monograph form as much as possible of the available information on the Kjeldahl procedure; and in this aim he has been very largely successful. The material is arranged in five main sections. After a short historical introduction, there is a chapter (74 pages) dealing with conditions affecting the sulphuric acid digestion of organic material, which considers, among other topics, acid requirements, effect of salt addition, oxidizing agents, catalysts, and reducing agents. The third chapter (50 pages) is concerned with digestion procedures appropriate to various types of material and also deals with sub-micro methods. In the fourth chapter (21 pages), methods for the determination of ammonia, with and without distillation, are considered. Finally, there is a useful classified bibliography of publications covering the entire period since the inception of the method.

The book is well documented with a numerical list of references at the end of each chapter and there is an adequate subject index, but the absence of an author index is, to say the least, irritating. References up to the year 1963 are listed.

Although there are few if any sins of commission, there are a few of omission. For example, the section dealing with procedures for soils is inadequate in that there is no reference to work later than 1937, and important contributions such as those by Alves and Alves in 1952 and Bremner in 1960 are not mentioned either in the text or in the bibliography. The subject of distillation apparatus would seem to merit more extensive treatment in the text than it has received, although it is well covered in the bibliography, but even here no reference could be found to the Hoskins distillation apparatus which is commercially available in the United Kingdom. Furthermore, there is no mention of adaptation of the Kjeldahl procedure to automatic analysis as described by Whitehead in 1961.

The text is clear and concise in style and the printing and binding are admirable. With only minor faults, this book brings together a mass of information on the Kjeldahl method and is undoubtedly worthy of careful examination by all investigators concerned with nitrogen in organic materials. One is, however, left with the thought that an extension of the book to include all methods for the determination of organic nitrogen would make it even more valuable; perhaps the author might consider this suggestion when a second edition becomes due.

R. I. MORRISON

JETS IN IDEAL FLUIDS

Theory of Jets in Ideal Fluids

By M. I. Gurevich. Translated from the Russian by Robert L. Street and Konstantin Zagustin. Pp. xvi+585. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1965.) 120*s*.

ONLY the word 'jets' in the title of *Theory of Jets in Ideal Fluids* needs amplification, the other words need only emphasis. The author uses the term 'jet-flows' to include any flows with free streamlines, flows caused by hydrofoils and separated flows as well as the kinds of flow more ordinarily thought of as jet-flows, that is, flows from orifices. The book is certainly about theoretical investigations and exclusively about ideal fluids. The author's intention is clearly that of being a compiler of work carried out under the heading which is his title, work which is otherwise scattered in many journals. He disclaims, properly, the aim of being encyclopaedic but he does not always make clear the principles on which he has based his choice of material.

The book appeared in Russian in 1961. More than half of it deals with two-dimensional, steady, incompressible flow. This material is therefore a long account of the many ingenious uses of conformal transformation techniques and is very much for the hydrodynamicist rather than the engineer-scientist working with real fluids. After this long section the final four chapters deal, in sequence, with: unsteady flows; jets in compressible fluids (a topic which perhaps just steps outside the narrowest definition of ideal fluids); axisymmetric flows; and a very short section (26 pages) on heavy fluids and surface effects. From the purely visual point of view it is not an easy book to read. It is produced by photographic reproduction of a typescript original, with the result that apart from the use of upper and lower case letters there is no variety whatsoever of type-face. This monotony of visual impact is increased by the minimal use of headings.

The translators claim, as one of the particular strengths of the book, the comparison of theoretical results with experimental data. This claim is, unfortunately, not justified. There is very little indeed of such comparison and therefore very little assessment of the value of the work in relation to the flow of real fluids. This claim, it must be emphasized, is made by the translators in their preface and not (except perhaps by a most oblique implication) by the author in his preface.

All the flows discussed in the book are ones of which the kinematics are those of shear layers in real fluid flows. Of course there is no consideration of shear forces, the fluid by hypothesis being inviscid, but the flows themselves are all examples of flows with steep velocity gradients. It is just in such flows that viscous effects are of great importance. Where, also, the pressure gradient is adverse, the flow of a real fluid may not be even qualitatively similar to that of an ideal fluid. This situation does make the detailed results of questionable value. If the combined effects of pressure forces and shear forces in real fluids result in flows at least qualitatively the same as the flow patterns of the ideal fluids discussed here, then some features of these ideal flow solutions can be of value. More precisely, it can be the case that the ideal fluid flow results may give a satisfactory outer boundary condition to which the shear layer solution of real fluid flows can be matched. Also, for thin shear layers, the prediction of the pressure field may be satisfactory.

There is an extensive bibliography with many Russian references. The proof reading has been rather rough; a quick glance at the list of authors shows Lord Kelvin referred to as 'Lelvin' and Lighthill has been given one of his degrees (B.A.) as his initials.

R. G. TAYLOR

ANALYSIS OF THE FLYSCH

Sedimentary Features of Flysch and Greywackes

By S. Dzulyński and E. K. Walton. (Developments in Sedimentology, Vol. 7.) Pp. viii + 274. (Amsterdam, London and New York: Elsevier Publishing Company, 1965.) 95*s*.

IT is easy to suppose that the authors of *Sedimentary Features of Flysch and Greywackes* had some difficulty in deciding on its title; and the layman could not appreciate that a previous volume in this series entitled *Turbidites* referred to the same group of rocks. This reflects a fundamental difficulty of definition. The name 'greywacke' is a petrographic term, enveloping a specific group of rock-types, which may loosely be defined as muddy sandstones. 'Flysch' describes an association of rock-types, now recognized as having genetic affinities, and as having been deposited in a particular tectonic environment—that of a deep trough in front of an advancing mountain chain. While many flysch sandstones are greywackes, they are not all; nor are greywackes confined to flysch. While a consensus agrees that turbidity currents are responsible for flysch, it must be conceded that this is not proved, that greywackes can originate by other processes, and that turbidity currents can operate in other environments than that envisaged for flysch. Nevertheless it must be admitted that there exists a genetic associa-