

TECHNOLOGY

REVIEW

May

1952





The Vulcan organization in Cincinnati has been serving the process industries over the past half century. In 1952 American industry will be called upon to bolster the country's defenses while meeting a steady load of essential civilian demands. In fulfilling these responsibilities, Vulcan is available with its technically-trained staff and specialized facilities to help solve many difficult processing problems.

VULCAN ENGINEERING DIVISION OFFERS:

- TECHNICAL AND ECONOMIC SURVEYS
- PROCESS DEVELOPMENT
- PROCESS AND PLANT DESIGN
- EQUIPMENT DESIGN AND PROCUREMENT
- ERECTION AND CONSTRUCTION
- INITIAL OPERATION SERVICES

A few of the specialized fields in which Vulcan process engineering services have been utilized include:

- Organic chemicals
- Petro-chemicals
- Pharmaceuticals
- Low-temperature gas separation
- Waste disposal
- Chemical recovery
- Extraction and diffusion operations

Write for explanatory literature, or better still have a Vulcan representative call to see you.

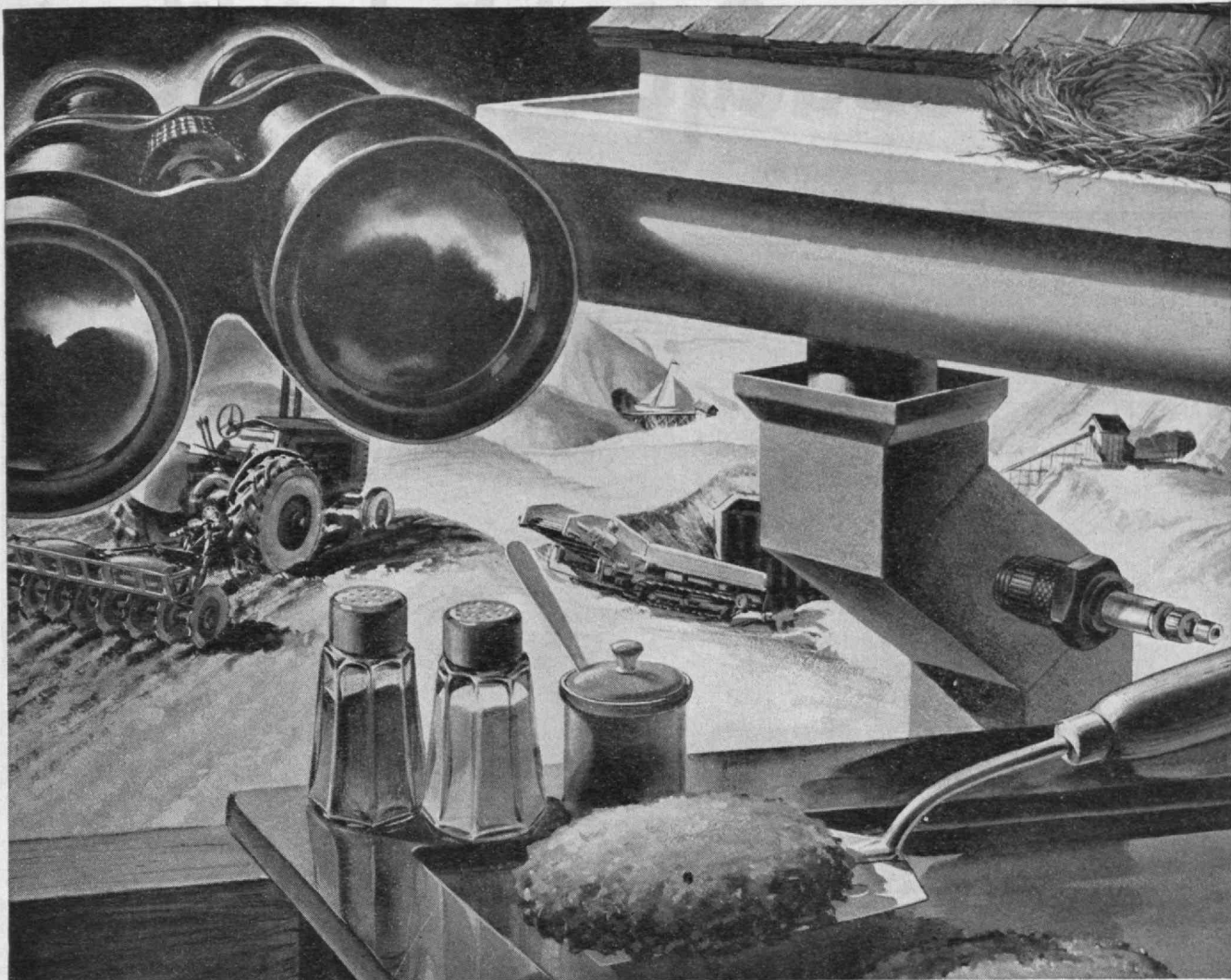


VULCAN ENGINEERING DIVISION

The VULCAN COPPER & SUPPLY CO., General Offices and Plant, CINCINNATI 2, OHIO
PHILADELPHIA BOSTON SAN FRANCISCO BUENOS AIRES
VICKERS VULCAN PROCESS ENGINEERING CO., LTD., MONTREAL, CANADA

51 YEARS OF SERVICE

ENGINEERING DIVISION • MANUFACTURING DIVISION • CONSTRUCTION DIVISION • INDUSTRIAL SUPPLY DIVISION



All but one of the objects in this picture have something in common — Norton or Behr-Manning abrasive products are vital factors in their manufacture and in their quality. *Can you find the stranger?*

