

The Alcohol Industry in the Philippines

Native Beverages: Progress in the Licensed Trade

By E. M. GROSS, CHEMIST



From the earliest times the people of the Philippines have been moderately addicted to the use of intoxicating beverages, and we find throughout the history of the Spanish occupation references to its influences.

A document dated 1571 from Mirandaola to the king of

Spain reports, that the natives "have wines of many kinds: brandy, made from palm-wine, obtained from the coconut palm, and from the wild nipa palm *pitillos*, which are the wines made from rice, and *borona*, and other wines made from sugar cane." In 1762, Governor Simon de Anda ordered the governor of Guagua, to forbid the sale of nipa-wines and destroy all found in the taverns. In 1837, Blanco writes of the injurious effects of the native wines. Monopolies of the distilled spirits industries were common under the Spanish rule. The art of distillation seems to have been taught the natives by the Chinese, and the method that of potstills, a crude process followed to this day by illicit stills. "In 1862, the alcohol monopoly was done away with. Two years later, the trade and manufacture of all kinds of alcohol was decalared free."

Several large modern distillery plants were established by Spaniards and alcohol was distilled mainly from nipa and coconut palm sap. Rectification of the crude spirit was carried to a fairly efficient point.

The American authorities found the following intoxicating beverages in general use throughout the islands upon their arrival in 1898:

Tuba: made from the sap of the various palm threes, coconut, nipa buri palm, and cabo negro.

Busi: made from cane juice.

Tapuy: made from rice.

In the Visayas group, Tayabas and Laguna provinces, tuba predominated; to this beverage the people add *cascotele* the bark of *camachili*, to overcome the strongly cathartic effects of the palm juice.

Busi was being manufactured in the sugar producing regions, while *tapuy* was in vogue amongst the mountain tribes, where no other prime material was available but rice. Incidentally we might mention that *tapuy* is the most economical intoxicant in the world, where lasting effect for little expenditure is sought for, as a glass of it drunk at night, followed by a glass of water in the morning, will keep the partaker of it drunk for a week, so for the thrifty it can't be beaten.

In and around Manila were located the modern stills. They produced rectified Alcohol from which were manufactured imitations of European beverages, mostly: *Tinto* (claret wine) *gubero* (gin), *anisado* (Spanish *Anis Cordón*; the sweetening, however, was mostly saccharine instead of sugar). Practically all of the alcohol was produced from nipa sap, and some from coconut sap. The industry was flourishing and increased year by year. In 1910 about 68 recognized distilleries were in operation the islands, along with many illicit stills.

In 1920, the establishment of modern sugar mills and their production of large quantities of molasses called the attention of the various distillers to this more economical prime material for alcohol production. The art was new and difficulties arose as to the rapid fermentation of the

molasses; about three to four days were required to complete the change from invert-sugar into alcohol; the process often miscarried and acid fermentation resulted, or at best the alcohol yield was small. The services of the chemists from the bureau of science were called upon. They, along with private chemists, finally perfected a formula whereby favorable results were obtained. The process at present consists in mixing molasses with water until the mixture resulting is seven degrees *Brix*. To 20,000 liters of such a mixture, 18 to 20 liters of commercial sulphuric acid is added, the whole thoroughly stirred, and then about 15 to 20 kilos of ammonium sulphate are scattered over the mixture, which is



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then let stand. Fermentation commences in about 12 hours and is complete in about 24 to 36 hours. Maximum results have, so far, been obtained from this procedure. Some distilleries make such new mixtures with each batch; others practice inoculation by adding ten per cent of a ferment in full action to a new mixture.

The latter process has economy on its side.

The general result is five gallons of spirit from an equal quantity of molasses; with efficient operation the cost of a gallon of 94 per cent spirit is about P0.17.

After all of the available alcohol is recovered by distillation, some of the distilleries continue the distilling process at a higher temperature and recover the fusel oil left in the lees. This material finds a very important use as a solvent for cellulose and is in great demand in varnish and celluloid factories. The rest of the liquor is at present thrown away, locally; but in Europe the distillation process is continued and the nitrogen present is recovered in the form of an ammonia, later used as a base for the manufacture of ammonium sulphate, in great demand as a fertilizer.

