Tuby 1938 TECHNOLOGY REVIEW THE RE. IN U. S. Pat. Office

Grace Moore in Magnolia Gardens Chesterfield time is pleasure time everywhere

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CGARETTES

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THE TABULAR VIEW

WE commend the reading list, "Design in Modern Life" (page 409), compiled by Margaret Paige Hazen of the M.I.T. Library, as admirable collateral reading for the article, on page 405, by CHARLES D. MAGINNIS. Those who wish to know more about modern architecture and the International style are directed to four books in this reading list: "The New Architecture and the Bauhaus," by Walter Gropius; "The International Style: Architecture Since 1922," by H. R. Hitchcock, Jr., and Philip Johnson; "Towards a New Architecture," by Le Corbusier; and "Pioneers of the Modern Movement from William Morris to Walter Gropius," by Nikolaus Pevsner. C Dr. Maginnis was born in Ireland, where he began his education at the famous Cusack's Academy in Dublin. From there he went to England and in 1883 won the Queen's Prize in mathematics at South Kensington. Two years later he came to America to settle in Boston and establish the architectural firm of Maginnis and Walsh, a name long associated with many notable ecclesiastical and college buildings. At the present time he is president of the American Institute of Architects. In 1924 he was awarded the Laetare Medal, and a year later his firm was honored by the award of the Gold Medal of the American Institute of Architects for its notable con-is drawn from the address delivered by him at the graduation exercises of the Institute in June.

IN this issue two papers are presented in full and two in condensation from the symposium, "The Impact of Science on the Arts" (page 412), held at the Institute on Alumni Day. The committee which arranged the symposium included A. Lawrence Kocher, '13, chairman and presiding officer, Theodor C. Müller, '26, Kenneth Reid, '18, and Ralph T. Walker, '11. JOHN MILLS, '09, is director of publications of the Bell Telephone Laboratories, Inc., and a distinguished engineer and writer. His latest book, "A Fugue in Cycles and Bels," was published in 1935. **(** WALDEMAR B. KAEMPF-FERT is science editor of the New York Times. Q MAL-COLM COWLEY is literary editor of the New Republic. He has translated many books from the French, and his "Exile's Return," published in 1934, was read widely with approbation. **(FREDERICK J. KIESLER** is director of the laboratory for design correlation at Columbia University and director of productions at the Juilliard School of Music. C.-E. A. WINSLOW, '98 (page 414), is Anna M. R. Lauder Professor of Public Health and associate fellow of Trumbull College, Yale University. I HARRY J. CARLSON, '92 (page 415), has long been intimately associated with the Institute as a member of its Corporation and as an active Alumnus. In 1922-1923 he was president of the Alumni Association. **(**JOHN E. BURCHARD, '23, is an editorial associate of The Review, was chairman of the Alumni Day Committee, and, as announced on page 410, is to be the director of the new Albert Farwell Bemis Foundation at the Institute.

No. 9 Just for Fun! **CHALLENGE** TO YOUR INGENUITY THE mathematical method which ordinarily would be used to solve the apparently simple problem given below leads to an absurd result in this specific case. Why? 2 MILES LAND ► I MILE RIVER LAND Suppose an electric cable is to be laid from point A to point B, as indicated in the figure. If land cable costs 12c a foot and submarine cable 13c a foot, what length of land cable x should be selected to obtain the least possible total cable cost? We specialize in solving "puzzles" for industry. Write for information on our "GUARANTEED RESEARCH SERVICE"

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MAIL RETURNS

LETTERS AND PICTURES FROM REVIEW READERS

Good Germicides

FROM JOEL Y. LUND, '23, VICE-PRESIDENT

LAMBERT PHARMACAL COMPANY

After reading Dr. Dunn's article, entitled, "There <u>Are</u> Good Germicides," in the April issue of The Review, it occurs to me that some readers might be misled into believing that Dr. Dunn is criticizing the value and efficacy of the several well-known, nationally advertised oral antiseptics. In view of the fact that at one time Dr. Dunn participated in extensive practical tests which demonstrated the germicidal effectiveness of one of these antiseptics under actual conditions of use, I am sure that he did not intend his comments to be interpreted as such criticism.

