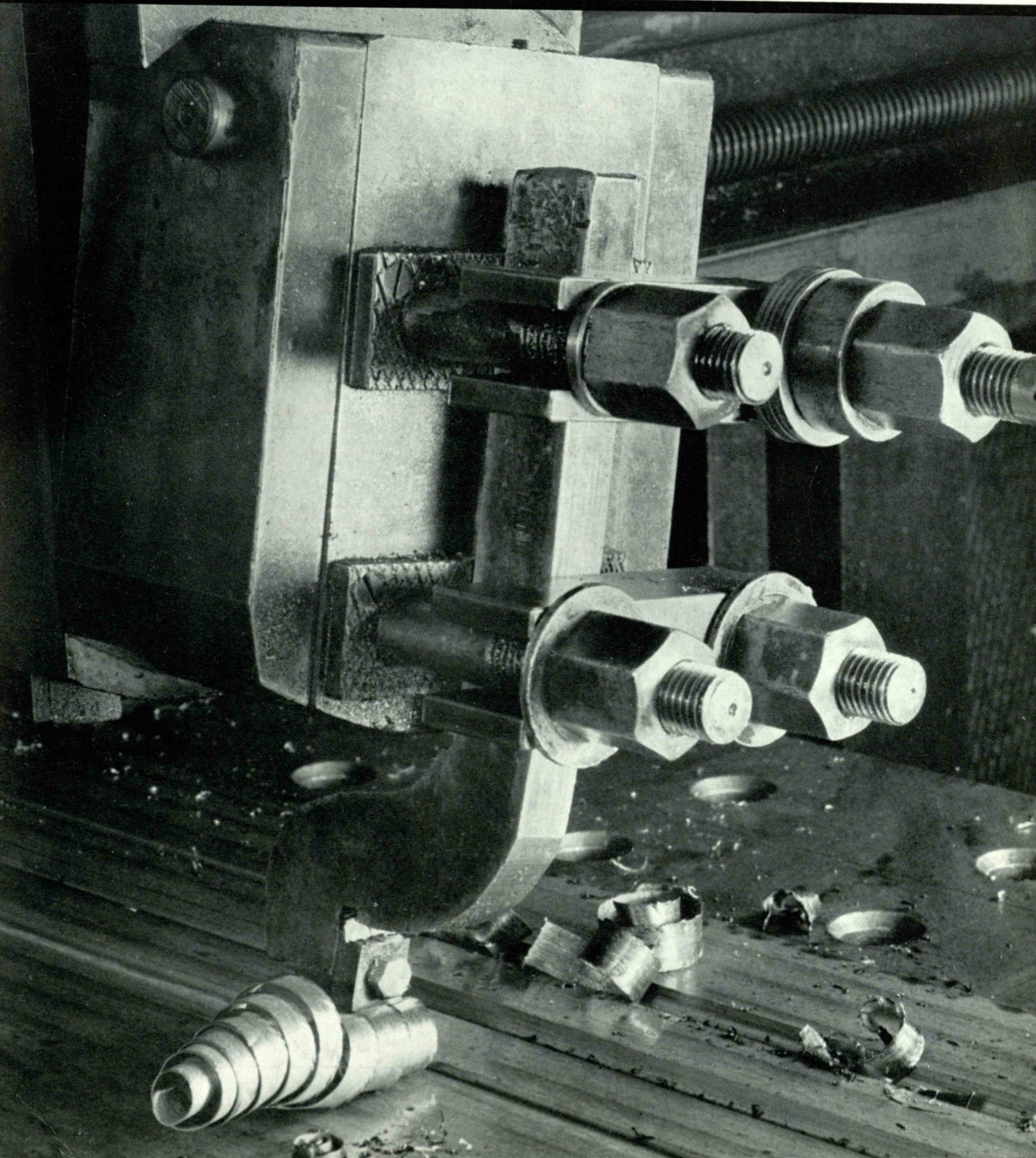


*May* 1940

# TECHNOLOGY

## REVIEW

Title Reg. in U. S. Pat. Office





