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ENGINEERS AND THE M.B.A. DEGREE . . 5

Joseph F. Manildi received his B.S. degree in electrical engineering from the California Institute of Technology in 1940, attended the Harvard Business School for one year, and returned as a graduate assistant to Caltech where he received his M.S. degree in 1942. He is now continuing his work towards a doctorate.

POWDER METALLURGY 8

William F. Nash, Jr., instructor in physical metallurgy at the Institute, received his B.S. degree in engineering from Caltech in 1938. During his fifth year work in aeronautics, he became interested in metallurgy, and was given an assistantship for research in that field. His thesis for the Ph.D. degree, received in 1942, was on powder metallurgy.

JAPAN 10

Raymond Cromley, B.S. '33, lived in Tokyo for six years where he was financial editor of the American-owned newspaper, the Japan Advertiser. Prior to December 7, 1941, he was correspondent for the Wall Street Journal. On that date he was arrested and imprisoned "for sending information to the Wall Street Journal which could be used by the United States against the national defense of Japan." He was exchanged for a Japanese and arrived in August aboard the Gripsholm.

"... THE END OF THE BEGINNING" . . . 12

J. E. Wallace Sterling, associate professor of history at the California Institute, reviews in this issue . . "the end of the beginning," of which Mr. Winston Churchill spoke in his Mansion House speech on November 10. Professor Sterling's clear analyses of current events have proven the most popular features of the last two issues of the Review.

THE ELECTRIC UTILITIES AND THE WAR . 14

Fred T. Schell, in the third of a series of articles on "Utilities and the War," presents the war-time problems confronting the eleeirtcal industry, as well as an outline of the contributions of that industry to the war effort. Since receiving his B.S. degree in electrical engineering from Caltech in 1927, Mr. Schell has been associated with the Southern California Edison Company, Ltd., where he now holds the position of Industrial Power Engineer.

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EDITORIAL

SCRAP:

The problem of steel scrap is an important one to all who are interested in contributing to the war effort. This month there appears a sketch by Artzybasheff, "Junk Rains Hell on the Axis," which is timely and to the point. We are indebted to the Wickwire Steel Company for permission to use this, and to *Metal Progress,* published by the American Society For Metals, for the cut. It may seem strange that we have to worry about scrap in our back yards when this country has large resources of iron ore.

Scrap iron and steel have always been utilized in the production of new steel, the source being largely steel mill scrap, worn-out machinery and other heavy equipment. In producing sheet and strip steel, approximately 35 per cent of the ingot is scrap suitable for remelting, while in producing heavy products, such as plate and structural shapes, about 18 per cent is scrap. In war-time, the production of light products decreases while that of heavy products increases. *Steel Facts,* published by the American Iron and Steel Institute, stated recently that the production of steel ingots has risen about 27 per cent in the period 1940-1942, while steel plant scrap has increased only 24 per cent. This may not seem very significant, but in tonnage it is important. At the present time the shipbuilding industry is the largest consumer of steel, and about two-thirds of their requirements are plates. Steel production during the first nine months of this year was 64,020,000 tons, which is 2,500,000 tons more than for the same period last year and an all-time high. Some open heart furnaces have actually been shut down temporarily because of scrap shortage. Industry is trying to make equipment last longer by more extensive repairs; hence, much less is being returned to the furnaces. Pig iron production is being expanded, but this is a tremendous job and requires time. Steel is our most important material for the armed forces, and for the war industries. Every bit of scrap will help; therefore, get in the scrap now. Look at the caricature on page 3 and see if you don't find something there that you have and can throw into the fight. What has been said for steel scrap also applies to other metal scrap which is needed.

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We hope the REVIEW can continue and improve. If you have suggestions or criticisms, send them in, please.