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The natural dynamics of the population in the Carpathian Mountain Space at the beginning of the 20th century (1901-1910). Case Study: Apuseni Mountains (Romania)

ABSTRACT

The purpose of the article is to analyze the natural dynamics of the population Apuseni Mountains (Carpathian Mountain Space). The study interval is 1901-1910. It uses the statistics of the Austro-Hungarian authorities as in the period 1901-1910, the Apuseni Mountains just like the whole of Transylvania were under dualistic leadership.

RÉSUMÉ

Dynamique naturelle de la population dans l'espace montagneux des Carpates au début du XX^e siècle (1901-1910). Étude de cas: montagnes Apuseni (Roumanie).- Le but de l'article est d'analyser la dynamique naturelle de la population dans les montagnes Apuseni (Carpates). La période d'étude est 1901-1910. On utilise les statistiques des autorités austro-hongroises car à cette époque, les montagnes Apuseni tout comme l'ensemble de la Transylvanie étaient sous une direction dualiste.

INTRODUCTION

The purpose of this article is to study the natural dynamics of the population at the beginning of the 20th century, having as a case study the space of the Apuseni Mountains. These mountains are a component part of my doctoral thesis, in which I am researching the phenomenon of anthropization under demographic dynamics and economic activities that have led to the emergence of anthropic relief. The objectives of the study were reported in the analysis of birth, mortality, infant mortality, natural increase and nuptiality. We have also tried to identify some causes of historical genesis that have been found on the evolution of the analysed indicators. The period under review was 1901-1910, a period that followed some

RESUMEN

La dinámica natural de la población en el espacio de montaña de los Cárpatos a principios del siglo XX (1901-1910). Estudio de caso: montañas Apuseni (Rumania).- El propósito del artículo es analizar la dinámica natural de la población en el espacio montano de los Cárpatos, concretamente en las montañas Apuseni. El intervalo de estudio es 1901-1910. Utiliza las estadísticas de las autoridades austrohúngaras, ya que, en este período, las montañas Apuseni, al igual que todo Transilvania, estaban bajo un liderazgo dualista.

PALABRAS CLAVE/MOTS CLÉ/KEYWORDS

Population dynamics, Carpathian Mountain Space, Apuseni Mountains, Romania.

Dynamique des populations, espace de montagne des Carpates, montagnes Apuseni, Roumanie.

Dinámica poblacional, región montana de los Cárpatos, Montañas Apuseni, Rumania.

severe epidemiological phenomena that had their mark on the indicators studied. It is also the period before the beginning of the First World War.

The Apuseni Mountains have a rich historical past, in the space of which the human component has retained its continuity and cyclicality until contemporaneity. This territory was researched from the perspective of several scientific fields, among which we can enumerate: Geography, History, Biology, Geology and Sociology. Under the geographical aspect, the Apuseni Mountains were researched from the perspective of all the geography. The first studies were conducted since the 20th century, but their abundance increased after the end of the communist period, in the year 1989. The first research that targeted the settlements and the population of the moun-

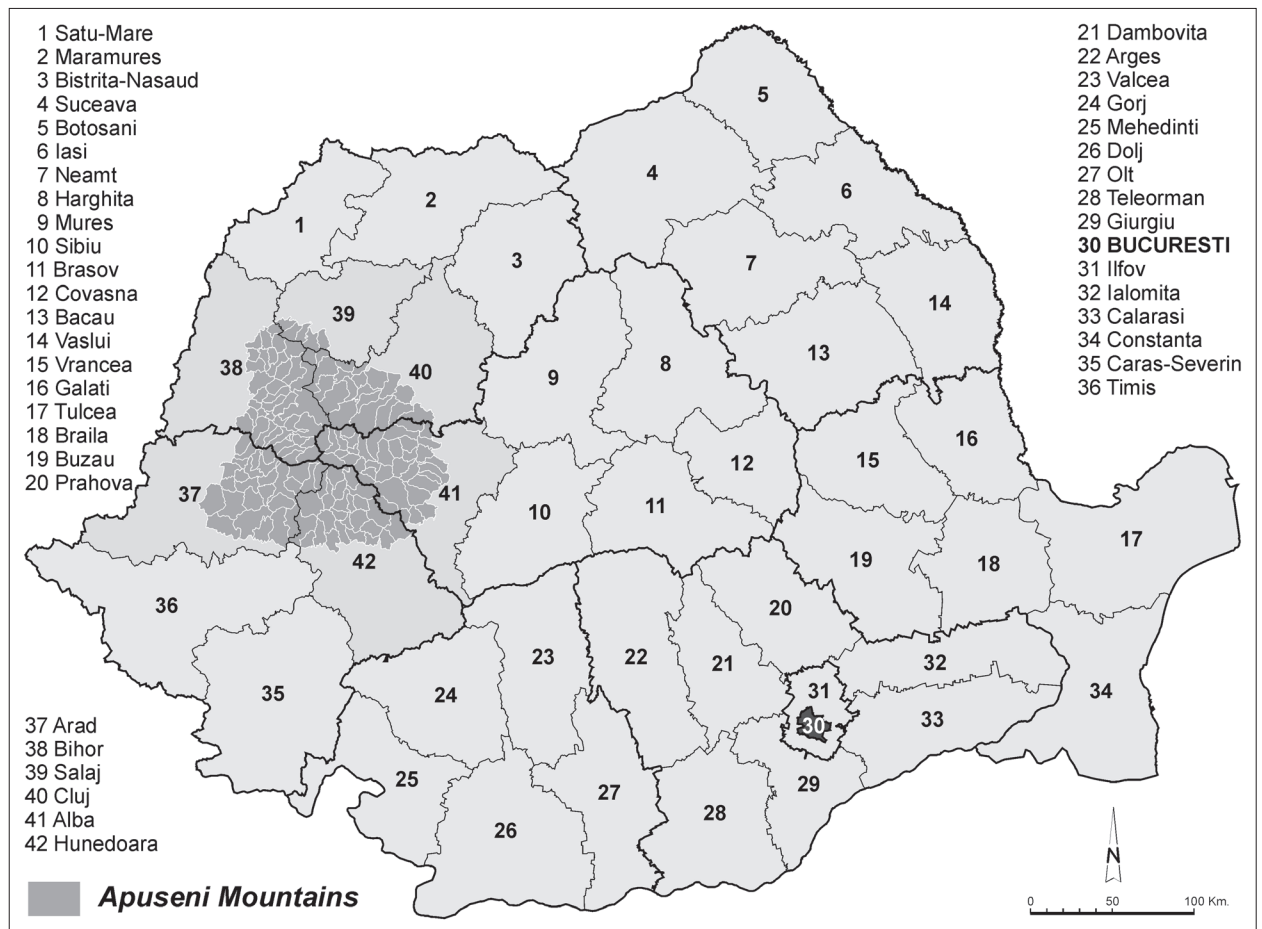


FIG. 1. Geographical position of the Apuseni Mountains at Romania level. Source: Lung, 2019.

tains was Surd (1982), realizing his doctoral thesis. The central topic of the thesis was based on the study of the settlements in the upper basin of Arieşului with special regard to economic and social systematization. Surd et al. (2007), have drawn up a large analysis of the demographic risk of the Apuseni Mountains, identifying causes leading to the depopulation of the Carpathian Mountain Space. Another doctoral thesis aimed at the resilience of the regional system of the Apuseni Mountains, a thesis by Drăgan (2011). As a territory with large enlargement, more thorough studies were made on subregions of the mountains. In the central area of the Apuseni Mountains, the *Land of the Moţi* is located, being a mental space of the country type. The territory is inhabited by the *Moţi*, identifying themselves heavily with their birthplace. Boţan (2010) conducted a study of regional geography on this mental space, being highlighted as characteristic of the occupations, the way of life of the people. Two

years later, Erchedi (2012) analysed the same mental space from the perspective of rural development and social geography. The Apuseni Mountains have an abundant history of mining exploitation, so Constantin (2011) conducted a geography study applied to settlements in the mining areas. In the southwestern part of the Apusenilor, there is another mental space, that of the *Land of the Zărand*, which was studied by David (2010) from the perspective of regional geography. Surd et al. (2017) published a book between the covers to which the settlements and the human component in the Apuseni Mountains were analyzed, in various respects.

