

History of geologic research in the Salzkammergut

By

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The stratigraphy of the Alpine Triassic mainly is based on the publications by F. v. HAUER (1853) and subsequent papers by E. v. MOJSISOVICS (1873–1902): 1892: Hallstatt Zone. Presently a revision of stratigraphic type localities and ammonites is carried out by L. KRYSSTYN and E. T. TOZER caused by the discovery of G. SCHÄFFER and W. SCHLAGER (e. g. 1969), that most of the fossil accumulations are either due to synsedimentary tectonic fissures or to faunal condensation, the latter caused by periods of minimum sedimentation. The tectonic fissures show evidence of repeated opening (W. SCHLAGER, 1969). Some of the fissures cut through the whole sequence of Hallstatt Limestone (e. g. fissures with Norian sediments in Anisian Hallstatt Limestone!).

Maybe as a consequence of the beautiful countryside as well as of the most complicated geology of Salzkammergut area the „Hallstatt-Zone“ became a „punching-ball“ for generations of sediment geologists and of tectonic speculations. In the early phase of research (between approximately 1802 – marked by L. v. BUCH's monography – and 1903, the year of the IX. International Geological Congress in Vienna) stratigraphic problems of the Alpine Mesozoic were the main goal, but also considerations regarding the bathymetric conditions, the geometry of depositional environments and lithogenesis were made. In the years 1797–1799 L. v. BUCH travelled jointly with A. v. HUMBOLDT in the Salzkammergut area (L. v. BUCH, op. cit.). The first results of the investigations of the red colour of the limestones, of the age and environmental conditions of the salt deposits and of the origin of stratification were published. The unrivalled genius of the Austrian geologists E. SUESS (1888) gave already an explanation for the bedding resp. cyclicity of Dachstein Limestone, i. e. cycle emerging and subsequent weathering of the bedding planes – a simplified model for the „Lofer cyclothems“ (A. G. FISCHER, 1964). A study by E. v. MOJSISOVICS (1874) represents an early attempt of facies zoning in Salzkammergut area. E. v. MOJSISOVICS (1903) in one of his last papers summarizes his ideas of the paleogeographic position of Hallstatt zone. He postulates an in situ position (sediments of Hallstatt type deposited in channels („Hallstätter Kanäle“) cutting through the reefoid Dachstein Limestone barrier resp. platform). One year later the fateful paper by E. HAUG & M. LUGEON (1904) marks a fundamental break through in the history of geological research in Salzkammergut area: the concept of nappetectonics was established. In the sequel the „nappists“ entered into competition with the „autochthonists“. L. KOBER and his school (e. g. W. MEDWENITSCH, A. TOLLMANN up to a few years ago, and others) plead for an extreme nappism. On the other hand C. DIENER, K. LEUCHS, F. TRAUTH and in modern time H. ZANKL and especially W. SCHLAGER and his group followed the autochthonous concept of E. v. MOJSISOVICS (1903) in modified versions. The present author tends to accept this concept, too.

It would exceed the scope of this paper to enumerate all the famous people doing research in this area in the past century and the interested reader can refer to the book by A. TOLLMANN (1976) for this purpose or to the short review by W. JANOSCHEK & A. MATURA (1980) respectively.

References

- BUCH, L. v. (1802): Geognostische Beobachtungen auf Reisen durch Deutschland und Italien. Vol. 1, 320 p., (Haude & Spener), Berlin.
- FLÜGEL, E., LOBITZER, H., SCHÄFFER, P. & ZANKL, H. (1975): Mesozoic shallow and deeper-water facies in the Northern Limestone Alps. – In: FLÜGEL, E.: International Symposium on Fossil Algae. – Guidebook, 55–146, Erlangen.
- HAUER, F. v. (1853): Über die Gliederung der Trias-, Lias- und Juragebilde in den nordöstlichen Alpen. – Jb. Geol. Reichsanst., 4, 715–784, Wien.
- HAUG, E. & LUGEON, M. (1904): Sur l'existence, dans le Salzkammergut, des quatre nappes de charriage superposées. – C. R. Acad. Sci. Paris, 130, Paris.
- JANOSCHEK, W. R. & MATURA, A. (1980): Outline of the Geology of Austria. – Abhandl. Geol. Bundesanst., 34, Wien (in print).
- KITTL, E. (1903): Geologische Exkursionen im Salzkammergut (Umgebung von Ischl, Hallstatt und Aussee). – Guidebook 9. Internat. Geol. Congr., No. 4, 118 p., Wien.
- KOBER, L. (1912): Der Deckenbau der östlichen Nordalpen. – Denkschr. Akad. Wiss., math.-naturwiss. Kl., 88, 345–396, Wien.

- KRYSTYN, L. (1974): Probleme der biostratigraphischen Gliederung der Alpin-Mediterranen Obertrias. – Schriftenr. erdwiss. Kommiss. Österr. Akad. Wiss., 2, 137–144, Wien.
- & SCHÖLLNBERGER, W. (1972): Die Hallstätter Trias des Salzkammergutes. – Guidebook 42. Jahresvers. Paläont. Ges., 61–106, Graz.
- MOJSISOVICS, E. v. (1869): Über die Gliederung der oberen Triasbildungen der östlichen Alpen. – Jb. Geol. Reichsanst., 19, No. 1, 91–150, Wien.
- (1873–1902): Das Gebirge um Hallstatt. 1. Theil. Die Mollusken-Faunen der Zlambach- und Hallstätter Schichten. Suppl.: Die Cephalopoden der Hallstätter Kalke. – Abh. Geol. Reichsanst., 6, 3 parts, 356 p., Wien.
- (1874): Faunengebiete und Faciesgebilde der Trias-Periode in den Ost-Alpen. – Jb. Geol. Reichsanst., 24, 81–134, Wien.
- (1903): Übersicht der geologischen Verhältnisse des Salzkammergutes. – In: E. SUESS (Ed.): Bau und Bild Österreichs, 383–391, Wien.
- RIECHE, J. (1971): Die Hallstätter Kalke der Berchtesgadener Alpen. – Dissertation Techn. Univ. Berlin, 173 p., Berlin.
- SCHÄFFER, G., VAN HUSEN, D., DRAXLER, I. & LOBITZER, H. (1976): Arbeitstagung der Geologischen Bundesanstalt: Blatt 96 Bad Ischl, Salzkammergut. – 48 p., Wien.
- SCHLAGER, W. (1969): Das Zusammenwirken von Sedimentation und Bruchtektonik in den triadischen Hallstätterkalken der Ostalpen. – Geol. Rdsch., 59, 289–308, Stuttgart.
- SUESS, E. (1888): Das Antlitz der Erde. Vol. 2. – 704 p., (F. Tempsky), Wien.
- TOLLMANN, A. (1976): Monographie der Nördlichen Kalkalpen. Teil II: Analyse des klassischen nordalpinen Mesozoikums. Stratigraphie, Fauna und Fazies der Nördlichen Kalkalpen. – 580 p., (F. Deuticke) Wien.
- TOZER, E. T. (1971): Triassic Time and Ammonoids: Problems and Proposals. – Canadian J. Earth Sci., 8, No. 8, 989–1031, Ottawa.

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