

## Dedication

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to

**ALEXANDER TOLLMANN**

**1928-2007**

The present meeting „Correlating Cretaceous Micro- and Macrofossils“ is dedicated to Prof. Dr. Alexander TOLLMANN (1928 – 2007), one of Austria's most prominent earth scientists of the last century. At a first view it seems astonishing to devote a meeting treating correlation-problems of the Cretaceous time period to a person whose major scientific work focused on tectonic problems of the Eastern

Alps. And indeed, among the impressive total scope of TOLLMANN's publications, we find only a minor amount articles dealing directly with stratigraphic problems of the Cretaceous time period. However, they are important enough to deserve discussion. TOLLMANN's contributions to this subject concern the following thematic fields:

- Revision of the Lithostratigraphic Nomenclature of the Northalpine units
- Mesozoic
- Exact timing of Cretaceous orogenetic events
- Contributions to Cretaceous micropaleontology

### **Biographic remarks**

Born in Vienna (27.6.1928) during hard times, TOLLMANN started his studies at the University of Vienna immediately after World War II. In 1953 he finished his studies with a PhD in geology *sub auspiciis praesidentis*. He continued his professional career at the Institute of Geology (Vienna University), where he became a recognized academic lecturer in 1962. Ten years later he obtained the very prestigious chair for geology at the same university which he held until 1996, when he became emeritus.

As well trained young man TOLLMANN mapped enormous areas in high mountainous regions of the Central Alps and the Northern Calcareous Alps. The insights gained from this demanding field work enabled him to write the pioneering book “Ostalpensynthese” (= Synthesis of the Eastern Alps) in 1963. The new ideas he introduced in this landmark paper caused numerous long lasting vigorous discussions. Between 1973 – 1986, TOLLMANN wrote six thick monographic books with reference to the geology of the Northern Calcareous Alps and the geology of Austria, all

together more than 4000 pages! A detailed summary of TOLLMANN's further scientific publications, more than 200 single papers – some of them book-size – are listed in the recently published memorial address (LEIN 2007).

## **TOLLMANN's contributions to Cretaceous stratigraphy**

### **1. Revision of the Lithostratigraphic Nomenclature**

In the sixties and seventies of the last century a lot of non-Austrian earth scientists worked in the Alps. Many of them were unfamiliar with the well established regional lithostratigraphic nomenclature. By using pure descriptive lithologic terms instead, they introduced considerable academic confusion. TOLLMANN was one of the first who opposed this detrimental practice and the incorrect use of stratigraphic terms. In many controversial discussions concerning lithostratigraphic nomenclature TOLLMANN often disarmed his opponents at least by asking "How can you say this? Have you ever been at the type locality (of the discussed formation)?" Most of them had not.

The result of years of careful studies was a monographic analysis of the Mesozoic sedimentary sequences of the Northern Calcareous Alps. Regarding this topic, this book was and still is unique. 62 out of the 580 pages of this seminal work are about the description of Cretaceous lithostratigraphic units. Beside this compilation TOLLMANN also made some original contributions to Cretaceous micropaleontology and sedimentology (e.g. TOLLMANN, 1960; FAUPL & TOLLMANN 1978).

### **2. Timing of Cretaceous orogenic events**

Soon after the introduction of the concept of nappe tectonics, the idea of world wide simultaneous orogenic events originated. STILLE (1924) was the first who worked out this idea systematically. This concept, first widely accepted, was brought into discredit later on when in some cases the proposed synchronism of certain tectonic events turned out to be wrong.

The revision of the stepwise tectonic evolution of the Alps with its culmination in Cretaceous times motivated TOLLMANN to investigate the timing of Alpine mountain building processes again in-depth. The results of this research, earned from the field evidences in the Eastern Alps and Western Carpathians, was a reanimation of the old STILLE-concept (TOLLMANN 1966). TOLLMANN also coined two new terms: the **Austroalpine phase** (TOLLMANN 1963:193, 1966:18) denoting the first signs of orogenic disturbances in the sedimentary record in the middle part of the Early Cretaceous; the **Mediterranean phase** (1964:86, 1966:69), marking the short stratigraphic gap caused by the "pregosauic" nappe tectonics.