According to the Austro-Hungarian administrative structure, in the period 1901-1910, the Apusenii Sălaj were administratively integrated with the Shire of Sălaj. Following the administrative reforms that followed the Great Union in the year 1918, the county was transformed into the county, now the Apusenii Sălajului was in the

administration of the county Sălaj. An interesting article was published by the historian Porumb-Ghiurco (2017) who studied the population dynamics of Sălaj Shire, between 1869 and 1941. In addition to the demographic aspects it pursues in the article, it conducts a detailed administrative-territorial development of the willow. In addition to these works, a series of articles appeared in specialty journals, which treated the population in terms of natural and migratory dynamics, altimetric distribution (LUNG and GLIGOR, 2018; LUNG, 2018; LUNG and DIACONESCU, 2019; LUNG, 2019).

The population and everything related to its dynamics have been the subject of research for many other researchers (DELGADO VIÑAS, 1995; FERNÁNDEZ SALINAS, 2001; DELGADO VIÑAS and GIL DE ARRIBA, 2008; MARTÍNEZ FERNÁNDEZ and DELGADO URRECHO, 2017; BETETA AVIO, 2018).

STUDY AREA

The Apuseni Mountains are part of the Carpathian Mountain Space of Romania. They have an area of 10.750 km². Expanding on the territory of six counties (Alba, Arad, Bihor, Cluj, Hunedoara, Sălaj). Administrative are formed from 153 administrative-territorial units, 140 common (rural area) and 13 cities (urban space).

The northern boundary of the mountains is given by the Barcăului Valley, the eastern boundary of contact with the Transylvanian Depression, in the south the boundary is given by the Mureş Valley, and in the east the limit is one sinuous to the connection with the West Hills. In the central part there is a higher area with altitudes of more than 1.800 meters (Vlădeasa 1.836 m, Bihor 1.849 m and Gilău-Muntele Mare 1.826 m) followed by a lower area (POP, 2000).

METHODOLOGY

Statistical data are taken from the Natural Movement of the Population between 1901-1910, Rotariu et al. (2005) which in turn processed and translated into Romanian the data after *A magyar szent korona országainak népmozgalma közégenkint. Magyar Statistikai Közlemények, Új Sorozat, 46. Kötet, Budapest, 1913*. The specific source of statistical data is a statistic made by the Austro-Hungarian authorities at the beginning of the 20th century.

The historical source that underwent the completion of this study, presents annual figures of the number of

new-borns and deceased, who then gave us the chance to calculate birth values, mortality, and subsequently the natural growth for each administrative unit. This source also comprises average numerical data of the deaths, divided into two categories: deceased between 0 and 6 years, respectively 7 years and over. Unfortunately, the source does not record data on the gender structure of the deceased population. Another demographic indicator contained in the source was the nuptiality, by mentioning the number of marriages, to calculate the rates of this indicator. The most well-represented demographic indicator, from the Hungarian source, was mortality Romanian researchers having to divide their work into two large volumes. Thus, the first volume was called *Demographic events*, in which the authors included the evolution of the new-borns, deceased, annual and decenal marriages for each administrative unit. The second volume was called *Causes of death*, which was fully devoted to the phenomenon of mortality, and the causes of death were divided into three distinct categories: contagious diseases, other diseases, and violent deaths.

The indicator rates were obtained by dividing the population of the administrative unit into the arithmetic mean of the two censuses of 1900 and 1910, and the annual averages were achieved by reporting to the total demographic events at the level each territorial unit. Thus, the use of the environments of the component localities was excluded (e.g. an administrative-territorial unit such as the municipality or the city consist of several localities).

As for the migration in this early period of the 20th century, we must mention that the emigration of the demographic component in the Apuseni Mountains was an upward phenomenon until the beginning of the First World War. Finally, we decided to analyse the emigrational phenomenon by identifying the number of people who left according to the census of 1900 and 1910. The data was reported to the total population of each administrative-territorial unit at the same census. Comparing the emitters at the time of the two censuses gives us an insight into the population's departure due to the diversity of the epidemiological spectrum that existed in the first decade of the 20th century in the Apuseni Mountains.

The census was also used in the year 1910 (ROTARIU et al., 1999-2006). We note that the data used by us are average values of the indicators analysed in the article. After obtaining the data they were processed in Microsoft Excel2013, and then generated graphs. For the best relief of the distribution of the studied indicators, several

maps have been generated. Geographic Information Systems (ArcGis 10.3) have been used for map making. In addition to the cartographic figures, a great help was the specialized literature consulted in magazines, articles, books, and archives.

RESULTS AND DISCUSSIONS

BIRTH RATE

At the beginning of the 20th century, in the Apuseni Mountains, the natural dynamics of the population was characterized by high values of birth and mortality, but the birth trends were growth and the mortality of decreasing which would lead to positive natural growth. 12 administrative units recorded the lowest average birth rates with values ranging from 20,1-30‰ (Conop 21,6‰, Petriș 22,9‰, Zam 24,4‰, Sălciua 24,5‰, Rapoltu Mare 24,7‰, Ocoliș 25,4‰, Bârzava 26,6‰, Săvârșin 26,7‰, Beiuș 27,5‰, Vărădia de Mureș 27,9‰, Gurasada 29,8‰, Poșaga 30‰). Between 1901 and 1910, 22.762 births were held in the Apuseni Mountains, of which 1.467 (6,4 %) only in the 12 administrative-territorial units, which recorded the minimum birth rates. The lowest effective number of births were recorded in three units of the Apusenii Albei: Poșaga 73, Sălciua 63 and Ocoliș 44. The birth of the Apusenii Albei was influenced in this period by the agricultural context at all favourable, namely the precarity of living material conditions, deplorable hygiene and periods of previous diseases that resulted in a decrease in fertility (HOLOM, 2009, p. 33; ROTARIU, 2006, p. 293 quoted by HOLOM, 2009, p. 33). More particularly, this climate of poverty, epidemics, shortages have generated a sense of insecurity that has impregnated itself in the mental population. The period 1872-1873 was most in the psyche of the population of the Apusenii Albei, because of the cholera epidemic that provided a very tense state of mind between humans, felt until the first decade of the 20th century (HOSSU, 1998 quoted by HOLOM, 2009, pp. 31-32). Another dysfunction that generated insecurity on the inhabitants of the Albei, were the floods in the year 1897, from the hydrographic courses of the Târnava and Mureșului (*Gazeta Transilvaniei*, nr. 90, nr. 132, nr. 137, 1897). Also, at the end of the 19th century, agricultural productivity was negatively influenced by the large quantities of precipitation and hail, largely destroying cereal crops. In conjunction with these acute natural calamities, viticulture was destroyed by the Phylloxera, resulting in a drastic decrease in the

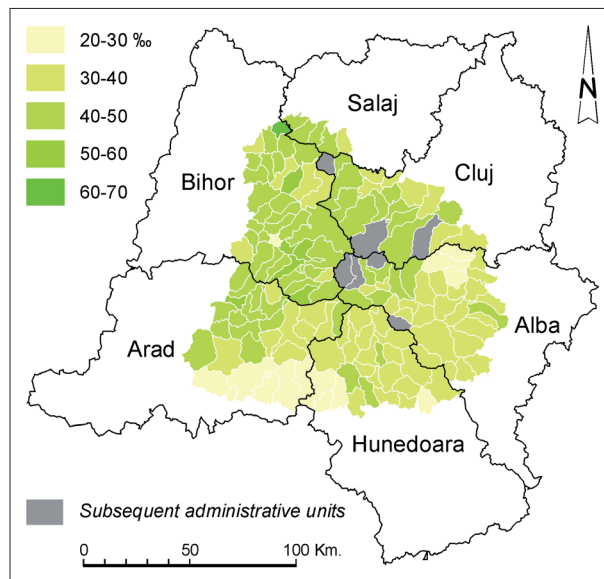


FIG. 2. Spatial distribution of average birth rates in the Apuseni Mountains from 1901-1910. Source: data processed after the Rotariu et al. 2005.

vine harvest (*Gazeta Transilvaniei*, nr. 72, nr. 214, 1897). Unfortunately, the whole of these short-term critical periods has been found on the behaviour of people from a reproductive and matrimonial point of view. Even if the events had a short period, they remained in the demographical mental for longer periods. Apusenii Aradului held the highest number of births, six of the units with more than 100 births, the commune Bârzava with 202 births, being the commune with the most births between the 12 in the period 1901-1910.

