

Schlumberger: The History of a Technique

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[Aller au sommaire du numéro](#)

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Schlumberger: The History of a Technique

By L.A. Allaud and M.H. Martin
John Wiley and Sons, Toronto,
 333 p., 1977.
 \$22.50

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The history of the Schlumberger brothers and their development of electrical geophysical prospecting methods, provides fascinating reading for anyone engaged in the exploration for hydrocarbons. Conrad Schlumberger began his work in France, prior to the first world war, and initially developed surface mapping techniques, still used by most mining exploration companies. The story unfolds as he progresses from "back yard" experiments to studies of known mineral deposits, and finally to commercial prospecting enterprises, with his brother Marcel, both in France and in the rest of the world. While the rest of the exploration industry stalled during the Great Depression, hard work and mappable results kept the Schlumberger group busy in Russia with contracts that ensured their survival and allowed new developments and techniques to proceed. To this day, surface electrical techniques developed by Schlumberger play an important role in Soviet Petroleum Exploration.

Subsurface (wire line logging) techniques developed in 1927 and after many years of experimentation and field testing, the petroleum industry gained a tool which revolutionized exploration. The Great Depression slowed research and development of these new tools. Spontaneous potential and resistivity devices, measuring relative permeability and formation resistivity respectively, dominated the logging of boreholes until the end of the second World War. When Germany invaded France, Schlumberger moved most of the research group to Houston. The frantic search for petroleum reserves during the second

World War provided the incentive to develop new logging devices. From 1945 to 1957 the first porosity tool was developed. The Gamma-Ray Neutron log allowed shale content and porosity measurements, and combined with the SP-resistivity logs allowed quantitative reservoir calculations to be made for the first time in the borehole without core information.

The sonic tool, first experimented with in 1937, made its entrance to the exploration scene in the late 1950s. As well as being an excellent porosity measuring device, this tool made a tremendous impact on seismic techniques which were becoming more important in the exploration for petroleum.

The advent of sophisticated computer techniques for interpretation and the refinement of early tools has allowed the petroleum industry to make significant strides in the understanding of the distribution of oil and gas accumulations. Many companies have benefitted from the perseverance of the Schlumberger brothers. They have to be acknowledged as the pioneers and leaders of almost all the borehole measurements which we take for granted today. In addition, their role in pioneering surface electrical prospecting techniques is often overlooked but of equal importance.

This book is an attempt to credit them and although the authors succeed, their tedious style provides difficult reading. A natural subdivision of the book could have been a historical account followed by a description of their scientific techniques. However the intermeshing of these two aspects of the story tends to destroy the flow of the historical narrative and limit the technical continuity necessary for its use as a geophysical textbook. I do feel, however, that the relevant aspects of both could be sorted out and used for the basis of an informative and essential part of the education of students in the earth science disciplines.

MS received August 31, 1978

Aspects of Ecology and Zoogeography of Recent and Fossil Ostracoda

Edited by H. Loeffler and D. Danielopol
Dr. W. Junk b.v. Publishers, The Hague, 521 p., 1977.
 Dutch guilders 150,00.

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This book contains all the 51 papers given at the sixth International Symposium on Ostracods (Saalfelden, Salzburg, July 30th to August 8, 1976), which was discussed on the ecology and zoogeography of both living and fossil Ostracoda. This volume consists of five parts. The first ("Introduction", p. 3-14, one paper), deals with the "Zoogeography of Ostracodologists". The second ("General aspects and morphology", p. 15-146) consists of 10 papers; the third ("Ecology and zoogeography", p. 147-308) of 14 papers; the fourth ("Paleoecology and paleozoogeography", p. 309-490) of 15 papers; and the fifth ("Abstracts of the Discussion sessions", p. 491-499) of three Discussion reports.

In part two, three papers discuss ostracod ornamentation as an indicator of different (paleo) ecologic parameters. The paper by A. Rosenfeld and B. Vesper on "The variability of the sieve-pores in recent and fossil species of *Cyprideis torosa* (Jones, 1850) as an indicator for salinity and paleosalinity", points out the relationships between the percentage of "round", "oblong and irregular" pores and salinity, "irregular" pores being predominant in hypersaline waters. The influence of salinity on the ostracod shell was also documented by G. Carbonnel and M. Jacobzone, in their paper "L'ornamentation chez les Loxoconchidae: un moyen de prédiction (paléo)écologique". They demonstrate that cluster and correspondence analyses of the relationships between the ornamentation in some Loxoconchidae and ecological