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CONTRASTS[1]

By Professor FREDERICK G. KEYES

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ANY alumnus of Brown would be very sensible of the honor of being asked to take part in as important an event as we celebrate to-day. When I received the invitation to speak, my first impulse was to rejoice for the opportunity to express my gratitude for the abundant benefits Brown extended to me some thirty years ago. My second thoughts turned to dwell on the significance and meaning of the splendid Metcalf Research Laboratory, designed exclusively for graduate study and research.

That this addition had long been a practical necessity was clear these many years to those who have followed at first hand the rise of the department to a position of outstanding importance. Because of my nearness to the university and my membership on the department's visiting committee, it was easy to comprehend the time and patience expended under what henceforth will probably be referred to as "the old conditions." Professor Kraus and his colleagues will no longer spend valuable time in effecting the compromises required heretofore to provide adequate opportunities for a rising level of graduate students. It is a great joy to know that the efforts of the staff to promote the progress of graduate study and research will take place in a setting worthy of Brown University and of the man whose wisdom and generosity have made the dream of the research laboratory a reality.

Sometimes it is a salutary procedure to pause occasionally, as on the present occasion, to survey the steps which have led up to the present position. The exercise puts events in their proper relationship, promotes a decent humility, induces a just pride, emphasizes the eternal verities, makes for simplicity and enables one to lay the course for the future on a more assured basis.

Brown University was the seventh American college

[1] An address delivered at Brown University, Providence, R. I., on the occasion of the dedication of the Metcalf Research Laboratory of Chemistry on December 28, 1938.

also may be used. This reverses the images of the two areas with respect to the center line. Two images of the gap or overlap are seen, on opposite sides of the contiguous areas. These images may interfere with accurate comparison of the two areas. For this reason the biprism first described is preferable.

GEORGE E. DAVIS

DEPARTMENT OF PHYSICS,
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A GASOLINE-TORCH LABORATORY BURNER

THE Biological Survey, U. S. Department of Agriculture, maintains several research stations at points remote from such utilities as gas and electricity. Field workers at such stations are handicapped in not being able to use Bunsen burners or electrical stoves. This difficulty has been overcome at the Delta Migratory Waterfowl Refuge, in Louisiana, by utilizing a gasoline-torch stove. The stove was designed and constructed by Timothy Sullivan, a machinist at the refuge WPA project. It can be built at little cost, requires for heat only an ordinary gasoline "blow-torch" such as that used by plumbers, and produces a high heat with comparatively little fuel consumption.

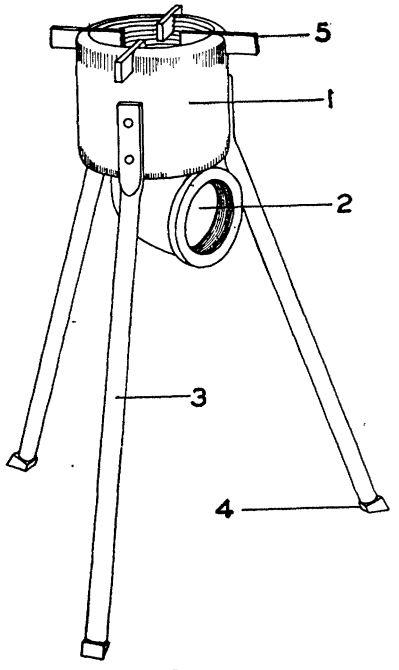

FIG. 1.

The Sullivan burner utilizes the following materials:

Materials: Many of these items may be salvaged from old machinery or from scrap-metal heaps. (1) One galvanized iron 3¼-inch pipe sleeve, 3¼ inches high. (2) One 1¾-inch pipe elbow. (3) Three pieces of ⅜-inch iron pipe, each 13 inches long. (4) Three pieces of rubber for insulating shoes for the legs of the stand. (May be cut from old automobile tire shoe.) (5) Four 2-inch lengths of ⅜ × ½ inch iron bar for grate. (6) Collar cut from ⅛-inch thick steel plate, to fit the inside diameter of the 3¼-inch pipe sleeve and with a hole to receive the 1¾-inch pipe elbow. (Not shown in figure.)

