

The Hans Laubscher volume : an introduction

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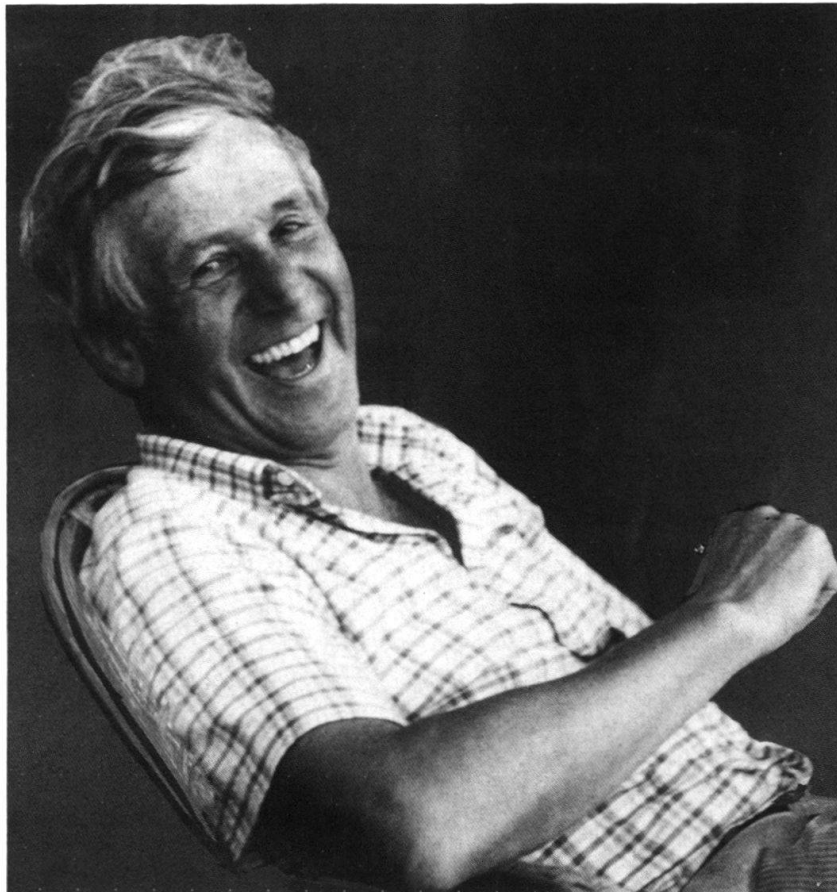
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The Hans Laubscher Volume: An Introduction

By PETER JORDAN¹), THOMAS NOACK¹), STEFAN SCHMID¹) and DANIEL BERNOULLI²)

This special issue of *Eclogae Geologicae Helvetiae* is a collection of papers presented at the *7th Annual Meeting of the Swiss Tectonic Studies Group* held on January 19th and 20th, 1990, in Basel. This meeting was organized to honour Professor Hans P. Laubscher at the occasion of his retreat as a chairman of the Geological-Palaeontological Institute of Basel University.

Born on January 11th, 1924, in MuttENZ near Basel, Hans Laubscher obtained his PhD degree in Geology at Basel University with a detailed analysis of the complex Caquerelle structure in the central Jura Mountains. At this time he was only 23 years



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old. Subsequently, ten years of work with an oil company in Venezuela brought him in contact with the geophysical and theoretical aspects of geological phenomena, as well as with the practical side of geological research. Back in Basel in 1958, he started with a quantitative analysis of the Jura folds and became one of the leading scientists in the field of the application of material balance in tectonics. His meticulous field work and his analytical skill led to the break-through of the famous "Fernschub"-concept for the Jura Mountains, the motion of the far-reaching decollement of the sedimentary cover independent of local basement tectonics. Field observations and experimental approaches convinced him that physical laws have to be thought to an end in order to find the constraints and implications of orogenic processes. So, while being a Guest Professor at the University of Illinois, he became an early advocat of Plate Tectonics, and, back home again, he was the first to apply this revolutionary concept to the Alpine orogeny. He studied the palaeotectonic and palinspastic aspects of the Alpine belts of the Mediterranean and turned then to the Ivrea body and the Periadriatic line, as he believed "that not understanding the Insubric line meant not understanding the Alps" (LAUBSCHER 1988b). In the following years, he established the concept of far-travelling thrust sheets in the Southern Alps. Being involved in recent deep seismic campaigns through the Alps, Hans Laubscher became one of the most outstanding experts on the kinematics of the deep crustal structures in the Alps and on three-dimensional material balance in the Alpine system.

In the autumn of 1989, Hans Laubscher retreated as Chairman of the Geological-Palaeontological Institute, a position which he held since 1966.

The 17 papers of this volume cover almost every aspect of Hans Laubscher's field of interest, theoretical and regional, unfortunately with one important exception: the geological interpretation of deep seismic data (cf. SCHWEIZERISCHE ARBEITSGRUPPE FÜR REFLEXIONSSEISMIK 1988, LAUBSCHER 1990a, 1990d, 1990e).

The first three papers (SUPPE & MEDWEDEFF, GROSHONG, KELLER) are concerned with theoretical aspects of the geometry of folds and extensional structures in the brittle field (cf. LAUBSCHER 1977a, 1977b, 1983a). The four regional papers concerning the Jura Mountains proper discuss three-dimensional kinematic aspects (BITTERLI), the influence of inherited structures on later thrusts (GONZALEZ), ductile deformation in the basal evaporite decollement levels (JORDAN et al.) and changes of the stress field during Jura overthrusting (TSCHANZ) (cf. LAUBSCHER 1965; 1973c and 1986a; 1976b and 1984b, and 1980 and 1987c respectively). The Jura as part of the Alpine orogeny is discussed by BURKHARD (cf. LAUBSCHER 1961a), whereas PFIFFNER compares the mechanisms of folding in the Jura and the Helvetic (cf. LAUBSCHER 1976). The following papers (STECK, ZINGG & HUNZIKER) are concerned with the Pennine Alps and the Periadriatic line, and the collisional and post-collisional history of Africa and Europe respectively (cf. LAUBSCHER 1970b, 1983c, 1984a, 1988c). Four papers cover different aspects of polyphase, extensional and compressional kinematics in the Southern Alps (SCHUMACHER, SCHÖNBORN, CASTELLARIN & PICOTTI, DOGLIONI & SIORPAES) (cf. LAUBSCHER 1985a, 1990b, 1990d). A first attempt to construct a balanced cross-section through the Austroalpine nappes of Tyrol is made by EISBACHER et al. (e.g. LAUBSCHER 1989). The final paper (THOMAS) is concerned with one of Hans Laubscher's favourite playgrounds: unraveling complex three-dimensional kinematics (cf. LAUBSCHER 1958, 1987b).

The “Hans Laubscher Meeting” was organized by the staff and the students of the Geological-Palaeontological Institute of Basel University. We like to thank all of them for their enthusiastic cooperation. Financial support by the Swiss Academy of Natural Sciences, the University of Basel, the Verein Basler Geologie-Studierender and the Nagra is acknowledged. The present volume has been made possible due to the generous financial support by the Dr. Joachim de Giacomi Foundation of the Swiss Academy of Natural Sciences and the Freiwillige Akademische Gesellschaft, Basel. Finally, we like to thank all authors for their contribution and all referees for their meticulous reviews.

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