

## The history of conodont research in the Italian Carnic Alps

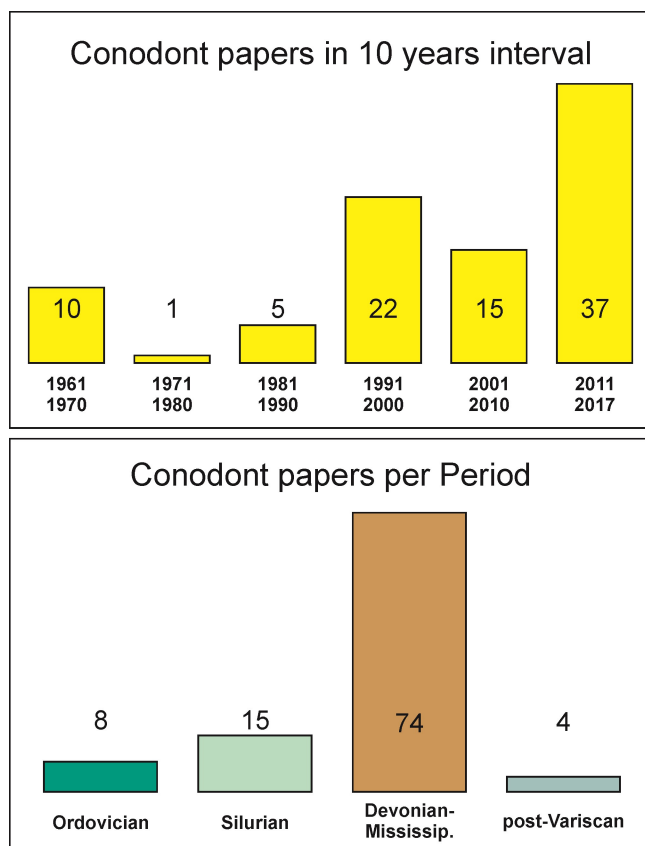
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The conodont studies in the Italian Carnic Alps started in the mid 1960 with pioneer work of Serpagli from the University of Modena. Initially, Serpagli worked with Greco and their research focused mainly on the Ordovician sequences. The success of Serpagli findings lead to a great interest in conodonts among students of the “Bologna School”, traditionally working on the Carnic Alps since the beginning of the twentieth century. The example of Serpagli was therefore immediately followed by studies carried out by Manzoni, Manara, and Vai. At the same time, Serpagli moved his researches in Sardinia, as he was more or less friendly warned that the Palaeozoic of the Carnic Alps was matter of Bologna. Historically the cities of Bologna and Modena have a tradition of battle on trivial matter as the theft of a bucket. The forced renounce of Serpagli is an example of how history can badly influence present behaviour.

At that time the technique to extract conodonts from limestones was leaching in a solution of acetic acid and the insoluble residues was then separated into light and heavy fractions using bromoform. Only in the late 1980, after the discovery of the connection between the use of bromoform and cancer, in the conodont laboratory of Bologna this dangerous substance was substitute with a solution of sodium polytungstate.



**Figure 1.** Statistical data of conodont papers from the Italian Carnic Alps.

Manzoni and most of his followers focused their conodont research mainly on the Devonian and lower Carboniferous sequences, especially on the pelagic limestone that provided rich conodont associations. Since the first researches carried by students from Bologna the conodont study has not been limited to the Italian side of the Carnic Alps, but sometimes across the border or in Austria (see Manara & Vai, 1970). Despite these scattered “incursion” a real collaboration with the Austrian colleagues did not started until the late 1990 when Ferretti started to study Ordovician conodonts in collaboration with colleagues of the Geologische Bundesanstalt. This collaboration was limited to stratigraphic sections located in Austria. The decennial lack of collaboration between Bologna and Modena was overtaken only in the late 1990 when students of both cities were involved in the organization of the Seventh International Conodont Symposium. The Symposium represented a dividing line between past and future, and lead to new fruitful collaboration.

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Another demarcation line, the invisible country border between Austria and Italy, so often crossed when walking on mountain paths, was at last overstepped during the last ten years thanks to a joint project leading to the formalization of all the Pre-Variscan lithostratigraphic units previously named with different informal names on both sides of the border. In that contest conodonts played an important role, being the best tool for providing the age of the various units. Hopefully the recent results will not be the only products of a flourishing partnership.

At the end conodonts become the main “trait d’union” between cities and countries, at least in the small part of world constituting the beautiful Carnic Alps.

The reference list includes the main conodont-related publications based on stratigraphic sections located on the Italian side of the Carnic Alps.

## **Variscan**

### ***Ordovician***

Serpagli & Greco (1965a, 1965b), Serpagli (1967), Manara & Vai (1970), Vai & Spalletta (1980), Bagnoli et al. (1998), Brime et al. (2003, 2008).

### ***Silurian***

Manzoni (1965), Serpagli & Greco (1965a), Herzog (1988), Brime et al. (2003, 2008), Corradini et al. (2003), Corradini (2008), Corrigan & Corradini (2009), Corradini & Corrigan (2010, 2012), Corradini et al. (2010, 2016a), Corrigan (2011), Piras et al. (2012, 2013).

### ***Devonian and lower Carboniferous (Mississippian)***

Forti & Nocchi (1963), Ferrari & Vai (1966,1973), Manzoni (1966, 1968), Perri & Spalletta (1981a, 1981b, 1990, 1991, 1998a, 1998b, 1998c, 1998d, 1998e, 1998f, 2000, 2001), Spalletta (1981), Spalletta et al. (1983, 1998a, 1998b, 2011, 2015a, 2015b, 2015c, 2015d, 2015e, 2015f, 2017), Spalletta & Perri (1994, 1998a, 1998b, 1998c,1998d, 1998e, 2001), Perri et al. (1998), Pondrelli (1998, 2002), Brime et al. (2003, 2008), Corradini et al. (2005, 2010, 2011, 2012, 2013, 2015a, 2015b, 2015c, 2015d, 2016a, 2016b, 2017), Kaiser (2005), Corradini (2008), Corrigan & Corradini (2009), Kaiser et al. (2009), Corradini & Corrigan (2010, 2012), Corrigan (2011), Corrigan et al. (2011, 2012), Kido et al. (2015), Mossoni et al. (2013), Mossoni (2014), Pas et al. (2014), Pondrelli et al. (2015a, 2015b, 2015c, 2015d, 2015e, 2015f), Suttner et al. (2017).

## **Post-Variscan**

### ***Upper Carboniferous (Pennsylvanian) to Middle Triassic***

Luppold (1994), Nicora & Rizzi (1998), Brime et al. (2003, 2008).

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