"The Ugly Disease of Poverty". Descriptions, Reports and Socio-Medical Measures to Combat Pellagra in Bukovina, 1890-1914

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Abstract. The health situation and the functioning of the Austrian Bukovina health system remain poorly understood due to the marginalization of the topic as well as the limited study of primary source material related to this time frame and region. Although scattered in the archives of Romania or those of Ukraine (Cernăuţi/Chernivtsi), in the regional press and popularization works specific to the beginning of the 20th century, the material concerning the variety of diseases (many of them infectious, with fatal effects among the population) is rich and instrumental in understanding the knowledge the historical specificities of the easternmost province of the monarchy. Based on such diverse information from the archives of Suceava and the press of the time, the article proposes to shed light on one of the most challenging "social diseases" of the time, namely pellagra. It presents the conditions and appearance of the disease, its symptoms and phases of manifestation (as described by several doctors from Cernăuţi and Suceava) and how the doctors and political authorities of the time adopted medical and social "sanitation" measures. The successes and setbacks in what had been dubbed the "Fight against Pellagra" (*Bekampfung der Pellagra*) for several decades point to the potential for examining the topic from the perspective of social history, ethnohistory, medical history, historical demography, and rural history, thus offering ideas for new investigations.

Keywords: nutritional deficiency, social disease, medicalization, Bukovina, recovery, pellagra

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1. Introduction

At the beginning of the 1908, in one of the Romanian-language newspapers from Cernăuți (Chernivtsi/Czernowitz), the priest and ethnographer Dimitrie Dan addressed the readership of "Honorable landowners" with the following words:

> "*None of you may have heard of a new illness called pellagra; others might not have heard of it at all. At the urging of the honourable captaincy from Rădăuți, I wish in the following to show you what a dreadful disease pellagra is, what causes it, so that some of our people fall ill with pellagra, and finally how we could protect you from that horrible and deadly sickness"* (Dan 1908: 62).

Almost two decades had passed since the provincial government had requested all district medical staff involved in vaccination campaigns against smallpox to document and investigate the cases of pellagra identified in rural communities. This had contributed to a better understanding of the conditions that favoured the development of the condition, which would in turn increase the effectiveness of what the authorities called a "campaign" or "fight" against the disease.

In the medical literature of the Austrian Empire, the mechanisms of pellagra pathology were no longer a novelty since the 18th century, the disease subsequently becoming endemic in Lombardy, southern Tyrol, Gorizia and Gradisca, explaining somewhat its names of *Rose delle Asturie*, *Lepra asturica*, *Lepra italica*, *Risipola lombarda*, *Eczema lombardo*. It took doctors more than a century to understand the mechanisms of the disease, searching for its infectious or genetic causes and blaming either "animal microbes," "dust on the skin," "sunburn," or "contaminated water" (Ginnaio 2011). The most reputable views attributed the attachment to a diet nearly "exclusively" and "abusively" composed of maize flour products or polenta. Hence resulted in the maidic[1] and the toxic (or zeitoxic[2]) theories. Supporters of the former definitely blamed the "monotonous diet" and corn, which, unlike other cereals, could not be easily "assimilated by the human digestive organs" (Felix 1901: 196). Certain assumptions limited to this hypothesis were confirmed by the discovery of vitamins, particularly the role of niacin, commonly referred to as vitamin B3 or PP. Finally, pellagra became a nutritional condition, or the

[1] Theory according to which corn, a food poor in nourishing materials, especially in nutrients nitrates, would cause pellagra, regardless of whether it is healthy or spoiled.
[2] Theory attributing pellagra to mycotoxins (moulds) from tainted corn.

"prototype of a social disease" caused by the body's lack of essential nutrients (Savvidou 2014). On the other hand, proponents of the toxic idea asserted that eating maize tainted with mould and fungus was the cause of the illness. According to the illustrious physician and anthropologist Cesare Lombroso, it was not poverty that caused pellagra (i.e., corn known as "the food of the poor") but rather a virus specific to altered corn, which has a devastating effect on an exhausted and neglected body. In other words, there was a connection between "pellagra" and "poverty," but not a cause-and-effect relationship. The severity of the clinical manifestations led to its identification with the "disease of the 3 D's" – dermatitis, diarrhoea, and dementia, often followed by death. However, beyond the clinical particularities of this feared disease, its approach from a historical perspective remains challenging, with attempts at retrospective analysis regarding either the entire Austrian monarchy (Flamm 2021) or its provinces (Gentilcore and Priani 2023; Devetak 2024).

As for the imperial province of Bukovina, - where it is described by using terms such as "jap", "flap", "skin", "skinning", and "cleft" - references are scattered in documents belonging to administrative authorities (priests, doctors and officials), in reports, health situations and press, each highlighting its trajectory and conclusion. Historical medical research in the territory of Austrian Bukovina is still in its early stages, although in the 1970s, the physician Octavian Lupu tried to build a history of health services by referencing legislative documents issued by the chancellery in Vienna (Lupu 1978). The unpublished manuscript, which is still housed in the County Library in Suceava, identifies pellagra as one of the primary concerns. Despite the shortage of qualified medical personnel and limited financial resources, the author advocated for the gradual implementation of medical measures.

Owing to previous inquiries into the subject (Mareci Sabol 2017a, 2017b), an in-depth exploration of pellagra as the "ugly and deadly disease" that ravaged Bukovina seems to be a particularly fruitful direction of research., Moreover, the praxeological approach to the subject aims not only to discuss the practical routines and the findings of the few doctors in Bukovina but also to examine the practical application of their theoretical knowledge in a social and community context. In other words, focusing on the historical sources generated by the reports and individual analyses elaborated and published by Bukovinian doctors, this approach moves medicine from the intimate space of the hospital or doctor's office or the patient's home into the public debate, and eventually into the decision-making forum of the province. In addition, the sources encompass the case studies that were the subject of articles in medical journals, opinions, and archival statistics, all of which have the potential for a

practice-focused reconstruction. In the first part of this work, I will provide an overview of the food context and the nutritional deficiencies that constituted the cause or contributing factor of pellagra, highlighting two products (corn flour and alcohol) whose use and abuse led to diseases, debates, and medical and social policies. What did corn mean in the diet of the population of Bukovina, especially for members of rural communities? Who was the victim of alcohol, and who should be held accountable for the production, sale, and consumption of harmful foods due to negligence or malice? The following section presents the medical approach to the disease as a strategic movement, a spontaneous or thoughtful desire to highlight the doctor and the cases considered worthy of being made public. The last sequence refers to those figures that led doctors and provincial politicians to adopt social measures and health policies in the easternmost region of the Austrian Empire.

