

INFECTIOUS DISEASES AND THEIR TREATMENT IN GEORGIAN WRITTEN SOURCES¹
ინფექციური დაავადებები და მათი მკურნალობა ქართულ წერილობით წყაროებში²**LIANA SAMKURASHVILI**

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Abstract. The article reviews the manuscripts of medical content (fundamental works - Medical Book ("Thsigni Saakimoi"), "Yadigar Daud", "Incomparable Qarabadin" ("Ustoro Karabadini"), collections, separate works, qarabadins), the chronological framework of which includes the 10th-19th centuries, they reflect information about infectious diseases and their treatment; also, medical references in the memoirs with a focus on the public perceptions, causes, and management of these diseases.

The article presents the material in terms of belonging to the chronological, sectoral and cultural environment: the role of the authors or translators of the works in terms of knowledge about epidemiological diseases, the establishment of special terminology, the introduction of Eastern and European traditions.

The Georgian manuscripts reflect the diagnosis of some infectious diseases - plague, cholera, leprosy, smallpox, typhoid - the influence of regional and social characteristics of the infected on the spread and course of diseases, traditional, folk, and contemporary scientific methods of treatment, including vaccination, isolation/lockdown, and escaping tactics, other anti-epidemic measures.

These manuscripts contain references to Eastern, Muslim, and European, as well as Russian physicians and scientists (Galen, Jenner, and others); To some extent, it presents the details of society's approach to infectious diseases, in general, the general knowledge and picture of the development of medicine in a specific historical context.

Keywords: Infectious Diseases, Vaccination, Manuscript, Collections, Qarabadin, Sources

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აბსტრაქტი. სტატიაში მიმოხილულია სამედიცინო შინაარსის ხელნაწერები (ფუნდამენტური ნაშრომები “წიგნი სააქიმოი“, „იადიგარ დაუდი“, „უსწორო კარაბადინი“, კრებულები, ცალკეული თხზულებები, კარაბადინები), რომელთა ქრონოლოგიური ჩარჩო მოიცავს X-XIX სს-ებს; ისინი ასახავენ ცნობებს ინფექციური დაავადებებისა და მათი მკურნალობის შესახებ; ასევე, სამედიცინო ცნობები მემუარულ ლიტერატურაში ფოკუსით, საზოგადოების მიერ აღნიშნული დაავადებების აღქმაზე, წარმოდგენებზე, გამომწვევ

მიზეზებსა და მართვის ხერხებზე. მასალა წარმოდგენილია ქრონოლოგიური, დარგობრივი და კულტურული გარემოსადმი კუთვნილების კუთხით: წარმოჩენილია თხზულებების ავტორთა თუ მთარგმნელ - გარდამთქმელთა როლი ეპიდემიოლოგიური დაავადებების შესახებ ცოდნის, სპეციალური ტერმინოლოგიის დამკვიდრების, აღმოსავლური და ევროპული ტრადიციის დანერგვის თავსაზრისით.

ქართულ ხელნაწერ მემკვიდრეობაში ასახულია ზოგიერთი ინფექციური დაავადების - შავი ჭირის, ქოლერის, კეთრის, ყვავილის, ტიფის - დიაგნოსტიკა, დასნეულებულთა რეგიონული და სოციალური თავისებურებების გავლენა დაავადებათა გავრცელებასა და მიმდინარეობაზე, მკურნალობის ტრადიციული, ხალხური და თანადროული მეცნიერული მეთოდები, მათ შორის, ვაქცინაცია, განრიდება/იზოლაცია, სხვა ეპიდსაწინააღმდეგო ღონისძიებები. აღნიშნული ხელნაწერები ინახავს ცნობებს აღმოსავლელი, მუსლიმი და ევროპელი, ასევე, რუსი მედიკოსებისა და მეცნიერების შესახებ (გალენი, ჯენარი და სხვები); გარკვეულწილად, წარმოგვიდგენს საზოგადოების მიერ ინფექციური დაავადებებისადმი მიდგომის დეტალებს, ზოგადად, საერთო ცოდნასა და მედიცინის განვითარების სურათს კონკრეტულ ისტორიულ კონტექსტში.

საკვანძო სტყვები: ინფექციური დაავადებები, ვაქცინაცია, ხელნაწერი, კოლექციები, კარაბადინი, წყაროები

Introduction

Manuscripts preserved in the depositories of Georgia and abroad, containing information about infectious diseases, date back to the 10th -11th cc.

The information related to the management of infectious diseases in the manuscripts can be provisionally divided into the following four groups: 1. The methods of treatment in ancient Georgia according to “Incomparable Qarabadin”, “Book of Medicine”, and other works of medical contents; 2. The tactic of isolation / lockdown and distancing caused by the pandemic, discussed not only in the old Georgian medical works, but also in the texts of the Old Testament and theological literature, in memoir works; 3. Quarantine arrangements in the frames of measures carried out by the state, based on documentary sources, 4. Hygienic-sanitary indications in medical books and qarabadins.

Manuscripts of the 19th century should be singled out as a separate group, which present the knowledge of the previous and first period of the formation of bacteriology (the second half of the century), disease management strategies and instructions for preventive measures.

Methods

The research of the material discussed in the article was carried out using an interdisciplinary methodology; the theoretical research conducted on the primary sources presented in the article was based on the following components: the analysis of the material as an artifact, the primary text,

comparative analysis, based on the peculiarities of the cultural-historical environment of the reviewed manuscripts, and the interpretation considering the relevant stages of the history of medicine.

In addition, in the initial and subsequent stages of the research, an in-depth study of individual manuscripts was carried out based on the principles of studying manuscripts, codicology and textology. The obtained results were discussed taking into account the specific stages and requirements of the history of the medicine. The joined results of the research allowed us to present the medical knowledge preserved in the Georgian manuscripts of the 10th – 19th centuries in terms of the etiology, diagnosis, management and history of the study of infectious diseases.

