SUMMARY

Flysh sites in the Jaśliska Landscape Park (Polish Carpathians): a proposal to augment the education and protection programmes

The Jaśliska Landscape Park (*Jaśliski Park Krajobrazowy*) is situated in the Beskid Niski Mts. (Fig. 1). The land relief of the area is that of young folded mountains and has its lowest elevation in the Beskidy range. The Park is a part of the Outer Carpathians, i.e. the area where the rock substrate is comprised of cyclic sequences of flysh layers – chiefly sandstones, conglomerates, siltstones and shales. These rocks are formations of the Creataceous and Palaeogene age. The flysh Carpathians are predominantly formed of beds bent into anticlines and synclines. The rock substrate of the Jaśliska Landscape Park is classified under two nappes (structural-palaeogeographic flysh units): the Magura nappe and the Dukla nappe (Fig. 1).

A considerable part of the Park's area is covered by vast, solid complexes of old beech-fir stands. The Park is situated on the margins of the distribution ranges of the Pontic (among others: Rosa gallica, Nepeta pannonica, Staphylea pinnata, Lithospermum officinale) and West-Carpathian elements (there are here: Veratrum lobelianum, Aconitum variegatum, Galium rotundifolium, Rubus bifrons, Senecio rivularis). Since 16th century, this area has been inhabited by Ruthenian mountaineers known as the Lemko people. During the turbulent years after World War II, they were displaced and the area is now very sparsely populated. The highly attractive landscape and the accompanying wildlife, represents a perfect advertisement for the area situated between the Dukla and Łupków passes, and is a consequence of the region's poor endowment in mineral raw materials. Since the area did not invite industrial expansion, the natural landscapes were retained partly because of the poverty of mineral resources in the region. In addition, this countryside has been associated with an extensive natural economy such as pasturing, managed forests and the development of forest products.

The landscape, being one of the 'statutory' objects protected in landscape parks, overshadows other geological objects in the areas concerned, placing them below protection and eco-tourism priority tasks, in terms of their importance. This paper represents an attempt to augment the network of tourist attractions in the Jaśliska Landscape Park by highlighting sites of geological interest (Fig. 1). The following outcrops have been selected: Inoceramian Beds in Ropianka (1), Menilite Beds at Horb (2), Hieroglyphic Beds in Zyndranowa (3), Majdan Beds at Czarna Młaka (4), complete section of the Cretaceous and Tertiary deposits in the stream of Biały (5), Menilite Shales and Charts at Ostra (6) and in Zwedływka (7), sandstones of the Krosno Beds in Bielcza (8) and Jasiołka (11), variegated shales of the Hieroglyphic Beds in Bielcza (9) and Jasiołka (12), tors of the Przybyszów Sandstone at Fujów (10), sandstones of the Cisna Beds in Szczerbowiec (13) and Jasiołka (14). These sites are in the main fairly accessible, being situated in stream and river valleys and their alluvial plains; only one of them is on a hilltop. The sites described in this paper are natural outcrops – they occur in a few places where erosion-denudation processes were most intense.

The geological sites presented in this paper illustrate the comprehensive picture representing the facial and lithological differentiation of the flysh of the Park (Table 1). These exposed outcrops, representing a class of geological phenomenon, could facilitate the didactic and substantive performance of the Park's educational function. The list is the Author's selection from among the available flysh outcrops. It is a set of sites in the area which allow one to track the wide variability of the flysh rock substrate of the Park, and can definitely enhance the eco-tourist offer of the Park in terms of the abiotic elements of nature.

The selected sites are presented in a wider geological context (of lithology and tectonic structure), in order to contribute to the dissemination of knowledge on the geological structures in the Park, given that the Park is particularly perceived as being an integral part of the Flysh Carpathians geopark. An innovative form of geological site display was proposed; namely: the lapidarium. This would serve as a teaching aid in showing the lithological diversity of the flysh at sites where the substrate cannot be accessed (e.g. because of accumulated alluvia). Nevertheless, there are still issues remaining for the consideration of the host-authorities, such as whether the conservation type protective measures of the sites are needed in order to assist educational and eco-tourist purposes.