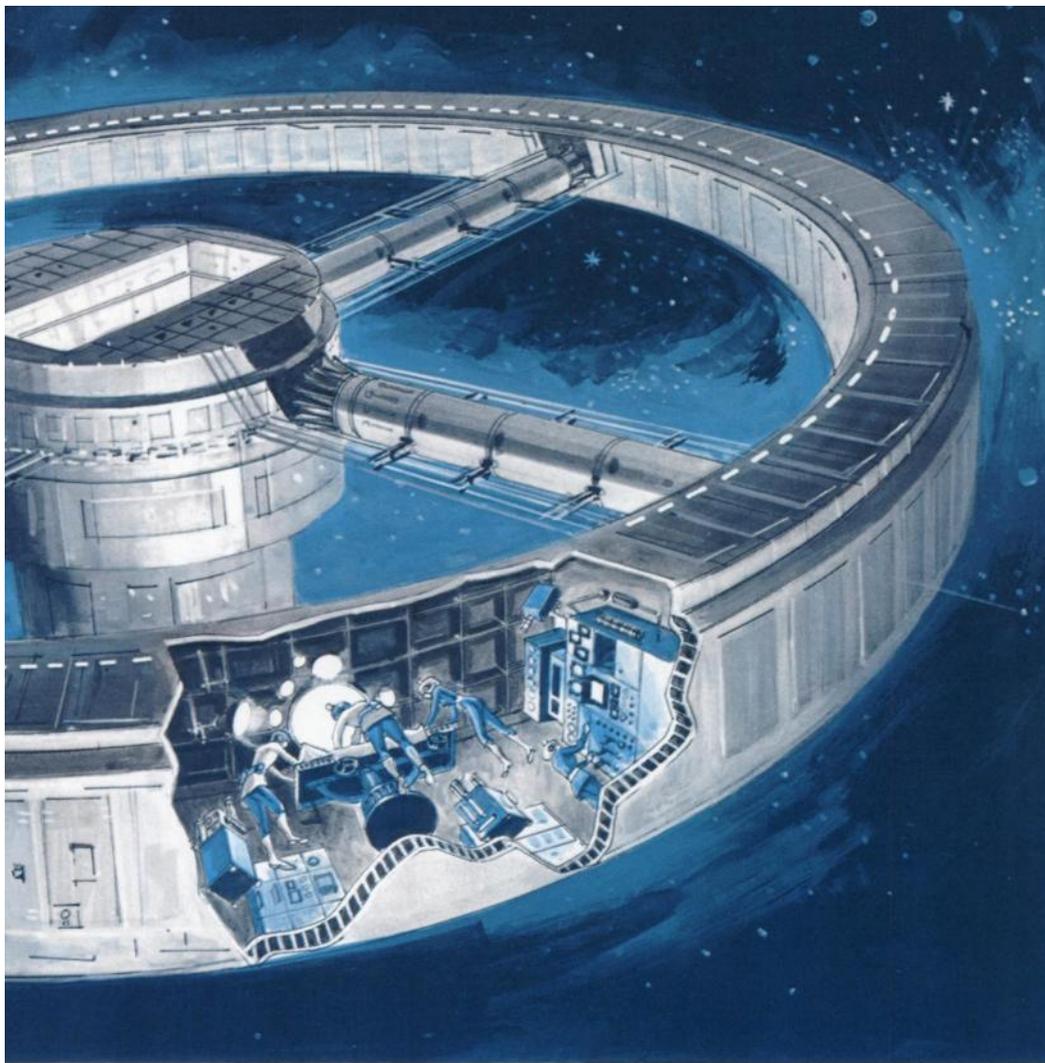
*Designers and Builders of  
Computer Systems for Medicine*

2300 Fisher Building Detroit, Michigan 48202



2022

**...you've conquered cancer  
and heart disease, and switched  
to preventive medicine...**



## ...the tools for getting there are here today.

The journey won't be easy. You'll have to travel past the limitations of your five senses. And be extra-familiar with the submolecular, as well as the intracellular, world.

We have the instrumentation to take you there. For instance, Nuclear-Chicago's Pho/Gamma Scintillation Camera. It's the choice of more than 95% of U.S. teaching hospitals and medical schools. They like its high resolution, ease of patient positioning, and its choice of 12 specialized collimators allowing one to switch from routine, "bread-and-butter" imaging to highly sophisticated procedures.

Our Pho/Dot is the world's most proven rectilinear scanner. Our Liquid Scintillation and Automatic Gamma Counters embody the newest ideas in capability-expansion for radioimmunoassay and competitive binding tests. And we could say equally good things about our Pho/Gamma Tomocamera, Data/Store Playback System, and similar products. But that wouldn't be modest.

When the last of the Great Plagues that afflict humanity has been wiped out, it will be because dedicated people have pinpointed the method of attack. With instruments like these.



**NUCLEAR-CHICAGO**  
A SUBSIDIARY OF G. D. **SEARLE** & CO.

CM-273

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**The future-oriented company**

For their sake and yours  
Now  
sterility tested



3 safety factors with  
**Albumotope®-LS**

(Aggregated Radio-Iodinated [<sup>131</sup>I] Albumin [Human]) for lung scanning

Sterility testing is *safety factor #1* in the preparation and use of Albumotope-LS. A full two-week sterility test period must expire before the material is released for shipment. *Safety factor #2* is the low radiation dose. Quick clearance of Albumotope-LS from the lungs after scanning and its rapid excretion make for a radiation dose reported to be only 1.9

rads to the lungs and 0.008 rads to the body as a whole from an administered dose of 300 microcuries. *Safety factor #3*: aggregated radio albumin is virtually nontoxic. This together with the low radiation dose permits lung scanning to be repeated in 24 hours—a useful advantage in following the course of the disease or evaluating therapy.



**SQUIBB HOSPITAL DIVISION**

E. R. Squibb & Sons, Inc., Princeton, N.J. 08540

*For brief summary, see next page.*

**14**  
DAYS

# Albumotope®-LS

(Aggregated Radio-Iodinated<sup>[131]</sup>  
Albumin [Human]) for lung scanning

**CONTRAINDICATIONS:** Radiopharmaceuticals should not be administered to pregnant women or to persons under the age of 18 years unless the indications are very exceptional. Because iodide is excreted in human milk, aggregated radioalbumin should not be administered to nursing mothers.

**ADVERSE REACTIONS:** Although the immunological properties of serum albumin are believed to be virtually unaltered by the iodination process, there is a possibility that hypersensitivity reactions may occur in patients receiving additional doses a number of weeks after an initial dose.

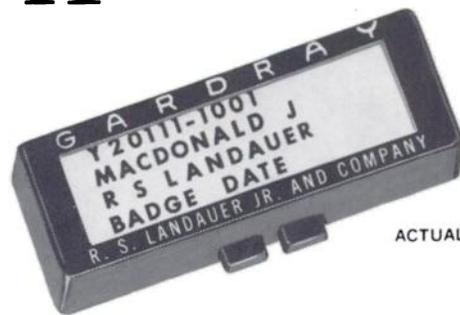
The hypothetical possibility that particles of large size might induce deleterious cardiovascular or cerebrovascular effects, postulated by some investigators, has not been borne out in extensive clinical use with Aggregated Radio-Iodinated (<sup>131</sup>I) Albumin (Human). For full prescribing information, see package insert.

**AVAILABLE:** As a sterile, nonpyrogenic, aqueous suspension. Each cc. contains approximately 0.5 mg. aggregated human serum albumin labeled with iodine-131. Not less than 90% of the aggregates are between 10 and 90 microns and none are more than 150 microns in size. The preparation also contains 0.9% (w/v) benzyl alcohol as a preservative. The potency ranges from 250 to 450 microcuries per cc. on date of standardization.



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# YOU SEE IT



ACTUAL SIZE

## ALMOST EVERYWHERE

Now, more than ever in the history of personnel dosimetry, you can use one service because it incorporates all the best features of the present state of the art. We are referring, of course, to Landauer's Gardray® film badge service.

With vapor barrier film wrapping, molded in filters, plus scores of other technical features, today, Gardray® service gives you the key advantages of computerization and automation while delivering the complete benefits of Landauer style attention and concern . . . R. S. Landauer, Jr. & Company, Glenwood Science Park, Glenwood, Illinois 60425 (312) 755-7000



# Introducing the New Ultra-TechneKow® Technetium Generator



with **4** New Features

**1. New enlarged lead shield reduces radiation exposure to the operator.** With at least 1½ inches of

lead all around the generator column this is one of the best shielded generators available today.

**2. New "Ion Control" Process** (patent applied for) reduces aluminum level to a point where it is virtually undetectable by normal laboratory test methods. The eluate may be used with any of the currently available sulfur colloid kits or with other tagging

procedures requiring low aluminum levels.

**3. New 500-ml saline supply** allows as many as 15 or 16 elutions per week. The saline supply is built in and factory sealed, an exclusive feature of the new **Ultra-TechneKow**:

**4. New self-aligning milking station** makes the elution process simpler than ever. When the "Sight Glass" elution shield with evacuated vial is placed into the milking station, the needle is automatically centered over the evacuated vial. Press plunger down, turn slightly to lock into position, and elution proceeds automatically.

## It's the most advanced concept in technetium-99m generators.

This all-new, redesigned version of our **Ultra-TechneKow** series is carefully engineered into an attractive, pre-assembled, completely self-contained unit. This model is the culmination of seven years of experience making technetium-99m generators. The **Ultra-TechneKow** Generator is shipped each week complete with evacuated elution vials, needle pack with labels, molybdenum-99

and technetium-99m reference tables, needle guard for operator safety, convenient carrying handles, and package insert with complete information.

Contact your Mallinckrodt/Nuclear representative now for detailed information on this unique new product of Mallinckrodt/Nuclear research.



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## Radioimmunoassay Test Sets

Three complete sets —  
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Each set contains all reagents\* and antibodies needed for complete serum value determinations. And these sets are uniquely designed to assure you of more accurate results with less complicated procedures.



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requires paper chromatography purification

### 2. Estradiol-Estrone Test Set

requires column chromatography separation

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a direct serum assay (no extraction)  
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- highly specific antibodies
- same-day results
- linear calibration curves
- all solutions pre-mixed, ready-to-use

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- Other Wien Test Sets:**  
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 Digitoxin  
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Department \_\_\_\_\_

Affiliation \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

\*except solvents and liquid scintillation cocktail

**NOTE:** radioactive substances tagged with tritium  
(<sup>3</sup>Hydrogen), except T<sub>3</sub>.



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Succasunna, New Jersey 07876

Introducing the newest, quickest way  
to remove all types of  
**RADIOACTIVE CONTAMINATION**  
from your hands, skin and  
small work areas

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AEROSOL SPRAY or FOAM

### SURFACE CLEANER

"Lifts" radioactive  
particles from  
smooth or rough  
work surfaces  
and traps them  
in foam



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Decontaminates  
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skin surfaces



Just shake,  
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wipe away!

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**03-301 RAD-CON Surface Cleaner . . . . . \$5.75**

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# series 84—the total scanning system



## 8416 MEMOSCAN—Tape Replay System

Records scan data on magnetic tape which can be played back to produce additional photorecordings. During playback, changes may (or may not) be made in background erase, intensity, and contrast enhancement to provide a readout different from the original. Regenerations can be made at half-size if desired. Brain phantoms above demonstrate variations from same original scan.



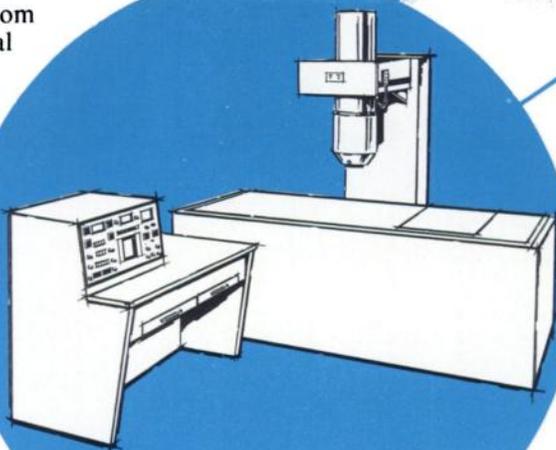
## 8415 PROBE MOUNTED RATEMETERS

To facilitate set-up and positioning, ratemeters can be mounted on the detector.



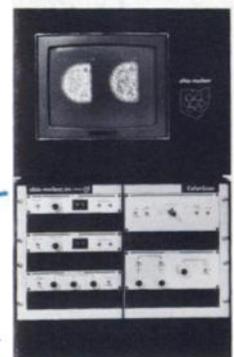
## INTEGRAL PATIENT COUCH

Standard on all Series 84 Scanners.



## NOISELESS CRT DISPLAY

8 x 10-cm storage monitor (which can also be used in non-store mode) displays scan progress without annoying noise.



## 8417 COLORSCAN—Interactive Video Display

A scanner data system capable of displaying images in 8 or 16 colors or in 8 or 16 shades of gray. Image is retained in core memory and may be manipulated to provide background erase, contrast enhancement, statistical smoothing, subtraction or summation—AFTER THE SCAN.

