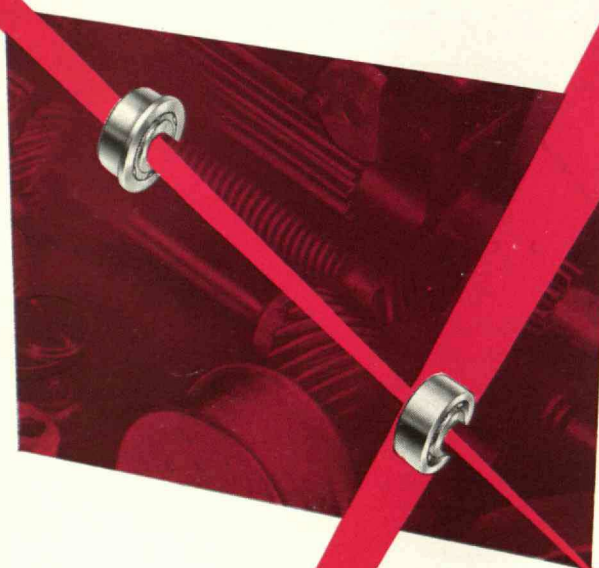
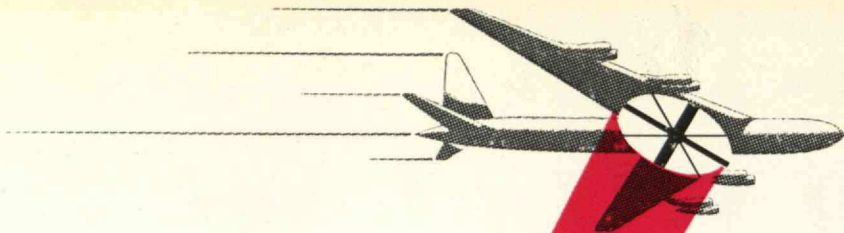


TECHNOLOGY

REVIEW *February* 1954



ACTUAL SIZE MPB 418c



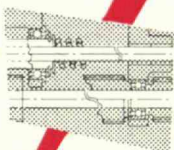
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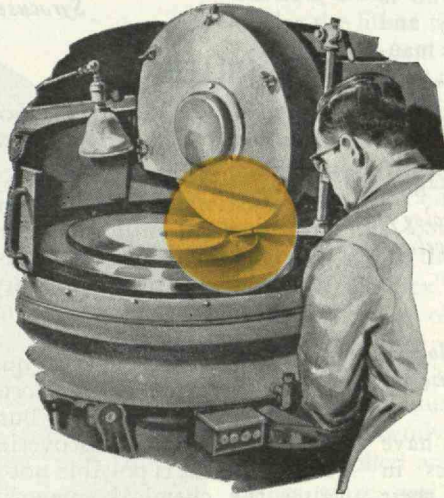
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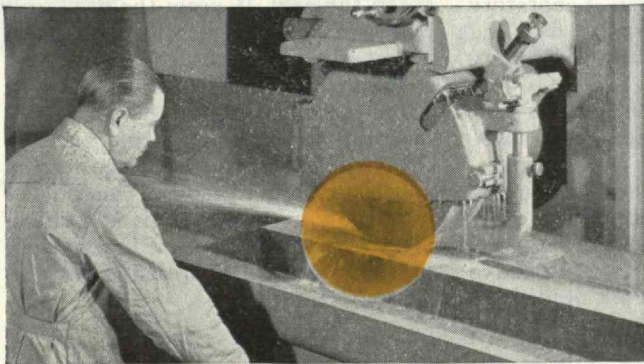


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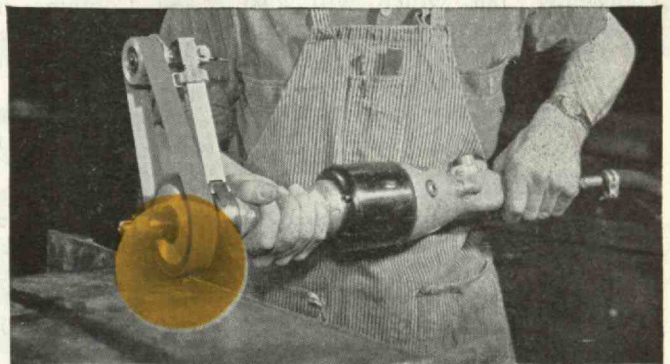
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NORTON  **BEHR-MANNING**

THE TECHNOLOGY REVIEW, February, 1954, Vol. LVI, No. 4. Published monthly from November to July inclusive at Emmett Street, Bristol, Conn. 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 December 23, 1949, at the Post Office at Bristol, Conn., under the Act of March 3, 1879.