What doesn't belong in this picture?

The electric mine car? No! In this new device, for hauling loads through narrow pits, Norton abrasives are essential to the manufacture of almost every part.

The harrow? No! Its concave discs are "roughed and polished" with Behr-Manning RESINALL METALITE belts.

The binoculars? No! Their lenses were shaped by Norton diamond wheels on automatic-lens generating machines. Other parts were also precision ground by Norton abrasive products.

The hamburgers? No! The machines that grind them are deburred, in casting form, with Behr-Manning coated abrasives. Even the surface on which they are

frying is cleaned with a Norton ALUNDUM griddle brick.

The stranger in the picture is the bird's nest. Any man-made product — whether of metal, wood, paper, cloth, leather, ceramics, plastics — depends in some important way on products that bear such well-known trade-marks as Norton and Behr-Manning.

Norton Company makes abrasives, grinding wheels, refractories, Norbide grain and molded products, grinding and lapping machines, non-slip floors. Norton Company, Main Office and Works, Worcester 6, Massachusetts.

Behr-Manning makes abrasive paper and cloth, oilstones, abrasive specialties, Behr-Cat brand pressure-sensitive tapes. Behr-Manning Corporation, Division of Norton Company, Troy, New York.

SOLD BY LEADING DISTRIBUTORS AND DEALERS THE WORLD OVER



NORTON COMPANY BEHR-MANNING

WORLD'S LARGEST MANUFACTURERS OF ABRASIVES AND ABRASIVE PRODUCTS

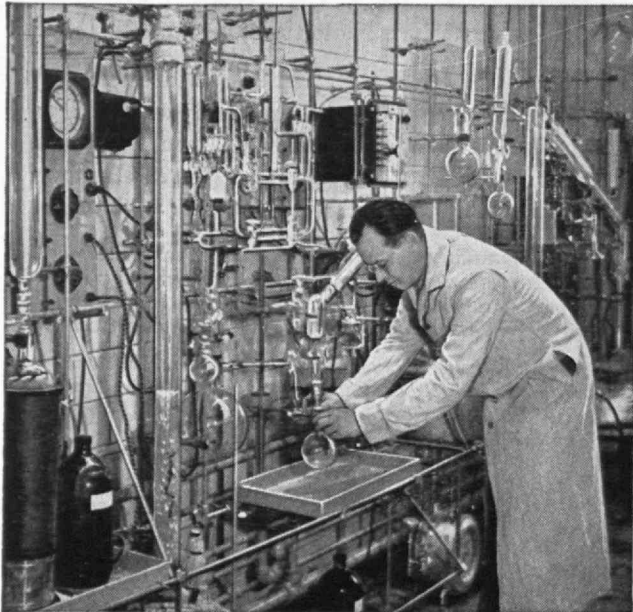
MAKING BETTER PRODUCTS TO MAKE OTHER PRODUCTS BETTER

