

In the Devonian period (419 to 358 million of years ago) many animals unlike those known today lived in the oceans. The most common sessile animals were not bivalves (as it is now) but brachiopods (lampshells), today a relictual phylum (400 species worldwide) possessing a bivalved shell too but having a very different anatomy. Rich fossil brachiopod faunas are known from the area of the present Holy Cross Mountains (central Poland), situated then in the equatorial zone and covered by the sea.

In many parts of the world in the middle part of the Devonian (Givetian stage, so called because international community of geologists decided that the world reference for rocks of that time slice should be in the environs of the French town of Givet) an abrupt replacement of faunas took place. This is called the Taghanic event from a place name in the eastern North America where the fullest description of this phenomenon was possible. Preliminary results show that brachiopod faunas from the area of the present Holy Cross Mountains were developing continuously during the entire Givetian, so no Taghanic event took place there. This would be an exception at world's scale.

The aim of the present project is to confirm this hypothesis. Research will consist first in synthesising all available data on Middle (and earliest Late) Devonian brachiopods from the present Holy Cross Mts., including excavations in order to study incompletely known faunas. Then, multiple comparisons with faunas of the same age from other areas (especially Morocco and North America) will be effectuated. Comparisons will use mathematical (statistic) methods in order to confirm that the observed phenomena are significant (not contingent).

Fossil faunas are an important element of natural heritage. Some of the studied outcrops might become geotouristic sites and thus possess a general value for the society as a whole and even be of economic significance (development of tourism).