Assembly: One end of the elbow is welded to the steel collar, and this unit welded to one end of the pipe sleeve. This forms the body of the burner, the open end of the elbow being the flame intake, and the upper end of the sleeve the top of the burner. Then the top end of the sleeve is cut in four equidistant places to receive the lengths of iron bar. These lengths are spot-welded in place and form a grate. The ⅜-inch iron pipe is used for the stand, the upper end of each length being flattened and riveted to the outside of the lower half of the sleeve. The rubber shoes for the feet of the tripod stand may be cut with a projection that will fit up inside of the bore of the iron piping.

Use: a gasoline torch is heated and fired, and placed so that the end of the barrel is about an inch from the flame intake of the burner. The amount of heat may be regulated by adjusting the flame of the torch.

JOHN J. LYNCH

U. S. DEPARTMENT OF AGRICULTURE

BOOKS RECEIVED

ALBRIGHT, JOHN G. *Physical Meteorology.* Pp. xxvii + 392. 246 figures. Prentice-Hall. $5.35.

BEAVER, WILLIAM C. *Fundamentals of Biology, Animal and Plant.* Pp. 896. 299 figures. Mosby.

DARLINGTON, C. D. *The Evolution of Genetic Systems.* Pp. x + 149. 26 figures. Cambridge University Press, Macmillan. $2.75.

DOLLARD, JOHN, and others. *Frustration and Aggression.* Pp. viii + 209. Yale University Press. $2.00.

GASKELL, AUGUSTA. *Whence? Whither? Why?: A New Philosophy Based on the Physical Sciences.* Pp. xx + 312. Putnam. $2.50.

Index to A. S. T. M. Standards and Tentative Standards, January, 1939. Pp. 140. American Society for Testing Materials, Philadelphia.

KEESING, FELIX M. *The Menomini Indians of Wisconsin: A Study of Three Centuries of Cultural Contact and Change;* Vol. X, Memoirs of the American Philosophical Society, 1939. Pp. xi + 261. Illustrated. The Society, Philadelphia.

KLEMPERER, OTTO, Editor. *Electron Optics.* By the Research Staff of Electric and Musical Industries, Limited. Pp. x + 107. Illustrated. Cambridge University Press, Macmillan. $1.75.

LANDIS, CARNEY and WILLIAM A. HUNT. *The Startle Pattern.* Pp. x + 168. 4 figures. Farrar and Rinehart. $2.50.

PEARSE, A. S. *Animal Ecology.* Second edition. Pp. xii + 642. 132 figures. McGraw-Hill. $5.50.

SCHEIDEMANN, NORMA V. *Lecture Demonstrations for General Psychology.* Pp. x + 241. 10 figures. University of Chicago Press. $2.50.

WHEELER, WILLIAM M. *Essays in Philosophical Biology.* Pp. xv + 261. Harvard University Press. $3.00.

YOSHIMURA, S. *Dissolved Oxygen of the Lake Waters of Japan: Vol. 2, No. 8, Science Reports of the Tokyo Bunrika Daigaku, Section C.* Pp. 63–277. 54 figures. University of Literature and Science, Tokyo. Y 2.00.

NEW BOOK AND INSTRUMENT CATALOGUES

ALLIS, LOUIS COMPANY, Milwaukee. *Bulletin No. 508E, Explosion-proof Motors.* Pp. 12. Illustrated. *Bulletin No. 610, General Information; Nema Standards and Definitions.* Pp. 8. Illustrated.

APPLETON-CENTURY, D., COMPANY, New York. *Spring Books, 1939.* Pp. 78.

BURKE AND JAMES, INCORPORATED, Chicago. *The Story of Korelle Reflex with Instructions and Operating Hints for Securing Perfect Photographic Results.* Pp. 12. Illustrated.

CENTRAL SCIENTIFIC COMPANY, Chicago. *Cenco News Chats, No. 22, February, 1939.* Pp. 22. Illustrated.