The first decade of the 20th century is marked by average birth rates ranging from 30,1 to 50‰, evenly distributed throughout the Apuseni area. The rates between 30,1 and 40‰ predominate in the southern parts especially in the Apusenii Hunedoarei and in the Apusenii Albei. In the Apusenii Aradului these rates appear in the territory of the Depression of the Hălmațiu, and in the Apusenii Bihorului, Clujului and Sălajului appear only sequential. The rates of 40,1-50‰ dominate the northern parts of the Apuseni with a broad distribution in the Apusenii Bihorului and Clujului. To a lesser extent, these rates also appear in the Apusenii Aradului. The Apusenii Bihorului had the highest birth rates, exceeding 50,1‰. Six administrative units had rates between 50,1 and 60‰, of which five are geographically positioned in the bihorian parts of the Apuseni, and the other unit is the common carand of the Apusenii Aradului. Also, the highest birth rate in the Apuseni Mountains in the period 1901-1910 is posi-

tioned also in the Apusenii Bihorului, Şinteu commune with a rate of 64,5‰.

The seven administrative units that recorded maximum birth rates had together 1.064 births. Only Cărand of the Apusenii Aradului recorded under 100 births, with only 68 births. The rest of the communes had more than 120 births, with a maximum of 251 births recorded by the bihorean Bunteşti commune.

We must mention that other administrative units had the number of births higher than those mentioned, but reporting to the total population, birth rates were inferior. For example, Târnova had 547 of births, Băiţa 365, Zlatna 322, Bratca 308, Poieni 301, Geoagiu 288, Săvădisla 272, Abrud 267, Gurahonţ 263.

MORTALITY

The population mortality dynamics of the Apusenii Mountains in the first decade of the 20th century was marked by past events, which took place since the end of the 19th century.

The 70-80 years of the 19th century remained in remembrance of the population of the Apusenii Mountains over decades due to drought phenomenon. This climate-risk phenomenon has made it impossible to practice agriculture, especially plant culture, resulting in increases in food prices everywhere. In addition to the many troubles that were abusing the demographic component in Apusenii and the daily living was affected by drought, by increasing prices (*Gazeta Transilvaniei*, nr.66, p. 263, 1866). The population is unable to effectively combat the damage resulting from drought, due to the low level of technical equipment in the agricultural field and the precarious conditions of how agriculture is practiced (CERNOVODEANU, 1984, pp. 423-424). In addition to the food and agricultural difficulties encountered, the anthropic component faced choleric disease, which did not make many victims, affecting localities such as Galda de Jos (RETEGAN, 1995 quoted by HOLOM, 2009, p. 48). After the cholera epidemic, around the Apusenii Mountains followed the typhoid epidemic that made casualties in Abrud and Roşia Montană, extending to localities in the area of the two (*Gazeta Transilvaniei*, nr. 76, p. 164, 1868). The demographic component of the Apusenii Mountains was confronted with epidemic periods, characteristic of the entire Transylvanian territory. The diseases represented in the second half of the 19th century and at the beginning of the 20th century, the main cause of mortality (ROTAR, 2005 quoted by HOLOM, 2009, p. 49).

Most of the deaths in Apusenii were generated by a highly diversified epidemiological framework that has consistently decimated the population. In the period 1901-1910, in the Apusenii Mountains, the average mortality rates were high, dominating the rates between 20,1 and 40‰, with a majority tint for the rates between 20,1 and 30‰. The total number of deaths during this period was 170.666 people (ROTARIU et al., 2005): 40.044 of deaths in the Apusenii Bihorului (23,46 ‰), 37.517 deaths in Apusenii Albei (21,98 ‰), 35.855 deaths in the Apusenii Aradului (21,01 ‰), 32.306 deaths in Apusenii Hunedoarei (18,93 ‰), 19.891 deaths in the Apusenii Clujului (11,65 ‰), 5.053 deaths in the Apusenii Sălajului (2,96 ‰).

At the level of Transylvania were established (TODEA, 1974), three areas concerning the distribution of mortality. The first area was the one that contained the territories with higher mortality, in the second area were included the territories with a middle mortality, and the third area constituted the territories with lower mortality. Thus, the Apusenii Aradului are in the area with lower mortality, along with the Apusenii Hunedoarei, Albei and Clujului, and the Apusenii Bihorului and Sălajului were positioned in the first category.

From figure 3 we can note that the rates between 30,1 and 40‰ are distributed in the Apusenii Aradului, Bihorului and Sălajului parts, which is a phenomenon contrary to the distribution of birth rates. The first four highest average mortality rates belong to the Apusenii Bihorului: Şuncuiuş 39,8‰, Cărpinet 39,3‰, Roşia 38,4‰ and Bunteşti 38,2‰. The bihorean part was noted during this period by high rates of both birth and mortality. The causes of human mortality in the period 1901-1910 were included in three categories: contagious diseases, other diseases, and violent deaths (table 1, table 2, table 3).

The mortality of administrative units in the Apusenii Bihorului was mostly generated by diseases such as congenital weakness, pneumonia, and pleurisy. Also, supplementing them were other diseases of the old age. In Şuncuiuş commune, most deaths were caused by congenital weakness (356), following the causes of old age (171), namely causes associated with the respiratory system such as pneumonia and pleurisy (163). 67 % of all deaths in Şuncuiuş were among the three diseases. Congenital weakness made 337 deaths in the commune of Cărpinet, 226 people died due to pleurisy and pneumonia, and 135 old age. 55,2 % of all deaths fall within the categories of diseases and conditions mentioned above. In Roşia commune, 237 people died due to congenital weakness, and 156 inhabitants died from the two dis-

eases related to the respiratory system. Also, of old age, 113 people ceased to be alive. The 506 deaths recorded a share of 51,3 % of the total number of deceased people. In the commune of Buntești, 1.829 deaths were recorded, of which 621 died of congenital weakness, 356 pneumonia and pleurisy, and 164 old age. Under the percentage ratio, the population of the deaths in the Buntești commune, which has been assigned to those diseases, has a share of 62,3 % of the total. No fewer than 11.003 people died in the Apusenii Bihorului due to congenital weakness, 6.919 of pneumonia and pleurisy, and 4.984 of old age. The contagious disease that had the lowest spread in the Apusenii Bihorului was puerperal fever, which killed only 56 people. Most likely deaths occurred among women because it is a disease that arises from complications occurring at birth.

In the Apusenii Aradului were killed by congenital weakening 7.756 people, 5.544 of pneumonia and pleurisy, and 4.833 of old age. Also, the parts of the Aradului overlapped the Apuseni Mountains were greatly affected by tuberculosis, decimating 4.820 people. The least prevalent diseases in the Apusenii Aradului were: puerperal fever (41 deaths), 124 people died of dysentery and 197 people were killed by typhoid fever.