These Great Laboratory

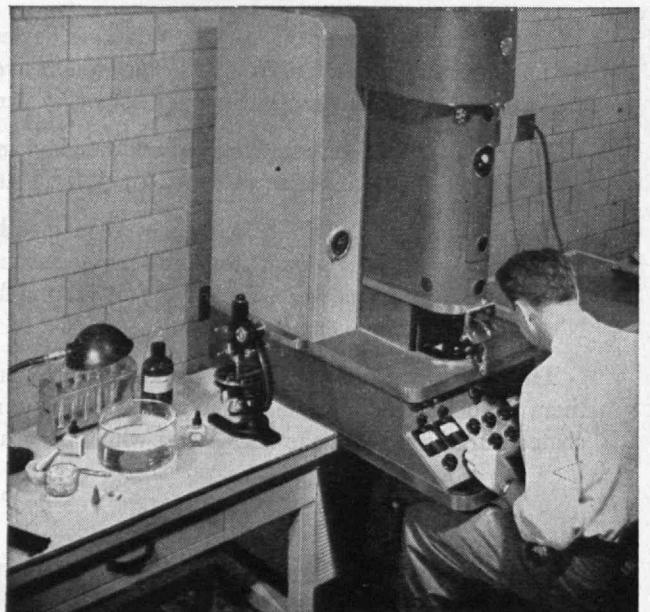


PETROCHEMICALS offer independent inventors great opportunity for exploration and reward. Such synthetics as Nylon, Viny-

lite, Neolite are already indispensable to our expanding economy—and new ideas in this area are at a premium today.



UNDER THE SINCLAIR PLAN, chemistry laboratories like these are open for the first time to independent inventors.



ELECTRON MICROSCOPE, capable of magnifying 100,000 times, is typical of the expensive equipment now available.

Facilities Are Open to You

Many inventive people have responded to the Sinclair Plan's offer of laboratory facilities—to others who wish to do so, a suggestion: There is promise and profit in oil-based synthetics.

EIGHT months ago, Sinclair turned over a part of its great laboratories at Harvey, Illinois, to independent inventors who had promising ideas in the field of petroleum products but who did not have the facilities needed to develop or prove out their ideas.

To date nearly 5,000 people have submitted ideas to the laboratories, and the Plan is recognized as a valuable service to independent inventors. As a result we have made the Sinclair Plan part and parcel of the long-range operation of our company.

There may be inventive people interested in this Plan but wondering what sort of ideas or what areas would be profitable to explore. To those people we suggest the field of petrochemicals. Such things as plastics, synthetics, substitutes and new materials as yet undeveloped—made from petroleum—offer great opportunities for invention and reward.

If you have an idea of this sort—or in the general area of petroleum products or applications—you are invited to

submit it to the Sinclair Research Laboratories. In your own interest, each idea must first be protected by a patent application or a patent.

