

forms the tea not only of Paraguay but of the whole Argentine Confederation, the greater part of Brazil, the Chili coast, and Peru. More than 5,000,000lb. of that tea are manufactured in Paraguay alone. In packing this Paraguay tea the leaves, after being artificially dried, are pounded in a leather "seron." The hide of which the seron is made is steeped in water and sewn up at the side. The top part is left open for the introduction of dried leaves. The seron is then sewn up and pounded with a mallet until it becomes of an oval shape. Although this is an expensive process, there is no doubt that the perfume is most thoroughly kept in, and that is one of the essential points. The odour of the tea is exceedingly aromatic, and it has properties of a very agreeable nature. I will prophesy—I do prophesy—that it will be the tea—well not of the future—but of all hard brain-working individuals, and not only of such men but also of all men undergoing great physical exertion. In South America it is well known that a man can abstain with comfort from eating animal food for from fifteen to eighteen hours by using this tea. If anyone can discover some kind of package for this substance other than leather (which is liable to be eaten by rats) he will make his fortune.

Mr. HUGHES: I have listened to this paper with very great interest, and I have no doubt it was of great interest to those connected with the tea trade. No doubt it is the result of the late trial respecting the Asia. I think Mr. Wigner will be glad to know (if he does not know already) that the trial has attracted a great deal of attention in India, and that the results of the decision have been fully reported in the Indian papers, and will have great influence in inducing the shippers to see that the goods are packed in proper substances. With regard to Mr. Wigner's experiments, I think the thickness of the lead has a great deal to do with the matter, and in the cases he has mentioned I cannot help thinking that if the lead had been of a thicker quality the damage would not have been so great.

Mr. EASTICK thought some kind of varnish could be used to keep the lead from being attacked.

Mr. WIGNER in reply said: Perhaps I may be permitted to reply to Mr. Hughes first. The paper I have read to-night has nothing whatever to do with the recent trial of the Asia. I have carefully avoided anything having reference to China tea. It is simply the result of experiments made long ago, before the Asia question arose. I may say, however, that while China tea is packed in lead 2lb. or 3lb. to the square foot, Assam tea is packed in lead 4oz. to the square foot. I have not tried the paper which Dr. Wright speaks of, but I think if that paper can be obtained at a reasonable price it opens a field for its trial. The difficulty which appears to me to arise with merchants is, that the tea is almost in every case bought in China or Assam, and paid for by bill on London, and the purchasers have no idea of the way in which it will be packed until it arrives in this country.

The thanks of the meeting were voted to Mr. Wigner for his paper.

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Communications.

REPORT ON THE PRESENT CONDITION OF CERTAIN OF THE CHEMICAL INDUSTRIES IN JAPAN.

(Compiled by the Editor from Extracts from a Letter from Mr. T. Takamatsu, of Tokio University.)

Sulphuric Acid.—The only sulphuric acid factory in Japan is at Osuka. It appears that at the present time the trade in this acid is not good, and there is evidence of a declining tendency, not so much being exported to China as formerly. The home consumption is at present, moreover, very limited.

Alkali.—There is a small alkali works, it is true, in the neighbourhood of the acid factory, yet it is by no means in an active state. At present it would appear a matter of great difficulty to found a new chemical industry in Japan, owing to the lack both of capital and skilled labour, as also to the great obstacles in the way of transport of raw materials from different parts of the country.

Manufacture of Coal Gas.—One gasworks supplies the city of Tokio with the means of illumination. It is situated outside the city and near the coast (Shinagawa Bay). It was erected in 1874 by the Government, from the design of a French engineer. At first only five retort-furnaces were built, and placed in a line. Each furnace fires a bank of three fire-clay retorts of D shape, and of the following dimensions: 22in. across the flat bottom, 13in. high, and 8ft. long. The demand for gas-lighting has evidently increased since 1874, for now another series of four furnaces has been added, and placed back to back with the old ones, each of these firing a bank of five retorts of the oval shape, each 7ft. long, 20in. wide, and 15in. high inside, so that now 35 retorts are at work. Each retort is charged with 2cwt. of coal at intervals of six hours. There are two hydraulic mains for the two lines of retorts, and these are connected in the usual way with a series of atmospheric condensing pipes, emptying themselves into tar-wells. The atmospheric condensers consist of 24 vertically-arranged cast-iron pipes, 5in. in diameter and 12ft. high. These are placed in two lines, and the gas traverses them alternately in the usual way. The exhauster, placed between the condensers and the scrubbers, is simply