Medical and Veterinary Manuscripts

in the Depositories of Georgia and Abroad

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Table of Contents

Introduction

Medieval science is a unifying phenomenon of theoretical, empirical and practical knowledge, an integral part of the “complex civilization” created during this period and an affiliated aspect of Western-Eastern cultural heritage.

Georgian science has played its extraordinary role in the process of knowledge transformation in the cultural area of the Middle East. It was based on a centuries-old national tradition and creatively “converted” the achievements of the Hellenic-Byzantine and Muslim-Eastern cultures. This connection is visible in Georgian written monuments, medicinal works among them, in a variety of materials that differ in composition, origin, and purpose.

Medical knowledge, as an ancient achievement of culture, for centuries has been considered as one whole with philosophy. This unity served to access the essence of cultural history, life and human existence. Relevantly, medical knowledge was reflected in the works of philosophers, physicians, naturalists, as well as in theological works.

Materials of this type of religious and secular works, general medical, pharmacological, veterinary works, qarabadins, educational-medical and family books, encyclopedias, various references, formulas, special dictionaries are widely presented in separate Georgian manuscripts and mixed collections. Their chronological frames cover ten centuries. They are collected in the funds of the National Centre of Manuscripts: in the collection of the Society for the Promotion of Literacy (S Collection); In the Collection of Ecclesiastical Museum (Collection A); In the collection of the Historical-Ethnographic Society (H Collection); In a new growing fund – the Q collection; Also in manuscripts containing natural, medical

and veterinary works kept at other depositories of Georgia and foreign centers (Sinai, Jerusalem, Athos, Oxford, Matenadaran, St. Petersburg – National Library of Russia and the Institute of Oriental Manuscripts, National Library of Paris, Libraries of Sophia, Vienna, Vatican, Leipzig and others).

Georgian manuscripts, including historical documents and monuments of law, reflect, in general, the long-term path of completing and developing medical knowledge, determined by the intellectual level of the nation, the historical tendencies and requirements of the cultural society; The relationship and interaction between folk-medicine and old Georgian professional medicine.

The medical vision reflected in the survived first, earlier manuscripts is based on the humoral-pathological system of Hippocrates. In the Middle Ages, Georgian medicine, like other fields of science, was strongly influenced by Arabic-Iranian, and from the 18thc. by European-Russian impacts.

This enriched, converted knowledge acquired characteristic elements of the particular cultural environment in all regions. The basis was common – treatment as a renewal of life forces; Nature healed, and the doctor cared. Therefore, the remedies were called from the surrounding nature – organic products, minerals, technology of their production. The works were also heterogeneous – extensive, encyclopedic works, qarabadins, formulas, etc.

Systematic scientific research of works of medical content preserved in Georgian manuscripts began in the 1930s. Well known are: publications and research by L. Kotetishvili, works by I. Beritashvili, M. Saakashvili, Il. Abuladze, B. Rachvelishvili, M. Shengelia, R. Shengelia, P. Pirpilashvili, L. Khidasheli, N. Mindadze, S. Salukvadze; In veterinary medicine – researches by L. Leonidze, K. Kapanadze, K. Jvarsheishvili. In recent years were published works by N. Khelaia, L. Khidasheli, D. Kukhianidze, L. Samkurashvili, L. Shatirishvili, T. Abuladze, which are dedicated to medical manuscripts and materials reflecting medical knowledge scattered in certain theological works. In 2017, a catalog of Georgian medical manuscripts compiled by a group of authors was published, which includes medical manuscripts preserved in some depositories of Georgia and abroad.

Nevertheless, most manuscripts of medical and veterinary content have not been studied in terms of the history of medicine; Basically, there is no systematic, unified, accessible information about the material evaluated by the specialists of the field (we mean a complete database, annotated catalogs, etc.).

In addition, with some exceptions, medicines were not made according to the formulas from the medical manuscripts; Medical knowledge preserved in the Georgian manuscript heritage is not fully presented in the curricula of higher education institutions of the relevant profile.

Typology of Georgian Medical and Veterinary Manuscripts

Typologically Georgian medical manuscripts are divided into the following groups:

- Medical books containing theoretical and practical medicine issues, encyclopedic type works;
- Materials presented in the ecclesiastic literature, in particular, in exegetical, hagiographic works, euchologion;
- Separate works included in mixed and thematic collections and fragments containing medical content (chemistry, essays on precious stones, etc.);
- Lists of medicines: only a list or a list with descriptions and indications of diseases, sometimes of medicinal forms (pills, *qurs, majun*, jam, powder, balm, *sharbat*, etc.);
- Dictionary material: Extensive dictionaries, including explanatory, Latin and / or Oriental matches; Sometimes additions to existing dictionaries;
- Notes: Brief description of diseases, different types of formulas, etc.;
- Late (mostly of 19th c.) works that are, in fact, analogues of modern scientific works;

Late (mainly nineteenth-century) works, which are, in fact, analogues of modern scientific works, with reference to numerous sources (written – original and translated, folk, experience of physicians), footnotes, etc. This group also includes works describing one of the diseases with appropriate diagnostics, treatment methods and remedies.

Each of the above groups, in its turn, clearly reflects both national knowledge and healing traditions, as well as the traces of medieval Muslim and, more recently,

traces of the works of European physicians, well-known authors in the form of direct influences of translations or rendering of individual or entire works.

From this brief overview, it is clear, that the study of medical manuscripts will raise a number of problematic issues. Systematizing, customizing, interdisciplinary research, practical implementation, and possible evaluation of written material is the beginning of a complex study of this diverse material. In L. Kotetishvili's words: "No one would think that this legacy [medical manuscripts] should belong only to doctors and is relevant only to the field of medicine. Not at all. This heritage belongs to the Georgian people, every conscious citizen and, this heritage, explained, studied and tested by modern science, should be returned to the people by scientific studies".

The aim of the publication is to systematize the mentioned heritage, popularize it, present the possibilities of practical implementation and the results of interdisciplinary research.

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The present research consists of three parts.

The first part presents a general overview of medical and veterinary manuscripts preserved at Georgian and foreign depositories arranged in certain groups; information on the place of preservation of manuscripts with reference to institutions; information on infectious diseases and their treatment, medicinal remedies of mineral origin according to old Georgian written sources; samples of some formulas, a prototype description of some of the medicines made according to some of the formulas from the manuscripts.

The second part is an album of selected manuscripts of medical and veterinary content, in which the manuscripts preserved in various depositories are presented chronologically. The album contains an archeographic description of the manuscripts: fund, place of preservation, dates of copying and restauration, size, writing material, author / translator, convertor. Annotation is attached to each sample.

The third section presents the glossary of terms used and a basic bibliography.

We think that the publication will expand the knowledge about the medical works presented in Georgian written monuments and other types of works also containing medical knowledge, will make this material available to a wide range of scientific circles and will create the possibility of its in-depth research.

Medical Knowledge in Georgian Ecclesiastic Literature

Medicine is a field aimed at protecting human health, preventing diseases, treating, and prolonging life. Initially, medicine was obtained through practical observations on life (Sanikidze 1997: 2-4), that greatly contributed to the development of scientific knowledge in the old civilizations (Mesopotamia: Sumer, Babylon, Assyria, Egypt, India, China, Iran). Mesopotamian medical knowledge was spread throughout the entire Eurasian continent (Shengelia 2012: 12-23).

In the history of Georgian medicine, as part of the history of world medicine, significant attention is drawn to Colchis, Medea's homeland existing in the southern and eastern coasts of the Black Sea in 14th-12th BC. Medea seemed to be familiar with various forms of medicine: for internal and external usage, inhalation; She prepared various medicines: sleeping pills, cures for diseases, poisons, ointments, miraclous and magic. According to credible data, Mithridates of Pontus (2nd-1st cc. BC) belonged to the Colchian branch.On the report of Pliny, he introduced administering poison every day against poisoning.The formula for the common antidote, "Mithridatum", became known after him; At the same time, these poisons led path to the development of world pharmacy (Egetashvili 2017: 38).

Initially, medical experience was transmitted orally, later healers began to write down it; This is how the foundation of the ancient medical literature was to be laid. There are several periods in the history of medicine, the earliest of which is considered to be the Greco-Roman or Hellenistic period (4th c. BC – AD 4th c.); It is followed by the Byzantine period (4th-7th cc.), the Islamic era (7th-19th cc.), and finally, the transitional period (until the 60s of the 19th c.).

Today researchers of the history of medicine are guided by Greco-Roman and Hellenistic medicine. Hippocrates (460-377 BC) is considered to be the founder of classical medicine. His humorous-pathological system was universal for many centuries. It was developed by Claudio Galen (129-200 / 216). This system had many followers until the 19th c.

Medical knowledge entered Georgia through various sources. Its contacts with the Mediterranean countries included not only political-economic relations, but also cultural issues. From the 5th century, Georgia had close ties with the Christian environment of Syria-Palestine and Constantinople. Medical knowledge came

Photo №1.

NCM, H1452, Horologion-Gulani from Qanchaeti, Adam and Eve in Paradaise.

mainly through Georgian translations of ecclesiastic works. These are, first of all, Georgian translations of the Old and New Testaments copied in the 5th-18th cc., Christian philosophical and religious texts, etc.

According to the lections from the Old Testament, the fundamental understanding of health is related to God, who is the creator of life, humanity, and therefore, awarding health and well-being. "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; And the Lord God set up the tabernacle which he took from Adam, and married her, and brought her to Adam. "(Acts 2: 7, 21-22)[1] **(Photo №1)**. After falling of sins, depressive processes of vitality developed, hurling humans to death.The key issue of the Old Testament is that health and well-being are of the will of Heaven, and sickness is not ordained by God. The approaches of the Old and New Testaments about the essence of health are the unity of the soul and the body. The ethernal expression of health is man's longevity, that presides over anything known up to today: "And all the days of Matuslas were created, in the which he lived, nine hundred and sixty-nine (969) years, and died" (Acts 5:27). Sharply reduced: "And Nakor lived seventy-nine (79) years ..." (Gen. 11:24). Later in the Psolter it is already mentioned: "The day of our years ... seventy years, and if it be strong, eighty years ..." (Ps. 89:10), 70 years of life seemed to be long, and those who reached the age of 80, should be proud of it. Shortening the lifespan was caused by the environment and the other factors that probably led to the biological and mental degradation, deterioration, degeneration processes of the organism, which had an impact on human life expectancy.

Genesis indicates that God took rest on the seventh day of creation of the universe; This day is set to be idle and beneficial for the man (Shatirishvili 2016: 128-129). The purpose of the Sabbath (later of Sunday) is to rest according to the Old Testament, a holiday that not only has positive and healthy values for a person, but also serves as the protector against disease. Representatives of modern medical circles agree that the ideal period of rest for the healthy functioning of the human body and mind is one out of seven days. Who fails to make the most of the holidays, hurts himself.

The close link between health and diet is not new. A certain diet also has a treatment purpose if it is prescribed for a specific disease. There are passages in the Holy Scripture when food selection serves to maintain good health, indications of

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[1] *Citation from the Holy Bible are taken from the edition of Korneli Kekelidze National Centre of Manuscripts; the Bible, the Old Testament, I-II; Tbilisi, 2017.*

its beneficial effects on nutrition and health: "... Do not turn yourselves into personal food, for the eating of many is accompanied by salutation ... and whoever forbids it, let him live" (Wisdom of Ziraq 37: 29-31).

Information about food is found in the very first chapter of Genesis: "And God said, Behold, I give unto you every sowing seed, and every tree that beareth fruit, and every tree that hath the fruit of his seed to eat" (Gen. 1:29). Adam and Eve were allowed to taste everything in heaven, they were forbidden to eat only the fruit of the "tree of knowledge of good and evil". In the early stages of human development, the pre-Flood man was a vegetarian, only during the Flood did God allow the survived to eat meat (Gen. 9-3, 5).

Photo №2.

NCM, Q902, Moqvi Gospels, the Healing of Ten Lepers.

In the Old Testament we rarely find references to the healers who have God given talents: “Honor the healers ... for the Lord hath created him” ... (Wisdom of Ziraq 38: 1-4). God will bring sickness to man and healing is also the will of Heaven. The means of healing the sick is dictated by the Lord. The prophet Isaiah instructed Ezekiel to put a fig bandage to heal the abscess (Isaiah 38:21).

Sickness is also a test of faith. In the book of Job there is a narrative about leprosy, a very disturbing disease of a man. As he suffers from terrible pains and applies to the healers (doctors), who, in his opinion, cannot help him, or are incompetent: “You however smear me with lies, you are worthless physicians, all of you” (Job 13: 4).

According to the scientific history of medicine it is noteworthy, that the Bible already contains the names of various diseases: leprosy (Lepra), the epicenter and source was in Egypt, as well as itching (Pruritus), hemmorhoid (piles), mental (psychosis) disorder, or madness, blindness, heart attack, etc.

There are lots of lexical units and terms in the text of the Bible, the use and significance of which testify existence of certain knowledge about the internals. As we see from the Old Testament texts, health, healing, is the wholeness and oneness of a man with God, with other people and the world. This idea, obviously, continues in the New Testament, where we can find a number of refine medical details. Jesus Christ and the Apostles heal obsessed with different diseases. They heal wounds and heal mad, leprosy, blind, dumb, obsessed, feverish, bleeding, dropsied, etc. Treatment methods are varied: close and distance, individual and in groups, using assistance and without them: “And a leper came to him, and worshiped him and said: Lord, whilst you are able to heal me; And stretched forth his hand to Jesus, and touched him and said: I will; be thou cured! And immediately healed him of leprosy (8,2) **(Photo №2).**

The Savior heals the blind, deaf, that is done in different ways – touching with the hand and tongue, saliva, healing with the word: And ... he said to him: Ephatha! Which is it: Relax! And immediately they that heard it spake openly, and his tongue was loosed” (Mark 7: 32-39).

In addition to the healing methods mentioned above, lots of sick people are cured by the Lord’s touch, word, calling: crippled, bloody, withered hand, feverish, a number of diseases are represented in all four Gospels.

In the early Middle Ages the education of the Byzantine Empire was of a secular character. Medicine was included in the so-called educational program and was

taught in close connection with four subjects, the Quadrivium – mathematics, geometry, astrology and music. Such education in the 4th century formed the basis for the thought outs of Basil of Ancyra, Basil the Great, his brother Gregory of Nyssa, Nemesius of Emesa (4th-5th cc.), in the 8th c. – of John of Damascus, etc.

One of the above-mentioned figures, Basil of Ancyra, was one of the earliest intellectuals in Byzantium, in 336-360. His treaties on the true purity of virginity is devoted to physiology and morality. Bishop Basil of Ancyra was a former physician. Despite his clerical work, he well reconciled medical and theological views in his moral preaching. His work was translated into Georgian by George the Athonite **(Photo №3).**

Photo №3.

NCM, A-55, Collection, Basil on Ancyra, "On Virginity…"

The writings of a philosopher, ascetic, theologian, Basil the Great of Caesarea (330-379), “Hexaemeron (On the Six Days of Creation)” and “On the Beasts” were translated anteriorly. The text of the “On the Six Days” tells the story of the creation of the universe in six days, but the author did not comment the issue of human creation, which was filled out by his younger brother, Gregory, Bishop of Nyssa (335-394), in the work “On the Making of Man”. The earlier translations of both these works are included in Shatberdi Collection (S-1141). “On the Making of Man” is the first chapter in this collection **(Photo №4).** Later the work was also translated by George the Athonite. Nemesius of Emesa (4th-5th cc.) was the bishop of the city of Emesa in Syria. His work “On Human Nature” was translated in the 11th-12th cc. by Ioane Petritsi.

Photo №4.

NCM, S1141, Shatberdi Collection, Gregory of Nyssa, “On the Making of Man”.

Among the works of John of Damascus (680-780), the work “The Fountain of Knowledge” occupies a special place, which consists of three parts: “Philosophical Chapter”, “Concerning Heresies” and “An Exact Exposition of the Orthodox Faith”, or “The Exposition”. This work is translated by Ephraim the Less (Mtsire) and Arsen of Ikalto **(Photo №5).**

Photo №5.

NCM, A 24, John of Damascus, “The Fountain of Knowledge”.

The relationship between philosophy and science was a very important and serious issue throughout the Middle Ages, until a separate science with its accumulated experience developed into an independent discipline (Rapava 1985: 41). The above-mentioned authors discuss the views on the nature of the soul, the composition of the body, discourse both the spiritual and physiological power of man, as well as the state of nature of the believer, a human in the Heaven and the Hell. Ancient authors rely on ecclesiastical doctrine and the Old Testament, but in their discourses classical philosophical and anthropological ideas are also reflected. Thus, these works represent both theological and ethical thought, as well as means of cognition of then existed (anatomical-physiological) knowledge.

The first issue underlying the discussion of the above-mentioned religious texts is the generally accepted philosophical as well as medical principles, that imply the humoral-pathological system of Hippocrates, according to which the circulation of humors (fluids) takes place in the body. Greek and later medieval medicine was based on this system.

Hippocrates relied on the widespread natural-philosophical view that nature consists of four elements: earth, water, air, and fire, which correspond to blood, white bile, black bile and mucus in the human body. If these fluids are mixed in a good ratio, the person is healthy, and disproportional mixture of these fluids cause illness[1]. According to Galen, the disruption of each humor ratio corresponds to a specific human character. The combination of these four elements is the guarantee for health. Disruption of the normal combination by strengthening or reducing this or that element, causes illness. This view is shared by all authors.

