

**Iron deficiency anemia testing—
As easy as throwing in the sponge!**

Irosorb-59 is the second in a series of **in vitro** radio-pharmaceutical tests developed by Abbott Laboratories. **The Irosorb-59 Sponge offers a remarkable degree of accuracy and simplicity that makes routine screening a practical matter.**

Accuracy: The diagnostic accuracy of the test is unsurpassed in measuring latent iron-binding capacity. What's more, unlike other methods, it can be used following the administration of a hematinic.

Speed: Irosorb-59 can be washed quickly, there being only 3 washes. No incubators or shakers are needed.

Convenience: Irosorb-59 is in a disposable kit form ready for immediate use at room temperature.

Safety: No dilution or pipetting of radioactive material is necessary. Since the patient receives no radioactive materials, the test can be used in children, pregnant women; or in adults without any hazard of radioactivity.

Flexibility: The test does not require the presence of the patient for the determination of the radioactivity. Serums can be frozen and saved until a sufficient number has been collected to run a rack full of tubes at one time, or serum samples can be mailed to personnel performing the test.

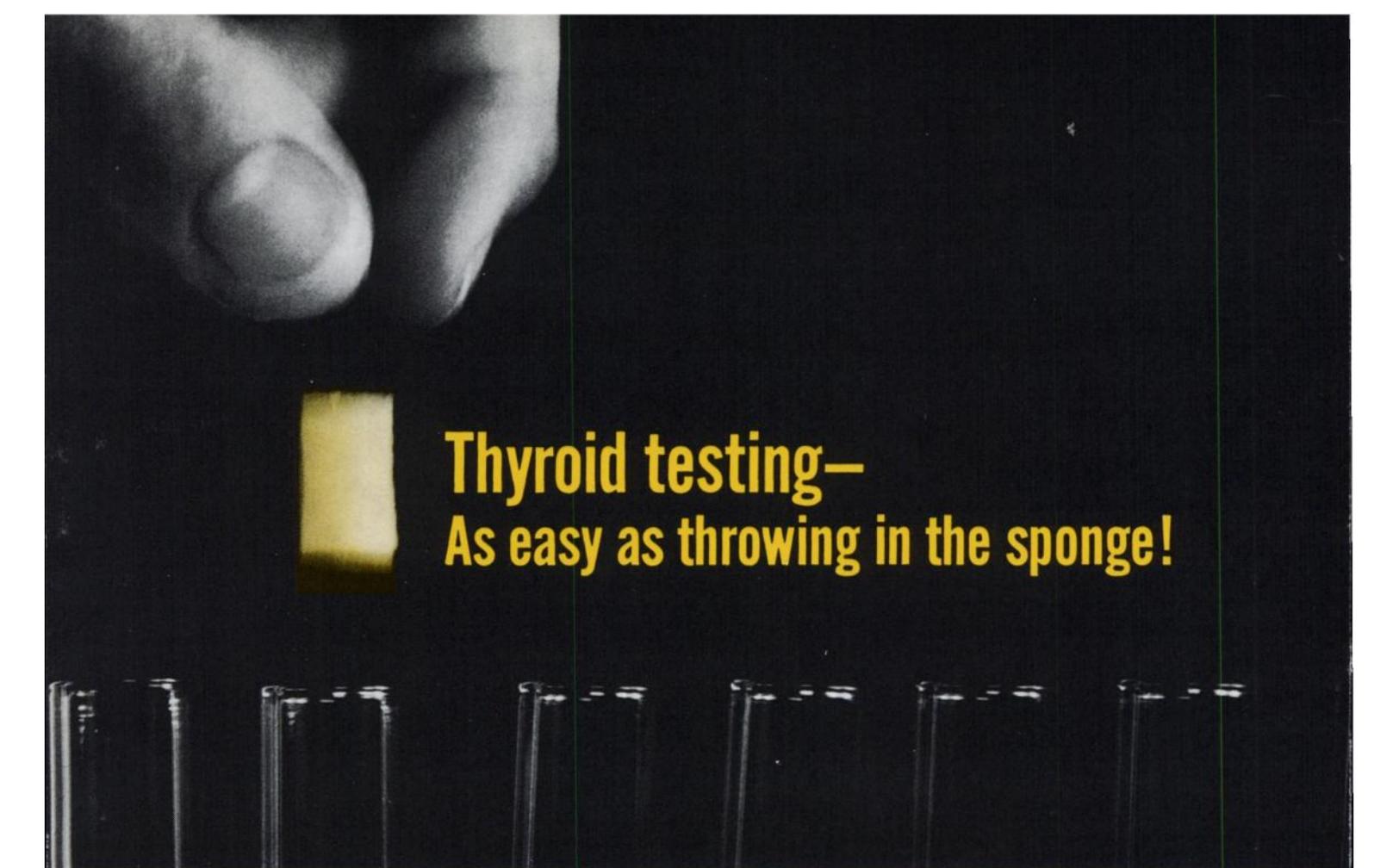
**Irosorb-59 is available to all doctors, hospitals and clinical laboratories—
AEC licensing is not required.**

709418



IROSORB-59[®]
DIAGNOSTIC KIT

ABBOTT LABORATORIES NORTH CHICAGO, ILLINOIS
Abbott Laboratories, S.A., 2, rue Thalberg, 1201 Geneva, Switzerland



**Thyroid testing—
As easy as throwing in the sponge!**

The Triosorb Sponge is an in vitro test providing accuracy, speed and convenience.

Accuracy: Because factors such as red blood cells and exogenous iodine have been eliminated from consideration in the Triosorb Test, it is unsurpassed in accuracy.

Speed: With only 3 washes and no need for double pipettings, shakers, or incubators, the Triosorb Test can be more rapidly performed than any other T-3 test.

Convenience: Available in a disposable kit ready for immediate use at room temperature. There is no dilution or pipetting of radioactive materials with Triosorb. It is the simplest and most convenient thyroid function test to perform.

“The resin sponge (Triosorb) technique is superior to the erythrocyte method for performing the I^{131} T3 test in terms of simplicity, convenience and elimination of errors characteristic of the erythrocyte procedure.”¹

“The T-3 uptake test was vastly improved by a resin-sponge . . . (Triosorb) . . . which is offered as a replacement for the red cells as well as for the loose granular resin which varies from day to day.”²

**Triosorb is available to all doctors, hospitals and clinical laboratories—
AEC licensing is not required.**

1. McAdams, G. B., and Reinfrank, R. F., J. Nuclear Med., 5:112, 1964.

2. Manfredi, O. L., et al., J. Nuclear Med., 7:72, 1966.

802457



**TRIOSORB®-131
TRIOSORB-125**

T-3 DIAGNOSTIC KIT

ABBOTT LABORATORIES NORTH CHICAGO, ILLINOIS

Abbott Laboratories, S.A., 2, rue Thalberg, 1201 Geneva, Switzerland

This sponge puts the
squeeze on the PBI!



"For many years the protein-bound iodine (PBI) has been used as an indirect index of the level of thyroid hormones; however, in an appreciable number of cases it does not provide an accurate measurement, because compounds containing iodine or mercury are present."¹

It is now generally recognized that a quantitative **direct measurement** of thyroid hormones in serum is the most valuable single laboratory aid in assessing thyroid function.

"Using a resin-sponge and thyroxine tagged with I-125, a simple method was developed to determine serum thyroxine."²

That method is Tetrastorb-125, the first diagnostic kit offering a direct measurement of thyroid function by determining serum thyroxine. Hypothyroid patients show a decrease in serum thyroxine while hyperthyroid patients show an increase.

Using the principle of saturation analysis for measuring total serum thyroxine, the following results have been reported:

"When T_4 and PBI values were compared, a good correlation ($r=0.823$) was obtained with a higher diagnostic accuracy for the T_4 determination. All euthyroid individuals with PBI's elevated due to iodine had T_4 values in the normal range. . . . The T_4 level correlated well with the clinical status in hypothyroid subjects receiving T_4 or hyperthyroid subjects receiving various forms of therapy."¹

"Unlike the protein-bound iodine determination, this technique is entirely unaffected by iodine or mercury, an important advantage from the clinical point of view."³

"These results proved that this method could be used as a routine clinical diagnostic test in place of the determination of PBI."⁴

By requesting both Tetrastorb-125 (a direct measure of thyroid activity) and Triostorb® (an indirect measure of thyroid activity) for his patient, the physician is provided with more information than ever before possible.

Tetrastorb-125 is available to all doctors, hospitals and clinical laboratories—AEC licensing is not required.

1. Murphy, B. P. and Patte, C. J., J. Clin. Endocr., 26:247, 1966.
2. Kaplan, B. C., AAAS Meeting, Dec., 1966.
3. Murphy, B. P., J. Lab. & Clin. Med., 66:161, 1965.
4. Nakajima, H., et. al., J. Clin. Endocr., 26:99, 1966.



