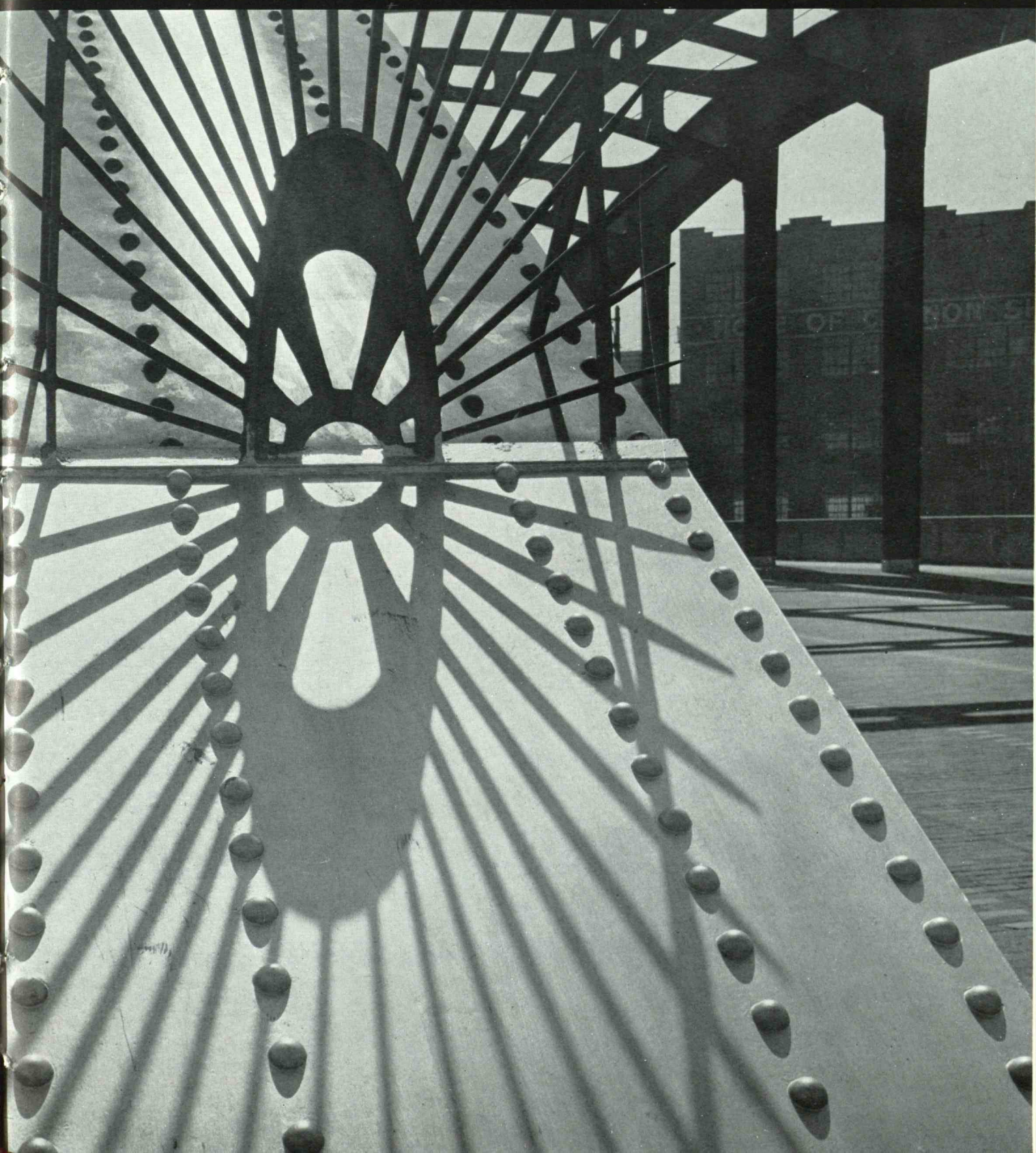
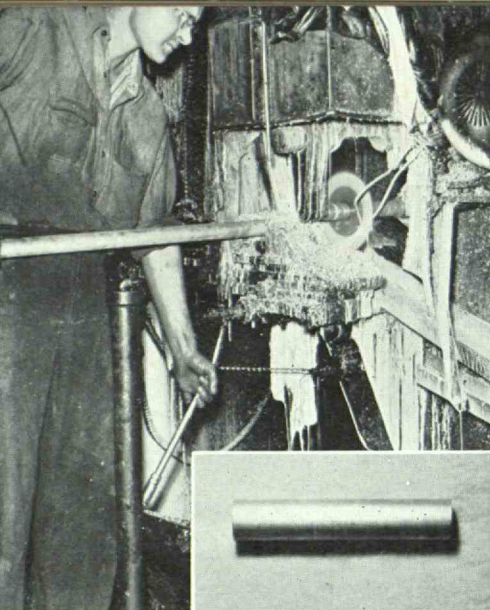


