currents on the beds and foreshores of estuaries. The late L. F. Vernon-Harcourt adopted this expedient when studying the problem of training walls for the sea outlet of the River Seine, and in 1889 communicated the results of his investigations to the Royal Society.¹ The French Government subsequently had a model constructed under the advice of M. Mengin, the engineer in charge.

Experience of tests made with such models has shown their use to be highly valuable. Notwithstanding the fact that the vertical and horizontal scales employed for making such models are necessarily different, the records so obtained afford a close insight into the prospective effects of a defined scheme of works. In a model of the Mersey the horizontal scale adopted was 2 inches to the mile, the vertical scale 80 feet to the inch. The tide period was 42 seconds. After running the model for a period of 2000 tides, the existing natural contours and channels of the river were found to be reproduced with remarkable fidelity. By working a model for a few hours, and simulating repeated tidal effect, data can be demonstrated which would involve long periods of costly observation. While exceptional gales cause temporary derangement of estuarial conditions, the regular movements of the forces of Nature bring such conditions back to the normal, and the play of this action can be watched by operating a model.

The reports above specified describe how such models can be constructed. It is probable that no scheme of operations for the regulation of estuaries or tidal flats involving large outlay will in the future be organized without supplementing the preliminary investigations on the site by the evidence of working models.

¹ "The Principle of Training Rivers through Tidal Estuaries, as illustrated by Investigations into the Methods of Improving the Navigation Channels of the Estuary of the Seine" (L. F. Vernon-Harcourt), *Proc. Royal Society*, 1889.