Nemesius of Emesa calls the elements “members/parts of the body”. According to John of Damascus, each body is also made up of four elements, while the bodies of living beings (living) are made up of four fluids.

The creation of a man by God is a mysterious issue. About the question the authors, under our interest, talk about homo sapience created like the image of God and highlight his superiority over other spiritual creatures of man. John of Damascus writes in “The Exposition”: He (God) created the man with his own hands like his image and likeness, sculpted the body from soil and in blown cognitive and rational

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[1] Below, the Humoral-Pathological System of Hippocrates, from ecclesiastic writingst ranslated into Georgian, will be discussed.

soul, that is, a human is an intellectual being, and this is his distinguishing mark from other animated beings.

Human beings, created like the image of God, as well as other animated beings, are divided into males and females in order to be able to reproduce. According to Basil of Ancyra, “as apart of a man was created a woman, and likewise all the beasts were ruled to have male and females, like bitch and dog, sow and ram, cow and bull.

Considering medical and physiological features is especially important in human life. The authors discuss the five senses and the five sense organs, their essence, their influence on the body and the soul: “the wish …as a source comes out of a body and is distributed among the five senses…” these are the sight, that through its organ, eye, imprints the “image of something”, sacred or impure “icon” in mind. Hearing with ears imprints; taste, that produces many heartbeats and nourishes the body through tastes. Touch is of two kinds: visible and invisible. Invisible means feeling from a distance, seeing, hearing, smelling (Basil of Ancyra).

Nemesius of Emesa talks about each feeling in the chapters: “on the sight”, “on the taste”, “on the touch”, “on hearings”, “on smelling”. He emphasizes the importance of brain as the central part of the nervous system, which provides the body with senses through the veins, or the nerves.

In the 13th chapter of “On the Human Nature” Gregory of Nyssa discusses the followers of two approaches. Some of them considered that the power of reason was captured in heart or in brain.Those who support the heart prove that the heart is at the center of the body, while those who attribute the reason to the brain say that the head is a fortress for the whole body and that the reason rests there.

The human body is formed up of two origins; Basil of Ancyra speaks about the oneness of soul and body as two initials. God created man “like a donkey-centaur”, with the body of a man till the waist and below the waist like a horse. Nemesius of Emesa refers to the nature of the soul, its relation towards the body; In the chapter 57 of “The Exposition” John of Damascus speaks about the “features of the two natures”, that there are two actions of nature – divine and human.

Basil of Ancyra, as we see, believes that the upper waist parts rule the mind, the spiritual desires, or makes it human. Humanity suppresses brutality. The parts of the lower body serve to brutality, carnal desires, over-feeding and bawdry. These organs are: the abdomen/stomach, i.e. the abdominal cavity, the abdomen (belly

fat), the liver, the kidneys, or what is placed “from the waist below and down”. The stomach is the source of human fattening, because without food the life of the flesh is impossible, and the stomach is a food-receiving organ.

The functions of the internal organs, namely of the liver and bile, as the digestive organs, and the secretory functions of the kidneys, are irritation and germination of seeds in kidneys.

Nemesius of Emesa gives more detailed lists of the internal organs. These are: “Liver and brain, heart, stomach, kidneys, the intestines” ... According to Gregory of Nyssa, man cannot live without heart and liver. They are benefitted by the stomach and the lungs.

The anthropological work of Gregory of Nyssa, “On the Making of Man”, is a complete work among the works of the Church Fathers. The author talks about human anatomy. He reports that there were several ways to get to know the human body, including dissection. “Some have learned how each organ is positioned in the body by autopsy, while others have acquainted and explained why each part of the body was born” (Chapter XXX).

According to the author of “On the Human Life” a man needs: mind (brain), heart and liver. Internal organs: stomach and lungs, one of which (lungs) stimulates internal fire in the heart by breathing, while the other (stomach) absorbs nutrients for the internal organs. The bones carried the weight of the whole body like columns, but not in such a way that a single dissected bone was implanted in the whole structure; The Lord constructed man in such a way that he breathes, moves, acts; He uses his hands, moves his neck, head, activates his jaw, opens and closes his eyelashes (eyelids) and moves the rest of his body, that is “performed by some machines, with the tension and release of the veins” ... Nature acts magically, more precisely, the Lord of nature ... and the bones and cartilages, veins, blood vessels, fibers, cords, fleshes, skin, fat, hair, glands, nails, eyes, nostrils, ear, and all such, and a thousand others, separated from each other by different properties, according to their nature, is fed with one kind of nourishment”.

Thus, the authors have a thoroughgoing knowledge both, in medicine and theology. In the opinions of the Holy Fathers, the theological writings follow the view that man, who was created by God at the very end, reached the top of the ladder of earthly beings, and by this condition reigns over every creature.

According to the ancient Georgian literature, medicine also uses the practice of complex treatment, known as the holistic method and involves the active involvement of psychotherapy with various means of treatment. In the history of medicine, prayers, spells and various magical-religious rules or rituals should be considered as effective methods of psychotherapeutic influence. From this point of view, the texts of the “Euchologion” are interesting, according to which baptism, ecclesiastical marriage, the rite of the deceased, etc. are completed. The text of the “Euchologion”

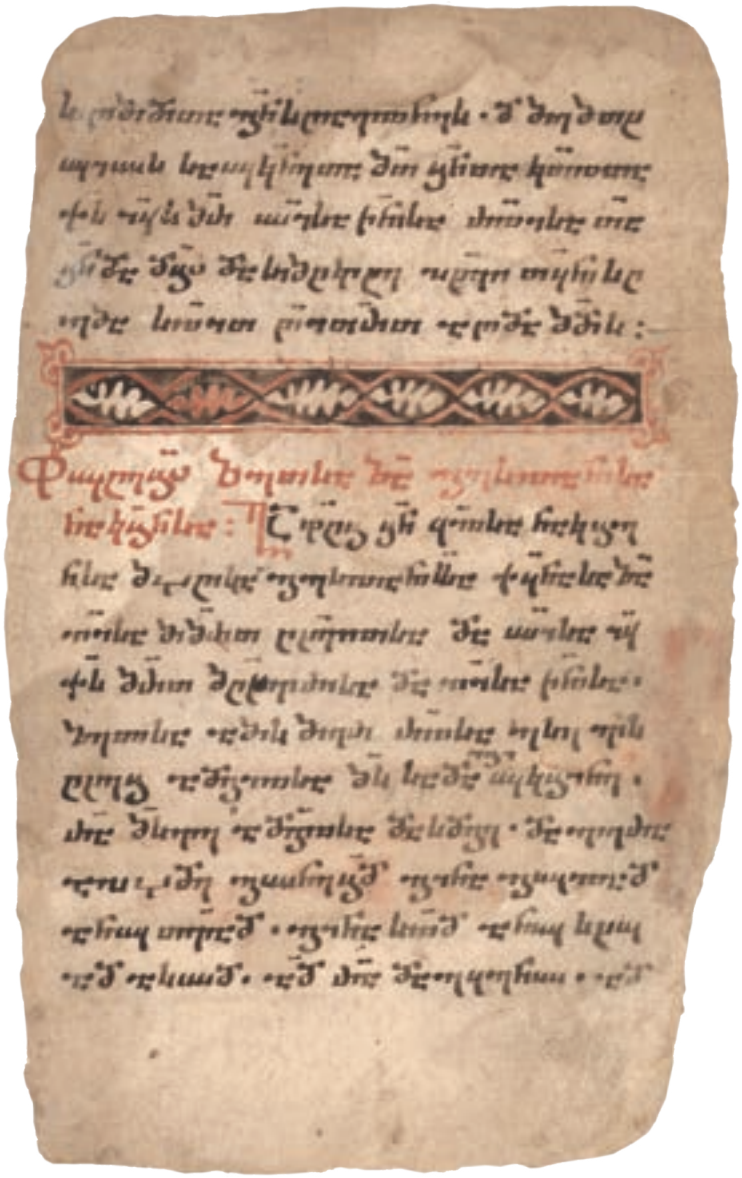

Photo №6.

NCM, A 1110, "*Euchologion*", "*Swore on the oil used for curing the bite of snake*".

A 1110, preserved at the National Centre of Manuscripts, survived in the 15th c. manuscript, should include an earlier version containing medical knowledge, which selects the rules of purification through various prayers or blessings, spells. The collection includes prayers for health, “Prayer for hair cut”, “Swore on the oil used for curing the bite of snake”, “Prayer for all kind of diseases and passion of the souls”, “Prayer for pulling the snake out of the hole”… Also there are medical advice “for pains of liver and lungs”, “for insomnia”, “against helmicols”, against hear and beard loss, etc.

Oil-related texts deserve attention. Sanctified oil is a remedy. It is a well-known fact that the anointing is performed with grace, which strengthens the sick spiritually, cleanses him from sins, and often even cures them, because divine grace is poured out onto the Christians **(Photo №6).**

This codex of the “Euchologion” begins with the prayer for healing and is followed by the blessing of the oil on the sick and the “chanting prayers for the sick”. “Preparing oil for the sick.” First the sanctified oil is prepared to be used as a medicine. Call upon seven priests to prepare a candle and oil, and put seven cotton lamp wicks, and let one of the priests say reigns of the Father and the Son ... Mercy! This is followed by a prayer for the sick: “Savior of the sick, give thanks to the truth! ... Christ God, be merciful and heal the sick, for you are glorious” ...

Georgian original and translated hagiographic monuments provide important information about medical knowledge and various diseases in Georgia in the 5th-11thcc. Researchers of the history of Georgian medicine have mentioned the importance of hagiographic literature in the study of medical approaches of the relevant epoch: L. Kotetishvili, M. Saakashvili and A. Gelashvili, M. Shengelia etc. (Burduli 2009: 24). In one of the earliest monuments “Life of St. Nino”, which tells the story of Christianizing Kartli, there is no direct information about diseases, but there are stories of humans (Queen Nana, a child) getting sick and their healing. It is clear from the text that at that time the doctors were called as the “scientists of curing”, “master healers” (Shengelia 1980:72).

Interesting information about the disease or various remedies can be found in the text of “the Martyrdom of Shushanik”, which lists various remedies, such as: “Salbuni” (ointment) and medicine, a kind of classification of medicines is given; They are divided into oral and external medications. The symptoms of the diseases are also presented. The loss of spiritual balance is described by Iakob Khutsesi as

“shouted and yelled like a mad/rabid” – here mad/rabid is the sickly excited behavior of a person in affect (Burduli 2009 24-34) **(Photo №7).**

There is also a reference to the disease of leprosy, which Iakob Khutsesi refers to as “leper”: there was a woman, from Persia, Magus, who had the ointment against leprosy and she came to St. Shushanik. And she taught her, in order that she had left Magus and became a Christian” (Monuments 1963: 23).

In the first half of the 6th c., Assyrian fathers came to Georgia from Syria under the leadership of John of Zedazeni, they established monasteries in the Kartli-Kakheti region, some of which (David Gareji, Shio Mgvime) became important spiritual, literary and cultural centers.

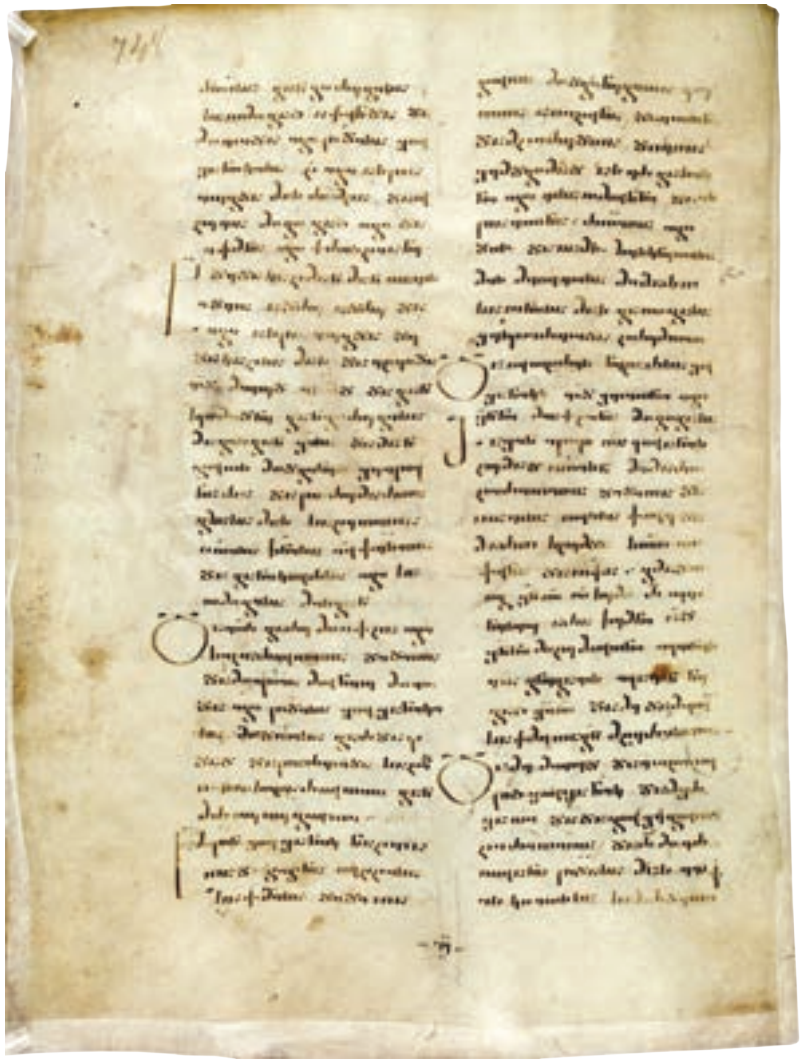

Photo №7.

NCM, A 95, Parkhali Homiliary, “The Martyrdom of Shushanik”.

The author of the life of John of Zedazeni mentions various diseases in his work: blindness, deafness. According to the text, "a paralytic (cripple) with many illness was brought to him, poor to watch." It also tells the story of the healing of a mentally sick person by the Holy Father, "among whom was the devil lying (Monuments 1963: 191-217)."

In the last decade of the 8th c. Grigol of Khantsta settled in Klarjeti, who founded the large monastic constructions in this region.

Many diseases are mentioned in Giorgi Merchuli's "Life of Grigol of Khantsta". Among them: epilepsy (may also include hysterical seizures) (Monuments 1963: 295); Hands and feet "bone-dry" face mumbled, "paralyzed" (probably paralysis is described)" once the Blessed was near Shatberdi, when a woman came to him with a two-years-old son, with his hands and feet bone-dry with paralysis and the mouth mumbled" (Monuments 1963:294). Blood flow – bleeding from a woman's urogenital organs; Deaf and dumb from birth (congenital deaf-mute); the disease, that was called "blessed" and in ancient times referred to diarrhea (Monuments 1963:302). According to this example, it is probable that medicine in the time of Grigol of Khantsta had undergone certain stages of development, because relatively earlier, this disease was known with another name (Shengelia 1980: 99); "Goat (Monuments 1963:298), which is called arthritis (podagra, gout); Later the disease, arthritis, was mentioned in "The Life of Ioane and Ekvtime". According to George the Athonite, Ioane the Athonite suffered from arthritis and "was lying for many years and endured many pains" (Monuments 1967:55).

The text of "The Life of Serapion of Zarzma" also contains interesting information about diseases."The Life of Serapion of Zarzma" (ca. 1st half of the 10th c.) by Basil of Zarzma describes a disease of a man: After the death of Serapion of Zarzma a man came to his [Serapion of Zarzma] dead body, he suffered from terrible pains and bleeding from the genitals and cried with a loud voice" (Monuments 1963 : 343). There is another story of healing a man with an eye disease. A man came to the coffin of the saint, his right eye stinging and he had completely lost his sight (Monuments 1963: 346).

Ilarion the Georgian was a prominent representative of the Georgian Church in the 9th c. His name is associated with the renewal of David Gareji and the establishment of monasteries abroad. The text of the "Life of Ilarion the Georgian" names and describes a number of diseases that are related to the miraculous healing by the Saint: the healing of a boy's sore leg with the sacred oil of a candle; The "lame

man," in the name of the Lord, "went forth with his feet"; curing a paralyzed child; Healing of the prince's son Procopius after his miraculous revelation to Ilarion's chasse – Ilarion put his hand on Procopius' stomach, prayed and healed him of his illness (Monuments 1963:9-37).

The original work of a Georgian monk from Sabatsminda Monastery "For Penance and Meanness" (6th-7th cc.), written as a guide-book for monks, includes scientific information about the biological and social nature of man, where his biological nature – the balanced activity of the individual organs of the body is compared with the unity of society: "We are one corpse – one society and each of us is one unit or a member of this corpse" (Abuladze 1955:176).

