

## Lead-Encased Tin Water-Pipes.

The frequency of cases of poisoning, caused by the action of water on the lead-pipes through which it flows, has induced the lining of such pipes with tin, which is supposed to give perfect perfection. But Dr. Nichols, of the Boston Journal of Chemistry, maintains that the danger is increased by the attempted remedy. He says:

We take the ground, in regard to this pipe, that instead of its being safer, it may, under certain circumstances very liable to occur, become *much more dangerous* than that constructed entirely of lead. \* \* \* If we place lead and tin in juxtaposition, with access of water, one or both of the metals will suffer from rapid corrosion. In laboratory experiments, we have found the tin, under certain conditions, to suffer most, but invariably the lead decomposition was greatly augmented by the association. The impression prevails, to a considerable extent, that pure tin pipe is practically indestructible when placed in the ground for conveying water. This is certainly an error. We have had a section of tin pipe in our possession which was corroded through and through, and yet it had been in use but six months. Lead is not so readily acted upon as tin, under the ordinary conditions of exposure to which service pipes are subjected. The safety in the use of tin pipes does not consist in any peculiar exemption from corrosive action, but in the harmlessness of the resultant oxides or carbonates. If tin was indestructible in contact with moving water, and the coating placed upon the interior of lead pipes *absolutely perfect* at all points, it would certainly be a most desirable invention. A family using water flowing through a tin lined lead pipe from a well, or from the main of a city or town aqueduct; is exempt from danger *so long as the lining remains perfect*. But if, from defective soldering, or cracks, or breaks in the lining, or from corrosive action, water contact is made with the lead, then alas for the family! Electrical currents commence to flow between the metals; disintegration goes on rapidly, and lead poisoning is almost certain to result. A lead pipe, under these circumstances, would be much safer.