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DISCUSSION

Farakka barrage project: a challenge to engineers

D. MOOKERJEA

Mr A. R. B. Edgecombe (F)

I believe that the barrage at Farakka is the first on the Ganga. Its construction is a great and courageous achievement. There are, of course, weirs across the Ganga at Bhimgoda and Narora. Was consideration given to a weir at Farakka, and if so, why was a barrage decided on? How was the Ganga discharge of 2 000 000 cusecs at Farakka observed? What was the method of silt exclusion employed?

Mr Mookerjea

The presumption that the barrage at Farakka is the first on the Ganga and that there are existing weirs higher up is correct.

40. The river section at Narora and Bhimgoda is much more narrow and stable with a much lower flood discharging capacity. The major tributaries of the Ganga, namely the Sarda, the Ghagra, the Sone, the Gandak and the Kosi, contributing a major part of the flood discharge, join the Ganga much lower down.

41. Construction of weirs has now been practically discontinued and in all such cases a barrage is being considered. The reason is that a barrage, which is nothing but a low crest weir with steel gates, allows flexibility of control in diversion of water which is the primary objective. This is why the barrages are known as the diversion works for diverting flow of the river into the canal by gravity.

42. The discharges across the Ganga river were observed at various points by taking cross-sections with echosounders fitted in high powered launches, and also by observing velocity with the help of current meters at different intervals. It may be of interest to record that a flood intensity of 2.45 million cusecs passed down the river at Farakka in the 1971 monsoon. As the barrage was already there, there was no problem in estimating the flood flow by observing the levels upstream and downstream.

43. Silt exclusion devices in the form of tunnels have been provided in the first three undersluice bays from the right abutment.

44. Because it is a barrage and not a weir, the crest level could be kept much lower allowing the silt to flow down the river during the floods when the silt content in the river is at its maximum.