For the eradication of contagious diseases in the Apusenii Aradului, the authorities allocated funds for the endowment of the Infectious Diseases Hospital. Financial resources have been used for the purchase of new bedding, items for personal hygiene, kitchen items, mattresses, and other materials necessary for the use of baths (STEPAN-BĂȘOIU, 2014).

In the Apusenii Hunedoarei, 6.127 people died of congenital weakness, and 4.915 of old age. This time, in the third place, as demographical decimated, it is tuberculosis with 3.275 people and only then respiratory diseases with 2.791 deaths. The epidemiological spectrum of Apusenii Hunedoarei has diversified slightly, with numerous deaths due to water diseases (1.199 deaths) and diphtheria that killed 1.607 people. In addition to the puerperal fever, which had the lowest mortality values in the Apuseni Mountains, in the parts of the Apusenii Hunedoarei, there were diseases such as dryness that decimated only 102 people, following 200 measles deaths and 271 typhoid fever.

The Apusenii Albei are like the Apusenii Hunedoarei from the point of view of the distribution of diseases. In addition to the three, four diseases that have heavily affected the space of the Apuseni Mountains in the period 1901-1910, in the Apusenii Albei were recorded high numerical values of deaths caused by other diseases.

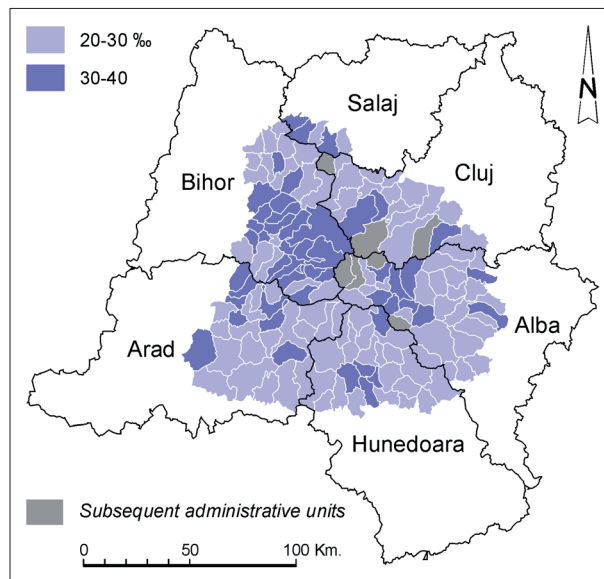


FIG. 3. Spatial distribution of average mortality rates in the Apuseni Mountains from 1901-1910. Source: data processed after the Rotariu et al. 2005.

1.335 people died from water diseases, 1.177 died due to spasms and convulsions, and 1.094 diphtheria. Due to puerperal fever, 40 people died, 134 from dysentery and 289 from typhoid fever.

The Apusenii Clujului is a prefecture with the Apusenii Hunedoarei, most of the deaths being caused by congenital weakness and old age, and in third place there is tuberculosis, being the only parts of the Apuseni Mountains identical in this regard. The situation changes slightly when we talk about the diseases that have killed the lowest demographic effect. Puerperal fever killed only 45 people, typhoid fever 276, dysentery died 333 and 352 died of seizure disorder.

The Apusenii Sălajului recorded the lowest of the deceased, 1.358 dying of congenital weakness, 714 of old age, 633 pleurisy and pneumonia. Tuberculosis has decimated the population of the Apusenii Sălajului with 598 people. Puerperal fever (16), diphtheria (35) and seizure (37) were diseases with the smallest spread in these parts of the Apuseni Mountains.

The epidemiological framework had the largest spatial expansion through the diversity of diseases, which caused the most deaths. However, in addition, violent deaths were recorded, in which accidents, suicides, homicides and unsafe causes were assimilated.

Of the 170.666 deaths recorded between 1901 and 1910, 28.816 (16,8 %) have been catalogued as having unknown causes.

TABLE I. Numerical and percentage distribution of contagious disease deaths in the Apuseni Mountains from 1901-1910

Contagious disease	Apusenii Albei		Apusenii Aradului		Apusenii Bihorului		Apusenii Clujului		Apusenii Hunedoarei		Apusenii Sălajului	
Measles	481	1,2%	448	1,2%	718	1,8%	523	2,6%	200	0,6%	68	1,3%
Scarlet fever	541	1,4%	711	1,9%	651	1,6%	536	2,7%	756	2,3%	76	1,5%
Tusa convulsive	756	2%	586	1,6%	788	2%	491	2,5%	700	2,2%	186	3,7%
Diphtheria	1094	2,9%	333	0,9%	422	1,1%	648	3,3%	1607	5%	35	0,7%
Typhoid fever	289	0,7%	197	0,5%	274	0,7%	276	1,4%	271	0,8%	62	1,2%
Children's diarrhea	588	1,5%	712	1,9%	1667	4,2%	597	3%	477	1,5%	107	2,1%
Dysentery	134	0,3	124	0,3%	491	1,2%	333	1,7%	414	1,3%	129	2,6%
Tuberculosis	3314	8,8%	4820	13,4%	3616	9%	2602	13,1%	3275	10,1%	598	11,8%
Puerperal fever	40	0,1%	41	0,1%	56	0,1%	45	0,2%	36	0,1%	16	0,3%
Others	203	0,5	131	0,3%	126	0,3%	137	0,7%	134	0,4%	19	0,4%

Source: data processed after the Rotariu et al. 2005.

Male overmortality was a phenomenon recorded in the space of the Apuseni Mountains. The higher number of men's deaths was put on account of genetic factors, working conditions, tobacco consumption and alcoholic beverages. During this period, there was a proportionality between gender mortality and natality. Thus, male sex was dominant at birth, but also male sex was dominant in deaths (DETEŞAN, 2005, p. 95).

Regarding contagious diseases, the end of the 19th century and the beginning of the 20th century is distinguished by a genuine epidemiological transition between cholera and tuberculosis. Although, in the space of the Apusenilor, cholera was not as acute as in the rest of Transylvania, the progress of tuberculosis has been massively sighted on the number of deaths in the Apuseni Mountains.

The fulminant ascent of the tuberculosis epidemic required the issuance of a circular in the year 1905, requiring clear measures to be applied as soon as possible in educational establishments. Thus, children had to keep the napkin at their mouths when coughing, in schools, it was compulsory to have clean scooters, disinfected 1-2 times a day. The measures provided that the classrooms were renovated at least twice a year and the pupils were recommended to be trained in outdoor gymnastics for the rejuvenation of the lungs. Each morning, the windows and school furniture had to be erased and the ventilated classes until the students arrived. Also, after each hour, the class ventilation was required 5-10 minutes and 1-2 minutes during winter. At the beginning of the 20th century, another contagious disease that spread within the Apuseni Mountains was typhoid (typhoid fever), expand-

ing predominantly in rural areas. The main factors regarding the distribution and expansion of typhoid in the rural area of the Apusenilor were, misery, lack of hygiene and excrement of lice (STEPAN-BĂŞOIU, 2014, p. 103).

Another disease of hygienic disorder was dysentery, which spread through excrement, so many sick people represented a source of illness for others. The demographic component, measures against dysentery as well as washing hands before each meal with soap and water, kitchen vessels to be washed with hot water, food consumed to be freshly cooked, maintenance of personal hygiene (STEPAN-BĂŞOIU, 2014, p. 126).

This extensive framework of contagious diseases, other diseases and violent deaths has been spotted on the demographic composition of the Apuseni Mountains, influencing the emigration of the population. At the census in the year 1900, in the Apusenilor area emigrate 965 people with an emigration rate of 1,7‰. The Apusenii Hunedoarei lost the largest demographic, leaving 296 people, 30,67 % of all regional departures. 54,05 % of the 296 people left were from the Bulzeştii de Sus and Ribiţa, registering emigration rates of 25,2‰ and 13,4‰.