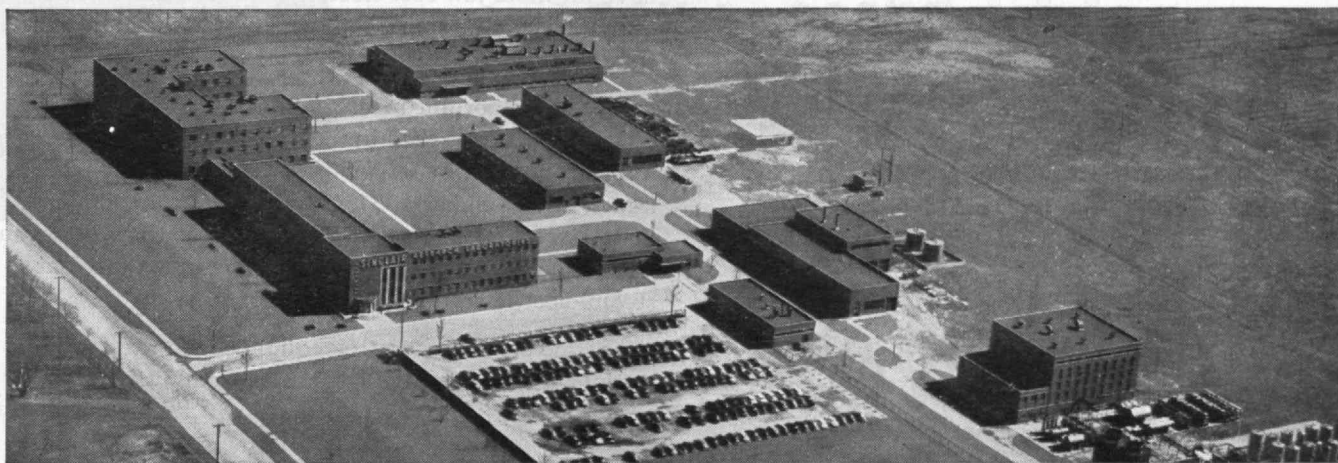
The inventor's idea remains his own property

If the laboratories select your idea, they will make a very simple arrangement with you: In return for the laboratories' work, Sinclair will receive the privilege of using the idea for its own companies, free from royalties.

This agreement in no way hinders the inventor from selling his idea to any of the hundreds of other oil companies for whatever he can get. Sinclair has no control over the inventor's sale of his idea to others, and has no participation in any of the inventor's profits.

HOW TO PARTICIPATE: Instructions are contained in an Inventor's Booklet available on request. Write to: W. M. Flowers, Executive Vice-President, Sinclair Research Laboratories, Inc., 600 Fifth Avenue, New York 20, N. Y.

IMPORTANT: *Please do not send in any ideas until you have sent for and received the instructions.*

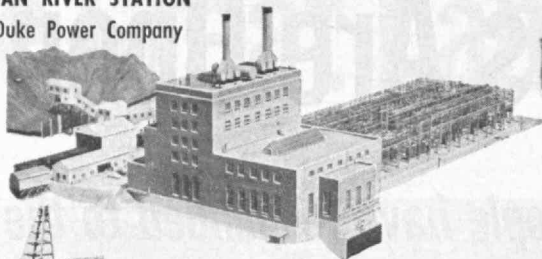


SINCLAIR RESEARCH LABORATORIES—nine buildings containing the most modern testing equipment known—have contributed many of today's most important developments in petroleum.

Under the Sinclair Plan, the available capacity of these great laboratories is being turned over to work on the promising ideas of independent inventors everywhere.