Announcing **TETRASORB™-125**
T-4 DIAGNOSTIC KIT

ABBOTT LABORATORIES NORTH CHICAGO, ILLINOIS

Abbott Laboratories, S.A., 2, rue Thalberg, 1201 Geneva, Switzerland

TM—TRADEMARK. 712434

New help in diagnosing pulmonary problems

Scintiscanning of the lungs now offers a new approach to the diagnosis of pulmonary disease.¹ With use of macroaggregated radio-iodinated I^{131} albumin, lung scanning has been found to be simple, rapid and relatively safe,^{2,3} and is invaluable as an adjunct to other diagnostic procedures whenever information about pulmonary vasculature is desired.

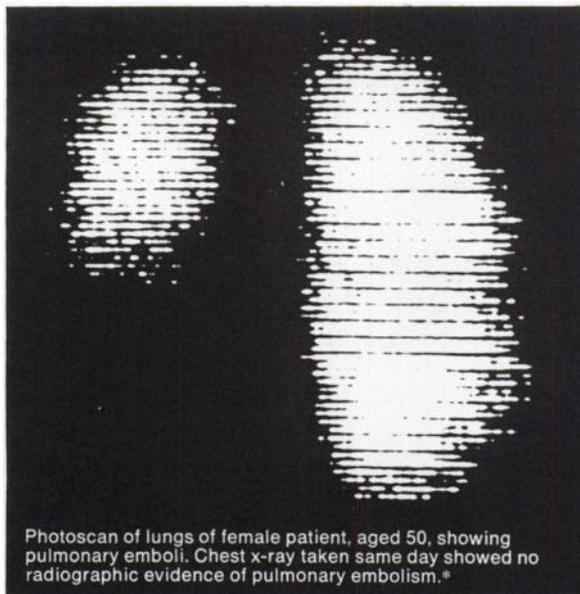
Perhaps the most useful application of the lung scan has been for the early detection of pulmonary embolism where "... it appears that the lung scan can point to the site of embolic lesions before signs of lung infarction are recognizable on plain chest films."³ This is important, for with the development of new means of treating pulmonary embolism, the need for improved diagnostic ability has increased. For example, the availability of anticoagulant drugs to prevent further thrombosis and of proteolytic agents to dissolve thrombi already formed, the use of surgical therapy (such as ligation or plication of the inferior vena cava and even pulmonary embolectomy) — all require more accurate diagnostic procedures.^{4,5}

Of course, pulmonary arteriography can give an immediate positive demonstration of an obstruction in the pulmonary circulation as soon as it occurs, but this procedure is time consuming and technically difficult to perform. It necessitates injection of large quantities of high density contrast medium directly into the pulmonary artery, and it also requires cardiac catheterization (with some risk of dislodgement of venous thrombi). Moreover, experience has shown that patients with pulmonary hypertension may tolerate injections of contrast material poorly. Other examinations, such as x-ray study of the chest and electrocardiography, are rarely definitive.⁴

In contrast, lung scanning with Albumotope-LS is a simple and direct adjunctive measure; reliable and virtually without risk of morbidity to the patient. And unlike pulmonary arteriography it does not require cardiac catheterization and involves only minimal inconvenience to the patient. All that is required is the i.v. administration of a relatively small amount of the isotope. And the test may be supplemented with other procedures when necessary.

Although the lung scan has been used most frequently for the detection of pulmonary emboli, it can provide useful information in the diagnosis and evaluation of other pulmonary problems. For example, a recent report⁶ in the September, 1966, issue of *Circulation* discusses the potential applicability of the technique in the detection and assessment of mitral valve disease. According to the authors, the technique has been found useful in screening patients with clinical findings of mitral valve disease who were not considered symptomatic enough to warrant cardiac catheterization... in the preoperative study of patients so ill that left heart catheterization was unusually hazardous... and in determining whether the pulmonary venous pressure is elevated in patients with known severe pulmonary arterial hypertension. In these latter patients it is often difficult to measure pulmonary arterial wedge pressure reliably and the more extensive manipulations necessary for left heart catheterization may be poorly tolerated. Thus, assessment of the distribution of pulmonary arterial blood flow by lung scanning affords a means for determining the existence of pulmonary venous hypertension, which suggests the presence of potentially correctable lesions, such as mitral stenosis or cor triatriatum.⁶

New radioisotope scanning procedure can help detect the vascular changes of pulmonary disease before they show on chest films



Photoscan of lungs of female patient, aged 50, showing pulmonary emboli. Chest x-ray taken same day showed no radiographic evidence of pulmonary embolism.*

Albumotope[®]-LS Squibb Aggregated Radio-Iodinated (I^{131}) Albumin (Human)

References:

- (1) Quinn, J. L., III; Whitley, J. E.; Hudspeth, A. S., and Prichard, R. W.: *Radiology* 82:315 (Feb.) 1964.
- (2) Sabiston, D. C., Jr., and Wagner, H. N., Jr.: *Ann. Surg.* 160:575 (Oct.) 1964.
- (3) Haynie, T. P.; Hendrick, C. K., and Schreiber, M. H.: *J. Nucl. Med.* 6:613, 1965.
- (4) Wagner, H. N., Jr., et al.: *New Eng. J. Med.* 271:377 (Aug. 20) 1964.
- (5) Quinn, J. L., III; Whitley, J. E.; Hudspeth, A. S., and Watts, F. C.: *J. Nucl. Med.* 5:1 (Jan.) 1964.
- (6) Friedman, W. F., and Braunwald, E.: *Circulation* 34:363 (Sept.) 1966.

Dosage and Scanning Procedure: Recommended scan doses of 150 to 300 microcuries of aggregated radioiodinated (I^{131}) albumin depending on the instrumentation available and the technique employed. Scanning immediately follows administration of slow intravenous injection. Patient may be placed in a prone or supine position.

Side Effects and Precautions: Radioisotopes should not be used in pregnant women, nursing mothers, or in patients under 18 years of age unless indications are very exceptional.

There have been no reported cardiovascular or other untoward effects attributable to Albumotope-LS. Extensive clinical use of Albumotope-LS has not borne out the hypothetical possibility that particles of large size might induce deleterious cardiovascular or cerebrovascular effects. The product appears to possess no antigenic properties. One patient with a known history of angioneurotic edema, who had been given Lugol's solution in conjunction with aggregated radioalbumin similar to Albumotope-LS, developed urticaria.

Available: As a sterile, non-pyrogenic, aqueous suspension. Each cc. contains approximately 1 mg. aggregated human serum albumin labeled with 800-1500 microcuries of iodine-131 at time of manufacture. Also contains 0.9% benzyl alcohol as a preservative.

*Illustration furnished through the courtesy of George V. Taplin, M.D., Harbor General Hospital, Torrance, California.

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is the honor and integrity of its maker.



stercow 99m

Technetium-99m

For high-definition diagnostic scans of brain lesions, thyroid, lungs, kidneys, liver, spleen and other organs.



High-definition scans are an essential in the fast-developing field of radio-diagnosis. Particularly so in the localisation of brain lesions and the scanning of thyroid, kidneys, liver, spleen and other human organs.

Good scan resolution is one of the major contributions of the technetium-99m yielded by Stercow 99m - an advanced-design sterile generator by Duphar.

