James Graham Chesnutt who won the $1,000 AAAS-George Westinghouse Science Writing Award for Newspapers as announced last week in *Science*. Mr. Chesnutt will be present at a luncheon in Boston 27 December to receive the award and a citation for accurate and readable scientific news reporting. The winning story, describing the work of Karl F. Meyer, director of the Hooper Foundation for Medical Research, University of California, on chemotherapy of Bubonic Plague, appeared in the *Call-Bulletin*, San Francisco, where Mr. Chesnutt is employed as a reporter and rewrite man. He was discharged from the Army last Spring with the rank of Lieutenant-Colonel after having been with the Psychological Warfare Branch, SHAEF. After VE day he helped to reorganize the German press.

**Genes and Nucleoproteins in the Synthesis of Enzymes**

S. Spiegelman and M. D. Kamen
A valuable aid to the student of astronomy or of navigation has been designed to locate celestial bodies quickly and accurately. The Millar Observoscope is made on the same principle as the equatorial mounting of the astronomer's telescope. This precision instrument is constructed of impact-resistant phenolic plastics with declination and latitude scales impressed in the body of the instrument. Impressed also are scales which indicate month, clock and sidereal hour angles.

Use of the instrument helps the student in visualizing the coordinate system and the apparent motion of the stars, while locating instantly the desired star. Intricate and confusing charts become unnecessary. In use, the latitude scale is set to the latitude of the observer and the civil time, opposite the day of the month. The star or constellation to be observed is looked up in the list of 55 stars provided and the sidereal hour angle set and declination indicated. The instrument is then oriented to true north and the star or constellation will be seen in the viewing tube.

The instrument may be mounted on a camera or astronomical tripod or simply placed on its weighted base for accurate observations. It may be used equally well to locate true north, to indicate civil time or latitude if all known settings are made and the sight tube is pointed to a known star. It is designed for use north of the equator. For use south of the equator, a special instrument can be supplied.

Professional astronomers who are accustomed to using complicated devices will be amazed at the accuracy and mechanical simplicity of this device.

No. 58070 Cenco Millar Observoscope .......... Each $10.00

CENTRAL SCIENTIFIC COMPANY

NEW YORK TORONTO CHICAGO BOSTON SAN FRANCISCO
For Courses in Elementary Anatomy and Physiology

Millard and King's
Human Anatomy and Physiology

Second Edition. This textbook represents one of the most significant contributions in print today to the teaching of elementary anatomy and physiology. Outstanding for its superb balance and refreshing style, it is noted also for its comprehensive approach—gives full coverage of such subjects as pseudostratified epithelium, chemical changes during muscle contraction, and sensory mechanisms.

By NELLIE D. MILLARD, R.N., M.A., Instructor in Anatomy and Physiology, School of Nursing, Michael Reese Hospital, Chicago; and BARRY G. KING, Ph.D., Lieutenant Commander, U.S.N.R., Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md. 514 pages, 297 illustrations, 43 in color. $3.00

Millard and Showers'
Laboratory Manual of Anatomy and Physiology

A new laboratory manual that accentuates student interest. Unusually clear-cut directions are given for dissection of the rabbit, cat, pig, frog, and butcher shop specimens; also for microscopic examination of tissues. Recommended for use with the text described above or with any standard book on the subject.

By NELLIE D. MILLARD, R.N., M.A.; and MARY JANE C. SHOWERS, R.N., B.S., Instructor in Anatomy and Physiology, the Christ Hospital School of Nursing, Cincinnati. 119 pages, illustrated. $1.00

At Boston... you are cordially invited to visit
Saunders exhibit at Booths 55-56
A.A.A.S. Convention, December 26

W. B. SAUNDERS COMPANY
West Washington Square Philadelphia 5
Contents

Genes and Nucleoproteins in the Synthesis of Enzymes: S. Spiegelman and M. D. Kamen 581