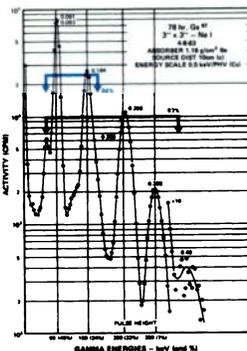
## SUPERIOR COLLIMATORS

Choose between two focal lengths: 3.5" (8.9 cm) or 5.0" (12.7 cm) and three energy ranges: up to 180 keV, 370 keV, and 550 keV. All are designed to maximize sensitivity without allowing excessive septal penetration for the maximum energy level in the range.



## 8409 SCAN MINIFICATION

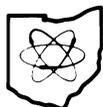
Whole-body scans on one 14 x 17-inch film. Scan livers, lungs, and brains at a fraction of the time required for 1:1 scanning, using 2:1 or 5:1 reductions with no loss in quality or detail.



## 8418 100 keV-1 MeV WINDOW

Switch selectable 100 keV-1 MeV window maximum. Wider window is useful in capturing a higher percentage of the energy emissions from isotopes with multiple photopeaks, i.e.  $^{67}\text{Ga}$ .

**The standard items and optional features available with the Series 84 make it a total scanning system. All options are field installable on all Series 84's. It's company policy.**



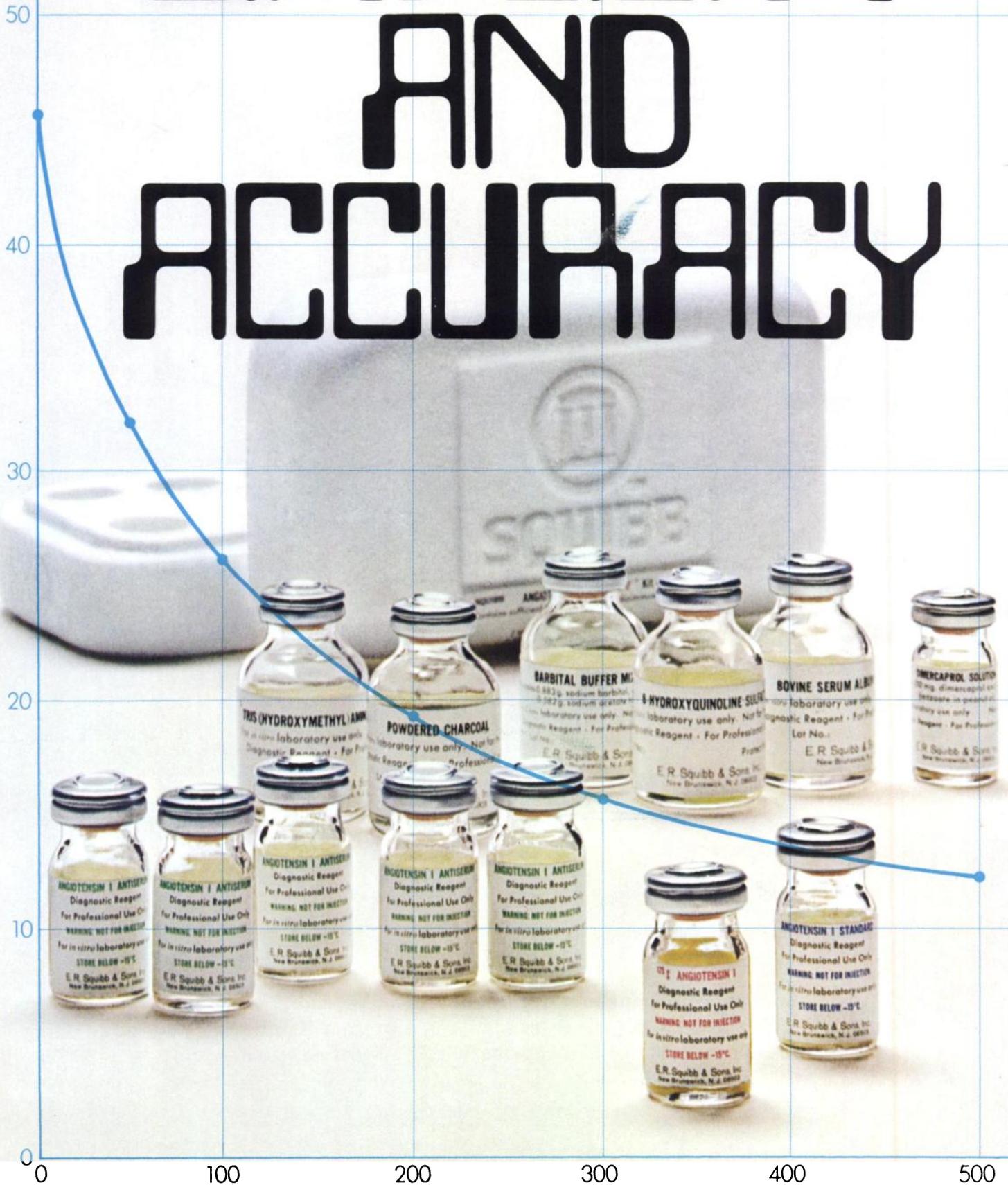
**ohio-nuclear, inc.**

7700 St. Clair Ave., Mentor, Ohio 44060

Phone: (216) 961-0900

OHIO-NUCLEAR (U.K.), Radix House, Central Trading Estate, Staines, Middlesex, England. Phone: Staines 51444

# SIMPLICITY AND ACCURACY



Isn't that what  
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when you measure  
plasma renin  
activity?

## Designed for precision and accuracy

Three important features of the Immutope Kit assure reliable, reproducible results in determination after determination. First, a special formulation makes the Angiotensin I Standard stable. Second, standardization is protected by a built-in iodine scavenger. Third, *all* the reagents in the Immutope Kit are stable (when properly stored) and all are matched — specifically formulated and tested to assure compatibility.

## Designed for simplicity

Usual work time is significantly reduced because the reagents are premeasured. Because there's no need to run repeat blanks. No ice baths required as with another similar kit...all

Angiotensin I Immutope procedures, except for incubations, are done at room temperature. No need to make up fresh reagents every time a series is run...properly stored, the diluted <sup>125</sup>I Angiotensin I solution lasts for a week, the Tris Acetate Buffer with BSA for a month, and the remaining reagents for three months.

## Low cost of individual determinations

The Angiotensin I Immutope Kit doesn't need expensive accessory equipment. It has a big capacity of 500 determinations, only 12 of which need be used for standards — and none of which need be run as reagent blanks. All the required reagents are provided in one complete, reasonably priced kit, for a low cost per individual determination.

for determination of plasma renin  
activity by radioimmunoassay

---

# ANGIOTENSIN I IMMUTOPE™ KIT

---

combines the extreme sensitivity  
of radioisotope methodology with  
the extreme specificity of  
immunologic techniques

(SQUIBB radioimmunoassay kits are identified by the trade name, IMMUTOPE.)

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E. R. Squibb & Sons, Inc., Princeton, N.J. 08540



# Here's what you've always wanted for whole-body imaging but could never get... until now.

It's a dramatically improved scintillation camera with larger field, higher resolution, better uniformity...and a moving patient table that enables you to get full-body, minified gamma images in as little as 10 minutes.

You get them all with Picker's new Dyna™ Camera 2C and the new Omniview™

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Together, they set new performance criteria for practical diagnostic visualization.

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varies less than  $\pm 10\%$ . The Omniview moving patient table presents whole-body and variable field size images at this same higher resolution—down to 15:1 minification. Dyna Camera field size is a full 45% larger than



comparable cameras and has superior linearity of  $\pm 3\%$  over the entire 11.8" field of view for clear, undistorted images.

Consider too, that Picker's computerized Image Enhancement System gives uniformity correction, background suppression, and contrast enhancement unobtainable by other means. The IES, in conjunction with the new Dyna Camera 2C, can be used with any other existing scintillation camera to permit facility expansion at lower cost.

So get all those performance features you've always wanted.

You can get them all with Picker's new Dyna Camera 2C and new Omniview—the new standards of performance for images of health. Picker Corporation, 595 Miner Road, Cleveland, Ohio 44143.



(a) Technetium 99<sup>m</sup> Polyphosphate Whole-Body Image.

(b) Left Lateral Brain Image from Dyna Camera 2C (50% reduction).

**PICKER®**  
images for health

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WHEN THEIR NEEDS ARE FOR NEW,  
PROVEN RADIOPHARMACEUTICALS:  
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201 - 825-2310**

**KITS:**

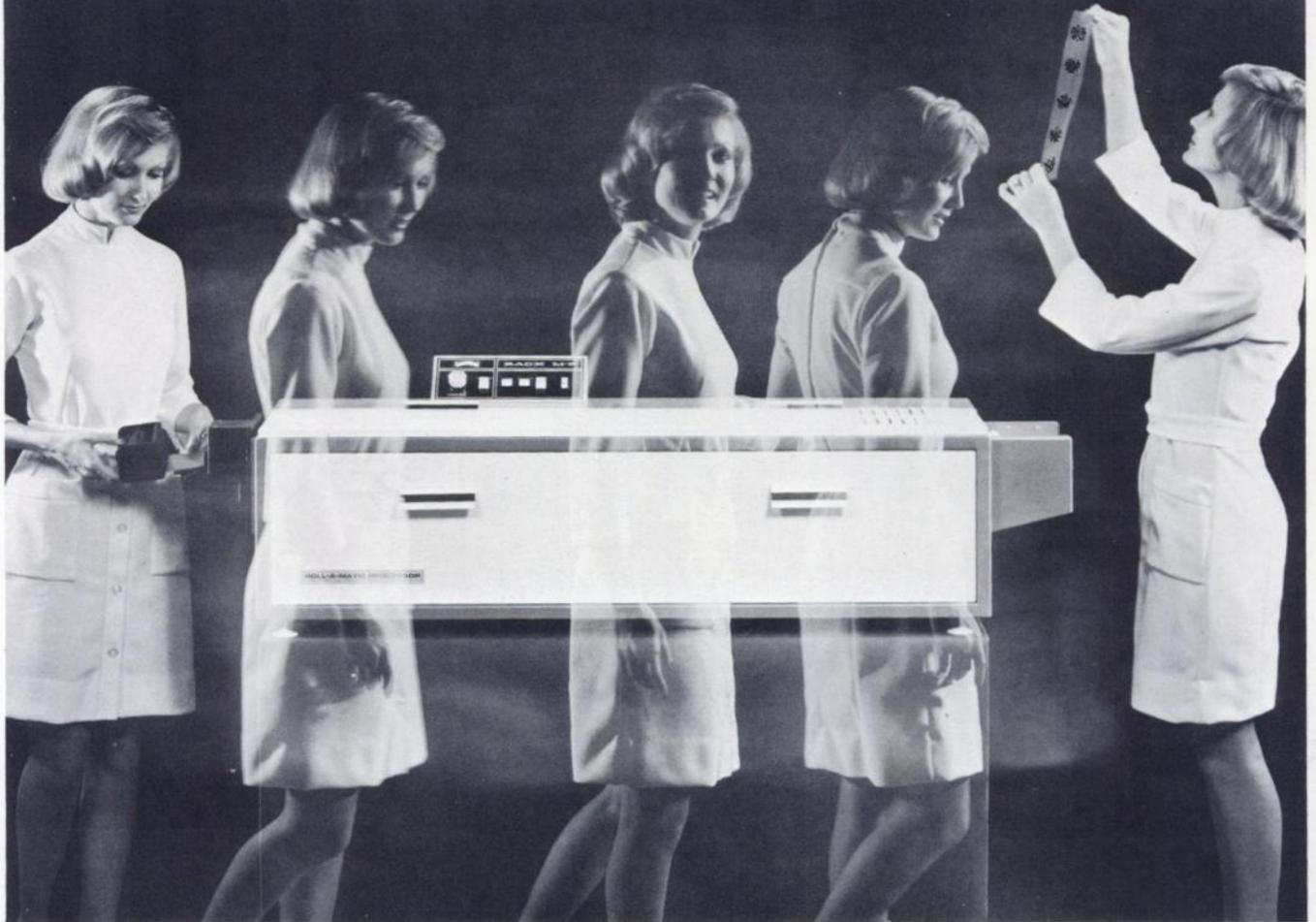
Technetium-99m DTPA (Brain and Kidney) 10 vials	\$30
Technetium-99m/Tin (Liver) 10 vials	\$40
Technetium-99m Polyphosphate (Skeleton) 5 vials	\$50
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**READY-TO-INJECT:**

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	second vial - \$25
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	3 mCi - \$45
Xenon-133 in the Gas Phase or Dissolved in Saline	\$1/mCi (minimum of 10 mCi)



# New RADX Roll-A-Matic Processor lets you view scans in 42 seconds.



All you do is feed exposed film into the RADX M-3 Roll-A-Matic. In just 42 seconds, the first frame is ready for viewing. Develops all sizes of roll film up to 5". From 4 frames to a full roll, with provision for feeding to a take-up spool.