Approximately 75 per cent of the alcohol produced is consumed locally as beverages; 25 per cent is exported, at present to China, or made into denatured alcohol and fuel alcohol. The latter is mixed according to the Foster process and consists of a mixture composed of 20 parts sulphuric ether, 80 parts rectified alcohol (96%), 5 parts kerosene oil and 1/2 part aniline oil or pyridine. The object of the aniline or pyridine

is to neutralize the acetic acids and aldehydes formed on explosion of the fuel, to prevent pitting of the engine pistons and cylinders. As a tractor fuel and for stationary, internal combustion engines, this fuel has given fair satisfaction. As a fuel for automobiles it still leaves a great deal to be desired. The gasoline alchemist's dream is still to come, as far as alcohol for a motive fuel is concerned.

Internal revenue statistics may be of interest, so we copy them:

	1923	1924	1925
	Proof Liters	Proof Liters	Proof Liters
Taxpaid	8,932,246	10,363,984	12,202,372
Export	1,667,102	1,797,048	2,770,333
Sold to U. S. Army and Navy	91,793	111,568	171,934
Denatured Alcohol	912,260	1,387,564	1,164,412
Motive Power Alcohol	2,323,606	3,097,456	3,662,798
Fusel Oil Recovered	2,224	23,529	9,227
Total	13,829,231	16,721,639	19,971,076

Increase	3,249,437
Percent of Increase	19.43

Distilled Spirit Removed for Domestic Consumption as Beverages

	1923	1924	1925
	Proof Liters	Proof Liters	Proof Liters
Domestic Manufacture	8,932,246	10,363,984	12,202,372
Imported	861,708	346,138	402,561
Total	9,294,014	10,650,122	12,604,933
Increase	1,356,108	1,954,811	
Per cent	18.35		
Per capita	0.90	1.06	

Raw material used: Liters

Nipa sap	36,327,704	18,199,014	15,616,514
Coco sap	6,332,576	6,648,522	7,673,192
Molasses	12,917,647	21,443,946	38,261,160
Cane Sugar	2,366,782	929,471	771
Grain	4,577	3,331	6,240

NOTE:—A proof liter of alcohol is a mixture containing 50% of absolute alcohol and 50% of water.

MORE ABOUT TARHATA

More news from Jolo since the September *Journal* was published contains curious details on the conduct of Princess Tarhata Kiram, who was a student in the University of Chicago at the time Mrs. Carmen Aguinaldo Melencio, daughter of General Emilio Aguinaldo, was there. Tarhata returned to Manila a very modern girl, with bebbed hair and liberal ideas. But it was very dull resuming life in Jolo: there were no sorority dances, no moonlit lake yachting trips, no motoring parties of young people. Yet there were the tribe and tribal traditions. These, it seems, have claimed Tarhata. She no longer bobs her hair; she has acquired again a taste for buay, and, displacing a fourth wife, she lives with Datu Tahlil, third member of the Jolo provincial board. This relationship she is maintaining is contrary to Moro law, limiting legitimate wives to four, for the fourth wife, it is said, had not been divorced nor obtained divorce when the relationship began; and even yet there has been no decree of divorce.

Thus the daughter of the East, doffing western culture, has returned to the East with a vengeance. She suffers more or less ostracism because of her quaint conduct. An elder niece of Sultan Hamid Hamilul Kiram remains his favorite. She is Putri Dayang-Dayang Kiram, much older than Tarhata, comfortably stout and uneducated. She occupies the town residence of the sultan. Princess Radda Kiram, formerly a student in the Philippine Women's College in Manila and also older than Tarhata, has returned to her people in

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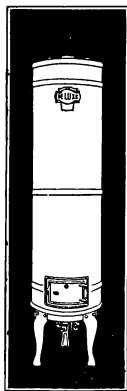
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