What General Electric people are saying . . .

G. C. HOUSTON

Mr. Houston is Manager—Manufacturing Training Services Section, Manufacturing Personnel Development Services Department.

" . . . Leadership ability is not developed by attending lectures or by reading, even though such activities may be helpful in stimulating thinking and developing a higher degree of understanding. We believe, without qualification, that the only sound way to acquire and develop these abilities is through the process of learning by doing. Consequently, any well-conceived leadership development program is built around these principles . . .

Provide opportunities in the work situation to practice doing those things required of men in positions of leadership responsibility.

Associate with proved leaders.

Adequately evaluate performance and give sound guidance and counseling along the way.

Each of the individual's assignments in his work situation should be supervised by a man who has already proved his leadership ability, who is genuinely interested in developing others, and who is familiar with the objectives of the assignment in relation to the needs of the candidate. The assignment should be planned to provide experience which will not only increase the candidate's know-how, but which will also provide an opportunity to strengthen his weak points or further develop his specific abilities.

G. E. Review

P. R. HEINMILLER

Mr. Heinmiller is Managing Editor of the General Electric Review.

" . . . There is more writing in industry than turning out technical reports. There are letters and memorandums, reports and articles to associates in your field of engineering, and what is most difficult of all, presentations to management. I say 'most difficult of all' because you must get your ideas across to non-engineers, and you cannot take refuge in technical jargon.

When writing signed articles for

technical publications, you must: know your audience, write so your audience can understand you, and keep everything in a logical sequence. Be complete and concise, use active verbs, mix short sentences with long ones to give a change of pace, and avoid clichés. Start with an outline and then fill it in.

All other things being equal, the engineer who is articulate, who is able to express himself orally and in writing in an understandable manner, will gain more prominence than one who cannot. (I prefer the word "prominence" to "success," because the latter has conflicting definitions and often carries a high price tag.)

*at Case Institute of Technology,
Cleveland*

H. M. ROZENDAAL

Dr. Rozendaal is Manager—Biological Studies Section, General Electric Research Laboratory.

" . . . Engineers and physicists have contributed much to technics in medicine and biology. Many of their efforts have been in the field of medical physics or biophysics. They have led to the discovery or development of apparatus, such as electrocardiographs, x-ray machines, diathermy equipment, electron microscopes, analytical apparatus using ultraviolet and infrared light, to mention only a few. Drs. Whitney and Coolidge in our Laboratory have been pioneers in this field and their contributions are known to every physician.

And now atomic energy has seriously affected medical diagnosis, medical therapy and biological research. New apparatus is being introduced to medical personnel. New devices for more accurate measurements and localization of radioactive isotopes in the body are needed. In these and allied fields, the engineer,

the medical man and the biologist have many interests in common. We must encourage these people to get together to explore problems of mutual interest. Such an approach will be of interest to the scientists but, much more important, it may result in developments of great benefit to our patients.

*Institute of Radio Engineers,
Syracuse, N. Y.*

H. F. MILLER

Dr. Miller is Manager—Advance and Development Engineering Services Division

It is estimated that at present there are about 100-million acres of worn-out land in this country. Bringing this land back to productivity is one of the major tasks that must be undertaken.


This will require vast quantities of the nitrogen-, phosphorus-, and potash-type fertilizers. But apart from this, recent discoveries have shown that it is possible not only to alter the chemical composition of soil but also its physical composition—characteristics such as porosity, density, texture, and moisture retention. Small quantities of organic materials—the "soil conditioners" as they are called on the retail market—are capable of doing many of the things that only humus in the soil could formerly do.