Following the Apusenilor Hunedoarei were the Apusenii Clujului, from which 215 people migrated, representing 22,28 % of total regional and 14,62 % at county level. Călăţele şi Mărgău were the administrative units most subjected to the migratory phenomenon, with rates of 16,9‰ and 12,4‰, the numerical population of departures from the two being 62,33 % of the total recorded in the Apusenii Clujului.

The Apusenii Albei and Aradului had the same number of people who left, as many as 203 for each of the

TABLE II. Numerical and percentage distribution of deaths caused by other diseases in the Apuseni Mountains in the period 1901-1910

Other diseases	Apusenii Albei		Apusenii Aradului		Apusenii Bihorului		Apusenii Clujului		Apusenii Hunedoarei		Apusenii Sălajului	
Infantile dryness	348	0,93%	697	1,9%	1301	3,2%	416	2,1%	102	0,3%	211	4,2%
Congenital weakness	7387	19,6%	7756	21,6%	11003	27,5%	4657	23,4%	6127	19%	1358	26,9%
Of old age	6756	18%	4833	13,5%	4984	12,4%	2962	14,9%	4915	15,2%	714	14,1%
Attack of aplopexia	650	1,7%	237	0,7%	281	0,7%	352	1,8%	276	0,9%	37	0,7%
Spasms, convulsions	1177	3,1%	633	1,8%	932	2,3%	896	4,5%	696	2,2%	308	6,1%
Pneumonia, pleurisy	3767	10%	5544	15,5%	6919	17,3%	1614	8,1%	2791	8,6%	633	12,5%
Water diseases	1335	3,6%	1043	2,9%	1295	3,2%	600	3%	1199	3,7%	171	3,4%
Others	2948	7,9%	3329	9,3%	3438	8,6%	1581	7,9%	1658	5,1%	260	5,1%

Source: data processed after the Rotariu et al. 2005.

two subregions of the Apusenilor. However, high emigration rates were recorded only in the Apusenii Albei, in Blandiana and Stremț, being 10,1‰ and 15,0‰. As a weighting, the number of departures differs according to the migrant herd at the county level. Thus, the 203 people departing from the Apusenii Albei represent 9,49 %, and the same number of people emigrated from the Apusenii Aradului constitute 32,64 %.

A similar model was present in the Apusenii Bihorului and Sălajului, where emigration was a somewhat less phenomenon felt at the beginning of the 20th century. From both subregions, only 24 people emigrated, the population of these subregions was heavily under the influence of the phenomenon of belonging to their birthplace. Thus, leaving the birthplace was not in the priorities of these inhabitants of the Apuseni Mountains, even though they faced various epidemics and low economic resources. In these two parts of the Apusenilor emigration rates were below 2,5‰, as there were a number of 44 administrative-territorial units. Basically, it can be seen the desire of the population not to leave these places, namely the courage to stand and fight with the many diseases.

The situation was much changed in the 1910 census, with much higher emigration values compared to 1900. At the regional level, compared to the 1900 census, the number of departures increased by 344,14 %. The increase in the intensity of the emigration had epidemic causes, low life, lack of qualified medical services. The emigration rate from the Apuseni Mountains increased from 1,7‰ to 7,0‰ in 1910. This fulminant increase to the emigrations was based on the diversification of the epidemiological framework and poor agricultural productivity. Low-quality food and storage in precari-

ous conditions favoured the expansion of diseases in the space of the Apuseni Mountains.

The most destructive area of the Apuseni Mountains, due to the emigrations was the part of the Apusenilor Albei. The number of people who left their birthplaces, being 1.594, rising from the year 1900, by 685,22 %. The 1.594 emigrated people represent 37,19 % of the emigrated regional herd in 1910. The rates recorded at the local level were visibly increasing compared to the rates recorded at the beginning of the century. Thus, 13 administrative units had the rate of emigrations over 10‰ (Avram Iancu 10,5‰, Cricău 28,9‰, Galda de Jos 28,5‰, Ighiu 22,0‰, Livezile 21,5‰, Ocoliș 11,6‰, Poiana Vadului 13,7‰, Rimetea 10,8‰, Stremț 54,3‰, Vadu Moșilor 26,9‰, Vidra 33,7‰, Vințu de Jos 22,4‰, Blandiana 46,0‰). For example, from the Stremț that had the highest rate of departure, they predominantly emigrated to ethnic Hungarians and Germans, who settled in the commune with the entrance of the Apusenilor under the jurisdiction of Austro-Hungarian.

From the territory of the Apusenilor Hunedoarei emigrated 1.242 people, 28,98 % of the population of departures at the region level. The increase in the number of departures in this area was 319,59 %, at the census of 1910 compared to the one in 1900. Six municipalities recorded worrying rates of departures: Baia de Criș 37,4‰, Bulzeștii de Sus 88,3‰, Geoagiu 10,5‰, Rapoltu Mare 26,1‰, Ribița 50,3‰, Tomești 32,4‰. In the Bulzeștii de Sus, the departures took place from the village of the component Tomnatec, registering an exodus of the population to neighbouring villages. A similar case was in the Baia de Criș, the exodus of the population of the village of Rîșculița was caused by the lack of jobs and the absence of medical services for the treatment of the dis-

TABLE III. Numerical and percentage distribution of violent deaths in the Apuseni Mountains from 1901-1910

Violent deaths	Apusenii Albei		Apusenii Aradului		Apusenii Bihorului		Apusenii Clujului		Apusenii Hunedoarei		Apusenii Sălajului	
Accidents	488	1,3%	481	1,3%	500	1,2%	284	1,4%	500	1,5%	31	0,6%
Suicides	94	0,3%	137	0,4%	103	0,3%	58	0,3%	108	0,3%	8	0,2%
Homicides	114	0,3%	114	0,3%	122	0,3%	42	0,2%	154	0,5%	12	0,2%
Unsafe causes	12	0,03%	23	0,1%	8	0,02%	10	0,1%	16	0,05%	-	-

Source: data processed after the Rotariu et al. 2005.

eased population. From Geoagiu, most of the departures were among the Hungarians, who left the Geoagiu de Jos village to move to the other villages.

In the Apusenii Clujului, emigrations were 766 rising from year 1900 by 256,27 %, representing 17,87 % of the total flock of departures from the Apuseni Mountains, to the census of 1910. Compared with the year 1900, the administrative units of the Călățele and Mărgău remained with rising rates, reaching 59,5‰ and 80,8‰. As a result of the two, there was only one administrative unit, the Săcuieu that had a rate of 14,1‰. The Călățele suffered influences in the ethnic structure from the dualistic (Austro-Hungarian) domination, which were first spotted in the 20th century on the population. In addition to Romanians, they began to leave, Hungarians, Germans, and Slovaks, the last two ethnic communities representing a protuberance of the colonization of the dualistic regime in the Apuseni Mountains. In Mărgău and Săcuieu, the demographic component exerts a rotation in terms of migration, with an interrelationship between the actual who were leaving and others returning.

The demographic component of the Apusenii Aradului lost 579 people, 13,51 % of the regional migrant population. Only two administrative units had higher rates, Buteni 25,4‰ and Pleșcuța 10,1‰. Pleșcuța commune has been caused by the emigration of Romanian citizens from the village's component villages, Aciuța, Gura Văii and Rostoci. The case of Buteni commune overlaps the two previously mentioned municipalities of the Apusenii Clujului.

Although the epidemiological extension was quite large in the Apusenii Bihorului, the population remained in the territory, only 91 departures were recorded, with a share of only 2,12 % at the regional level. No rate was greater than 3,0‰, which shows the strong link of the anthropogenic component with mental space.