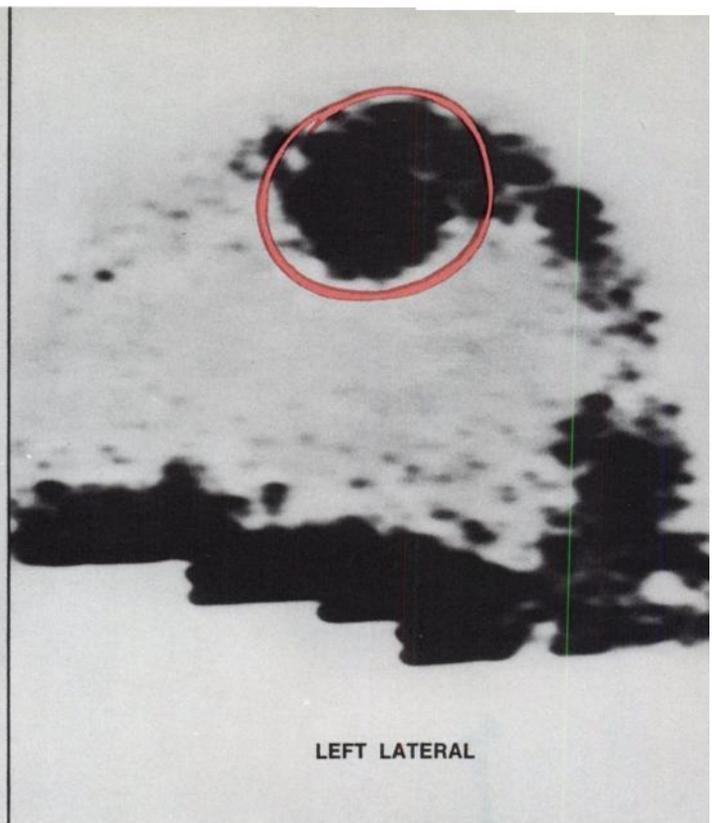
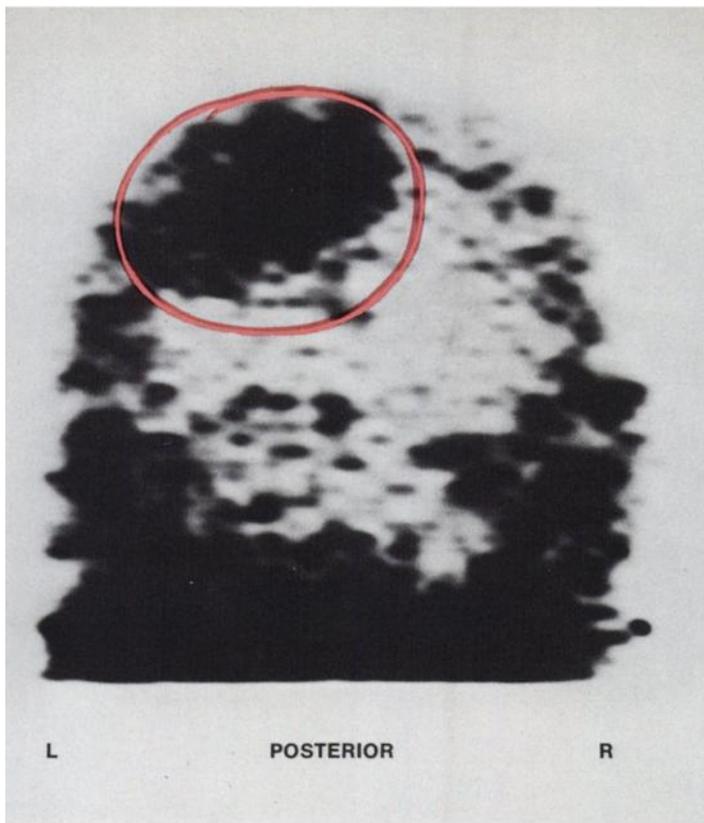
Supplies are despatched during the week-end pre-calibrated for the first day of use, usually Monday at 18.00 hrs M.E.T. - and an elution efficiency of approximately 80% of the technetium-99m in the Stercow is guaranteed. Further, milking is a simple, safe and speedy operation. Full details of Ster-

cow 99m and the uses of the scanning agent technetium-99m will gladly be sent on request. Samples are available free of charge. Stercow 99m is manufactured by Duphar to the very high quality standards necessary for nuclear pharmaceuticals. A new design of sterile generator, it is available in three types with 150, 300 or 450 mc of the parent radioisotope Mo99. Complete elution with 15, 20 or 30 ml. When milked in the approved manner, the resultant technetium-99m is sterile, non-pyrogenic and hence ready for immediate use - either orally or intravenously. The Duphar Shielded Stercow Milking System gives additional safety and efficiency in the elution operations.

Nuclear pharmaceuticals



Contact our local representative
or write direct to
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In suspected brain pathology, find out fast with **Pertsan-99m**

For brain scanning, Pertsan-99m provides more information with less radiation to the patient than any other related cerebral test—whether other radioisotopes or x-rays. And you get each projection fast—as little as 2 minutes with a camera, 15 minutes or less with rectilinear scanners.

A 54-year-old man was hospitalized with progressive weakness of the right side, followed by seizures of the right side (Jacksonian seizures). Brain scans showed an abnormal concentration of isotope in the left parasagittal area. Surgery revealed a meningioma, which was removed, and the patient recovered.

The 2 scans above, showing the marked abnormal uptake (which turned out to be a meningioma), were made with Pertsan-99m. This product is shipped Monday through Friday—and Sunday. Thus, brain scans can be scheduled 6 days a week—Monday through Saturday.

INDICATIONS: Adjunctive diagnostic aid in detecting and localizing intracranial neoplastic (primary or metastatic) and non-neoplastic lesions.

CONTRAINDICATIONS: Radio-pharmaceutical agents should not be administered to pregnant women or to persons less than 18 years old unless the indications are very exceptional.

PRECAUTIONS: Care should be taken to ensure minimum radiation exposure to the patient as well as all personnel; to prevent extracranial contamination because this can lead to erroneous interpretation; and to differentiate areas of abnormal activity from areas of normal vascular activity.

804464

Pertsan™-99m

SODIUM PERTECHNETATE Tc 99m

Also available:

Pertgen™-99m

TECHNETIUM 99m GENERATOR KIT

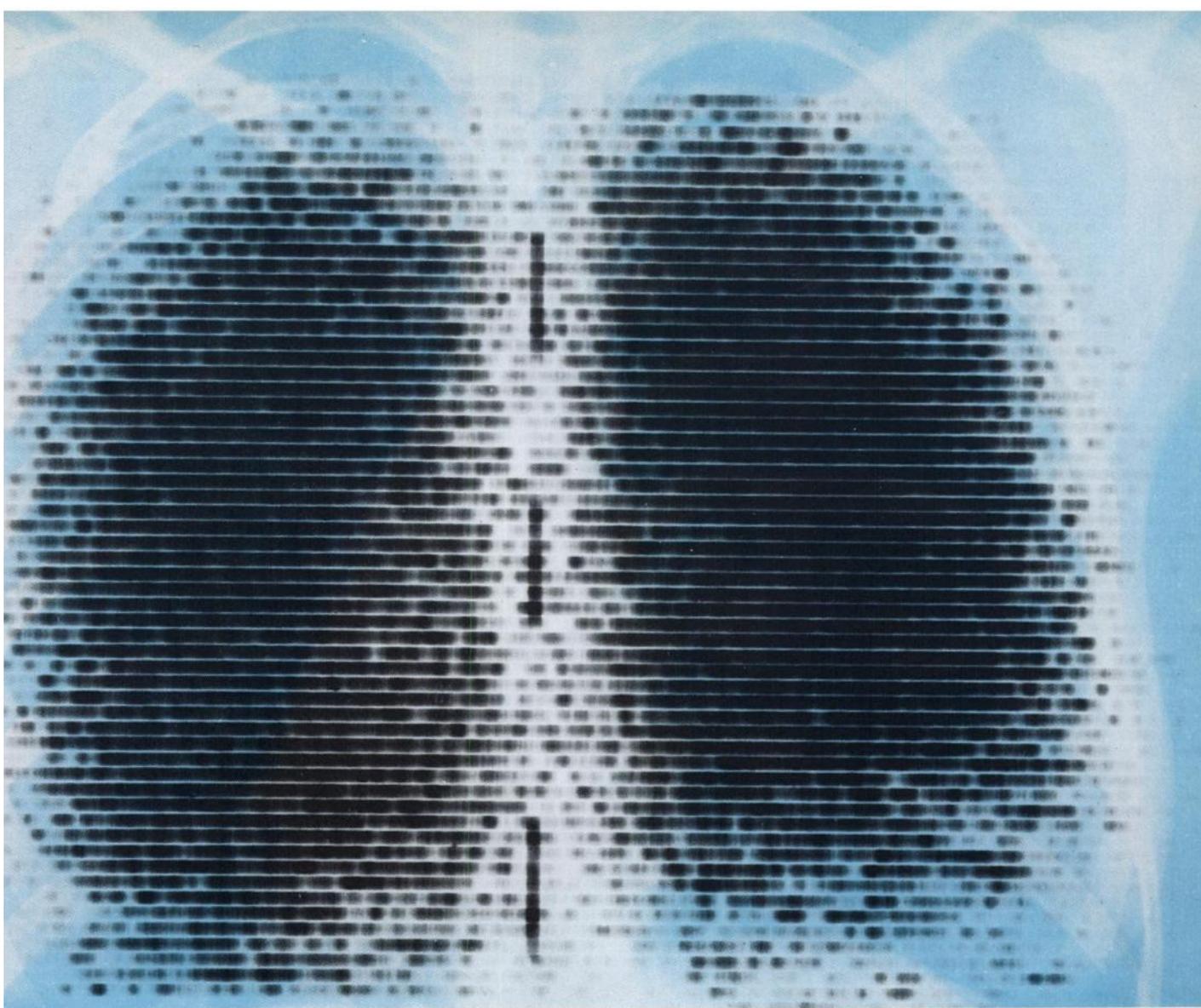


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Abbott announces
Macroscan™-131
AGGREGATED RADIO-IODINATED (131) ALBUMIN (HUMAN)

**If it's a pulmonary problem,
Macroscan-131 pictures it!**

Pulmonary embolism, suspected: To confirm (or rule out) its occurrence.

