

June 1944

TECHNOLOGY REVIEW

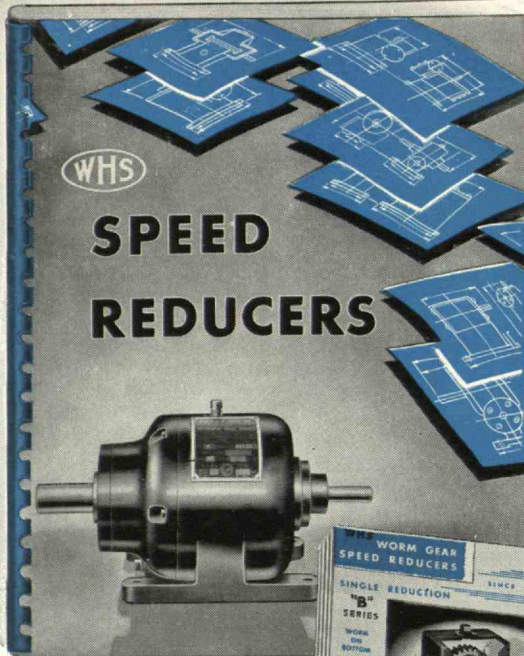
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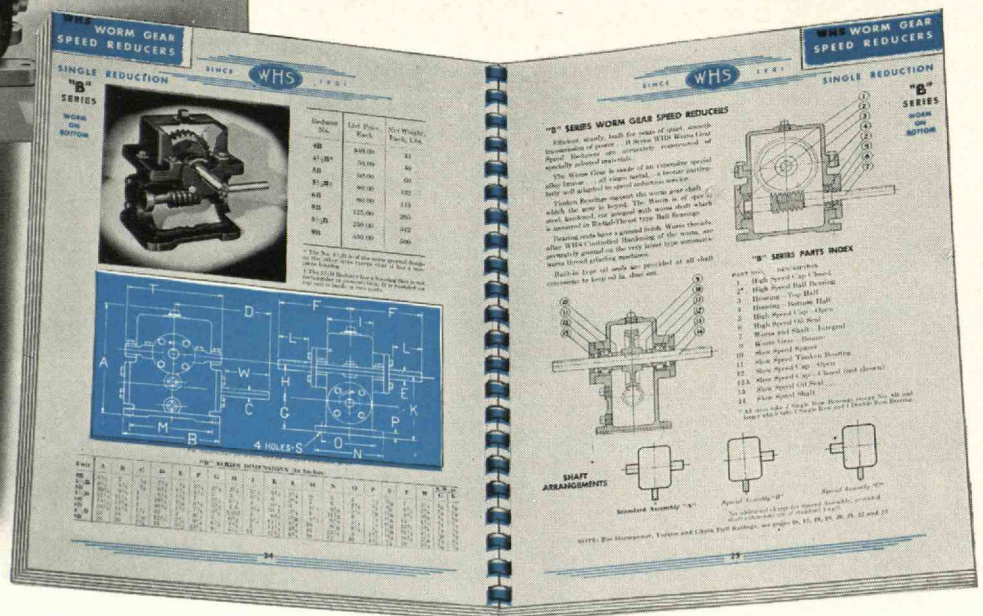
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**"First
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THE new WHS Engineering Manual and Catalog No. 144 approaches the authority and completeness of a text book. Practically any question you might ask about Speed Reducer design, ratio range, horsepower and torque ratings ... in the wealth of sizes and styles covered by the WHS line ... is answered in this book.

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**Keep their Eyes
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Specifically, here are the features of this new goggle that add up to all-around eye protection and comfort.

Larger side shields have perforations nearly double in size and number. This increased ventilation produces a natural draft that keeps lenses clear and eyes cool. Two other AO advantages: new curved nosepiece assures a more comfortable fit; all-elastic headband holds goggles firmly in place.

And the new lightweight acetate eyecups, with smooth, rounded edges, are individually shaped to fit the left and right eye snugly. This closer, more comfortable fit guards against particles striking from all angles, while impact-resisting Super Armorplate lenses protect against direct hits.