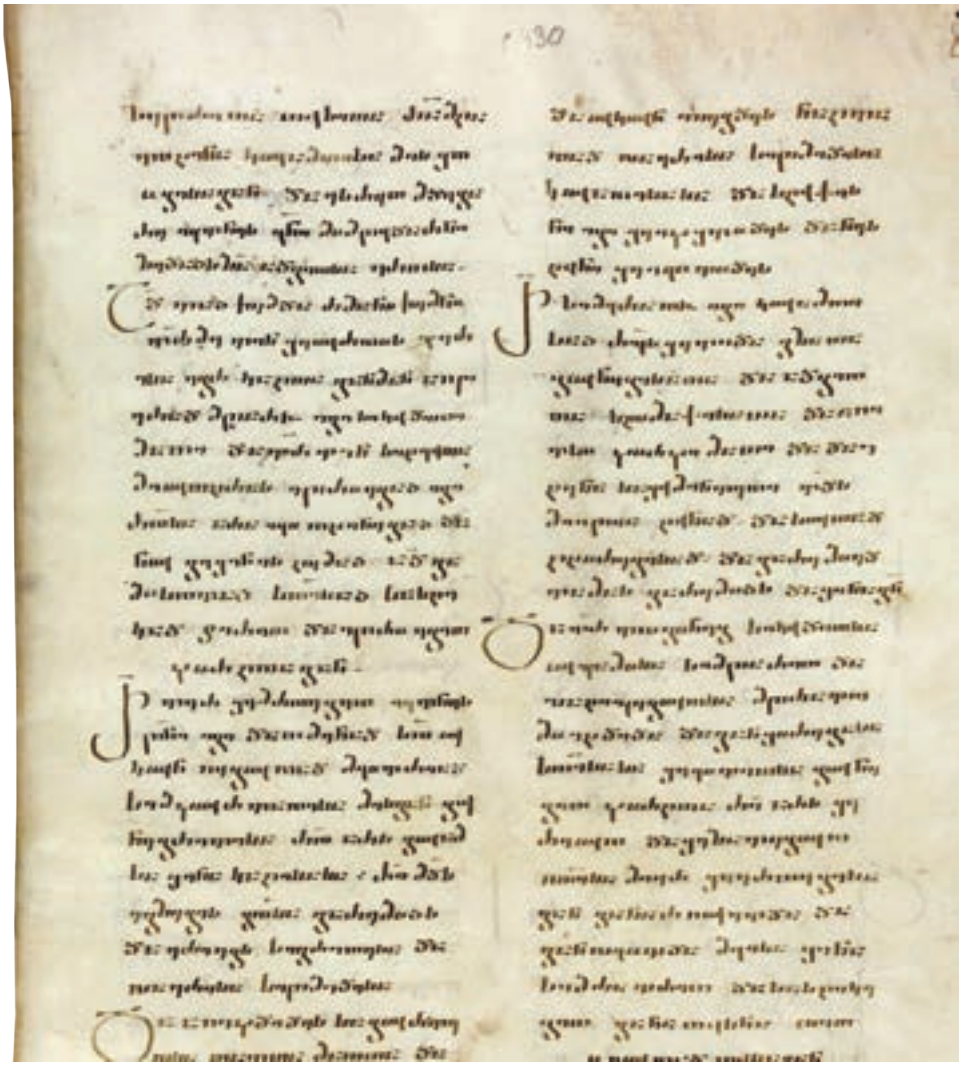

Photo №8.

NCM, A 95, Parkhali Homiliary, "*Martyrdom of the Monks from Sabatsminda*".

Makari Meskhi (13th-14th cc.), in the "Life of Peter the Iberian" (Georgian Prose 1982:429)[1] mentions a number of diseases that the Blessed Peter, with the help of the Lord, healed with prayer: His prayer cured "an eunuch named Iovane": "It happened once that an ulcer spread overand covered his mouth "(p. 31); in another passage: the "deadly illness entered Iovane" but "all the illness left his body" as a result of prayer (pp. 36-37). Many miracles were executed by God through the hand of Blessed Peter in Alexandria: "Many were healed of the devil, and the blind, and the lame and the lepers" (p. 38); By prayer he could heal, "the Jewish, the fisherman, whose body was filled with water and whose belly was terribly swelling" (p. 54). At the touch of the holy relics and the vestments of Blessed Peter, were healed, "the weak, feeble, and obsessed with the great pains ... and the paralytic and the sick" (p. 57) (Georgian Prose 1982: 31-57).

Medical notes and relevant terminology are preserved in the hagiographic work "Martyrdom of the Monks from Sabatsminda"[2] translated by Stephen of Damascus, son of Mansur (8th c.). "Amba Thomas", is named among the monks who was "a healer ... and a priest master in healing" (32v); He "straightened broken bones of beaten monks and helped to coalesces them like a good sculptor" (50v). The work describes in detail the physiological picture of the soul rising from the human body as a result of suffocation with smoke, when the elements were oppilated and the arteries were obstructed (the nostrils were closed), the smoke filled respiratory organ until it reached the brain and completely disabled it…" (46v-47r) (**Photo №8).**

The Georgian translation of Theodore Abukura's anti-Muslim polemical work, translated into Georgian by Arsen of Ikalto (11th-12th cc.), mentions Muhammad's "with the disease "black-brooder" (S 312, 26v). The name of this disease is found in medical manuscripts in the form of melancholy.

In the beginning of early feudal period, the main forms of medical treatment, characteristic for this period were mentioned: shelters for the elderly and disabled, hospitals, medical and cultural centers in royal and commercial cities, at the residences of the princes and ecclesiastical-cultural centers (Shengelia 1980: 86).

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[1] "The Life of Peter of Iberia" was written in Greek by John Rufus (5th-6th cc.), the surviving Syrian edition served as an original for Makari Meskhi's (13th-14th cc.). Georgian version. Peter Iberian (Peter the Georgian) in science is identified with the greatest thinker of the 5th c. – Pseudo-Dionysius the Areopagite (Georgian Prose 1982:429).

[2] At the National Centre of Manuscripts the work is prepared to be published based on three manuscripts (Bodley №1, A 95 and A 188).

In the fifth century, under the leadership of Peter the Iberian a hospital was built in Jerusalem: “after several days of staying in Jerusalem at the monastery built by them, they built another monastery and a hospital” (Monuments1967: 235).

There was a hospital near Jerusalem in Sabatsminda, where “master healers” worked. “The Life of Ilarion of Georgia” (9th c.) states that he was visited “by some to cure the soul and others to cure the flash.” The hospital, also existed in the monastery of Iviron, in the middle of the 12th c. Michael the Priest donated money to build the hospital (Acts of Iviron 2008: 6, 53).

According to the chronicler, under the leadership of David Agmashenebeli (David the Builder) a hospital – Xenon was built in Gelati: “Xenon was built in a place alike and beautiful”, where the diseased, suffering from various diseases had all the conditions for treatment (Kartlis Tskhovreba 1996: 253-254).

Old Georgian encyclopedic fundamental medical works

Old Georgian manuscripts, containing fundamental works of special medical content, were copied in the 13th-18th cc.

Of the earliest surviving medical manuscripts, the only one, S 4939, copied on parchment, is a small fragment of a medical text on pages 25v-28r in the lower palimpsest layer, which says: “Blood ... kidney... To eat – fat meet...”, as well as the names of vegetables and fruits, etc. According to palaeographic signs, the text dates back to the 13th c. (Georgian Palimpsests 2017) **(Photo №9).**

Photo №9.

NCM, S 4939, Palimpsest.

Manuscript Q 26, kept at the Georgian National Centre of Manuscripts, has preserved the most fundamental work of the earliest medical content, Canaanite's "Incomparable Qarabadin". The second list of work № 13 (23), copied in the 18th c. is preserved in the Georgian Manuscripts Fund of the Institute of Oriental Manuscripts of the Russian Academy of Sciences (St. Petersburg). On the basis of these two lists – Tbilisi Q26 and St. Petersburg №13 (23) – Lado Kotetishvili, the first researcher of Georgian medical literature, published this work (Incomparable Qarabadin 1940) **(Photo №10).**

The title of the work is taken from the phrase given at the beginning of the text: "this Incomparable Qarabadin is a lot wise and has healed a lot diseased suffering from serious troubles." The first edition of "Incomparable Qarabadin" (1940) mentions Canaanite as the author. L. Kotetishvili suggested that Canaanite, mentioned in an

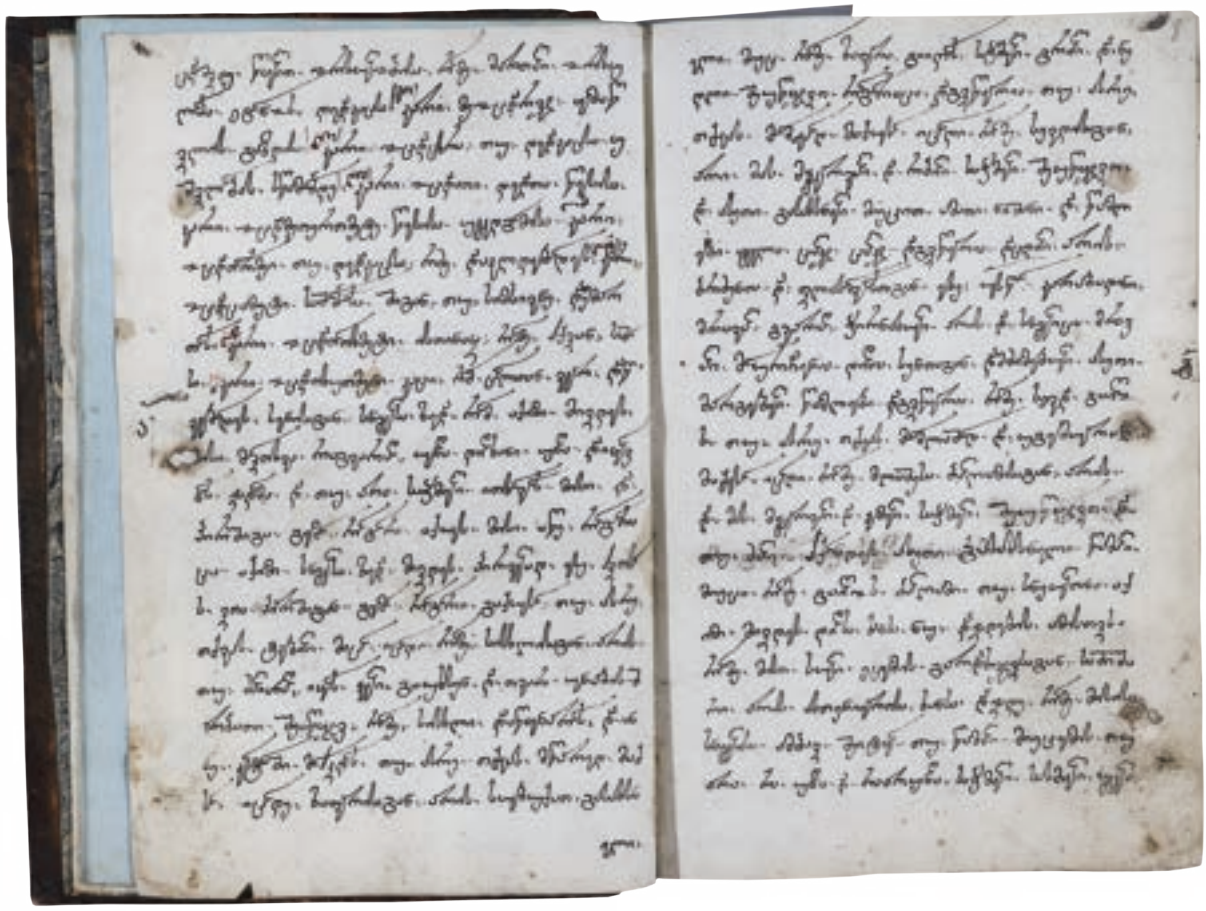

Photo №10.

IOM RAS, №13 (23), "Incomparable Qarabadin".

ancient Mkhedruli inscription on the page 36 of this copy from Tbilisi, be the author *("God, have mercy on the great sinner Danbubi, the all-powerful Satos...who will read this book, forgive the sinner Canaanite").*

Based on the linguistic peculiarities revealed in the work (Georgian archaic vocabulary and grammatical forms) and the years of activities of the cited authors, the researchers date the work back to 10th-11th cc.

"Incomparable Qarabadin" is a compilation. The compiler calls it "incomparable" or matchless/ peerless/unequalled, because he uses the medical advice of well-known of the times Greek (Galliane / Galianoz / Gallinoz, Dipocrates / Bagrat) and Arab authors (Muhammad Ibn Zakaria Ar-Razi / Masu, Misu Yaqub Ibn Sulayman al-Israel, Sabit Ibn Kurra, Khoja Sinan / Ibn Sina); Also he included Georgian folk methods of treatment and remedies in the Qarabadin; the work also cites "The Babylonian wise man and philosophers" and their ancient diagnostic method "the sign of washing the hands" is also attested; this indicates to the possibility of ancient connections between Babylonian and old Georgian medicine.

The collection consists of three major sections: the first summarizes the general medical principles; The second section presents general pathology and therapy, a brief description and treatment of diseases of the internal organs; The following section describes external (traumatic and skin) diseases: fractures, burns, snake and dog bites, etc.; This is followed by the information on the hygienic-dietary issues and finally, the work ends with a list of simple (one-component, herbal) medicines. The compiler of the works used the works of Arabic speaking authors (the names of Greek authors are attested in Arabic form). Therefore, the presence of Arabic forms in the text was expected, especially in medical terminology, that is also confirmed by textological studies.

Thus, it can be said that the Qarabadin is the first special fundamental medical work that has come down to us, summarizing the complete medical knowledge available at the time, collected from written sources and folk medicine.

"Incomparable Qarabadin" was actively used by both the contemporaries and the scribes of later periods. It is almost entirely included in Zaza of Panaskerti's "The Medical Book" (15th c.); In the Georgian manuscript (№18, 15th c.) from Matenadaran, the pharmacological part is represented with the 17-page fragment from the "Incomparable Qarabadin" text. Most of its parts are included in Ioane's copy of "Yadigar Daud". An indicator of the popularity of the composition is the medical works preserved in the Armenian manuscript of the 17th c. (Mat. № 412,

17th c.). According to Il. Abuladze's research, this is an Armenian translation of Qarabadin (Abuladze Il. 1985).

The Georgian manuscript "Foreign Fund" № 18 preserved in Matenadaran is a medical essay. The manuscript was first described by Christine Sharashidze (Sharashidze 1986). This manuscript presents the Georgian version of the medical collection "The Treasure of Khwarazmshah", which has reached us with this unique manuscript of the 15th century (Georgian version of " The Treasure of Khwarazmshah" 2018) **(Photo №11).**

The author of the main source of the Georgian version of "The Treasure of Khwarazmshah" ("Zakhirai Khwarazmshahi"), Zain ad-Din Abu Ibrahim Ismail Ibn

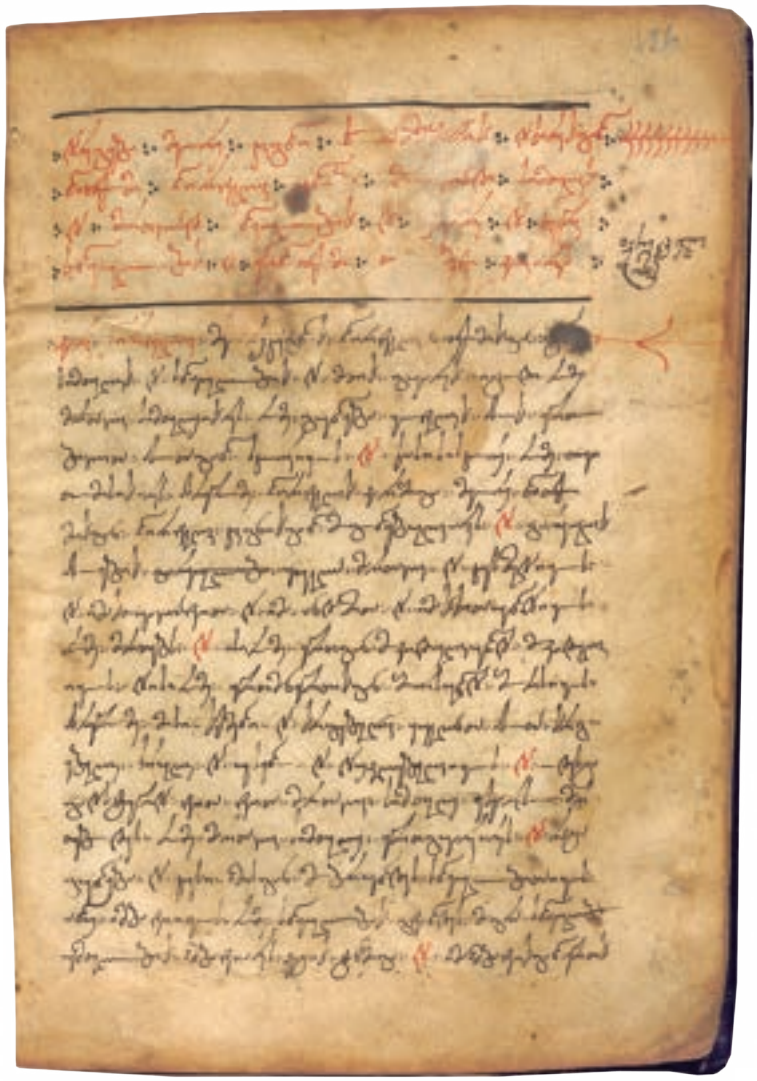

Photo №11.

Mat. 18, Georgian version of "The Treasure of Khwarazmshah".