In the next 25 years the need will also arise for other chemical additives needed for the soil to support the growth of the mold or the fungi now present in humus. There is conjecture that soil molds and bacteria play a great role in transferring nutrients from the soil to the roots of the growing plants. This is a chemical industry—not now in existence—that could be breath-taking in scope.

G.E. Review

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THE TABULAR VIEW

Summer Session. — PROFESSOR ERNEST H. HUNTRESS, '20, Director of the Summer Session, draws attention in this issue (page 191) to a fundamental change of emphasis in the summer activities of the Institute. His review of the origin and development of the Summer Session clearly demonstrates that the current viewpoint represents evolution, not revolution. With reference to the new accent upon Special Summer Programs for professional personnel from industry, government, and other educational and research institutions, the article cites new statistical evidence of the changing nature of the Institute's Summer Session. Dr. Huntress has directed this activity since February, 1952, coming to it after a long association with the Department of Chemistry, culminating in a decade as Professor of Organic Chemistry. He has also long been intimately concerned with the M.I.T. Graduate School through service for 10 years (1940-1950) as chairman of the Graduate Committee of the Department of Chemistry, for several years (March, 1950 - September, 1953) as Deputy Dean of the Graduate School, and currently as Secretary of the Graduate School. In addition to some five score professional papers representing experimental research, he is the author of four major technical books, and since 1947 has served as an associate editor of the Chemical Monograph Series of the American Chemical Society. He has been especially identified with the organization and systemization of chemical literature and has taken an active part in the development of the M.I.T. library system.

Tile Technology. — The second and concluding part of an article on "Decorative Tiles — Their Place in Ceramic Art" by E. STANLEY WIRES, '07, appears on page 195 of this issue. In the first part of this well-illustrated article (which appeared in the January, 1954, issue of The Review) Mr. Wires reminded us that much of the world's history, art, technology, and culture could be traced by fragments of tiles which we inherit from earlier civilizations. His article of last month surveyed the characteristic features of tiles from ancient Egypt, Babylonia, Assyria, Persia, Syria, Turkey, northern Africa, Spain, and medieval and Renaissance Europe. In the concluding installment, Mr. Wires traces the development of Dutch tiles, discusses English painted and printed tiles, and outlines the development of the tile industry in the United States from its origin in Philadelphia, Pa., and Bennington, Vt., about a century ago. He concludes with a few remarks regarding the Tile Club — an association of Nineteenth Century artists, painters, and sculptors, who used tile painting as an outlet for their creative talents. Illustrations for both portions of Mr. Wires's article are taken from the collections of American, British, and Continental European art museums, as well as from the extensive personal collection of tiles of Mr. Wires. The author is a graduate of the Institute's Course in Architecture and, throughout his
(Concluded on page 178)

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GEARS

THE TABULAR VIEW

(Concluded from page 176)

professional life, has been closely associated with the tile industry. He was treasurer and manager of the E. Stanley Wires Company, Inc. of Boston from 1908 to 1944, and New England sales manager of the Cambridge Tile Manufacturing Company of Cincinnati, Ohio, from 1945 to 1952.

Challenge of Suburbia. — Although the basic lure of suburban living is as great today as at any time in history, three new factors account for the recent very great expansion in living beyond the urban rim. The great increase in population, with its high degree of centralization within city limits has provided greater need for the development of the modern suburb. At the same time, two technological factors have hastened the growth of Twentieth Century Suburbia. One of these is increased facilities and comfort of mass transportation; the other is the great advance which has been made in communication, according to KARL T. COMPTON, Chairman of the M.I.T. Corporation, whose article "Today's Challenge to the Family in Suburbia" appears on page 201 of this issue. Dr. Compton takes care to point out that, since suburbs are by no means all alike, it is difficult, if not impossible, to generalize on the problems of suburbia. But of those features which apparently contribute to this more healthful way of living, Dr. Compton singled out for special mention the fact that suburbs are of such size as to be capable of competent administration by civic minded individuals whose personal efforts can be helpful in directing community policies into productive channels. Perhaps such a conclusion might be expected from one who, although primarily known as physicist and university administrator, has performed outstanding services to his local community and, especially, to the nation. Dr. Compton's article is the result of a study conducted last summer and was delivered, in but slightly expanded form, at a conference in Scarsdale, N.Y., last October.