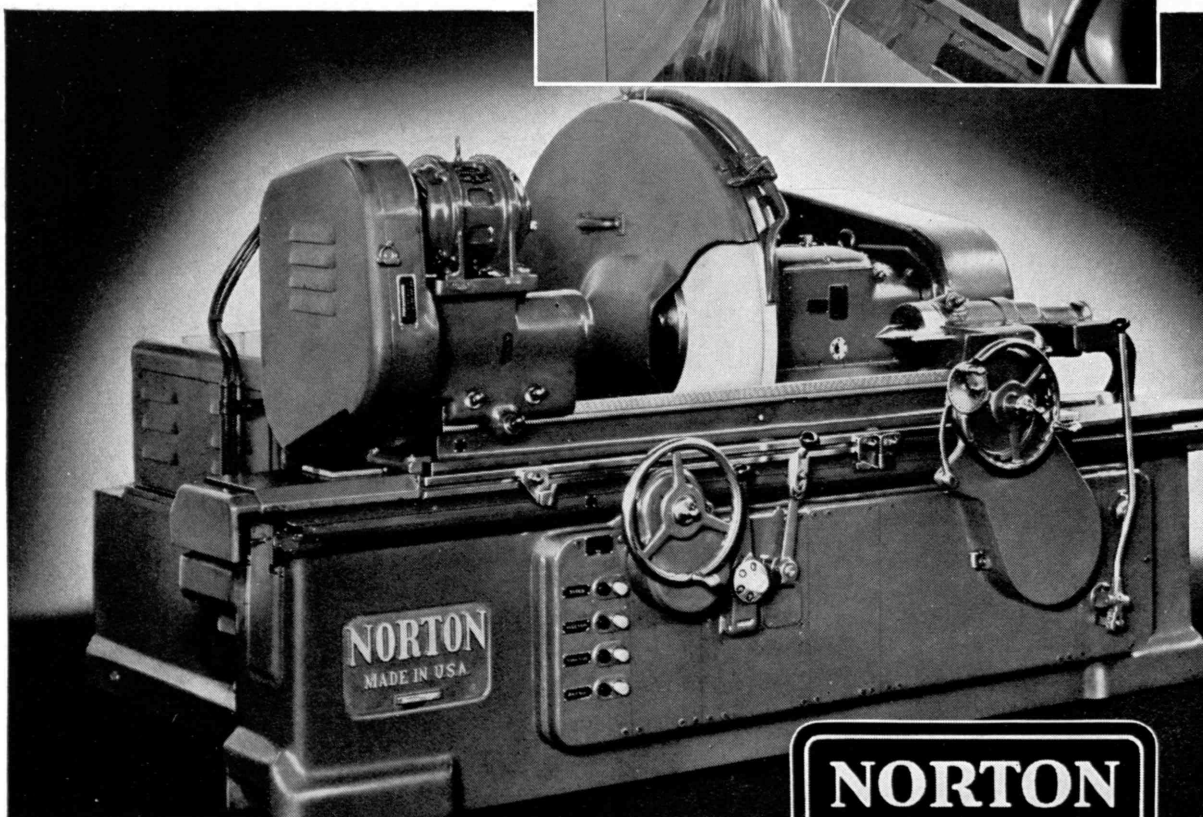
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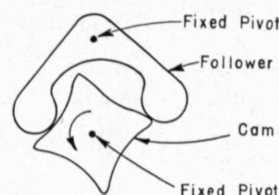
## THE TABULAR VIEW

