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## Preface

This book provides the reader with a blend of high-quality photographs, figures, and accompanied text for the identification of trace fossils in well core and outcrop. Ichnological data are becoming more and more crucial in sedimentological and paleoenvironmental interpretation, not only in the exploration and exploitation of hydrocarbon but also in the characterization of aquifers and in scientific drilling. Key features include the identification and interpretation of trace fossils in core and outcrop, integrated sedimentological–ichnological core logging, and hydrocarbon reservoir characterization. It has been prepared for an audience in the fields of sedimentology, paleontology, and petroleum geoscience from academia (graduate students and professionals) and industry (reservoir geologists).

After an introduction to the study of trace fossils in well core and an outlining of ichnological basics, principles and concepts, this book offers a detailed description and interpretation of 39 commonly occurring ichnogenera together with recurrently associated features such as diffuse bioturbate texture, plant roots and their traces, borings and pseudo-trace fossils. The trace fossils are highlighted by their expression in well core, illustrated with numerous original photographs and supplemented with carefully selected schematic drawings from the literature. This unique information is complemented by examples of trace fossils in outcrop, as well as relevant key figures from existing work.

Each chapter is treated in a consistent manner, stating the ichnogenus name and author in the title, followed by sections on morphology, fill and size; ichnotaxonomy; substrate; appearance in core; similar trace fossils; producers; ethology; depositional environment; ichnofacies; age as well as reservoir quality. This book is rounded off with an extensive list of references for further reading. The material for the book originated from the author's continuous work with trace fossils, chiefly in core, over the last two decades.

The well-core examples selected for this book mainly originate from the Norwegian Continental Shelf, which has been subject to extensive exploration and exploitation for oil and gas over the last half-century, although data from other regions of the world have been added. Based on this, siliciclastic rocks are overrepresented as compared to carbonates, and the majority of material comes from Mesozoic strata; however, all major paleoenvironments are covered. The presented trace fossils and associated features are thus just examples of possible occurrences in core, and other regions or stratigraphical units may return other interesting ichnological data. It is my hope that this book will promote further studies in this field.

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