Chronic pulmonary tuberculosis: To estimate unilateral and regional function and perfusion of the lungs.

Emphysema: To evaluate the degree of focal lack of perfusion.

Pneumonitis: To evaluate the decreased regional blood flow that occurs without obstruction of vessels.

Lung tumors: To evaluate the regional ische-

mia resulting from compression or obstruction of pulmonary arteries.

Surgery and/or other therapy for lung disorders: To evaluate the effectiveness of therapeutic measures.

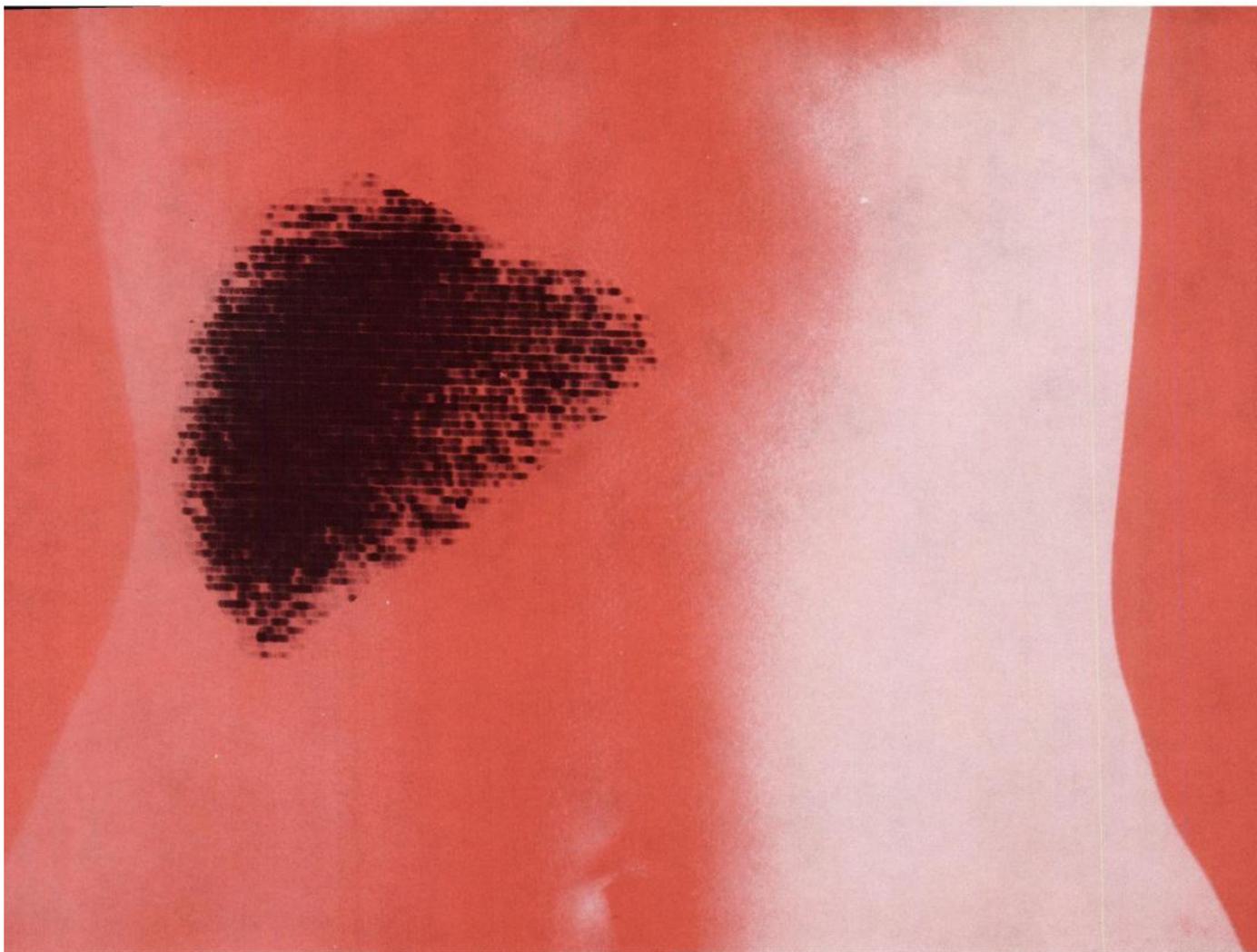
Macroscan-131 is sterile and non-pyrogenic. It is ready to use and should not be heated prior to use.

INDICATIONS: For scintillation scanning of the lungs to evaluate total, unilateral, and regional arterial perfusion to the lungs.

CONTRAINDICATION: Radio-pharmaceutical agents should not be administered to pregnant women, nursing mothers, or to persons less than 18 years old unless the indications are very exceptional.

PRECAUTIONS, SIDE EFFECTS: Care should be taken to administer the minimum dose consistent with safety and validity of data. The possibility of an immunological response to albumin should be kept in mind when serial scans are performed. There is a theoretical hazard in acute cor pulmonale, because of the temporary small additional mechanical impediment to pulmonary blood flow. A possible case of urticaria has been related to a similar preparation. The thyroid gland should be protected by prophylactic administration of concentrated iodide solution.





Abbott Announces

ColloscanTM-99m

TECHNETIUM SULFIDE Tc 99m

Now, you can "see" the liver without exploratory surgery!

Liver scanning is employed to help determine the size, position, shape and functional integrity of the liver. Space-occupying lesions of the liver from all causes usually can be detected and diagnosed. Scanning is especially useful when serologic or other laboratory tests are equivocal or not useful.

Colloscan-99m offers major advantages over earlier medical isotopes:

1. It provides very high counting rates that can be readily detected.
2. It is easily collimated and shielded.
3. And because of its short half life (about 6 hours) and fast clearance, the patient receives minimum radiation.

For these reasons, technetium sulfide Tc 99m has been called the agent of choice.^{1,2}

It is important to note that Colloscan-99m is formulated with low molecular weight dextran (dextran 40)—and not clinical dextran (dextran 75).

Colloscan-99m is a sterile, non-pyrogenic, colloidal solution that can be administered as received—no preparation is necessary. It is shipped 6 days a week—Monday through Friday and Sunday.

INDICATIONS: For indirect visualization of the liver, spleen, and bone marrow.

CONTRAINDICATIONS: Radio-pharmaceutical agents should not be administered to pregnant or lactating women or to persons less than 18 years old unless the indications are very exceptional.

PRECAUTIONS: Care should be taken to ensure minimum radiation exposure to the patient as well as to all personnel. Physicians administering this agent should be prepared for emergency resuscitation in the event of an anaphylactoid reaction. The absence of a lesion in the scan does not necessarily denote the absence of lesions.

ADVERSE REACTIONS: In more than 200 patient studies, there were 2 reported instances of hypotension requiring prompt supportive treatment.

TM—TRADEMARK 803461

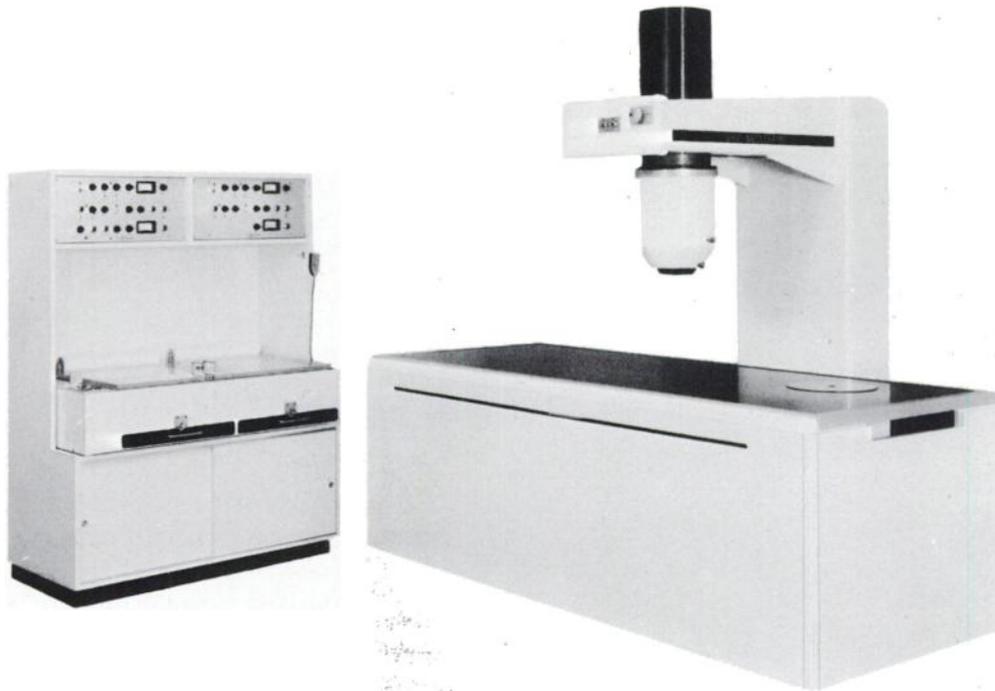
1. Gottschalk, A., J.A.M.A., 200:630, 1967.
2. Shingleton, W. W., et al., Ann. Surg., 163:685, 1966.