Results

As a result of the study of Georgian manuscripts of medical content, several important circumstances were highlighted:

1. Georgian primary sources (10th – 19th centuries) reflect contemporary knowledge of Georgian scribes and doctors about epidemiological diseases, their history, distribution, diagnosis, and management;
2. The studied material clarifies the way of assimilation and transformation of appropriate knowledge and tradition by the country at the crossroad of cultures through the translation, processing and interpretation of Eastern, Muslim and European/Russian sources;
3. The mentioned traces and influences are reflected in the vocabulary of the texts, the personalities, the recipes and the historical realities.

Discussion

Manuscripts preserved in the depositories of Georgia and abroad, containing information about infectious diseases, date back to the 10th -11th cc.

Some of the infectious diseases are discussed in the fundamental medical works of the Middle Ages - "Incomparable Qarabadin" (10-11th cc.), "The Book of Medicine" (beginning of the 13th c.), "Yadigar Daud" (16th c.); Sometimes a separate chapter is dedicated to each illness; Their causes and clinical signs are described; A dosed list of medications is given; The sanitary-hygienic and prophylactic methods used by the contemporary and ancient healers of the works, preventing these infections are described.

Disease names in texts are often presented in both languages. Such are, for example, *malicious time*, the same *black plague*, in Arabic *Tghaaghuni (ṭā'ūn)*, which is referred to in the medical writings of the 10-11th cc. "Incomparable Qarabadin": The plague, that is tghaaghuni ...the sign of it is found at the base of the ear, or at the base of the tongue, or at the base of the breast, or in the armpit, or in the groin". The following are the remedies and treatments – depleting, putting cupping glass, etc. (Incomparable Qarabadin, 1997: 520).

"The Book of Medicine" names hot air as the cause of cholera: *vabaisa (uabā')* // *haitai (hayḍa)* is the result of hot air. "The sign of the illness is that the nature of the body tends from an ordinary state and weakens.

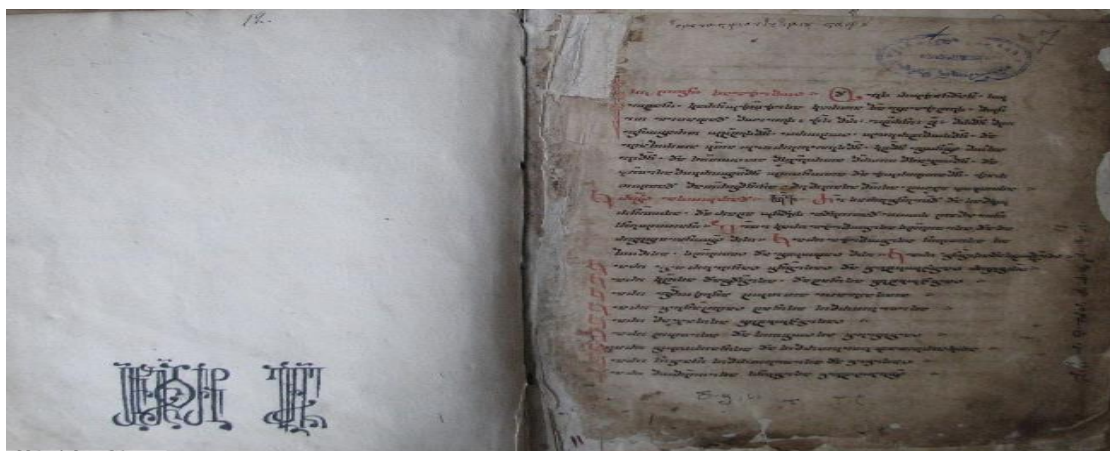


Fig. 1. S-1274 The Book of Medicine. 15th – 16th cc. Kept at Korneli Kekelidze Georgian Centre of Manuscripts

The sick feels dizziness and pulse is very high and thrills, and thirstiness is soaring... and the saliva spat out would be stinky ... the treatment is to blood-letting ... and pleasant scents and flowers put at the head ... will help a lot” (The Book of Medicine, 1936: 289-290). Excessive eating is named as the second cause of cholera. "Haitai (hayḡa) and garja, which is called in Arabic tukhma (tuḡma) and in Georgian sudden shock; this illness might be caused of overeating (The Book of Medicine, 1936: 173-174).

In "Incomparable Qarabadin" and "The Book of Medicine" several types of infectious skin diseases are named: leprosy (*barasi - baras*), acariasis, alphas, *guzami (ḡudam)*. "If someone eats and drinks with leprosy, he will be infected" (Incomparable Qarabadin 1997: 72). "Leper, that is called in Arabic baras ... this illness comes from thick mucus/vomited bile; Baras, like a leper, might be black and white. And if no blood comes out while blood-letting no cure is ahead; if the blood comes ... the treatment is successful; and if the blood flow is weak the cure is hard to achieve” (The Book of Medicine, 1936: 262). "The Incomparable Qarabadin" describes the external signs of leprosy, the author recommends to change the air for the sick and notes that this illness is inherited from father to son: the sign of leprosy is ... the face to be reddened and then blacken and widened . . . eyelashes and eyebrows shed. . . sweating all the time on head and face. . . it is leper . . . if the sick is in mountains take him to the lowland, being in lowland take him to the mountains. Changing places is almost good ... *Jalinoz* [Galen] said: this is a deadly disease and if infected it's difficult to get out of it ... will spoil the urine and infects his son and even he [the son] will not be cured” (Incomparable Qarabadin, 1997: 494-495).