OBITUARY
Enoch Karrer: Carl M. Conrad 584
Philippe Lasseur: Walter C. Tobie 585
Bernice Maclean Shapiro: Ann H. Morgan 585

TECHNICAL PAPERS
A Possible Avian Analogue of the Scrotum: B. B. Cowles and A. Nordstrom 586

SCIENCE EXHIBITION 589

NEWS AND NOTES 590

IN THE LABORATORY
Photographic Measurement of Radiation Quality and Quantity: Jean Kieffer and Roy M. Seideman 596
The Use of Unsaturated Polyester Resins for Embedding Biological Material: Theodore Romaniak 601
A New Spectrophotometric Method for the Determination of Vitamin A: Jorge Awaopara, Fred H. Mattson, John W. Mehl, and Harry J. Deuel, Jr. 602

LETTERS TO THE EDITOR
Life Insurance Medical Research Fund Grants: Francis E. Dieuvaide 605
Myosin and Adenosinetriphosphatase in Muscular Activity: W. F. H. M. Mommaerts 605
A Possible Role of the Guppy, Lebistes reticulatus, on the Biological Control of Schistosomiasis mansoni: José Oliver-González 605
Reduction of Excess Acetylcholine in the Serum of Pernicious Anemia Patients by Treatment With Pteroyl Glutamic Acid, Liver Extract, or Ventriculin: John Emerson Davis 605
On Virus Nomenclature: Robert P. Hanson 606

BOOK REVIEWS
Scientists against time: James Phinney Baxter, 3rd. Reviewed by Leonard Carmichael 606
Encyclopedia of hydrocarbon compounds, C1 to C6: Joseph E. Faraday. Reviewed by Frederick D. Rossini 607
Genera et species plantarum argentinarum (Vol. 1): National University of Tucumán. (Ed.) Reviewed by Francis W. Pennell 608
Penicillin Merck meets the recognized high standard of quality established for all Merck products. It is subjected to repeated tests and control procedures throughout every step of the production process, and the finished product is assayed, tested, and approved under rigid standards established by the Food and Drug Administration and by The Merck Analytical Laboratories.

The physician who specifies Penicillin Merck is assured of uncompromising quality.
BECKMAN pH METER
IN OUR STOCK FOR IMMEDIATE SHIPMENT

BECKMAN pH METER, Industrial Model M. Designed especially for factory and field use but also suitable for laboratory use. A portable, self-contained instrument of rugged construction, without slide wire potentiometer, incorporating the following features:

An electronic tube voltmeter circuit, permitting continuous, direct pH readings
Factory filled, internally shielded glass electrode and companion calomel electrode, charged, ready for use

The scale reads from pH 0 to pH 14 in 0.1 pH divisions, with double graduations of pH 0 to pH 7 and pH 7 to pH 14, the acid or alkaline range being selected by a switch. The instrument is adjusted for normal operation at 25°C and a control is provided for the compensation of asymmetry potential.

A 50 ml Pyrex beaker is used as a container for the test solution and readings can be made with as little as 10 ml of sample.

The instrument is entirely self-contained, with necessary dry cells for operation, in case 13 ½ x 9 ½ x 9 inches, weight 24 lbs.

4918-R. Glass Electrode pH Meter, Beckman Industrial Model M, as above described, complete with shielded glass electrode, sealed calomel electrode, Pyrex glass beaker 50 ml, 100 ml bottle of saturated KCl solution and 1 pt. bottle of Buffer Mixture pH 7.0. In carrying case, with directions for use mounted in the lid

Code Word ................................................................. 105.00

Copy of pamphlet EE-113, giving detailed description of above pH Meter, together with accessories, sent upon request.

ARTHUR H. THOMAS COMPANY
RETAIL—WHOLESALE—EXPORT
LABORATORY APPARATUS AND REAGENTS
WEST WASHINGTON SQUARE PHILADELPHIA 5, PA., U. S. A.

