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President: SUMMERS HUNTER, Esq.

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Lecture on East Bengal and Assam

BY MR. F. C. MOSDEN (MEMBER).

Monday, March 11, 1912.

CHAIRMAN: MR. A. BOYLE (VICE-PRESIDENT),

THE district described by the lecturer was that in the neighbourhood of the rivers of Eastern Bengal and Assam served by the India Steam Navigation and Railway Company, Ltd., in whose service he had been for several years. The principal of these rivers were the Brahmaputra and the Ganges. The starting point of the Company's steamers was Calcutta and the terminus on the Brahmaputra was Debrughar, a total distance of about 1,500 miles. The River Ganges service ran from Goalundo to Monghyr.

The lecture was illustrated by about 160 lantern views from photographs taken by the lecturer. In pointing out the difficulties to be met with in working rivers where there was a large rise and fall of the waters, he stated that the Brahmaputra, in the dry season, had a depth of not much more than 8 or 9 ft. In the month of August, which was about the middle of the rainy season, the river attained a depth of about 40 or 50 ft. which was its maximum. The time taken to get the difference in these depths was about

three months, and one could easily understand, in rivers of this description, the difference it must make to the navigation of the vessels.

Fig. 1 shows one of the Company's paddle steamers, *Mimbu*,

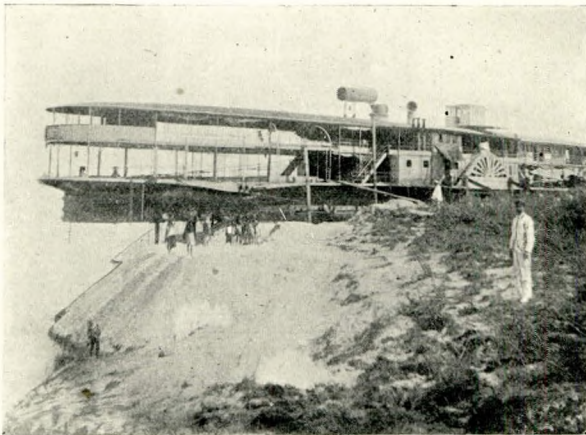


FIG. 1.

lying on top of the main bank at Kookhila-Mookh, Northern Assam. This vessel was proceeding on her voyage up the



FIG. 2.

river, the main bank being covered to a depth of about 5 ft. The serang in charge of the vessel took her across this bank in order to save time, but, instead of having the depth of water he thought there was, there was barely sufficient to float her. She grounded, and in less than a month was in the position shown. To leave the vessel in this position was to run the risk of breaking her back, therefore the Company decided to cut away the ground down to the water level.

Figs. 2 and 3 show the manner in which the vessel was shored

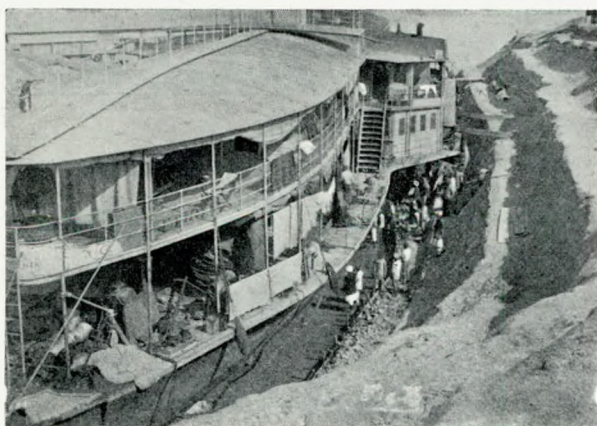


FIG. 3.

and channels cut on both sides the full length of the vessel. After getting the vessel below the level of the water, temporary dock gates of bamboo mats, etc. were constructed and the whole of the improvised dock was filled with 3 ft. of water; then with the help of two large towing vessels the dock gates were broken down letting in another 2 ft. of water and the vessel was safely brought into the river.

Fig. 4 shows the height of the bank from which the vessel was lowered.

Another great difficulty in river navigation was the occurrence of cyclones, and a number of photographs were shown illustrating the effects of a cyclone, lasting some two or three hours, upon various types of vessels.



FIG. 4.

Fig. 5 shows the mail steamer *Vulture*. The boilers of this vessel were being cleaned at the time of the cyclone, and she



FIG. 5.

was lying alongside of the workshop flat. The cyclone caught both vessels on the beam, the workshop was sunk and the *Vulture* sank on top of her. Divers were sent down and located the hole in the ship's bottom, after which cofferdams were built around ; the boiler (40 tons weight) was lifted out, tem-

porary plates were put on the bottom and she was raised and sent to Calcutta to be dry docked.

