

## Attractive geotourism sites in the area of the Ždiar village (Tatra Mts. region, Slovakia)

LUBOMÍR ŠTRBA and MICHAELA KURTOVÁ

*Institute of Geotourism, Technical University of Košice, Letná 9, 042 00, Košice, Slovakia  
(E-mail: lubomir.strba@tuke.sk, michaela.kurtova@tuke.sk)*

### ABSTRACT

When talking about “classic tourism”, most people have a clear image of it, often including accommodation, tourist trails, and a nice view of the countryside. Discussion opens when considering relatively new forms of tourism such as geotourism. Despite the efforts of several institutions, associations and individuals, geotourism is relatively poorly developed in Slovakia and most tourists know very little about this form of tourism. This work is focused on significant and relatively easily accessible geosites, e.g. Tokáreň hill, sandstone quarry in the Bachledova valley, flysch sediments of the Central Carpathian Paleogene Basin etc., which can enrich the offer of tourist attractions in the Ždiar village. Individual sites are connected to the continuous trail presenting possible alternative to the current offer of tourist trails in this area.

**Key words:** geosite, Ždiar, Tatra Mts.

### INTRODUCTION

The Ždiar village is situated in the heart of beautiful and intact nature with friendly and hospitable local people and pleasant atmosphere dominating in the village, in the north of Slovakia near Slovakia-Poland border area, east from the Tatra Mts. (Fig. 1). This all ingratiates oneself with every tourist. The Ždiar village is a “living” example of natural and cultural monuments and heritage. The location of the village predestinates the tourism development.

From tourism point of view, the village and its surroundings are very attractive with many options of touristic activities throughout the whole year. Therefore, this area is often visited by both domestic and foreign tourists, which can e.g. use many hiking trails including the only available educational trail within the whole Belianske Tatry Mts. – hiking trail Monkova dolina (valley) – Kopské sedlo (saddle). The visit of Ždiar is also connected to cultural events, e.g. Goral Folklore Festival.

Besides generally known attractions, the village and its surroundings also offer other, rarely known, sites which have undisputed potential, mainly in the field of geotourism. The article is focused on some of such localities. Nowadays, similar localities are the subject of interest of many researchers, not only in the field of geotourism (e.g. Baláž & Lanskiy, 2010; Compl'ová, 2010; Dziegiel, 2011; Henriques et al., 2012; Kvačič & Peljhan, 2010; Labus, 2012; Rybár et al., 2010; Zglobicki & Baran-Zglobicka, 2013)

### TOURISM IN ŽDIAR

Since 1927, foreign tourists started to visit Ždiar (tab. 1). Ždiar folk costumes, dance and unique natural scenery were the main baits. In 1920s and 1930s, the main purpose of tourist visits was the village's propagation at home and abroad. It was mentioned by the Czech photographer and director Karol Plicka in his movie “Earth

sings” (original name in Slovak: “Zem spieva”).

In 1932, it was necessary to refuse 70 guests due to the low capacity. People from Ždiar realized that they have great opportunity to earn money from tourism and therefore, they started to build guest houses (tab. 2).

In 1970s and 1980s, the village was one of the biggest tourist centers in the Slovak

part of the Tatras. Due to its accommodation capacities, Ždiar was named as “the biggest hotel in Tatras”.

It is necessary to point out that data in the table 2 represent only a fragment of the real number of accommodation facilities in the Ždiar village. Many people drive their business illegally and offer private accommodation without any official evidence (Kollárová, 2000).

