POTOMAC WATER LEAD-PIPES.

To the Editors of the National Intelligence:

The advent of a supply of water to our city conveyed by pipes had to some minds suggested the necessity of considering the suitability of material from which such pipes should be made, and objection has been raised to the use of lead as the proper metal. I have taken the liberty of placing a few facts in connexion therewith before the notice of the public.

In 1833, in Paris, the Minister of Agriculture and Commerce issued a letter to the Prefects forbidding in breweries and stores the use of lead, copper, or zinc pipes, and cites as examples the numerous cases of poisoning arising from the employment of such pipes to convey liquors capable of fermentation. The circular also alludes to the accidental poisoning of persons at Claremont, where the Orleans family suffered, and the statement was also made that water from such pipes could be traced to the contact of water with lead. To obviate this inconvenience, the Minister only allowed for such uses as the transport of water, or of pipe water, or of pipes of any other water bearers. One might ask, if the Minister had a real consideration for the public, would it not be better to get rid of lead totally, rather than subject us to the least danger from lead by allowing the sin with it?

But, it may be asked, what are the materials from which such pipes are made, and are they subject to receive objections to their practical use?

In 1833, Dr. W. H. Elliott, of New York, published an account on the effect of Croton water on lead-pipes, and his observations were confirmed by his own experience. The Crotolite water has the same effect of acting on the lead-pipes, and my own experience in the western part of France has been to the same effect. I have had occasion to convey spring water to houses, and the symptoms of lead poisoning were the same as with potable water. There were no cases of lead poisoning, and it was found that for transport for water, especially if the distance be great. It is many years ago since Dr. Christian pointed out the effect of lead-pipes on water, whereby the water is corroded by the pipes and with it pointed out the residuous means of remedy. He showed that the water was soft, or salt, containing the salts of lead, after being conveyed by such pipes. The water was hard, containing lime or earth, in the form of sulphates and phosphates, and did not sensibly affect the lead. But, if the water be soft and free from dissolved carbonic acid, the decomposition of the pipe, and thus saved the lead from being reduced to lead oxide; and to make a new lead-pipe serviceable it was only necessary to coat the inside with a deposit of sulphonated lead. This was found to be very much more effective than to boil the water for hours, and the injurious effect was not longer imminent; and in point of fact we know that practically old lead-pipes are used for water where the nature of the water remains the same.

But, happily, the dangers which await us from the use of lead-pipes are not so immediate as they would be in the case of water from the Potomac, which is not derived from granite or primary water-sheds. Potomac water is largely loaded with earthy salts, containing the salts of lead, and the effect of these salts on the interior surface of the pipe is produced in a very short time. Of the effect of pipes made of lead when long in use, there was given a good instance in the examination of the water used (during the period of the cholera) for the delivery of water to the houses of the population, for ordinary purposes, which was conveyed from the top of the house down through four stories, yet the water delivered at the bottom was found to be a trove of lead in two quarts of water examined by Dr. Elliot.

The effect of the circular of the Minister of Agriculture in France was to introduce pipes extensively for the delivery of water. But these have gradually disappeared, and are considered to be a menace to health. The price of lead has been a substitute, and unless made strongly it will not resist the effect of the frost of our winters, and when broken or leaky will not be repairable. Potomac water is tolerably pure, and the small pipes are still more insufficient, for they clog so readily with rust that the bore is small, and where there is the slightest bend for a lodging place, the iron gutta percha, are insalubrity, against nature, and there is not any material at present dear suitable for the purpose of making a pipe of an inch diameter and the pipe of the kind described is too light for the purpose, being baked or fused, that future piping is to be obtained. I do not believe, in fact, we have not that material yet presented to us; and until it does appear there is nothing which can economically supply the use of lead.

THOMAS ANSELL, M. D.