Hassan Ibn Al-Ahmad Ibn Muhammad Al-Hussein Al-Jurjan (Al-Gurgani +1136) originally was from Iran, southeast of the Caspian Sea, from the province of Gurgan, and served as a doctor at the court of the ruler of Khorezm, Qutb ad-Din Muhammad ibn Yamin ad-Din Khwarazmshahi (1097-1127). The mentioned work was also written by his order and according to the Muslim tradition was dedicated to him.[1]

The Matenadaran manuscript lacks the pages; In addition, it was messed up while binding during the restoration. After sorting the text in sequence, it was found that almost one third of the work was missing. The essay represents a systematic course of the theoretical material in medicine that was compiled as a guide-book. It consists of three main parts: Books I-II and III – pharmacological passages. Part I (the book) is incomplete, the preserved text contains human anatomical and physiological data; Book II presents the symptoms of health and diseases; Methods of diagnosis (*Araz*) are described on the basis of the forms of pulse (Majas), urine (water or pee), stools (excrement), sputum/phlegm, sweat; The third part is a fragment of pharmacological information (p. 17), which begins with the phrase: "Another sign, derived from Mansur, of knowing the disease" and following the beginning of the "Incomparable Qarabadin".

The Georgian version of "The Treasure of Khwarazmshahi" besides the main source uses the fundamental works of ancient and contemporary to the collection authors, such as Galen's Anatomy *(Jalinoz Tashrih);* Muhammad Ibn Zakaria al-Razi (Razi) "*The Book of Havi";* Ibn Sina's (Avicenna) "The Medical Law"*(Kanun)* and others.

The Arabisms found as a result of linguistic analysis – anatomical, physiological, biological, diagnostic, as well as non-medical terminology and traces of grammatical categories, as well as mistranslated symptomatic nonsenses prove that Arabic translation of Persian original of "Zakhirat Khuarazmshahi" served as the source for Georgian version. Existing political, cultural and literary processes in Georgia and the ongoing educational and translation activities at the Gelati Academy, the Georgian version of the Treasure of Khwarazmshah had to be translated at the end of the 12th century (the Georgian version of "The Treasure of Khwarazmshah" 2018).

The codex S 1274 preserved in the funds of the National Centre of Manuscripts contains an interesting medical work "The Book of Medicine"[2]. According to the

[1] According to the tradition established in Muslim literature, authors immortalize the names of the commissioners or the patrons; Al-Jurjani also follows this tradition.

[2] First notes about the manuscript was published by Ekvtime Takaishvili in the newspaper "Iveria" (Takaishvili 1903:644).

testament brought at the beginning, “This Book of Medicine, when the Sultan Rukandan ran from the gates of the city of Karnu, was presented as a trophy. By Christ, Ptni Ch [Patron Chkondideli], his royal chancellor, elder, Proto-Upertimos,and first of all the viziers, a man of wisdom, protector of widows and poor, a fair judge, made me to translate this into Georgian, me a former-Khoja”, it is known that the ex-Khoja translated the collection into Georgian at the beginning of the 13th c. **(Photo №12).**

The medical collection “The Book of Medicine” by ex-Khoja *(khojakhopili),* preserved in this manuscript, (The Book of Medicine: 1936) is an encyclopedic work and consists of two parts. The first part deals with general philosophical-medical therapy. It outlines the importance and benefits of medicine; Duties of a physician, philosophical views on human nature; Human anatomy, etc. The second part presents general pathology and therapy, all the organs of the human body are analyzed –

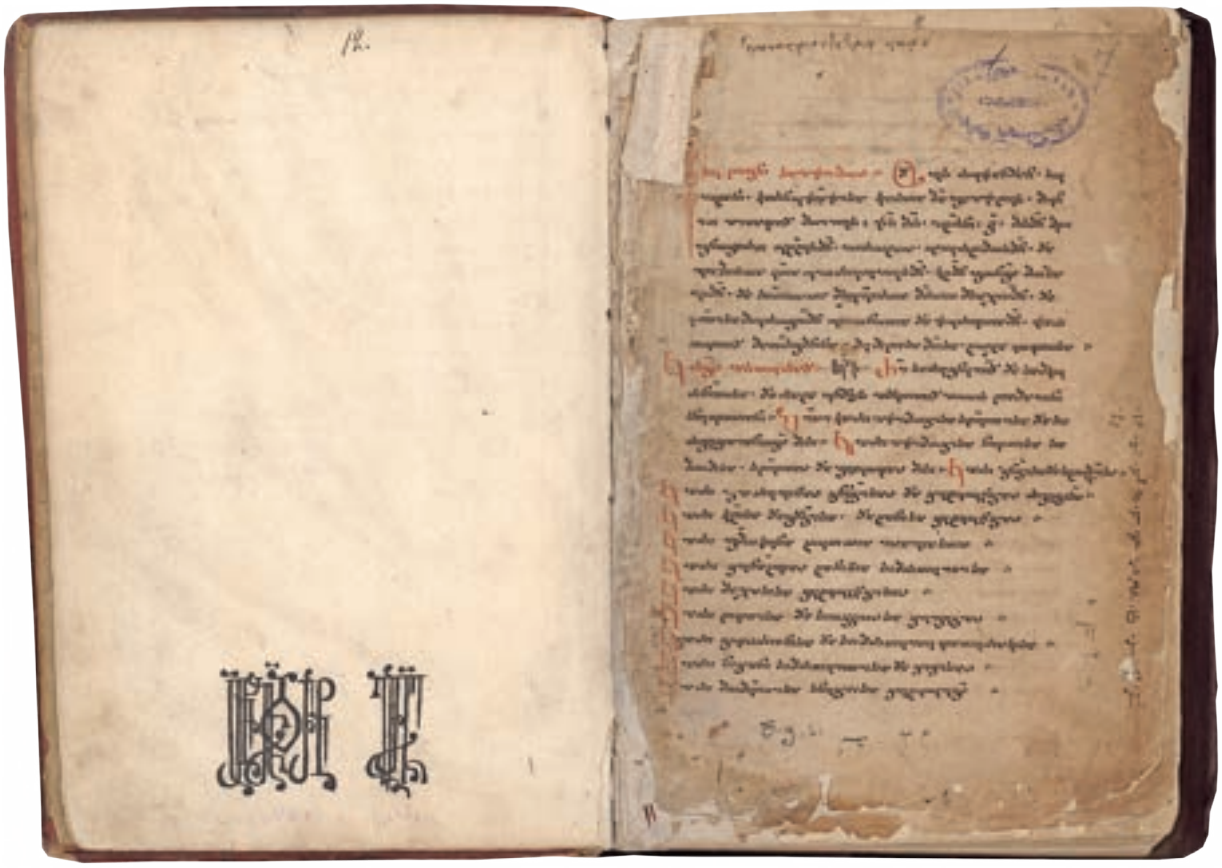

Photo №12.

NCM, S 1274, “The Book of Medicine”.

starting with the treatment of diseases of the head and the organs on it (eyes, nose and ears, mouth and teeth, tongue and lips); This is followed by treatments for the heart, abdomen, and organs in the abdominal cavity; Diseases of the spine and joints; Finally, external (skin) diseases and tumors are described; Diseases accompanied with fever; Injuries and burns, snake bites ... The treatment of diseases of each organ is often certified by the medications used by several doctors.

The work is distinguished by the large number of authors, it presents the healing methods of 22 authors; The chronological upper limit of the life of the named authors is the 11th century, thus, the original of 'the Book of Medicine" must have been written in 11th -12th cc.

The original of "The Book of Medicine" obtained as booty during the Battle of Basyan was duly evaluated by Chkondideli-Royal Chancellor/Vizir, who was the high official in the country and enjoyed the rights of the first person of the kingdom after the king (Meskhia 1979: 29-34). An important fundamental work was added to the medieval Georgian medical literature in the form of the Georgian translation of the collection by ex-Khoja by his order.

The merits of ex-Khoja, the translator of "The Book of Medicine", were duly appreciated by Georgian scholars[1]. There are different approaches in the scientific literature about the origin of the work. E. Takaishvili (Takaishvili 1903: 642-643) I. Javakhishvili (Javakhishvili 1935: 268) and L. Kotetishvili (Kotetishvili 1936: XXI) considered it to be translated from Arabic, Mikheil Shengelia (Shengelia 1956: 60) entified the work as an original Georgian writing. According to Niko Marr, the translation may have been done from Persian or Armenian. Therefore, he required

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[1] L. Kotetishvili noted: "The famous group of scholars-philosophers of this epoch, consisted of such names as: Ioane of Tbeti, of Sinai, Arsen of Ninotsminda, Anton of Chkondidi, Ioane of Bolnisi ... Efrem the Less (Mtsire), Arsen of Ikalto, Ioane Petritsi and many others. The name hidden under the pseudonym of no less brilliant Georgian scientist-doctor ex-Khoja should be added to the list; And to the large amount of translations of theological, naturalistic and philosophical works of that time should be added the present "Book of Medicine", which represents one of the most prominent monuments of written medicine in contemporary Georgia" (Kotetishvili 1936: XXVII). According to II. Abuladze: "[the ex-Khoja] is not even a random scribe-translator, but a healer-scribe who is trained in both foreign and native medical writing. The high qualities of his translation are the result of a certain tradition that should have been developed in Georgia in previous centuries" (II. Abuladze, Works, IV, 1985). For our part, we cite one example from the text where the translator correctly spells the scabrous name of a man's genitals with the corresponding numerical meaning: "The sign of the flow of blood" from "eight hundred and thirty-five" (c. 1936, p. 216).

a detailed study of the text to determine the source language of the monument (Marr 1908: 204). During the textual analysis, various specific Arabicisms were revealed (medical vocabulary, Arabic grammatical constructions, Georgianized Arabic roots, cases of inaccurate translation, a number of stylistic features), which can be explained only by the influence of Arabic written source (Samkurashvili 1985: 56-61). L. Kotetishvili suggested *"Kitab al-Qullia"* as the Arabic source for "the Book of

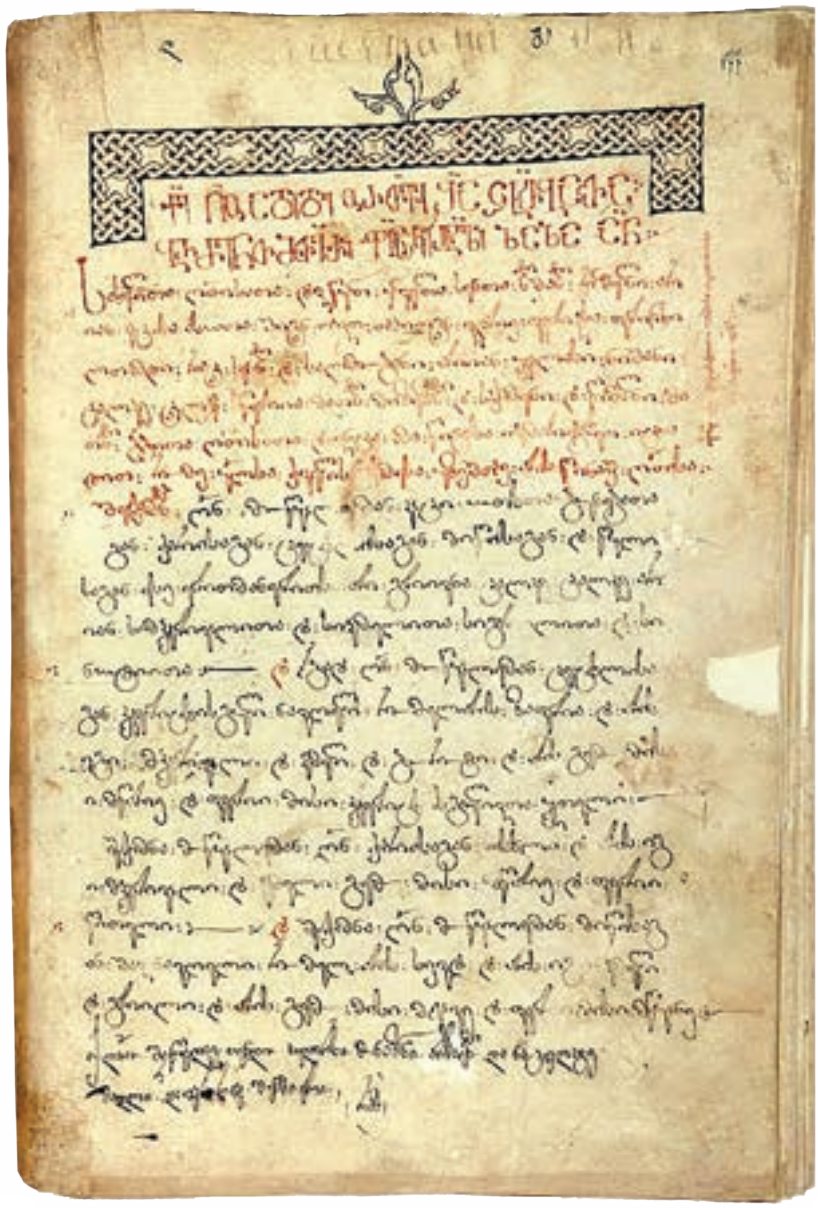

Photo №13.

NCM, Q 877, Zaza of Panaskerti-Tsitsishvili, "The Medical Book – Qarabadin".

Medicine" of Ibn Rushd (Averroes), but the comparison of the texts did not confirm this assumption.

Tornike Chkonia, a member of the expedition of the Academy of Sciences of the Georgian SSR in 1945 from the archives of Nijni-Novgorod (former Gorki, Russian Federation) brought Zaza of Panaskerti's "The Medical Book – Qarabadin" and delivered it to the Department of the Manuscripts of the State Museum of Georgia, the manuscript was assigned the number Q 877.

An interesting detail from the history of the manuscript is the goose feather and a sheet of paper on which the inscription is done by Vakhtang VI: "Christ, We, the Governor of Georgia, the Prince Vakhtang, all the separated pages of this Qarabadin arranged and bounded for usage and benefit for the man and for the resources" (1709). Therefore, Vakhtang VI, whose contribution to the development of Georgian culture and science is known, took care of the restoration and protection of this medical book **(Photo №13**).

The manuscript lacks the beginning, thus, it is unknown whether the author was indicated in the work, but in the text Zaza "the healer" or the head of wise men is mentioned several times. And the second part of the monument begins like this: "Christ God, bless in both homes, the wise leader Zaza of Panaskerti, Amen". Based on the available information, Zaza of Panaskerti is considered to be the author of the works. Zaza was from Tao, a descendant of the ancient feudal family of the Panaskertelis, one of branches of the family was established in Kartli in the 15th c., and hence gave the origin to the Panaskerteli-Tsitsishvilis family. Zaza of Panaskerti mentioned in the manuscript is a famous historical figure, loyal to the king. A fresco portrait of Zaza is preserved in Kintsvisi Church.

Zaza Panaskertel's "The Medical Book" is one complete work. Its two constituent parts are organically related to each other. Stylistic and lexical study shows that the essay was written by one author. The essay is a compilation work. Old Georgian medical monuments are used as a literary source, such as the "Incomparable Qarabadin" of the 10th -11th cc.; In addition, the work is based on theoretical and practical advice collected from other unknown Georgian medical books, methods of folk remedies. The first part of the book (1-24r) outlines the general issues of medicine: hygiene, disease examine and diagnosis; Basic forms of medicines, processes of their use and technology; The second volume discusses the main issues of pathology and therapy; Diseases of individual organs and their signs; Treatment methods, different forms of medicines are described in detail; The collection covers almost all fields of

medicine and describes diseases of individual organs and their treatment. Thus, it is an original Georgian compilation monument; It richly uses oriental terminology and medical principles, that were so characteristic of the world medical literature of that period. Essay is considered to be a fundamental medical work at that time. An indication of the great interest of medical society and the general public is that Zaza of Panasketi-Tsitsishvili's "The Medical Book-Qarabadin" has been published several times (Panaskerteli-1950; Panaskerteli-Tsitsishvili 1978; 1986; 1988).

The manuscript Q 270 was purchased by the State Museum in 1928; the manuscript includes the important monument of Georgian medical literature, "Yadigar Daud" by David Bagrationi. All the copies known for that times are attached to the edition as versions; the main text is represented with the contents from the

Photo №14.

NCM, Q 270, Dautkhan, "Yadigar Daud".

manuscript Q-270 (the first half of the 17th c.) as it was “the oldest and the shortest of all” (Yadigar Daud 1938).

The author of the work the King David, Dautkhan, was the son of Luarsab I. He ruled in the period when the neighboring countries of Georgia – Iran and Ottoman Empire were politically opposing states, and consequently, the foreign policy of Georgia fluctuated between these orientations. In 1569-1578 David was the king of Georgia. He left for Istanbul in 1579 for two years, but had to stay there until the end of his life, where he died in 1585. King David’s political career proved unsuccessful, though his legacy became a significant mark on the literary scene; With “Yadigar Daud” he contributed an important work to the Georgian medical literature. As he mentions in the preface of his works, while living in Istanbul he got acquainted with famous scholars and book depositories, where he saw many scientific and medical books; Among them, two “Tatar books” – “Muntakhab Shafi” (preferred selected treatments) and “Yadigar Sharif” (my face, reminiscent) were selected, which, according to him, were collected from numerous medical books. Books like these were not available in Georgia, so the sick could not be healed there. So David translated these medical books, combined them, and added his own healing treatises, calling the work thus “Yadigar Daud.” It is the only medical work of its kind in the Middle Ages, in which the author is named as “the Sinner Dautkhan” **(Photo №14).**

According to the colophon of the work, Yadigar Daud is a compilation, scientific-popular work, which was intended for practical activities. The author himself states about his destiny that “if a man becomes ill in such a place where there is no doctor, put this book in front... and treat, as written in this book ...“.