2. Food context: Corn-based diet, nutritional deficiencies, and alcoholism

Described as a "social plague" in Bukovina in the 1880s-1890s, pellagra caught the attention of the press. The intellectuals demanded sanitary measures and improvements to the economic environment and living conditions of the empire's citizens, trying to prevent the disease from becoming a severe threat to the state. Moreover, the profoundly dramatic image of the rural environment, monotonous and imbued with the stigmas of malnutrition or poor dietary habits, created a state of alert. Perhaps not coincidentally, the intervention of the priest Dimitrie Dan, a corresponding member of the Romanian Academy and a respected citizen of Bukovina, could contribute to edifying the people ("the honourable householders," as he used to address them) regarding the "cause of the dreadful disease of pellagra", concerning the deficient diet and the consumption of harmful corn:

> "*Those people who eat, day after day, year after year, only polenta made from spoiled, unripe or mouldy corn flour contract the disease called pellagra. But a person contracts pellagra easily if he consumes the bad or old polenta, which has begun to mould at the bottom, and moistens it with water to make it slide more easily down the throat. Similarly, those people contract pellagra, who eat good polenta, but only with clear borscht, which is not sufficient to nourish their body".* (Dan 1908: 63).

Towards the end of the 19th century, corn had become ubiquitous in rural diets, slowly replacing all other competing cereals. Excessive and often

exclusive consumption of polenta, whether made from good flour or spoiled flour, could lead to "the dreadful and terrifying disease." Paradoxically, "the food that brought the disease" became iconic for the rural population or even "an emblem of Romanian identity" (Diaconu 2021: 108). According to Edmund von Neusser's work on pellagra in Austria and Romania, the cultivation of corn in Bukovina had begun around the year 1786 (Neusser 1887; Klunczenko 1911b: 199), although according to observations made by Splény as early as 1775, the peasants in the newly annexed province ate "only milk, cheese, and cornmeal, that is, cornbread". In 1893, commenting on this statement, Johann Polek, the editor of Splény's writings, noted: "More widespread than cornbread, or what Splény[3] calls *Kukuruzbrod*, is *mamaliga*, a porridge made from corn flour (Splény 1998: 213). We do not know whether the scholar and traveller Baltazar Haquet referred in his notes to the same cornmeal porridge as the only dish prepared by the people of Bukovina, but paradoxically, this poor food made the locals healthier and more vigorous compared to the residents of large European cities (Hacquet 2002: 69). The ethnographer Simion Florea Marian wrote that corn seeds were used for filling sausages or in sauces that accompanied dishes made with pork ribs, goose meat or fish. Boiled in milk, the same corn kernels transformed into a delicious dish, served mainly at substantial meals before entering Lent and at commemorative celebrations for the dead. Moreover, a fermented drink from corn mixed with barley could replace beer. For Marian, corn represented "the main element of Romanians everywhere. If there was no corn, I do not know what the Romanian people would do, who have become accustomed to eating only bread made from cereals." Several dishes were prepared out of corn flour: polenta ("a poor word for a poor dish"), sweet corn dough ("which takes the form of a pancake whose dough must never rise and which gives a sweet taste"), *alivancă* ("prepared from corn flour mixed with yoghurt"), cornmeal – coarsely ground corn ("coarse ground seeds with milk or for making dumplings, especially vegetarian ones"). In addition, Simion Florea Marian explained the corn-wheat relationship as follows: "Romanians use wheat during the major holidays, while corn flour is used in their daily life. From corn flour, we prepare not just bread, pancakes and other similar products, but also other small pastries that are primarily consumed by children" (Marian 2010).

The expansion of the railway infrastructure and the possibility of importing large quantities of corn, against the backdrop of high consumption,

[3] Field Marshal Gabriel Anton Baron Spleny von Mihaldy was a nobleman and general of the Austrian Empire. He served as the first governor of Bukovina from the summer of 1774 until the spring of 1778.

made it possible for its price to drop. Unfortunately, transportation and improper storage also led to its spoilage. Taking seriously the warnings of doctors and realizing the ignorance regarding the nutritional value of food, the priest Dan wrote: "The most effective means to avoid pellagra is to mix polenta with wheat, rye, or barley bread, meaning we should eat, alternatively, polenta and bread. So, if we eat polenta alongside bread and if, moreover, we frequently indulge in milk, cheese, and meat from geese, pigs, sheep, lambs, then truly, the good Lord will protect us from the dreadful disease" (Dan 1908: 64). In an article meant to popularize the existence of the disease, the physician Gheorghe (sic!) Manolescu argued that it was "caused by social wrongdoing" (which had generated at a medical level "a Babylonian confusion") and mainly targeted "the working masses, who are underfed and poorly nourished" (Manolescu 1904: 2). The "disruptions" in this image came from the presence of

> "*wealthy people…, who live worse than the poor. The reason is their boundless avarice, for some like these would rather sell the beautifully ripe corn, which shines like gold in the market, while they, along with their tender offspring, that is, the children, punish them by feeding them with the poorest corn, which sometimes even pigs refuse to eat. They would much rather greedily hoard money than nourish themselves with healthy bread.*"

Committing a capital sin like avarice, they were condemned to "the dreadful disease of pellagra, accompanied by terrible sufferings, terrifying madness, and a cruel untimely death in a hospital or a lunatic asylum" (Dan 1908). While the wealthy class represented the "exception", the peasants formed the "rule", and chronic hunger caused by nutritional deficiencies and alcoholism favoured the emergence and exacerbation of the disease. In 1910, the physician Octavian Gheorghian employed stark terms to caution the public and the authorities of the following: "The greatest enemies of our people are alcohol and pellagra. They decimate whole villages, and if things continue as they are, it won't be long until hospitals can no longer accommodate the number of sick" (*Calendar* 1910: 54). Even if the majority of the population found itself somewhere in the middle distance between moderation and excess concerning alcohol consumption, the public discourse highlighted the danger of alcoholism in Bukovina. For example, in one of the issues of "Gazeta Bucovinei" from the autumn of 1895, the residents of Suceava were divided into three categories: "Suceava residents who drink at home; Suceava residents who drink in taverns; and Suceava residents, finally, who drink at home and in taverns" (*Gazeta*