SINCLAIR—for Progress

DAN RIVER STATION
Duke Power Company



O. H. HUTCHINGS STATION
The Dayton Power and Light Company

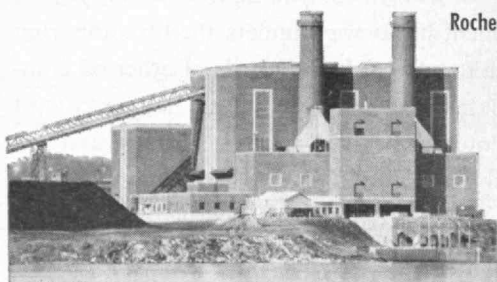


PORT JEFFERSON STATION
Long Island Lighting Company

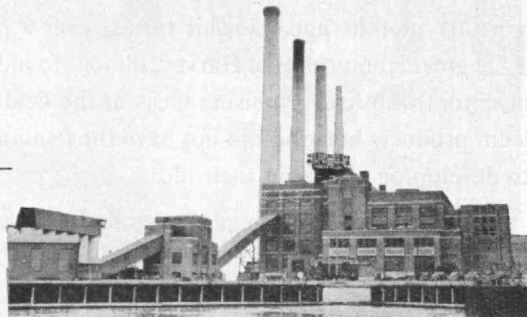


7 of the top 10

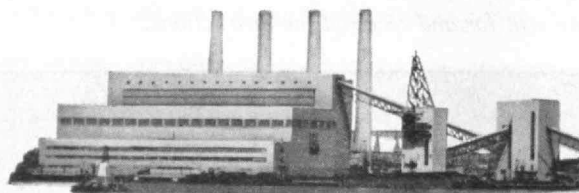
RUSSELL STATION
Rochester Gas & Electric Corporation



POTOMAC WASHINGTON STATION
Wisconsin Electric Power Company



POTOMAC RIVER GENERATING STATION
Potomac Electric Power Company



SEWAREN GENERATING STATION
Public Service Electric and Gas Company

The seven power stations shown on this page are in a very real sense *symbols of power progress*. And power progress is perhaps the most important single fact in the economy of this country today. It is the reason why we have far more low-cost electricity to turn our wheels of industry and provide modern comforts for our homes than any other nation in the world.

The most important measure of power progress is efficiency . . . expressed in terms of fuel consumption per kilowatt-hour. A Federal Power Commission report issued in November 1951, covering the operation of 264 power stations during 1950, discloses that the seven plants shown here rank among the ten most efficient steam-electric stations in the country.

All of the steam generating equipment in these seven stations was designed and built by Combustion Engineering — Superheater, Inc.

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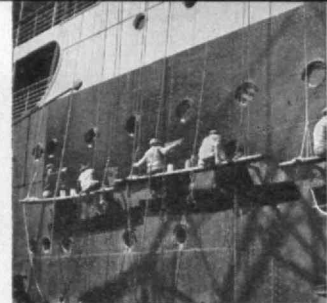
ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT



COMBUSTION ENGINEERING—SUPERHEATER, INC.

Combustion Engineering Building
200 Madison Avenue, New York 16, N. Y.

• *A Source of Carbon for Steel*

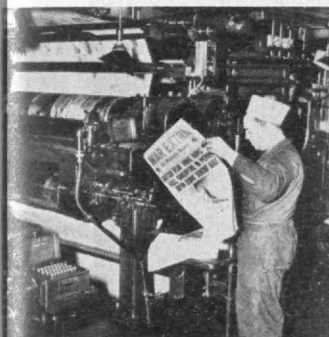


• *Gives Paint Its Jet Glossiness*

• *Triples Tire Life*



• *Makes Printing Inks Blacker,
Type easier to read*



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• *Essential to Carbon Papers
and Ribbons*



• *Protects and Beautifies Plastics*

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77 FRANKLIN ST., BOSTON 10, MASS.

• *Goes Into Records*





17 Years of Prize-Winning Performance

To paraphrase a well-known quotation,
 "Old HRO's never die!" Nor, may we hasten to add, do they "fade away."

In 1934, the year he got his amateur license, Gerard de Buren, HB9AW (Geneva), FP8AW (St. Pierre and Miquelon), purchased an HRO. He's still using it with prize-winning results. In 17 years, his HRO has helped him win one amateur award after another. Just this year, on St. Pierre and Miquelon Islands, he worked 1285 stations in 53 countries in 35 days!

Enduring performance like this is built into every National product.