A special case was the area of the Apusenilor Sălajului, the number of departures recorded at the census in the year 1910 being less than the herd registered in the census of 1900. Of the five territorial units com-

posing the Apusenii Sălajului, only 14 people left, representing only 0,33 % of emigrations at the regional level. Although, the average mortality rate in three of the municipalities passed 30‰, after tuberculosis, the second cause of death was that of old age. Thus, the population of the Apusenii Sălajului has stationed the same as in the Apusenii Bihorului, treating maladies with remedies only by them knew, in the absence of medical staff.

As I stated in the methodology, age group deaths were divided into two large categories: 0-6 years, respectively 7 years and over. From the exceptional historical Austro-Hungarian source, we were able to extract data on the evolution of the average number of deaths in the Apuseni Mountains for the two established age groups. The average number of deaths per year in the period 1901-1910 was 17.013, of which 8.080 deaths were recorded in the 0-6 year group, and 8.933 in the 7 years and above group. The highest mortality in the population of 0-6 years was recorded in the space of the Apusenilor Bihorului, where 2.173 people died, 26,89 % of age group deaths at the regional level. Most deceased people were registered in the communes of the Bratca (106) and Buntești (109), in the rest of the Apusenilor Bihorului the number of deaths per administrative unit is below 100. In the Apusenii Albei, there were 1.640 deaths, 20,30 % of the group's total, most in Albac (105) and Zlatna (103). Apusenii Aradului has lost 1.590 people in group 0-6 years, which means 19,68 % at the regional level. 1.412 deaths were recorded in Apusenii Hunedoarei, most in Băița (116), and the Apusenii Clujului have lost 1.007 people, but in no administrative unit, the herd has passed 100 deaths. Only 258 people died in the Apusenii Sălajului, being the subregion of the Apuseni Mountains that lost the population's smallest flock between 0-6 years.

For the age group of 7 years and older, the situation was somewhat more acute, with higher death levels recorded. This time, the Apusenii Albei lost the largest demographics, 23,61 % of the total number of this age group in Apuseni. We found that there were three administrative units in which the number of deaths passed by

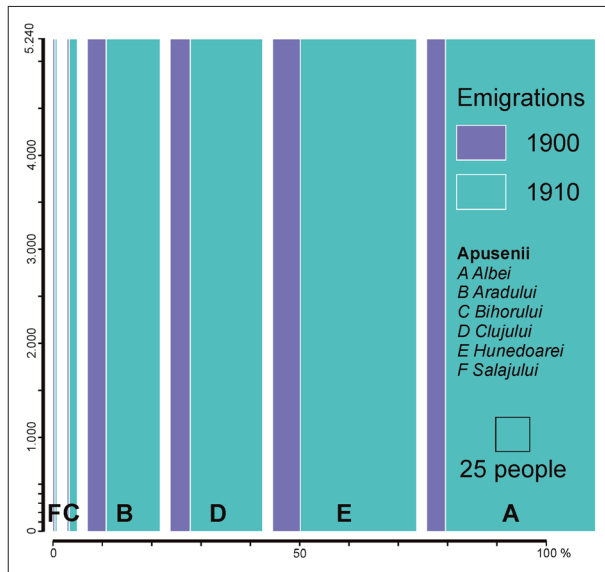


FIG. 4. The evolution of emigrations from the Apuseni Mountains to the census of 1900 and 1910. Source: data processed after the Rotariu et al. 1999; Rotariu et al. 1999-2006.

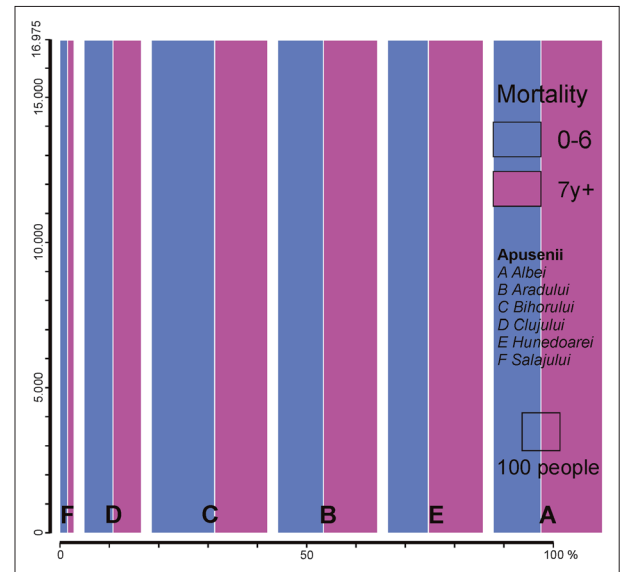


FIG. 5. Mortality in the Apuseni Mountains assigned to the two age groups..Source: data processed after the Rotariu et al. 2005.

100, at Abrud (131), at Roșia Montană (104) and Zlatna (164). These three territorial units were important mining centres, and a large number of deaths was caused by unsanitary jobs in the basement, which subsequently resulted in premature ageing, to the illness of the miners shortly after death.

1,904 deaths were recorded in Hunedoara parts, with administrative units like those of the Albei, where mining was the main activity sector of the demographic component. Are the cases of territorial units, Baia de Criș (101), Brad (116), Băița (139). We can deduce that most deaths have been among the population for over 50-60 years, miners working in the extraction and processing of deposits in the basement.

Apusenii Aradului registered 1,860 deaths, with something higher for four units, Târnova (176), Tăuț (111), Bârzava (125) and Săvârșin (115), they form an overlapping alignment of the Zărandului Mountains.

This age group lost 1,833 people in the Apusenii Bihorulului, only the Bratca with more than 100 deaths was identified.

The Apusenii Clujului and Sălajului lost the least of the people in this age group, with 980 and 247 deceased people being reported. These two subregions were the only ones who had for each administrative unit the averages of deaths below 100 annually.

Of all this, we can consider that most people in the group of 7 years and over who have died were over 50

years old and were male. In addition to the many diseases that decimated the population of the Apuseni Mountains, they contributed to increased deaths and mining operations. In the administrative units where the number of deceased was high, in their proximity there was this type of exploitation.

NATURAL INCREASE

The distribution of the average rates of the natural increase in the Apuseni Mountains from 1901-1910 is mostly comprised between values of 0 and 20‰. The southern, south-western, and south-eastern parts of the Apuseni Mountains recorded average values ranging from 0 to 10‰. There were also three administrative-territorial units in which the averages fell below 0‰. The most significant dysfunctions were in the Apusenii Albei, where the commune of Sălciua recorded an average rate of natural increase of -2‰. This negative value is based on the demographic decrease from 1900 to 1910, which has worked together with the numerous diseases of the epidemiological spectrum that have decimated the human component. Only the first three diseases included 62,2 % of the total number of deaths for the whole period. The next negative average rate was the commune of Zam in the Apusenii Hunedoarei, which was -0,9‰. The population of Zam was confronted with numerous

deaths from contagious diseases, only the first four diseases decimating 973 people, while others 190 were registered to unknown causes. Together, they had a share of 70,1 % of the total deceased people in the joint during the period 1901-1910. In the western vicinity of Zam, the commune of Petriș is positioned in the Apusenii Aradului, the third administrative unit which had the average rate of negative natural increase. The rate was $-0,2\%$, but in addition to the same situation as the commune of Zam on the causes of death, Petriș fell demographical from 1900 to 1910 by 0,9 %. Following the model of Zam, the first four ailments decimated the population of Petriș with 699 inhabitants, and 191 had unknown causes. By summing up these numerical numbers, we find that, in the total number of deaths in the period 1901-1910, the share is 74,7 %.