This new Duralite Goggle No. 301A can be supplied with either 50 mm. Super Armorplate lenses in clear or Calobar shades. Order from your nearest AO Representative . . . today.

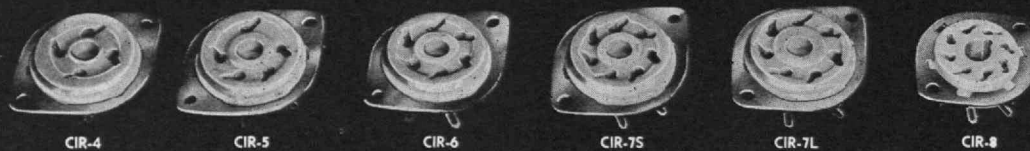
P. S. For the worker who must wear spectacles and needs protection for short periods, the AO Duralite Coverglas Goggle—with the same safety and comfort features as the standard Duralite Goggle—is recommended.

American  Optical
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SOUTHBRIDGE, MASSACHUSETTS

MANUFACTURERS FOR MORE THAN 111 YEARS OF PRODUCTS TO AID AND PROTECT VISION. BRANCHES IN ALL PRINCIPAL INDUSTRIAL CENTERS

THE TECHNOLOGY REVIEW, June, 1944. Vol. XLVI, No. 8. Published monthly from November to July inclusive at 10 Ferry Street, Concord, N. H. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription \$3.50; Canadian and Foreign subscription \$4.00. Entered as second-class matter at the Post Office at Concord, N. H., under the Act of March 3, 1879.

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CIR Series Sockets

Any Type List \$.45

Type CIR Sockets feature low-loss isolantite or steatite insulation, a contact that grips the tube prong for its entire length, and a ring for six position mounting. They are supplied with two metal

AA-3

List \$.60

A low-loss steatite spreader for 6 inch line spacing. (600 ohms impedance with No. 12 wire.)

List \$.50

steatite aircraft insulator.

List \$.90

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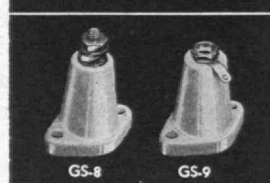
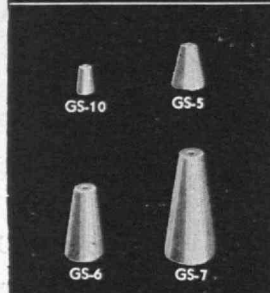
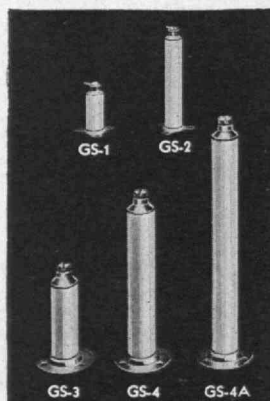
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MEMO

National is still your best bet for high grade parts for H.F. Communication work. Deliveries are good when orders are covered by suitable priority rating.

NATIONAL COMPANY, INC.
MALDEN, MASS.



GS-5, 1 1/4" List, each \$.40

GS-6, 2" List, each \$.70

GS-7, 3" List, each \$ 1.25

GS-10, 3/4", package of 10

List \$.12

These cone type standoff

insulators are of low-loss

steatite. They have a tapped

hole at each end for mounting.

GS-8, with terminal List \$.90

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These low-loss steatite stand-

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lead-through bushings.

XS-1, (1" Hole) List \$ 1.20

XS-2, (1 1/2" Hole) List \$ 1.35

Prices listed are per pair, in-

cluding metal fittings. Insula-

tion steatite.

XS-3, (2 3/4" Hole) List \$ 6.00

XS-4, (3 3/4" Hole) List \$ 7.25

Prices are per pair, including

metal fittings. These low-loss

steatite bowls are ideal for

lead-in purposes at high volt-

ages.