The work consists of three parts: The first, general medical part contains information on human anatomy and physiology. There are seven vital organs: the brain, the heart, the liver, the lungs, the gallbladder, the spleen, and the kidneys. From the physiological information the main thing is digestion (processing and absorption). Food is supplied to all organs through blood vessels. General and personal hygiene issues (house and clothing) are discussed; The second part deals with diet (food, desserts,sharbats), prevention (benefits from walking, balance of sleep and wakefulness, cleansing of the body, etc.). The third part contains clinical pathology, “the reasons of all diseases and symptoms and medications”.

Comparison of “Yadigar Daud’s” text with plausible Eastern source (National Centre of Manuscripts PAC 432) revealed an interesting picture. The Georgian

text is not a direct translation of a Persian source, although the direct traces of the named work is obvious; In addition, medical terminology used is nearly Arabic-Persian (Abuladze 2010).

In contrast to the medical writings discussed above, which have survived to the present day in one or two manuscripts, there are several copies of "Yadigar Daud". The number manuscripts resulted in its popularity, caused a kind of misunderstanding and somehow even disputed David's authorship. In the versions attached to the indicated edition (six manuscripts), which are derived from a copy, that was edited by the physician of the next century, Ioane, he [Ioane] is named as the author instead of David.

The copy of "Yadigar Daud" from a private collection, the so-called Aladashvili manuscript, is also very interesting. We learn about the manuscript from an oral information of the doctor Irakli Koberidze[1]. Manuscript It is not included in L. Kotetishvili's edition, as it was found later. Based on the Aladashvili copy, father and son Ioseb and Beniamen Kurchishvili published the full text of the earliest known manuscript of David Bagrationi's "Yadigar Daud" (Yadigar Daud 1992).

Qarabadins

The word *Qarabadin* first appears in the medical book of the 10th-11th cc. "Incomparable Qarabadin", the earliest copy of which was executed in the 13th c. and for almost ten centuries among Georgian manuscripts with the name of Qarabadin numerous medical information or explanation of different content, composition and volume have been preserved. Several groups of Qarabadins can be distinguished: the earliest works containing a brief description of the diseases and their treatment with complex (multicomponent) and simple drugs. This group of Qarabadins is based on rigorous medical knowledge, clinical-experimental methods used for treatment, and these principles are never violated anywhere in the entire works. The main basis of Qarabadins of this type are the Eastern sources, well

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[1] At the turn of the 19th -20th cc. a Jabadari manuscript belonged to Parten Meskhi, the priest of the village of Mulakhi, Svaneti. The manuscript was given as a dowry to his daughter, Teresa (Luka Koberidze, son of Ioseb married her). Teresa Meskhi-Koberidze, as a public healer, actively used the remedies and methods described in the manuscript. Later, her son married Alexander Aladashvili's sister Ekaterine Aladashvili, in whose family Alexander got acquainted with this manuscript and asked his nieces to let him have it; They could not refuse …

known by Georgian doctors of this period and used in compiling their works. Such are, for example: “Incomparable Qarabadin”, Panaskerteli’s “The Medical Book-Qarabadin”, “Yadigar Daud”.

The second group of Qarabadins represent more home remedies, where only medicinal drugs (mostly herbal) are listed without size-weight. Occasionally prayers are also found; Sometimes it contains the healing properties (character) of the material obtained from minerals (ruby, diamond, emerald, turquoise ...), animals or birds. These types of works may include advice-recommendations against parasites for family-sanitary activities (fly, flea, bumblebee), of culinary (jam cooking, beverage preparation), furniture care and other useful tips; Sometimes even veterinary (animal treatment) advice. Works of such structure can be conventionally called “family Qarabadins”.

There is a peculiar type of medical books, so called *Mosaic collections*, which, along with information collected from medical books or even home remedies, include astronomical and geophysical (earthquake, thunder) information; Often attached with *calandra,* tips on agricultural labor; A list of ominous days; Excerpts from the Gospels, Avgaroz, Christian prayers, pagan spells, etc. Among the well-known for today Qarabadins the oldest one (A-1110) is from the 15th c., the forepart of Euchologion (1v-116v), preserved at the National Centre of Manuscripts. The manuscript is remarkable for its illumination and oldness of the text.

A similar mosaic-collection- type work is preserved in the small-size medical manuscript (H-916)[1] of the 17th c. entitled as Abraham’s Qarabadin. According to the content, Qarabadin consists of three main parts: The first part is astronomical-geophysical information. The second part – Qarabadin is righteous and true. Here are listed the diseases and brief appropriate medications without indicating size-weight are attached; For example, “Whoever has blurred vision drop the gall of a fish into his eyes”; Or “Whosoever has his stomach filled with the wind, let him eat honey and white mulberry for three days on an empty stomach and it will cure him.” The third part combines Avgaroz – “healer of diseases and pains and persecutors of devils and spirits and evil and unpure”. Then passages from the Gospels, pagan spells, Christian prayers of the Holy Fathers (pursuing, against the devil). One (curing) part from Abraham’s Qarabadin is published (Four Qarabadins 2009: 103-116).

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[1] *The manuscript was donated to the Historic-Ethnographic Society of Georgia in 1912 by the widow of Platon Ioseliani, Ana.*

The so-called Mosaic Qarabadins are compiled with a different system than the fundamental medical works; They contain astronomical-geophysical information and useful advice about agricultural activities, curing, samples of Christian-religious and magical-pagan medicine (prayers, spells ...). All this serves one purpose – to protect human health from any external forces, diseases, atmospheric variability.

Thematic and Mixed Collections Containing Medical Material

Theological, secular or mixed collections containing medical works, individual texts or formulas are diverse and, following their social function, reflect the trends of different epochs or cultural environments, the role of scholar scribes in the development of the field and the spread of its achievements.

In this regard, initially should be mentioned the unique Georgian manuscript of the 10th c., the Shatberdi Collection (S 1141), an anthology of educational purposes copied in Klarjeti, which presents both religious (exegetical, dogmatic, hagiographic) and secular (historical) works, “Convention of Kartlisai”, “De Gemmis”, “On Weights and Measures”, “On Beasts”, grammatical footnotes), works of Gregory of Nyssa, Epiphanius of Cyprus, Dionysus of Thrace, Hippolytus of Rome.

The first work in the collection, Gregory of Nyssa’s exegetical work “On the Making of Man”, reflects the scientific knowledge preserved in Byzantium from ancient times, anthropological philosophy, combined with medical knowledge and natural philosophy. In it, a man, his physical essence is considered at the level of the proto elements, mechanics, medicine and psychology, by revelation in connection with truth, insight and cognitive abilities. The chapter 30, “The Word of the Healers, that Foretells the Birth of the Body of a Man, and the Collection” is particularly important in discussing the biological, medical-anatomical structure, and psychological-cognitive life forces.

The body, which is considered to be an essential structure obtained as a result of the union of material elements, is heavy, changeable, and permeable, though he is clear eyed, has the ability of speech, thus reveals hidden thoughts.

Gregory of Nyssa distinguishes three main organs necessary for life – the head / brain – “the source of life, the lifegiving “, the heart – “the beginning and the root of heat”, and the liver – the “source of blood”; Their functions, relations and order with other organs are considered: with entrails, lungs: they represent appropriate supplements for each other, as for example, stomach and lungs, one of which (lungs – the organ next to the heart) “with breathing excites the fire inside the heart” and the other (stomach) “absorbs the nourishment for the entrails”; The vital processes are described- respiration, blood circulation, movement (“the movement is achieved with shrinking and expanding copulas/nerves”). The most important thing is the soul, because men are the “shell of the self-moving soul”; Anatomical characteristics, physiological processes, the function of sensory organs are described.

Certain medical information, in particular, the healing properties of the gemstones / minerals, are also presented in the collection. De Gemmis by Epiphanius of Cyprus added to this collection describes the 12 precious gemstones that decorate the garment of biblical Aaron.

Photo №15.

NCM, S 1141, Shatberdi Collection “On the Beasts”.

Here are some excerpts from the work: cornelian cures stomach ache and causes diarrhea (p.129), topaz – its sediment is used for the treatment of poisoned people (p. 130), as well as used against "dizziness" and for the person at the death door; sapphire – cures intumescence, garnet – "eliminates any stomach ache and pain and whose belly is full" (p. 136).

The third work, "On the Beasts" is from the collection of Shatberdi, by Eusebius of Caesarea, but attributed to Basil of Caesarea, is parallel of Hexameronian understanding. As, in general, exegetical writing it also includes the description of beasts, creatures with soul based on biblical-symbolic lore and on the knowledge that was reflected in the writings of the exegetes **(Photo №15**).

The following passages are used to describe beasts and birds: Stork/ Black Stork (according to the dictionaries of Sulkhan-Saba, Teimuraz Bagrationi, Ilia Abuladze) "heals the eyes of the blind/eye pain" (p. 127); The text describes characteristics and behavior of an owl, a partridge, a serpent, a griffon-vulture. Thus, the text is interesting also in terms of zoology.

The manuscript 1446/75[1] of the National Archives is a collection of multi-various compositions, which presents different texts – liturgical, historical, canonical, ascetic, question-and-answer, "sayings of philosophers", "achievements of art" (according to Euclid's Geometry / according to the aerial survey). Among them, the copy includes a medical section, as well as a folk, spell text. The main part of the collection, written in Nuskhuri, according to palaeographic signs dates back to the 14th-15th cc.

The text includes Qarabadins and some formulas (medicine for eye pain, medicine against cough, freckles, skin diseases, body cleansers, etc.), as well as specific cases of use of herbal remedies against fever, pain killers, dancing mania, for curing burns, urinary incontinence, migraine, low back pain and other diseases. The named material is written in Mkhedruli hand and dates back to the 19th c.

It should be noted that in more late mixed collections or separate works dealing with the healing properties of gemstones and minerals, more detailed and distinct material is presented. These collections are mostly related to oriental sources and well-known schemes.

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[1] The manuscript was purchased by the priest Michael Khelashvili. In 1924 it was moved from Vladimer Khelashvili's archive to the State Archive. See the description of Georgian manuscripts (the fund of manuscripts of the National Archive of Georgia), Vol. I, pp. 367-371.

The mixed manuscript collections containing the scientific material of the 17th – 19th cc. are not homogeneous in terms of both structure and purpose, although the material presented in them is based on a certain principle, a specific model and scheme of division into fields of science.

The material containing scientific information included in this type of Georgian collections is of more practical content. These are texts of astrological / astronomical content – calendars, charts of the sun and the moon, lunar eclipse, zodiac signs and lunar calendar. Essays on the treatment of humans and animals, medical formulas,

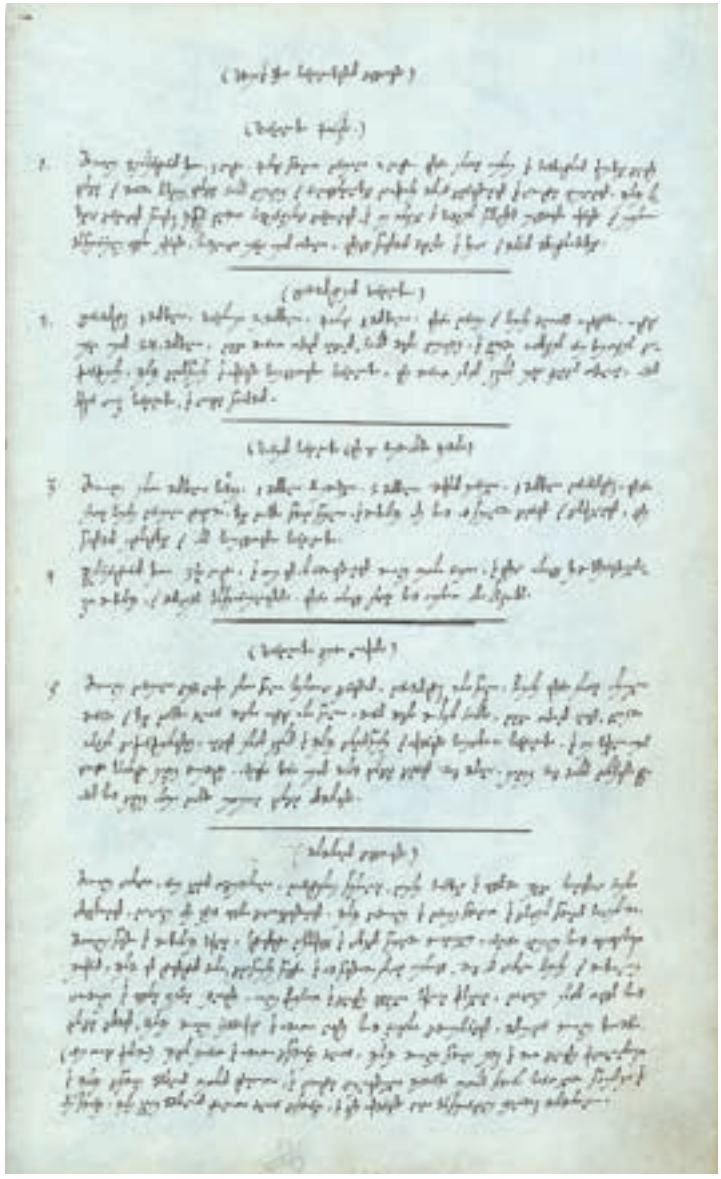


Photo №16.

NCM, A 1448, The Collection, Recipes.

appendix; Instructions on making tools; Definitions and dictionaries; Properties of precious stones and minerals, etc.

Some mixed collections contain material from related fields, e.g.: in the manuscript collection S 4955 (Fund Description 1961:263-264) (19th c.) side by side the selected Qarabadin – Muntakhab Shapia, or selected from Shapa (from the treatment), one of the sources (Abuladze 2010: 11-19), of Yadigar Daud is presented, as well as zodiac signs, lunar calendar, chiromanty, palmistry. This material is united by one principle and is related to astrological prophecy. Such selections are presented numerously in our collections.

Such material – medical, calendar, astrological, etc. – is often attached to prayers, chants, sermons, other theological texts, as well as accompanying popular poetic works – original and translated. Such manuscripts were a kind of "family book" for everyday use. They reflected the tastes of contemporary society, the intellectual level; Their form was often dictated by political and cultural indicators.

The samples of mixed collections:

H 2955 (Description of the Fund H 1953: 294-299) (19th c.), a collection compiled and copied by Osse Gabashvili, the son of Zakaria, which contains dictionaries, praises, passages from sermons and astrological material. The Dictionary opens the collection, containing thematically grouped common vocabulary, gem and plant names, including oriental titles. The material is mostly taken from Sulkhan-Saba Orbeliani's dictionary. The collection includes a description of the properties of the versified zodiac.

A 1448 (Description of Fund A 1954: 536-552) (1801-1862) is also a mixed collection; Contains biblical, theological texts, iambics, judgments, creed, confessions, etc. The compiler, translator and scribe of the collection is Taras Meskhishvili.

The manuscript also presents various technological recipes for: sandalwood ("art remedy for glazing", lacquer), amber, gum arabic (a kind of raw rubber), danamastic (Persian turpentine tree) (incense bead, gum), sumach, marble, cinnamon water, distilled vodka, gilding/gold plating a book cover. This part of the text can be identified with the relevant instructions from "The Chemistry" by Vakhtang VI ("Hte Chemistry" 1981; Chagunava 1984); Also, similarities can be found with Vakhtang's medical paragraphs. The vocabulary is mixed and contains Latin, Oriental, Georgian terminological units and general lexical material. The copy is interesting in many ways. It represents the broad interests and erudition, cultural influences of its compiler and the secular society of that time (Abuladze 1990) **(Photo №16**).

Sections with scientific content are often presented in mixed collections along with poetic works. For example, the manuscript H956 (Description of the Fund H 1951: 321-322) (1788) contains popular in the 18th c. Persian poem, Char-Darvishiani, and "A Book of Horse Care", adapted from Persian and attached with interesting authorial index explanations.

The manuscript collection S 62 (Description of the Fond S, 1959: 69-71) (1823) (the codex belonged to Grigol Chavchavadze) combines the poetic works of Teimuraz II, Mirian, fables, as well as the formulas of the medications. One of the formula refers to the "body fluid/ thick phlegm" known in Persian-Arabic medical treatises – body fluids, juices – elements of the humoral-pathological system resulting from the interpreting Galen's works (Yadigar Daud 1985:42).

Mixed collections, scientific works or sections containing such information in them, clearly reflect the traces of their origin, that are revealed in their structure, in the selection of material by the copyists and compilers corresponding the demands of society, as well as in vocabulary and terminology. In these sections, along Georgian original vocabulary, depending on the peculiarities of the epoch, the tendencies of the political and cultural environment, we find Persian-Arabic, Russian, Latin linguistic units.

For example, the manuscript S 2399 (Description of the S Fund 1963: 244-246) (1843), which combines poems, riddles, and lexical material as well as the formulas for medicine, shows both Oriental, Muslim (Arabic-Persian established terminological units), and Russian traces.

