concludes with a chapter on the basic problems of biology including finality, irreversibility of differentiation, the origin of life, and evolution. The final chapter of the book is entitled "From animal to man: thought and language". It contains sections on the animal mind, homo faber, homo loquax, the origin or geometry, art, human play, and the structure of societies.

Even a person lacking in the mental equipment necessary for a full understanding and critical appreciation of this book will find its reading intensely stimulating and thought-provoking. As to the difficulties he encounters reading the book, one remembers that James Hutton's important and novel ideas on geology had to await a secondary presentation by John Playfair before they were fully understood and became effective.

A. ERDÉLYI

HUMPHREYS, J. E., *Linear Algebraic Groups* (Springer-Verlag, Berlin, 1975), xv+247 pp., $18.90.

The author's aim in this book has been to write an introductory text on algebraic groups which would be accessible to workers in associated fields, e.g. finite simple groups, infinite linear groups. This is by no means an easy task but has been accomplished very successfully and I would thoroughly recommend the book to anyone wishing to acquire an understanding of the basic ideas of algebraic groups.

The contents of the book are necessarily very similar to those of Borel's "Linear Algebraic Groups" but do include an additional chapter on Representation and Classification of Semisimple Groups. As does Borel, Humphreys begins by giving an account of the algebraic geometry required. The main differences here are that the terminology of schemes is avoided completely and also only an algebraically closed field K is considered. This latter restriction has some obvious disadvantages but does mean that one is able to obtain an intuitive grasp of the basic concepts much more easily. The treatment in this opening chapter is probably the main single feature contributing to the overall success of the book.

In the remaining chapters the treatment is closer to Borel's, the restriction to an algebraically closed field only becoming important in the later chapters. The book ends with a survey of rationality properties but can, of course, give little indication of methods of proof. However, these results can only be appreciated after obtaining the necessary background in the simpler situation and after reaching this stage those who require these results should be able to tackle the more advanced texts on the subject.

In short, this book fits perfectly into the series of Graduate Texts in Mathematics. It does not give a complete survey of the subject and does not give all the latest results which research workers in the field would want. It is a textbook on an advanced topic which many non-specialists will find extremely useful.

M. J. TOMKINSON

GILBERT, R. P. and WEINACHT, R. J. (editors), *Function Theoretic Methods in Differential Equations* (Research Notes in Mathematics, Vol. 8, Pitman Publishing, 1976), iix+309 pp., £9·50.

This book is a collection of papers arising out of an issue of *Applicable Analysis* which was planned for the 85th birthday of N. I. Muskhelishvili. The collection is made particularly valuable by the inclusion of several recent works by members of the Georgian Academy of Science of the U.S.S.R. The book is divided into three main sections: (1) Generalizations of Analytic Function Theory, (2) Integral Operators, and (3) Boundary Value Problems. The first section is concerned with various methods for extending the concept of analyticity, in particular discrete function theory, pseudoanalytic functions in the sense of Bers, and monogenic functions. Of special interest here is the very clear survey paper by Professor Habetha "On the zeros of elliptic systems of first order in the plane". The second section is concerned mainly with singular integral operators, a subject to which Muskhelishvili made many fundamental contributions. Particularly welcome here is the paper by Professor Mikhailov reviewing some of the recent results obtained by him and his co-workers. The final section contains a variety of papers connected with boundary value problems for ordinary differential equations and the solution of integral equations arising in the theory of elasticity. The reviewer found the long paper by S. Christiansen in this section on "Kupradze's functional equations for plane harmonic problems" very interesting. Overall this book should be of considerable interest to those mathematicians either working in the area of function theoretic methods in differential equations or those who are simply interested in finding out what some of the more important lines of research are in this field.

D. L. COLTON

HALL, G. and WATT, J. M. (editors), *Modern Numerical Methods for Ordinary Differential Equations* (Clarendon Press, 1976), 336 pp., £9·75.

This book comprises the proceedings of a summer school held in 1975, organized by numerical analysts from Liverpool and Manchester Universities. The list of contributors is almost a who's-who in British o.d.e. specialists, as well as including a prominent overseas contributor, so the work is certainly authoritative. The style however is generally not too abstract, which is welcome, and the book is coherent, a feature no doubt partly due to the contributors having used a common notation. The book is aimed at final year and postgraduate numerical analysts, and to both users and suppliers of numerical software. I would expect the book to be understandable by anyone with a grasp of calculus, matrices and norms, and an appreciation of the basic properties of o.d.e.'s. Eight chapters are devoted to general initial value problems, and a further six to stiff problems. This is followed by five chapters on boundary value problems and two final chapters on delay equations and Volterra integro-differential equations. Other features include a detailed list of contents, a collection of references for the whole book, and a subject index, although as one might expect there are no questions for the student. The book is well bound; and although it is photo-reproduced, the final effect is not unpleasant, although there are some differences in the style and density of the typescript.

I think the book succeeds best in its appeal to the academic community, being well suited to the preparation of a course (or courses), and to an in-depth appreciation of the subject. I am not so sure that it will appeal to the less sophisticated user, say in an Engineering Department. For instance the basic idea of attempting a finite difference solution is stated in the first twelve lines of text, with no illustration or amplification. Nothing is said, as far as I can see, of the circumstances in which such a solution should be attempted, or about how a high order differential equation might be reposed as a first-order system. Likewise the circumstances under which a stiff system might arise are not explained, except in a general mathematical sense.

There are one or two minor irritations, for instance the author's names do not appear with the chapter headings (they are indexed in a list); and the chapter number only appears on the initial page, so that it is hard to find one's way about the book, and to distinguish between the many equations each referenced by (2.1) for instance. Any savings in the use of photo-reproduction do not seem to be reflected in the price, which will put it beyond what many students can afford. However, these are minor points, and