“The Book of Medicine” discusses two forms of gravedo: *zukma and nazlat*, the causes of which are harmful heat and the sun: “gravedo, which is called Zukmi and Nazlat, is caused of harmful heat... *Madaini* says: When the water comes down from the brain through nose is called *Zukmi* and whatever comes down to the face and reaches the breast, it is called *Nazlat* (The Book of Medicine, 1936: 132).

Infectious disease – phthisis, i.e. tuberculosis in the “Incomparable Qarabadin” and “The Book of Medicine” is called as the lung pain//lung disease, in Arabic - sill. "The sign of sill is: constantly coughing and heavy breathing, thirsting, and the flash melting and time to time spat blood out, and the face is red and having fever, hotter in the evening after eating; if the signs appear, guess that it is sill, the disease of lung pain” (incomparable Qarabadin 1997: 363). “Lung ulcer, that is called Sill in Arabic . . . is when the body weakens and begins to soften gently; And the saliva that comes out is yellow . . . this illness is so difficult that it's hard to heal the lungs if once infected” (The Book of Medicine, 1936: 161).

The infectious disease, the smallpox (Arabic: *ğudr*) is narrated in the "The Book of Medicine" and in "Yadigar Daud" by Dautkhan. “The sign of smallpox, called *ğudr* in Arabic, is not easy to cure, back pain, and eyes are red. The treatment is to blood due to the strength of the sick. And if it is too late to blood, do not do this otherwise it will harm . . . if the sick is a young let him blood, as the illness will soothe with depletion. And the scholar doctors have experienced, who suffers from the disease will be under threat” (The Book of Medicine, 1936: 266).

The author of "Yadigar Daud" names several types of smallpox: the diseased blood is revealed in the form of smallpox, or scarlatina, or spotted fever. . .” and gives advises how to treat it: if a man is infected with smallpox let him bled from the middle vein and put cupping glasses; give the pills causing vomiting; if nose-bleeding intensively will help a lot . . . and whatever the smallpox confirmed neither open his hand nor put cupping glasses” (Yadigar Daud 1992: 554) Some of its forms are described: “Better is first fever and then breaking-out; difficult and evil is if the breaking-out is black and small. And if white overlaid then the case is serious . . . is the sign of botch, that is a white, small and then black . . . the form of spotted fever (Yadigar Daud, 1992: 555-557).

At the end of The Medical Book, only an excerpt from the discussion of rabies survives, as the end of the manuscript is missing: in case of *Zahri* the body is covered with pimples. The sign of the disease is that, the anus would turn red and sweat from the genitals, and be afraid of water. And be barking like a dog and attack a man. . . be afraid of water that he can see the face of a rabid dog". "Yadigar Daud" gives the cause of rabies, that is called the dog rage: “the dog rage is the disease . . . the illness . . . if whoever bites, he is infected. And this disease will infect a dog a wolf, a jackal, a fox, a cat – all will be effected and raged. The reason for this is that a lot of spoiled remains . . . are eaten. The signs of rage: eyes turn red, dribbles, . . . water will flow from the mouth and nose, the head and mouth will be bend to the ground . . . feeling hungry and will not eat or drink; seeing water, run away frightened. . . walking thrilled . . . want to bite a man; the throat will shrink and cannot bark. If a raged dog bites a man, seven days back he will be like melancholic, he wants to be alone, avoid the light, rush into the dark house. He can no longer recognize his face of a rage dog and gets scared. He starts howling, throat and mouth dries, could not bark. Wants to bite a man . . . there is cure till he avoids water. Treatment: not let the wound heal up for forty days and immediately put potting glasses on it”. Then other remedies are listed (Yadigar Daud, 1992: 606-608).

The author of "Incomparable Qarabadin" focuses on the methods of prevention from contagious diseases and advises how the healer and caregiver should treat a sick person: . . . the evil spirit from the

sick may attack a healer and infect him, be careful ... sit so far that the spirit could not reach you; do not stay for long, leave in time (Incomparable Qarabadin 1997: 71). Then gives more detailed description: In the house where the sick stays, do not stay; what he eats, do not eat the food he leaves, otherwise it is dangerous. Do not use the cup the sick drinks water with" (Incomparable Qarabadin, 1997: 72).

Several Georgian medical manuscripts of the 19th century contain interesting information about cholera. One of them is the codex № 149 of the collection of the Prince Ioane (Batonishvili) (1772-1830), history and medical advice on Cholera. The manuscript is preserved at the National Library of Russia (St. Petersburg). Here is a brief history of the "new diseases" called "cholera mirabus" (Latin for "rapid excretion of bile"). The disease first appeared in the village of Bengal, India in 1816; from here to other cities of India ..., then was spread to Persia. It is not contagious, but it arises from "dirty air." The disease manifests itself in three forms: 1. the patient feels pain in the umbilical area; 2. Has convulsive pain in the umbilicus and abdomen, requires rapid depletion (40-50 ounce and give the abovementioned medications); 3. There is a sudden foaming aura and weakening, it is necessary to pour cold water on the face and put a wet cloth on the chest. According to the colophon of the manuscript, the author of the works is David Mikirtichin Carpel, "an excellent physician, educated at the Medical Academy of England in the city of Calcutta"; Translator Aghafon Eremiev; "Printed in Tbilisi (Georgia), at the typography of Iagor Eremiev-Artsenov, August 23, 1823".