XS-5, Without Fittings

List, each \$ 8.25

XS-5F, With Fittings

List, per pair \$17.00

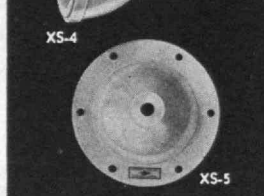
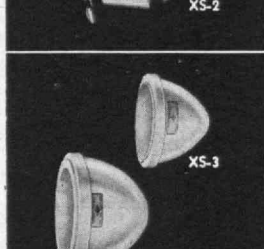
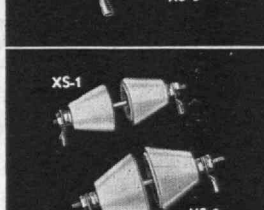
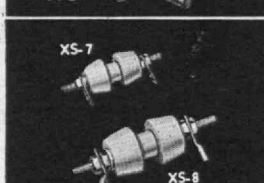
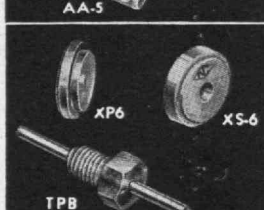
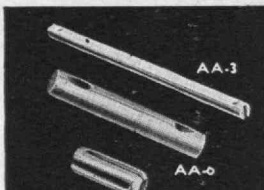
These big low-loss bowls have

