

---

Comitato per la Edizione Nazionale delle Opere di

# FEDERIGO ENRIQUES

---

ENRIQUES, FEDERIGO

## Introduction

in R. Bonola, *Non-Euclidean Geometry; a critical and historical study of its development*, Chicago, 1912, pp. V-VI. (Authorized Engl. translation by H.S. Carslaw)



L'utilizzo di questo documento digitale è consentito liberamente per motivi di ricerca e studio. Non è consentito l'utilizzo dello stesso per motivi commerciali.

---

*Il presente testo è stato digitalizzato nell'ambito del progetto "Edizione nazionale delle opere di Federigo Enriques"*

*promosso dal*

*Ministero per i Beni e le attività Culturali*

*Area 4 - Area Archivi e Biblioteche*

*Direzione Generale per i Beni Librari e gli Istituti Culturali*

per la Matematica

# NON-EUCLIDEAN GEOMETRY

A CRITICAL AND  
HISTORICAL STUDY OF ITS DEVELOPMENT

BY

ROBERTO BONOLA

PROFESSOR IN THE UNIVERSITY OF PAVIA

AUTHORISED ENGLISH TRANSLATION WITH  
ADDITIONAL APPENDICES

BY

H. S. CARSLAW

PROFESSOR IN THE UNIVERSITY OF SYDNEY, N. S. W.

WITH AN INTRODUCTION

BY

FEDERIGO ENRIQUES

PROFESSOR IN THE UNIVERSITY OF BOLOGNA

Dono del Signor



500

CHICAGO

THE OPEN COURT PUBLISHING COMPANY

1912

R. UNIVERSITA' DI BOLOGNA

ISTITUTO MATEMATICO

COPYRIGHT BY  
THE OPEN COURT PUBLISHING COMPANY  
CHICAGO, U. S. A.  
1912  
*All rights reserved*

Printed by W. DRUGULIN, Leipzig, (Germany)

## Introduction.

The translator of this little volume has done me the honour to ask me to write a few lines of introduction. And I do this willingly, not only that I may render homage to the memory of a friend, prematurely torn from life and from science, but also because I am convinced that the work of ROBERTO BONOLA deserves all the interest of the studious. In it, in fact, the young mathematician will find not only a clear exposition of the principles of a theory now classical, but also a critical account of the developments which led to the foundation of the theory in question.

It seems to me that this account, although concerned with a particular field only, might well serve as a model for a history of science, in respect of its accuracy and its breadth of information, and, above all, the sound philosophic spirit that permeates it. The various attempts of successive writers are all duly rated according to their relative importance, and are presented in such a way as to bring out the continuity of the progress of science, and the mode in which the human mind is led through the tangle of partial error to a broader and broader view of truth. This progress does not consist only in the acquisition of fresh knowledge, the prominent place is taken by the clearing up of ideas which it has involved; and it is remarkable with what skill the author of this treatise has elucidated the obscure concepts which have at particular periods of time presented themselves to the eyes of the investigator as obstacles, or causes of confusion. I will cite as an example his lucid analysis of the idea of there

being in the case of Non-Euclidean Geometry, in contrast to Euclidean Geometry, an absolute or natural measure of geometrical magnitude.

The admirable simplicity of the author's treatment, the elementary character of the constructions he employs, the sense of harmony which dominates every part of this little work, are in accordance, not only with the artistic temperament and broad education of the author, but also with the lasting devotion which he bestowed on the Theory of Non-Euclidean Geometry from the very beginning of his scientific career. May his devotion stimulate others to pursue with ideals equally lofty the path of historical and philosophical criticism of the principles of science! Such efforts may be regarded as the most fitting introduction to the study of the high problems of philosophy in general, and subsequently of the theory of the understanding, in the most genuine and profound signification of the term, following the great tradition which was interrupted by the romantic movement of the nineteenth century.

Bologna, October 1<sup>st</sup>, 1911.

**Federigo Enriques.**