Bucovinei 1895: 3). The issue of alcoholism was not new for Bukovina. The first measures to combat it dated back to its organization within the Austro-Hungarian empire. General Enzenberg, for instance, proposed limiting imports, regulating the sale of alcoholic beverages, and controlling taverns. Moreover, he desired the sale of these "sinful liquids" on credit, recommending the reconversion of tavern keepers from their antisocial profession and directing them "towards agricultural work" (Lupu 1978: 119). By the end of the 19th century, the phenomenon of excessive alcohol consumption became notable, but the law of 1878 did not have a radical effect on locals. From the capital of Bukovina in the years 1880-1890, there was a call to distinguish the "old merry drinking, with good wine" from the "ruinous alcoholism due to various poisons." A definite scale of the harmfulness of alcoholic drinks opposed distilled beverages to fermented ones. As a general principle, the noxiousness of the finished product increased directly in proportion to its strength, placing distilled alcohol or "alcoholic poison" at the top of the hierarchy of dangers, which generated the physical and moral decline of man, pushing him towards murder, driving him to madness and giving cause to "a host of liver diseases" (*Gazeta Bucovinei* 1896: 3). In one of his interventions, Dr. Würzel mentioned the case of the wife of a very wealthy peasant, who, as a drinker of *rachi*, "fell ill with pellagra", later recovering after prolonged abstinence from alcohol and corn-based foods. Similarly, a 50-year-old public official, recognized as an alcoholic, fell ill with pellagra, although he had eaten cornmeal in moderate quantities. In his case, the appropriate regimen had "favourable success" (Würzel 1903: 214). However, that distinction between "reasonable" alcohol consumption and alcoholism was irrelevant for the "poor," the "malnourished worker", who became an object of the speeches from the podium of the provincial Diet (*Czernowitzer Tagblatt* 1910: 2) or of the priests' sermons, who endorsed the pledges of abstinence made in church, in front of a barrel full of *rachi* that was to be first "cursed" and then led through the locality "to the sounds of trumpets and pistols", to the burial site as proof of "getting rid of this sin" (Covalciuc 2018: 63).

Without insisting on the issue of *horilka* or *rachi* consumption, on the hygiene of the body or the dwelling, the priest Dan recommended, to avoid the "terrible disease," first to give up the consumption of "rotten, mouldy and unripe corn." In the event this sickness had been contracted the patient was advised to go to a doctor or the hospital and, at the same time, to exclude from the diet, "for a longer period, food with cornmeal," promising them "complete recovery" (Dan 1908: 64).

3. Disease and patients in the descriptions of doctors from Bukovina

In 1903, in an article published in *Wiener Klinische Wochenschrift*, one of the first cases of pellagra in Bukovina was mentioned, which had been diagnosed in the early years 1880s: "I already knew that this disease was spreading more and more in the neighbouring kingdom, Romania, and when I travelled inside this country, I saw isolated cases. However, at that time, I did not have the time nor the freedom to familiarize myself, in detail, with these cases and manifestations of the disease. One day that year, visiting the priest of the village of Costâna, not far from Suceava, I found out about a disease that had already appeared repeatedly in his parish, with a multitude of symptoms and a stunning evolution that led me to a hut where a woman with a severe and advanced stage of pellagra was huddled on a poor bed. From that moment on, I directed my entire interest towards the disease and sought out every case in the area, eagerly reading all the published works on this subject" (Würzel 1903: 211). At the time of observation, the author of the mentioned article, Max Würzel, a doctor at the Public Hospital in Suceava, was one of the first to signal the presence of the disease in the Southern part of Bukovina. The same period (1883-1884) and the same village with its sick people appeared in Doctor Kluczenko's reports, which emphasized its unusual character and clinical novelty. Despite the perplexity manifested by many of his colleagues, he claimed that the disease was not unknown to the local peasants, "especially, the elderly priests here being familiar with all the severe symptoms. of pellagra and its appearance, in previous years, especially 'after poor harvests' "(Kluczenko 1889: 47). The proximity of Suceava to the Kingdom of Romania had prompted Austrian doctor Edmund Neusser to mention in his treatise on pellagra the manifestation of the disease in Bukovina, although he had not had the opportunity to directly witness any patients there, but rather intuitively deduced this based on reports from Romanian hospitals (Neusser 1887). In turn, the physician Ioan Neagoe from Bucharest reported the presence, in the year 1866, of four patients with pellagra – which emerged after the "bad corn harvest of the years 1865-1866" – admitted to the "asylum and hospital for the insane in Cernăuți" (Manolescu 1904; Neagoe 1900), providing incorrect information regarding the location, since the construction of this medical facility would only be completed in 1886/1887. Just like Würzel or Kluczenko, the physician Ion Volcinschi from Cernăuți estimated that the first cases of pellagra were announced around the year 1884, sporadically, not only in the Suceava district but also in Cernăuți, Coţmani, Gura Humorului, Rădăuți, and Siret (Lupu 1971). Finally, Doctor Wladimir Philipowicz discussed the appearance of pellagra in Bukovina long before the year 1887, when he

diagnosed six patients. According to his notes, it was "quite late", given that in Moldova and Wallachia, it had been reported as early as 1846-1847, and the "lifestyle of the rural Bukovinian population was quite similar to that of the Romanians" (Philipowicz 1888: 422).

