

**A TREATISE ON
LEVELLING,
TOPOGRAPHY, AND
HIGHER SURVEYING**

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A treatise on levelling, topography, and higher surveying by W. M. Gillespie

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W. M. GILLESPIE

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ON
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HIGHER SURVEYING.

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P R E F A C E .

THIS volume, announced several years ago as being in preparation to follow the author's Land Surveying, was left at the time of his death unfinished. In preparing it for the press, the editor has endeavored to carry out, as far as possible, the plan already laid down. A considerable part of the volume has been given by the author, in the form of lectures to the civil engineering classes in Union College, and has been printed from the original manuscript.

The best authors on the subjects treated have been consulted, in order to render the work as complete as possible. The principal authorities are the following: Begat, Bourns, Breton, Chauvenet, Fenwick, Frome, Gurley, Guyot, Jackson Lee, Narrien, Puissant, Salneuve, Simms, Smith, Stephenson, Wiesbach, Williams, and the papers of the United States Coast Survey.

Wherever it has been necessary to refer to the elementary principles of surveying, reference has been made to Gillespie's Land Surveying (designated as L. S. for brevity), and the numbers of the articles referred to are enclosed in parentheses.

UNION COLLEGE,
SCHENECTADY, *June*, 1870.

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