

**ESSAYS IN  
SCIENTIFIC  
SYNTHESIS**

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Essays in scientific synthesis by Eugenio Rignano

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**EUGENIO RIGNANO**

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BY  
EUGENIO RIGNANO

EDITOR OF "SCIENTIA," THE INTERNATIONAL REVIEW OF SCIENTIFIC SYNTHESIS

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## PREFACE TO THE ENGLISH EDITION

THE essays composing this volume have already appeared in various periodicals, such as *Scientia*, *La Revue Philosophique*, *La Revue du Mois*, the *Monist*, and also (before the war) in the *Archiv für die gesammte Psychologie* and the *Annalen der Naturphilosophie*. They were revised and published in a French edition in 1912 (Félix Alcan, Paris). Although each of these essays is a study complete in itself, they are connected by one and the same synthetic spirit, and are animated by one and the same object: that of demonstrating the utility in the biological, psychological, and sociological fields of the theorist, who, without having specialized in any particular branch or subdivision of science, may nevertheless bring into those spheres that synthetic and unifying vision which is brought by the theorist-mathematician, with so much success, into the physico-chemical field of science.

It is often said and often repeated that the English are not attracted by broad generalizations, which are too far above reality, and that they cannot, or do not care to, leave the safe ground of facts. Well! it is true that in these essays an attempt is made to reach generalizations of the loftiest scope, and that, too, in those fields in which the need of such generalizations

is most felt, and in which the attempt is fraught with the greatest risk. But in spite of that I venture to hope that they will be as warmly received in the Anglo-Saxon world as elsewhere, because each generalization, vast as it may be, is not only based upon the solid ground of facts, but is even, if I may say so, constituted by those countless facts themselves, arranged in such a way that the generalization in question spontaneously springs to light. In this, too, I have done nothing more than follow the example which has been given to us by some of the most famous English writers.

If, then, the very warm reception awarded to these essays in France may be traced to their theoretical and synthetic character, I may venture to hope that they will be received with an equal warmth in Britain and America, when the solidity and magnitude of their empirical basis is realized. And if, in the eyes also of that Anglo-Saxon public, this book succeeds in demonstrating the aforesaid utility of theoretical investigation even in these fields which are of so purely experimental a character, my efforts will be amply rewarded.

Meanwhile, one agreeable duty remains to be discharged: to tender my best thanks to Mr. Philip E. B. Jourdain, to whose suggestion an English edition is due, and to Mr. W. J. Greenstreet, to whom I am indebted for the English translation.

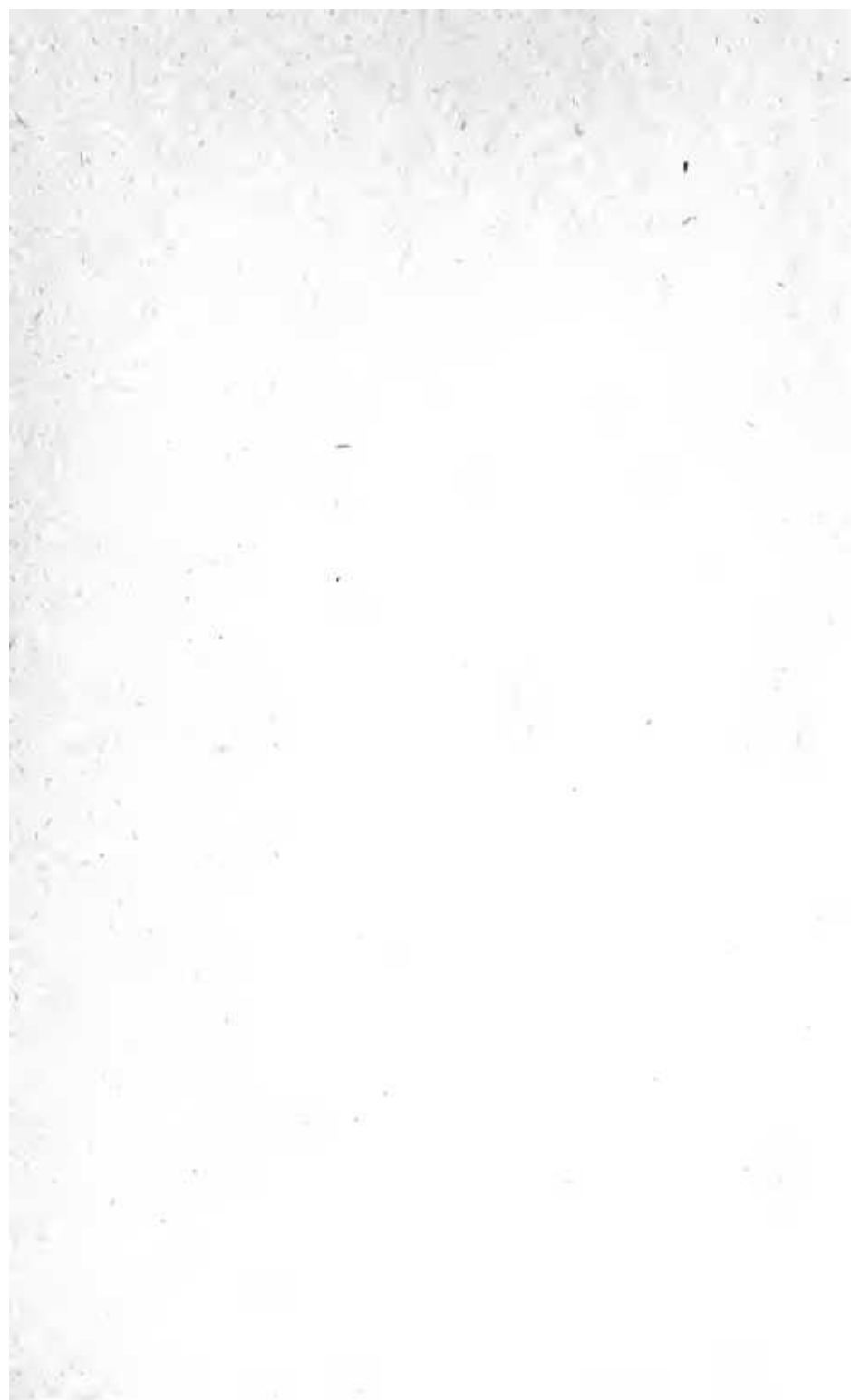
E. R.

MILAN, *July* 1917.



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# ESSAYS IN SCIENTIFIC SYNTHESIS

## I

### THE RÔLE OF THE THEORIST IN THE SCIENCES OF BIOLOGY AND SOCIOLOGY

SUPPOSE a mathematician were to examine all available records of experimental research in physics, and to make himself master of the results reported and described in the literature of the subject. And suppose that he then shut himself up in his study and proceeded to a general consideration of the bearing of those results, in the course of which he modified current conceptions and accepted theories, and broached new theories of his own. Let us further suppose that it were now discovered that this "theorist" had never made an experiment in his life, or that he had never seen, even from a distance, a scientific instrument. The discovery would awaken no comment. Such a carefully finished theory as the mathematician has worked out is made by means of analyses and comparisons, of generalizations and hypotheses, tested and verified by the correspondence of the facts with the results of reasoning. None can question the value and the need of such work, if we are to have a progressive systematization, and are