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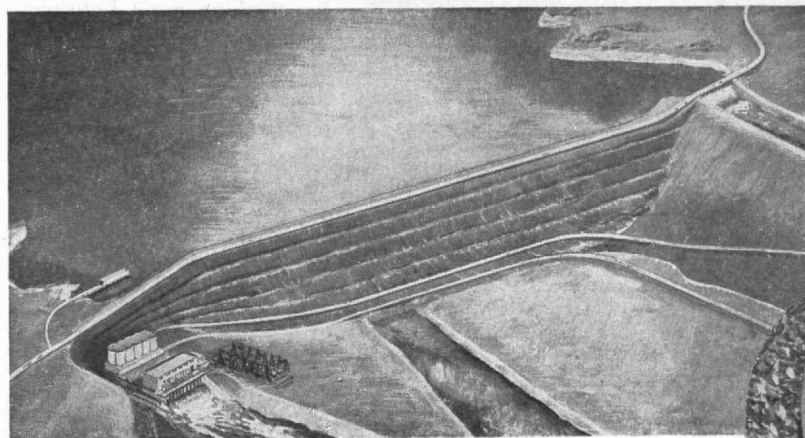
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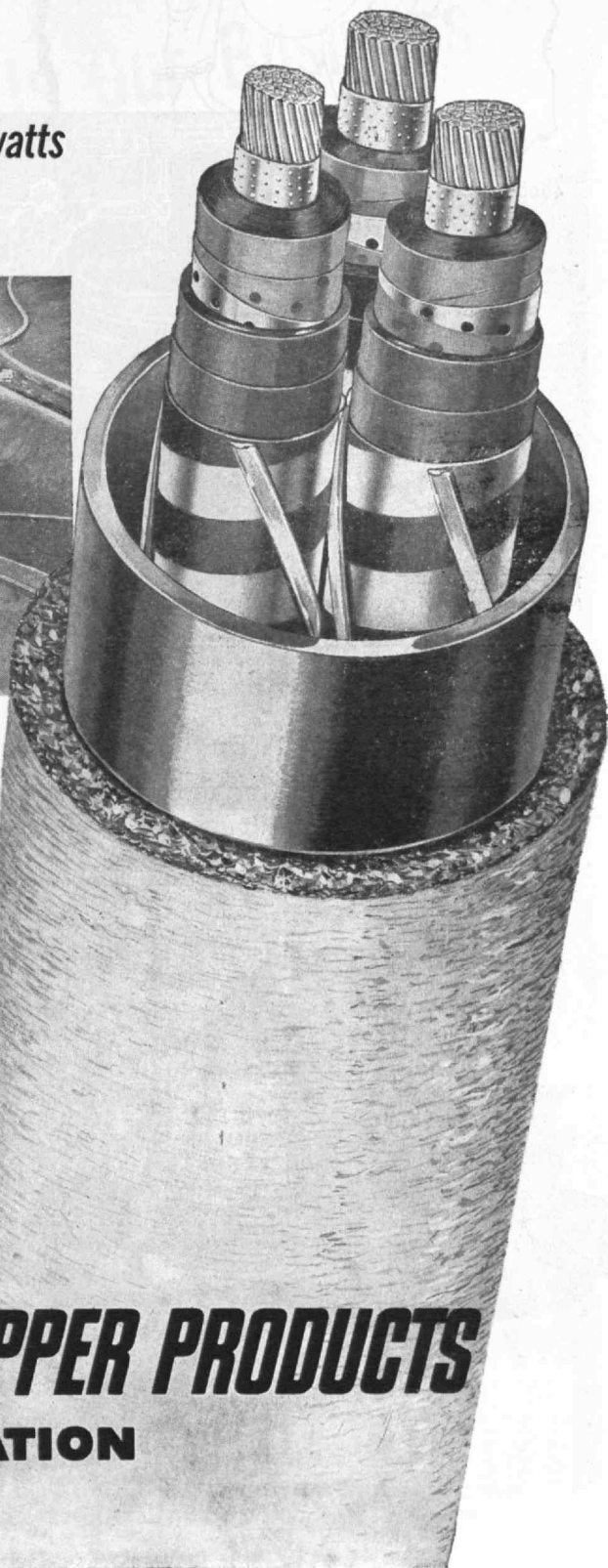


Habirshaw pipe-type power cable will provide a dependable and economical means of carrying this tremendous bulk of hydroelectric power at 230,000 volts, from the powerhouse to the outdoor switching stations at Garrison Dam, being constructed at Riverdale, N. D., by U. S. Army Corps of Engineers.