The Roll-A-Matic goes where you need it, too. No darkroom. No external plumbing. Fully self-contained. Just put it on any convenient table or counter and plug it in. Also adaptable to chemical replenishment where usage volume is high.

The RADX Roll-A-Matic has everything going. RADX quality and dependability. Fastest cycle time of any processor. And a price that will surprise you — under \$3700! Call RADX for details.



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PROCESSOR**

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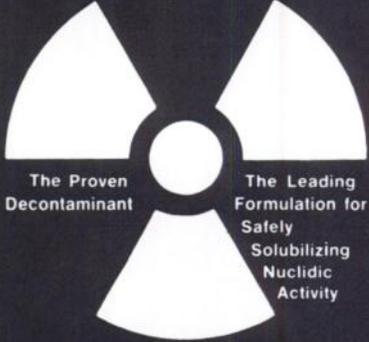
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# RADIOACTIVE REGIONAL VENTILATION STUDIES, SIMPLIFIED.

Now, thanks to the AVM-3 Automated Ventilation Module, radioxenon ventilation studies need no longer be technically difficult to accomplish.

The AVM-3 system provides a simple, yet reliable and flexible method of administering radioactive gas and controlling patient breathing during ventilation studies.

And, since the AVM-3 system is linked to your scintillation camera by remote control, it automatically initiates all scintiphoto exposures at precise predetermined intervals. As a result, the only functions of the operator are to select the desired study sequence,

push the start button and then collect camera data.

*In short, the AVM-3 Automated Ventilation Module allows you to perform Single Breath – tidal volume or vital capacity, Rebreathe and Washout Studies – singly or in the combination of your choice – using just one operator. All without patient cooperation. All with consistently reproducible results. (Single breath studies may be made at any lung volume.)*

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to perfusion studies, easy and meaningful regional V/Q comparisons are permitted.

The AVM-3 system, with protective lead-shielding, is enclosed in a single case mounted on an overbed table for use on patients in either sitting or supine positions.

The Suprenant/Douglas AVM-3 Automated Ventilation Module. Just one of the ways in which we're working to make your job a little easier.

For more detailed information, just write Omnimedical, 3711 Long Beach Boulevard, Long Beach, California 90807.

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**Early et al.**

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By D. BRUCE SODEE, M.D., F.A.C.P., F.A.C.G.; and PAUL J. EARLY, B.S. May, 1972. 516 pages plus FM I-XII, 7" x 10", 402 illustrations. Price, \$22.90.

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**MEDICAL SPECIALTY TERMINOLOGY  
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By CLARA GENE YOUNG; and JOSEPH J. LIKOS, M.D., F.A.C.P. August, 1972. 283 pages plus FM I-X, 7" x 10", 124 illustrations. Price, \$15.75.

**TEXTBOOK OF NUCLEAR  
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Well-illustrated discussions explain essential nuclear physics and nuclear chemistry concepts in this comprehensive reference. The book examines clinical theory and applications to body systems. The authors stress principles and understanding rather than technical detail; simplify terminology wherever possible; and assume no mathematical background on the reader's part. The section on clinical applications concentrates on techniques used to study functional morphologic and hemodynamic aspects of various organs and systems. Numerous tables provide necessary data, and two glossaries clarify specialized terminology.

By PAUL J. EARLY, B.S.; MUHAMMAD ABDEL RAZZAK, M.B.B.Ch., D.M., M.D.; and D. BRUCE SODEE, M.D., F.A.C.P. 1969, 378 pages plus FM I-VIII, 7" x 10", 241 illustrations. Price, \$16.75.

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This is the first book to integrate and systematize radiation's biologic effects and research applications. Its clear presentation of essential physics requires a minimal background in mathematics. A second section of this reference then examines the effects of various types of radiation on living systems, and the use of radioactivity in life science study. Handsomely illustrated, it is accompanied by a correlated manual and together they provide a solid foundation in this important aspect of biologic investigation.

By VICTOR ARENA, ScD. 1971, 543 pages plus FM I-XIV, 7" x 10", 271 illustrations. Price, \$13.50.

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and other in vivo applications



- CPS & PERCENTAGE READOUT
- COMPACT & PORTABLE
- BATTERY OPERATED (3 D cells)
- FULLY TRANSISTORISED
- LINEAR SCALE & WIDE RANGE
- RECORDER OUTPUT
- VARIABLE DEPTH COLLIMATOR
- UNLIMITED CHANNEL SELECTION
- MANUFACTURED & SERVICED IN THE U. S. A.
- CLINICALLY PROVEN FOR OVER ONE YEAR

### CONTROLS

High voltage  
Threshold  
Window  
Battery test  
Response (fast & slow)  
CPS or percent switch  
Reset

For DEEP VEIN THROMBOSIS DETECTION, the Model 145 offers the important features of portability, standard D cell operation yielding at least 100 hours of uncycled use, unlimited channel selection, and prompt servicing.

Using I-125 labelled fibrinogen and the Model 145, early detection of deep vein thrombosis of the legs can be accomplished. With the Model 145, the leg is scanned after intravenous injection of the labelled fibrinogen. As a thrombosis develops, the radioactive fibrinogen is detected with the Model 145 and measured directly in percentage, where 100% is determined over the precordial area.

### SPECIFICATIONS

RANGE: 30, 100, 300, 1000, 3000 cps  
and 0 - 120%

TIME CONSTANT: Fast 2 sec., slow 14 sec.

SIZE: 4½ x 5½ x 8 inches (HxWxL exclusive  
of handle).

WEIGHT: 6.5 lbs total

DETECTOR: 1mm x 1 inch NaI (TL) mounted  
on PMT and 7 mg/cm<sup>2</sup> aluminum  
window. Optional - 1 inch x 1 inch  
NaI (TL) detector with thin window  
at extra cost.

PRICE: \$995.00 - FOB Wellesley,  
Massachusetts



**jasins & sayles associates**

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telephone (617) 235-6691

# The DI 750 Multi-Format Camera System

The nucleus of our system is the Electronic Programmer. It alters the deflection signals normally used to displace the CRT beam. The image displayed is manipulated in size, location, duration and number. The CRT image moves, not the camera



film. That's the essence of our system. Making it "multi-format" and revolutionary. Use the 750-01 Programmer with your existing cameras. Select 1 through 16 frames per film, manually or electronically advanced on the CRT. The size can range from full display (full use of CRT diameter) to 1/16th. Add our 750-02 8 x 10 X-ray Camera which records as many as 16 frames of dynamic flow information on each sheet of 8 x 10 film. Or the 750-03 Back which permits simultaneous

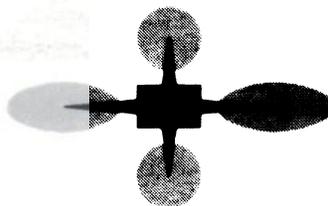
recording on 4 x 5 cut film, Polaroid, and/or microfiche. Using the microfiche camera back, as many as 80 frames can be placed on a single microfiche 4 x 5" film, then enlarged for reading with the 750-04 desk top viewer.

For further information, write or call .

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BI 1

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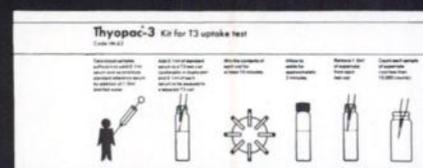
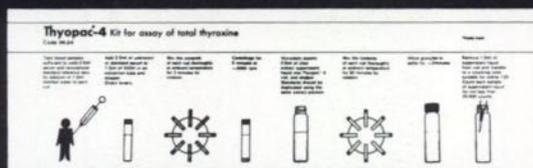
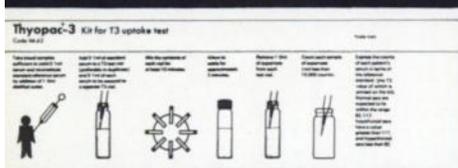
- HPL kit
- Other products for RIA

Name .....

Address .....

City                      State                      Zip                      Country

28374



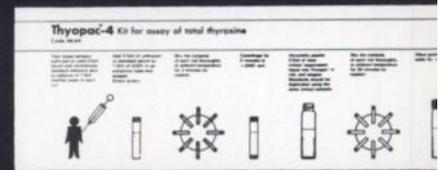
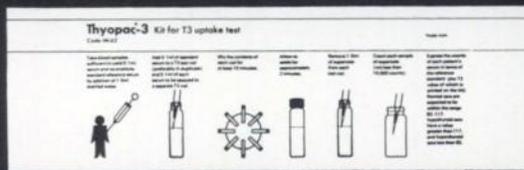
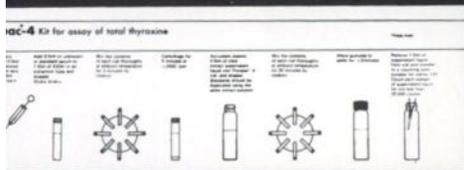
# Time after time. Test after test.

You can depend on a consistently high level of reproducibility and accuracy with Thyopac thyroid function tests. Every batch of material is tested against 11 different standards for reproducibility – and each batch is tested again at expiry

date. Reproducibility is thus assured over the whole clinical range during the life of the kit. This is the service offered by The Radiochemical Centre.

# Thyopac<sup>\*</sup>-3 & 4

\* Trademark.



# Pack after pack.

- Sample for counting is withdrawn at equilibrium
- Temperature control is not required
- No time-critical stages
- Faster, more accurate, more reproducible results

Combined use of Thyopac-3 and Thyopac-4 will give you a more precise Free Thyroxine Index which eliminates complicating factors such as raised TBG levels due to pregnancy and allows rapid separation of the normals from the distinctly abnormal; it also provides you with more accurate information on the areas in between.

## invariably the best thyroid function tests



**The Radiochemical Centre Amersham England**

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Instant Livercolloid Reagent™

Instant Lungaggregate Reagent™

Just add  $^{99m}\text{TcO}_4^-$  and shake!

The kits are supplied with mixing vials and a lead shield  
for storage. These simple reagent kits are proof that

Medi+Physics stands for things to come. For information  
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our Emeryville Laboratory at 415-658-2184.

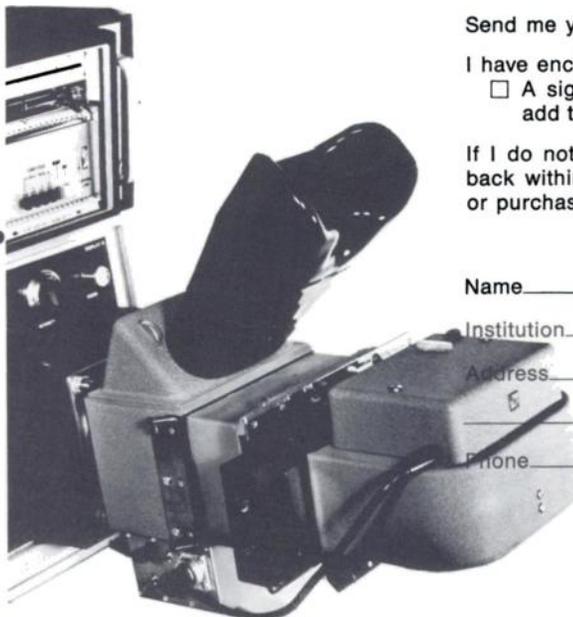
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# WE'LL EVEN LET YOU TRY IT!

**Our 70 mm Camera with automatic scaler controlled film advance and data chamber offers all you need in a 70 mm Camera at minimum cost.**

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Send me your 70 mm Camera plus one roll of film.

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# Clinical Newsletter

from Bio-Rad

## Straight talk about a new T-3 test

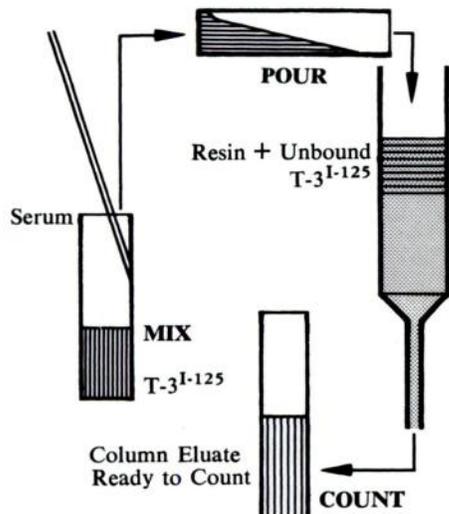
### Bio-Rad's new TRI-COUNT T-3 combines simplicity, reproducibility and low cost.

Bio-Rad recently introduced a new T-3 by column test called **TRI-COUNT** that combines simplicity and reproducibility at a price you may find hard to believe. We accomplished all this by utilizing the same ion exchange technology as the Bio-Rad T-4 by Column Test. We kept the test as simple and uncomplicated as possible, building the reproducibility into the test itself rather than depending on operator technique.