# TECHNOLOGY

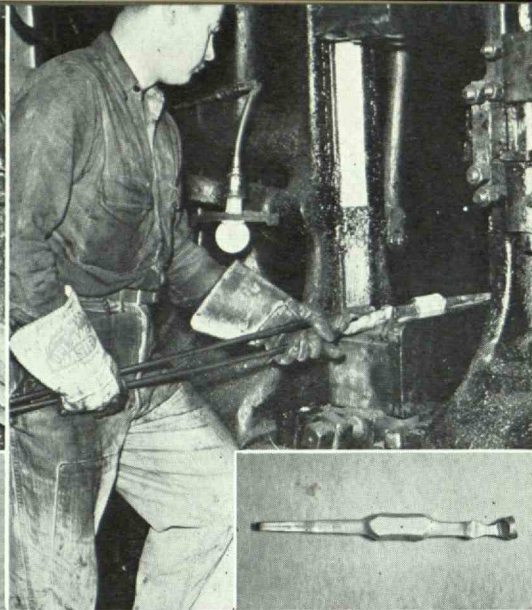
## REVIEW *December 1948*



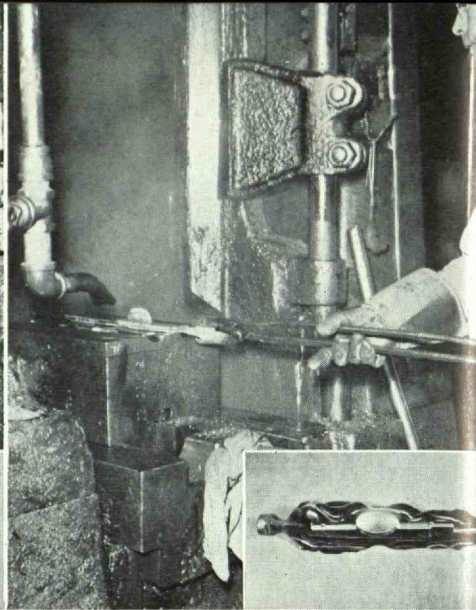




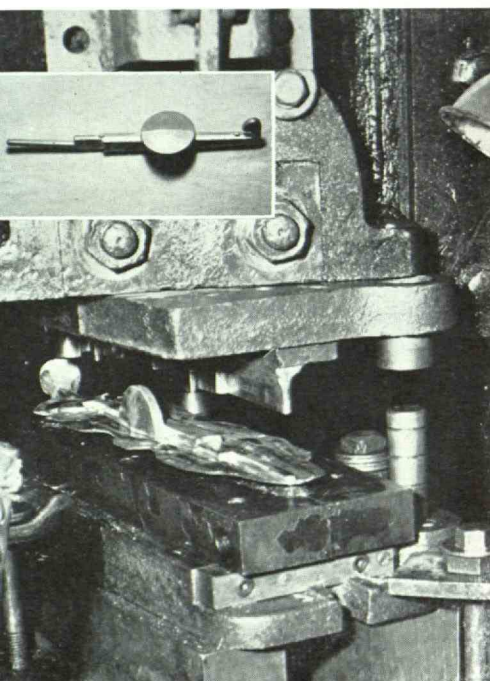
Cutting Bar



Lengthening and Shaping



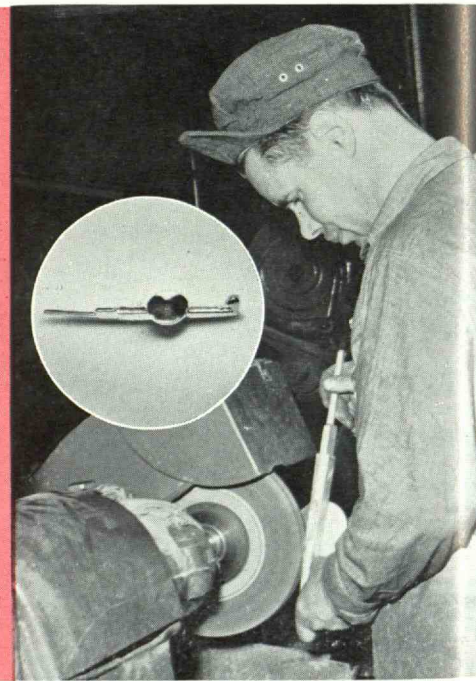
Shaping to the Die



Trimming the Flash

# FORGING ALUMINUM

into  
Pressure Cooker Tops



Finishing and Polishing

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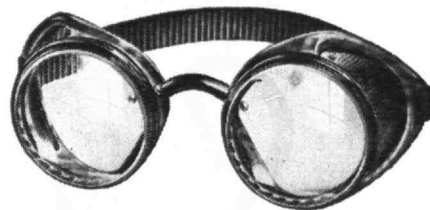




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**Industrial Eye Accident Costs UP  $78\frac{1}{2}\%$   
OVER 1939 COSTS**

In these days of rising costs when you put a "tracer of lost profits" on your books, you may see that it isn't only the rising costs of raw materials and labor that eat into your net! Eye accidents throughout industry average more than \$5 *per employed shop worker* per year. You can avoid the unnecessary costs of eye accidents (sometimes represented by 4-figure claims) by installing an adequate eye protection program. Your AO Safety Representative can show you how 98% of all eye accidents can be prevented by such a plan and *how large your savings can be!*