I would appreciate very much your publishing this letter to clear up the possibility of any misunderstanding.

St. Louis, Mo.

The Review gladly publishes, to avoid any misunderstanding, Mr. Lund's comment on Dr. Dunn's article.

Avoiding Estivation — and Needle Hiss

FROM W. S. DRURY:

In The Tabular View on page 342 of the June issue, you quote a reader who has gotten into a state of estivation over the wearing away of phonograph records, and you speak yourself of putting up with needle hiss. Out here we have preserved our gift collection of fine records from the Carnegie Foundation by the simple device of using Kacti needles. These have the added advantage of playing many records without the need for changing or repointing, and surface noise is not bothersome. Being softer than record material, they do not harm it, provided there is no grit in the grooves. I suggest you recommend to your reader that he try some. A Red Top needle sharpener keeps them repointed as needed. *Middlesex School*

Concord, Mass.

The Duck That Got Wet

FROM HOWARD CLEAVES:

The Review for May, page 294, contains further reference to "The Duck That Got Wet," the item including this: "His feathers, usually water-repellent because of the film of oil which covers them," and so on. If you are interested, I suggest you read an article in the *Condor* (1929), published by the Cooper Ornithological Club and doubtless to be found in the library of the Museum of Comparative Zoology, Cambridge — an article by J. Eugene Law dealing with the subject of the oil gland in birds. This article establishes pretty conclusively that oil is entirely absent from the feathers of birds. The author believes the function of the oil gland to be that of lubricating the bird's bill.

Staten Island, N.Y.

Miracles of Railroad Engineering

FROM EARL H. LEAF:

Perhaps you would be interested in the following story which is based upon a letter I have just received from China and upon personal knowledge. I have experienced no less than 18 bombings myself while traveling on the Tientsin-Pukow railway line. New York, N. Y.

M.I.T. Graduate Is China's Hero

The indomitable spirit and rare courage of China's railway officials and workers will some day be told in story and song, for no general or soldier on the front line faces more danger or heartbreak than these gallant men who have maintained railway communications open despite incessant bombings night and day. The railways immediately behind the Chinese lines are the constant targets for the Japanese bombers. Whole fleets of enemy bombing planes drop tons of explosives on those two thin strips of steel for weeks and months, yet somehow the Chinese keep the lines operating.

Of all the railways in China, the Tientsin-Pukow railway is the most bombed, with the Lunghai and the Canton-Hankow lines running a close second and third. Every official and worker on the Tientsin-Pukow line is a hero, and the hero of heroes — the man who has kept that railway operating under conditions which are almost beyond the ability of man to believe — is a young graduate of M.I.T., Shih Chih-jen, '24 [Chih Jen Shih], director of the engineering department of the Tientsin-Pukow Railway Administration.

Shih is not the kind of engineer who sits in a well-heated office far behind the lines, out of the reach of the birds of death. He lives and works directly inside the war zone. His line has been bombed more than 4,000 times during the past ten months, and Shih himself has been caught in no less than 300 bombings. He not only lives to tell the tale but also to waive aside his personal (*Concluded on page 396*)



SUSAN AND GOD & TELEVISION

Here are representative television images as photographed and rushed to The Review by Beverly Dudley, '35, during a recent telecast of a half-hour version of the play, "Susan and God." In introducing the play, telecast by R.C.A., John Golden, its producer, looked solemnly happy in being the first American producer to have a play presented by television with regular settings and Broadway cast.

Reading in the usual manner, the pictures show (1) Gertrude Lawrence, as Susan, awakened, obviously, at the unseeming hour of 7:30 a.m.; (2) Paul McGrath and Gertrude Lawrence, planning a vacation with their daughter; (3) Blossom (Nancy Coleman).

The receiver from which these images were photographed was constructed by Donald G. Fink, '33, in the research laboratory of *Electronics*, the magazine for which he and Dudley work. It is therefore a "homemade" receiver and not one of the few receivers closely held by R.C.A.

