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No. 6

ALGEBRAIC EQUATIONS

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ALGEBRAIC EQUATIONS

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1930

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32 Avenue of the Americas, New York NY 10013-2473, USA

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www.cambridge.org
Information on this title: www.cambridge.org/9781107493612

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First edition 1907
Second edition 1915
Third edition 1930
First published 1930
Re-issued 2015

A catalogue record for this publication is available from the British Library

ISBN 978-1-107-49361-2 Paperback

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PREFACE

THIS tract is intended to give an account of the theory of equations according to the ideas of Galois. The conspicuous merit of this method is that it analyses, so far as exact algebraical processes permit, the set of roots possessed by any given numerical equation. To appreciate it properly it is necessary to bear constantly in mind the difference between equalities in value and identities or equivalences in form; I hope that this has been made sufficiently clear in the text. The method of Abel has not been discussed, because it is neither so clear nor so precise as that of Galois, and the space thus gained has been filled up with examples and illustrations.

More than to any other treatise, I feel indebted to Professor H. Weber's invaluable *Algebra*, where students who are interested in the arithmetical branch of the subject will find a discussion of various types of equations, which, for lack of space, I have been compelled to omit.

I am obliged to Mr Morris Owen, a student of the University College of North Wales, for helping me by verifying some long calculations which had to be made in connexion with Art. 52.

G. B. M.

BANGOR,
August, 1907.

Now that a reprint has been called for, I have taken the opportunity of inserting the condition that a general quintic may be metacyclic in the field of its coefficients. The discovery and calculation of it are due to my colleague, Mr W. E. H. Berwick.

G. B. M.

BANGOR,
July, 1915.

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PREFACE TO THIRD EDITION

IN this edition of Dr Mathews' tract I have adjusted an error in § 51. An account of the resolvents of an irreducible sextic has also been included in §§ 54–59. For this I have drawn freely on a recent paper in the *Proceedings of the London Mathematical Society* and am indebted to the Council for permission to make use of it. A few additional notes and references have also been added.

W. E. H. B.

BANGOR,
November, 1929.

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