

**AN ELEMENTARY  
TREATISE ON STATICS,  
WITH A BIOGRAPHICAL  
NOTICE OF THE AUTHOR**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649120024

An elementary treatise on statics, with a biographical notice of the author by Gaspard Monge & Woods Baker

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.  
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

[www.triestepublishing.com](http://www.triestepublishing.com)

**GASPARD MONGE & WOODS BAKER**

**AN ELEMENTARY  
TREATISE ON STATICS,  
WITH A BIOGRAPHICAL  
NOTICE OF THE AUTHOR**



*Sylvester Le Baker*  
*from*  
*Woods*

AN

ELEMENTARY TREATISE

ON

STATICS,

BY GASPARD, MONGE.

With a Biographical Notice of the Author.

TRANSLATED FROM THE FRENCH,

BY WOODS BAKER, A. M.

OF THE UNITED STATES COAST SURVEY.

PHILADELPHIA:

E. C. & J. BIDDLE, No. 6 S. FIFTH STREET.

1851.

---

ENTERED according to Act of Congress, in the year 1851, by  
E. C. & J. BIDDLE,  
in the Clerk's Office of the District Court of the United States, in and for the  
Eastern District of Pennsylvania.

---

---

STEREOTYPED BY L. JOHNSON AND CO.  
PHILADELPHIA.  
PRINTED BY T. K. AND P. G. COLLINS.

---

QA821  
M713  
1851  
MATH

PREFACE  
TO THE  
AMERICAN EDITION.

---

A WANT has long been felt in this country of a good elementary treatise on Theoretical Mechanics. The books on that subject, in the English language, are mostly voluminous, and either adapted to the comprehension of those only who have mastered the various branches of analytical mathematics, or composed chiefly of practical and descriptive details. Hence, an accurate knowledge of the general laws, or grand fundamental truths of mechanics, so important to all men, in this eminently practical age and country, and especially to those who have some one of the useful arts as their daily occupation, has hitherto been attainable only by highly educated men.

One of the consequences of the want of a familiar acquaintance with the mechanical laws, upon which all machines, of whatever possible kind, must depend, is the large number of failures of inventions occurring every year. The authors of such attempts generally

have mental ingenuity enough, but, unfortunately, they have not the knowledge necessary to render their contrivances consistent with the laws of Nature, or adapted to attain the proposed ends by the best possible means. Machines, deficient in either of these essential matters, must sooner or later be discarded; and their disappointed inventors have then to regret the loss of their money and time, which proper information would have prevented.

To supply this urgent need, in part, the following little book upon Statics, or the science which treats of the equilibrium of forces applied to solid bodies, has been translated. It has long been known and highly admired by those who are familiar with the scientific literature of France; but to persons who have little or no acquaintance with French authors on such subjects, it may be well to mention, that correct information, so well digested, precise and clear, can be obtained from the literature of no other nation or language.

From the advertisement prefixed to the seventh French edition of this treatise, which has gone through eight editions in France alone, besides several that have been published at Brussels, the following extracts are made:

“The first edition of this work, which appeared in 1786, was specially intended for young candidates



for the Navy; now, it is one of the standard books most generally followed. A correct and clear style, rigorous demonstrations, and well connected propositions, have long caused it to be preferred for instruction in Statics. It is the first book in which there has been collected all that can be demonstrated in Statics synthetically. After having studied Euclid's Geometry, this work will be read without difficulty. Being modelled upon the method of the ancient geometers, it presents very clear ideas upon an abstract science, of which a great number of useful applications are made."

"A profound knowledge of Statics requires the aid of mathematical analysis, that is to say, of Algebra, and the Differential Calculus; but it is as important for beginners to study synthetical statics before analytical statics, as it is fit to precede the study of analytical geometry by that of elementary geometry."

"The discussion of the elementary machines offers to M. Monge an occasion for showing the truth of a principle, which the author of the *Mécanique Analytique* (Lagrange) has rendered so productive, and which is known as the *principle of virtual velocities*."

The treatise on Statics, of Monge, is a necessary introduction to the work of Poisson, which is a large and thorough analytical treatise, composed for the pupils of the Polytechnic School of Paris.

The translator would here acknowledge his obligation to his friends, R. S. McCulloh, Esq., Professor of Natural Philosophy in the College of New Jersey, and J. B. Reynolds, Esq., Engineer and Lecturer on Mechanical Philosophy before the Franklin Institute, Philadelphia, for their kindness in giving him valuable advice and assistance in preparing this work for publication.

*Washington, Nov. 1850.*

## BIOGRAPHICAL NOTICE

OF

## GASPARD MONGE.

---

It may be neither uninteresting nor out of place here, to give a slight sketch of the life of the author of this work, who was one of the most distinguished of the eminent men of science in France at the close of the last century. It is selected from two papers,\* written by his pupils, MM. Brisson and Dupin, and presented by M. Delambre in his *Analysis of the Labors of the Academy of Sciences during the year 1818*.

Gaspard Monge was born in 1746. . . . . His progress was so meritorious as to procure for him the Professorship of Physics in the College of Lyons, the year after he had completed his studies in that institution. . . . . Having gone to Beaune during vacation, he undertook to draw the plan of that city; for which purpose he was obliged to make the necessary instruments. He presented his labor to the rulers of his native city, who compensated the young author as generously as the limited means of the public purse would

---

\* *Notice Historique sur Gaspard Monge*, by M. Brisson; and *Essai Historique sur les Services et les Travaux Scientifiques de G. Monge*, by M. Dupin. See the advertisement to the 7th edition of *Geometrie Descriptive*, par G. Monge, Paris, 1847.