The following manuscripts are preserved in the Collection A (Ecclesiastical Museum) of the National Center of Manuscripts, A 1645, A 1646. Both manuscripts contain text of the same content copied by various hands. The text deals with the management of the cholera epidemy. The causes of disease, sanitary-hygienic norms, how to protect oneself in conditions of temporary isolation - quarantine are presented. It is noted that cholera by nature is not a contagious disease, so quarantine alone will not bring the desired results. To stop the epidemic, it is necessary to protect the health of the army and the population. To do this, six basic regulations must be followed: 1. When bringing large loads to cities, prohibit the abundance of people and cattle, the density in the stalls, which will intensify and spread other diseases accompanying them; 2. The population should move from densely populated areas near rivers, lakes and swamps to high, cool places; And the army during the summer months should go out to the camps arranged in dry and open places, in order to timely identify the sick and send them to the fermery; 3. During hot summer days (40 degrees), workers should work only from 4 to 8 o'clock in the morning (from 4 AM to 8 AM), so as not to get "cholera" due to fatigue and midday heat (local disease also explode from high temperatures). At the same time they should wear sun hats; 4. In heavy and long rains in hot and windless weather this disease is dangerous. People need to change places, walk and change the air to prevent this disease; 5. Unemployed people should be avoided from castles and densely populated cities in the summer to relieve the military and civil officers of unnecessary hardship, as the abundance of people and cattle will pollute the air; 6. At the beginning of the disease, everyone can have "a small glass of vinegar, which is a prevention for smelling and rubbing on the temples." And those who are overwhelmed with blood can use "rhubarb, wine stone salt" to cause diarrhea. In addition, as soon as diseases are detected at the border, summer shelters should be prepared and new ones built so that the beds of the sick are not arranged tightly; Prepare for them underwear and personal

utensils for food. If underwear is not enough due to the large number of patients, then wash their own shirts every week immediately, as well as every patient who comes to the infirmary should bathe in the pool. Should be fed with "oatmeal or barley butter"; It is necessary to have enough "sesame oil and rubbing alcohol" to rub the patients when blowing and "good wine to cure their increased weakness." The healed should not be let go immediately, but should be detained till their complete well-being with medicines and baths in the water of the summer river, that will be useful for "healthy soldiers" as well.

Information about cholera in the fundamental medical writings of the Middle Ages, where the disease is mentioned under various Arabic-Georgian names (*Wabai, Haita, Garja, Tukhma* and *Eldai*) was no longer known in the 19th century and it is referred to as "new diseases".

Smallpox

Infectious diseases of children or "childhood diseases" were quite common and dangerous diseases in Georgia. These diseases included: diphtheria, smallpox, measles, scarlet fever, mumps, rubella, chickenpox, whooping cough // cough.

Diphtheria - caused great harm to children and was often lethal. According to Sul Khan-Saba, during diphtheria throat swells (Orbeliani: 1993). In the old Georgian medical books, Diphtheria was considered a serious contagious disease. By the early Middle Ages, signs of the disease were known: pharyngitis, bloating, difficulty while swallowing, etc. Diphtheria is the name of when sores throat and cannot eat and throat is bloated. This is an evil disease" (Incomparable Qarabadin 1997: 346). During Diphtheria, "a man feels pain in his throat and neck. Breaths with great difficulty and cannot swallow. At the same time, hawk starts to flow from mouth, eyes become red and if not helped soon, the sick may die" (Saakashvili, Gelashvili, 1956: 52-53).

Chapter 193 of "The Book of Medicine" describes two infectious diseases together: "The smallpox, which is called in Arabic *Jodri* ... and the red (= measles)" ... "Infected body has fever and hot blood". A person infected with smallpox has a fever that lasts for three days, the patient has a sore back and eyes get red. "The sign of the measles: the patient has dry mouth and flutters, and the eyes are red and the mood is changed ..." (The Book of Medicine, 1936: 266).

The smallpox pandemic, along with other diseases, has always been a great danger to humanity, which naturally attracted special interest in medicine. Information about this disease can be found in Georgian medical collections. The infectious disease, or the plagues are mentioned in the earliest medical collection "The Incomparable Qarabadin". It contains: "The chapter of smallpox and plaque", which discusses the symptoms of the smallpox and the rules of its treatment. "The signs of smallpox is: the whole body is like fire and the eyes are red and the body starts itching and gets thirsty and the mood changes and fear fills his heart" (Incomparable Qarabadin 1997: 397), or "the sign of this is, that the patient has fever and for three days has back and waist terrible pain. ... if depleted will help the body immensely. One sign is that the mouth gets red and the eyes and the head feels heavy; if you see the sign, guess, this is smallpox". (Incomparable Qarabadin 1997: 397-399). As for the treatment blood-letting and various herbal remedies are indicated. "As you see that a man has smallpox, open his hand

and let him bleed” ... If smallpox comes out for the first time, do not open his hand. After the blotches appear, give the barley water to be boiled with jujube-plum and lentils” ... There are various methods of treatment in the text. There are also instructions on which herbal remedies to use to prevent the smallpox blotches in the eyes or leaving traces of a rash on the skin of the patient.

Other sources confirm that quarantine was a means of prevention of epidemic in Georgia. As long as the institution of the king existed in Georgia, the only but very effective anti-epidemic measure was complete isolation with the country where the epidemic would explode. The border was closed and all traffic was restricted, although these restrictions were imposed in connection with the Black Death epidemic in the Ottoman Empire and Persia, we could not find any information about such restrictions during the smallpox burst.

The nineteenth century has come. This epoch brought many other innovations along with political news, and we observe the coincidence of traditional Georgian folk medicine and European scientific medicine along with Russian (European) medical practice introduced in the country. It was from Europe that medical work "The Strength and Treatment, that saves the nation from smallpox, common vaccination against smallpox" was translated into Russian and later from Russian into Georgian: The book was published in Moscow in 1805 by the Medical Academy of Russia and in the same year was translated into Georgian by Goderdzi Piralov, who himself copied and presented it to Prince Ioane (Batonishvili). As the translator and scribe informs us with his inscription, the work was popular all over Europe and the translator therefore paid attention to it.

