

SCIENCE

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THE NATIONAL ACADEMY OF SCIENCES¹

ADDRESS OF THE PRESIDENT²

THE academy has adhered very consistently since its incorporation to the principle that the primary consideration for membership is convincing evidence, by scholarly character and productiveness, of devotion to the fundamental principles of science and the scientific way of knowledge, which are the sources of the discoveries and inventions that have transformed the social and economic conditions of modern life. There is no danger that we should depart from these principles. But it should be widely known that we fully recognize the social, economic and national responsibilities that rest upon us, and that we are making every effort to discharge these responsibilities. The academy occupies a very special position of responsibility in the relations between science and public affairs.

¹ Meeting in Washington, D. C., April 24, 25 and 26, 1939.

² Given at the annual dinner for the presentation of medals, April 25.

The academy itself is a small body compared with the great body of professional scientific men in the universities and colleges, in the schools of technology and medicine, in the engineering profession and in medicine, in the research institutes, in government service and in the industrial research laboratories of the country. The academy took a great step forward in the way of wider representation when it organized the National Research Council in 1916 at the request of President Wilson. This body is defined legally as an agency of the academy, but it is much more than that in practice: it is a sister body, possessing a large measure of independence, with which the academy co-operates harmoniously and whole-heartedly in the carrying out of our public relations.

We are bound together most closely not only in administrative ways, but also in spirit and purpose. The overlapping membership is numerous, but the National Research Council has much greater latitude than the

pump to achieve the maximum rate of pumping; too rapid flow will cause the diaphragm to buzz without accomplishing anything. The pump is sometimes temperamental about starting. Very often the trouble can be traced to faulty construction, but it is also true that valves and diaphragm improve after they have been in place for a time. Once started, the pump will run for weeks without attention. Sometimes the air is slowly absorbed from the air chamber and must be replaced. This can be done by blowing air through the intake. The pump will work in any position, but the air chamber must be more or less vertical with the stopper down.

High efficiency depends chiefly upon well-fitting valves and rapid inflow. As many as four parallel intake tubes have been put in with very satisfactory results. The writer has for the most part used the pump simply submerged in the barrel of sea water that was being circulated. The exhaust tube was, of course, extended to a point above the surface of the water.

E. L. LAZIER

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AN INEXPENSIVE WARM STAGE

A WARM stage is a very useful addition to the microscope, particularly for such investigations as the demonstration of motile amoebae in stools. Where only an occasional examination is made, the cost (\$15 to \$20) is likely to be prohibitive.

A very serviceable stage can be made at a trivial cost from an electric iron heating element. This comes copper clad and slotted as shown in the drawing. It draws 550 watts at 110 volts, becoming red hot. However, if it is connected to the secondary terminals of a

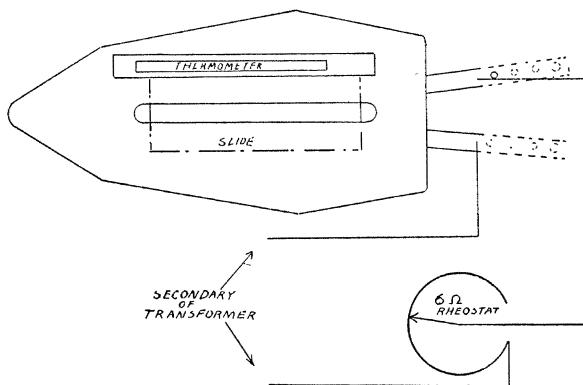


FIG. 1

bell-ringing transformer, it does not take much current and rises to a temperature of 40° C. or less. By connecting a 6-ohm radio rheostat in series, the current can be regulated so as to maintain a temperature of 37° C.

The construction is quite simple. With a hack-saw or grindstone, remove most of the side of a piece of $\frac{1}{8}$ " pipe about 3 $\frac{1}{2}$ " long, leaving both ends. This furnishes the thermometer carrier. The slot enables the operator to read the temperature. Lay the element on a piece of asbestos and connect the terminals to the 110-volt mains. The element becomes quite hot in a few seconds. Place a strip of solder about $\frac{1}{2}$ " from the slot. Place the pipe on the molten solder and disconnect the electric current. When cool, the pipe will be firmly fastened to the element. Cut off the portion of the element terminals shown in dotted lines and solder wires to them. Connect these wires to the transformer through the rheostat.