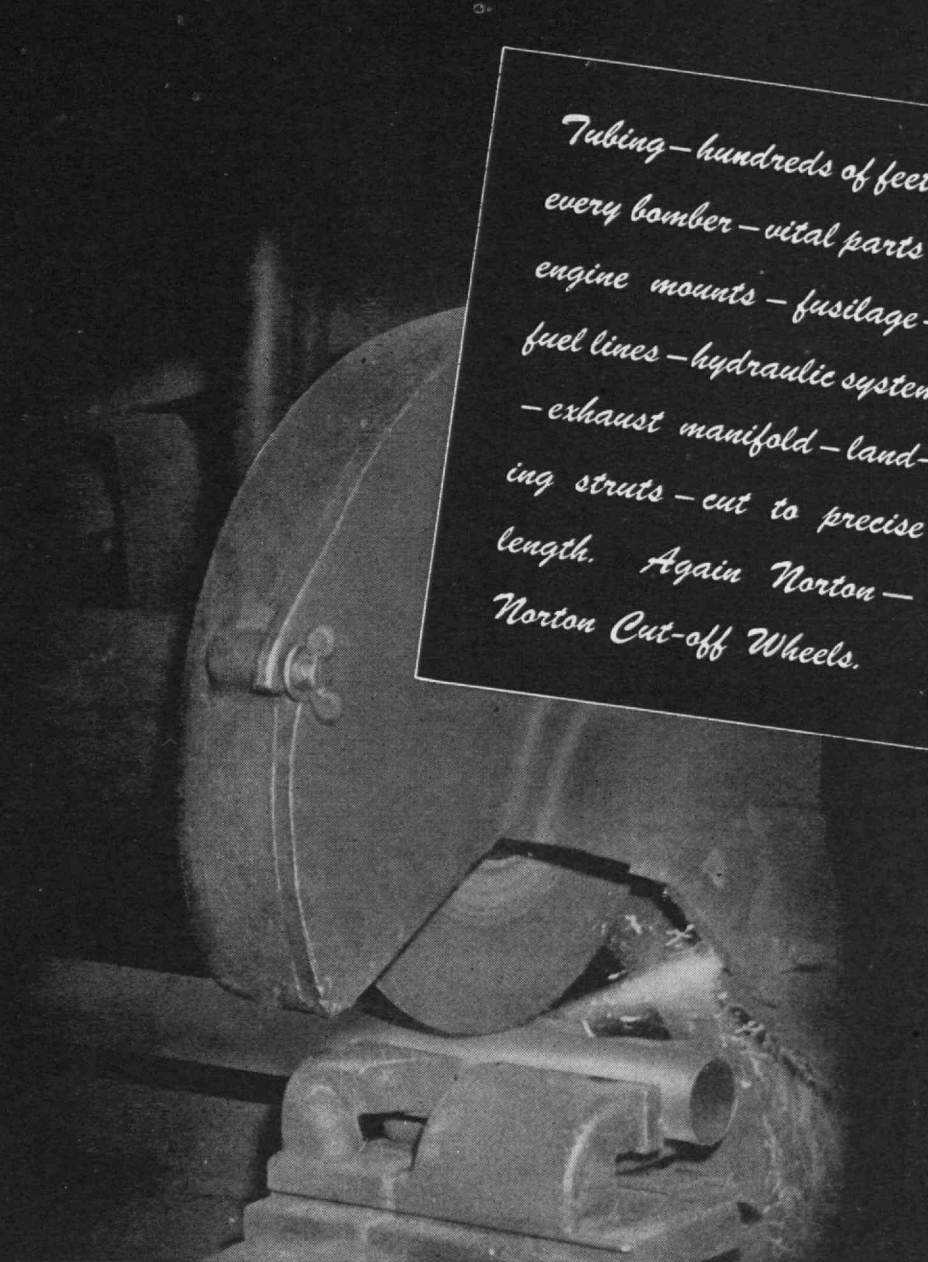
an extremely long leakage

path and a 5 1/4" flange for

bolting in place. Insulation

steatite.





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every bomber—vital parts of
engine mounts—fuselage—
fuel lines—hydraulic system
—exhaust manifold—land-
ing struts—cut to precise
length. Again Norton—
Norton Cut-off Wheels.*

Cutting-off with Norton Resinoid Abrasive Wheel

Thousands of sharp abrasive cutting teeth go into action at a surface speed of 16,000 s.f.p.m.—resinoid bonded by special Norton-developed formulas.

Yesterday—cutting-off was hardly more than a tool room or stock room application.

Today—cutting-off is a high speed production on many kinds of materials—steel, brass, aluminum, ceramics, plastics, insulating materials, glass, cemented carbides.

Norton Abrasive cut-off wheels not only cut costs but they save time—and time was never more precious than now.

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Photo courtesy North American Aviation, Inc.

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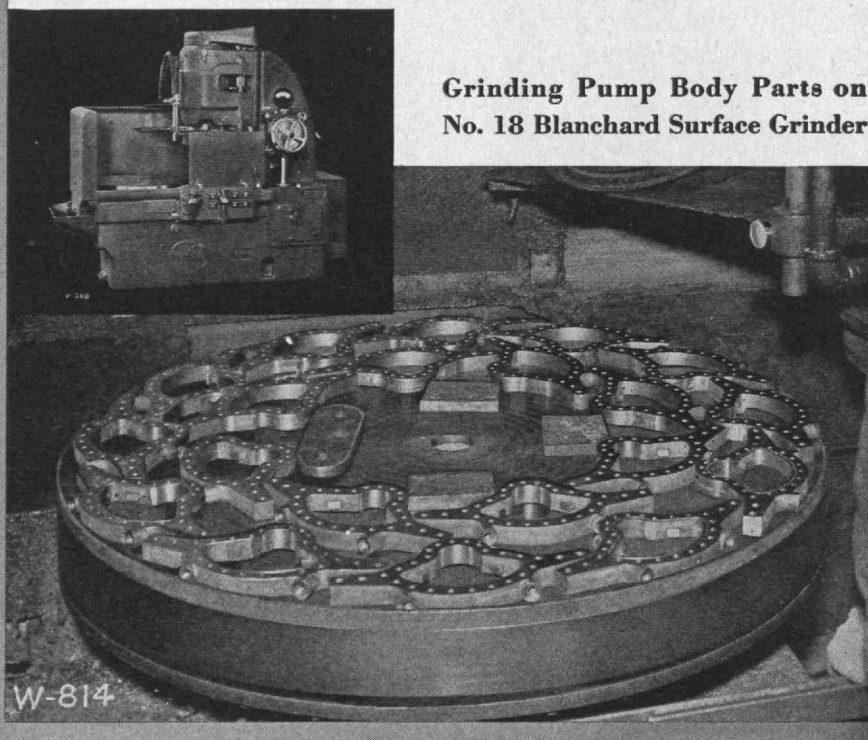
★ *Especially
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THIS is an excellent example of accurate surface grinding of pump body parts on a No. 18 Blanchard Surface Grinder.

