

HARBOR OF MOBILE, AT CHOCTAW PASS, DOG RIVER  
BAR, &c.

[To accompany bill H. R. No. 155.]

APRIL 7, 1856.

Mr. EUSTIS, from the Committee on Commerce, made the following

REPORT.

*The Committee on Commerce, to whom was referred the House "bill for continuing the improvements of the harbor of Mobile, at Choctaw Pass, Dog River bar, and to the Lower Fleet," have had the same under consideration, and report :*

That they find that, in consequence of obstructions to the navigation of the bay of Mobile, owing to Dog River bar, which lies a few miles below the city, and the circuitous course and low depth of water of Choctaw Pass, the trade and commerce of the city are annually taxed with a heavy burden in the shape of lighterage, pilotage, and towage. From reliable estimates furnished to the committee, they find that for the year ending 31st August, 1856, the loss sustained from those items amounts to nearly *two hundred and fifty thousand dollars*; and there is every reason to anticipate a still heavier loss in the future, unless steps are taken by Congress for removing the obstructions.

In order that the House may see the data upon which the committee predicate their conclusion, they annex the following calculation, which they are assured may be regarded as closely approximating correctness.

The receipts of cotton at Mobile for the year ending 31st August, 1855, in consequence of the continued low water in the Tombigbee and Alabama rivers and their tributaries, amounted in round numbers to but 450,000 bales. Looking to the yield of former years, it may be safely estimated that from one hundred thousand to one hundred and fifty thousand bales of the last year's crop were not forwarded to that city. This quantity will, of course, be transported there this season, and the increased quantity of land put in cultivation, together with the improvements annually made in the culture, must swell the number for the present and future years to at least 600,000 bales.

Cotton, it is well known, is the chief export of Alabama; and as

the expenses of its shipment from Mobile to northern and European markets form the chief item in the loss sustained by that city and the State, it is proper to make it the basis of calculation, as the following exhibit shows.

It will be seen that the expenses are put down in two columns—one for the year ending 31st August, 1855, and the other the 31st August, 1856 :

	Crop of year ending August 31, 1855, 450,000.	Estimate in same ratio, crop 600,000.
<i>Lighterage outward.</i>		
Cotton for foreign ports, 347,000 bales, at 30 cents.....	\$104,100	\$138,800
Cotton for domestic ports, 103,000 bales were cleared; estimate one-fourth to have been lightered—say 25,750 bales, at 30 cents.....	7,725	10,300
Spars, timber, and lumber to foreign ports.....	17,000	17,000
Naval stores.....	500	500
<i>Lighterage inward.</i>		
Salt, 150,000, (year ending August 31,) at 10 cents.....	15,000	15,000
Railroad iron, 10,000 tons, at \$1.....	10,000	10,000
Other merchandise from foreign and coastwise ports, say.....	15,000	15,000
<i>Pilotage over Dog River bar.</i>		
Inward and outward, 712 vessels, average \$16 50.....	11,748	15,664
<i>Towage over Dog River bar.</i>		
Inward and outward, actual figures.....	16,560	22,080
	197,633	244,344

The above table indicates the necessity for an appropriation for the improvement of the Mobile harbor, and thus relieve the city of the annual loss to which it is now subject.

It is the only seaport of the large, wealthy, and growing State of Alabama, the products of the middle and lower half of which can find no other outlet. To that port, also, the productions of eastern Mississippi are forwarded for sale and shipment to foreign parts.

From these considerations, and the fact that the improvements demanded are of a *national* character, and therefore clearly within the power of Congress to grant, the committee report the bill back without amendment, and recommend its passage.

All of which is respectfully submitted.

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THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF CHEMISTRY  
CHICAGO, ILLINOIS

REPORT

BY  
J. H. HARRIS

RESULTS

The following table shows the results of the experiments conducted during the course of this investigation. The data are given in the form of a table, and the results are discussed in the text. The table shows that the rate of reaction is proportional to the concentration of the reactants, and that the reaction is first order with respect to each reactant. The activation energy of the reaction is found to be 15.5 kcal/mole.

DISCUSSION  
The results of the experiments are in good agreement with the theoretical predictions. The reaction is first order with respect to each reactant, and the activation energy is 15.5 kcal/mole. The rate of reaction is proportional to the concentration of the reactants, and the reaction is first order with respect to each reactant.