A similarly diverse vocabulary is presented in Manuscript № 388 of the National Archives of the Ministry of Justice (Description of the NAG Foundation 1950: 42). The collection includes poems, excerpts from poetic excerpts, as well as animal Qarabadins and the text "On the Precious Stones", which is structured according to the scheme of medieval Muslim mineralogical-geological works (Medieval 2006).

Thus, Georgian mixed manuscripts of scientific content of the 17th -19th cc. and medical texts among them reflecting contemporary knowledge, intellectual level of common cultural society, trends of development and public order, are of practical direction, however, conditioned by the taste and demands of contemporary secular society. Though, still repeating popular oriental schemes. The material preserved in similar Muslim collections is mainly theoretical and does not go beyond the framework defined by the classical differentiation of the fields of science. The collections of the later period are mainly a reflection of the European / Russian knowledge of the

19th c. and are, in fact, scientific books discussing the history of the issue, citing contemporary research methods, advances in the medicine.

As a sample of the above, we can consider the manuscript № 7205, D 96 preserved at the Sergi Makalatia Historical-Ethnographic Museum of Gori. An extensive collection was compiled in 1847-1893 by Alexander Garsevanishvili, a doctor from Gori. The author writes: “I gathered from different people. I added the information about the herbs and plants used by Georgians, that was obtained by me, as well as translated the names of the herbs and plants from Russian into Georgian, put them in the alphabet, explained their names in Russian and Latin, as a rule of botany”.

The material in the manuscript is varied. Diseases are divided into fields; each field into chapters. A description of the disease, including contagious diseases, remedies of treatment – *kurs, sharbat, desserts, oils,* etc. are given– instructing their preparation. The text also includes veterinary material; Dictionaries of foreign words (Arabic-Persian, Russian and Latin) with relevant Georgian terms and definitions are presented. It is especially noteworthy that the author cites sources in the footnotes as well as in the text: “I translated from Russian”, “It is from old Qarabadin”, “Used by the Georgian people”, “Learned from Ioseb Saakov, son of Giorgi, a doctor of Gori region ...” etc. The collection can be considered as asample of scientific books.

Scientific-Practical Collections

Material reflecting medical knowledge is also presented in special, practical collections. The work of Vakhtang VI – "The Book of Oil Mixing and Making Chemistry" (S 3721) – a multifaceted work – deserves special attention in this regard. There is only one complete manuscript, which was copied by Vakhushti Bagrationi himself, and he made the outlines of the tools/equipment included in the manuscript.

The composition was written in 1716-1724. The work describes the post-alchemical period, when information on chemical compounds was spread, methods of obtaining them were improved, and new compounds were discovered. Traces of Georgian, original, Persian and European-Russian sources are presented in the codex, as well as theoretical and practical materials in various fields, including therapeutic paragraphs. Vakhtang should have used Russian sources (Herbal, Book of Home Cure). During his stay in Russia, Vakhtang had access to European sources. In 1732, Gottlieb Schöber, a former physician to Peter I, was appointed his personal physician, and he was an excellent scientist. Collaboration with Academician Delil's group was also beneficial (Vakhtang VI, "The Book of Oil Mixing..." 1981; T. Abuladze 1990; Nevskaya 1974).

The material of Vakhtang's collection is multidisciplinary and multicultural. Although Vakhtang did not create itself a medical work, he made significant contributions to finding, arranging, copying and editing ancient Georgian medical manuscripts ("Incomparable Qarabadin", Panaskerteli-Tsitsishvili's "The Medical Book"). The medical paragraphs in his "Chemistry" confirm the scientist's medical erudition. As indicated by researchers of the history of Georgian medicine, Mikheil Shengelia and Ramaz Shengelia, Russian words, terms such as vodka, bread, quarter, quant, arsenic, powder, oven, glass, etc. are often found next to oriental terms in the text; Also Latin terminology: *ale witermus, cardialterpenanto, mostikha,*etc., that is an indicator of the cultural and economic relations of Georgia

at that time with Western Europe. We often find such sentences in the book: “It will arrive from France” (par. 246), mouse poison, its rock stratum … is in Khwarasan as well as in France” (par. 54), “aroma like French incense” (par. 252), the vodka from mastic tree is called in French *Mostikha*” (par. 267) etc.

There is no systematic description of medicines in the manuscript, but it is still of some interest, exploring the history of ancient Georgian medicine on the one hand and the study of Vakhtang VI’s personality and his scientific range on the other.

From the text, paragraph 35 is interesting in terms of the history of medicine. Vakhtang is well trained in optical medicine: Paragraph 2 describes how to make the mold of the spectacles. The text reveals Vakhtang VI’s deep knowledge of the highly complex issues of physiological and physical optics. In addition, it is possible to assume that there was an optical workshop in Tbilisi. Vakhtang paid special attention to the description of the rules for making glasses and other optical instruments. He describes the manufacture of the spectacle frame, the polishing process, Vakhtang names gluing the paper on the mold and instead of “crocus” as a polishing substance, he refers first to *Amaruli* and then to “*Trifel*” i.e. twofold polishing **(Photo №17**).

Photo №17.

NCM, S 3721, Vakhtang VI, “The Chemistry”, Technology of making glasses.

The rest 33 paragraphs contain a description of the medicinal products to be used in some diseases, their effect on the body ("character"), the technological processes of preparation, etc.

At that time Georgia had cultural and economic relations with different countries. We often find such references in the text: "Kharis Chini is not easily obtained, it will be brought from China." Ammonia "from Samarkand, Kashkhar will be transported to Khorasan and then delivered here", "white cloth will be brought from Russia", etc. As for the needed material for optical workshop "crocus" seems to be imported from France. "Crocus is a sort of yellow pitch, imported from France". More than twenty paragraphs of Vakhtang's work refer to cosmetics – *Lakhostaki* (dye for eyebrows), incense fragrance, oils (cinnamon and sandalwood, cloves, nutmeg and all seeds, rose oil, amber aroma, Indian Frankincense, *Jalasin*, orange flower, etc.), production of hair dye, treatment of baldness (L. Khidasheli 1999).

Information on Infectious Diseases and Their Treatment in Georgian Written Sources

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”, “The 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.

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 (tā‘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. 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 … 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*(hayḍa)* and *garja*, which is called in Arabic *tukhma (tuḫma)* and in Georgian sudden shock; this illness might be caused of overeating.

In "Incomparable Qarabadin" and "The Book of Medicine" several types of infectious skin diseases are named: leprosy *(barasi-baraṣ),* acariasis, alphos, *guzami (ğuzam).*" If someone eats and drinks with leprous, 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). "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 Medcine" 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 *ğudrin* 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 care-giver 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 from" (Incomparable Qarabadin 1997: 72).

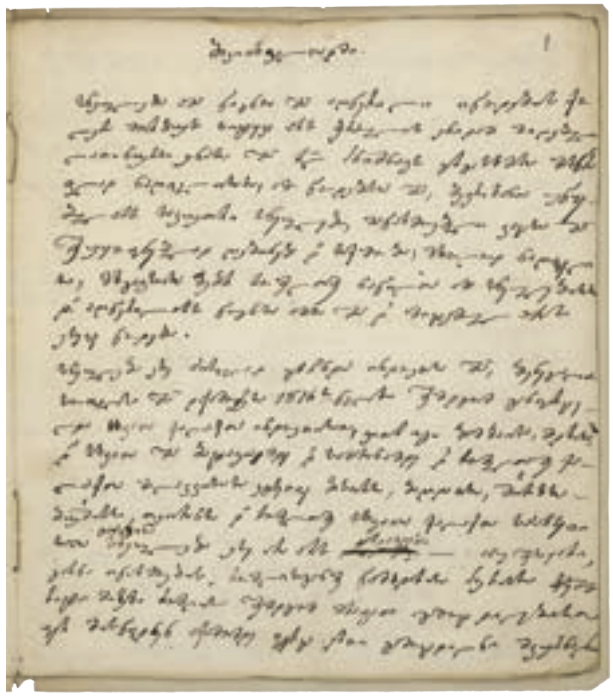


Photo №18.

NLR, IN 149, History and medical advice on cholera.

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) **(Photo №18).** 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 above mentioned 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 Centre 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 19thcentury and it is referred to as “new diseases”.

Smalllpox

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[1].

Diphtheria – caused great harm to children and was often lethal. According to Sulkhan-Saba, during diphtheria throat swells (Orbeliani 1993). In the old Georgian medical books, Diphtheria was considered as 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 throatand 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,

[1] *According to Sulkhan-Saba Orbeliani “childhood infectious diseases are: measles, smallpox, scarlatina” etc. (Orbeliani 1993).*

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 "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 blood" ... 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 epidemy 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 the Prince Ioane (Batonishvili). As the translator and scriber 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 Centre of Manuscripts, in the collection H 2217 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 foamdoes 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.

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 King 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 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 Güldenstädt 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. Güldenstädt 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 would be lightly picked (Chirgadze 2010:41).

Typhoid / Parthian typhus

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 by 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 hospitals” 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 fields, 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. 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.

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 enjoinment."

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, epidemies 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)” 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 Centre of Manuscripts (formerly the collection of the Society for the Promotion of Literacy), 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 contemporery approaches of infectious diseases in Georgia, in particular, cholera in the 60s of the nineteenth century **(Photo №19).**

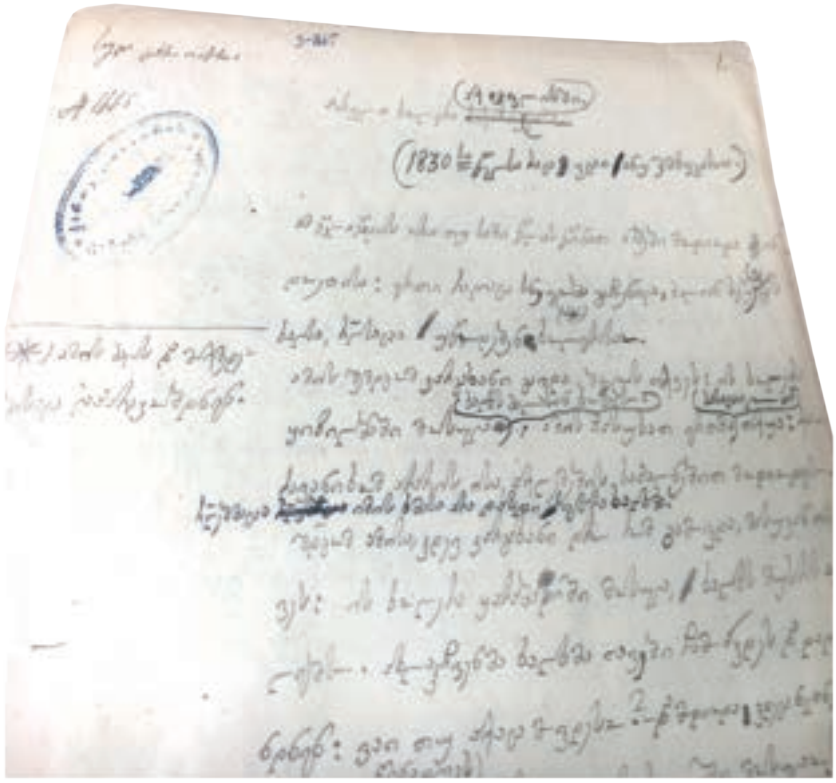


Photo №19.

NCM, S 1665, Alexander Orbeliani, “The first cholera here in Tbilisi”. Autograph.

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 “her 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 closed space”.

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 reminds him 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 chianuri 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.

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 disease 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.

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.

Dictionary and Glossary

Georgian medical works, translations and revisions contain rich material in the field of study lexical, terminological, linguistic relations.

Old Testament texts are full of lexical units and terms, the use and meaning of which testify to the existence of certain knowledge about internal organs and physiology.

In addition to the canonical references to the creation of the universe in the Georgian translations of the anthropological works of Gregory of Nyssa, Nemesius of Emesa, John of Damascus and others, evidences reflecting the knowledge of contemporary science based on data inherited from Greece and the East, relevant vocabulary-terminology – Georgian, authentic and linguistic units developed through translations and comments are found (Abuladze 1964: 5-6).

While reviewing Georgian translations of these works, Iv. Beritashvili noted: "The fact that words and terms from such works have existed in Georgian language since the 9th century indicates that educated Georgians not only read and studied such works, but also used them in their original works and practice" (Beritashvili 1957: 97-107).

Both Greek and Arabic-Persian medical vocabulary is abundantly used in medieval medical manuscripts, a certain number of which entered the lexical fund of the Georgian literary language.

According to Greek sources, secular-general medical vocabulary is presented in the translations of Georgian exegetical and philosophical works along with theological vocabulary and terminological units. There is a lot of such material in the manuscripts of Georgian medical content: *avgaroz/amulet, abraxas/medicine, stomach, organ, xenon, element, tendon, cord/copula, nostril, typhoid, vessel* etc.

It is noteworthy from the Arabic dictionary, for example, “doctor” (Arabic: ḥakīm) – the nickname of a healer, means wise, prudent, philosopher, doctor. Even today, in oral and literary languages, the word “healer” sounds natural (in Arabic it is called tabīb). It seems that in Georgian medical literature, a healer/doctor was required to do more than cure the disease with medication alone. This is proved by the duties of the doctor listed in the introduction to “The Book of Medicine”; “The doctor should know his job well and completely, has to have read many medical books by scholar healers … should guess the disease ... be reliable and generous, cherishable and not lazy”; the doctor “asked at home… applied and shown the wrist and is as trusted as a father (“The Book of Medicine” 1936: pp. 9-10).

Itself the word *Qarabadin* (Arabic: qarābāḏīn), which has become an almost common name for Georgian medical and veterinary works, was introduced into Georgian through Arabic sources. The term was first used in the title “Incomparable Qarabadin” and has been used as a generic term for medical content till the beginning of the 20th century.

It should be noted that the Arabic-Persian vocabulary in Georgian medical works was often dictated by the accuracy to the original.

From Arabic medical vocabulary in Georgian we can find: *abi (pill), balgham (pus), buasir / bovasil (hemorrhoids), buran / buhran (crisis during illness), varam (malignant tumor), zafra (bile), ointment, majas /maja (pulse), nikris (gout), tle/tilau (ointment), migraine, sharbat, khunagi (diphtheria), hukna / hukna (clyster),* as well as the names of infectious diseases, which are explained in the texts themselves (see the dictionary of terms for this material).

The language of the late Middle Ages, “confused with the other/new words “, overloaded with Persian-Arabic lexical units, is particularly characteristic. Most of these terms are established in the language, so their use in Qarabadins is also absolutely natural. At the same time, our scholars attached special dictionaries and commentaries to certain Georgian scientific translations and collections, which had a definite practical and educational purpose.

In general, when translating, whether it is a primary translation or a secondary, commented, completed one, special importance is attached to the provision of the exact equivalent of the original term or its definition. Such matches often do not indicate the internal form and main content of the term and gain the necessary relevance only as a result of a translational definition/commentaries (Gambashidze 1966). Thus, an extraordinary role is assigned to the translator, his knowledge and erudition.

The lexicographical material of the manuscripts of Georgian medical content, the vocabulary included in the texts, the dictionaries of medical and biological terms, containing Georgian, Latin, Greek, Eastern names of medicines and medicinal plants and their Georgian equivalents are especially significant in this respect. For example, H 343, S 19, № 69 / Gori / – Manuscripts containing Dautkhan's "Yadigar Daud"; H 414 – The Horse Qarabadin, Q 877 – Zaza of Panaskerti-Tsitsishvili's "The Medical Book" etc.; Matenadaran Manuscript № 17, which bears a striking resemblance to the collection Q 281 preserved in the National Centre of Manuscripts, contains a variety of material, including terminological – names of diseases and plants with appropriate terminology or definitions: *matbukhi banavsha* –man having pain in his back, *asliasinduba alike vineyard sow thistle/lettuce, asvantini rum* – absinthe, *agha karkarha* and *udulkarkhaha* – both are the names of wild tarragon, etc.

As it is known, Sulkhan-Saba Orbeliani's Georgian Dictionary contains rich material in terms of the creation and establishment of a special level of contemporary scientific knowledge, special vocabulary-terminology. For Georgian educators and scholars, the Saba Dictionary for centuries served as the basis for the further enrichment and development of the language through the introduction of new scientific terminological units conditioned by the historical-cultural context.

Such an approach is characterized by the term-creative activity of Vakhtang VI, Princes Ioane and David, that is based on previous experience and comes from Georgian, Eastern and European sources.

Here are some examples: *Sabri* and *Udi* – Aloe (according to Saba, Azua) – is found in "Yadigar Daud", "The Medical Book" and in many other medical works, in Qarabadins or separate prescriptions, as well as in "A Horse Qarabadin" compiled by Vakhtang VI, in "The Chemistry".

The following plant names are also used with similar popularity: *javzi* – nutmeg, walnut, *khardali* – mustard, *badiana* – dill,*anzali* – pumpkin, etc., their widespread usage and the tradition of using their Arabic-Persian names comes from the old qarabadins and medical books.

Some terms of special purpose, technological function of Persian-Arabic origin were also widely used both in the literary tradition and in terms of practical use: *avani / havani / avangi,* is commonly used lexeme of Armenian-Georgian having Iranian roots (Abuladze 1944; Andronikashvili 1966) – *rodini,* (mortar, mallet) – is found in "Incomparable Qarabadin", "Yadigar Daud", "The Chemistry", but Georgian "*rodini*" is simultaneously used. Also, *huli* – melted composite; *Kurs* (pill, tab) is the

most often used word in manuscripts. This term is found in all Georgian qarabadins and medical books. He replaced the Georgian *"kveri"* (roll) in some cases.