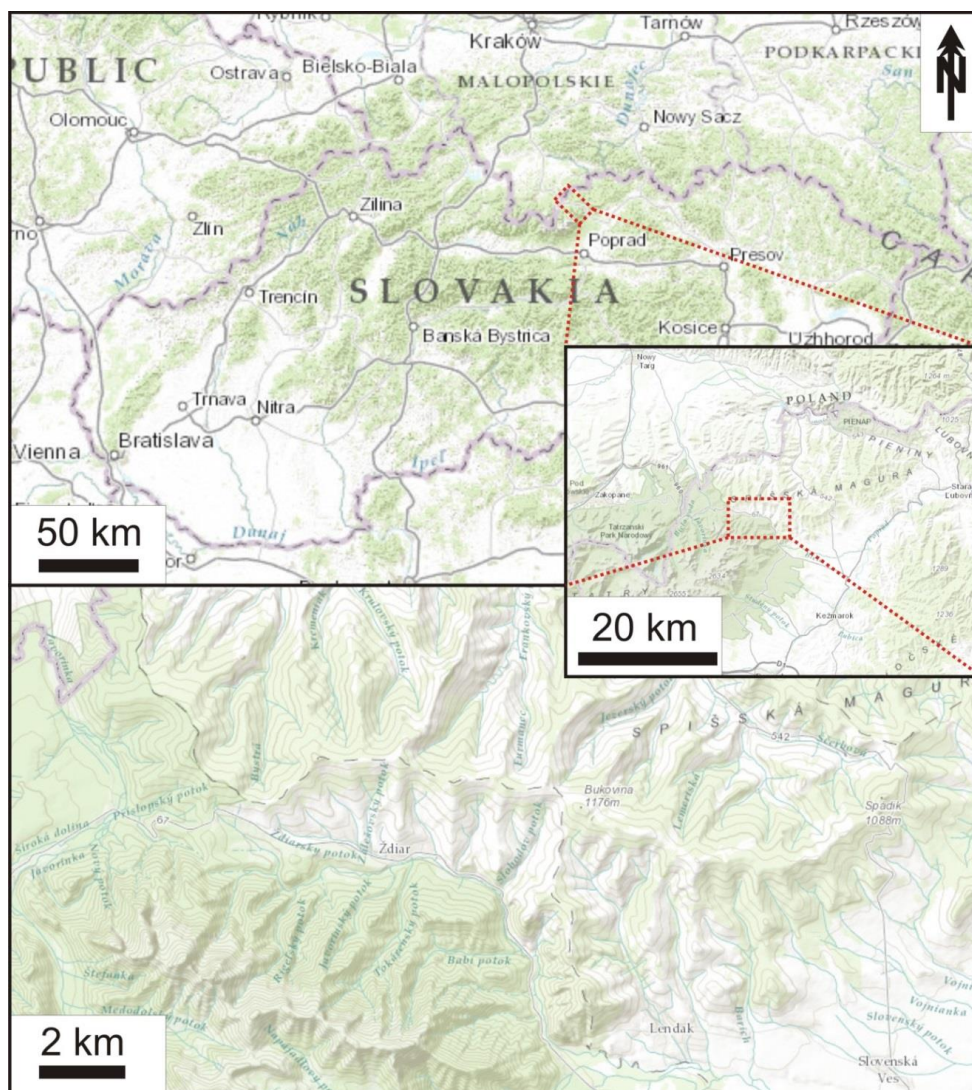


Fig. 1 Location of the study area of the Ždiar village and its surroundings (www.5, modified)

Tab. 1 Number of first foreign tourists in Ždiar

Year	Number of visitors
1928	5
1930	30
1932	100

Source: after Kollárová (2000)

**Tab. 2** Overview of officially led accommodation facilities in Ždiar

Accommodation category	Number
Hotels	2
Guest house	29
Tourist cottage	17
Tourist lodging	1
Private accommodation	42
<b>Total</b>	<b>92</b>

Source: www.2

Tourists coming to Ždiar have many possibilities how to actively spend time under the peaks of the Belianske Tatry Mts. In the summer, there are several hiking trails (tab. 3) to explore the beauty of Tatras intact nature. During the winter season, tourist can choose from 4 ski resorts or alone situated ski slopes. Following text brings a brief review of the most popular hiking trail Monkova Dolina Valley – Kopské sedlo saddle:

*“The green marked walking trail passes through the 3km long Monkova Valley which is situated under the Široké sedlo (1826m above sea level) and between the mountain peaks of Hlúpy (2061m) and Ždiarska Vidla (2142m).*

*From Monkova dolina there is a lovely hiking trail up to Široke sedlo which takes approx. 3 ½ hours. From here it's possible to continue down into the dolina Bielej vody -White Water valley through Kopské sedlo (1750m) on a moderately difficult route of 900m of varying altitude, around the Big White mountain lake – Biele Pleso (1615m) leading to the log cabin next to the Green mountain lake – Zelené Pleso (1551m). From there it descends to the bottom of the trail at the White lake parking area. From Široke sedlo another option to continue is via the valley of Seven Springs under Bujači hill (1947m) to the Plesnivec log cabin (1290m) which is the only high mountain chalet in Belianske Tatry and this descends into Tatranská Kotlina.” (www.3)*

**Tab. 3** Overview of trails in the Ždiar area

Trail	length	time	difficulty
Renewed trail through Magurka	7,5 km	3h 10 mins.	modest
Monkova dolina (valley) - Kopské sedlo (saddle)	7,6 km	3h 45 mins.	moderately difficult
Hiking trail: Ždiar - Malá Poľana - Jezersko - Kehel'	12,4 km	3h 25 mins.	moderately difficult
Mountain hike: Ždiar - Kopské sedlo (saddle) - Meďodoly - Tatranská Javorina	17,3 km	6 h 05 mins.	difficult
Hiking trail: Strednica - Magurka - Bukovina - Smerčany - Magurské sedlo (saddle)	19,7 km	5h 15 mins.	moderately difficult
Hiking trail: Ždiar - Magurka - Osturňa lake - Ždiar	24,4 km	6h 40 mins.	moderately difficult
Hiking trail: Ždiar - Magurka - Malá Fraková - Veľká Franková	24,5 km	6h 55 mins.	moderately difficult

Source: compiled after www.4

There is no doubt that the Ždiar village and its surroundings have a lot to offer to tourists. But nowadays, as the tourist demands still grow and new forms of tourism (e.g. geotourism, ecotourism, rural tourism, etc.) evolve and develop, there is a great opportunity to use the geotourism potential of the Ždiar area and offers visiting nature based tourist attractions that are relatively underrated today.

When closely looking into possible geosites in and near the Ždiar village, it can be assumed that there are tens of them. But, respecting the fact that the study area is located in or near the Tatra National Park area, the paper introduces only some of the geosites relatively easy to access with minimum breaches of visitor rules of the national park.

### **SANDSTONE QUARRY IN THE BACHLEDOVA VALLEY**

The locality is easy to find. Towards NE, it is situated on the left side of the Bachledova valley. It includes thick layers of massive sandstone (Fig. 2).

The sandstones exposed in the quarry are the part of the Huty Formation which is mainly represented by pelitic sediments of distal turbidites deposited during constant basin subsidence after the deposition of shallow-marine basal layers of the Borov Formation (Gross et al., 1999).

According to Janočko and Jacko (2001), the sandstones are interpreted as a part of basin floor fan. The outcrop is a very good example of time succession and extension tectonics. It is possible to observe several tectonic structures forming postsedimentary structure of the region.

From (geo)tourism point of view, this locality is important due to its sandstone character which represent specific stage of the deep-marine evolution of the whole area. Also, this locality is a very good example of abandoned local quarry from which, thanks to the rock qualities, the sandstones are present in many walls of

houses and other buildings in the area.

### **TOKÁREŇ CONGLOMERATES – TOKÁREŇ HILL**

Tokáreň conglomerates occur in many locations around the Ždiar village. One of the best accessible location is situated on the top of the Tokáreň hill (south from the Ždiar village, Fig. 3). It is accessible from forest trail. Recently, no hiking trail includes this site.