RADIOISOTOPE SCANNER

MODEL 54-FD

DUAL, OPPOSED, 5-INCH CRYSTALS



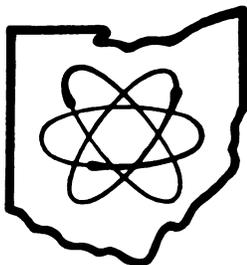
The demonstrable advantages of a dual 5-inch crystal scanner should be investigated by all those with a high clinical load who desire high resolution, rapid scans of both large and small organs or of the whole body.

The two scanning heads, exactly opposite each other, have separate, and complete electronics and print-out so that the data collected by each crystal may be used separately, in coincidence, or additively.

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Scanning speeds continuously variable to 200 inches per minute (500 cm/min.); adequate shielding even for high energy gamma emitters (up to 3 inches lead and 1 inch steel); high resolution crystals (9 per cent or better); accurate, reproducible scanning speeds and line spacing; no scalloping at any speeds; low background crystals (2 inch thick pure NaI light pipe); Gamma-graphic (patent pending) or slit mask photoscans; unequivocal one year warranty anywhere in USA or Canada.

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4 of every 5 new Departments of Nuclear Medicine get started with a Magnascanner®

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This fact hopefully suggests – to those contemplating the start (or expansion) of such a service – something about this instrument and the organization behind it. Other compelling points: the Magnascanner is far and away the instrument most widely used for diagnostic purposes by new or established Nuclear Medicine Departments; nearly 2000 hospitals are now serviced by Picker Nuclear. (Most Radioisotope Departments start with us and seem to stay with us.)

More. In less than 10 years the Magnascanner has become the keystone instrument in most Departments of Nuclear Medicine. This was the instrument that helped Nuclear Medicine specialists develop radioisotope diagnosis from a limited research technique to a practical, valuable, everyday, reliable, routine methodology. And in this rapidly-changing decade, the instrument changed too: multiple improvements and options were (and are always being) incorporated, making this the most up-to-date scanner available. Simultaneously, our line of other instruments for Nuclear Medicine expanded to the point of being the widest around. Nevertheless, nothing *anyone* has been able to do in this area (ourselves or others) has served to dislodge the Magnascanner from its keystone position in most Radioisotope Departments.

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PC67-130

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Service of Mankind



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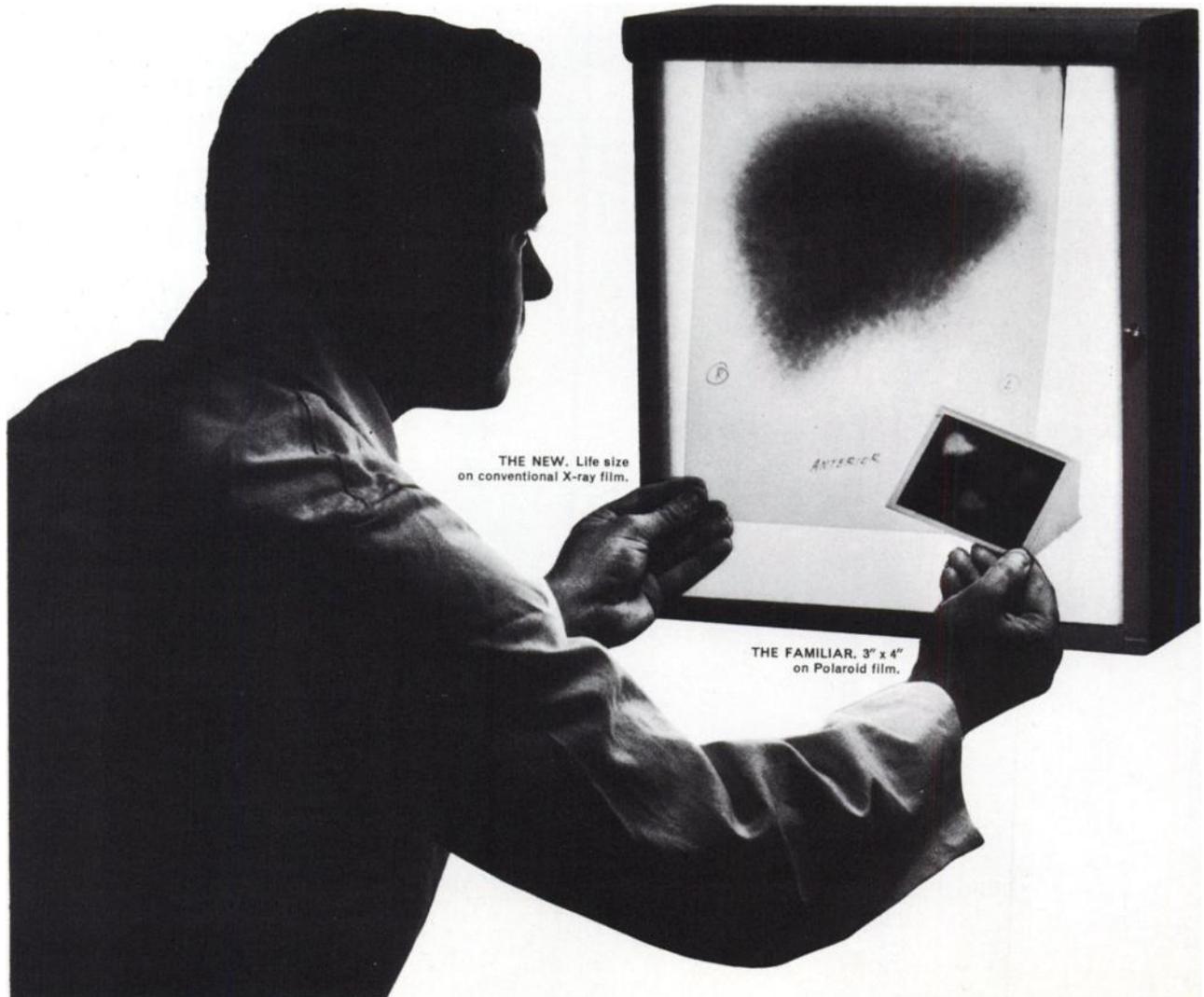
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Wagner

PRINCIPLES OF NUCLEAR MEDICINE

Here is a practical appraisal of the fast-growing field of nuclear medicine—one that sets forth both present and potential values in augmenting current methods of medical diagnosis. With clarity and precision, Dr. Wagner and his expert contributors explain the physical, chemical and mathematical principles of nuclear medicine. The authors give you a comprehensive account of today's clinical applications ranging from a 60-page delineation of radiodiagnostic techniques in the thyroid gland to a 42-page discussion of radiation dosimetry. Uses for all types of radiation detecting and measuring equipment as well as for all types of radiopharmaceuticals are described. In addition the authors have skillfully correlated the new techniques of nuclear medicine with the more classical methods of diagnosis. Separate chapters are devoted to the application of radioactive tracer methods in diseases of *blood, lungs, circulation, digestive system, brain, kidney*, etc. Additional chapters advise you on the effects of radiation and radiation safety. A brief sampling of the scores of topics discussed includes: *radioassay of hormone plasma—radioisotope renography—brain scans—whole body counting—in vitro tests*, etc.

Edited by HENRY N. WAGNER, JR., M.D. of The Johns Hopkins Medical Institutions. With 34 contributors. About 900 pages. About 175 figures. About \$29.00. Ready January, 1968

New

Rubin & Casarett

CLINICAL RADIATION PATHOLOGY

The authors of this important new work present an authoritative and critical study of the adverse effects of therapeutic radiation in the human body. Chapter by chapter, they systematically delineate the pathogenesis of radiation effects in all major tissues, organs, and organ systems.

The concept of relative radiosensitivity of cells according to their behavior with respect to the combination of: proliferation, differentiation and individual life span are first discussed. With this as a base, the authors explain relative radiation sensitivity throughout the body. For all common types of radiation injury in each body area, you'll find specific and practical information on *incidence, prevention* and *histologic change*. For most body systems, a special diagram summarizes the clinico-pathologic course of various levels of radiation injury: acute, subacute, chronic and late periods.

This valuable work offers assistance in prescribing safe, effective modes of X-ray diagnosis and therapy and in recognizing and evaluating radiation damage.