#### Simplicity

**TRI-COUNT T-3** has only three quick steps: mix, pour and count.

The sample is first mixed with radioactive T-3 buffer solution and allowed to stand at room temperature 15 minutes or more. The time is not critical. If the operator can't get to the next step for an hour it won't make any difference in the final results. Next, the mixture is poured into the **TRI-COUNT T-3** column and the eluate collected. Finally, the eluate is counted to determine T-3 value. That's all there is. No centrifugation, no incubation, no precise timing. It's a simple matter of mix, pour, count.



#### Low Cost

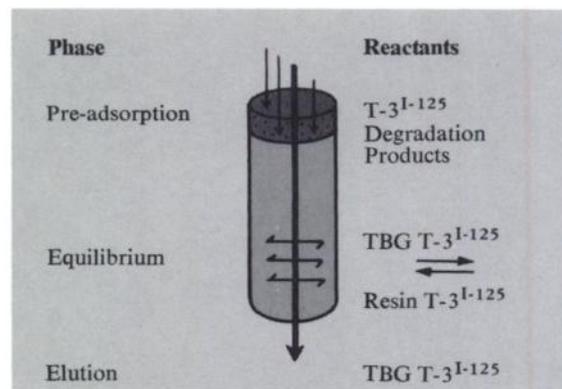
We set out to design the simplest and most reproducible T-3 test possible. When the laboratory results were fully evaluated and the test's simplicity became readily apparent, the low cost came as no surprise. Actually laboratories save money two ways with **TRI-COUNT T-3**: They save money when they buy it and they save time when they use it. An individual test can be performed in only 20 minutes and 20 tests can be completed in just 40 minutes.

#### Reproducibility

**TRI-COUNT T-3** has the highest degree of reproducibility of any T-3 test now on the market. There are three major reasons for this.

1. The **close control** of the ion exchange resin manufactured by Bio-Rad specifically for this T-3 test.
2. The **simplicity** of the test that practically eliminates any effect of differences in operator technique.
3. The elimination of hormone degradation products as a cause for error. The **TRI-COUNT T-3** column is designed to adsorb hormone degradation products and separate them from the equilibration reaction.

None of this "just happened". It was all designed into the test at the start to reduce and eliminate potential errors before they occurred.



**BIO-RAD** Laboratories

NM

32nd & Griffin Avenue, Richmond, CA 94804.  
Phone (415) 234-4130.

- Send introductory offer at \$39.95 (50 tests).  
 Send more information.

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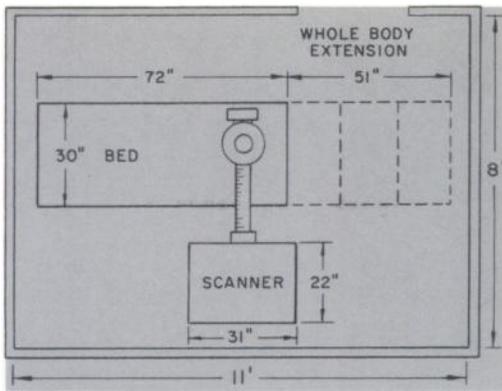


FIGURE 1 — MINIMUM SPACE



FIGURE 2 — EASE OF OPERATION

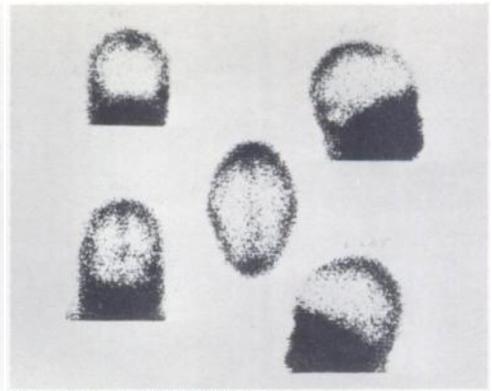


FIGURE 3 — MINIFICATION, 5:1

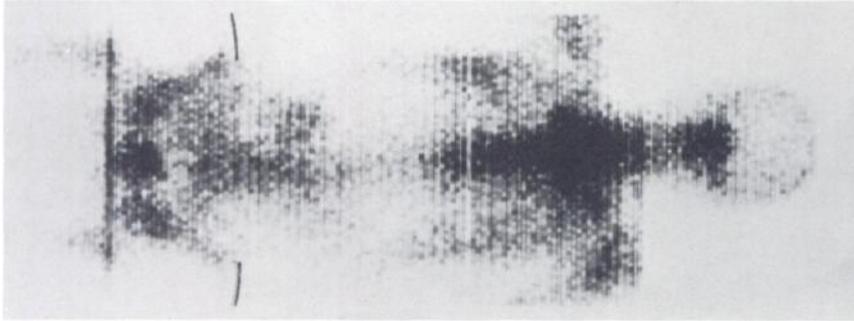


FIGURE 4 — MINIFICATION, WHOLE BODY IMAGING

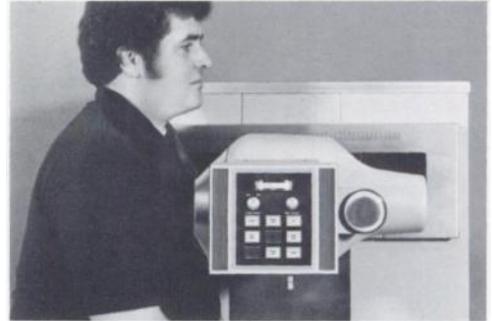


FIGURE 5 — VERTICAL SCANNING

## Some scanners offer everything Baird-Atomic does. Except the price.

**For good reason:** Since we don't offer a dual head scanner, our price is understandably lower. But with the same, even faster, patient processing time!

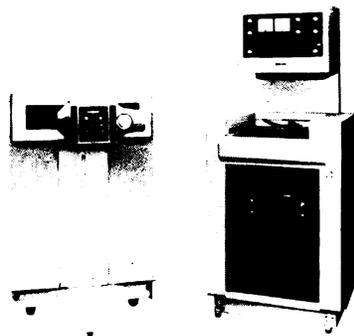
Competitive systems with a dual head usually list for \$35K. Is dual head scanning really worth the \$12K more than our scanner? We don't think so. Especially when you're getting started, you need a scanner that does the most, for less; because you'll eventually get a gamma camera to compliment your scanner.

So why pay for a capability of limited value? Our Verti-Scanner has proven to be more versatile, with equal to or better patient processing time, but at a substantially lower price tag.

**Versatility:** Scanning versatility is important in a hospital's nuclear medical department. For vertex brains or upright lungs (fig. 5), no other system can compare. Our Verti-Scanner makes set-up easier and faster through push-button operation and patient positioning

right at the detector (fig. 2). The Verti-Scanner also has a 2:1 and 4:1 reduction system which enables you to produce minified whole body images (fig. 4), with the added benefit of five quadrant selections (fig. 3).

**Price/Performance:** With our new 1507 rectilinear Verti-Scanner, you get vertical or regular scanning on a dual 14" x 17" film cassette and on teledeltos, with whole body minification; complete integrated circuitry, and three plug-in boards for an entire control panel that you can service yourself for excellent reliability and maximum "up-time".



In our price range, no other rectilinear scanner offers as much. And if you don't need vertical scanning now, add it later. But get our Servo-Scanner model 1505 now, at an even lower price tag.

Baird-Atomic also provides two shielded collimators (ten to choose from) with every system, plus free installing service, full one year warranty, complete technologist and physician training, plus modular service contracts where you perform your own system checks.

**Ask our customers:** For versatile, economical, proven scanner performance, look at our Verti-Scanner or Servo-Scanner. Our customers did; because they went through the same evaluation and chose Baird-Atomic. **Send for all the details and see for yourself.**



**Nuclear Division**  
125 Middlesex Turnpike, Bedford, Massachusetts 01730  
Tel: (617) 276-6000

# Here are four ways to handle your in-vitro and in-vivo testing requirements.

## IN-VITRO

### LOGIC™ scintillation well counter

LOGIC™ is a simplified integrated spectrometer and well counter that's easy to operate. Most important is the LOGIC™ unique service commitment. When problems arise, a unique service program goes into action and your unit is back in operation fast. Every LOGIC is built with solid state and integrated circuitry to give greater reliability and less downtime.

The LOGIC™ symptom describing manual allows you to pinpoint most service problems in minutes. A call to our technical representative confirms or corrects your diagnosis immediately. The cor-

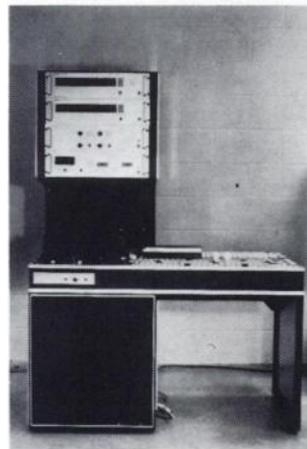


rect plug-in circuit board or a replacement LOGIC™ is air shipped to you the same day. You're back in operation within 24 hours. In short, if you have trouble with a LOGIC™, we'll repair or replace it with a service loaner in 24 hours or less.

### LKB/Wallac automatic gamma sample changer

The LKB-Wallac 80000 automatic sample changer handles a large capacity of samples to free your skilled staff for other duties. It allows long uninterrupted automatic runs with either uniform or intermixed samples.

The sample conveyer operates as an endless belt giving you fast, safe and secure pneumatic handling of samples. There are two methods for positive sample identification before measurement, its position on the conveyer belt, and a binary coded cap. And, samples are changed in only 10 short seconds. Data read-



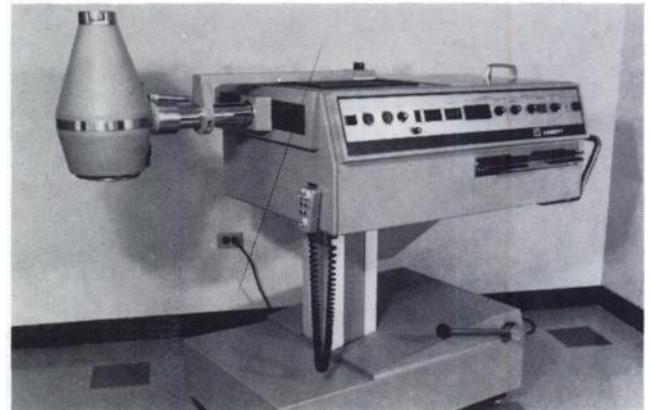
out is supplied in printed form or on punched tape. The Wallac automatic sample changers simple foolproof controls allow you to handle your needs efficiently and accurately.

## IN-VIVO

### GRAPHIC™ Rectilinear scanner

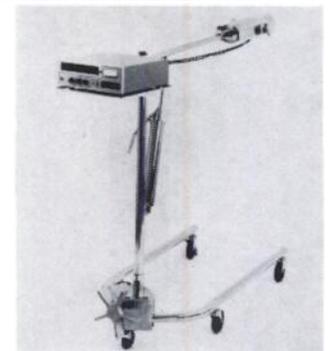
GRAPHIC™ operation is simple. The control panel is designed for a logical left to right set-up procedure. Start at the left with Power On and work your way in a logical sequence to the right of the panel to Scan On. GRAPHIC™ two-position film cassette allows you to scan

14" x 17" in either direction, across the chest or lengthwise along the body. GRAPHIC™ will accommodate a variety of large scan field requirements with uniform ease. And, GRAPHIC™ is built to last requiring a minimum of service attention. It's so rugged that we warranty it for mobile operation. You have to be tough to work under these conditions.

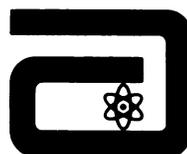


### LOGIC™ with uptake module

By simply adding a medical stand and probe with collimator to either of two LOGIC™ models, the 111 or 121, you're ready for thyroid uptake studies. The LOGIC™ modular concept provides add-on capabilities for you. Buy what you need when you need it. And, you still get the unique service commitment provided only by LOGIC™ . . . when problems arise, we'll repair or replace your instrument with a service loaner in 24 hours or less.



*And, these instruments come from a full-line supplier who assures you of a continuing service commitment to train and assist your personnel in all their needs. It's our privilege to keep your Abbott instruments operational.*



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# XENON - 133 GAS TRAP

MODEL Xe-133

- Collects Radioactive Xenon From Expired Air
- Prevents Room Contamination
- Eliminates Need For Expensive Exhaust Systems
- Operates Simply And Efficiently



This simple trap collects **radioactive Xenon** from expired air from patients during **circulatory and respiratory studies**. It is equipped with a disposable face mask, into which the breath is expelled, and a vacuum pump which draws the expelled air through charcoal-filled cartridges. The Xenon-133 is adsorbed on the charcoal, trapping the radioactive gas in the cartridge.

## SPECIFICATIONS

Overall Height: 32" including casters

Weight: 75 lbs.