The cable, a product of Phelps Dodge Copper Products Corporation, will consist of three 500,000 circular mil copper conductors, insulated with 835 mils of impregnated paper.

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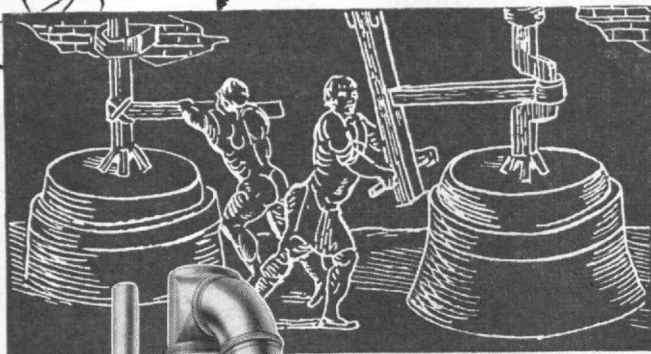
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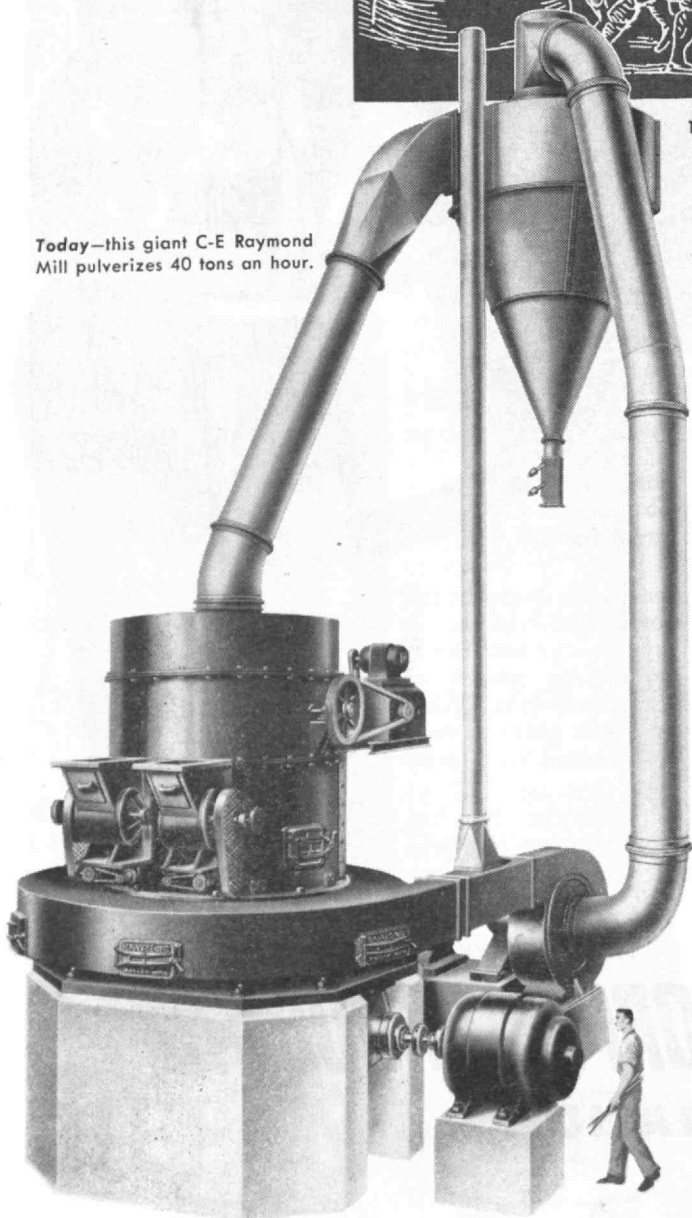


4000 B.C.—they ground a few pounds at a time.



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