In the medical literature relating to pellagra, the contributions of the physician Basil Kluczenko are by far the most easily identifiable; from his office as the health referent of Bukovina, he attempted to track the aetiology and prophylaxis of the disease throughout the entire province. Already in 1889, while functioning as the district physician of Suceava, a town located at the border with the Kingdom of Romania, he reported the presence of 12 patients with pellagra, with another 2 committing suicide due to the disease. In the document addressed to his superiors in Cernăuţi, he argued that the disease might be "frequent" among the local population, "especially in years with poor harvests," as opposed to the mountainous area, where locals were "spared." In a "more detailed analysis" published in the *Wiener Klinische Wochenschrift*, at the public hospital in Suceava, all 12 patients mentioned by Kluczenko were peasants (daily laborers), aged between 27 and 70. Of these, 11 were men. The 12th person was Katrina J. from Petroutz (Pătrăuţi), aged 36, with ten births but only six living children, the youngest being one and a half years old. Her husband, the forester, could provide the family with "a good material situation," even though the main food consumed remained polenta. The patient claimed to have fallen ill a year earlier (around 1886), subsequently developing inflammations on the backs of her hands and feet, which had however improved by autumn and almost completely disappeared in winter

Without other symptoms and not knowing the cause of the malady, she firmly denied having consumed spoiled or uncooked corn. Nevertheless, the recurrence of the disease, on June 15th, had sent her to the hospital, where the doctor found a complex of symptoms, besides changes in the skin (slightly scaly, reddish in colour), which included pallor of the face, decayed teeth, frailty accompanied by dizziness and headache. Fortunately, a proper diet and the administration of iron and arsenic improved the patient's condition. From the same period comes the case of Stefan M., a 37-year-old day labourer from Reusseny (Reuseni). Extensive facial erythema, bright red, covered his nose, forehead, cheeks, neck, backs of his hands and legs, and the outer surface of his forearms. From the doctor's description, it appeared that the patient responded to questions addressed to him "with slow speech, after much thought," being "extremely apathetic" and complaining of headaches and dizziness. Nevertheless, after two weeks, he was discharged. The youngest among the patients observed by the doctor from Suceava in 1888 was peasant

Konstantin K. from Teschoutz (Tişăuţi). At 27, married for two years, he had two children. Although the 1887 harvest was of poor quality, the spoiled corn was consumed for four months by his family as polenta. Unlike his wife and children, he presented extensive erythema on the backs of his hands and legs, on his face and neck, experiencing dizziness, headaches, and violent diarrhoea, sometimes bloody, which weakened him, rendering him incapable of hard work in the fields. Michailo U., a 34-year-old peasant from Jakobestie (Iacobeşti), Iwan S. from Lissaura (Lisaura), Bihol B. from Bossancze (Bosanci), and three other men from Costâna (where the disease had become "frequent"), also complained of the same symptoms. With an illness "he had borne standing" for three years, Iwan S. from Romanestie (Românești), a 44-year-old man, married, with four children and "fairly wealthy," had reached the stage of dementia, just like Peter G., a peasant living in precarious conditions who had ended up in the Suceava hospital after, a few weeks prior, he had set his own house on fire "in a fit of madness" (Kluczenko 1889: 48).

In Cernăuţi, the secondary doctor Philipowicz "occasionally" identified pellagra at the suggestion of his "chief," Dr Zaloziecki, who was intrigued by the skin changes on the backs of the hands and legs, as well as by the unusual psychological behaviour of a patient. With medical experience gained over more than 11 years in Gorizia, Philipowicz managed to diagnose six cases, two of which he confirmed through an autopsy. The patients were admitted to the surgery and internal medicine wards, with only one, a 26-year-old woman, assigned to psychiatry due to "mental disorders". The treatment provided by psychiatrist Tzurkan (Ţurcan) yielded results, and the patient was discharged after almost 3 months of hospitalization. Aware of the observations and descriptions of clinical cases by Dr. Kluczenko, his colleague from Suceava, Wladimir Philipowicz doubted the accuracy of patients' statements regarding the onset of the illness. With an air of superiority, which he justified by his social status and level of education of the patients, he blamed the ignorance and "lack of intelligence and awareness of the disease among our rural population" while also recognizing "the fear of our rural population towards the hospital," which meant that "the vast majority of patients stay at home. Therefore, I believe that a detailed observation in different parts of our Crown Land would reveal a considerably larger number of sick people" (Philipowicz 1888: 455). The same opinion was shared by Kluczenko, who considered it interesting and useful to investigate the occurrence of pellagra throughout Bukovina (Kluczenko 1889: 48).

But how did this terrible disease, which most often led to a fatal end, manifest itself, and how did the Bukovinian doctors describe it? To identify

and delineate it, they referred to foreign literature (or, in Philipowicz's case, to the experience accumulated in regions where it had already become known), checking the criteria of scientific rigour of the era applied in science medical, ordering or hierarchizing the manifestations of the disease from a conceptual and categorical point of view. According to Dr. Manolescu, in the "intermittent stage," "a beginning of redness is observed on all parts of the body exposed to the sun" and "a general weakening of the organism … always accompanied by headaches, dizziness, continuous fatigue, disgust for work, and social reserve. These symptoms disappeared in autumn, only to return increasingly pronounced in springtime. The next stage, "remittent", was characterized by the generalization of erythema on the skin exposed to the sun, paraesthesia, hyper chromia, and desquamation or "peeling". In this phase, the treatment of skin lesions consisted of compresses of acetic clay, vaseline for softening, and, eventually, drops of arsenic. For the healing of the digestive tract, bismuth was administered in association with opiates, iron, and small doses of quinine as "tonics to improve nutritional status and combat anaemia." Doctor Würzel expressed his distrust in the administration of saline solution, plasma, and strychnine, the latter for combating episodes of schizophrenia and subsequent paralysis complicating pellagra (Würzel 1903: 215-216). The evolution of the disease or "the unfortunate sufferer being taken in the grip of the disease" coincided with "general dullness, diarrhoea, cramps, delirium, melancholy, and, finally, with death, either by the mercy of God or by suicide, by drowning or hanging" (Manolescu 1904: 2).