**H**OUSING the millions of Americans who at present are sheltered in unsanitary and wasteful slums, and whose economic status is such that careful planning is essential if the task of sheltering them is to be done without either overstraining the economic fabric or unjustly handicapping other income groups, is a problem of much social and governmental concern. Conditions which must be met if it is to be settled are penetratingly analyzed in this issue of *The Review* (page 276) by **WALTER R. MACCORNACK**, '03, Dean of the School of Architecture, who writes with the authority of long and responsible connection with housing questions. In 1932, Dean MacCormack was a member of the committee on large-scale housing of President Hoover's Conference on Home Building and Home Ownership; for three years, 1936 through 1938, he was chairman of the housing committee of the American Institute of Architects; as vice-president of that organization, he now directs its housing activities. Cleveland Homes, Inc., a public works slum-clearance program, is a notable example of the work in housing to which he was principally devoted in the decade prior to his return to Technology as dean in 1939. ¶ The lethal use to which explosives are being put in wider and wider parts of the world may obscure the fact that they can be the source of much fun. With this latter aspect **TENNEY L. DAVIS**, '13, Professor of Organic Chemistry at Technology and Editorial Associate of *The Review*, is concerned in an article (page 273) which bespeaks anticipation of the now nearing Glorious Fourth. Historian of science, as well as commentator on bombs, Professor Davis in this article brings two of his manifold interests into conjunction. ¶ Third in a series of surveys which this volume of *The Review* has contained on some of the broad research programs under way at Technology is the résumé of investigations and applications in the field of ultrahigh frequency which **EDWARD L. BOWLES**, '22, Professor of Electrical Communications, presents in this issue (page 279). As director of the Round Hill Experiment Station, history of which he recounted in *The Review* for October, 1934, and as leader of the group which developed the Civil Aeronautics Authority-Massachusetts Institute of Technology blind-landing system for airplanes, Professor Bowles has been in close touch with all phases of the high-frequency program. ¶ Just what lubrication is expected to do depends upon just what friction is, and upon this relation depends no small amount of research and study. The intricacies of what goes on at the boundary where two moving surfaces impinge on each other are discussed (page 282) by **JOHN WULFF**, Associate Professor of Physical Metallurgy at the Institute and fourth author provided for this issue by the Faculty. Dr. Wulff's earlier contributions to *The Review*, in December, 1938, and April, 1939, have dealt with the development of the techniques of powder metallurgy and with research into the exceedingly costly problems of corrosion, studies which also are concerned with surface phenomena.

No. 25

## Just for Fun! A CHALLENGE TO YOUR INGENUITY

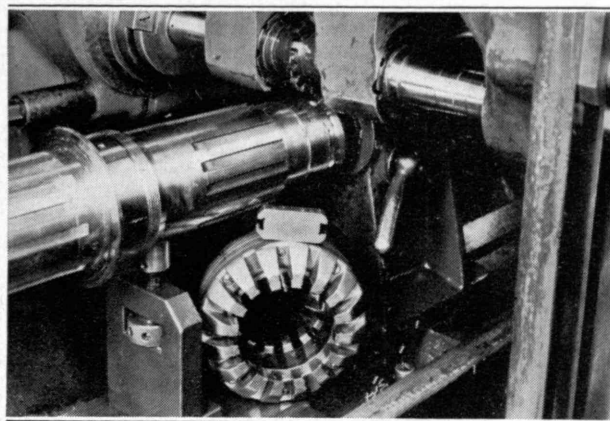
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## MAIL RETURNS

### Celebration

FROM DAVID A. YOUNG:

. . . To your surprise, your letter must have traveled straight on without delay, because I received it direct from Panama on the fourteenth of January, just a month after it was written. Since the war we had a ship from New Zealand on the fifteenth of December land, then the *Remuera* from Panama on January 14, and now we are expecting one from New Zealand on the thirtieth inst., by which I am forwarding this note. . . . We celebrated the 150th anniversary of the *Bounty* yesterday, the twenty-third inst. . . . Best regards to all.

Pitcairn Island

### Protest

FROM ROBERT N. ELLIOTT, JR., '38:

I wish to call your attention to what I consider a piece of gross negligence on the part of the editorial staff of *The Review*. In the February issue appeared an article titled "If War Comes." Surely none of the men on the staff of *The Review* is so naive as to think that war ever "comes." Such a carelessly worded title, if not purposely so worded, tends to create a fatalistic war psychology in its readers. If I remember the history that I learned back at Tech, every war we have ever fought, with the possible exception of the Revolutionary War, could have been avoided. In other words, war did not *come* to us. Instead, we went out looking for it.