The northern, north-western, and north-eastern parts of the Apusenii Mountains have had somewhat higher rates of natural increase. The average rates were between 10,1 and 20‰, distributed predominantly in areas of the Apusenii Aradului, Bihorulului, Clujului and entirely in the Apusenii Sălajului. Also, at the northern tip of the Apusenii was recorded the highest average rate of the increase. This was 37,4‰, registered by Șinteu in the Apusenii Bihorulului. The rate was supported by numerical demographic growth, the average number of births and the average rate of nuptiality, 11,4‰, the third installment in the Apusenii Mountains in the period 1901-1910.

The administrative units of the Apusenii Aradului began after the year 1894 to switch to the new demographic regime, characterized by low levels of both mortality and birth. These levels were associated with the beginning of modernising society through the perspective of industrialisation, advances in medicine and economic growth. This new demographic regime has been exercised through two forms of transition. The first type, the Malthusian, is expressed by decreasing the proportion of married women. The second type, Neo-Malthusian, is characterized by a decrease in fertility due to the training of women in the work of farmland, grain cultivation and the desire to increase the level of book science (STEPAN-BĂȘOIU, 2014, p. 86).

INFANT MORTALITY

From figure 7 we can see that mean infant mortality rates had a wide variability between 1901 and 1910 in the Apusenii Mountains area. The rates are between values of 150 and above 290-300‰.

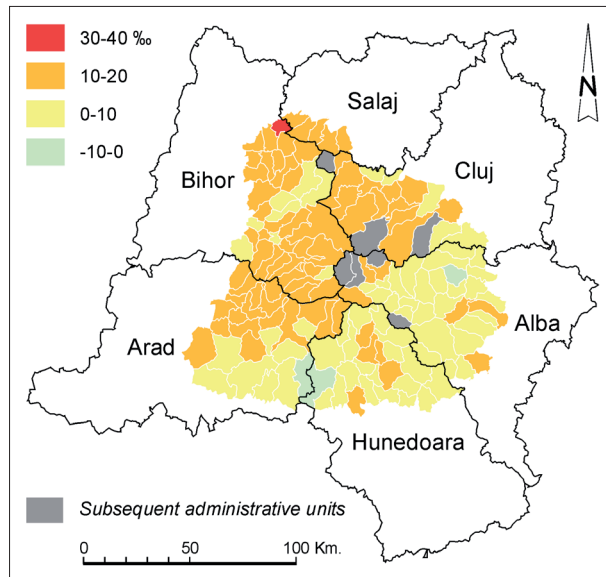


FIG. 6. Spatial distribution of average rates of natural increase in the Apusenii Mountains from 1901-1910. Source: data processed after the Rotariu et al. 2005.

Infant mortality is a fundamental indicator of the level of culture of the human component, but especially the quality of living standards. At the core, infant mortality is a series of unsettling factors that on the one hand are directly related to the actions undertaken by people, and on the other hand, are what authorities do to help the demographic component. In the first category, we can mention factors such as medical education and food models, and in the second category we can mention the network and the efficiency of the health system (TREBICI and HRISTACHE, 1986, pp. 60-61). The effectiveness of the health system at the beginning of the 20th century was very limited because of the lack of qualified medical personnel. In many villages in the Apusenii Mountains, the assistance to births was provided by other women, who, in addition to the many work they carried out, were engaged in assisting the births. Basically, the medical qualification was obtained by working period near midwives. There is also an acute shortage of pharmaceutical products. The medicinal products administered to the new-born consist only of a few drops of silver nitrate, which were put into the eyes of the child. If the child passed the first year of life, then he was vulnerable to diseases such as scarlet fever and measles. In the absence of medical treatments, survival was due to the ability of body strength in combating disease (ANDJAlba, COLECȚIA MANUSCRISE, f.111, 118).

The number of children dying in the first year of life, i.e. the infant mortality rate, highlights in the mortality analysis a „domination of small groups of age” (DUMĂNESCU, 2006, p. 139). Children are the most exposed to the high pressure of internal and external factors leading to death, which are vulnerable in all seasons. Unfortunately, such reality is surprised in the entire space of the Apuseni Mountains (DETEŞAN, 2005). These high mortality rates under 1 year led some researchers to talk about the „huge dose of hazard” that conditioners the survival of the little ones, „at least until the generalization of advances in medicine and until their hostile mental blockage It started to fissure” (DUMĂNESCU, 2006, pp. 136-137). We can note that most of the administrative units in Apuseni have rates above 206,24‰, which is the value recorded in Transylvania for the period 1900-1910.

There were three administrative units, in which the average mortality rates recorded the minimum values. Avram Iancu of Apusenii Albei had the rate of 142,9‰ and the communes Vărădia de Mureş and Conop from Apusenii Aradului had 146‰, respectively 139,1‰. Drawing up a theoretical statistic based on statistical data from 1901-1910 (ROTARIU et al., 2005) we can say that the number of deaths under one year caused by measles, scarlet fever and children’s diarrhoea has very low values in the area of communes Avram Iancu, Conop and Vărădia de Mureş. Throughout the period, in Conop died due to the three diseases only 12 people (7 children’s diarrhoea, 3 measles and 2 of scarlet fever) (ROTARIU et al., 2005, p. 34). In Avram Iancu commune, there were 30 deaths caused by children’s diarrhoea, 2 measles, and no case of death caused by scarlet fever (ROTARIU et al., 2005, p. 14). Vărădia de Mureş, had a slightly higher rate, being justified by the 63 deaths caused by scarlet fever. The measles died 6 people, and children’s diarrhoea 7 people (ROTARIU et al., 2005, p. 46).

The highest rates were recorded in the Apusenii Bihorului, where neighbouring communes, Căbeşti and Roşia had average infant mortality rates of 312,1‰ and 318,6‰. These were the only rates that have passed 300‰, being the largest in the entire period 1901-1910. In Căbeşti, 97 deaths were recorded, of which 48 were caused by measles, 42 children’s diarrhoea and 7 of scarlet fever (ROTARIU et al., 2005, p. 56). Regarding the commune of Roşia, the number of deaths recorded among the three diseases was 266. The most widespread disease of the three mentioned was the diarrhoea of children who were responsible for the death of 159 people (59,7 %), following 76 deaths from scarlet fever and 31 measles (ROTARIU et al., 2005, p. 70).

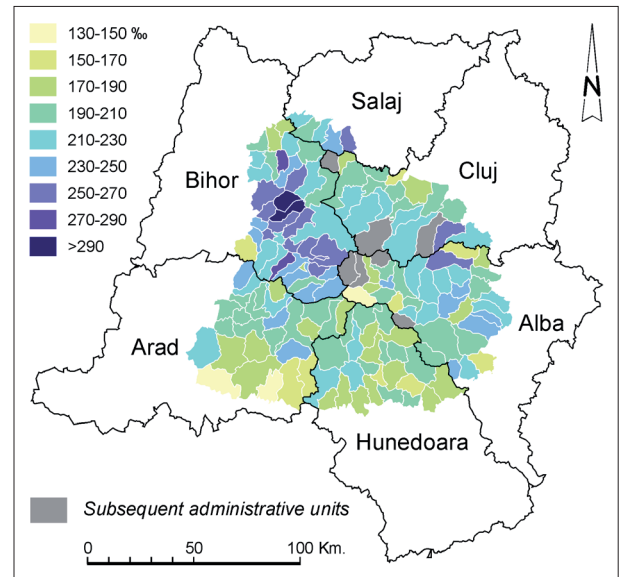


FIG. 7. Spatial distribution of average infant mortality rates in the Apuseni Mountains from 1901-1910. Source: data processed after the Rotariu et al. 2005.