Cable Address, BALANCE, Philadelphia
you know your tissues will spread e-v-e-n-l-y

...it's a Technicon constant temperature water bath

The water temperature will be just right for smooth, even spreading: never too hot or too cold. No melting paraffin to distort tissues; no folds or wrinkles. No bubbles due to frequent water change ... temperature stays constant day in, day out. Bulletin 6320 gives particulars: send for it.

TECHNICON COMPANY, 215 E. 149th St., New York 51, N. Y.
Announcing new

“MEDICHROME” Series MR

HEMATOLOGY

Following is a partial list of 2 x 2" (35 mm.) Kodachrome photomicrographs on the normal and pathological histology of the blood, made with the cooperation of DR. NATHAN ROSENTHAL, Mt. Sinai Hospital, New York City. Those slides indicated by an asterisk (*) are available for immediate delivery. Because of the nature of the work involved, we request that you do not place an order on the balance of the slides listed, as no definite promise of delivery can be made. Additional slides will be available.

MR/1. Acute post-hemorrhagic anemia Bl.
MR/2. Aplastic anemia Bl.
*MR/3. Hyperchromic anemia (achylic) Bl.
*MR/4. " " " B.M.
*MR/5. " " " high power
*MR/6. " " " B.M.
*MR/7. " " " high power
*MR/8. " " " B.M.
*MR/9. Reticulocytosis after liver extract Bl.
*MR/10. " " " B.M.
*MR/11. " " " Bl. reticulocytes
*MR/12. Acquired hemolytic macrocytic anemia Bl.
*MR/13. " " " B.M.
*MR/14. " " " Bl. reticulocytes
*MR/15. Congenital agranulocytic anemia (recovering) Bl.
*MR/16. " " " B.M.
*MR/17. " " " high power
*MR/18. Aplastic anemia Bl.
*MR/19. " " " B.M. (hyperplastic)
*MR/20. " " " B.M. (aplastic)
*MR/22. " " " B.M.
*MR/23. Cooley’s anemia (Mediterranean) Bl.
*MR/24. " " " B.M.
*MR/25. Sicca cell anemia Bl.
*MR/27. " " " B.M.
*MR/28. " " " Bl. reticulocytes
*MR/29. Eosinophilia and leukemia in allergic dermatitis Bl.
*MR/30. " " " B.M.
*MR/31. Thrombocytopenia—thrombocytopenic purpura Bl.
*MR/32. showing megakaryoblast 500 x
*MR/33. Thrombocytopenia—thrombocytopenic purpura B.M. showing megakaryocyte 500 x
*MR/34. Thrombocytopenia—purpura hemorrhagica Bl.
*MR/35. (blue cytoplasm) B.M.
*MR/36. Acute infectious mononucleosis Bl.
*MR/37. " " " B.M.
*MR/38. " " " high power
*MR/39. " " " B.M.
*MR/40. " " " B.M.
*MR/41. Anemia (severe) Bl.
*MR/42. " " " B.M.
*MR/43. " " " Bl.
*MR/44. " " " B.M.
*MR/45. Lymphoblastic leukemia Bl.
*MR/46. " " " showing vaculated cells
*MR/47. Acute lymphoblastic leukemia, undifferentiated type in children Bl.
*MR/48. Acute lymphoblastic leukemia, undifferentiated type in children Bl. high power

*MR/49. Acute lymphoblastic leukemia, B.M.
*MR/50. Acute myeloblastic leukemia Bl.
*MR/51. " " " high power
*MR/52. " " " high power
*MR/53. Acute myeloblastic leukemia B.M.
*MR/54. " " " high power
*MR/55. Acute myeloblastic leukemia (Auer) Bl.
*MR/56. " " " B.M.
*MR/57. Myeloblastic leueopenic leukemia Bl.
*MR/58. " " " B.M.
*MR/59. Chronic myeloid leukemia Bl.
*MR/60. " " " high power
*MR/61. " " " B.M.
*MR/62. " " " field of megakaryocytes