By PHILIP RUBIN, M.D. and GEORGE W. CASARETT, Ph.D., both of the Univ. of Rochester School of Medicine. About 1200 pages. About 400 illus. About \$45.00. Two Volumes. Ready February, 1968

New

Murphy

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The *New (2nd) Edition* of this outstanding work brings you a wealth of up-to-date, comprehensive help on the indications, techniques, results, and complications of radiation treatment of cancer in each area of the body. Major revisions in this edition include current modifications of radiotherapeutic techniques with more emphasis on the use of *high energy radiation sources, wedge filter techniques* and *moving beam and strip techniques*. The new "T.N.M." method of clinical classification of malignant lesions and their extension has been used throughout the book.

By WALTER T. MURPHY, M.D. of the Buffalo General Hospital. 1020 pages. 1337 illus. \$45.00. *New (2nd) Edition Published June, 1967*

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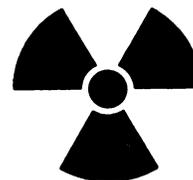
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ANNOUNCEMENT TO AUTHORS

PRELIMINARY NOTES

Space will be reserved in each issue of THE JOURNAL OF NUCLEAR MEDICINE for the publication of one preliminary note concerning new original work that is an important contribution in Nuclear Medicine.

Selection of the preliminary note shall be on a competitive basis for each issue. One will be selected after careful screening and review by the Editors. Those not selected will be returned immediately to the authors without criticism. Authors may resubmit a rejected or revised preliminary note for consideration for publication in a later issue. The subject material of all rejected manuscripts will be considered confidential.

The text of the manuscript should not exceed 1,200 words. Either two illustrations, two tables or one illustration and one table will be permitted. An additional 400 words of text may be submitted if no tables or illustrations are required. Only the minimum number of references should be cited.

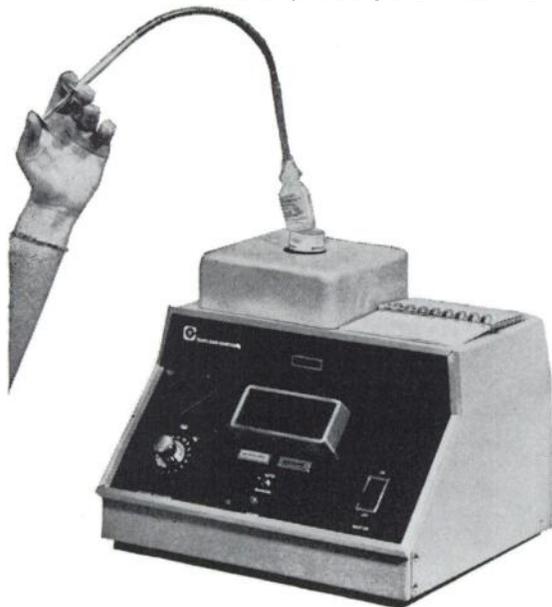
Manuscripts should be mailed to the Editor, Dr. George E. Thoma, St. Louis University Medical Center, 1504 South Grand Blvd., St. Louis, Missouri 63104. They must be received before the first day of the month preceding the publication month of the next issue, e.g., preliminary notes to be considered for the January issue must be in the hands of the Editor before December 1.

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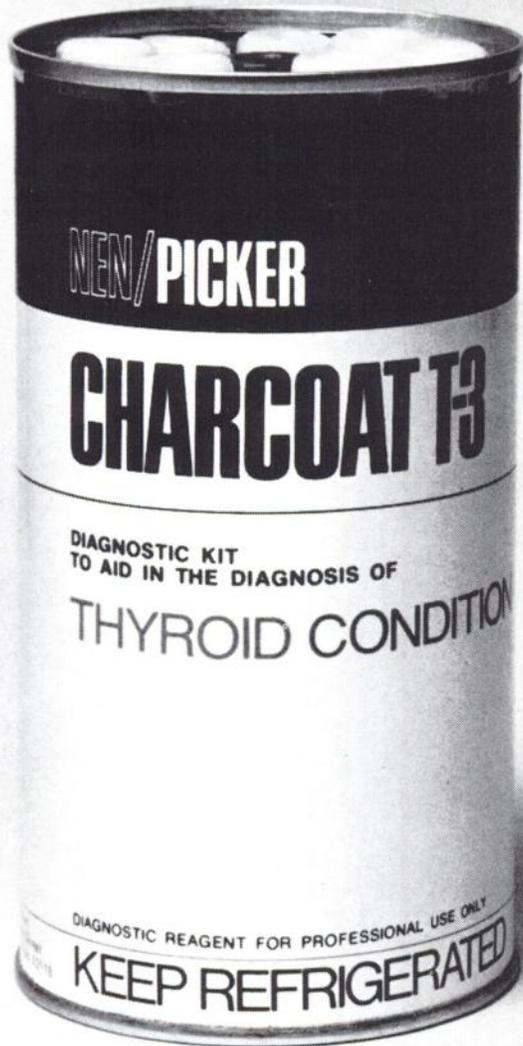


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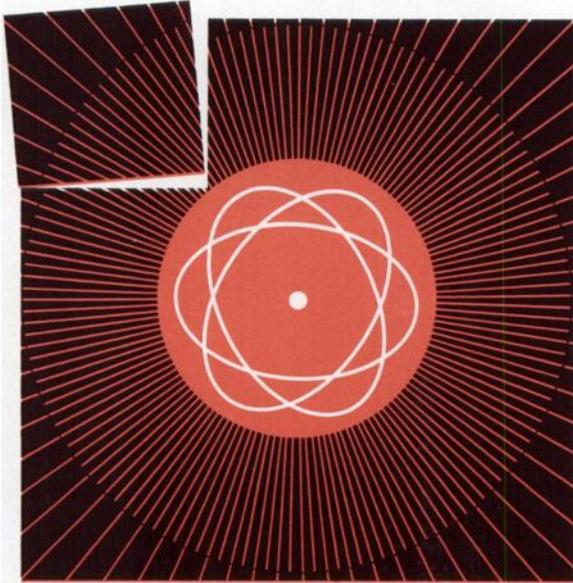
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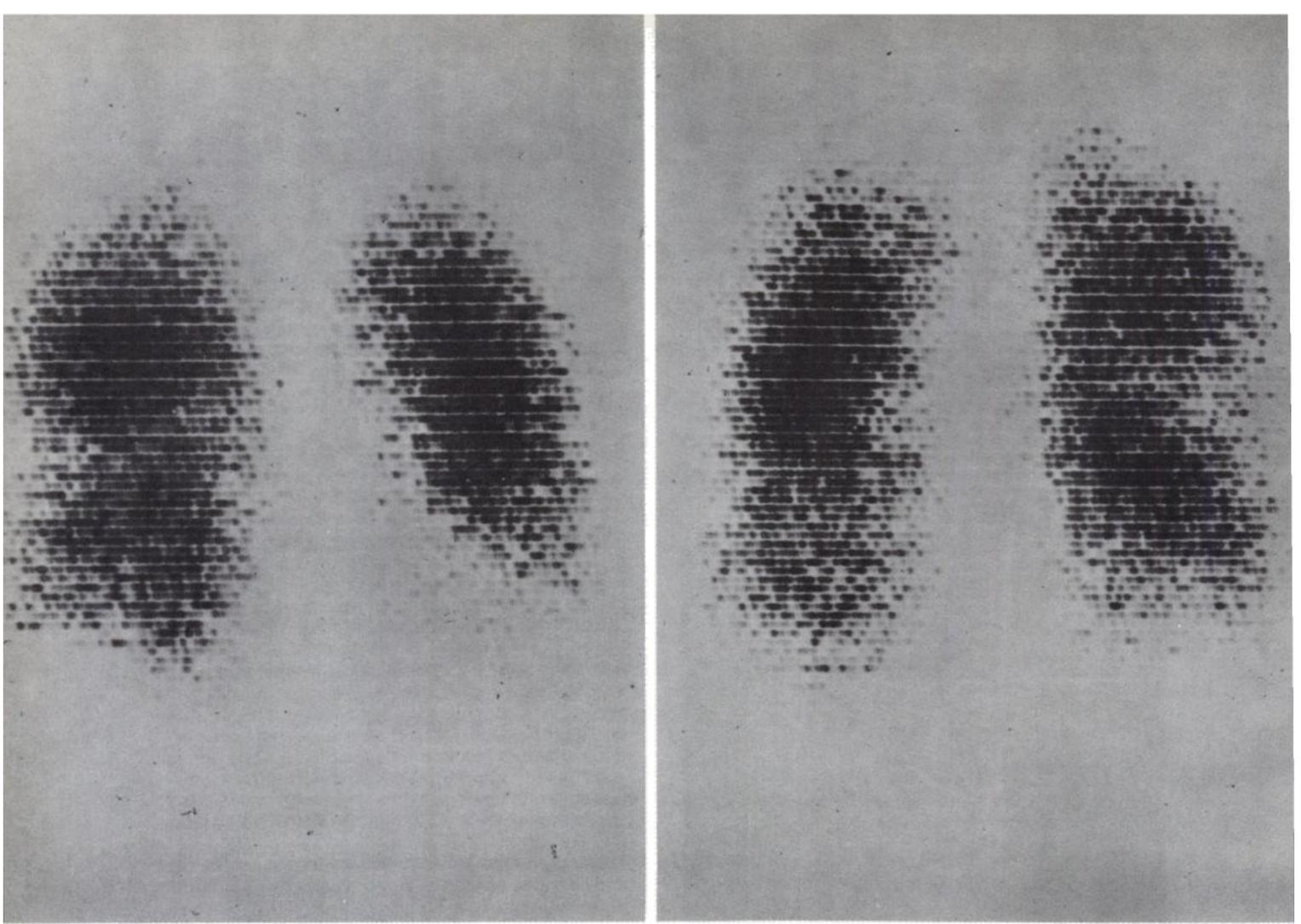
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1. Taplin, G. V., et al., Scientific Exhibit, Society of Nuclear Medicine, June, 17-20, 1964.
2. Quinn, J. L., III, Whitley, J. E., Scintillation Scanning in Clinical Medicine, Quinn, J. L., III, Editor, W. B. Saunders Co., Philadelphia & London, 1964, p. 148.
3. Lopez-Majano, V., et al., Radiology, Vol. 83: No. 4, Oct. 1964, p. 698.
4. Taplin, G. V., et al., Radioactive Pharmaceuticals, AEC Symposium Series #6, USAEC, Apr. 1966, p. 542.
5. Taplin, G. V., et al., Radioactive Pharmaceuticals, AEC Symposium Series #6, USAEC, Apr. 1966, p. 541.

