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Editorial Notes

The River Hooghly and the Port of Calcutta :

The Port of Calcutta depends on the Navigability of the River Hooghly. The River Hooghly, though it looks so large, is a difficult river to navigate, because it is not so deep as is desirable everywhere, develops unexpected shoals, has its deepest portions in discontinuous winding channels, forms strong, treacherous eddies, that often cause vessels to run aground, and has several bars that cannot be negotiated by deep draught vessels, except in certain states of tide. Only vessels of a certain speed corresponding to the draft can take advantage of the tide to pass over these bars. There is an economical limit to the speed that a vessel should have; and the economics of shipping show that the cost of transportation is increased by reduction of draught and reduced by an increase of draught, so much so, that the most economical draught for a 1000 ft. long vessel having a speed of 30 knots has been determined to be 60 ft.* Such a deep draught is not at present available at any Port in the World. But the authorities of the Port of London took this into account when determining the depth of a tunnel to be permitted below the bed of the river so as to allow for future increase of depth by dredging or other means. The designed draught of vessels has been gradually increasing throughout the world for economical reasons; and Ports all over the World are endeavouring to increase their depths to take in vessels of greater draught which bring in greater trade and increase the revenue.

By efficient methods of river training and dredging the depths of rivers can be gradually increased. Notable examples of such gradual increase of depth

* Tr. I.N.A. 1930, 1931.

are the rivers Clyde, Danube and Liffey. But the draught available on the Hooghly has been for a number of years gradually decreasing, in spite of efforts by dredging and other means to maintain the navigable channels. Various opinions have been expressed from time to time as to the cause of deterioration of the River and the best means to improve its navigability. The opinions generally arouse much controversy. Sane discussion of the problems to arrive at general agreement regarding their solution is desirable. We therefore publish in this issue one of the opinions expressed by Mr. K. Bhattacharya, B.E., C.E., in a meeting before the Association of Engineers on 22nd September, 1958 and invite further comments.

The author draws attention to the dangers of reduction of flow of water from the Rupnarayan and Damodar into the Hooghly likely to be caused by the operation of D.V.C. Dams and pleads for greater attention to utilisation of the flushing effect of the Rupnarayan than to the attempts at increase of headwaters by construction of the Faracca Barrage which, in his opinion, is unlikely to come up to expectations.

On the other hand there exists an opinion that much of the silt that is deposited in the lower reaches of the Hooghly is brought down by the torrential waters of the Rupnarayan during the rainy season and reduction of its speed during that time would reduce its silt bearing capacity. Moreover, the storage of water made possible by the Dams would enable supply of water during the dry weather months.

The quantity of water that should be let out of the Dams must be given sound consideration.

Welding :

The use of welding for connecting parts of structures has now become so common that the glamour of novelty of the process has died down. Users have lost their original fears regarding its reliability and now we are faced with the dangers of its misuse. It is well to remind users of the properties of the various electrodes available in the market so that electrodes detrimental to a job may be avoided. In this issue we therefore publish an article on the chemical properties of electrodes presented to us by Mr. S. V. Nadkarni.

The Human Factor :

Engineering has for long been thought of and studied only in relation to its technical factors. Increasing attention is now being given to problems relating to the Human factor, its organisation, management, and payment. The trend of thought will be noticeable in two articles in this issue.

Contributions :

For some time we have suffered from a dearth of articles suitable for publication and it seemed that the Association was in danger of becoming moribund. However, a new dynamic trend is now apparent, and we appeal to our members to help to accelerate it by sending in their articles for publication at an early date.