From geological point of view, Tokáreň conglomerates are part of the Huty Formation. They fill a canyon incised into the underlying mudstones of Huty Formation, coarse-grained deposits of Borové Formation and Mesozoic basement. The maximum incision is about 60 m. The deposits consist of conglomerates and alternating sandstones. The composition of angular and rounded clasts varies. Some beds are composed of exclusively carbonate clasts, however, beds composed of carbonate, shale, quartz and crystalline clasts may be also found. Typical is occurrence of sandstone, mudstone and numullitic limestone clasts suggesting their redeposition from the underlying Paleogene deposits (Janočko & Jacko, 2001).

Tokáreň conglomerates represent fill of a canyon which is a part of a turbidite system in the basin. Strong incision was caused by fall of relative sea level. The petrographical composition of clasts suggests multiple source areas of the deposits. Prevaingly massive conglomerates in the lower part of the succession probably originated by debris flows. The better internal organization of beds in the upper part of the succession point to transformation of the debris flows into high-density turbidity flows. The described characteristic of the deposits suggests the back-filling of the basin during the rise of relative sea level (Janočko & Jacko, 2001).

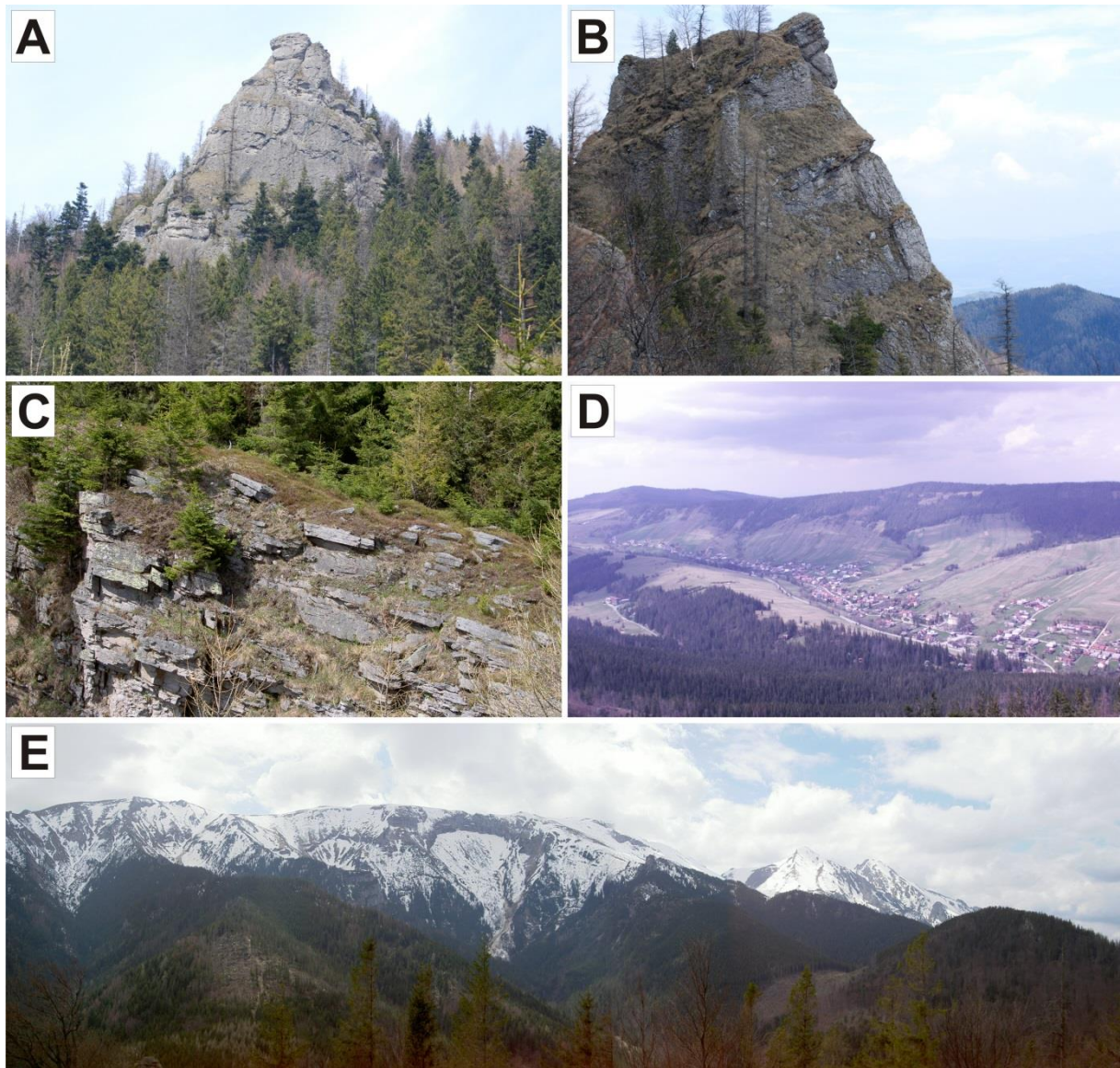
(Geo)tourism importance of this location lies in the character of the locality itself. It is very specific site with characteristic