*MR/63. Chronic myeloid leukemia Wintrobe tube showing sedimentation
*MR/64. Perif. myelogenous leukemia Bl.
*MR/65. " " " B.M.
*MR/66. Chronic lymphocytic leukemia Bl.
*MR/67. " " " splmdle cells
*MR/68. " " " B.M.
*MR/69. Chronic leucopenic lymphocytic leukemia Bl.
*MR/70. " " " B.M.
*MR/71. Acute monocytoid leukemia Bl.
*MR/72. " " " high power
*MR/73. " " " B.M.
*MR/74. Acute plasma cell leukemia Bl.
*MR/75. " " " B.M.
*MR/76. Acute reticulum-cell leukemia Bl.
*MR/77. " " " B.M.
*MR/78. Metastatic carcinoma B.M.
*MR/79. " " " 500 x
*MR/80. Gaucher's Disease B.M.
*MR/81. " " " high power
*MR/82. Nieman-Pick disease Bl.
*MR/83. " " " B.M.
*MR/84. Malaria vivax (tertian malaria) Bl.
*MR/85. Malaria malariae (quartan malaria) Bl.
*MR/86. Malaria falciparum (malignant malaria) Bl.
*MR/87. Filariasis
*MR/88. Kala-Azar
*MR/89. Multiple myeloma Bl.
*MR/90. " " " high power
*MR/91. " " " B.M.
*MR/92. Polycythemia (early) Bl.
*MR/93. " " " B.M.
*MR/94. " " " (late or spent) Bl.
*MR/95. " " " B.M.
*MR/96. Myelosyclic myeloma Bl.
*MR/97. " " " B.M.

NOTE: Bl. — Blood
B.M. — Bone Marrow

Write also for listing on NORMAL BLOOD “MEDICHROMES”

JUST OUT!
New 32 page booklet on Blood Testing Instruments. Write for your free copy, 223R4/SC.
MICROLUX
A Highly Efficient Universal MICROSCOPE LAMP

For Visual Observation, Photomicrography, Micro-Projection

The Microlux yields the highest intrinsic light intensity obtainable with an incandescent light source. It is compact, consumes little current, and can be used on 110 volt A.C. current.

The MICROLUX Provides These Outstanding Advantages:

- It can be used in photomicrography from low to high magnification with the complete two lens condenser of the substage of the conventional medical microscope. After alignment, adjustment to the light system with the 16mm objective, changes to objectives of shorter focal length—including the oil immersions—can be made without further adjustments of the entire illumination system.
- With each objective uniform illumination exists throughout the field, and the intensity is sufficient for short exposures even with a green filter.
- An aperture stop as well as a field stop is operative for the entire range of magnifications. The field of view is remarkably flat on the ground glass.
- For visual observation, a diffusing daylight filter is placed in the filter holder.
- For micro-projection, a projected image of satisfactory intensity approximately three feet in diameter can be obtained with a 16mm objective.
- The short focal length of the condenser permits optical conditions for uniform illumination, even at high magnification, to be met with the lamp placed relatively near the microscope. This makes the lamp controls easily accessible to the microscopist.
- The lamp can be tilted from a horizontal to an almost vertical position.
- The light source is a special low voltage lamp of small current consumption and high illumination intensity.
- At maximum rheostat setting, the light is of proper color temperature (3200° K) for use with Kodachrome Type B film without the need of auxiliary filters.
- Both condenser and lamp positions are adjustable for obtaining proper optical alignment.

ADDITIONAL MICROSCOPE ACCESSORIES

The Leitz Magarc... A carbon arc microscope lamp employing an entirely new principle—feeding of the carbons is magnetically controlled assuring continued positive performance throughout the life of the carbons.

Complete information on the Microlux and Magarc Lamps, and the Micam Camera Attachment is available upon request for Catalog No. 1318.

E. LEITZ, Inc., 304 Hudson Street, New York 13, N. Y. (Dept. 801)

Please send us Catalog No. 1318, containing information on the Magarc, Microlux Lamp and the Micam Camera Attachment.

