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G. H. Hardy

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THE 'INFINITÄRCALCÜL' OF
PAUL DU BOIS-REYMOND

by

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PREFACE

THE ideas of Du Bois-Reymond's *Infinitärcalcül* are of great and growing importance in all branches of the theory of functions. With the particular system of notation that he invented, it is, no doubt, quite possible to dispense; but it can hardly be denied that the notation is exceedingly useful, being clear, concise, and expressive in a very high degree. In any case Du Bois-Reymond was a mathematician of such power and originality that it would be a great pity if so much of his best work were allowed to be forgotten.

There is, in Du Bois-Reymond's original memoirs, a good deal that would not be accepted as conclusive by modern analysts. He is also at times exceedingly obscure; his work would beyond doubt have attracted much more attention had it not been for the somewhat repugnant garb in which he was unfortunately wont to clothe his most valuable ideas. I have therefore attempted, in the following pages, to bring the *Infinitärcalcül* up to date, stating explicitly and proving carefully a number of general theorems the truth of which Du Bois-Reymond seems to have tacitly assumed—I may instance in particular the theorem of III. § 2.

I have to thank Messrs J. E. Littlewood and G. N. Watson for their kindness in reading the proof-sheets, and Mr J. Jackson for the numerical results contained in Appendix III.

G. H. H.

TRINITY COLLEGE,

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CONTENTS

	PAGE
I. Introduction	1
II. Scales of infinity in general	7
III. Logarithmico-exponential scales	16
IV. Special problems connected with logarithmico-exponential scales	21
V. Functions which do not conform to any logarithmico-expon- ential scale	26
VI. Differentiation and integration	36
VII. Some developments of Du Bois-Reymond's <i>Infinitärcalcul</i> .	41
APPENDIX I. General Bibliography	47
„ II. A sketch of some applications, with references .	48
„ III. Some numerical results	58