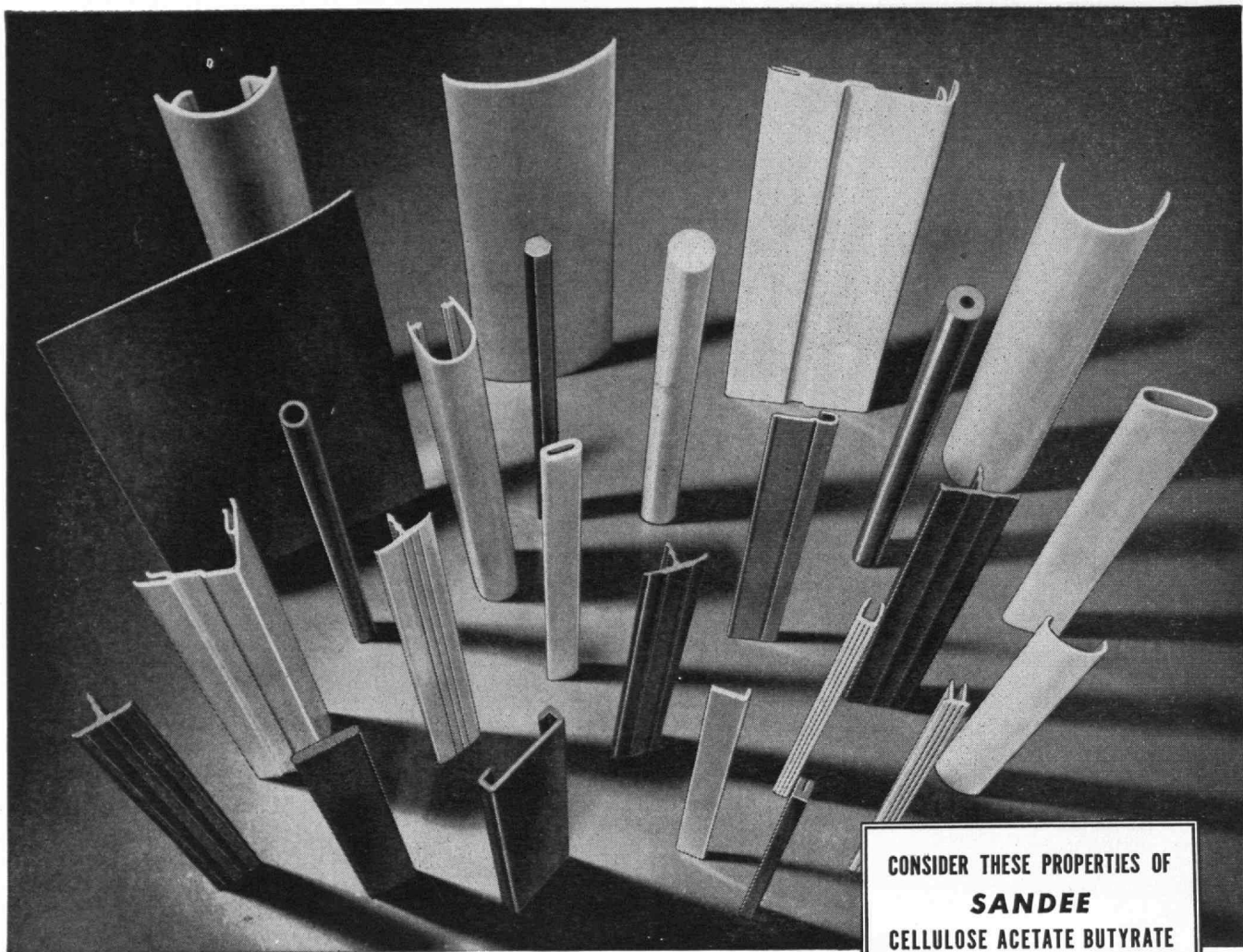


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## *Sandee* CELLULOSE ACETATE BUTYRATE *Extrusions*

**7** HIS general purpose material, under the trade name TENITE II, has attained an excellent reputation for appearance and serviceability in widely diversified fields. This is not only true in injection molded and fabricated items but is equally true in Extruded Rods, Tubes, and simple and complicated shapes. Colorful, tough, easily machined and easily formed to fit specific contours, it is serving to complete satisfaction in fields ranging from rods and tubes for toys to furniture and refrigerator trim.

Study the properties of this excellent general purpose material, then check with *Sandee* for confirmation of suitability to your requirements. *Sandee's* practical know-how in extrusion often helps in altering designs for improvements in functional utility, appearance, and cost.

### CONSIDER THESE PROPERTIES OF **SANDEE** CELLULOSE ACETATE BUTYRATE

- |                          |                                   |
|--------------------------|-----------------------------------|
| 1. Specific Gravity      | —1.22                             |
| 2. Tensile Strength      | —3000 to 5000 p.s.i.              |
| 3. Impact Resistance     | —Excellent at normal temperatures |