These pump parts are held magnetically on a 36" chuck and work is held to very close limits giving a finish suitable for final lapping operation.

The material is high strength forged steel and .004" is removed from each side, to limits of .0003". Forty pieces 10 $\frac{5}{8}$ " long, 5 $\frac{1}{8}$ " wide and .756" thick (80 surfaces) are produced per hour.

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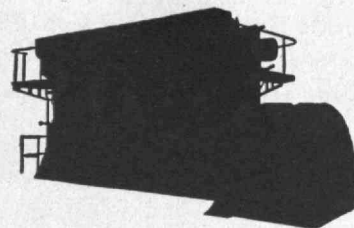


Grinding Pump Body Parts on
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When peace comes, it is vital that America keep as many of its workmen busy as is possible. Some industries cannot escape labor layoffs during the period of re-tooling. Not so the Diesel industry if . . .

The "if" means if it has work to do. The work should

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Busch-Sulzer has expanded its facilities greatly since 1941 and has increased its carefully trained personnel by 50 percent in the last 20 months. We are anxious to keep these men and machines busy and help to achieve the peacetime stability that all of us yearn for.

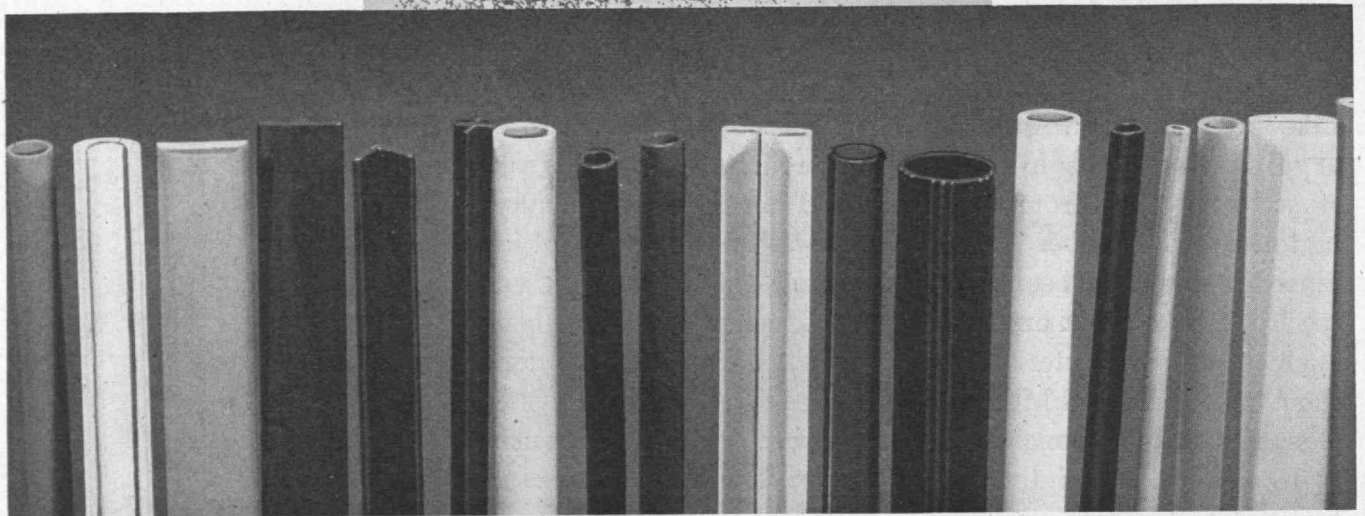
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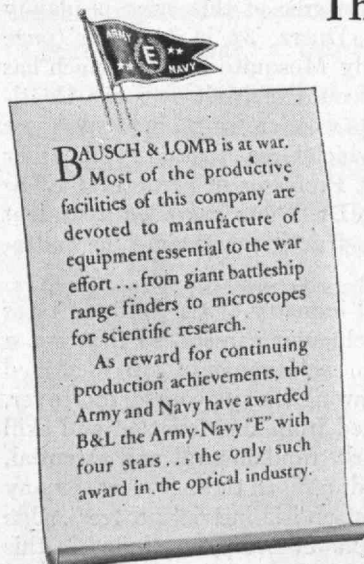
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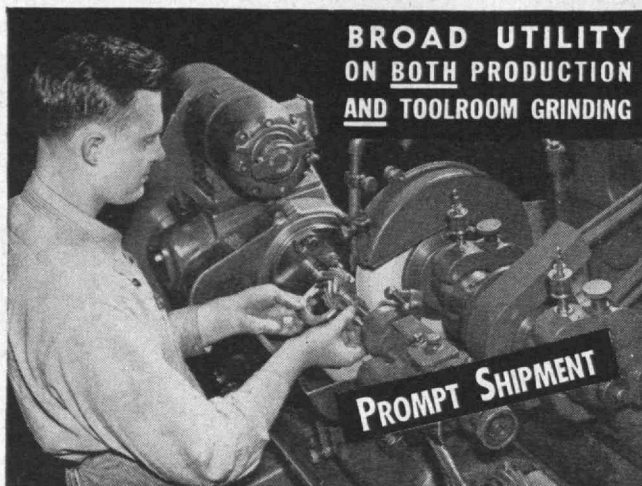
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THE TABULAR VIEW

