many experiments one-tenth of one per cent. was sufficient to kill in a few hours. The most marked peculiarity in all experiments made with this waste was that in a few minutes after mixing it with either fresh or sea water a reddish brown precipitate began to form and continued forming for several hours. The suspicion that this was ferric hydroxide was confirmed by subsequent chemical analysis. Microscopic examination of the gill filaments of fish killed by this waste showed that death was caused by this adhesive precipitate sticking to the filaments and preventing respiration. With a coating of this rust-like substance covering the gills it is difficult to see how oxygen could pass into the blood and carbon dioxide could pass out.

Experiments began with solutions of 6 per ct, 2 per ct, and ½ per ct, all of which were found to be very poisonous, fish living from half an hour to an hour.

Reduction to ¼ per ct resulted in the death of the hardy stickleback in about five hours. They were able to survive for two or three days when the solution was reduced in strength to one-seventh per cent. In fact, when any of the hardier fish like fundulus, stickleback or rock bass, were able to survive the six or eight hours during which the ferric hydroxide was being precipitated, they usually lived on for several days or a week. More delicate fish, like smelt (*osmerus mordax*) and trout, however, succumbed to weak solutions of the poison in from ten minutes to half an hour. Repeated attempts to resuscitate these fish by artificial aeration in fresh water proved failures. In the case, therefore, of the more sensitive fish death, was apparently caused by the absorption of the free hydrochloric acid and ferrous chloride. That small quantities of ferrous chloride became absorbed was proved by treatment of the gill filaments with ferro-cyanide of potassium. This reagent stained the filaments a blue colour, and subsequent examination of sections of these under the microscope showed slight absorption of the iron compound along the surface cells. This proof was suggested by Dr. McCallum.

Attention is directed to the very high specific gravity of this pollution. The effect would be to cause the pollution to fall to the bottom of a stream into which it might be poured. This would result in the death of fish that frequent the deeper parts of a river, especially if the flow was sluggish. On the other hand, the great density would increase the rapidity of diffusion throughout the fresh water in accordance with the laws of diffusion of liquids of different densities.

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