| 4. Heat distortion       | —170° to 185°F.                   |
| 5. Rigidity              | —Good to very good                |
| 6. Dimensional Stability | —Good to very good                |
| 7. Water Absorption      | —1 to 2%                          |
| 8. Burning Rate          | —Slow                             |
| 9. Odor                  | —Nil to faint                     |
| 10. Color                | —Unlimited                        |
| 11. Finish               | —Excellent                        |
| 12. Machinability        | —Excellent                        |

SALES REPRESENTATIVES IN 19 PRINCIPAL CITIES

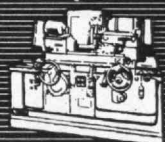
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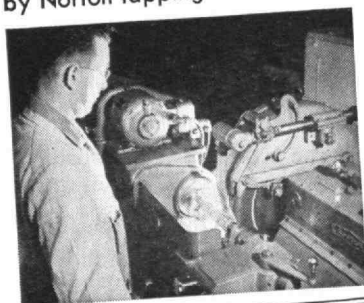


## YOUR KITCHEN DEPENDS ON ABRASIVES

... and REFRACTORIES

**T**AKE the sheet steel and stainless steel of refrigerator, range and cabinets—Norton wheels grind defects from the steel billets; Norton grinding wheels and machines surface the rolls that roll the billets into sheets; Norton abrasives polish the sheets.

The dependable performance of refrigerator, dish washer and other operating appliances comes from the precision produced by Norton grinding wheels and machines, and the still further precision produced by Norton lapping machines.