geological evolution documenting tectono-sedimentary events within Western Carpathians leading to deposition of conglomerate sediments. Also, the hill

offers many beautiful views on Belianske Tatry Mts, especially Ždiarska Vidla (Fig. 3E).



**Fig. 2** Sandstone layers in the quarry in the Bachledova Valley



**Fig. 3** Tokáreň, A, B – cliffs of the Tokáreň conglomerates, C – individual layers of the Tokáreň conglomerates, D – view on the Ždiar village from the top of Tokáreň, E – view on the Belianske Tatry Mts from the top of Tokáreň

### **FALLEN SNOW AVALANCHE IN THE TRISTÁRSKA DOLINA (VALLEY)**

Every year in May, a snow avalanche falls (Fig. 4) down to the Tristárska dolina (valley). As the avalanche itself and/or unconfined fallen snow and material driven by the avalanche may be quite dangerous for tourists, it is necessary to be extremely careful at this site, like e.g. tourist visiting active volcanoes (Erfurt-Cooper, 2011). The site is accessible using forest trail

connected to green hiking trail leading from Strednica to Monkova dolina (valley) crossroads.

From geotourism point of view, the site documents immense power of nature where the falling snow tears down everything standing in its way. Snow fan formed by the avalanche, shattered trees and snow remodeled relief this all is visible in this site. Due to the fact that this site will be interesting for tourists mainly in one month of the year, it can be assumed that this locality will be primarily seasonal visited.

## FLYSCH SEDIMENTS OF THE CENTRAL PALEOGENE BASIN

Almost along the whole area of interest, many different scale outcrops of flysch sediments of Huty Formation and Borové Formation can be found (Fig. 5). Rhythmic alternations of thin layers of sandstone and mudstone (or claystone) with prevailing amount of finer sediments are present in the Biela creek and within many outcrops.

These thin sedimentary layers document the deep-marine evolution of the area from turbidity currents. According to geological research (Gross et al., 1999; Janočko & Jacko, 2001) the sediments represent distal turbidites – deep-marine sediments that were deposited from gravity driven currents transporting fine sand and clay (or mud). It refers to relatively calm deposition conditions.