Number of Chambers: 8

Chamber Size: 1 $\frac{5}{8}$ " I.D.x18 $\frac{1}{4}$ " long

Shielding:  $\frac{1}{4}$ " thick lead sleeve around chamber assembly

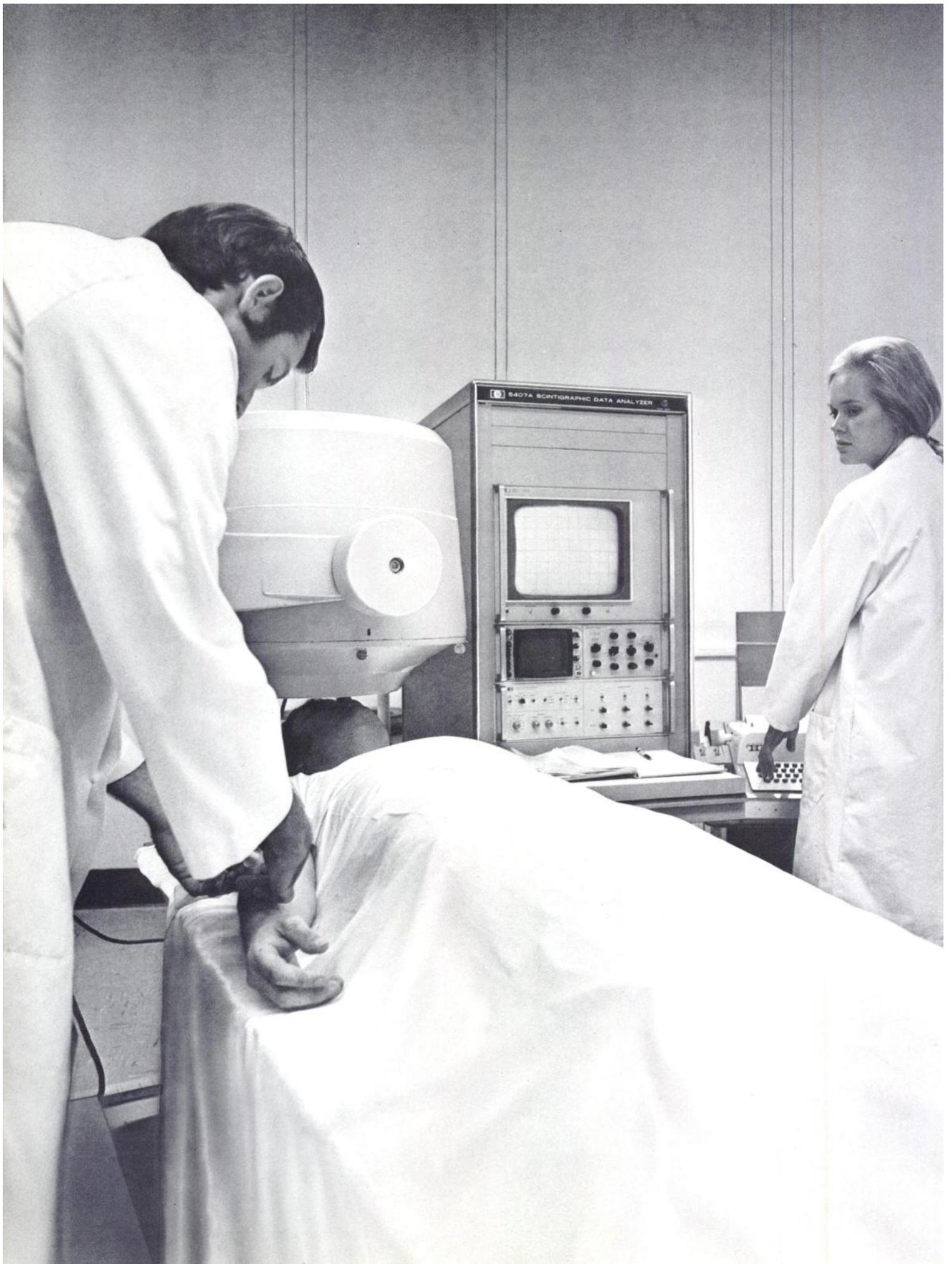
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# The Computerized Gamma Camera Data System.

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There's no end to what you can do with HP's system.

This new computerized system offers the most advanced data acquisition and manipulation techniques in nuclear medicine. Whether you're a researcher or clinical user, the studies you can carry out are virtually unlimited.

It lets you see and do things you could never do before in this field. The results are better patient care and more precise research—done faster and for less money.

Despite its sophistication, the system is remarkably easy to understand and operate. It has a simple keyboard that you or your technicians can use to tell the system what you want it to do. After that, everything's automatic. You don't have to be a computer programmer to run it.

It does things no other system can.

**High Data Rate.** It records up to 100 frames per second in our unique List Mode, or 300,000 counts per second in Histogram Mode. It handles the highest speed studies currently being investigated.

**List Mode.** The unique List Mode, provided in addition to the Histogram Mode, offers many innovations. For example, you store *all* the original raw data from your study. Later you can decide how to frame or otherwise manipulate it *without losing raw data*. You can store your manipulated data, too. Even at rates up to 100 frames per

second, you get all these features:

1. Data resolution of  $128 \times 128$ .
2. A Physiological Trigger to synchronize data framing.
3. Multiple Isotope capability that lets you record data from three isotopes simultaneously (two with the Physiological Trigger).
4. Image Expansion with which you can enlarge data from a small organ either before or after your study.

**Whole Libraries of Programs.** The simple, versatile HP BASIC language makes curve analysis easier than ever. BASIC is extensively documented and widely used in computer time share systems. And, if you ever wish to go even farther with the built-in general purpose HP computer whole libraries of other languages, (Fortran, Assembly and Algol) are available from HP.

**Remembers Your Protocols.** With just several keystrokes it'll automatically execute your previously entered protocols.

It does everything you expect a system to do, too.

It displays contours, isometric views and slices. You can define areas of interest with joystick markers or an optional light pen, and store 16 areas for later recall and curve generation.

Just several keystrokes give you complete Time Function and Frame (Image) Arithmetic. You can smooth, add, subtract, divide, multiply, using either images or constants. Complex images

such as lung ventilation-perfusion ratios are yours with just several keystrokes. And it normalizes images for non-uniform camera responses.

You don't have to worry about service.

Hewlett-Packard, an international leader in measurement, analysis and computation, makes all major components of the Model 5407A system, including the computer, and tape and disc memories. The company has 172 offices throughout the world ready to give you service and technical assistance.

HP is well known in the medical field. Its other products include ECG's, VCG's, patient monitoring systems, electromyographs, diagnostic ultrasound, fetal monitoring, and computer-assisted cardiac catheter labs.

There's a book that tells you all about it.

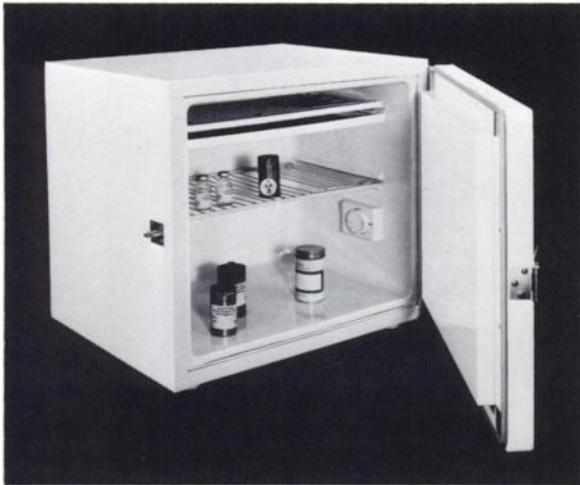
The title is "HP's Total System Approach to Nuclear Medicine." In 22 pages, it covers all the advantages of the new HP 5407A Scintigraphic Data System. For your copy, simply call your nearest HP office or write the Hewlett-Packard Company, 1501 Page Mill Rd., Palo Alto, California 94304; Europe: P.O. Box 85, CH-1217 Meyrin 2, Geneva, Switzerland.

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Lead is placed on the outside of the refrigerator, thus increasing insulation. A steel wall is built over the lead to give the unit the appearance of a standard refrigerator.

The door is reconstructed with a full sized lead and steel plug, precluding the possibility of leakage.

A sprung stainless steel continuous hinge and magnetic closure cause the door to close automatically after opening.

### SPECIFICATIONS

DIMENSIONS .....	22"x22"x20" HIGH
CAPACITY .....	2.5 CUBIC FEET
WEIGHT .....	150 lbs.
SHIELDING .....	1/8" LEAD, 6 SIDES
FREEZER COMPARTMENT.....	YES
FINISH .....	APPLIANCE WHITE
MODEL #01-025 .....	\$ 450.00

Atomlab Div.

## ATOMIC PRODUCTS CORP.

## PRO-TEC® SYRINGE SHIELD\*

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Unbreakable, Safe, Lightweight



*Twist lock and internally mounted stainless steel spring holds syringe firmly in place - prevents syringe shimmy or wobble.*

*Lead sleeve encased in nickel plated brass.*

*Exposed end of syringe barrel to view with-  
drawal of blood*

The Pro-Tec Syringe Shield is the first syringe shield that is not only easy and convenient to use, but also reduces exposure by a factor of 40. The Pro-Tec is less than half the weight of other syringe shields but its unique construction provides the same amount of protection.

Designed with the comfort of both patient and user in mind, the Pro-Tec is as easy to use as a syringe alone.

Send for complete details on the "Pro-Tec Procedure" for safe radioisotope injections.

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**medi+physics**

# Iodinated <sup>(125I)</sup> human fibrinogen

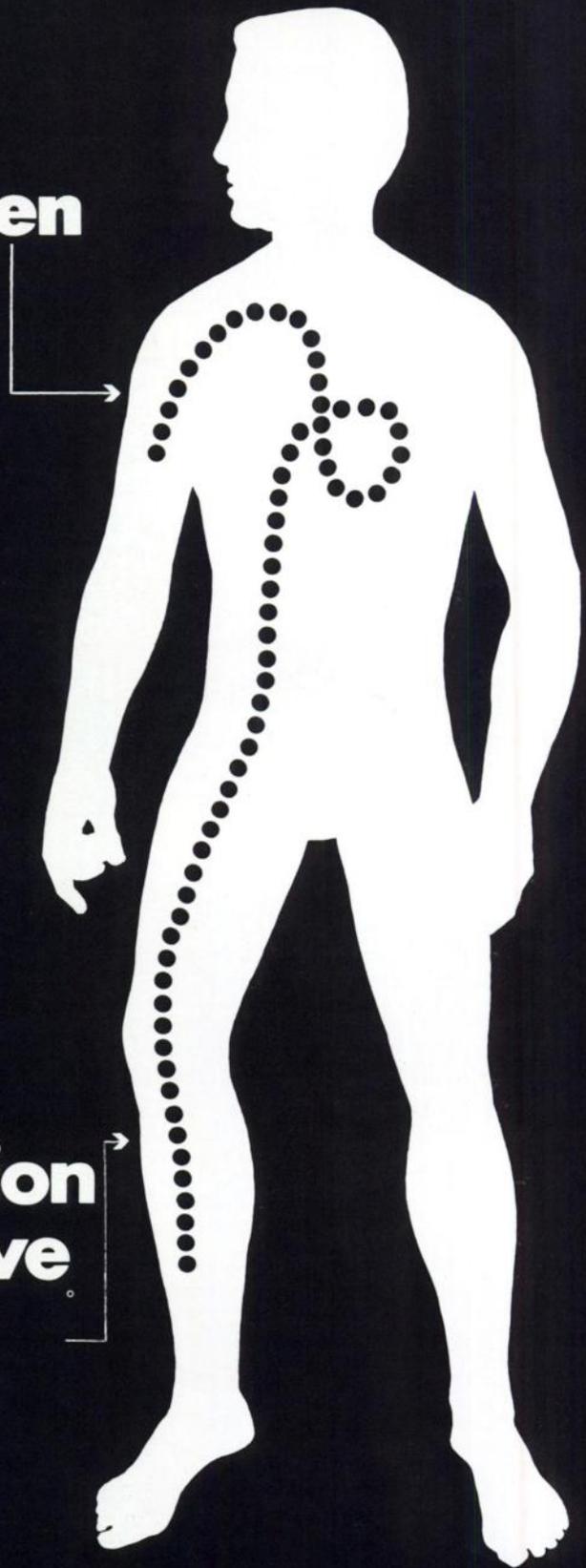
- 90% of iodinated fibrinogen is available for coagulation.
- prepared from a restricted pool of donors, screened to minimize the possibility of transmission of serum hepatitis.
- can be used for monitoring treatment of thrombus as well as detection.
- more convenient than phlebography—can be used for routine screening by ward staff.
- available from stock.

Post-operative deep vein thrombosis of the leg can give rise to many serious sequelae, including fatal pulmonary embolism, yet in many cases there are no clinical signs of the thrombus, itself. Labelled fibrinogen, administered by intravenous injection, becomes incorporated in the thrombus, and can be followed by daily scanning of each leg (using a hand held Isotope Localization Monitor). The area of maximum radiation intensity indicates the size and site of the thrombus. This simple daily procedure can be easily carried out at the patient's bedside.

