

# Wood-Preservation in the Philippines

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THE industry which the title of this article indicates is one of long standing in Europe and the United States. In Europe it dates back to the early 1800's where the first thoughts were given to the preservation of wood in order to make it more durable for construction purposes. Various types of wood-preserved were experimented with and with varied result; however, in England and in Germany the development of by-products of coal brought forth Creosote which, from early tests, showed the best results. Although many chemicals have been developed in the interim, Creosote still represents the most effective preservative that science has developed.

Unquestionably, the earliest application of Creosote to timber was made either by dipping or painting, and in the northern hemisphere fairly good results were obtained from this method. Engineers soon realized, however, that in order to increase the value of this wood-preserved, it would be necessary to actually impregnate the timber with the preservative. This could not be accomplished either by painting or dipping and, therefore, the pressure process was developed. To some extent painting and dipping is still used, but the greatest percentage of the timber treated in the world today with Creosote, is by the pressure method.

In the early 1920's, Mr. Arthur Fischer, then Director of the Bureau of Forestry in the Philippines, began to study the possibilities of treating Philippine second- and third-group timber the better to fit them for construction purposes, and thus to conserve the stand of first-group timber for a more lucrative purpose such as for the manufacture of furniture, etc.

At that time the Bureau of Forestry was unable to include in its appropriations sufficient funds to install a pilot-plant for testing the various second- and third-group timbers for their treating qualities. Mr. William J. Shaw was then President and General Manager of the Atlantic, Gulf & Pacific Company of Manila, and in a friendly conversation at the old University Club, Mr. Fischer presented his views on the possibilities of wood-preserving of second- and third-group timbers in the Philippines to Mr. Shaw. His arguments were apparently so convincing that Mr. Shaw agreed that his Company would put in a pilot-plant at its own expense and operate it under the direction of Mr. Fischer and some of his assistants who were also qualified to direct the experiments until such time as it had been definitely determined what timbers would lend themselves to wood-preservation both from a viewpoint of cost and life-expectancy.

The pilot-plant was installed and the experiments were carried on over a period of one or two years, and it was finally determined that Apitong would accept Creosote under pressure to a greater depth of penetration and concentration than any of the other timbers experimented with. It was also a most desirable timber due to the large quantities available from the various timbered areas in the Philippines.

The commercial possibilities of the market at that time were then studied by the Atlantic, Gulf & Pacific Company of Manila. The construction of railroads at the many sugar centrals which were being installed at about the same time, offered a substantial market for railroads or sleepers. It was therefore decided that this market

would be covered first, and a plant was installed accordingly. In the meantime, the pilot-plant was donated to the School of Forestry at Los Baños in order that it might continue with further experiments.

The original plant consisted of a 65-foot cylinder, 8-1/2 feet in diameter, constructed to withstand a pressure of 200 pounds per square inch, complete with a boiler of sufficient capacity to operate the pumps necessary to maintain the Creosote under the heavy pressure and furnish steam for heating the Creosote, recording gages to keep an accurate and indisputable record of the processing of each charge, and other supporting equipment.

Soon after this plant was in operation, other markets were explored and the demand for electric transmission-line and telephone-line poles offered a substantial volume of business. The Manila Electric Company and the Philippine Long Distance Company were the two largest public utilities in the Philippine Islands, and contracts were entered into with these companies to supply their requirements in Creosoted Apitong poles for their transmission and telephone lines. At that time these companies were using both Ipil poles and importing Creosoted Pine poles from the United States. In securing this contract, it was possible not only to substitute a local product for an imported product, but also to replace Ipil, a first-group timber, with Creosoted Apitong, thus accomplishing a part of the aim of Mr. Fischer's original idea in establishing a wood-preserving plant in the Philippines. The original plant was of sufficient size and capacity to take care of this new market; however, there was another market which required poles of such length that a treating-cylinder of considerably greater length was necessary. That market was in connection with harbor work, which required fender systems to protect the piers rapidly being established in the larger centers of the Philippines, from damage of ships coming alongside. The Company decided to purchase another cylinder and such equipment as was necessary to take care of this market. With this addition to the plant, Apitong piling up to 100 feet in length could be treated and in the 1930's products from the plant were shipped to China and the Malay States.

During the reoccupation of Manila by American troops, considerable damage was done to the plant, and rehabilitation could not take place until after the property on which it is installed had been released by the U. S. Army. This was actually accomplished on August 15, 1947, and the Atlantic, Gulf & Pacific Company of Manila immediately took steps to rehabilitate and again place the plant in operation. It is now expected that the plant will be in full operation by February 1, 1948. The demand for the products therefrom is even greater than before the war. In addition to our local demands, we have inquiries from markets supplied with the products from the plant before the war which, if deliveries can be met, will result in firm orders.

While the relating of the story regarding the beginning of wood-preserving in the Philippines makes it all sound very simple, it has been far from that. Many problems have arisen and have been met, but through experience and close contact with the products of the plant after they have gone into service, the difficulties have been reduced to a minimum.