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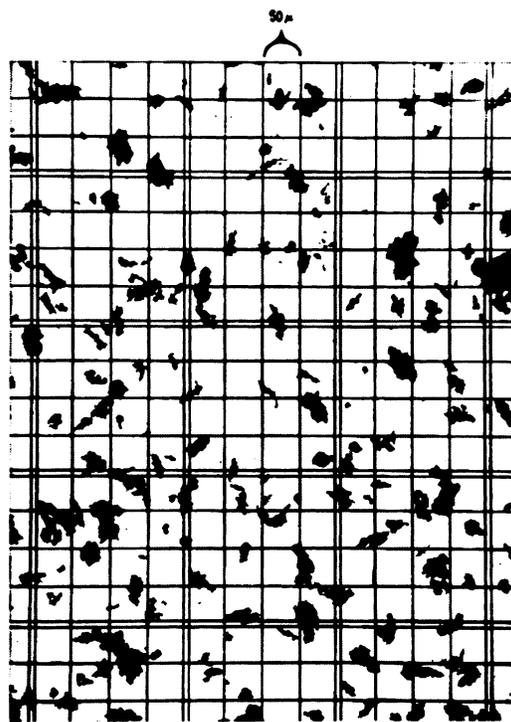
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1. Wagner, H. N. Jr., Scintillation Scanning in Clinical Medicine, Quinn, J. L., III, Editor, W. B. Saunders Co., Philadelphia and London, 1964, p. 158.
2. Taplin, G. V., et al., Radioactive Pharmaceuticals, AEC Symposium Series #6, U.S.A.E.C., April 1966, p. 547.
3. Taplin, G. V., Health Physics, Dec. 1964, p. 1219.