E. M. ABRAHAMSON

THE JEWISH HOSPITAL OF BROOKLYN

BOOKS RECEIVED

- BERRY, A. J. *Volumetric Analysis, Including the Analysis of Gases; With a Chapter on Simple Gravimetric Determinations*. Fifth edition. Pp. vi+196. 9 figures. Cambridge University Press, Macmillan. \$2.50.
- BOSSHART, HEDWIG. *Anthropologische Untersuchungen im Engstligen- und Frutigtal (Berner Oberland); Inaugural-Dissertation*. Pp. 195. 56 figures. 21 plates. Art. Institut Orell Füssli, Zurich.
- BURNS, R. M. and A. E. SCHUH. *Protective Coatings for Metals*. American Chemical Society Monograph No. 79. Pp. 407. 89 figures. Reinhold. \$6.50.
- BURRILL, ALFRED C. *Resources Museum, The People's University, Soldiers' and Sailors Memorial Hall; Popular Bulletin No. 1, Part 1, 1939*. Pp. 107. Illustrated. The Museum, Jefferson City, Missouri.
- CONANT, ROGER and WILLIAM BRIDGES. *What Snake Is That? A Field Guide to the Snakes of the United States East of the Rocky Mountains*. Pp. viii+163. Illustrated. Appleton-Century. \$2.00.
- CONKLIN, EDMUND S. and FRANK S. FREEMAN. *Introductory Psychology for Students of Education*. Pp. xi+557. 35 figures. Holt. \$2.75.
- CULLWICK, E. GEOFFREY. *The Fundamentals of Electro-Magnetism*. Pp. xxvi+352. 145 figures. Cambridge University Press, Macmillan. \$4.50.
- DE BROGLIE, MAURICE. *Atomes, radioactivité, transmutations*. Pp. 269. 17 figures. Flammarion, Paris. 22 francs.
- EGLOFF, GUSTAV. *Physical Constants of Hydrocarbons; Vol. I, Paraffins, Olefins, Acetylenes, and Other Aliphatic Hydrocarbons*. American Chemical Society Monograph No. 78. Pp. 403. Reinhold. \$9.00.
- Field Engineers Bulletin No. 12, U. S. Coast and Geodetic Survey, December, 1938*. Pp. 246. Illustrated.
- HEISER, VICTOR. *You're the Doctor*. Pp. 300. Norton. \$2.50.
- KIFER, R. S. and H. L. STEWART. *Farming Hazards in the Drought Area*. Research Monograph XVI of Division of Social Research, Works Progress Administration, 1938. Pp. xxviii+219. Illustrated. U. S. Government Printing Office, Washington.
- Nauka Polska; Science and Letters in Poland, Their Needs, Organization and Progress, Vol. XXIV*. STANISLAW MICHALSKI, Editor. Pp. x+587. Mianowski Institute for the Promotion of Science and Letters in Poland, Warsaw.
- SUTERMEISTER, EDWIN and FREDERICK L. BROWNE. *Casein and Its Industrial Applications*. Second edition. American Chemical Society Monograph No. 30. Pp. 433. 50 figures. Reinhold. \$6.50.

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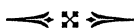
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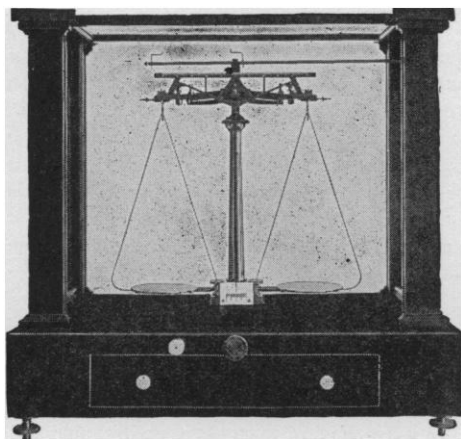
Chapter Headings: Health Values. Nutrition. Digestion. Oral Hygiene. Respiration. Circulation. Excretion of Nitrogenous Waste. The Skin. Endocrines. The Sense Organs. The Hygiene of the Nervous System. Mental Hygiene. Hygiene of Body Activity. Body Mechanics. Foot Hygiene. Hygiene of Reproduction. Heredity and Health. Narcotics and Stimulants. Responsibility for Health Maintenance. Communicable Diseases and Immunity. Appendix—A. Communicable Diseases. B. Nutritive Values of Edible Portions of Foods in Shares and Vitamin Units. Glossary.

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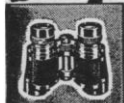
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