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BALNEOTHERAPY AND WELLNESS TYPE TOURISM IN THE AREA ZIZIN (BRASOV COUNTY)

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Abstract

Recovery of natural therapeutic factors such as mineral waters, therapeutic mud, which are found within Braşov County, adding favorably bioclimatic characteristics, which could determine the development in the future of new Spa resorts along with the mountain resorts. On Braşov county territory but, inexplicably though, we witness bankruptcy of former spa or local interest resorts, although the physico - chemical properties of mineral waters and bioclimatic features allow planning and development of modern resorts in the area. In this context this paper highlights specific aspects of the natural geographical factors in Zizin area, and mineral water general characteristics, based on which possible variants of sustainable development of Braşov County can be detached.

Keywords: mineral water, hydrotherapy, health tourism, Zizin.

1 INTRODUCTION

Harnessing the balneotherapeutic potential by specific spa treatments, was an important concern since ancient times, even at that time was done empirically. The development of this area has made therapeutic indications and contraindications of natural factors to be more precise, thus gaining a scientific foundation. Balneotherapy may determine and influence over time, therefore, the development of health tourism, which combines the need to rest with restoring the body's vital capacities, respectively SPA tourism in conjunction with *wellness* tourism, term first used by Helbert L. Dunn, 1961. Through its potential of mineral waters, Romania can be a very important European destination from spa treatments point of view in the area because the population of Europe recorded a continuous process of aging and age requires extra attention to each individual health. But even the young population could enjoy periods of recovery in the spa resorts, taking into account the climate characteristics in those areas and if these resorts are equipped with apparatus for Spa or Wellness type balneology. Starting from the above aspects, we intend to present the physiographic features–and the types of mineral waters in the Zizin village (Braşov County), the former resort that remains only in memory of the village elders. We believe that in the future, besides mountain resorts in Braşov County we might develop also spa resorts where *former resorts* existed such as Zizin, which, according to the Order of the Ministry of Health and Social Welfare of 13.02.1927, was declared *Baleneo – mineral small institution* of local interest (Braşov County Directorate of National Archives).

2 DATA AND METHODOLOGY

This paper relies on the exploitation of information obtained from bibliographic sources and field investigations conducted during 2009-2011: observations, interviews with residents and local authorities, questionnaires on a representative sample. Also, this paper is based on the recovery information from topographic maps and geological maps (Scale: 1:25.000, 1:50.000). The methodology includes the synthesis of bibliographic information, identification and mapping of mineral water sources (georeferenced based on information obtaind with the GPS), achievement (with GIS technique) of mapping representations and their analysis.

3 ZIZIN – SPA RESORT: PAST AND PRESENT

3.1 Geographical and geological features

Zizin is situated in Curvature Carpathians, at the foot of Piatra Mare and Ciucas mountains, in Brasov county (Fig. 1), at 16 km fron Braşov Town (the county capital), at 610 m a.s.l.. The physiographic conditions and water mineral resources provide a favorable context to develop a new spa resort applying certain spa treatments to people choosing this place.

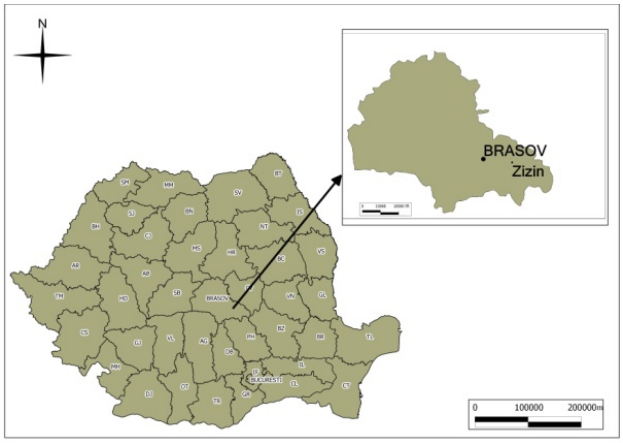

Figure 1. Geographical location of Zizin Village in Romania and in Braşov County (in right corner)

The hydro - mineral deposit from Zizin, is located in south-eastern side of Braşov Depression, at the foot of Piatra Mare and Ciucaşului Mountains (lying to the south), on Zizin Valley, a tributary of Tărlung River. Post-volcanic manifestations of the internal area of Curvature Carpathians are felt by CO_2 emissions and the presence of sulphur and arsenic gas releases. CO_2 emanations favoured the formation of carbonated springs that have a varied chemical composition with extremely important therapeutic effects.