Fig. 6 shows the stern-wheel steamer *Rohini*, and cargo flat

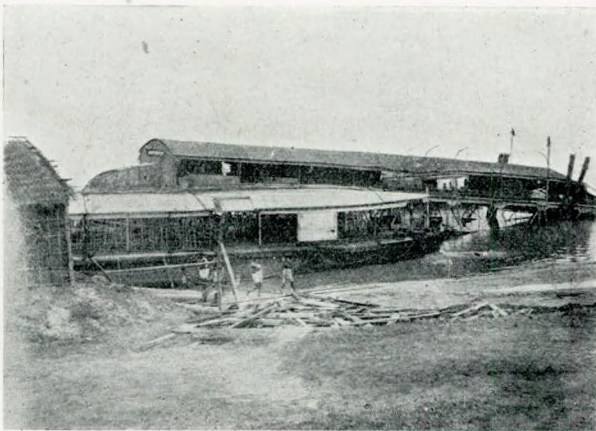


FIG. 6.

Lushmi. The *Rohini* was lifted up, and her stern put on the bank, while the fore end of the vessel was under 6 or 8 ft. of water.

Fig. 7 shows the stern-wheel steamer *Diana*. This vessel

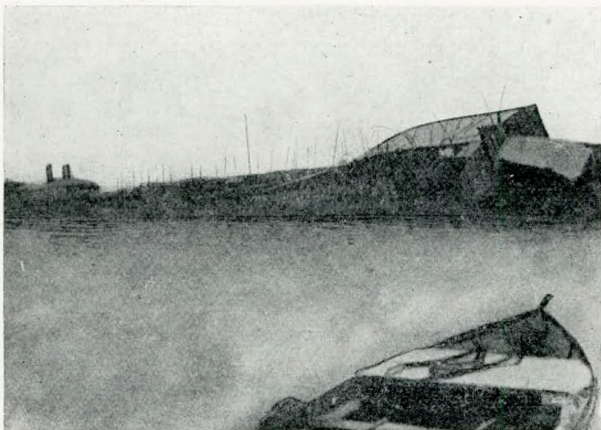


FIG. 7.

was lifted up bodily and turned on her side, lying fore and aft along the bank. Fig. 8 gives another view of the same vessel.



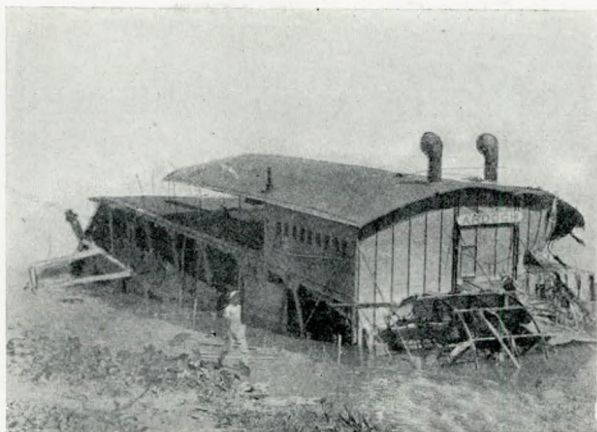
FIG. 8.

Fig. 9 shows the R. S. N. Co's vessel *Ardoch*. This vessel was broken in two, as can be seen on the photographs.



FIG. 9.

She was cut through, false bulkheads were erected, and the two sections towed down to Calcutta. About a dozen steamers were similarly damaged, and from the time of the occurrence, October, 1909, only three to four months elapsed before all the vessels were once more in commission.

FIG. 10. (*Ardoch.*)

Several very good views of the Himalaya Mountains were given, showing the enormous amount of snow which collects upon them. The views included photographs of Mt. Kinchinjunga and Mt. Everest, and a beautiful cloud effect on the Himalayas, which at first sight gave the appearance of a stormy sea. Views were shown, also, of the various types of natives, ranging from the Chokra, of Calcutta, to the semi-civilized native of the Naga and Lushai Hills; notable buildings, such as the Government House, Calcutta, Nawab of Dacca's Palace; and the Jain Temple, Calcutta, reptiles, including a Brahmaputra alligator 12 ft. in length, and a Sunderbund Muzzer of about 25 ft.; and pictures representing the trade of the provinces, tea-gardens, the loading of tea and jute into steamers, etc.

In proposing a hearty vote of thanks to Mr. Mosden, the Chairman said the lecture had been very interesting and instructive. The photographs reflected the greatest credit on Mr. Mosden. He commented upon the very peculiar nature of the work engineers in distant lands had to contend with, and said the members were much indebted to Mr. Mosden for the trouble he had taken in bringing the matter before them.

Mr. J. THOM (Member) seconded the motion, which was carried with acclamation.

The meeting closed with a vote of thanks to the Chairman, on the proposal of Mr. Mosden.