Photomicrograph of MAA I 131 aggregates



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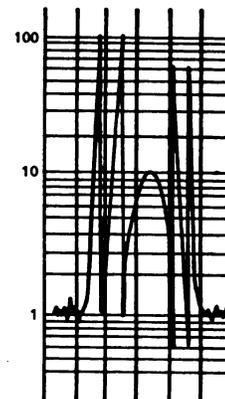
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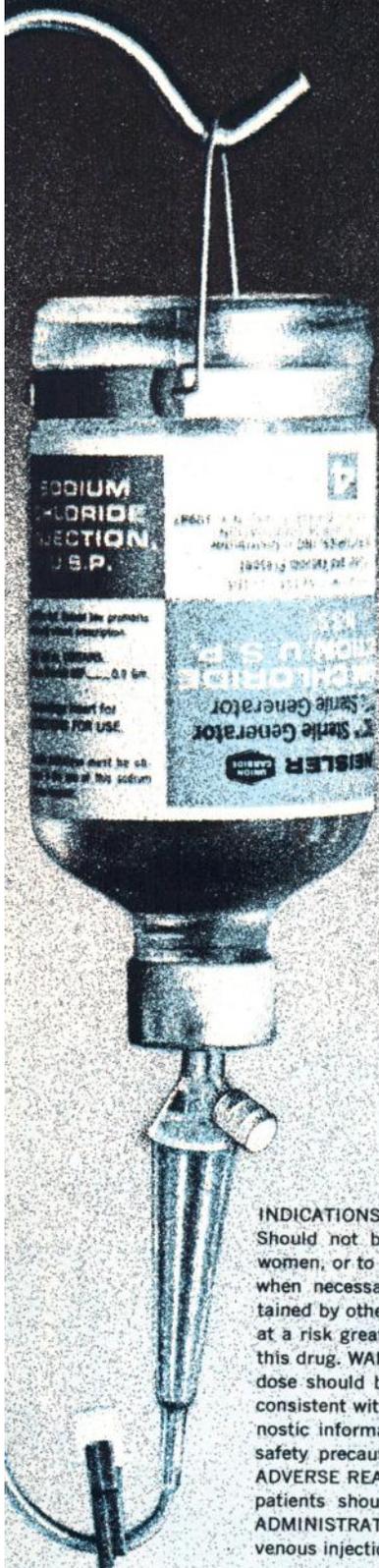
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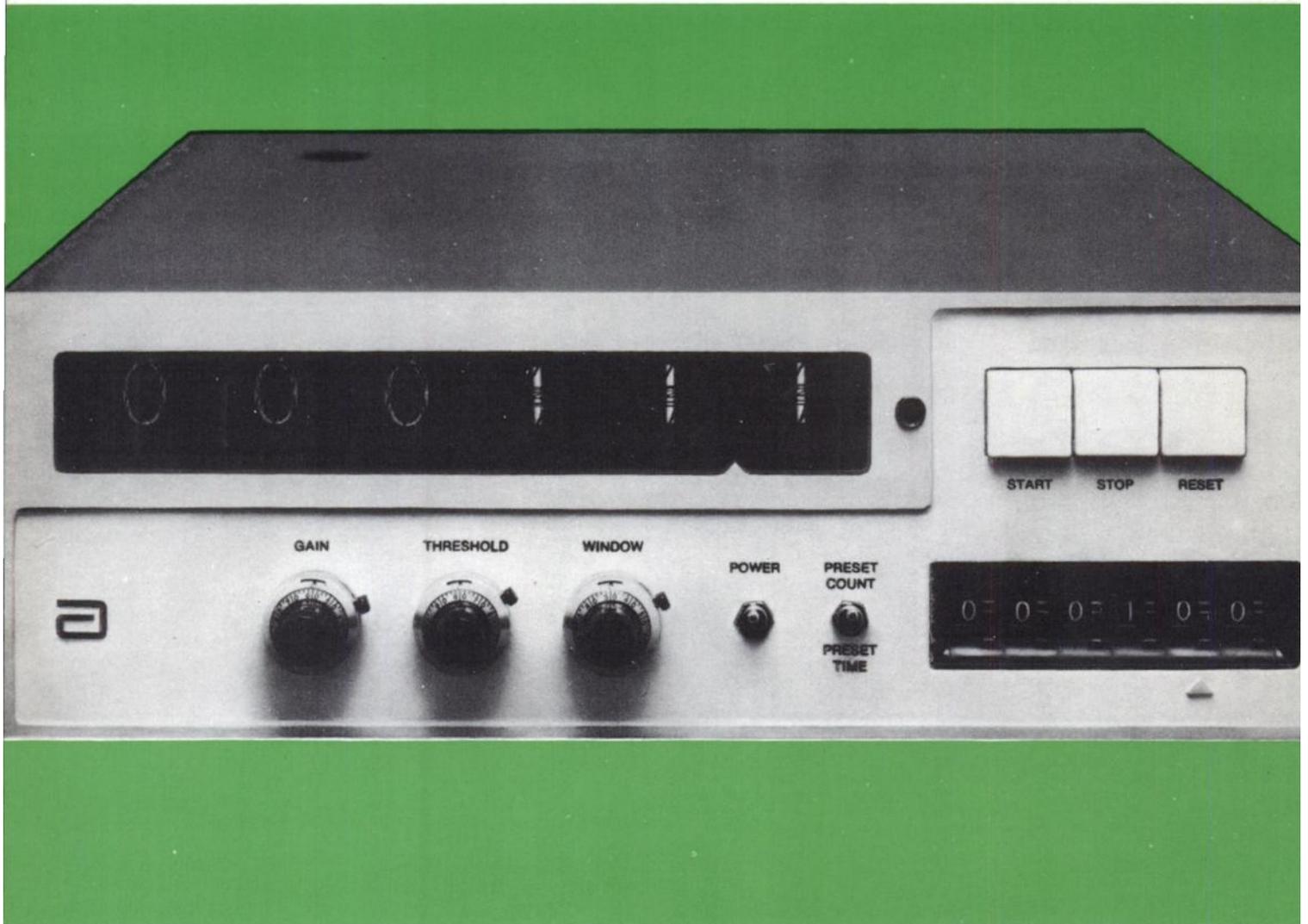
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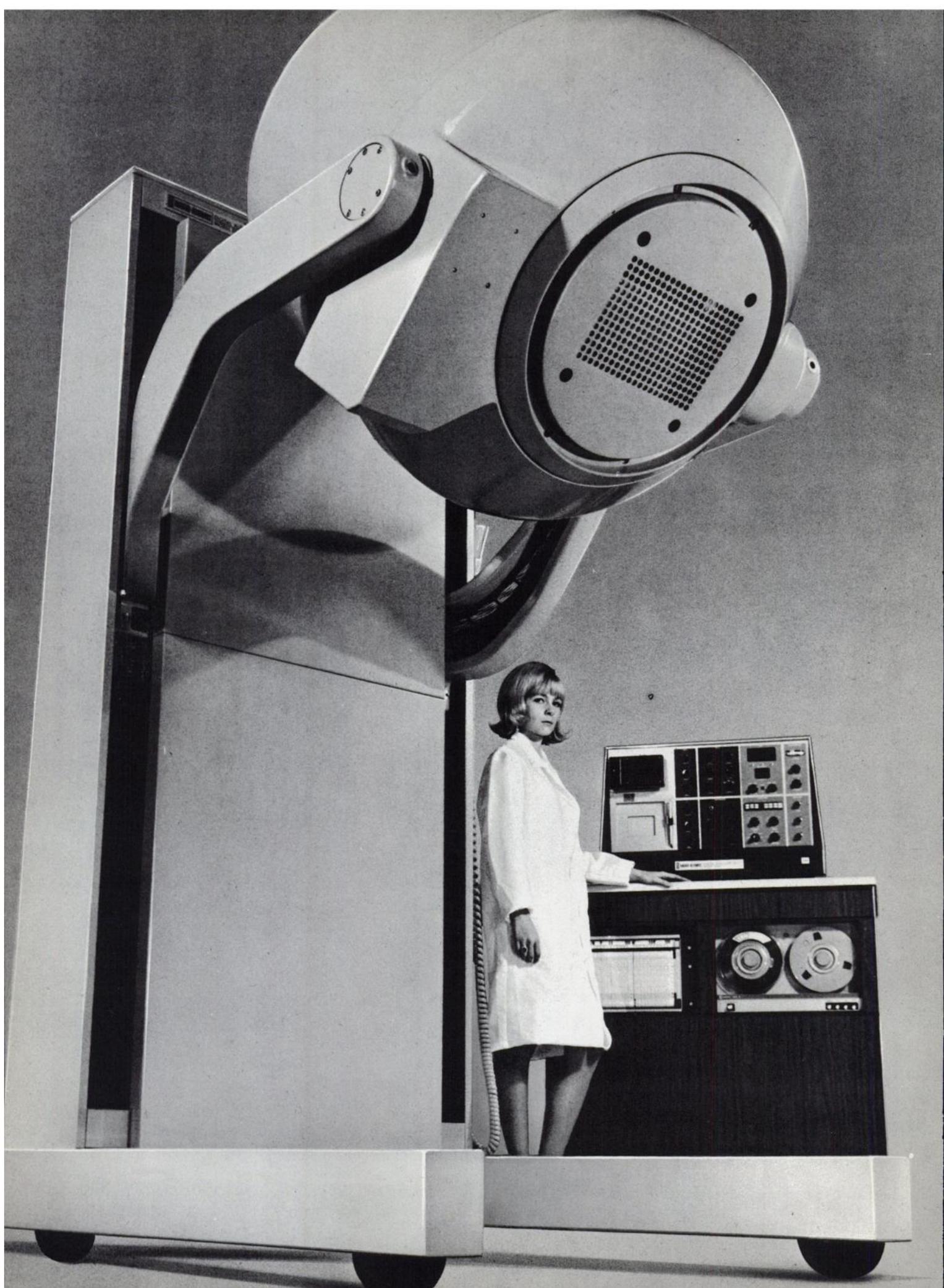
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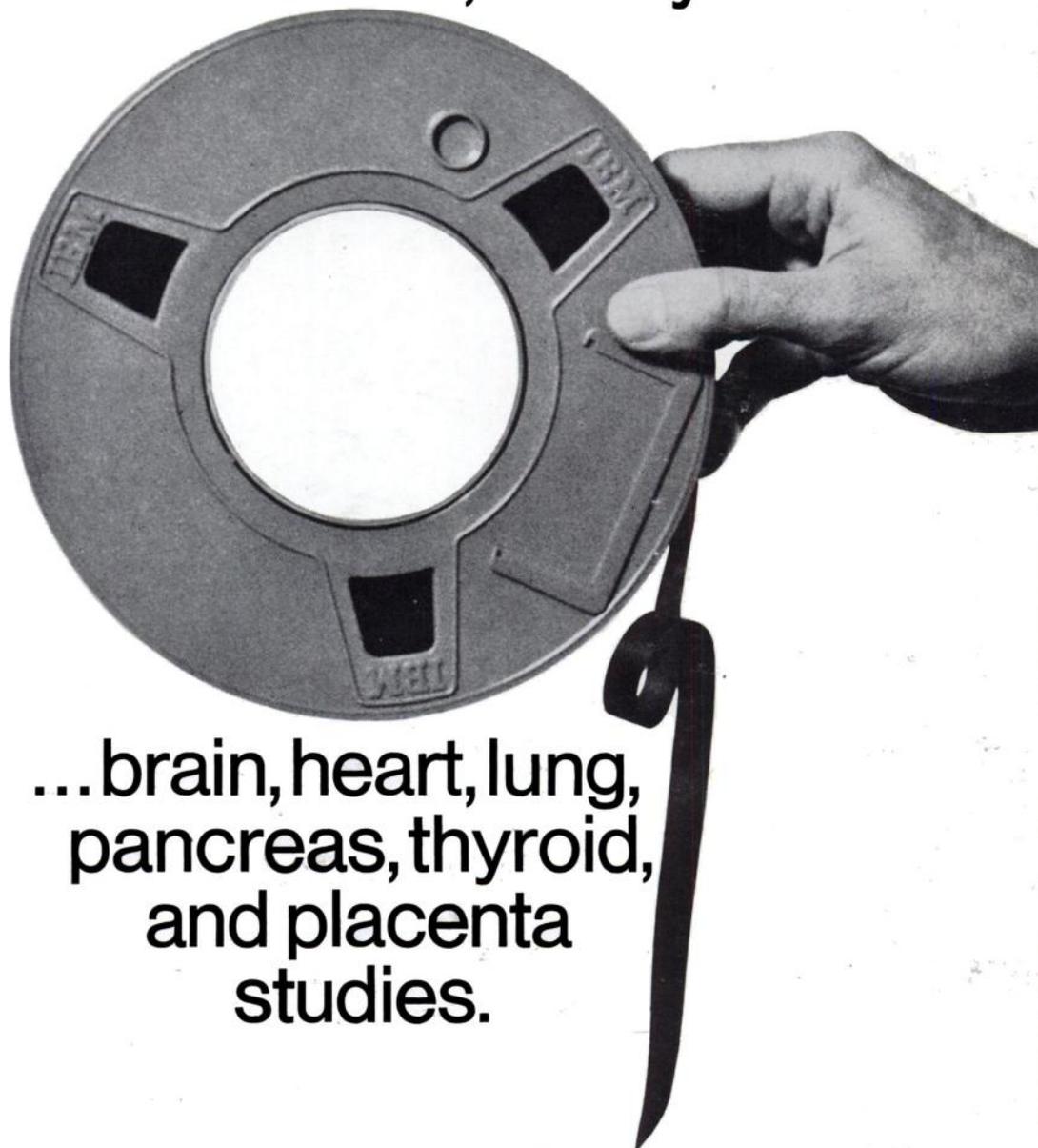
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