*Full information on the material and the technique is available from The Radiochemical Centre.*

*Availability of this product may be subject to national regulations.*

## For early detection of post-operative deep vein thrombosis



**The Radiochemical Centre Amersham England**





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# nm/ PLACEMENT

## POSITIONS OPEN

**UNIVERSITY OF IOWA MEDICAL Center** is expanding its post-graduate training program in Nuclear Medicine to include a two-year clinical residency in Nuclear Medicine in compliance with the guidelines of the American Board of Nuclear Medicine and American Medical Association. Applications for positions starting in 1973-74 and 1974-75 are now being accepted. Prerequisites are internship and one-year residency in internal medicine, radiology, pathology or surgery. The medical center's facilities for Nuclear Medicine include the University Hospitals and Veterans Administration Hospital in Iowa City, which provide excellent opportunities for training in clinical care, teaching and research in nuclear medicine. An equal opportunity employer. For detailed information, please contact: Richard E. Peterson, Prof. Medicine and Radiology, Nuclear Medicine Section, Univ. Hospitals and Chief, Nuclear Medicine Service, VA Hospital, Iowa City, Iowa 52240, or phone (819) 888 0581 x 288 or x 387.

**NUCLEAR MEDICINE RESEARCH & Education Trainee:** Position available in January 1973 for Research and Education Trainees in Nuclear Medicine. Excellent opportunity for research and advanced clinical training in either a one-year or

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**NUCLEAR MEDICINE TECHNOLOGIST Chief.** Position immediately available for well-trained and qualified in vitro radioisotope and radioimmunoassay procedures. MT (ASCP) or RT (ARRT) with NMT and degree preferred. Salary commensurate with experience and qualifications. Send resume to: Margaret L. Corson, M.D., Associate Pathologist, Harrisburg Hospital, Harrisburg, Pennsylvania 17101.

**NUCLEAR MEDICINE TECHNICIAN.** Applications are being received by the Brevard Hospital, 1350 S. Hickory Street, Melbourne, Florida for the position of Nuclear Medicine Technician. This is a permanent position with fringe benefits. Apply personnel office.

**NUCLEAR MEDICINE TECHNOLOGIST.** Staff position for experienced, registered Nuclear Medicine Technologist. College degree desirable. Salary commensurate

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**NUCLEAR MEDICINE TECHNOLOGIST.** 415-bed teaching hospital in progressive medical center, Central Wisconsin. Fine benefit program, salary open. Apply: Dr. Richard W. Miller, St. Joseph's Hospital, Marshfield, Wisconsin 54449. Phone collect 1-715-387-1741, Ext. 456.

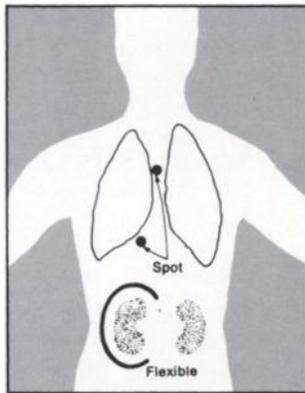
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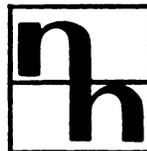


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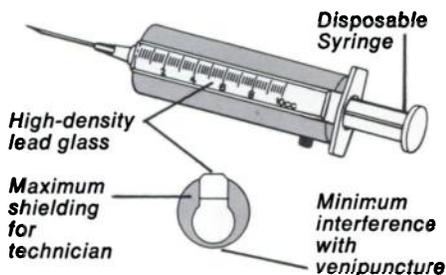
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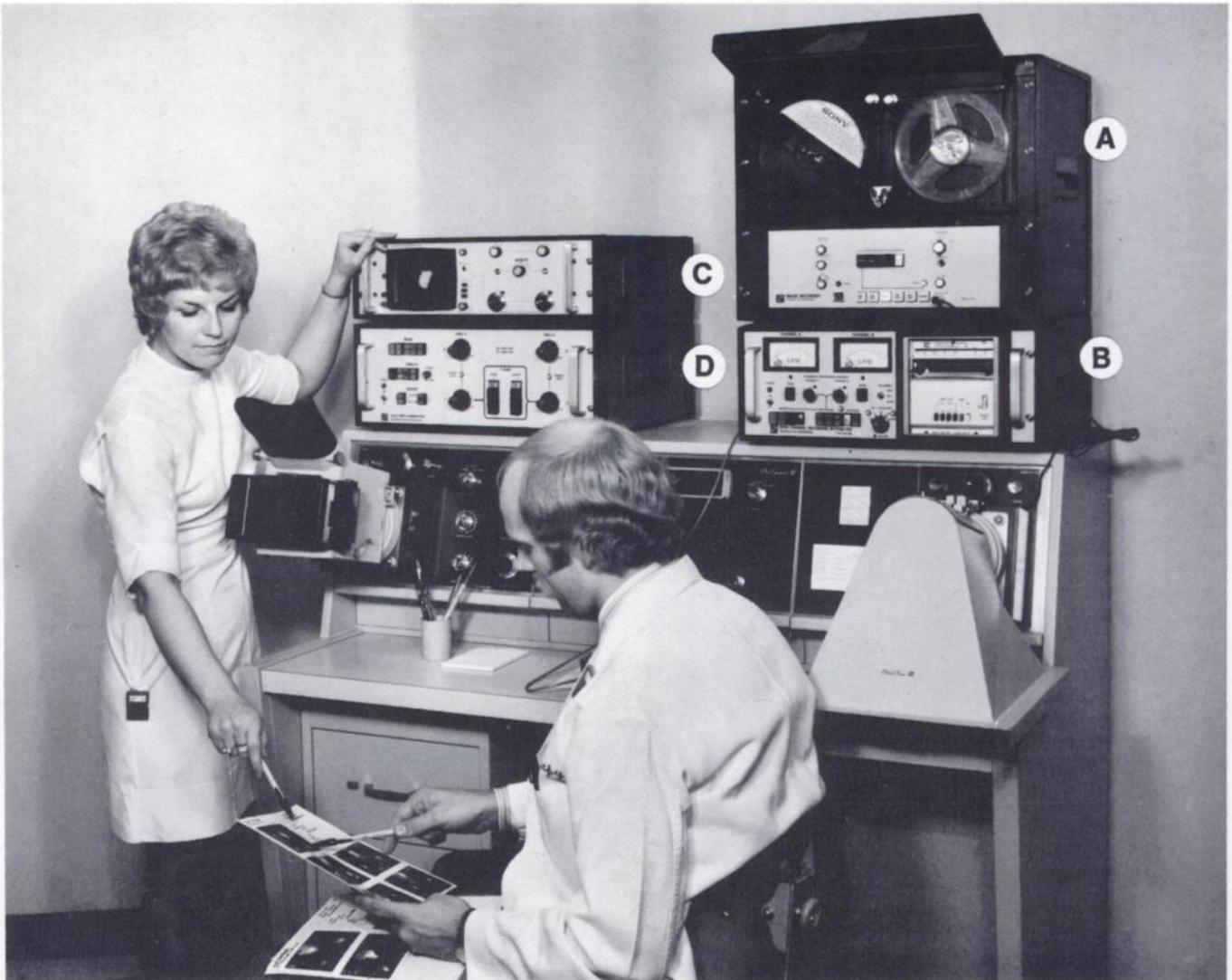
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ABSTRACTS Contact: C. Barrie Cook, M.D.  
3300 Gallows Road  
Falls Church, Virginia 22046  
Cut-off Date: February 10, 1973

Send Technologists Abstracts to:

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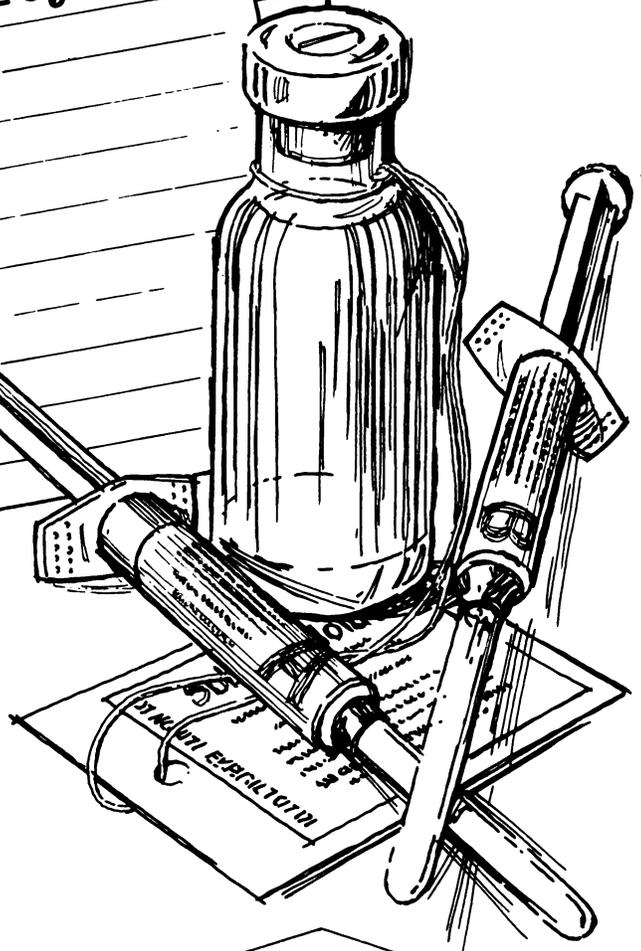
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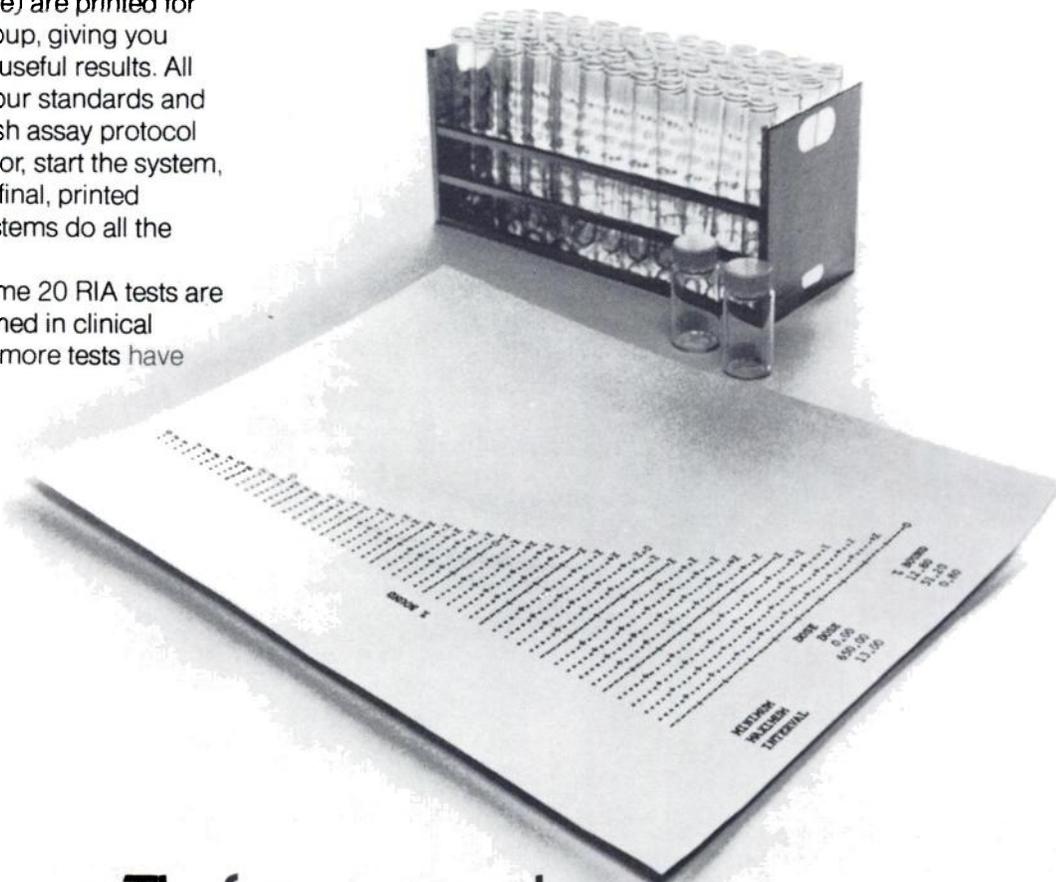
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# Radioimmunoassay

from New England Nuclear's Biomedical Laboratories

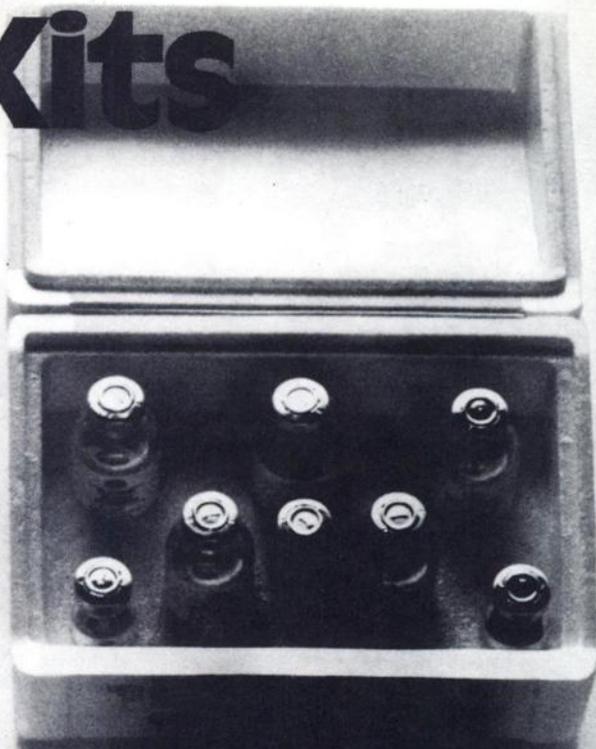


Digoxin [ $^3\text{H}$ ]