The manuscript is currently kept in the National Center of Manuscripts, in the collection of the Historical-Ethnographic Museum. The work consists of 11 chapters, which discuss the history of the study of the smallpox vaccine, mentions Eduard Jenner (Jenner) and European figures, presents the features and symptoms of the smallpox disease, compares the vaccine to the man and cow pox pus, which was used for vaccination, marked advantage was given to cow smallpox, one of the chapters is also dedicated to the specifics of taking the material. We read in the manuscript: the blotch should be broken out not more than ten days, should be pierced from the side, it should take the item, or material "in a fine crystal", then it should be wrapped, or covered with wax or "soft lacquer " so that the foam does not work. It is better to dry the material and keep it in the crystal, that is, it should be stored sterile ... When used, it should be opened either in warm water, or in blood, or in saliva. It is injected with a silver needle that has a gold tip with a hole in it.

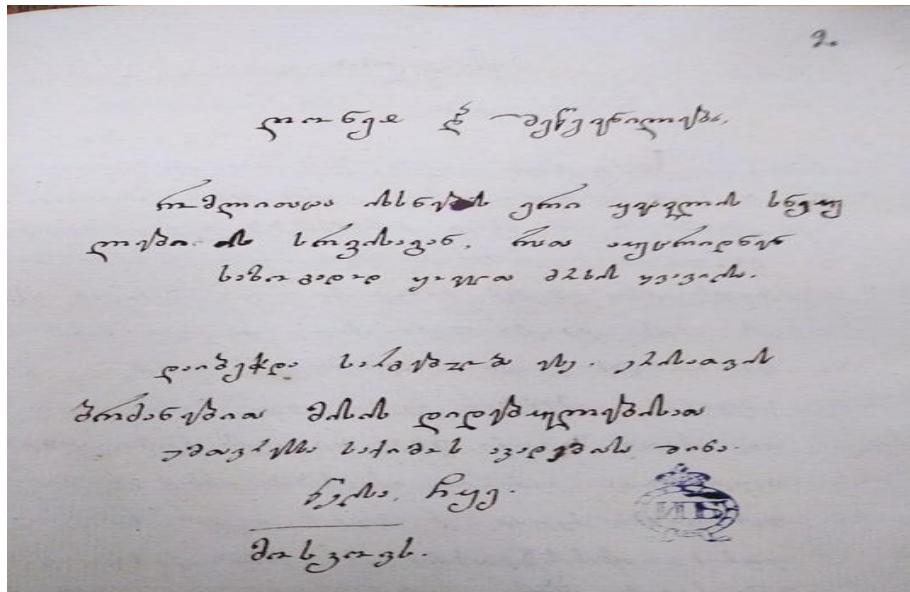


Fig. 2. H-2217. "The Strength and Treatment, that saves the nation from smallpox, common vaccination against smallpox". 1805, translator from Russian into Georgian: Goderdzi Piralov. Kept at Korneli Keklidze Georgian National Centre of Manuscripts

As it turns out, a reaction will occur a few days after the vaccination, which can lead to "irritability" (fever), a weak rash, in a word, "corresponds to the natural occurrence of the smallpox", but this process does not harm the health, distort or kill people. Vaccination protects humanity from smallpox.

We find the proves of existing smallpox in Georgia in our fiction and many times it was ended lethally. "Your sons and daughters have died out of smallpox", told the evil-word-man to the king in Sulkhan-Saba's parable "the kind and the evil-word-man". That is, smallpox was a ruthless disease, however, as researchers in the history of medicine M. Saakashvili, A. Gelashvili, M. Shengelia inform us, the burst of smallpox in Georgia did not cause special panic, because it was fought through variolation. This method involved the following: The material was taken in the spring or winter from a mildly ill person. The taken sample was stored in a clean container, in a warm place. If necessary, the fluid was taken to the patient, rubbed the it onto a graze on the skin on the arm or any other place. The graze would be covered with walnut shells and wrapped for a few days. The patient was prescribed a diet for 25 days; was not allowed to eat meat, etc. The patient had a complete picture of the disease within a week of vaccination, but in a very easy form.

In the last quarter of the 18th century, in 1771, the Russian Empire sent Johann Anton Gldenstdt from St. Petersburg to Georgia. He remained in Georgia until the fall of 1772. The guest of Georgia describes the process of vaccination of smallpox: "On May 15, more than 100 children were vaccinated ... Eight days before the end of the vaccination, children were not allowed to eat meat, fish or rice. They were fed only on bread and milk." The traveler describes that the wound (graze/scratch) was made on the children between the thumb and forefinger, and pus was put on it wrapped. The children were then allowed to breathe fresh air and they felt healthier. On May 19, three papules broke out the

injection site. Guldenstädt left on 22 May and returned on 2 July. The children greeted him, of course, in perfect health. Smallpox vaccinations was also administered to Prince Yulon.

This method was also known in Samtskhe-Javakheti. According to the ethnographic material from the end of the nineteenth century and the beginning of the twentieth century, the representatives of the Kharischirashvili family also vaccinated against the smallpox. Their ancestors were Aduashvilis from Javakheti, from the village of Baraleti, and Kharischirashvili's surname is a symbol of a craft, and they took it because they made a "bull plague" medicine - they would remove the contents from the rash of a sick bull or cow with a knife, cut the child's skin between the thumb and index finger in a form of a cross with the same knife. In case of vaccination the smallpox vaccinated should not be infected, if infected, it should be lightly picked (Chirgadze, 2010:41).

Typhoid / Parthian typhus

(Gr. Typhos - dementia) - the common name for several acute infectious diseases (enteric fever, camp-fever, reversible typhus, paratyphoid fever), in the severe course of which consciousness is lost.