The gleaming porcelain enamel of refrigerator, range and sink is produced in furnaces lined with Norton high-temperature refractories. And Norton refractories have an important function in the heating units of your electric range.

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## Soaking wet to bone dry — in split seconds

Water logged waste becomes usable fuel—and many a useful, but moisture-laden, product is dried in a twinkling by Flash Drying.

In this ingenious development, air at a temperature which would make steel glow removes moisture so swiftly and uniformly that scorching and burning never occur. Proteins and other organic substances are dried without structural breakdown. Wet coal particles from mine washeries are converted from a disposal problem to a valuable fuel.

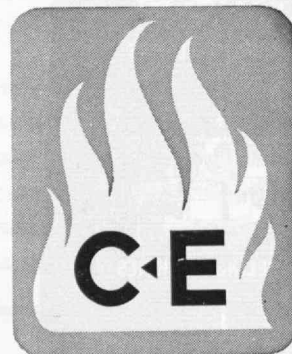
Flash Drying may seem a far cry to you from C-E's familiar field of steam generation. Yet actually, the generation and utilization of heat is the common basis of all C-E products—products

which touch your life in innumerable ways. C-E Boilers, by supplying steam for heat and power, contribute to the production of your food, your clothing, your car—and the electricity you summon by the flick of a switch.

C-E Marine Boilers powering cargo vessels bring the products of the world to your door. The chances are C-E Pressure Vessels help to provide gas for your car and many common household chemicals. Your shopping bags may come from a C-E equipped paper mill and—if you are lucky—your hot water from a C-E Automatic Water Heater.

Yes, the C-E flame is found in these and many other industries that serve you—a symbol of the efficient use of heat for your daily needs.

B-219



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form. The success of these training courses has led us to make them available for customer use, to help *your* employees produce faster, cheaper, better.

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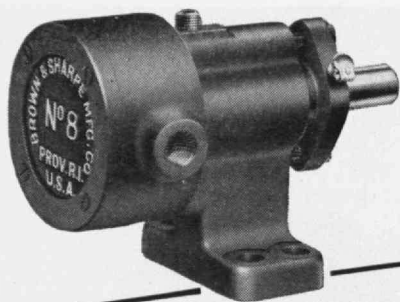
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# DIFENDORF GEARS

## THE TABULAR VIEW

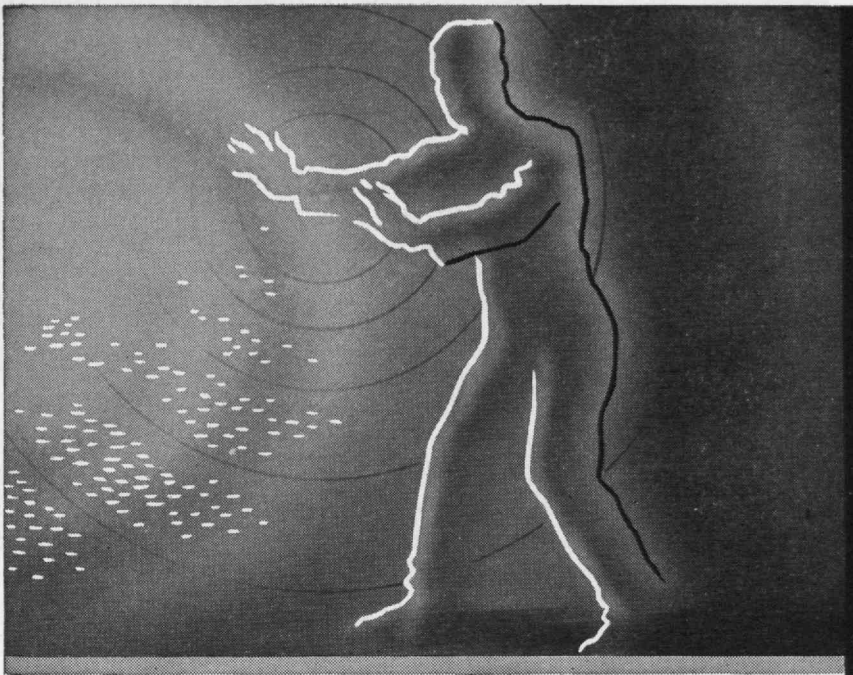
**Tomorrow's Living.** — PROFESSOR THOMAS K. SHERWOOD, '24, Dean of Engineering, is an able expositor (page 98) of his belief that both barrels of our educational shotgun should be fired together; one barrel to instill in the general citizenry an understanding of the true meaning, significance, and methods of science, and the other barrel to broaden the training of scientists and engineers through a better understanding of economics, history, social sciences, and the many other topics which can be conveniently lumped together as the humanities. In this way he envisions a more intelligent approach to tomorrow's living. Dean Sherwood is scientist turned educational administrator. He received the bachelor of science degree from McGill University in 1923, and from M.I.T. the S.M. and Sc.D. degrees in 1924 and 1929, respectively. During World War II he was a member of the National Defense Research Committee, a consultant on the Baruch Committee and to the War Department.