Name ____________________________ City __________ Zone __________ State __________

My Dealer’s Name Is ____________________________
Announcing the New 1947

CHART OF THE ATOMS
showing the New Elements
Neptunium — Plutonium — Americium — Curium

LITHOGRAPHED IN SIX COLORS

The aid of the cyclotron and betatron in atomic research during the war, and the confirmation of atomic theory in the development of the atomic bomb, has greatly stimulated research and public interest. This revision of our Atomic Chart, under the direction of Dr. W. F. Meggers, Chief Spectroscopy Section, National Bureau of Standards, in close cooperation with Dr. Glenn T. Seaborg, University of California co-discoverer of the new elements Neptunium, Plutonium, Americium and Curium, insure up-to-the-minute coverage of the radioactive section of the chart and of the whole field of atomic information.

PRICE $7.50
MAIL ORDER TODAY FOR DELIVERY JAN. 1, 1947

W. M. WELCH
SCIENTIFIC COMPANY
Established 1880
1515 Sedgwick Street, Dept. E
Chicago 10, Illinois, U. S. A.
by the method of Haffner (2) and in dogs and man by thermal radiation technique (1, 3). In rats and dogs the substances were administered by intraperitoneal injection, and in man, by mouth. Effects on circulation, respiration, and salivary (submaxillary) flow (10726). The depressor effects of the diphenyl compounds were less marked.

Cardioinhibition resulted from administration of any of the diphenyl substances, but only one of the demerol group (10720) produced this effect. Cardiac

### Table 1

Comparative Pharmacologic Action of a Series of New Analgesic Agents

<table>
<thead>
<tr>
<th>Compound No.</th>
<th>LD50 ± S.E. in mouse by vein (mg./kg.)</th>
<th>Analgesic action: threshold dose</th>
<th>Action in anesthetized dog by vein</th>
<th>Depression of saliva</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat (mg./kg.)</td>
<td>Dog (mg./kg.)</td>
<td>Man (mg.)</td>
<td>Blood pressure (mm. Hg.)</td>
<td>Heart rate</td>
</tr>
<tr>
<td>Demerol 10446</td>
<td>80.5 ± 2.8</td>
<td>5</td>
<td>10</td>
<td>80</td>
</tr>
<tr>
<td>10720</td>
<td>13.7 ± 1.0</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>10726</td>
<td>104.6 ± 3.8</td>
<td>8-16</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>10582</td>
<td>17.2 ± 0.9</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>10581</td>
<td>31.4 ± 2.4</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>10581</td>
<td>17.8 ± 1.3</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>10581</td>
<td>29.4 ± 2.0</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

were measured with standard procedures in dogs under barbiturate anesthesia. In this case, injections were all made intravenously. The median lethal dose in mice by intravenous injection was ascertained for each compound.

Results. Table 1 shows the findings for the various tests. It is obvious that six compounds (10820, 10446, 10582, 10581, 10819, and 10720) are more active analytically than demerol when the results in rats, dogs, and man are compared. Compound 10446 has the same potency as demerol in dogs, but it is more effective in rats and man. The introduction of an OH-group at metaposition in the benzene nucleus (10446) increases the analgesic action of demerol. The ketone form (10720) is more potent than the ester form (10446). Compound 10726 caused such severe vomiting that it was not tested in man. All the diphenyl derivatives are ketones and have a relatively high potency. No study was made with 10581 in dogs and man due to shortage of material.

Analgesic potency and acute toxicity appear to parallel each other, but the relationship is by no means exact. The effects on blood pressure of anesthetized dogs show marked differences. Considerable and prolonged fall of blood pressure followed injection of the demerol derivatives, with one exception

### Scanning Science

The Commissioner of Labor has submitted to the House of Representatives a plan for the organization of a permanent Census Bureau in Washington. The Director of the Census will be paid $6000 a year, the Assistant Director $4000. In addition there are to be three clerks and five statisticians. It is provided that a general census shall be taken April 15, 1900, and every ten years thereafter.

—18 December 1896