### **3. TOLLMANN's contributions to Cretaceous micropaleontology**

TOLLMANN's later fame as renowned expert at regional tectonics almost make us forget his early work when he had a strong paleontological lop-side. For his PhD field-work in Neogene soft sediments of the Vienna Basin it was necessary for him to obtain practical experience in micropaleontology. Therefore his first publications were micropaleontological studies treating the stratigraphic evolution of Miocene foraminifers.

Later on, already fully involved in emotionally and academically trying struggles concerning his new concept of the tectonic evolution of the

Eastern Alps, TOLLMANN tried to obtain the award of a recognized academic lecturer of paleontology besides his university lectureship for geology. For this purpose he wrote a monographic description (TOLLMANN 1960) of a very rich Upper Coniacian microfauna from the Gosau-Group of the Aussee-Weissenbach

valley, which he had detected when mapping this region. In this paper TOLLMANN described two foraminifer's species as new. The holotype of one of them, of ***Neoflabellina laterecompressa*** (Fig.1) is deposited in the micropaleontological collection of the National Museum of Natural History in Vienna.

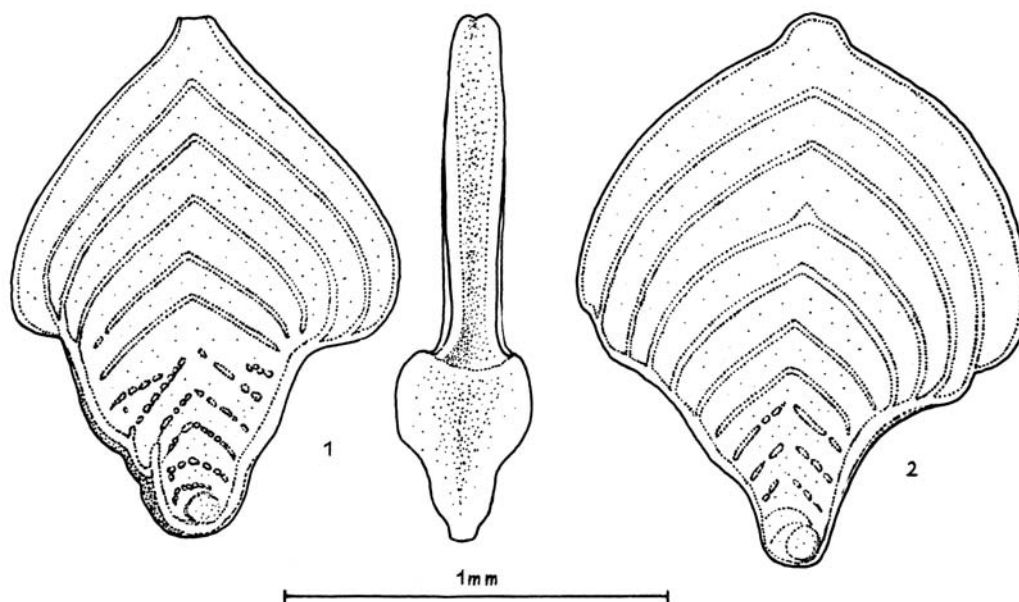


Fig. 1. *Neoflabellina laterecompressa* TOLLMANN

Years later TOLLMANN was again occupied with the genus *Neoflabellina*. Together with his wife Edith KRISTAN-TOLLMANN (1934-1995), a well known micropaleontologist, he described some additional new species (*N.hanzlikovae*, *N.extensa* and *N.ramosa*) from the Gosau-basin of Gams (KRISTAN-TOLLMANN & TOLLMANN 1976).

The most exciting discovery both made while comparing Upper Cretaceous foraminifera from Europe and North-America faunas (KRISTAN-TOLLMANN & TOLLMANN 1990). Their finding of the benthic foraminifer *Neoflabellina*

*laterecompressa*, first described in Europe and formerly considered as an “endemic” taxon, in Cretaceous sediments of Texas revealed a transatlantic spreading of rare benthonic Cretaceous foraminifers. Many of them had been described under different names on both sides of the Atlantic Ocean before. A nomenclatural revision as proposed by TOLLMANN and his wife therefore is an urgent demand for the future.

Richard LEIN

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