## CONCLUSION

Considering geotourism potential of the Ždiar village and its surroundings, it can be assumed that the area includes significant geosites which should play a key role in the process of geotourism development in Ždiar. Good tourist services (accommodation, restaurants, etc.) in this area and willingness of domestic people to follow new trends in tourism are the best predispositions for the geotourism development. One of the first steps could be an establishment of a geotourist trail connecting individual geosites around Ždiar as proposed in this article (Fig. 6). As some of the geosites are hard to access and/or are not near any existing hiking trail, the local geosite guide should be a necessity. Here, an example should be taken e.g. from the United States National Park Guides which



**Fig. 4** Fallen avalanche in the Tristárska dolina valley

guide visitors and provide them information about natural phenomena. Other limitations are Slovak laws protecting nature and restrictions within the Slovak national parks. No change in these rules will limit or absolutely avoid geotourism development not only in the area of the Ždiar village but also in every law protected area in Slovakia. Therefore, an extensive discussion about nature protection and (geo)tourism development in protected areas, with regard

to natural phenomena and monuments preservation, between professionals and general public is needed. One of the first steps how to start such discussion is to introduce possible attractive (geo)tourist localities, as presented in this article, which should bring more tourists into the area and help in the process of (geo)tourism development both at regional and national level.



**Fig. 5** Flysch sediments of the Hutý Formation in the Biela creek (Ždiar village)



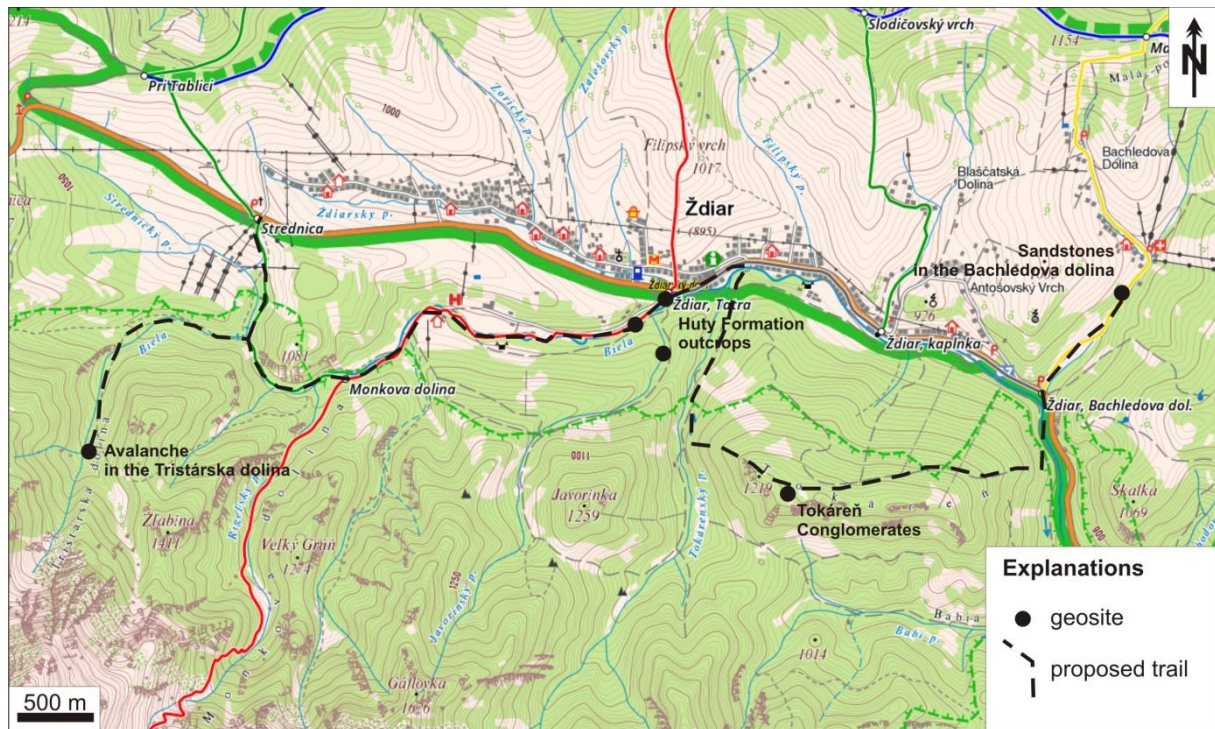


Fig. 6 Geosites in the area of the Ždiar village and geotourist trail proposal (www.4, modified)

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