Typhoid fever (Georgian: "Partakhti" means spot, rash) - an acute infectious (rickettsial) disease. It is characterized by severe intoxication, specific damage to arteries and rashes. The main role in the transfer is played by the lice, as well as the typical damage caused by rickettsia vasculitis. The disease is included in the number of particularly dangerous infections (Gogichadze, 2011: 442)

In the 19th century, before the development of bacteriology, extensive research on epidemiological diseases and the formation of medical statistics were underway, which largely led to the creation of a scientific basis for disease prevention before the introduction of microbiological and biochemical data into scientific circulation. The second half and the end of the century are marked by the creation of microbiology and immunology and the establishment of preconditions for the further development of these fields of medicine; Differentiation of infectious diseases, study of their mechanisms, study of the peculiarities of spread, planning of preventive measures are underway.

The Georgian manuscripts of this period mainly reflect the pre-bacteriological period of the development of medicine, although already in some of them, in the manuscripts dating to the second half of the nineteenth century, more or less systematized knowledge about infectious diseases is presented. Especially interesting from this point of view is the activity of Prince Ioane (Batonishvili), some codices of his collection of Georgian manuscripts.

Prince Ioane, a multifaceted scientist and figure with encyclopedic education, paid special attention to the development of medical thought, the introduction of European knowledge on Georgian soil, the development of special terminology, the development of measures for the practical use of medicine, including the study of infectious diseases and treatment Ioane Bagrationi, according to historical sources, was a learned physician. According to him, "I was healing the sick myself, from whom I learned treatment with various teachings ..."; (S 254; Saakashvili, 1958: 231; Shengelia, 1984: 264) In addition, while still in Georgia, he paid great attention to the implementation of medical reforms, which are

reflected in paragraph 27 of his "Laws" about the Folk Healer's Institute, arranging medical and pharmacy affairs, "functioning hospitals and maternity houses" etc. (Shengelia, 1984: 262-263).

Ioane divides diseases into internal and external diseases, reviews the elements of prophylactic medicine ("protection for health"), epidemiology, hygiene. In his famous "Kalmasoba" the author presents a scheme of division of medical arts into disciplines, which includes 14 disciplines, including anatomy, physiology, therapy, pathology, pharmacology and others. The given system is drawn in an artistic form, in the form of controversy between the representatives of "old" and "new" medicine (Kukava, 1956: 40-53)

After his exile to Russia, Ioane Bagrationi was engaged in extensive translation and scientific work - created special dictionaries containing Latin, Russian, and Oriental terms; Translated scientific works, including medical works from European and Russian languages, compiles scientific collections, etc.

The manuscripts of the "Collection of Prince Ioane" at the St. Petersburg Institute of Oriental Studies and the Public Library (formerly the Saltykov-Shchedrin Library) present manuscripts that are interesting from the point of view of the study of the history of medicine, the tendencies of scientific-cultural relations and proves the erudition, education and practical purpose of the author/authors. It should be noted that some of them are not authorized, although experts suggest that they should belong to Prince Ioane.

One such manuscript is the codex № 63 from Ioane's Collection at Public Library of Russia (St.Petersburg). A page is inserted in the manuscript with the title of the work - *"For the typhus of nerves and paralysis"*. This should be a description of typhus (according to the text "spotted", camp-fever) and related signs, based on a European source. In "Preface" the author notes: "Science is different and tangled." He tries to present the material in a systematic and structured way to the reader.

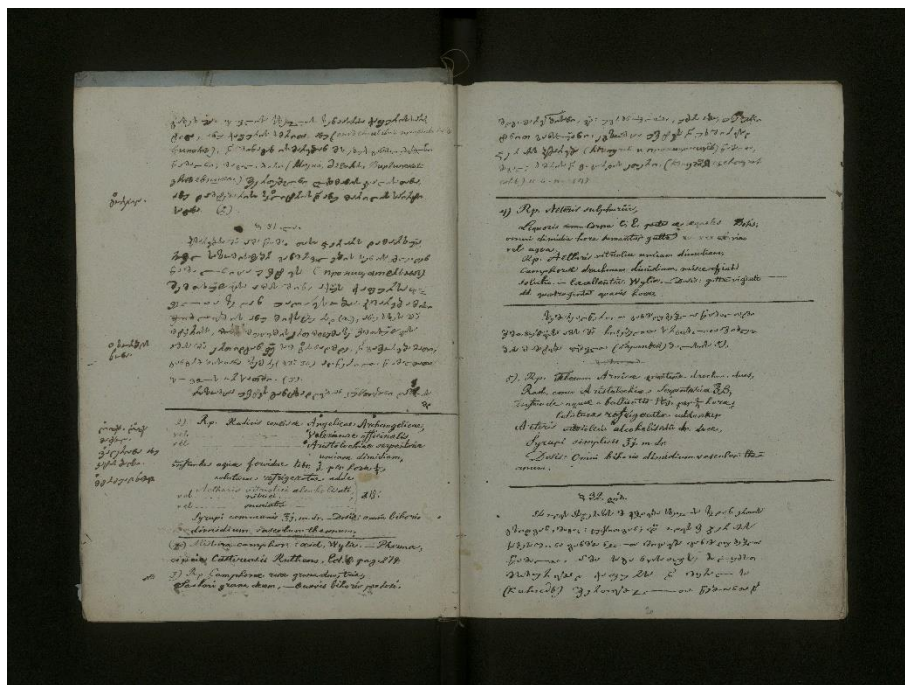


Fig. 2. №63. Qarabadin, XIX c. Prince Ioane's Collection. Kept at the National Library of Russia (St.Petersburg)

At the beginning, the compiler provides the reader with a diagram according to which the material is sorted: the name of the disease - Latin names are given, the definition of "typhus," the beginning of the disease, spreading of the disease, the end of the disease, happy end, period/time of healing.