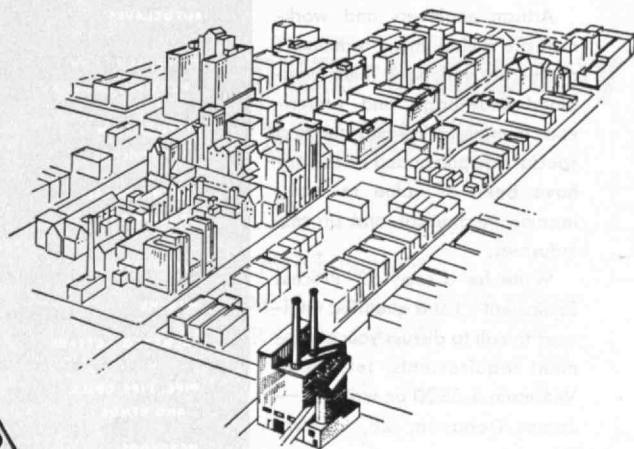


STEAM CENTER for a Medical Center

The new steam center of the Medical Center Steam Company, serving the University of Illinois and others in the Medical Center Area in Chicago provides a single, economical and reliable source of steam for all buildings in the group.

Three boilers, each with a capacity of 90,000 pounds per hour, distribute steam through underground pipes laid in 4600 feet of tunnels. Provision has been made for future expansion.

The steam plant and distribution system were designed and constructed by Stone & Webster Engineering Corporation.



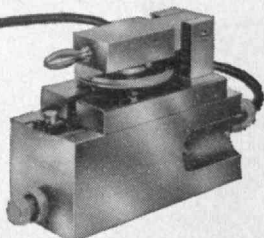
STONE & WEBSTER ENGINEERING CORPORATION

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with
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Equipment**



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several dimensions. If desired, fixtures may be ordered for use with your present Brown & Sharpe Amplifiers. For details, write Brown & Sharpe Mfg. Co., Providence 1, R. I., U. S. A.

We urge buying through the Distributor

BROWN & SHARPE 

THE TABULAR VIEW

Personal Writing Implements. — Progress in personal pencraft property is piquantly portrayed (page 357) by FREDERIC W. NORDSIEK, '31, whose pen is perennially put to paper for the perusal of Review readers. Mr. Nordsiek's writing proclivities were proclaimed by his appointment as editorial associate of The Review in 1944. As a graduate of Course VII, Mr. Nordsiek's professional training is in biology, but he has had extensive and varied experience in research and administration in food and related fields as well. Since last summer, he has been engaged in the research program of the American Cancer Society.

Of Yankee Granite. — When history decreed that the Battle of Bunker Hill be commemorated, it was but natural that materials indigenous of the region be selected. How the great gray obelisk came to be made of Yankee granite is recorded (page 359) by E. H. CAMERON, '13, whose frequent writings for The Review reflect a good sprinkling of history, personal relations, and engineering. The first of Mr. Cameron's two-part article deals with the preparation for the famous monument and appears in this issue; the second part will appear in the June issue, to mark with appropriateness the 110th anniversary of the completion of the Charlestown needle. Mr. Cameron is a civil engineer by training and long experience, but during the last decade has been engaged by his firm, Jackson and Moreland — consulting engineers, as head of their Technical Publications Division. His articles in The Review have provided a clear insight into the lives and technological progress of our grandfathers.

Made in Japan. — At the invitation of the Supreme Commander for the Allied Powers, and with the able assistance of an executive officer from the Unitarian Service Committee, 15 representatives of engineering education in the United States visited Japan last summer. Members of the Engineering Education Mission to Japan were invited to discuss revitalization of post-war Japanese technical education and technology, but apparently the visitors learned at least as much as their hosts. PROFESSOR HAROLD L. HAZEN, '24, headed this Mission and his article (page 351) represents a personal recollection of some outstanding events rather than the collective report of the Mission members. His article gives ample evidence that however hard the members of the Mission worked, there was time for pleasant excursions into the byways and folkways of Japanese culture. A more extensive biography of the author than can be given here appeared in the March, 1952, issue of The Review which recorded Professor Hazen's appointment as Dean of the Graduate School, upon the retirement of John W. M. Bunker, present Dean. For the illustrations used in "America Meets Japan in Engineering Education," The Review is indebted to another Mission member, Professor Albert G. H. Dietz, '32, of the Department of Building Engineering and Construction.

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