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Theme VIIb.

Application of Steel in Hydraulic Construction.

The papers and contributions to the discussion on this question indicate that the importance of steel as a material in hydraulic engineering has notably increased in the last few years. Despite the special peculiarities of the problems which arise in applying steel to hydraulic construction it is expedient to recognise their relationship to steelwork in general, in order that general solutions may be found for certain of the questions.

Among these the problem of corrosion takes a particularly important place. In order that good progress may be made in this field it is necessary that a large range of observations and experience should be covered by collaboration with steelwork engineers. Experience to date discloses, for instance, the welcome fact that the resistance of steel sheet piling to corrosion is greater than was expected at the time of its introduction.

The progress of the fight against damage through corrosion, both on the side of surface treatment and on that of the composition of the material, is no doubt destined to have very favourable repercussions on the development of steelwork applied to hydraulic engineering. It would be desirable that the International Association for Bridge and Structural Engineering should collect observations and data on corrosion from all countries, each individual observation being described as completely as possible, not omitting even those characteristic circumstances of the cases under observation which, so far as our present knowledge goes, may appear to be without significance from the point of view of the phenomena of corrosion.

The technique of welding offers great advantages in the construction both of flat components and of members which need to be rigid against torsion. Water tightness is easily obtainable by the use of welding. Welded hydraulic constructions are often preferable to riveted because of their easier maintenance. The special problems of hydrodynamics and flow which are encountered in hydraulic work call for an intimate collaboration between structural steelwork and hydraulic engineering as taught in the universities.