As Dr. Kluczenko sought the help of local teachers and priests in raising awareness among the rural population regarding the danger of getting sick, Dimitrie Dan "translated" for "the honorable householders" the grim spectacle of the disease in the following way:

> "*Pellagra first shows up by the fact that the one afflicted by this disease is hungover; that is, he feels no pain, yet is not healthy, so he cannot engage in any work. The patient's salivation increases, he feels a salty taste in his mouth, there is no good taste or no taste at all in any kind of food. Then, the patient is overwhelmed by stomach and bowel pains, even cramps with vomiting, then experiences a terrible stomach-ache, sometimes with bleeding. This illness is worse towards the end of winter when patients suffer from terrible headaches, dizziness and shivering as if after drunkenness, then a kind of drowsiness; they do not hear, do not see well, and eventually, they experience an inability toto think of anything. Moreover, the patient develops swellings on the hands and feet,*

> *sometimes even on the face and chest, which burn like fire and are accompanied by horrible pains. After a while, these swellings on the hands and feet rise and become red. These swellings then develop like blisters, and the skin begins to crack. The patient also develops swellings on the tongue, where crevices appear. All these symptoms appear to the patient until the beginning of autumn, that is, until the start of the cold season when the patient seems to feel better. The swellings then begin to disappear, so after a few weeks, the skin of the patient's hands and feet starts to peel, and in their place remains the skin beneath, which, however, is yellow, like the leaves of the trees after a frost. Throughout autumn, the patient also experiences headaches as well as stomach cramps. But this recovery of the pellagra patient is transient and deceitful because, with the beginning of the following spring, the headaches, dizziness, painful swellings of the skin on the hands and feet, the fierce stomach cramps and bowel troubles begin again, but now much more painfully and horrifyingly than in the past summer, and the unfortunate patient becomes sad, mute, has visions, considering oneself persecuted, and walking around with dark and sinful thoughts, that is, to end their own lives, – and many do so – indeed many of these wretched individuals go mad and die in asylums"* (Dan 1908: 62-63).

Among the cases described by Dr. Würzel was a 64-year-old patient from Arbore, ill for two years but admitted to the hospital only on January 1, 1898. The appropriate treatment (based on arsenic) and the corresponding diet improved his health. However, a year after his discharge, due to the recurrence of the illness, "he was found lying in a ditch, in an extremely degraded state," necessitating hospitalization again. Ultimately, two weeks later, that patient was discovered deceased. "Crushed under blankets… whether a suicide or accidental, he had stuffed a sackcloth into his mouth and thus suffocated" (Würzel 1903: 218).

That the victims of pellagra lived out their last days in a degrading spectacle of physical and mental misery is also highlighted by the announcements in the central German-language press. A distinctive column in the *Bukowinaer Rundschau*, specifically entitled "Misfortune", recalled those who, having reached an advanced stage of the disease, committed suicide in sinister conditions (*Bukowinaer Rundschau* 1899: 3; 1900: 3). To avoid such dramas, the most suitable solution, as far as possible, was admission to the mental hospital in Cernăuţi, the only one in Bukovina. The impressive and horrifying image of mental misery was illustrated by Dr. Gregor from the State Asylum in Cernăuţi

through 72 clinical cases monitored from March 1904 to September 1905 in an attempt to establish a causal or incidental relationship between pellagra and madness. Seven patients belonged to the neurasthenic group, the most common symptoms being headache, pain in the gastric area, pressure in the head, vertigo, anxiety (which could reach phobia), and feelings of physical and mental incapacity. The awareness of their illness, pellagra, and the depression it caused eventually made them resigned and inactive. Another ten patients were diagnosed with acute dementia, manifesting, besides apathy, a hypochondriacal feeling and an awareness of their mental disturbances, willingly accepting hospitalization in the asylum. While some apparently accepted their fates, "smiling" at what they called "a shrinking of the brain," others lamented, choosing either the medical assistance they had been offered or suicide to avoid becoming a burden to their families. Most patients (32) presented a disordered psychomotor state, having "terrifying hallucinations, accompanied by vivid emotions and violent motor excitement." They saw their homes or villages burning, believed they were being attacked by enemies or demons, surrounded by wild animals, or, more rarely, found themselves before paradise, in the presence of archbishops or clerics, fishing or during agricultural work. Two of the patients observed by Dr. Gregor suffered from acute delirium, ten from catatonia, three from anxiety psychosis, and another two from manic-depressive disorders. The difficulties that the Cernăuți doctor referred to – like his colleagues in other hospitals in Bukovina – concerned "simultaneous alcoholism," having a dramatic influence on the clinical picture of the illness, and "illiteracy" or the low level of education of the patients, elements that obstructed research, negatively influencing scientific observations (Gregor 1911).

4. Numbers, statistics and medical-sanitation measures

In the 1890s, the increasing presence of pellagra in the rural communities of Bukovina created a state of concern within the medical community, with repercussions throughout the entire social body. Investigations into the endemic nature of the disease in the Suceava, Gura Humorului, and Cernăuți districts showed that despite the high number of sick individuals presenting to doctors for care and treatment, the fear of hospitals among the rural population remained overwhelming. Authorities understood that only the coordinated action of doctors would help manage the health situation. Therefore, by Decree 6998, dated May 19, 1891 (Flamm 2021: 13-14), district doctors and personnel responsible for smallpox vaccination during the summer had to "investigate the spread of pellagra in communities and families, examine

lesions when warranted, and record the findings made" in a specially prepared "Form." The summer months were the most suitable for carrying out this action, as exposure to the sun favoured skin changes and an increased ability to observe specific lesions. However, in Bukovina in the 1890s, the value of a rural doctor was still debatable: "Well, common servant! You pay the mayor, you pay the registrar, you pay the inspector, you pay the taxes, where are you to support the doctor? If we come to perish from hunger, the presence of a doctor is superfluous, as we can die without a doctor" (*Revista Politică* 1889: 1). Somewhat fascinated by the aetiology of this disease and based on observation forms and his notes, Dr. Würzel reported that at the hospital in Suceava, from 1887 until the end of October 1902, 144 individuals (79 men and 65 women) diagnosed with pellagra had been hospitalized, with an average of four per year during the period 1888-1897 and 25 per year between 1898 and 1902. Only between 1897 and 1902, those seeking treatment in the hospital increased sixfold, even though it was well-known that patients with mild forms and initial symptoms of the disease only rarely consulted a doctor. Eighty-nine were released with an "improved state of health," while only eighteen were declared "cured". There were also patients discharged as "not cured", at their family's request, and a few others who perished in the hospital. Most of the patients (109) resided in the vicinity of the city of Suceava, while the rest (35) came from other districts of Bukovina and Galicia (Würzel 1903: 217-219). For more efficient disease management, upon reaching the position of government advisor, Dr. Kluczenko proposed to doctors in Bukovina's hospitals a "Form" to help understand the areas where pellagra had become endemic, its mode of spreading, to increase awareness of the medical community regarding the aetiology of the disease. "Kluczenko's Form" included sections such as: 1. Name, age, marital status, and address of the sick person, including location in a lowland or mountainous area, in sunny, shady, wet, or dry places; 2. The patient occupation or place of work and ability or inability to work; 3. Economic situation or "Financial Circumstances" (in the case of peasants, the land areas owned); 4. Duration of the illness and existence of other cases in the family, indicating the degree of kinship and their nationality; 5. The primary nutrition and the specific source of corn (production or purchase); 6. Whether the patient consumes alcohol and in what form (brandy or beer); 7. Have the patients worked in Russia or Romania? If so, when? Did they consume the corn provided by the employer, bring it home in exchange for the work performed, or purchase it from another source? 8. The patient is mentally healthy or suffers from mental disorders; 9. Are there changes in the skin, face, hands or legs? 10. Was the patient admitted to a medical institution? If so, in