The lithology of Zizin area is characterized through a sequence of formations belonging to lower Cretaceous age developed on a foundation of crystalline schists and Jurassic limestone. Lower Cretaceous strata formations belong to Sinaia layers being composed of shales with intercalations of gritstone and Valanginien – Hauterivien marly - limestone, and which at the upper side have a horizon of conglomerates, sandstones and Baremian reefs limestone. The area is covered with gravel, rocklets and quaternary clay. The diversity of rocks, determines mineral waters in the area to have carbonated character, calcium bicarbonate, chloride, sodium with mineralization between 765.8 and 154630.0 mg/l and a content of CO2 between 132.0-2156.0 mg (Pricajan, 1985).

3.2 Bref research history of mineral waters of Zizin

The first descriptions of mineral waters in Zizin were made by Dr. Lucas Wagner of Braşov, dating back to 1773, showing that mineral waters are used locally as therapeutic substances and mineral water for bottling; the water sources are first mentioned in *Synopsia fontanae Austriae*, made in Vienna by V.F. Tauche, 1777), and the first chemical analyzes were carried out in Belteky in 1818 (Pricăjan, 1985).

Balazs Orban (1873), speaks about the existence in Zizin of three springs whose mineral water had a special therapeutic importance, namely: source "hideg lobogo" where water flowed with bubbles from the ground (the Saxons called it Ferencz – Francisc), Lajos – Ludovic spring and Louis spring. In 1912, Şipos Janosne (born Bereczki Anna), bought the resort of the city of Braşov; this resort underwent a period of renovation and opened spring Bela (Braşov County Directorate of National Archives). At that time Zizin had three sources for which Dr. Greissing and Dr. Schnell made analysis determining their chemical composition. According to their composition, the springs could compete with the few healing springs in Europe: Ferdinand spring waters resembled the Luhacovice waters in St. Nectaire (Dolmey), Vals, Vic-sur-Cère, Selters, Ems, Gleichenberg and Niederselters, and the water spring of Michai (Ludovic), because the amount of iron that contains is identical to some springs such as Pyrmont, Franzensbad, Marienbad, Rochits etc (Hankó , 1891). Also Ţeposu and Câmpeanu (1921), describes the resort as having 11 springs, whose water was used for drinking and bathing, but not all were used for treatment, the major source being Ferdinand spring (Fig. 2), from where 4,000-5,000 liters of water daily in closed bottles were distributed in Braşov, Lobogo spring and Tărlungeni spring.

The Firs World War, strongly affected Zizin resort, the facilities for hot and cold baths were completely destroyed and the places once so beloved by tourists had become just meeting points for villagers, who organized feast and fares especially on the promenade near Ferdinand source.

Figure 2. Ferdinand spring in ancient time (source: Casuţa Amintirilor Museum)

Figure 3. Ferdinand spring today

Nowadays, only two springs are fed to the bottling station, F1b and F2 (http://www.zizin.ro/), respectively and two others are used by local residents, carrying water in all the surrounding villages, with dozens of bottles, old springs remain in decay (Fig. 3). During our field investigations we found and mapped nine water springs in the area Zizin-Tărlungeni area (Fig. 4).

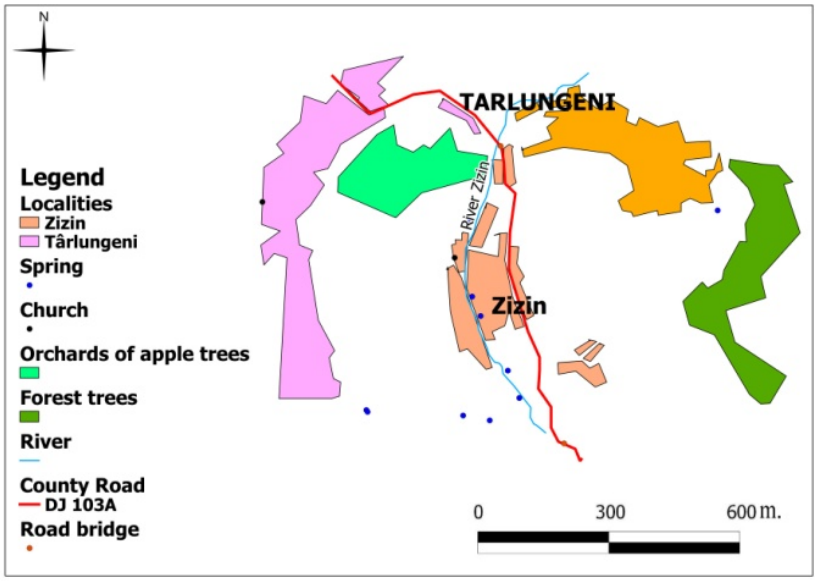

Figure 4. Zizin – location of the mineral springs identified on field

3. 3 Chemical parameters of mineral waters of Zizin

The chemical analysis made by Dr. Bela Lengyel (1891), indicates the chemical composition of the mineral water in Zizin, (to 1000 gr. of water) presented in Table 1.