Encouragement. — From ROBERT E. WILSON, '16, President of the Pan American Petroleum and Transport Company, this Review (page 483) presents a trenchant, hard-thought article well calculated to vitiate many gloomy prognostications about the industrial and technological future of the country. Discussing our situation as regards production and resources in petroleum, Dr. Wilson refers to the past to show convincingly that not so long ago things looked very black but that the blackness was very effectively relieved. His contention is that the same medium of relief can be counted on equally in the future, that the scientific and technological research which multiplied both proved resources and the rate of production from them can still be relied upon. As corollary, he stresses well the fact that for full realization of its potentialities, it must have freedom of action, and therefore that thoughtful people must look with doubt on social moves which may be expected to constrict it.

Era. — In days when the skillful and delicate art of making electrons work in dozens of ways plays a crucial part in the fighting of the greatest of wars, it is worth while to pause for consideration of how short a span the science of electronics has been in operation. We think readily of the first flight in a craft heavier than air; we remember with easy nostalgia the first automobile ride. Looking back in similar fashion, JOHN MILLS, '09, tells in this Review (page 486) the swift story of how electronics has developed since the invention of the audion by Lee deForest in 1906. Director of publication for the Bell Telephone Laboratories since its incorporation in 1925, Mr. Mills the author of a volume, *Electronics, Today and Tomorrow*, soon to appear.

Sandwich. — Steel, alloys, plastics — so the catalogue of much wartime construction automatically runs. Man's most familiar building medium is readily misconceived as usable only in boxes and crates for the materials of Mars. The degree of this error is plainly shown by ALBERT G. H. DIETZ, '32, in an article (page 489) discussing the speedy Mosquito bomber which has given such admirable account of itself over the Continent, and which, with its wooden wings, is fit successor to the wooden walls on which Great Britain in an earlier day depended. Assistant Professor of Structural Engineering at the Institute, Dr. Dietz has been a student of wood and wooden construction ever since his undergraduate days.

Gamut. — The electrical industry of the United States has been prolific in spectacular careers, so that not a few of its characteristic achievements are identified by the names of men. Throughout its course, moreover, the industry has benefited from the devotion and skill of other men whose work, fundamental and essential, has not been marked by drama. In these careers is many a story of human interest and industrial progress. One such is the story of Hermann Lemp, concluded in this issue (page 491) by DAVID O. WOODBURY, '21, biographer of Elihu Thomson and careful student of industrial history.