what year? (N.A.R.S.C.S. 215/1903) Later, a "Register" of patients with pellagra included, besides the names and ages of the patients, the duration of the disease, the area of land (garden and arable land), and the number of animals (cows, goats, and sheep) owned, the nervous, digestive, dermatological symptoms of the disease (N.A.R.S.C.S. 1/1910).

Centralizing the data provided by the doctors of Bukovina, the health reports indicated that, in just 5 years (1899-1903), the number of patients with pellagra increased by 275% (Kluczenko 1904: 253). In 1903, the district of Suceava recorded more than 400 instances (Würzel 1903: 212; Prinzing 1906: 397). In 1905, Bukovina had 1,056 patients with pellagra, which meant 479 more than in the previous year (*Bukowinaer Rundschau* 1906: 3) or the equivalent of 1% of the entire province's population (Lupu 1978: 47). A year later, the number doubled (2,266), only to then gradually decrease to 1250 in 1909 (Klunczenko 1911a: 4). From the perspective of spread, in 1910, the disease was reported in all the districts of Bukovina, more prominently in Cernăuți, Suceava, Rădăuți, Gura Humorului, Coțmani, and Zastavna and less so in Vijnița, Siret, and Câmpulung. Nevertheless, in the Mental Hospital in Cernăuți/Chernivtsi during the period 1894-1907, the ratio of admissions was different: most of the patients came from Chernivtsi district (143), followed by those from Siret, Coțmani, Storojineț and Rădăuți (between 30 and 35) and Zastavna (23), Gura Humorului, Suceava, Vășcăuți, and Vijnița (between 15 and 17) and only five from the Câmpulung district (Czernowitzer Allgemeine Zeitung 1908: 4). In numbers, between 1894-1907, 374 patients with pellagra were treated in the same hospital, out of whom 70 (18.7%) lost their lives (*Bukowinaer Post* 1908: 5). In 1902, 52 people diagnosed with pellagra were admitted for hospitalization (Lupu 1978: 110), while between 1907 and 1908, this number reached 270, or 18.4% of the total number of institutionalized patients (*Bukowinaer Post* 1908: 5). Ethnic belonging was also relevant, indicating characteristics of dietary behaviour. The victims of pellagra came from the ranks of Romanian and Ruthenian peasants, unlike "rural colonists, who have lived here for three generations – Germans, Hungarians, Lipovans, Poles – as well as numerous Jews who lived in Bukovina," where the incidence was "exceptional" (Kluczenko 1911b: 200).

From a gender perspective, Dr. Kluczenko indicated a higher prevalence of the disease among women. In his statistics, out of 2,266 patients recorded in 1906, 866 (38.8%) were men, while 1,361 (61.2%) were women (Die Wahrheit 1908: 25) due to a deficiency of niacin and tryptophan in their diet and high oestrogen levels. Another report from the mental hospital in Cernăuți, during the period 1911-1913, indicated the admission of 197 male

patients as opposed to 137 female patients (*Bukowinaer Post* 1914: 1). Regarding age group involvement, the most vulnerable group proved to be that between 21 and 60 years, with doctors identifying a link between adulthood and higher energy needs. Fewer incidents were recorded among children, adolescents, and seniors, though in their case, the question arose regarding the willingness of parents or families caring for them to take them to a doctor or to hospitalize them. Even though many patients with pellagra came to the attention of doctors within the first 4 years of its onset, most of them "bearing the disease while standing," sometimes for up to a decade (Kluczenko 1911c: 5).

The situation became extremely grim in the first decade of the 20th century. Seen from "the outside" and in a socio-economic perspective, many of villages in Bukovina were "infected with pellagra" (Jászi 1929: 232), which had reached, in a ranking of diseases, a second position in the empire (Niles 1912: 20). Sensing the long-term effects of pellagra on an economic level, Dr. Würzel wrote: "This rapid increase raises fears that the disease could become an economic danger in the not-so-distant future if the involved parties do not quickly decide to take vigorous measures to control the harm". In other words, the state had the duty to resolve this issue, thus initiating the "Fight against Pellagra" (*Bekampfung der Pellagra*). A few months after Bukovina's Government restricted grain import from Russia and Romania in November 1903, the authorities asked for more stringent control over its marketplaces, outlawing "rotten cornstalks and spoiled or health-damaging foods". Any "offence" had to be reported "immediately to the competent court, so that it could punish the offenders". (*Deşteptarea* 1904: 3).

In 1904, the physician Ioan Volcinschi established as preventive and combat measures against pellagra:

> "*raising the level of agriculture and intensifying agricultural production; promoting industry, especially that which is linked with agriculture; promoting home industry, through which peasants could earn some income, under easier conditions during the long winter months; improving the living conditions of the rural population through better education of women and girls regarding food preparation and especially bread; easing and shortening fasts; assisting small households that cannot afford cows to raise goats and pigs; combating alcoholism by abolishing taverns; the strictest control of corn imports and the establishment of drying facilities, according to a method appreciated at that time from Italy; the establishment of corn warehouses in regions with numerous patients, aimed at selling dried corn, and exchanging spoiled corn for good corn; a*

> *conscientious control of all corn and flour supplies as well as the destruction of spoiled corn; providing better information to villagers through proper propaganda; avoiding placing agricultural workers in regions with pellagra*" (Lupu 1978: 112-113).