Each stage is described separately; It is emphasized that this disease is psycho-somatic; It is related to environmental conditions and human lifestyle: bad/polluted air, bad/polluted water, bad and rotten food, secular calamity, public grief, trouble, over-wasting energy, lost blood ...

The newspaper "Tsiteli Armieli (Red Soldier)" (№204, 1923) provides very interesting information about the spread of typhoid fever and similar reasons in the nineteenth century. It was very important for the soldiers to know the etiology, causes of spread and prevention of this disease, because, as is known from historical sources, the typhoid fever was a great enemy for the warriors.

The newspaper's news section - "Information from Sanitation" - lists several reasons for the emergence / spread of this species of typhus based on historical examples from the nineteenth century, based on common economic and other factors:

War - In 1812, a large part of Napoleon's army died during the siege of Moscow; During the Crimean War of 1853-1856, British and French troops lost four times more soldiers because of typhus than during the battles;

Hunger - As it was known, hunger strongly contributes to the spread of the disease. In Russia, for example, 1.5 million people died of the disease during the crisis. More people were dying for this reason in March, when the peasants were running out of a supply of bread, a large part of them starving;

Poverty - causes pollution, people live in damp houses, have unbearable working conditions, lack sleep. In London, 97% of deaths from this disease are poor;

Climate - the disease spreads to regions with mild and cold climates;

Distribution time - from January to April, when it is cold. Humans take bath less, which in turn causes typhoid microbes to breed.

The information highlights *the high probability* of the disease spreading, citing examples of contact with sick physicians and other medical staff having contacts with the diseased. The patient must be isolated; His secretions, utensils, bedding are contagious. Finally, it is indicated that the disease is characterized by high mortality.

Let us return to the manuscript of Prince Ioane's collection. According to the codex, the treatment of the disease includes: "isolation because of pandemic typhus" - the primary requirement for treatment is cleanliness, separation from grief. Food should be healthy, non-fat; Alcohol intensifies the disease; It is necessary to cleanse the body. Medicines are given, mainly herbal; Both camphor and opium are used; The instructions for bath preparation and bathing are described. According to the author, during the illness the disease of internal organs are connected with the "typhus of nerves/problem of nerves". It is good to use "sweet egg water and magnesia".

The work is a sample of a scientific book - different terms with Georgian equivalents and definitions are called, footnotes are given, sources and their origin are named; The material is structured and follows the scheme presented at the beginning.

Finally, in conclusion, the author writes: "It is better in a year to have truly spiritual pleasure with which all the labors and all the worldly sorrows will be replaced with enjoyment."

Thus, for the healing of man, including from the "epidemic typhus", first of all improving his spiritual condition and health, psychological balance and harmony with nature are paramount.

Cholera

Memoir manuscripts are interesting in that they reflect the perception of events (historical events) by contemporaries and in our case, epidemics caused by infectious diseases. In the memoirs of Alexander Orbeliani, a Georgian poet and public figure, a representative of the older generation of Georgian romantics, "The First Cholera Here in Tbilisi (as far as I know or heard in 1830)" (S1665) the author provides information about the cholera epidemic in Tbilisi.

The manuscript is preserved in the Fund S of the Collection of Georgian Manuscripts at the National Center of Manuscripts (formerly the collection of the Society for the Promotion of Literacy), code S 1665. Though, the subtitle dates the manuscript with the year of 1830 the author actually completed the work in 1869. However, the text provides information on the prevalence of cholera in Georgia from the 1830s to the 1870s (for almost 40 years). The work is interesting in terms of studying modern approaches of infectious diseases in Georgia, in particular, cholera in the 60s of the nineteenth century.

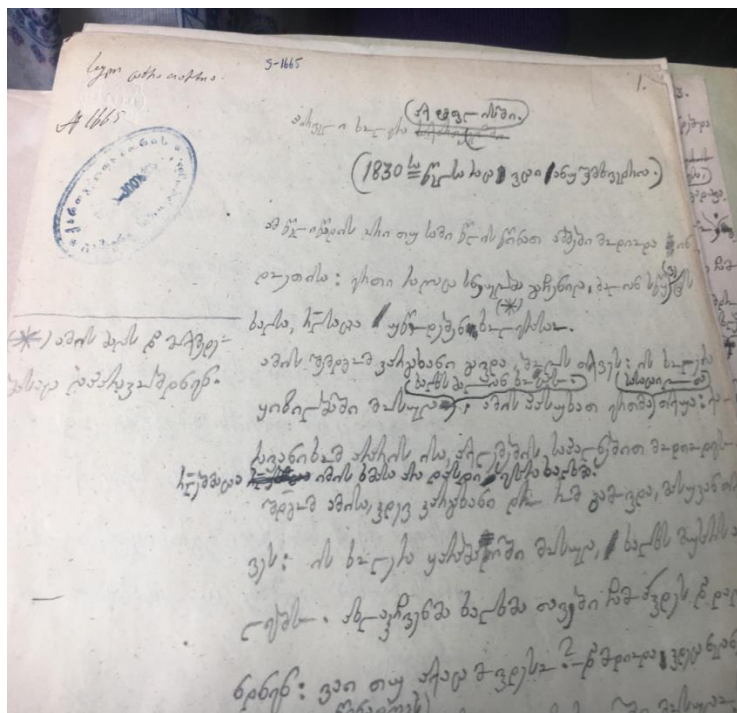


Fig. 3. S 1665. Alexander Orbeliani. "The first cholera here in Tbilisi. Autograph, 1869. Kept at Korneli Keklidze Georgian National Centre of Manuscripts

The author of the memoirs, Alexander Orbeliani (the son of Vakhtang Orbeliani) is the son of Princess Tekle (Batonishvili), the youngest daughter of Erekle II. The main stages of his life are similar to the biographies of other famous Georgian public figures of that period, members of noble families. Information about cholera is presented from the point of view of an educated person. The information in the manuscript can be considered in several layers: person, family, city, country, and the world during the pandemic.