If our government continues to meddle in the affairs of Europe, as it did by sending our Undersecretary of State to confer with officials of European governments, then history is likely to repeat itself, and we may find ourselves in another war because we went out looking for trouble.

Brownsville, Texas

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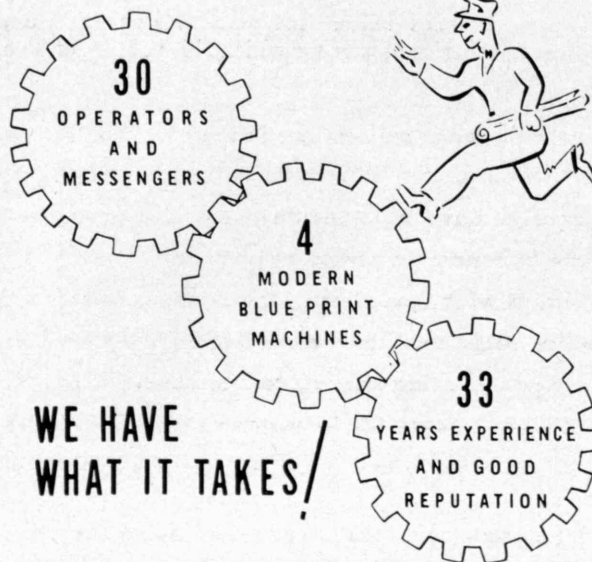
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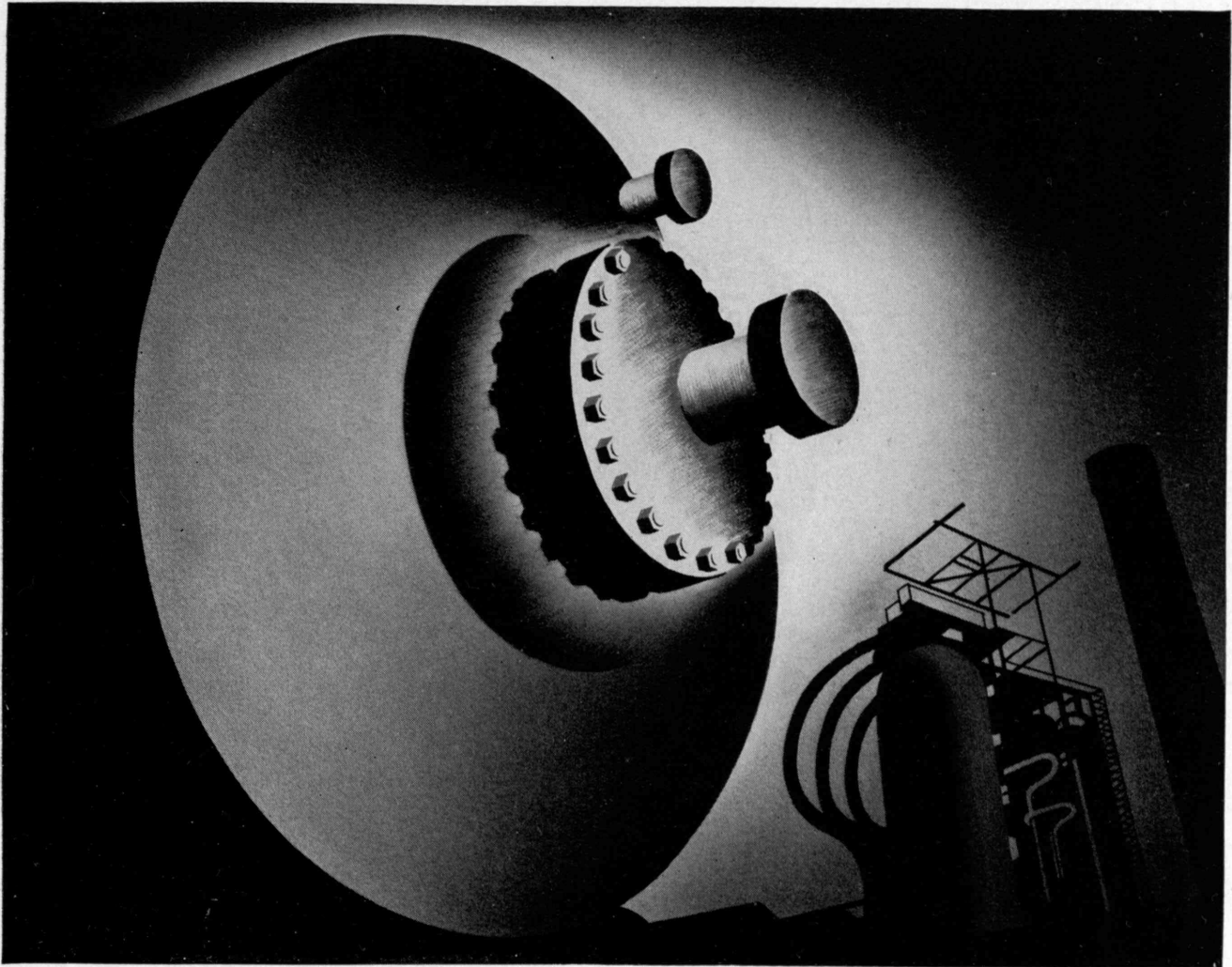
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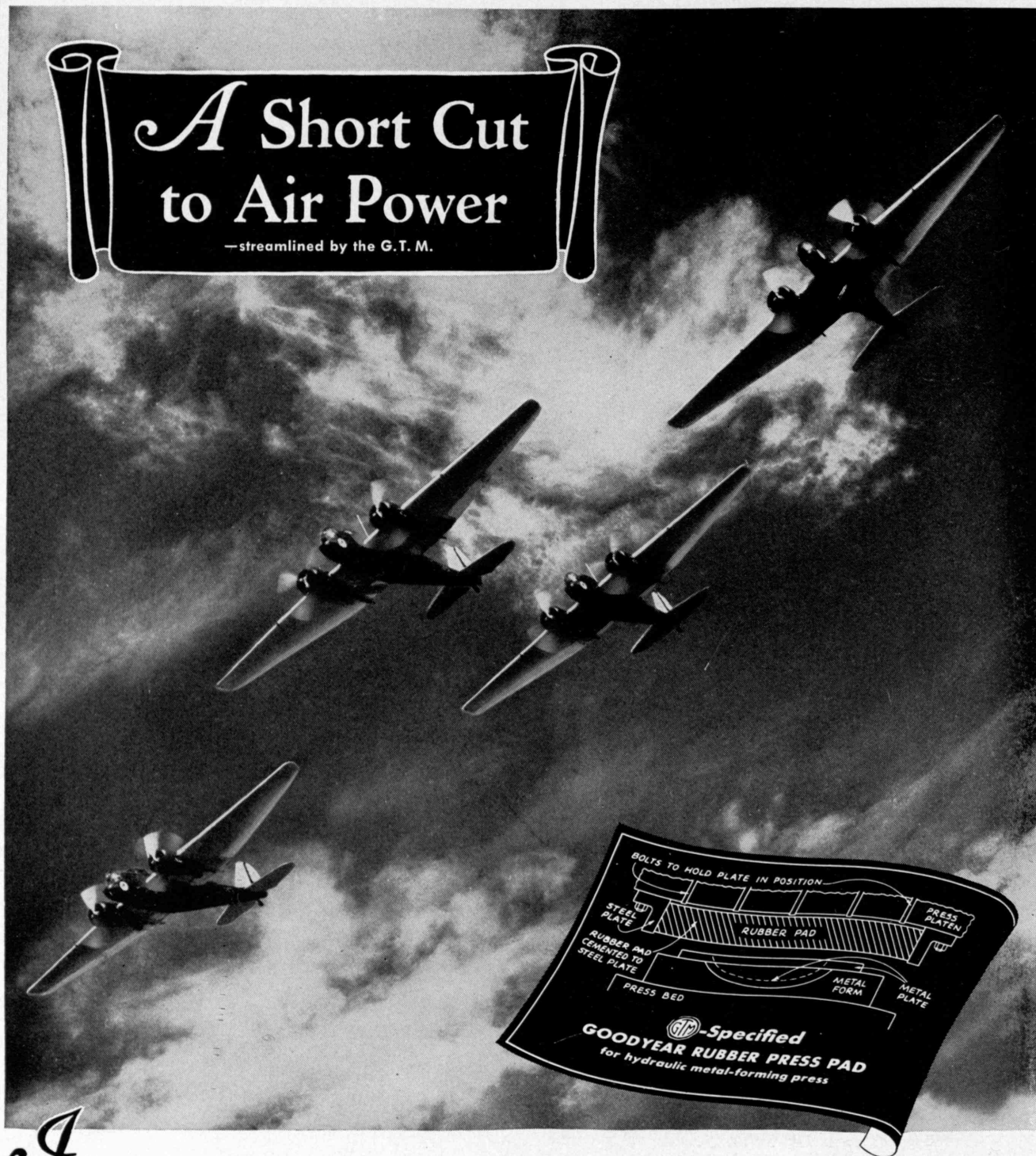
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# THE TECHNOLOGY REVIEW