Migration during the months of April to October – when a significant number of Bukovinians chose to go to Romania to earn wages from engaging in seasonal labour – was blamed for the increase in cases of pellagra, with Würzel believing that climatic and nutritional aspects favoured illness with malaria, typhus, and pellagra. He referred to the community in Tesoutz (Ţişăuţi), near Suceava, where, until the early 1890s, the disease had been unknown. In just 10 years, out of approximately 700 inhabitants, 50 had been confirmed with pellagra. Consequently, the doctor called for the mobility restriction or obstruction "through appropriate measures" (Würzel 1903: 217). Additionally, teachers and priests were encouraged to "enlighten the people about the sad consequences of this disease" (*Patria* 1910: 3), teaching them how to store corn, what and how to cook, which foods were healthy, and what the body needed to function optimally. After telling people how to protect their flour from cornmeal "of decay and mould" by drying it on clean sheets or tablecloths, Dimitrie Dan recommended alternating polenta with bread and supplementing the diet "as often as possible," with "sweet or sour milk, sheep or cow cheese" and meat, at least on Sundays and holidays" (Dan 1908: 66). Starting from the same medical statistics, Kluczenko discovered that, as of 1909, out of a total of 1250 patients with pellagra, 21% were landless and had no land to work on, and 47% up to 100 acres (*Bukowinaer Post* 1911: 4).

In their studies, the doctors highlighted the link between poverty and malnutrition in the rural Bukovinian population, particularly regarding protein and fat intake, distilled alcohol use, and the limitations placed on religious fasting. At their request, but equally following the Tyrolean model, the provincial authorities under the leadership of Governor Ritter von Bleyleben decided on "measures to combat pellagra." A special committee was to be established in the first few months of 1905 to determine which localities were most at risk of pellagra and to provide a budget for tangible measures to help the ill (*Bukowinaer Post* 1905: 1). In the following year, with 40,000 Crowns (from central funds for combating epidemics and social diseases, from those allocated by the Bukovina state administration and the Greek Orthodox religious fund), 12 facilities for patients with pellagra were built in 5 districts, with 471 individuals benefiting from these services, some for longer than 200 days. Other funds went towards synthetic fertilizers to enhance less usable

land. In 1909, the total grew to 54,000 Crowns, of which 1000 were alloted to buy milk sheep (which could provide two to three litres of milk a day), while the remaining amount was to ensure the effective operation of the feeding centres for the sick. A situation cited by the health representative of Bukovina indicated that such centres had emerged in all districts of the province (except for the city of Cernăuți) and in 30 localities where the share of pellagra patients had reached over 2.3 per cent of the population. For an average of 83 days, 1250 persons each received approximately 1200g of bread made from wheat flour daily, 300 g of bacon once a week, and three measures (*Stößel*) of cooking salt every three weeks (Kluczenko 1911: 201).

In the entire landscape of social and medical sanitation, the mess halls had a vital role. Established in private homes or buildings made available by local authorities, the "eateries" or bakeries were managed by a local committee led by mayors or priests. The exemplary mess hall in Rarancea – described by Dr Rudnik in *Wiener Klinische Wochenschrift* – was located 10 minutes away from the "local chancellery," in a "neat" building, compartmentalized, with two spacious and bright rooms for serving meals, complemented by "an equipped kitchen," an antechamber, a pantry, and a basement for storing wood. This establishment had a well, a henhouse, two animal outbuildings, and a small garden for vegetables. A head cook, a cook and her assistant, two cleaning ladies, a baker and a clerk meant to handle the daily records were employed as the mess hall staff. Daily, between 5:00 and 7:00 am, 250 grams of bread and half a litre of "warm milk" were supplied for breakfast. At lunch, from 12:00 to 14:00, the sick received soup (500 g), beef, pork, and mutton, and occasionally chicken (200 g), vegetable side dishes - such as rice, potatoes, peas, cabbage - (300 gr.), bread (400 gr.) and dessert (350 gr.). A medical examination, repeated every 14 days, was the basis for enrolment in the mess hall programme. Corn, wine, smoking, and alcoholic beverages were prohibited, but meat was served at least five times a week (except on fasting days). The diet and strict adherence to the doctors' recommendations yielded results, with the health status of 38% of those attending the social establishments designated for pellagra patients becoming "remarkable", while another 58% showed "improvement" by gaining weight, a sign of recovery (Kluczenko 1911: 201; Lupu 1978: 115).

As Deputy Florea Lupu pointed out, in addition to funding, initiatives, and social institutions—all of which are vital and successful—a comprehensive legislative framework was required to enable a "sanitation of material life and in terms of the nutrition of peasants" or, to put it another way, a methodical effort to restore their social standing. The law that several deputies and Bukovina doctors had asked for was released on January 1, 1911. It stipulated

more effective control over the preservation of corn and its trade, the organization of appropriate drying facilities and storages, the replacement of polenta with bread, the compilation of more accurate statistics for educating the population on issues related to hygiene and for promoting the industrialization of villages, the establishment of a commission and a special fund for combating pellagra and, last but not least, the encouragement of doctors to settle in rural areas. This statute incorporated several of the recommendations made by physicians Kluczenko, Würzel, and Volcinschi. It involved, among other things, the establishment and running of mess halls, facilities for the drying and storing of corn, and hubs for the distribution of corn and corn products to the populace in return for defective or inferior maize. In addition, bake houses (destined for a single community) and healthcare units such as hospitals for patients with pellagra had to be established and supported or maintained, with the specialization of doctors in this disease. Awards were also announced and granted for scientific works and outstanding achievements in the field of research and the fight against pellagra, while the population was to be informed about the nature of the disease, specifying the means of preventing it. Actions to increase agricultural, industrial, and nonprofit public activities had to address poverty, which accompanied the disease and was a contributing and aggravating factor in endemic areas. The president/governor, in agreement with the state committee, managed the situation as a whole, taking the measures deemed appropriate, requiring the Ministry of Internal Affairs (after hearing in the Supreme Medical Council of the Country) to allocate a sum considered necessary for carrying out projects related to combating the disease. At the same time, a commission aimed at advising and evaluating the situation. Presided over by the "president of the state" or by the appointed deputy of this position, the commission consisted of 12 voting members, namely state officials (with responsibilities in bodies such as government, the State Cultural Council, the Chernivtsi Chamber of Commerce and Industry) and doctors. Other persons, experts in the field, could occasionally or permanently participate in the debate without the right to vote. The political authorities, the so-called "first instance", were called to apply the law, while the community was obliged to support the political authorities in this endeavour. According to the rules set forth by the state president, physicians had to notify the political authority of every illness or death of pellagra patients. The political district authority was to punish those who disobeyed or disregarded the directives with a fine of five to fifty Crowns (Kluczenko 1911: 205). The district captains briefed doctors on their new duties shortly after concluding the legislative

framework. They reminded the need to be aware of the disease's symptoms, identify patients, fill out daily tracking forms, and report the number of diagnosed cases at the district level (N.A.R.S.C.S. 2/1910).

