

His success with the *Phoenix* and her sister craft showed Colonel Stevens how mighty a stride steam could effect on waterways. He had long been convinced that a like gain could be reaped by steam as a motive power for travel on land. In 1810 the Legislature of New York appointed commissioners to examine the routes proposed for the Erie Canal, and to report upon the feasibility of that project. When Colonel Stevens read their report, which discussed a continuous inclined plane from Lake Erie to the Hudson River, to be fed by the waters of the lake, he urgently pressed upon the commissioners, as preferable in economy, speed, and rapidity of construction, a system of steam railways. In 1812 he published his argument as a pamphlet, adding the objections of the commissioners, and his rejoinders. He said:

"So many and so important are the advantages which these States would derive from the general adoption of the proposed railways, that they ought, in my humble opinion, to become an object of primary attention to the national government. The insignificant sum of \$2,000 to \$3,000 would be adequate to give the project a fair trial. On the success of this experiment a plan should be digested, a general system of internal communication and conveyance be adopted, and the necessary surveys be made for the extension of these ways in all directions, so as to embrace and unite every section of this extensive empire. It might then, indeed, be said that these States would then constitute one family, intimately connected and held together in bonds of indissoluble union.

". . . To the rapidity of the motion of a steam carriage on these railways, no definite limit can be set. The flying proas of the islands in the Pacific Ocean are said at times to sail more than twenty miles an hour; but as the resistance of water to the progress of a vessel increases as the square of its velocity, it is obvious that the power required to propel her must also be increased in the same ratio. Not so with a steam carriage; as it moves in a fluid eight hundred times rarer than water, the resistance is proportionately dimin-