B.

(All communications should be addressed to "THE LIGHT-HOUSE BOARD.")

Treasury Department,

References None.

Office of the Light-House Board,

Subject Grassy Point Ranges, O. (Manhattan Ranges) Characteristics of lights.

Washington, June 28, 1893.

Lt. Col. J. A. Smith, U. S. A.,

Engineer 10th Light-House District,

Cleveland, Ohio.

R

Sir:

The Light-House Board is in receipt of your joint report of June 21, '93, on the subject of the Grassy Point Ranges, O., and the characteristics of the lights.

As the appropriation for this range is small, it is thought that locomotive head lights will answer quite as good a purpose, and will be far less expensive, than the fifth order lenses, which you mention in your joint report. These head lights are used on the Delaware River for ranges as much as seven and eight miles in length, with very satisfactory results, and one has recently been established in the steeple of St. Philip's Church, Charleston, as a rear light on a range nearly ten miles long. These head lights have the advantage of concentrating their light to a great extent in one direction, instead of scattering it over the horizon to the extent that a fifth order lens

would do.

Respectfully,

O. Sherman

Captain of Engineers, U. S. A.,

Engineer Secretary.