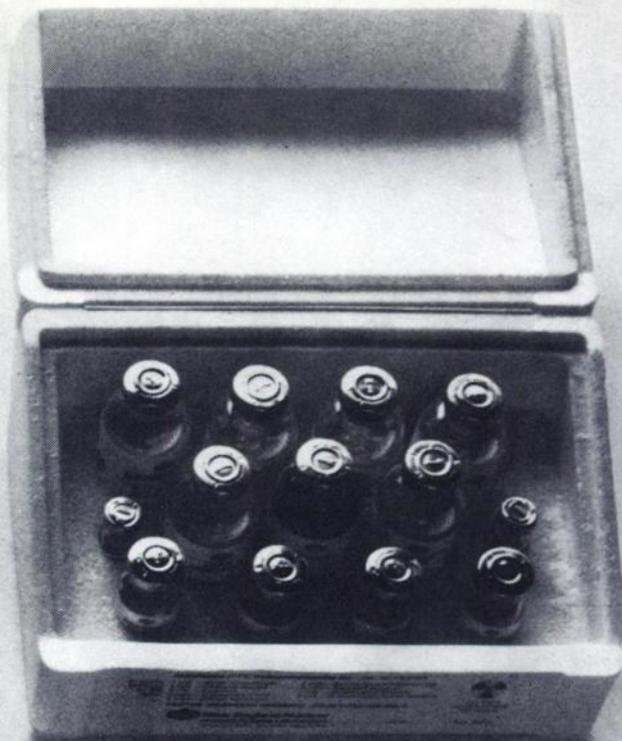


Human Chorionic  
Somatomammotrophin [ $^{125}\text{I}$ ]\*

# Kits



Digitoxin [ $^3\text{H}$ ]



Angiotensin I [ $^{125}\text{I}$ ]\*\*

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## New England Nuclear Biomedical Assay Laboratories

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Digoxin [ $^3\text{H}$ ]  HCS [ $^{125}\text{I}$ ]  Digitoxin [ $^3\text{H}$ ]  Angiotensin I [ $^{125}\text{I}$ ]

A number of kits are now under development. Please indicate those in which you are most interested. Technical information will be sent as it becomes available.

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 Testosterone [ $^3\text{H}$ ]  Morphine [ $^3\text{H}$ ]  Prolactin [ $^{125}\text{I}$ ]  HLH [ $^{125}\text{I}$ ]  
 Aldosterone [ $^3\text{H}$ ]  Cortisol [ $^3\text{H}$ ]  TSH [ $^{125}\text{I}$ ]  T-3 [ $^{125}\text{I}$ ]  
 T-4 [ $^{125}\text{I}$ ]

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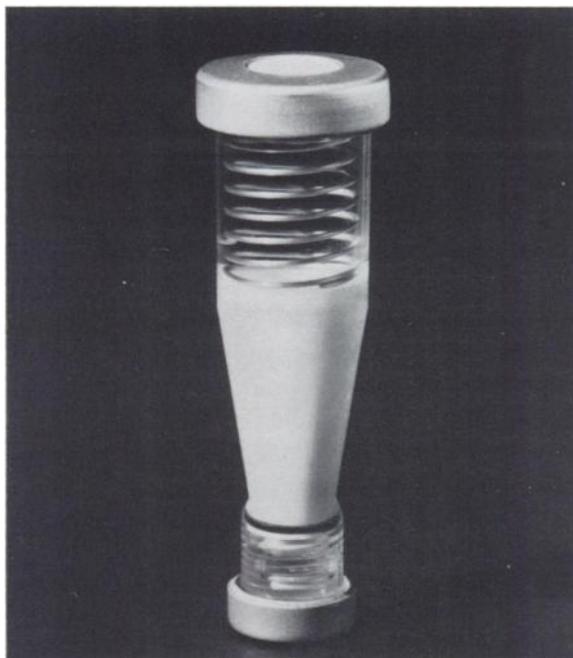
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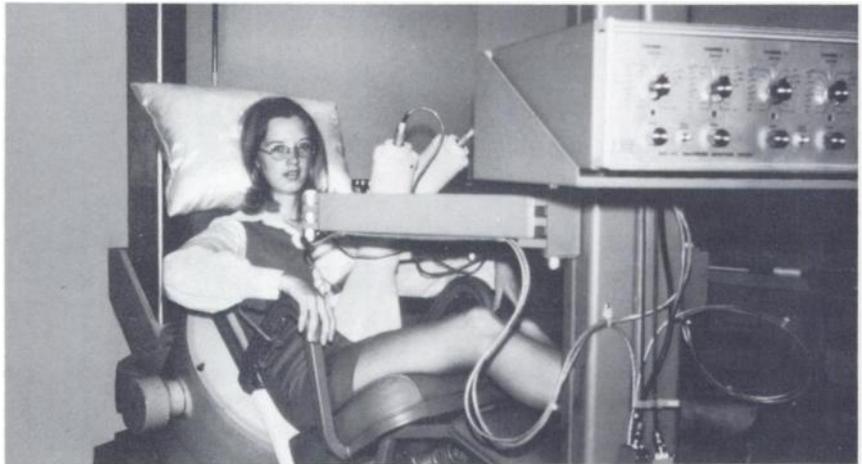
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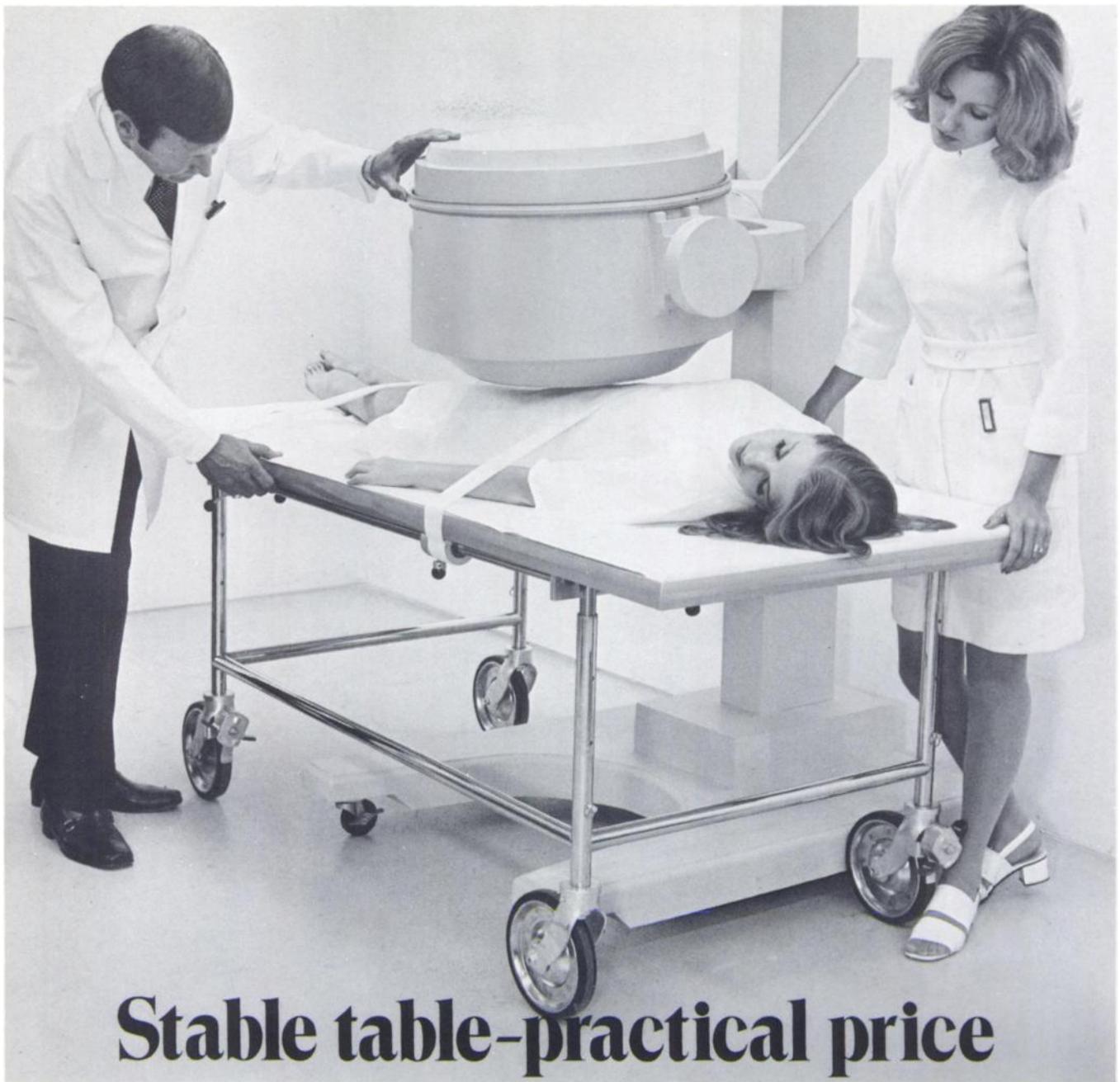
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## INTRODUCING ICON 380

**“No, 'tis not so deep as a well, nor so wide  
as a church-door; but 'tis enough, 'twill serve.” —SHAKESPEARE**

Mr. Shakespeare was obviously not thinking of our new ICON 380 Scintillation Camera when he wrote those words. But compared to other Cameras, the ICON 380 is a very deep well and a very wide church-door indeed. (We agree that wells and church-doors are hardly accurate units of measure, but we like the quotation). For those who insist on more exact terms, here is what the new ICON 380 offers:

A useful field of view of **38 cm.** (15 inches) diameter.

Delay line arithmetic.

Resolution better than 6 mm (1/4") as measured with <sup>99m</sup>Tc and bar phantom.

Two Zones-of-Interest, each capable of independent size, shape and position adjustment.

A unique “field of view” control which selects 38 cm., 28 cm., or

19 cm. circular concentric fields, rejecting all counts outside the selected field size, but maintaining the displayed image size.

A unique control (IRIS POSITION) to shift the 19 cm. field from its normal central position to the outer edge of the crystal. The 19 cm. field may then be positioned in any of four quadrants. This is an invaluable aid to patient positioning, especially in brain imaging.

14,000 hole low-energy collimator.

Dual channel ratemeter for display of Zones-of-Interest data.

Seven-digit scaler for digital quantification and display.

Both “fast” and variable persistence scope displays, with Polaroid camera.

Push-button energy selection with over-riding manual control.

2500 hole medium-energy collimator.

**OPTIONAL ACCESSORIES**  
Automatic 35 mm. NIKON F camera

Dual isotope option

Pinhole and high energy collimators

Magnetic tape recorder (256 x 256 matrix)

Additional “fast” scope display  
Anatomical marking option

Our new brochure has the whole story. Please write or telephone for your copy.

**SORRY U.S.A.—ICON 380**  
is not available in your country.



**CONUCLEAR LTD.**

P.O. Box 11055 Station “H” Ottawa, Ontario  
Canada K2H7T8 Phone: (613) 592-1411



**The Most Versatile Head Positioner  
IS The Least Difficult to Attach**

For both nuclear scanners and x-ray table units the Scholz Head Positioners are not only the most versatile and positive but also the easiest to attach. The Scholz Head Positioners are simple to operate. A single hand wheel opens and closes the padded jaws in unison. The jaws can be rotated through 360° and will index parallel to your camera face or table top.

**X-Ray Table Unit:**

All features are the same on both units. The Head Positioner for use with x-ray tables is easily attached with powerful vacuum cups.