The enrichment of the medical literary vocabulary with new European, Latin and Russian material is connected with the activities of the Princes David and Ioane and together with them Vasil Chiladze (Kutateladze 1967; Kiknadze 2015) in Russia.

An interesting material in this regard is provided by the one of the manuscripts preserved in the National Archives (1446/106) – the codex of Sulkhan-Saba Orbeliani's dictionary, copied in 1764 in Qizlar. The manuscript belonged to the Prince David. According to his own inscription, he bought a Russian dictionary in St. Petersburg, added "explanations of animals and plants that Saba had not even heard before." This material is considered to be the second stage of the prince David's lexicographic work.

The dictionary is opened by "Russian, Tatar, Georgian" lexical items "found and created by Ioane, son of King George of Georgia". The text of the manuscript is

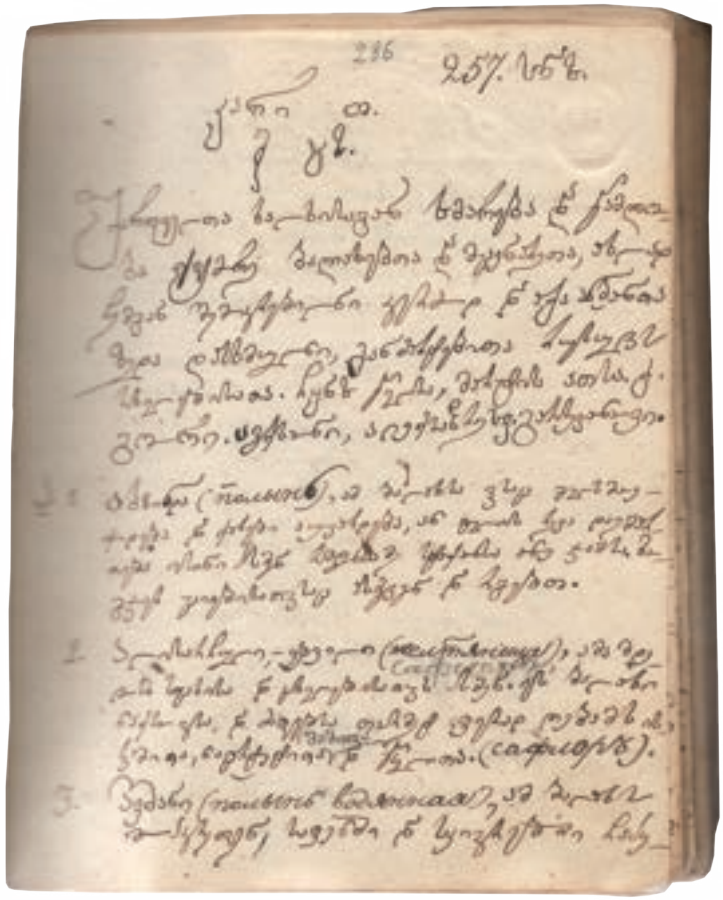


Photo №20.

GHEM, 69, The Collection.

completely corrected by the Prince David. The terminological units in the manuscript belong to the fields of zoology-botany, natural sciences, in particular, mineralogy-geology, lots of herbal medicinal remedies with their Russian, Latin equivalents, "dosages of medication", "healing practice" are presented. The lexical material is trilingual, sometimes "Tatar" and Armenian entries are also explained by the Princes themselves.

The study of the material may distinguish the following semantic patterns of term forms: foreign terms, specialization of the meaning of common words, terms derived from semantic integration (when a term is formed by merging two or more words, but they do not become one new term); Complex terms / phrases.

In addition, it should be noted that in most cases, the definitions of the terminal unit are descriptive and do not provide direct equivalents, that is due to the following circumstances: if there was no word in Georgian the translator provided the detailed definition of the meaning of the term. We encounter such a case in the translations of Vakhtang VI, when the translator introduces a foreign word / term due to the lack of its corresponding Georgian lexical unit and explains it by phrase, for example:

Majuni (*Ma'jun)* – "is from the language of others, in Georgian it is called *Dubeid"* (meaning the content of the term – a mixture of elixir, component-based, confortative, composed of two or more components), *Colon* – "this intestine is below the belly, which is curved from here to there". However, there are cases when a foreign term created as a result of semantic integration is presented with only one Georgian direct match: "*kutufihulba – shemgbari*" (hulba/hulbai from Saba's dictionary – is brought from qarabadin without explanation. The plant hulba / hulbai defined by Saba is the herb *Ulbo* (fenugreek) according to some lists – Shambhala (fenugreek). The word is used by David Bagrationi as the corresponding compound term.

Along with Sulkhan-Saba's dictionary, the lexical material of the princes David and Ioane was also distributed in special literature. As an example, we can bring the list № 69 preserved at Gori State Historical-Ethnographic Museum, the main part of which is the Qarabadin by Dautkhan – "Yadigar Daud". It was copied by Ioane the Priest, in Mozdok, in 1792. According to the scribe, he copied the manuscript from "The Prince Mirian's Qarabadin". The manuscript is attached with the colophons from the scribe and the translator, oriental names of medicines with Georgian equivalents; diagram of life circles; features and nature of bread, meat, milk, preparing of colorful ointments, mixture of majuns / drugs mentioned above, conformatives / list, index **(Photo №20).**

The second part of the manuscript – "The Second Qarabadin" is especially noteworthy, which, according to the compiler, was "copied" from the Prince David. The vocabulary is attached to the text – "Drug Names from Tatar to Georgian".

At the beginning of the manuscript, the compiler mentions that he (Garsevanov) collected freshly used herbal medicines used by the Georgians and sorted them alphabetically. The term brought in Georgian is accompanied by a Russian equivalent and encyclopedic description (*Abzinda* (absynth)- Palin, medicinal plant; *Alisarchuli* (safflower) – yellow plant, used as a dye); Here is a formula for making medicine / ointment of an external usage – components and technology. Here again, the terms found in the appendices of Sulkhan-Saba, Princes Ioane and David are presented: *Lakhostak* – anointing oil, eyebrow paint stone; *Avajua / Havajua* – Meskhetian-Javakhetian family perennial plant, dandelion, as well as some of the above named terms. They are given without definitions and direct matching entries as they were quite well known and commonly used by the population.

The lexicographical material discussed reflects the whole picture of the activity of the generations of Georgian scholar-educators, the process of adding and enriching the material in the cultural environment, following the interests of authors / co-authors and erudition, multicultural knowledge and practical purposefulness of cultural mediators.

Medicinal Remedies of Mineral Origin in Georgian Medical Books and Qarabadins

In Georgian fundamental medical works ("Incomparable Qarabadin" by Canaanite, "Book of Medicine" by ex-Khoja *(khojakhopili),* Zaza of Panaskerti – Tsitsishvili's "The Medical Book – Qarabadin", as well as David Bagrationi's "Yadigar Daud") used raw materials for medications are of plant, animal and mineral origin. Based on the descriptions of medicines in the old Georgian Qarabadins, up to 40 substances of mineral origin were identified, indicating their medicinal function. It should be noted that the properties of these substances are not described in the studied qarabadins in the frames of the modern scientific approaches, however, the information given in the qarabadins regarding the use of these substances indicates that the purpose and method of use were determined by the knowledge of the properties.

For the illustration Zaza Panaskerteli-Tsitsishvili's "The Medical Book - Qarabadin" names "*stone of magnet*, which attracts steel"- a mineral magnetite, with the chemical formula – Fe_3O_4, so called iron stone, it is assigned to use for expelling iron slag from the body (gastrointestinal tract): "For those who ate steel slag and it stayed inside the stomach, the cure is this – take the *stone of magnet*, that attracts steel, pound it well with half wool, take/drink it with wine or warm water, till the slag is not gathered as one" (The Medical Book - Qarabadin 1979: 559r, 15).

In Yadigar Daud, the whole chapter is dedicated to dental diseases and treatment. Here the adamant is referred to as the most durable mineral (having 10 points of hardness according to Mohs scale of mineral hardness). The mineral is

used for pulling out a tooth: “Who ever puts adamant on a tooth, grinds it into pieces and removes it; and if a man eats it, immediately his intestines are cut and kills him” (Yadigar Daud 1985: 312,26).

According to qarabadins salt, brine, rock salt were used for various purposes, for example, was advised when removing a tooth: “When the tooth is pulled out bring Salt water and soak an old cotton in this Salt water and press the cotton in the pulled out tooth site, and let him sleep so and keep it till the morning, other teeth will be fixed the cotton and will not be moved, it will cling to the gums” (Yadigar Daud 1985: 312,26).

In the medical books *gili Armani, guillerman* (mud, clay, Bolus Armenica / Bolus Armenus – fine-grained iron clay with yellow or brownish-red color, with strong astringent properties) and / or *gili makhtumi* (white clay, Bolus Alba – natural silicium composite enterosorbent, consisting of minerals from the kaolinitis ($Al_4[Si_4O_{10}](OH)_8$ group) is indicated as one of the components of complex medicinal remedies in cases such as bleeding, gastrointestinal disease, diarrhea, poisoning, skin disease etc. For example, a method to stop bleeding from nose is described as follows: “The doctor Burham said: he had previously used and experienced this method many times. Bring waters of snow, *bazaruji*, cucumber and mix the waters with *gili Armani* and a bit of camphor. They have to put it in both nostrills” (Yadigar Daud, 1985: 260,37). Chapter 28 of Yadigar Daud “Tells the causes, symptoms and remedies for phlegm,thirst and stomach pain”. A routine of giving and restricting water and food to the patient, as well as the intake of medications like *gili Armani* is indicated, thus underlining absorbing and coating features of clay: “You should not give water to drink, no food or bread, and if got thirsty, you should mash white sandal with rose water and make him drink, ... or in the same way mash *gili Armani,* or *gili makhtumi”* (Yadigar Daud 1985: 365,18). For the treatment of skin diseases (the chapter of the acariasis; acariasis – infestation, acaroisis) it is indicated “... put the mixture of *gili Armani* and vinegar bandage around and cover it with … cream” (The Medical Book 1978: 622,18).

Sulfur is one of the micronutrients in the human body, and in the form of a substance, it is characterized as an antiseptic and antiparasitic remedy, which entered medical books and qarabadins: “Sulfur is hot and dry. If a man suffers from acariasis let him take sulfur with honey and rub it onto his body, it will help against acariasis (Yadigar Daud 1985: 219,14); The use of sulfur for the treatment

of acariasis (acariasis – a parasitic skin disease caused by mites) is described in Zaza of Panaskerti-Tsitsishvili's "The Medical Book": "Another medicine for acariasis. Take the root of the hellebore, and chop and take it, and take the oil and sulfur, and mix it with vinegar, and make it warm, it will help" (The Medical Book 1978: 626,26).

Sulfur was of great importance for medicinal purposes, which explains why Vakhtang VI presents its detailed description and purification techniques in his famous textbook "A Book of Mixing Oils and Making Chemistry, collected by King Vakhtang" (NCM, S 3721): "Sulfur, some is amber-like, another is yellow, it may be black or the color of dove. Some say that, there is even red, but a chemist can also make red, and yellow: some being a piece, some are round and long, some are different, but the yellows have one and the same features, and for the oil, mentioned, only yellow is perfect, no others must be used and for vodka – white is also good" (Vakhtang VI 1981, §13), thus, the color and shape of sulfur are discussed and it is noted that yellow sulfur is of the highest quality in terms of purity. Another paragraph of "The Chemistry" describes the method of purifying sulfur by sublimation – "Fourthfold Distillation of Sulfur Oil" (Vakhtang VI 1981, §11).

Interestingly, both sulfur and "sulfur water" were equally used for medicinal purposes – hydrogen sulfide, sulfide waters, which belong to the balneological waters and are used externally (mineral water baths) and / or internally (drinking, inhalation, spraying, clystering). The use of these waters is recommended for: the treatment of cardiovascular, musculoskeletal, central and peripheral nervous, and endocrine systems, as well as gynecological, urological and skin diseases. Here are some examples for Illustration:

"Whatever is the site effected by the dancing mania (paralysis of any part of the body), ... bathe head and the corpse scrub limbs and vessels with sulfur water, or with alunite water (Yadigar Daud 1985: 275,11).

"Another type of urinary incontinence is that a man is constantly urinating and cannot detect urination. The reason may be from getting cold and the cold of the kidneys. The remedy for this is belching and immersion in sulfur water (Yadigar Daud 1985: 450,15).

Mercury and its compounds have been used in medicine since ancient times. Pliny the Elder (1st century, BC) called mercury an eternal liquid and a poison to all things. It is believed that the name Hydrargirum, or "silver water", was first mentioned

with Pliny, although it is more often referred to the author of this Latin name, the ancient Greek physician Pedanius Dioscorides, a native of the city of Anazarbus, Cilicia. Mercury, the only metal that is normally found in liquid form, has been of constant interest, hence its features – healing properties and toxicity – became known in quite early periods. Mercury and its compound sulema (the mercury (II) chloride, $HgCl_2$) also known as *Suleiman*, or the *majun of Suleiman*, is found in Georgian medical books as an antiparasitic, disinfectant, antiseptic remedy: "And another good medicine, curing acariasis is: take three eggs and scramble well, then take one dirhem *Suleiman* as *arsenic*, grind thoroughly and mix with eggs, … let it stay for one day and night, ... and the next morning a man with acariasis having bath and scrape the skin well, and then rub this mixture well onto the skin, wait for two hours and wash it back with warm water, and by the mercy of God, this will help by all means (Yadigar Daud 1985: 515,37).

According to the given recipe, the drug of this complex composition sulema has the same action as arsenic. Arsenic, as well as the natural compounds of arsenic with sulfur, or sulfide minerals – auripigment (orpiment) As_2S_3 and realgar AsS – have been used as medicine since ancient times and they are found in Georgian sources under the name *zarnakhi /zarnekhi /zarnikhi /zirnikhi*. Interestingly, in Zaza Panaskerteli's "The Medical Book" chapter "Poisoning" *zarnakhi* is mentioned as a poison – "If the man feeds a man with ... *zarnakhi*", the clinical picture of poisoning is given: "The body will suffer from pain and intestines become itchy and diarrhea (bleeding diarrhea) will occur". The description of clinical symptoms of poisoning is followed by a description of the antidote to the poisonous substance (neutralizing, coating remedies). The following words start the narration "this is the medicine for" (The Medical Book 1978: 250,34). At the same time, *zariki* (arsenic, Arsenicum) is proved to be included in the composition of complex dental pain medications as a component (The Medical Book 1978: 371,25). Thus, both the therapeutic and toxic effects of arsenic and its compounds are well known.

The substances of mineral origin named in medical books are mainly native simple (adamant, gold, mercury, silver, sulfur, etc). and complex – chemical compound substances (magnetite, hematite, rock salt, alum, copperos, cinnabar etc). At the same time, among the substances of mineral origin used for medicinal purposes there are compounds obtained as a result of certain technological processes – borax, *surinji* – lead rust/yellow rust (chemical composition of double

oxide of lead, Pb_3O_4) *murdasangi* (composition of lead (II) oxide, PbO, yellow lead), *Indian zangara/ gunda/zhangaro/ lakhustag /lakhostaki* – verdigris (composition of acetate of copper (II), Cu $(CH_3COO)_2$; Cuprum Aceticum) and some others.

Lakhostaki, as verdigris, an acetate of copper (II), is used in complex anti-ketosis and anti-acariasis medicines: "The very good medicine: take Persian sulfur six dirhem, *murdasangi, lakhostaki*, henna and zinc salts each four units, mercury two dirhem, and myrtle leaf half dirhem. These medicines should be grinded and sieved. First henna should be battered with water well so to kill mercury with henna, then again batter all the ingredients with the white of an egg and fill the egg shell with all this, coat with dough and put into the burning ember. When baked well mix with two hundred dirhem fat of black sheep and rub onto the skin in bath and leave for a day and night, then take a bath and the acariasis will go off, by the mercy of God, and this medicine is well experienced for many times" (Yadigar Daud 1985: 515,17).

At the same time, according to Sulkhan-Saba Orbeliani, *lakhostaki* is an "eyebrow dye stone", or a black dye used in cosmetics, the chemical composition of which is given in Vakhtang VI's "The Chemistry" (Vakhtang VI 1981, §58), recipe "How to Make *Lakhostaki":* "Take four units of copper, cooper foil (flattened copper sheet), three units of sulfur, *murdasangi* of cooper unit's eleventh part. Grind together sulfur and *murdasangi*. Cut copper, as much as needed, put one part of sulfur in raw clay pot and cover with one part of copper. Cover the pot and put into the oven, let it burn, *lakhostaki* is ready for use". Here is detailed description of the method of composing *lakhostaki*, which lists the components, and the conditions required for their interaction (e.g., flattened copper), that facilitates the completion of the sulfidation reaction. Conducting the process in hermetic space eliminates the risk of oxidation, rusting of the obtained product which is CuS, copper (II) sulfide; no reagent ensuring the reception of acetate is provided; adding *murdasangi (*Plumbum (II) oxide, PbO) may increase luminosity of the produced *lakhostaki* (Vakhtang VI 2013: §58).

