



In This Issue

On the cover this month is Hunter Mead, Professor of Philosophy and Psychology at the Institute, surrounded by just a few of the thousand organ pipes which currently occupy the spare bedroom of his house on North Chester Ave. in Pasadena.

Prof. Mead is probably one of the few poor people in the — well, let's say world — who has a functioning pipe-organ in his parlor. If you're curious — as we certainly were — as to how, and more particularly, *why* it got there, you'll find Dr. Mead's True Confession on page 17 of this issue.

Challenge to Management

President DuBridge's article on page 7 is adapted from a speech he made before the American Management Association in San Francisco on January 18. Originally titled, "The Challenge of Science and Technology to Management," the speech has already been abstracted in *Time*, and is to be reprinted by the American Management Association. We think it's one of the best Dr. DuBridge has made in some time.

Millikan Autobiography

Last month *E & S* ran an extract from "The Autobiography of Robert
CONTINUED ON PAGE 6



Mead

ENGINEERING AND SCIENCE MONTHLY



VOL. XIII CONTENTS FOR FEBRUARY NO. 5

Books	2
In This Issue	5
The Challenge of Science and Technology <i>Some of the changes science and technology may bring—and what we can do to encourage them</i> by L. A. DuBridge	7
Bacteriophage: A New Test Animal <i>Caltech biologists are using the viruses that attack bacteria to learn more about reproduction</i> by C. M. Stearns	11
The Two Supreme Elements in Human Progress <i>An extract from the forthcoming "Autobiography of Robert A. Millikan"</i>	14
The Philosophy of Organ-Building <i>Why should anyone want to build an organ? Ask the man who built one.</i> by Hunter Mead	17
Science in Art: Caricatures of Men of Science by E. C. Watson	20
The Month at Caltech	22
The Beaver	25
Alumni News	26
Personals	28
Science in the News	32

ENGINEERING AND SCIENCE MONTHLY

Published at the California Institute of Technology

STAFF

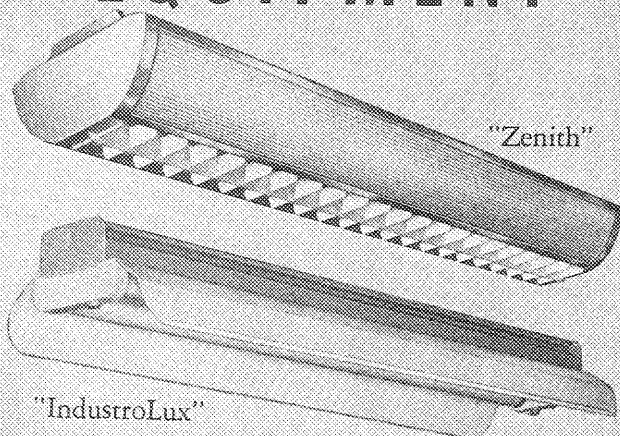
Publisher.....	Harry K. Farrar '27
Editor and Business Manager.....	Edward Hutchings Jr.
Student News.....	James Hendrickson '50
Staff Photographer.....	Ralph Lovberg '50
Editorial Consultant.....	Professor of English George R. MacMinn

PUBLICATIONS COMMITTEE

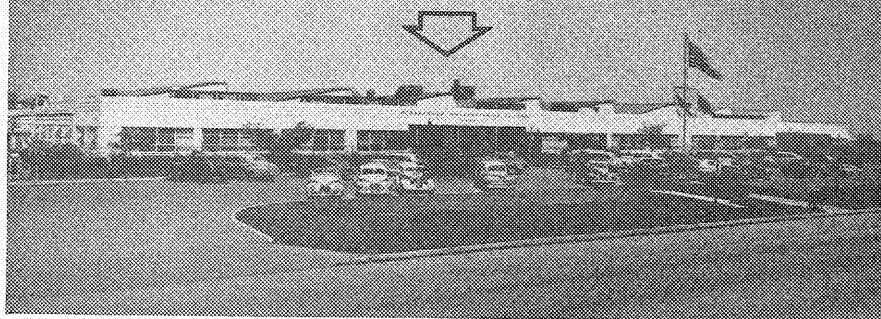
Chairman.....	Harry K. Farrar '27
Members.....	Richard C. Jahns '35, Martin H. Webster '37

Published monthly, October through June, at the California Institute of Technology, 1201 East California St., Pasadena 4, Calif., for the undergraduates, graduate students and alumni of the Institute. Annual subscription \$3.00, single copies 35 cents. Entered as second class matter at the Post Office at Pasadena, California, on September 6, 1939, under the act of March 3, 1879. All Publisher's Rights Reserved. Reproduction of material contained herein forbidden without written authorization.

SMOOT-HOLMAN ILLUMINATION EQUIPMENT



"IndustroLux"
Solves Lighting Problems at
AIRESEARCH



Plant and main office of the AiResearch Manufacturing Co., 9851 Sepulveda Blvd., Los Angeles.

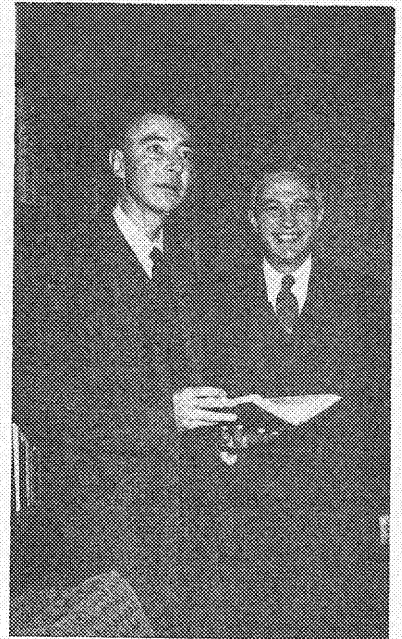
Like many other modern plants, the new AiResearch building uses SMOOT-HOLMAN Illumination Equipment...such as the depressible-plunger type "IndustroLux" and the "Zenith" luminaires shown above...for efficiency-plus, for employee comfort, for trouble-free maintenance...

and for the almost limitless endurance guaranteed by SMOOT-HOLMAN quality.



Offices in Principal Western Cities—Branch and Warehouse in San Francisco

In This Issue CONT'D.



Distinguished Visitor

A. Millikan"—which is to be published on March 22—dealing with Millikan's early days at the Institute. This month (page 14) we have another excerpt from the book—"The Two Supreme Elements in Human Progress." In the original draft of the book Dr. Millikan had this section labeled "My Philosophy." It's a rewarding and inspiring piece of writing.

And What's More

C. M. Stearns, who wrote the article on bacteriophage on page 11, is a member of the Institute staff attached to the Office of the President . . . Please note—the test tubes which all the members of the Phage Group are clutching in their fists in the picture on page 13 are merely drinking glasses filled with port. It's part of the routine whenever the group holds a seminar. Dr. Delbrück pours—and passes out cigars . . . J. R. Oppenheimer, the distinguished visitor shown above with Dr. DuBridge was just one of several d.v.'s who came to Caltech last month. You'll find notes on them on page 22.

PICTURE CREDITS

Cover—Ralph Lovberg '50
pps. 5,6—Ralph Lovberg '50
p. 13—Bill Wright '51
pps. 14,16—George Feroff
pps.17-19—Ralph Lovberg '50
p. 22—(top) Ralph Lovberg '50
(bottom) Pasadena Star-News
p. 23—Ross Madden-Black Star