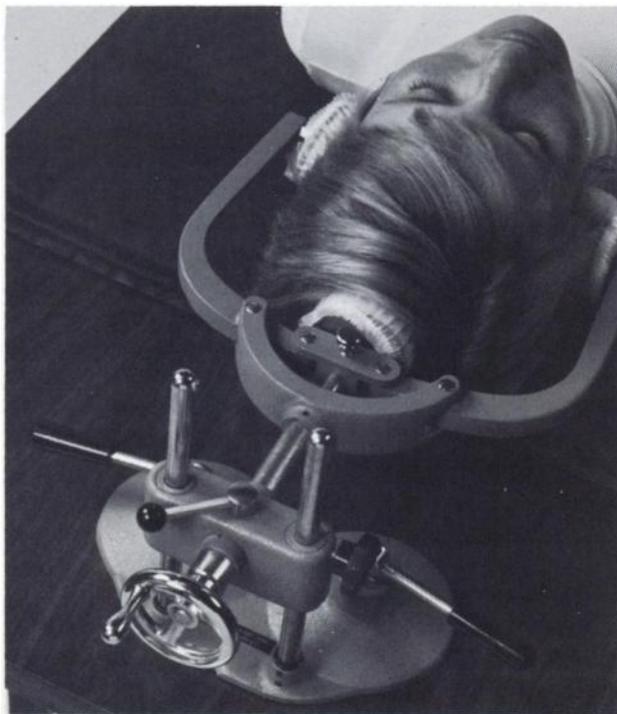
**Nuclear Camera Unit:**

The Scholz Nuclear Camera Head Positioner is easily attached to either the Nuclear-Chicago or the Picker Cameras. It is designed to attach by two bolts and offers the full versatility of the Standard Head Positioner.

For more information write:



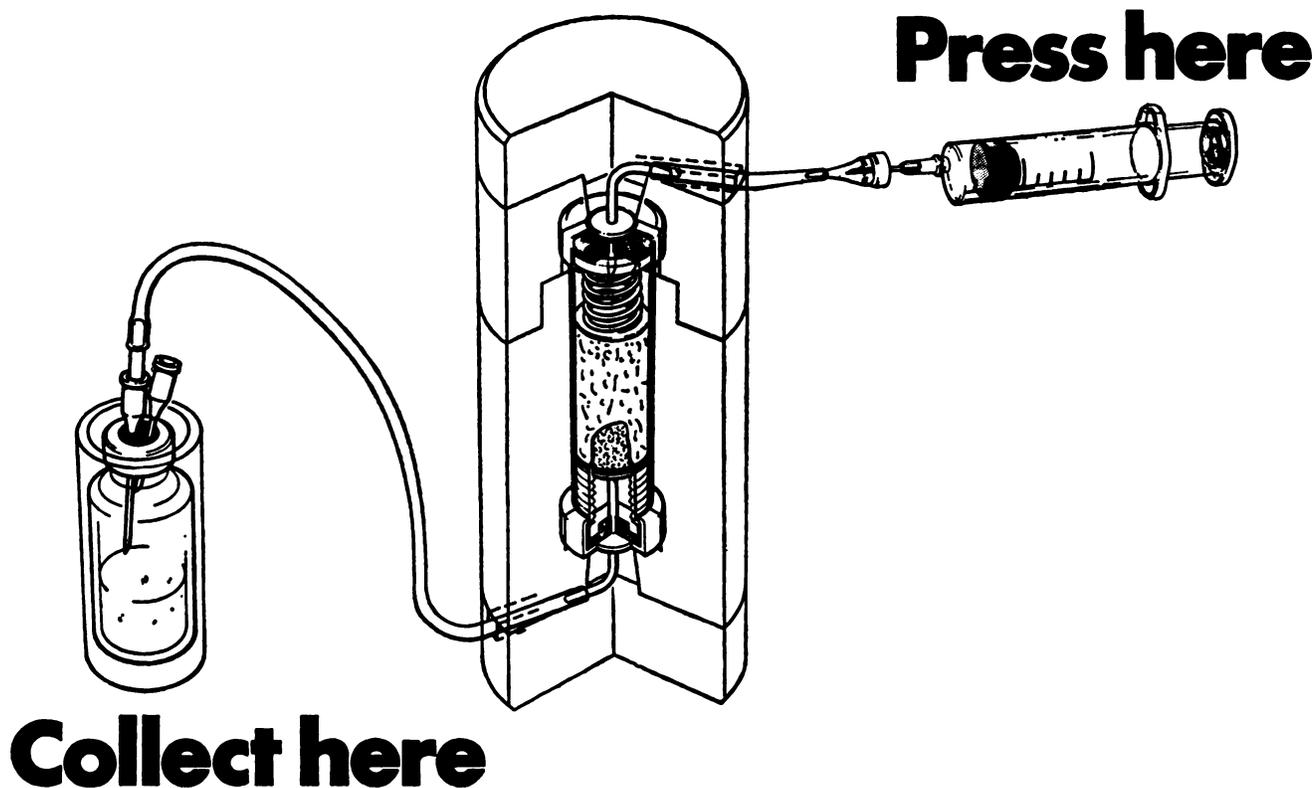
**® Frank Scholz X-Ray Corp.**  
464 Hillside Ave., Needham Heights, Mass. 02194  
(617) 444-7900



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# FOR STERILE, READY-TO-USE INJECTIONS OF TECHNETIUM - 99m, STRONTIUM - 87m OR INDIUM - 113m:



**New range of sterile generators from TRC**—designed by The Radiochemical Centre for greater simplicity, safety and reliability in preparing material for scanning brain, bone, liver and blood pool.

**Small elution volume with high radioactive concentration**—the new design of tapered generator body gives a reduction in the total bed volume. This reduces the elution volume required, increases the radioactive concentration and speeds the overall elution process.

**Consistently good yields**—the elution bed has been stabilized by using a spring loaded frit to eliminate disturbance by sterilization and to reduce the risk of channelling.

**Improved elution flow**—the new nylon mesh filter gives a fast reproducible flow and eliminates blockage by particles.

**Maximum control over operation**—the positive pressure flow system allows simple, fast elution with easy fractional elution if required.

**Maximum security against parent breakthrough**—the tapered generator body has been designed to reduce the bed volume but retain sufficient length to prevent breakthrough of the parent isotope.

**Safety during transport and handling**—the glass generator body has been replaced by a tough plastic material to reduce the risk of radioactive contamination due to breakage.

Please write for full information on the new range of sterile generators and the specifications of the daughter isotope.

**OUR PRODUCTS LEAD,  
OUR SERVICE FOLLOWS THROUGH**



**The Radiochemical Centre Amersham England**

Also available in the USA, South America and Canada from  
Amersham/Searle, 2636 S. Clearbrook Drive, Arlington Heights, Illinois 60005.



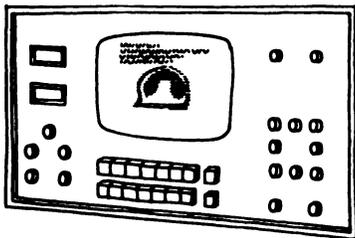


# System Seventy.<sup>TM</sup>

## Faster, more precise interpretation with a surprise tagged on.

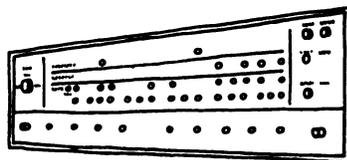
Now you can really do it faster, better, at a much lower cost — without ever having to worry about limitations again.

The Baird-Atomic Scanning Gamma Camera-System Seventy delivers 200,000 observed counts per second, with 3 to 4 millimeters resolution, at any energy.



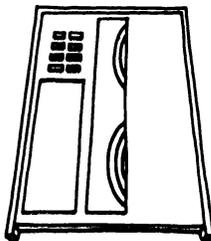
After three years clinical evaluation and thirty man-years of engineering, our Baird-Atomic nuclear teams have speeded up Static and Dynamic imaging procedures through computer computation and greatly improved human engineering, so that you can handle more patients, in less time. You gain more valid, more accurate information for faster, more precise interpretation.

You might call it a result of our decade of concerned commitment, to the nuclear medical community.



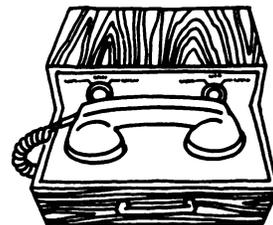
System Seventy uses as its information and data manipulation base the Nova computer. It's part of the whole new image processing console, also featuring a large screen viewing area, drum memory, and the minimum of controls. You simply push STATICS or DYNAMICS and let the computer take events from raw count information to clinical formats, in seconds. It's that easy — for you and your operator.

It's all possible through our comprehensive software packages and programming, eliminating the tedious and time consuming work of conversion to interpretable data.



But that's only our basic System Seventy. As your needs grow, our modular Scanning Gamma Camera will grow with you. Add what you want — unlimited patient record storage and instant retrieval, hard copy electrostatic images in

seconds, remote color TV monitoring, maintenance diagnostics transmitted from your lab to our service centers, buffered and/or expanded memory — even data transmission to other nuclear medical facilities for group consultation. It's all here, at your request.



We've ensured the clinical usefulness of System Seventy incorporating all those areas of special consideration like data smoothing and automatic non-uniformity correction along with our unique detector, its 294 NaI(Tl) crystals, and the computerized bed programmed to index sixteen times per study, 2.78mm per move — for 4704 true data collection points.

What this adds up to is superior performance, for really fast scanning — unlike any other camera available anywhere today, offering you the most options, at the lowest price.

So how much does System Seventy cost? Just ask us. Before you consider another scanning gamma camera, check the Baird-Atomic price tag.

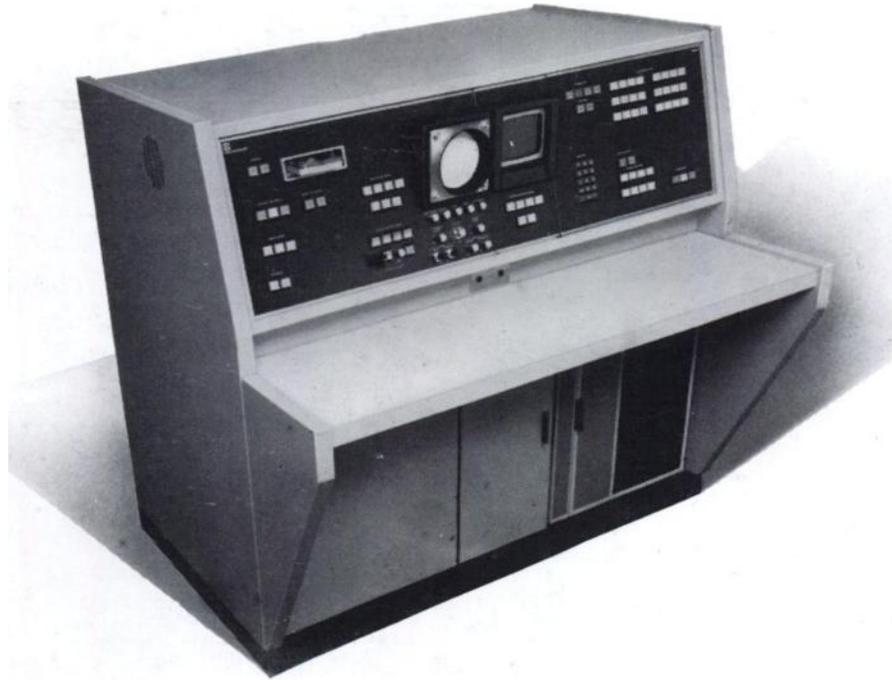
That's the best surprise of all.



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Bedford, Mass. 01730, 617/276-8000,  
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# Clincom.™

## The only data processor that measures up to Pho/Gamma's image.



Only Clincom is specifically designed to improve on the image of the world's most experienced scintillation camera. Clincom is fully compatible with Pho/Gamma—forming an integrated unit of unprecedented versatility in data storage, playback, and manipulation at the push of a button. It includes many "firsts"—in both today's and tomorrow's nuclear medicine procedures—to aid the physician in his particular diagnosis. To name a few Clincom enhancements of Pho/Gamma . . .

**Simplified Acquisition**—Mounted on top of Pho/Gamma's console, the Acquisition Panel easily facilitates camera/Clincom control by the technician. All operating parameters including date, patient identification number, collimator used, framing rates, and patient orientation are

pushbutton selected. Furthermore, the acquisition of data begins when the Pho/Gamma's "Start" button is activated.

**Image Processing**—All processing controls are located on the Physician's Viewing Console. The Analysis Scope displays either current data being received from Pho/Gamma, or stored images developed from Clincom's wide-ranging diagnostic procedures. The Text Scope continuously logs (in everyday clinical language) all information on the desired study. Both the processed image and the text may be photographed with a synchronized camera for storage in patient records.

**Permanent Storage**—Data is stored on the master tape and later may be transferred to cartridge tape for inexpensive, long-term storage. Self-checking features are incorporated to prevent unintentional data erasure.

**"Powerful" Software**—Clincom will remember, with the help of the "Capture Procedure" pushbutton, an entire sequence of data operations. A program thus generated is simply recalled with fingertip control. In addition, Clincom offers a wide range of on-line and off-line programs for future research and clinical needs.

**Remote Viewing**—Clincom can be placed up to 200 feet from the Pho/Gamma Console. This allows the physician to process studies in any area removed from the patient's presence.

Clincom . . . the image processing system for Pho/Gamma. Find out how Clincom can specifically meet your clinical and diagnostic needs. Contact your Nuclear-Chicago sales engineer, or write to us for your free brochure.



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