**Zeitschrift:** Eclogae Geologicae Helvetiae

**Herausgeber:** Schweizerische Geologische Gesellschaft

**Band:** 79 (1986)

**Heft:** 2

**Artikel:** Mineralostratigraphy, litho- and biostratigraphy combined in correlation of the Oxfordian (Late Jurassic) formations of the Swiss Jura range

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**Inhaltsverzeichnis**

**DOI:** https://doi.org/10.5169/seals-165840

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## 1. Introduction

### *1.1 Previous work*

Stratigraphic work in the Swiss Jura range began before 1820. MERIAN (1821) correlated the Early and Middle Oxfordian marl-clays (Renggeri Member and Terrain à Chailles Member) of northwestern Switzerland with the Effingen Member in canton Aargau, and the coral limestones of the St-Ursanne Formation in the "basinal" realm of canton Aargau (see Pl. 1A). GRESSLY (1838–41) carried out extensive geological mapping in canton Solothurn and in adjacent areas. Close observation of the coral bioherms and the coeval fine-grained sediments of the St-Ursanne Formation at La Caquerelle near St-Ursanne inspired this author to introduce the concept of facies into the scientific literature. Ironically, the great effort in mapping, practical use of the new stratigraphic method, and ample fossil collecting did not allow this distinguished geologist to arrive, in his own opinion, at a satisfactory time correlation between the deposits from shallow water and those of deeper marine origin. The progress of paleontology as pioneered by OPPEL (1856–8, 1862–3) in the Oxfordian of this region led to an important revision of Merian's correlation. On the evidence of ammonites, OPPEL (1857, p. 626) recognized that the thick Renggeri Member and part of the Terrain à Chailles Member in the northwest thin out to the southeast and grade into what is now called the Schellenbrücke Bed (Table 2 and Pl. 1A).This is a ferruginous marly limestone with iron ooids. The thickness of the bed is normally less than 10 cm. ROLLIER (1888, p. 87) correlated the Liesberg Member with the Birmenstorf Member, and the St-Ursanne Formation with the Effingen and Geissberg Members. He had no ammonites from the platform deposits to support his assertion. Later, ROLLIER (1911, Fig. 54) reaffirmed his view, and it remained unchallenged until 1967, when BOLLIGER & BURRI proposed another correlation which was based on the distribution of detrital quartz. The significance of the important paleontological work by de Loriol in relation to Rollier's correlation was not appreciated by most stratigraphic workers, perhaps because de Loriol paid so little attention to stratigraphy. In a short review, ARKELL (1956, p. 95–96) threw some light on the stratigraphic