Title Reg. U. S. Pat. Office

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

VOL. 42, NO. 7

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MAY, 1940

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*John Skara*

*Angelfish*



# THE TECHNOLOGY REVIEW

Vol. 42, No. 7



May, 1940

## The Trend of Affairs

### *Renaissance Engineers*

WHEN the scientifically trained mind undertakes to write of a subject which may be characterized as spacious, when the mass of detail to be handled possesses many offshoots, when each compilation of data discloses new sets of facts to be assimilated somehow into the body of the story — the situation is one of potentially very good prose. Remaining as necessary to assure full realization of the potentiality is the sole condition that the work be unhurried in time and unconstricted in space — that the material be assembled and mastered deliberately, that it be marshaled and planned firmly and directly, that it be recounted with judicious fullness. Circumstances such as these give the scientist or engineer his best opportunity, for they bring into full play his training in system, in the orderly manipulation of blocks of material, in the effective linkage of part to part.

A perspective of some centuries fosters the full development of these values because, on the one hand, it permits detachment and objectivity about the factual material dealt with and, on the other hand, it makes for an attitude by the writer toward the men with whose work he is concerned which is at once reminiscent and sympathetic. There is perhaps greater impulsion to see full justice done when the event concerned is so remote in time that one can afford to pass by the irritating and the petty or, in sum, that one is enabled, for a little while at least, to assume the Olympian.

A remarkable volume\* occasions this comment — a volume remarkable for the ease and the vividness with which it controls and reports a many-faceted story,

\* William Barclay Parsons, *Engineers and Engineering in the Renaissance* (Baltimore: Williams & Wilkins Company, 1939) xix, 661 pages, \$8.00.

remarkable as well in that, essentially a labor of love, it was enabled to be a labor of leisure and care. A humble witness, though a very telling one, to this last conclusion may be had from the great number of excerpts from unpublished documents in which the Renaissance architects, engineers, burgesses, and great lords whose activities General Parsons recounts speak for themselves — in accents and terminology astoundingly consonant with analogous writings of our own time.