Table 1. Chemical composition of Spring Ferdinand and Spring Ludovic in Zizin

Parameters	FERDINAND SPRING	LUDOVIC SPRING
Sodium Bicaronate (g/l)	1.4882	0.1656
Calcium Bicarbonate (g/l)	0.9552	1.2580
Magnesium Bicarbonate (g/l)	0.6039	0.1558
Iron Bicarbonate (g/l)	0.0098	0.0947
Magnese (g/l)	-	0.0294
Sodium Chloride (g/l)	0.9214	0.0558
Kaliu Chloride (g/l)	0.0299	0.0152
Sodium Iodide (g/l)	0.0016	-
Calcium Sulfate (g/l)	0.0029	0.0252
Aluminium Hydroxide (g/l)	-	0.0178

Hiydrogen Silicate (g/l)	0.0387	0.0785
TOTAL	**4.0516**	**1.8960**
CO_2 Free (g/l)	1019	1170
Temperature (^{0}C)	10.8	11.8

(source: Ţeposu & Câmpeanu, 1921)

From the above, it results that Ferdinand spring water is of alkaline – gas, chloruro - sodium type, while Ludovic Spring contains gas - ferruginous water (Ţeposu & Câmpeanu, 1921).

Pascu (1927), describes the water of Springs Ferdinand and Ludovic (Michai), as carbonated alkaline, ferruginous, chlorine, less iodine waters and were used for cold baths. Also Pascu, refers to other sources such as Spring Sarat, containing alkaline carbonated, chlorine water, not-entrapped located (Fig. 5), in the Canton Forest area (SE of the village) and alkaline carbonated spring water trapped in a concrete shaft, located in the courtyard of Michai Erdely, but this was not examined.

Berlescu (1971), presents Zizin town, as a resort of local interest, with mineral waters which have attracted attention from a century ago and who had the honor to house himself in 1840 and the Ruler of the Romanian Country, Al . I. Cuza.

Figure 5. Not-Entrapped spring

During the years 1980 - 1985, former water bottling unit used the water of former Spring Ferdinand, re-entrapped in a well with depth of 4.7 m, with a discharge of 0.17-0.30l/s and well F1 bis I.B.F. Both had a content of CO_2, relatively low, of 1.4-2.0g/l and respectively 1.4-1.5g/l (Pricăjan, 1985). The chemical analyzes, made in 2001, by the National Society of the Mineral Waters Springs , the F1b and F2, the only recovered water wells, indicated that the water is of hydrogen – carbonated, sodium , calcium, magnesium soft carbonated type, hypotonic and athermic (Table 2).

Table 2. Chemical composition of Spring (welles) F1b and F2 in Zizin

Anion	mg/l	Cation	mg/l
Cl^-	72	Ca^{2+}	144.28
HCO_3^-	671	Mg^{2+}	29.18
		K^+	4.4
		Na^+	128.8
CO_2	Min. 2500		

According to S.N.A.M. laboratory tests – 24.01.2001

3.4 Therapeutic indications of mineral water from Zizin

Because most mineral waters present curative properties, belneologists divide them into spa waters (used to cure external baths) and mineral waters (those used in internal treatment) (Pişota, Zaharia, 2005).

Zizin mineral waters have been used to treat respiratory disease and stomach disorders (Spring Ferdinand), in gastrointestinal tract disorders, anemia, nervous system and gynecological disorders (Spring Ludovic) (Ţeposu, 1921; Pascu, 1927). The mineral waters of Zizin can be use for intermal treatment (digestive, hepatobiliary, renal diseases), and for external treatment (compensated cardiovascular, gynecological disease, etc). In the living conditions offered by the modern society, nutritional diseases, illnesses caused by psycho - vegetative disorders, biological rhythms stress and diseases caused by inactivity, could find a remedy to Zizin.

3.5 Current status and possibilities/opportunites for development

Currently, Zizin in only bottling water through S. C. Apemin, company founded in 1991, but the bottling business began in 1936 (according to Apemin Zizin web-site).

The construction of a future resort in Zizin area, should begin by clearly defining the specific functional areas, namely the internal area enclosing the treatment facility and the restricted external area covering Spa or Wellness complex, that could be alternatives to the current tourism activities in Braşov area.

4 CONCLUSIONS

The development of health tourism in Braşov County would cause a number of positive aspects such as: development of localities where there are mineral springs, infrastructure modernization, reducing unemployment and external migration all leading to an economic growth of the Center region of which Braşov county is part of. Special attention must be paid, to valuing natural therapeutic factors (mineral waters, climate), through the reinstatement of former resorts (spa towns) of Braşov County, such as Zizin resort. With appropriate strategies, both macro and micro, we can meet the new requirements by creating modern resorts with a basic profile, but also by the emergence and practice of other types of tourism.

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Direcţia judeţeană Braşov a Arhivelor Statului.

Căsuţa Amintirilor Museum.