DU PONT de NEMOURS, E. I. AND COMPANY, INCORPORATED, Wilmington. *The Neoprene Note Book, Vol. 2, No. 11, January, 1939; Facts About Neoprene for the Engineer.* Pp. 6. Illustrated.

ELECTRICAL TESTING LABORATORIES, New York. *Current Notes; Special Number for General Circulation, December, 1938, No. 85.* Pp. 16. Illustrated.

FIEDLER, HENRY GEORGE, New York. *Catalogue No. 71, 1939; Books and Periodicals on Zoology (Embryology, Anatomy, Physiology, Evolution, Heredity).* Pp. 56.

HOUGHTON MIFFLIN COMPANY, Boston. *Spring Books, 1939.* Pp. 30.

LEITZ, E., INCORPORATED, New York. *Leica Photography; Vol. VIII, No. II, February, 1939.* Pp. 26. Illustrated. $0.10.

NORTON, W. W. AND COMPANY, INCORPORATED, New York. *Books that Live; Spring, 1939.* Pp. 46.

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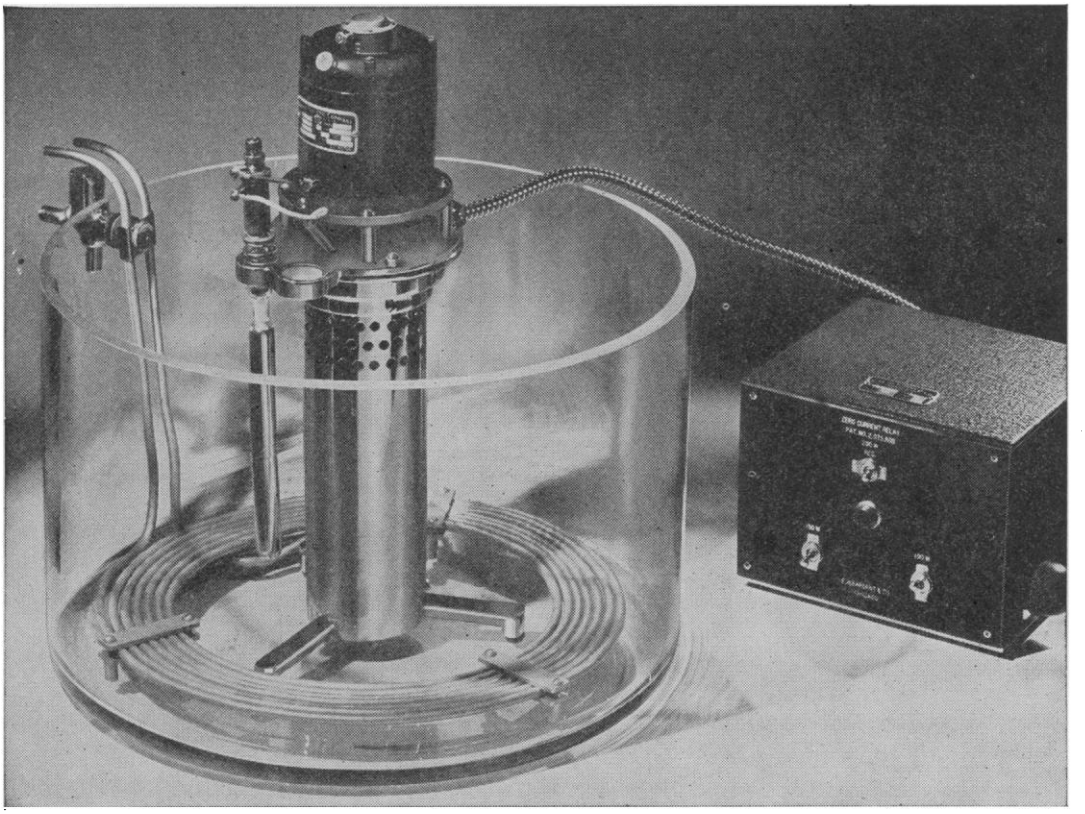

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