Naturally, Da Vinci and the multiple aspects of his strange genius fill a large share of even so large a book as this. In no other portion of the volume is the desirability of systematic and categorized treatment better demonstrated than in the chapters which General Parsons allocates to Da Vinci in his principal roles. So multifarious was Da Vinci's genius, and in their orientation so close to the attitude which rather arrogantly we like to appropriate as "modern" were his analyses and his practice, that the reader again and again must be brought up short by the almost inescapable realization of how essentially slight was the barrier of lacked knowledge preventing the tumultuous intellectual vigor of Da Vinci and his time from anticipating by centuries a large, if not the larger, share of the accomplishments for which we look to ourselves, our fathers, and grandfathers. What Leonardo and his age might have achieved — given control of steam and given the germ theory of diseases — is a speculation fraught with danger for the *amour-propre* of the Twentieth Century.

From the point of view of the student of social history, here is a wealth of isolated incidents any one of which is synoptic of the whole great drama of the gradual assertion of the royal authority and prestige despite the protestation and the struggle of feudalism. For instance, carts in 1184, passing by the palace of Philippe Auguste, stirred up mud which in turn emitted such a stench that



Pan Pacific Press

*From mid-Pacific America comes this depiction of tropical shore line — along the Kona Coast of the island of Hawaii.*

the monarch, nostrils outraged, convoked the burghers and the provost of Paris and ordered them to cause all the streets and public places of the city to be paved "with strong and hard stones." Then began a series of proclamations and ordinances, with a concomitant series of refusals to obey and stubborn persistences in neglect, which was to extend for four long centuries. What better measure of the impotence of the crown could be had than the exasperated inability of the king to keep his nobles from throwing filth into the very streets of the city, or a series of edicts extending over a century, endeavoring to prevent draymen from so crowding the streets with carts, coaches, wagons, vehicles, and timber that the ordinary passenger might progress only with difficulty. The parking problem evidently is no monopoly of the automobile. The hamstringing of engineering ability by vested interests, as in the toll system in which was entrenched the feudal seignior's domination over roads, is another powerful story in itself, which General Parsons tells directly and tersely, yet with all important detail. Current preoccupation with the rights and responsibilities of organizations of capital and of labor in the building of public works finds at least one archetype in his story of how the pavers of Paris so restricted their own trade that in the end they themselves were the chief sufferers.

Particularly interesting in a time which hopes that it is seeing the decline of the unfortunate compartmentalizing of constructive effort is the fact, explicitly stated now and then and implicit again and again, that fusion of aptitudes and expression in the Renaissance was by no means confined to Leonardo. Many of General Parsons' lesser figures were both engineer and architect, constructors of canals and bridges, designers of mills, workers in metal and stone. Of the several projects which offer illustration, that of the design and construction of the Rialto Bridge is, as presented in this volume, perhaps the best. All in all, this is a book to be approached with seriousness and with anticipation.

### "The Good Earth"

NOTWITHSTANDING the great respect, bordering on reverence, which we have for the soil and the thriving, invisible world it harbors, apparently we are only beginning to realize its potentialities. The same soil that to the husbandman is a synthesizer of edibles, and to the average soil bacteriologist is the home of destructive micro-organisms, is to one prominent scientist a bountiful reservoir of potential protectors and savers of human life.

The scientist is René J. Dubos, a native of France, recently hailed by his colleagues as the modern Pasteur because of the tremendously significant program of research he is now carrying out at the Rockefeller Institute for Medical Research in New York. Dr. Dubos is the discoverer of a new method of producing bactericidal agents, which — reported in a number of technical papers during the past year — was first brought fully to the attention of the public last month, following its complete explanation by him at the congress of the American College of Physicians.

Dr. Dubos began his line of research nearly a decade ago, extending the already accepted notion that the soil contains micro-organisms that will "return to dust" all organic material that falls on it, whether an oak tree or a dead ant. He reasoned that in that organic melting pot might be found specific agents that would attack the bacteria of disease. He mixed a large number of soil samples gathered from different localities, baked the mixture at moderate temperatures to decompose most of the dead organic material, and then injected a sample of the specific bacteria for which he sought a killer. One of his early trials was with the Type III pneumococcus, cause of one of the most baffling and destructive types of pneumonia. After an appropriate waiting period, he analyzed the soil to find a bacillus whose enzyme dissolved the shell of the pneumococcus.