**Today's Progress.** — TENNEY L. DAVIS, '13, turns up evidence (page 101) that Chinese warriors of centuries ago were formidable foes, having developed rocket-arrows for military purposes certainly as early as the Seventeenth Century and possibly as early as the Thirteenth. The documentary evidence which Dr. Davis has unearthed in his research for this article gives ample evidence that today's progress depends on past accomplishments. As an authority on modern explosives, an able historian for chemistry, and a frequent contributor to learned journals, Dr. Davis is well qualified to prepare this article for The Review. At Harvard he received an A.M. degree in 1915 and a Ph.D. degree in 1917. He was a member of the Institute's Faculty from 1919 until his resignation in June, 1942. He is director of scientific research and development of National Fireworks, Inc.

**Yesterday's Tribute.** — In spite of the doctrines of dictators, to the contrary, science knows no nationality; although the barriers of language may temporarily hold men of science apart, their professions bring them together. No better example could be cited than the tribute which a German scientist paid to a modest French professor of mathematics somewhat more than half a century ago when feelings of nationalism were probably at their height. DAVID and CHARLOTTE B. LANDAU record (page 103) the warm, personal life of André-Marie Ampère, and the part which Helmholtz played in immortalizing the French savant. In New York, David Landau follows his vocation as engineer, specializing in stress studies and elastic theory, whereas Charlotte B. Landau, a graduate in science from French schools, is a teacher and writer on science and scientists.

**Enzyme Kinetics.** — SAMUEL A. GOLDBLITH, '40, whose Trend piece appears on page 97, is a graduate student in the Department of Food Technology where he is studying for an advanced degree.





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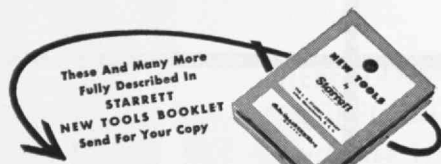
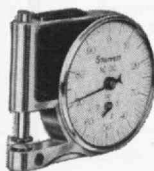
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## MAIL RETURNS

### Centenarians Familial

FROM GODFREY L. CABOT, '81:

I notice on page 40 of your November, 1948, number that Henry Richards of the Class of 1871 has celebrated his 100th birthday. If I correctly understand it, he is the brother of the late Robert H. Richards of the Class of 1868 who also lived to pass his 100th birthday. I do not recall any other authenticated case in history of two members of one family reaching and passing the age of 100 years. Boston, Mass.

### Music and Mechanism

FROM HERBERT V. WHITE:

Last summer a friend gave me a copy of the June, 1948, issue of The Review. His primary purpose in doing so was that I might see the photograph on the front cover. Due to the fact that I am an organist, this photo was of much interest to me. However, I am unable to identify the organ pictured. Would you kindly send me, at your earliest convenience, any information which you might be able to obtain on the instrument. Hartford, Conn.

[As we informed Mr. White and the many other inquirers about this photograph, the organ console pictured is located at Wanamaker's store in Philadelphia. — Ed.]

### Bouquets for Volume 50

FROM CARL T. KELLER:

I hate to inflate your ego any further, but in justice to the men who really do the work, I state that the last [July] number of The Review was not only the best, to my mind, of all the many issues of that excellent magazine which I have read, but the best of any such publications which I have ever seen. Even Mrs. Keller read parts of it with interest and I devoured it from "kiver to kiver"! I am keeping it amongst my treasures. My congratulations and keep it up!

Boston, Mass.

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