Readers will probably realize that defects are more apparent in these still pictures than they were in the moving images where attention was concentrated on the action and the dialogue.

Insulation from Age-Old Trees



The finest of all rubbers for electrical insulation is found only in the jungles of the Amazon. When properly mixed with chemically pure fillers and properly vulcanized, it makes a rubber compound that is less subject to deterioration than any other rubber compound. This is very important, because all rubber compounds deteriorate with time. Unlike moving machinery, they do not *wear* out, but passively *tire* out.

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Donald R. Stevens, '11, Vice President

Robert J. Wiseman, '12, Chief Engineer



(395)



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EDWIN C. SMITH '91, President

MAIL RETURNS

(Concluded from page 394)

experiences as something of little importance and to glow with pride and appreciation when he talks about his fellow workers.

If any of the three Central China trunklines had been put out of commission by Japanese bombs for more than a few hours or if the operations on any sections of these railways had gone wrong in early March, the sending of troops and supplies to South Shantung would have been impossible, and history might have told a different story. The slightest mishap might have enabled the Japanese to accomplish the occupation of Süchow and might have prevented the Chinese armies from giving the Japanese the greatest defeat in their military history — at Taierhchwang on April 7.

Largely through Shih's efforts, most of the rolling stock of the railway was removed before the Japanese could seize it. Nearly 300 locomotives were saved before the Japanese secured possession of the northern section of the line. His line lost only five engines since last July, two of which were under repair at that time in Pucheng, and three were blocked off north of Tanghsien as a result of the destruction of bridges by the Japanese. About 95 per cent of the rolling stock, including the famous *Blue Express*, had been withdrawn from the northern and southern extremities of the line, and the British-built train ferry for the cross-Yangtze section between Pukow and Nanking had been removed to safety.

"Our men risk their lives every day," he told his interviewer, while they were crouching behind a Chinese grave during a bombing operation. "Only yesterday two of my men were wounded by aerial bombs when they were loading the captured airplanes and tanks here for display in Hankow. The casualties in my staff so far are around 130. Since the adoption of defense measures, the Japanese planes have been prevented from flying low and machine gunning us. So there have been fewer casualties the past several months."

Emergency premises have been constructed at every station along the line. Even the fences at the stations have been removed so the train crews and passengers can scurry for cover all the quicker. Every precaution has been taken, but there is no real cover when the Japanese bombers start dropping their 500-pound missiles on the railway lines. The roar of the Japanese planes overhead is the signal for the engineer to halt the train immediately while the crew and the passengers take to the fields and disguise themselves as cabbages or what not.

On clear days when Japanese aerial operations are under way, it is frequently necessary to run from the train into the fields from a dozen to 20 times. This becomes terribly annoying and nerve-racking under certain conditions, particularly if the fields are soaked with rain and many inches deep with mud. Tracks, ties, and other equipment are concealed every few miles, and section crews are stationed along the entire lengths of the railways. They are out on the track making the repairs almost before the bombing planes are out of sight.

Although the Tientsin-Pukow railway has been struck hundreds of times, the line has never been out of operation longer than four hours! Did Shih learn such miracles of railroad engineering at M.I.T.?

The Next Major Step in Printing

FROM DR. OTTO I. BLOOM:

Thank you for your courtesy in sending me a copy of the December issue of The Review where some reference was made to a photographic type-composing machine, the joint invention of myself and the technical director of the academy.

Since our invention has been made public, I have seen or heard of no new development in the field of photographic type composition, although I am sure that many people are still working on the "problem." (Pardon the quotes around the word *problem*. Naturally, I feel that no problem exists now, not at least with our machine in the field.) The next major step in the commercial printing art will, I believe, be in color printing, whereby such printing will be speeded, made more economical, and more clean registration secured. The academy has sponsored a great deal of research on the subject, and as a matter of fact, our technical director has just obtained two United States patents covering a major process in commercial typesetting for multicolor printing.

American Academy of Graphic Arts New York, N. Y.

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