The Beiuşul was one of the most developed administrative units in the Apusenii Bihorului, with a clear pre-urban level. However, the share of children who die before the age of one year of total deaths is high (24,16 %). The pre-urban nature of the locality, associated with a significant increase in the share of non-agricultural activities, but also with an increase in the level of living at the village level, did not lead to diminished infant mortality rates, the rate index remained very high. The hope for life in this community from the Apusenii Bihorului was only 25,42 years old, and the average age of 18 years. Economic development in the administrative unit was superior to most other establishments but unfortunately did not help to lower infant mortality (BRIE, 2009, p. 122).

Overall, the average infant mortality rates in the Apuseni Mountains had very high values between 1901-1910. The shortage of sanitary infrastructure and the lack of qualified medical personnel were direct causes of infant mortality due to the inaction of the authorities. The lack of qualified and specialised medical professionals to assist the mother at birth and who can provide a minimum medical help to the child was another important cause of mortality growth. In parallel with these cases, there have been those that are directly related to demographic behaviour in terms of nutrition models and food education. Many children died during childbirth or shortly thereafter. High infant mortality also originated

in a negative collective mentality of the population, on attitudes towards the health system.

NUPTIALITY

The nuptiality designates the crowd of marriages concluded within a specified period, which in most cases is a calendar year. It is a main demographic phenomenon, expressing the intensity and frequency of the demographic event of marriage in the ranks of a population or subpopulation (LAZĂR, 2000, p. 110; ROȘCA, 2003, p. 76). The nuptial behaviour is one that is formed as a reaction of the human component to the structural conditions and restrictions of society and the environment in which they live (ROTARIU, 2003, p. 187). Conditionalities and economic-social realities have made their mark on the evolution of marriages and matrimonial ties between individuals. It is known that the pre-industrial populations were large-consuming cereals, and in the years when agricultural productivity was low, food shortages were found in the demographical plan by the numerical decrease of marriages. As a reverse phenomenon, when crops were good, the number of marriages was increasing (LIVI BACCI, 2003, p. 64).

The average rates of nuptiality are balanced in the period 1901-1910, with differences being relatively low. However, 25 administrative units have been identified, the average rates of which have passed 10,1‰. They are distributed homogenous in the area of the Apuseni Mountains, but we must mention that in each of the groups there is at least one administrative unit with a rate of more than 10,1‰. The average marriages on administrative units were under 100 per year, except for Târnova who recorded on average 116 marriages, given the large population of 13.458 inhabitants in 1910. I found that the highest actual average of the marriages was 67 in the Albac (ROTARIU et al., 2005, p. 29) from the Apusenii Albei, following the commune of Scărișoara with 61 marriages (ROTARIU et al., 2005, p. 53) and the Mărgău from the Apusenii Clujului with 60 marriages (ROTARIU et al., 2005, p. 265). At least the space of the Apusenilor Albei was subjected to hydrological risk phenomena, flooding destroying large areas of crops. Therefore, agricultural productivity at the beginning of the 20th century was a small one, which was a result of matrimonial evolution. However, in the first decade, there was a uniformity in the regarding the evolution of marriages. There is no doubt that stability has followed a steady economic and productive period in

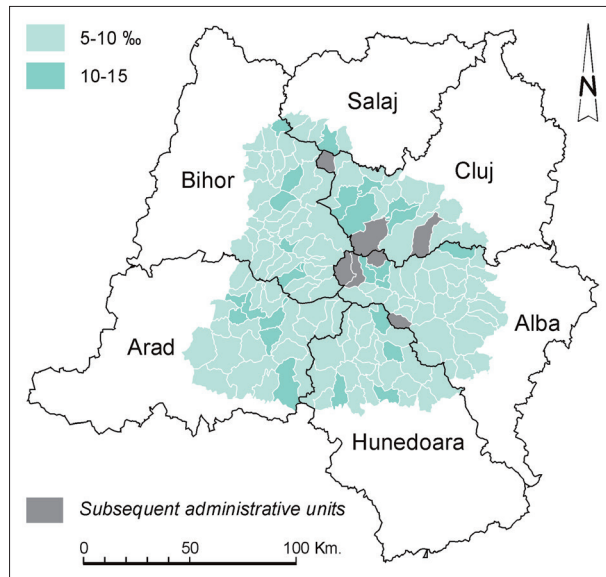


FIG. 8. Spatial distribution of average nuptiality rates in the Apuseni Mountains from 1901-1910. Source: data processed after the Rotariu et al. 2005.

the agricultural sector. By 1905, production was somewhat more modest, marked by fewer marriages. From 1905 to 1910, productivity experienced a sensitive ascent, which led to an increase in the number of marriages in the administrative units mentioned (HOLOM, 2009, p. 79). As seasonality, most marriages took place in November, followed by February. These two calendar months are resting months on agricultural activities and are placed before the debut of the two great posts. Another cause that influenced the nuptial, had confessional origins, so the reformations were the only ones who made marriages in December. Protestants, Evangelicals, Unitarians did not have so many restrictions of the religious calendar such as the Orthodox confession, on the optimal periods for marriages (HOLOM, 2009, p. 84). The Râșca and Ștei had an average reduced number of marriages, but reported to the total population, resulted in high rates. The census of the year 1910 (ROTARIU et al., 1999-2006), Râșca had a population of 345 inhabitants, and Ștei had 506 inhabitants.

The reduced values of marriages in the Apusenii Aradului are closely connected with the marriage herd at the county level. At the beginning of the 20th century, no less than 53,73 % of the demographic component was unmarried and barely 39,88 % were married. I found that the values in the areas of Aradului were very close to those of Transylvania. The share of unmarried in Transylvania was 52,4 % and the county of 53,73 %. The situa-

tion is similar in relation to the share of the married, 41,0 % at the level of Transylvania and 39,88 % at the shire level (PĂDUREAN, 2001, p. 307).

In the space of the Apusenilor Bihorului and Clujului the couple's ambience was inevitably marked at the level of real behaviour by the code of marital, ecclesiastical and secular attitudes. In those circumstances, the woman had to be subjected and humble in front of the man. Physical characteristics were important only if they served pragmatic needs. The woman was used largely as a helping hand to achieve the needs in addition to dwelling (MUNTEAN, 2001, p. 238). Also, for the attempt to avoid marginalisation many marriages were held between men of 45-50 years and women of 37 and 51 years (MUNTEAN, 2001, p. 233).

CONCLUSIONS

In the period 1901-1910, the Apuseni Mountains recorded high mean values of birth, mortality, but especially infant mortality. The number of births was high, but due to the shortage of medical premises and qualified medical staff, many of the new-borns did not pass their first year of life. Those who passed the first year were subjected to new vulnerabilities due to the multitude of diseases that existed in the Apuseni Mountains. Also, the lack of pharmaceutical products was a major malfunction, so the population was very pre-treated. The best medical treatment was determined by the own resistance of each organism in combating disease. However, we must mention that the natural increase had positive mean values with the exception of a small number of communes that had the negative decrease. The nuptiality kept very close mean values with small differences between the minimum and maximum rates, which shows a balance in terms of marriages. This period of the beginning of the 20th century, was one that followed years of rapid enlargement of epidemics in the area of the Apuseni Mountains, then the climatic hazards have put their mark on agricultural productivity. Drought periods have destroyed large areas of cultures, and from a phyto-pathological point of view, diseases have emerged that have destroyed whole plantations of vines. With all these difficulties, the human component in the Apuseni Mountains managed to continue its existence until today, passing over several evolutionary cycles, which were both positive and negative. The migratory dynamics of the population was noticeably influenced by the diversity of the epidemiological spectrum in the Apuseni Mountains. On comparative censuses of 1900 and 1910, we saw that

the population was in continuous motion. The flock of departures was continuously ascent, with 1910 high values of the left demographic component recorded. Some of the departed population turned to other regions in the country, and others just outside the country. Basically, the first decade of the 20th century was constituted as a space of metamorphosis between internal emigration (national level) and external emigration (international level).

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