Memoirs depict a certain period of the life of Alexander Orbeliani, in 1830 he was 28 years old. According to the memoirs it is even possible to define his lifestyle, agenda and even his official duties. At the same time, this is the material that reflects his spiritual world, showing his feelings during an unusual epidemic and common fear, showing his character, his humanity, which he expresses in word, and more importantly, in action. For illustration we can cite, that in the suburbs Alexander helps, an unknown to him woman, "rushing out, her hair awry" and in deep sorrow, as "his husband and one brave son" died of cholera the previous day and the police made them bury immediately, and now he helped her to bring the second son round and fight for life.

Alexander, who is at first fear of cholera, closes the doors and windows of the room in the heat of summer and explains to his mother, Princess Tekle, based on the popular belief at the time: "cholera cannot pervade the hot room".

The author of the memoirs observes the ongoing process in the city, describes the fears of the citizens, the escape of people from the city, the measures taken against the pandemic. The manuscript quite

dynamically describes the spread of information about the epidemic in the city and the resulting panic among the population.

The picture of the emptied city as a result of pandemic saddens the author and thinks about the noisy city full of life before the outbreak of the disease. "The light of the candle was barely shining in the window, just imagine even the barking of the dog could not be heard from anywhere, so the sound of every nature was faded, while the people of the joyful city walked up and down singing and shouting, tambourine and chiauri with tar, who would play ... all these were dead at that time. There was a silence of mournful grief in our lovely city of Tbilisi".

Memoirs also give some insights onto the administrative organization of city life during the pandemic. The shops were mostly closed as "the owners of the shops had all fled." At the same time, in order to provide food for the rest of the population in the city, a certain shift was established - "the police ordered us, the butchers to stay here in turns, to provide with meat those Russian officers who stayed here, or even wealthy families".

The memoirs contain interesting information from the point of view of medical history: the clinical picture of the disease ("I walked to the Tatar Maidan, here and there were there downfallen men, some had an iron color on face writhing and some foam coming out of their mouths"); Notions of cholera as a cause of disease and measures taken in accordance with those notions; Remedies and methods - "blood-letting" and author's finding - the use of Kakhetian red wine.

These methods are evaluated by specialists: Prof. M. Shengelia calls "blood-letting" a very reckless method, which had a devastating effect on a cholera patient, because the body of a cholera patient is dehydrated and needs, on the contrary, to supply as much fluid as possible and not to extract it in the form of blood. Regarding the use of Kakhetian black wine as a remedy, the researcher notes that this method could be effective for patients with mild form of cholera, as the patient received wine as liquid, the wine acted though weak, but still as a kind of disinfectant, moreover, the tannin of black wine would cause the gastrointestinal obstruction and thus protect the body from fluid loss (Shengelia, 1981:234-235).

Especially was raging cholera in Tbilisi, as well as in Telavi, Gori, Sighnaghi, Dusheti and other districts. From the second half of August to September 1, 2772 people died. There are no statistics in Alexander Orbeliani's memoirs, but the author shortly writes: "There was a great loss of the people of Georgia." In the memoirs, the author refers to the spread of the cholera epidemic in Georgia in 1830, 1847, 1865.

Cholera in Georgia was the part of the world pandemic, this is well understood by Alexander Orbeliani, who begins his memoirs like this: "Two or three years ago, news was coming: one diseases has appeared in India, killing the people immensely, that is called cholera ..."

The disease, which started in India in three years, reaches Georgia, spreads to other parts of the Russian Empire and goes further to Europe. In the nineteenth century, the world fought five cholera pandemics.

It should be noted that the most powerful outbreak of the cholera pandemic took place in the 1850s. Victorian Britain was shaken by the epidemic of 1854, when 616 people died in just a few days in Soho, central London. The blast was recorded in history thanks to a British doctor, John Snow, who methodically investigated all cases of the disease and named the cause of the cholera outbreak, not "the cholera wind", but polluted water. Doctor J. Snow compiled a map of cholera incidents, marked water collection sites and homes where cholera deaths were reported. Based on the statistics, he tried to substantiate the connection between the source of water supply in Broad Street, Soho and the cases of the disease. These data seemed to contradict the fact that no one had been infected in a nearby monastery. The study of this anomaly showed that the monks drank only beer brewed in the monastery, which further strengthened John Snow's theory. His research is considered to be the most important event in the history of public health, which gave impetus to the establishment of epidemiology, the development of water supply and sewerage systems (Talantov, 2019).

The discovery of the cholera vibrio by Robert Koch in 1883 led to the development of scientific ideas about the causes of cholera. It is as a result of scientific advances that epidemics, infectious diseases, from unknown and uncontrolled situations have gradually turned into challenges under administration

Conclusions

The research conducted on the Georgian medical manuscripts of a rather extensive chronological period (10th – 19th centuries) revealed a certain knowledge of the process of diagnosis and management of infectious diseases, conditioned by the cultural environment and historical context. Georgian reality reflected the contemporary achievements in the medical field of the Middle East, Europe and Russia.

Original, translated, compilation works created by Georgian scribes are created with practical purpose; Such "helpful books" - encyclopedias, short references, qarabadins, samples of scientific books, memoirs - performed the function of a guide for treating doctors, the role of a guide for the population.

The study once again clarified the need and perspectives of interdisciplinary research of the rich Georgian medical manuscript heritage.

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