Despite this legal framework, the local initiatives in the most affected communities that had made it onto the map of pellagra spread in Bukovina (*Czernowitzer Tagblatt* 1914: 5) and the enthusiasm manifested by several physicians doctors, who had published their case studies in medical journals in Vienna to contribute, to the understanding of the mechanisms of the disease and to find real solutions, the results in the fight against pellagra were not exactly as expected. For some peasants, corn (even low-quality corn) remained the primary source of diet. It is no coincidence that by the middle of 1914, one of the periodicals from Chernivtsi was once again showcasing information related to "the most widespread disease in Bukovina," about 1) the number of those hospitalized in the asylum and whose end was a "painful" one, 2) the insufficient data regarding the distribution of patients, and 3) the funding that authorities needed to allocate to combat pellagra. After all, the money the state had invested represented "significant resources." However – wondered the author – did the state have a "resource more valuable than people"? The very power of the state was rooted in healthy individuals. So, "what was the use of a political armour when, from within, 'this insidious disease rotted and poisoned generations, resulting in idiots, cripples, and dwarfs that burden the state, the country, and the community without being of use to anyone?" It was the responsibility of President Wassilko to continue the "precautionary measures" initiated in 1910 by Count Bleyleben, allocating equally generous sums in the campaign for the "liberation of the peasantry, this extremely healthy base of our population, loyal to the state, from a harm that is both terrible and pernicious in its consequences" (*Bukowinaer Post* 1914: 1). Pellagra cases were undoubtedly documented in Bukovina even after World War I, with public health sanitation measures still falling short of meeting the morbidity, if not fatality, numbers. Only later, towards the middle of the twentieth century, was the disease declared eradicated, disappearing from the nosological landscape of Romania along with the sanitation of major rural poverty hotspots. As for the dramatic way in which it manifested itself in the easternmost province of the Austrian Empire, its memory and reverberations in mental, scientific, political, economic, and social terms reflect the state's capacity to build and support medical initiatives and the citizens' willingness to recognize the danger and the disastrous effects of the disease. The story of pellagra in Bukovina is another powerful example of how conventions and practices - stemming from poverty or ignorance - can be replaced or dislocated.

5. Conclusion

Called "the disease of poverty," pellagra had a forceful impact on the population of Bukovina, a province located on the outskirts of the Austrian Empire, with an economy forced to face the challenges and commands coming from Vienna and a complex, diverse and complicated society. Beginning in the 1880s, Bukovina doctors reported seeing more and more cases of pellagra, with patients exhibiting crippling symptoms that hampered their health and capacity to work, resulting in pauperization, worsening poverty, and undermining the community as a whole. The primary risk factor was the simple, repetitive diet of the peasants, which was extremely low or lacking in vitamins and proteins. The impoverished and precarious financial situations of those who depended only on maize as a filling and easily accessible food source were also mentioned. The physical and psychological sufferings of the patients, accompanied by social stigmatization, created a dramatic picture often described by doctors Kluczenko, Phillipowicz, Würzel, Gregor, and Volcinschi.

The galloping increase in the number of cases and the terrifying manifestations of pellagra, especially the lamentable end of the patients, prompted the central and provincial authorities to intervene through a series of measures to limit the spread of the disease while also providing support to those who, trapped in a cycle of poverty and disease, could not afford to diversify their diet or procure nutritional supplements. Pellagra came to be perceived not just as a disease but also as a social and economic threat that weakened the vitality and resilience of rural communities, accentuating their fragility. As a result, specific "social and medical sanitation" solutions were tried. First, the provincial government of Cernăuţi issued a decree requiring all doctors to monitor and report cases of pellagra, especially during vaccination campaigns against smallpox. This initiative represented one of the first official attempts to collect and analyze epidemiological data, allowing for a better understanding of the spread of the disease and the contributing factors to its occurrence. Following this was a prohibition on the importation of contaminated corn from neighbouring states, restrictions on the trade of flour that could affect the population's health and regulations on the storage of grains. Although short-term and with somewhat limited effects at the community level, one of the costliest measures proved to be the opening of mess halls and bakeries to provide free meals to those confirmed with pellagra and meals that would correct nutritional deficiencies, ensuring a diversified and appropriate diet. As for educating the wider public about the causes and methods of preventing pellagra, authorities conducted awareness campaigns, with doctors, local leaders, priests, and teachers explaining both the link

between a diet based exclusively on corn and the health risks associated with it, as well as the importance of changing dietary habits.

Undoubtedly, the social and health policies to combat pellagra in Bukovina were complex and ameliorative (if not innovative) for the respective period, addressing both the symptoms of the disease and the economic and social causes of the epidemic. Additionally, efforts for epidemiological monitoring, the establishment of mess halls, regulation of corn quality, and food education campaigns significantly contributed to reducing the incidence of pellagra. However, the lack of robust health infrastructure, cultural resistance to changing dietary habits, widespread poverty, and structural dependence on corn as a staple food became significant barriers to the practical and sustainable implementation of preventive measures. The bitter lesson of what had become a widespread disease (*Volkskrankheit*) and the experience of fighting it highlighted the interdependence between health, economic conditions, and the social environment. To successfully avoid and battle such catastrophes, public health was required to be backed by a solid infrastructure, enough profitable resources, and a dedication to improving the living circumstances of all inhabitants.

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