A variant reading of the composition of *lakhostaki* is a manifestation of the established practice in the period when substances of different chemical composition were given the same name, and vice versa, the substance of the same composition (according to the chemical formula) was given different names (sulfur, brimstone – *gogirdi, qibrithi, tsumtsuma*).

The study of medicinal products of mineral origin named in qarabadins is important for the history of medicine, as well as for the history of chemistry, as it helps to understand the stages of development of practical and theoretical knowledge of chemical substances and their features, including therapeutic functions.

Georgian Veterinary Manuscripts

Veterinary manuscripts create a separate group. The research of the veterinary manuscripts kept in the Georgian and foreign depositories allows us to trackover time the domestic animal and bird diseases considered, the illnesses singled out by practicing veterinarians, the medicinal drugs and manipulations tried against the diseases. In the end, an image of the veterinary medicine development and its clearly cut social role in the society is formed.

Various diseases of domestic animals and birds, anti-disease medications, as well as the methods of their care and breeding exploited by the Georgian people, are presented in the ancient Georgian written veterinary monuments or qarabadins. Accordingly, there is "A Horse Qarabadin", "A Bird Qarabadin", "A Falcon Qarabadin", "A Dog Qarabadin". These manuscript compilations provide a rich material on the diseases of domestic animals and birds known in ancient Georgia along with the medicines used to treat them.

Veterinary manuscript books have been found in Georgia since the 17th century. It is feasible that similar compilations existed in earlier centuries, as in this country the knowledge of poultry and domestic animal diseases, their treatment and maintenance were a thing of great importance not only for the elite layers of the society, but for a wider socius as well. However, the number of the preserved qarabadins, their translation history or the notes on creating the original setshave been known just since the 19th c. ("A Dog Qarabadin" written by Ioane Batonishvili (the Prince), Q198).

From the late medieval times the translation of qarabadins begins. Vakhtang VI left his indelible trace on this field. He translated "The Horse" – "this small

Qarabadin" from Persian into Georgian which, as the manuscript books Q281 and S-14 announce, had a practical purpose "for young horsemen to get mastery, and for chieftains and herd owners".

The deeds of Vakhtang VI were continued by Ioane and Bagrat Batonishvilis (the Princes), Giorgi XII's sons, who made a special mark in the development of the veterinary medicine and considered it necessary to share their knowledge with the Georgians, benefitting the people this way.

Presumably, medical collections were very popular, and therefore, often written and composed, on the other hand, they were also frequently damaged, thumbed and worn off for their intensive usage. This is the reason why not many of the medical collections have reached us.

The qarabadins, come up today, are mostly without paintings and special decorations. Their embellishments are just the initial letters in cinnabar, ornamented simply. Unfortunately, there are no specimens of medical devices in medical collections, neither in human anatomy. Instead, European-influenced veterinary

Photo №21.

NCM, Q 311,Veterinary manipulation tools with inscriptions.

qarabadins are richly illustrated with medical instruments and animal skeletal imagery, in the analogy to the already discovered and well-known philosophical medical monuments **(Photo №21).**

The animal and bird qarabadins come from the late medieval times, the number of which is reaching 47. Korneli Kekelidze Georgian National Centre of Manuscripts holds 30 veterinary collections, the remaining 17 are kept in various museums of Georgia and Russia. Six of these 30 manuscripts contain the text of "A Bird Qarabadin", 21 manuscripts are the five different lists dedicated to horse treatment, two copies contain collections of the same text and present veterinary recipes, and one is a fragment of a "A Dog Qarabadin". Each manuscript has its own origin, adventure and value. They are copied from different originals by the scribes of different literacy background and literary tastes.

According to K.Jvarsheishvili, there are four main groups of manuscript books identified:

Group I includes horse qarabadins, which present the issues of care, treatment and breeding. There are five subgroups marked out:

A) To the first subgroup belongs the oldest H 414, preserved at the National Centre of Manuscripts. Written with Nuskhuri it is chronologically the earliest record and its copying dates back to the merge of the first and second halves of the seventeenth century. The text is fragmented, containing 4 pages;

B) Subgroup II contains manuscripts of the same text translated from Persian by Vakhtang VI. The earliest of them is dated with 1763, the latest–with 1874. The extensive edition of this work consists of 114 paragraphs, 43 of which are devoted to zootechnical issues, and 71 – to the veterinary ones.

In the process of working on the manuscripts, four more unknown lists of "A Horse Qarabadin" by Vakhtang VI (1675-1737) were revealed, which seem to have been deposited later in the repositories. Therefore, they are not fixed in Jvarsheishvili's monograph. These manuscripts are: Georgian National Archive № 816, 1730-1820, 64 pages; NCM Q 1606, Collection of Qarabadins, 1839, 1r-51r; Museum of the History of Georgian Medicine № 46, 4, 1846 (71r-122r) and Kutaisi State History Museum, K 716, 19thc. 70 f.

C) Subgroup III includes a work performed by Ioane, the son of Osse and ordered by the Prince Giorgi (Batonishvili, later Giorgi XII). The Qarabadin contains 280 paragraphs, 56 of which are devoted to zootechnical issues and 224 – to veterinary

ones. According to the colophon, the compiler uses the Qarabadins in Armenian and the ones by Vakhtag VI. Thus, the work is a kind of a compilation.

D) Subgroup IV contains texts translated from Russian by the Prince Bagrat (Batonishvili), which deals with the treatment of horses and cattle. This subgroup combines 5 manuscripts, three of which are autograph manuscripts by the Prince (Batonishvili). One of them is Q 311. The manuscript presents two different veterinary works. The first part of the Q 311 is presented at 4r-92v, written in 1817 in Petersburg. The translation is from French, precedeed by a horse picture (3v), on 5v-6r there are featured veterinary manipulation tools with inscriptions.

E) Subgroup V presents two manuscripts of the "A Horse Qarabadin": S 3728 and the manuscript from the Manuscript section of the Russian National Library (St. Petersburg) № 24/20, which deals with zootechnical and veterinary issues, namely: diseases of the horse skin [scabies], malanders, those of the respiratory tract (cough, breath shortness – "*qushi*"), digestive system, teeth and gums, etc. In addition, therapeutic and surgical methods used for the treatment of diseases are identified, and medical remedies are indicated.

Group II of the veterinary manuscripts includes "A Dog Qarabadin". It is survived as an only manuscript in fragment Q 198. The fragment of the collection contains six pages, dating with the 18th century. The existing colophon informs us that "it was done by Ioane, the son of the King of Georgia."

Group III contains "A Bird Qarabadin". It describes poultry breeding, care and treatment. Most of it is copied in the 17th century. One of the manuscripts (Q562:2) is led by a physiological introduction. According to Ilia Abuladze, with regard to the linguistic data of the monument, it should be a work of 12th -13th centuries.This setting allows the researchers to think that most of the veterinary manuscripts were created much earlier.

Group IV contains two qarabadins with veterinary recipes. The manuscripts consider 117 recipes of the main forms of remedies such as: whey, i.e. extract, ointment, solution, dirt (now: powder), pills, sherbet, etc. The Q311 veterinary prescription is described in the collection on pages 105r-149r **(Photo №22).**

It should be noted that the majority of Georgian veterinary manuscripts, in addition to purely veterinary matters, contain zootechnical issues (compiled and translated by Ioane, the son of Osse, compilatory work "A Horse Qarabadin", H 2156). It presents the following practical advice for horse breeding and care: for breeding there should be selected a horse with a proper appearance and behavior.

Taking into account the length of the horse pregnancy there is the time of a year indicated when a bull should be let into a herd; Prior to the birth, a skilled and experienced person called “qeshik” should be attached to the pregnant horse. Special tips on bird treatment and care are also provided.

The results, information and assessments of the study complementing the existing data, are important for the study of veterinary and zootechnical history. It will provide some support to scientific and educational circles interested in the subject.

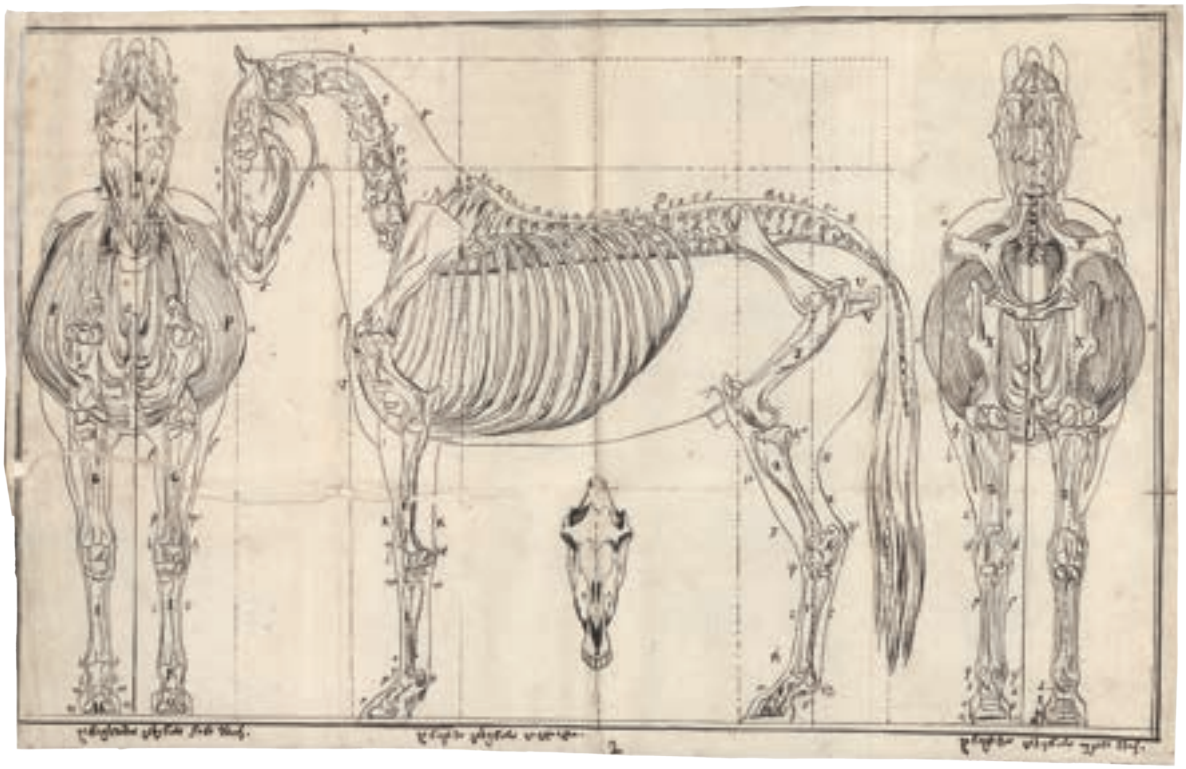


Photo №22.

NCM, Q 311, Horse skeleton.

About the Prototype of the Medicine Made According to the Formula Containing Beetroot Confirmed in the Old Georgian Medical Manuscripts

As a result of multidisciplinary research, a prototype of the pharmaceutical drug (BVLP – Beta Vulgaris Leaves Prototype) was developed on the basis of a recipe containing beet (Beta vulgaris) leaves certified in the manuscripts, which was tested on animals with an ethanol and NSAID (indomethacin) on induced experimental peptic ulcer model in the Pre-Clinical Pharmacochemistry Research Department of the Iovel Kutateladze Institute of Pharmacochemistry of the Tbilisi State Medical University.

The study found that BVLP was characterized by moderate potency of gastro-protective action in cases of gastric mucosal damage caused by local irritating factors of the stomach, while in the presence of systemic agents (such as steroids, nonsteroidal anti-inflammatory drugs) for the prevention of abnormalities BVLP appeared to be ineffective.

Neither single nor multiple (14 days) oral administration of BVLP causes any toxic effects in rats and mice. Animal behavior, weight changes, weight coefficient of internal organs do not differ from the data of control (intact) animals. It should be noted that the doses studied are 30 times higher than the daily doses of humans **(Photo №23).**

Photo №23.

Prototype of the Medicine / BVLP.

Album of Medical and Veterinary Manuscripts

Manuscripts copied in the 10th-14th centuries: Jruchi I and Jruchi II, as well as Gelati and Mokvi Gospels are richly decorated with illustrations, among which there are many healing scenes. Each miniature depicting a physiological case is dynamic, presumably based on an impression of real life. Each pathology is represented by an appropriate characteristic mark; Scenes for each disease show the appropriate habitus of the patient, the appearance of the sick person, his or her complexion, physical or mental state.

Jruchi I

The first classically decorated Gospel, adorned with images of the cross, cannon tables, 8 canons and illustrations, 3 of which contain healing scenes.

936-940

297 f.; 26x21 cm.; parchment, Mtavruli, red and black ink. Commissioner: Grigol, the son of Mirdati; scribe: Gabriel; painter: Tevdore, painter of Canon Table;

NCM H-1660

John 5, 5-6, 8-9

5. A man was there who had been ill for thirty-eight years.

6. When Jesus saw him lying there, and knew that he had already been a long time in that condition, He said to him, "Do you wish to get well?"

8. Jesus said to him, "Get up, pick up your pallet and walk".

9. Immediately the man became well, and picked up his pallet and began to walk.

Jruchi II Gospels

The manuscript is one of the distinguished with the abundance of miniatures, the manner of artistic style. The artist and the scribe of the manuscript is one and the same person.

12th c.

278 f., 24,5x18,6 cm., parchment, Nuskhuri, gold ink, red, black ink; scribe and artist: Michael.

NCM H 1667

Matthew 12,10,13

10. And, behold, there was a man which had [his] hand withered...

13. Then saith he to the man, Stretch forth thine hand! And he stretched [it] forth; and it was restored whole, like as the other

Gelati Gospel

A unique sample of a manuscript book, richly illustrated, wealthy decorated with 254 miniatures, brilliantly executed initial letters, with columned cannon tables on a sheeted gold background.

12th c.

293 ff.; 26x18,8 cm; parchment, Nuskhuri and Asomtavruli, gold ink, red and black ink.

NCM Q-908

Luke, 17, 12

12. And as he entered into a village, there met him ten men that Were lepers, which shood afar off:

13. And they liofted up their voices, and said, Jesus, Master, have mercy on us!

14. And when he saw them, he said unto them, Go shew yourselves unto the priests. And it came to pass, that as they went, they were cleanced…

Mark 5, 1-2, 7-8,12

1. And they came over unto the other side of the sea, into the country of the Gadarenes.
2. And when he was come out of the ship, immediately there met him out of the tombs a man with an unclean spirit.
7. And cried with a loud voice, and said, I adjure thee by God, that thou torment me not.
8. For he said unto him, Come out of the man, [thou] unclean spirit.
12. And all the devils besought him, saying, Send us into the swine, that we may enter into them. And forthwith Jesus gave them leave. And the unclean spirits went out, and entered into the swine: and the herd ran violently down a steep place into the sea, (they were about two thousand;) and were choked. in the sea.

Luke 14, 2,4

2. was a man suffering from abnormal swelling of his body. he healed him and sent him on his way.

4. So … he healed him and sent him on his way.

Matthew 9, 28-30, 32-33

28. When he had gone indoors, the blind men came to him, and he asked them, “Do you believe that I am able to do this?” “Yes, Lord,” they replied.

29. Then he touched their eyes and said, “According to your faith let it be done to you”;

30. and their sight was restored. Jesus warned them sternly, “See that no one knows about this“.

32. While they were going out, a man who was demon-possessed and could not talk was brought to Jesus.

33 And when the demon was driven out, the man who had been mute spoke...

Mokvi Gospel

This ceremonial manuscript is one of the last illustrated gospels, copied in Abkhazia. It is richly decorated with miniatures, cannon tables and initial letters on sheeted gold.

1300

329 f.; 30x 23.5 cm., parchment, Nuskhuri; red and brown ink; Commissioner Archbishop Daniel; scribe and illustrator: Ephraim; Place of execution: Mokvi.

NCM Q 902

Luke 2, 21

And when eight days were accomplished for the circumcising of the child, his name was called Jesus, which was so named of the angel before he was conceived in the womb.

Shatberdi Collection

A unique Georgian manuscript of the 10th century, an anthology of educational purposes. The collection includes works of both theological (exegetical, dogmatic, hagiographic) and secular content.

Some medical information on the healing properties of the gemstones / minerals in De Gemmis by Epiphanius of Cyprus, who describes the 12 gemstones that decorate the biblical Aaron's garment: cornelian cures stomach ache and causes diarrhea, topaz – its sediment is used for the treatment of poisoned people, as well as used against "dizziness" and for the person at the death door; sapphire – cures intumescence, garnet - eliminates any stomach ache etc.

973-976

287 f.; 28 x22 cm; parchment; brown and red ink; Asomtavruli and Nuskhuri; Scribe: Iovane Berai; Place of execution: Shatberdi

NCM, S 1141

Incomparable Qarabadin

The first special fundamental work of medical content, compiled in the 10th -11th centuries. It presents contemporary medical knowledge from the works of Greek and Arab authors, from ancient Georgian manuscripts; From folk medicine treatment methods and remedies are included; The diagnostic methods of the “Babylonian wise men and philosophers” are proven.

The work is a compilation and the compiler calls it “incomparable” or uncompetitive: the work consists of three major volumes: general pathology, forms of medicine (pills, kurs, medicinal powders, majuni ...), treatment of internal organs, external diseases, simple (single component) drugs are described.

13th c.

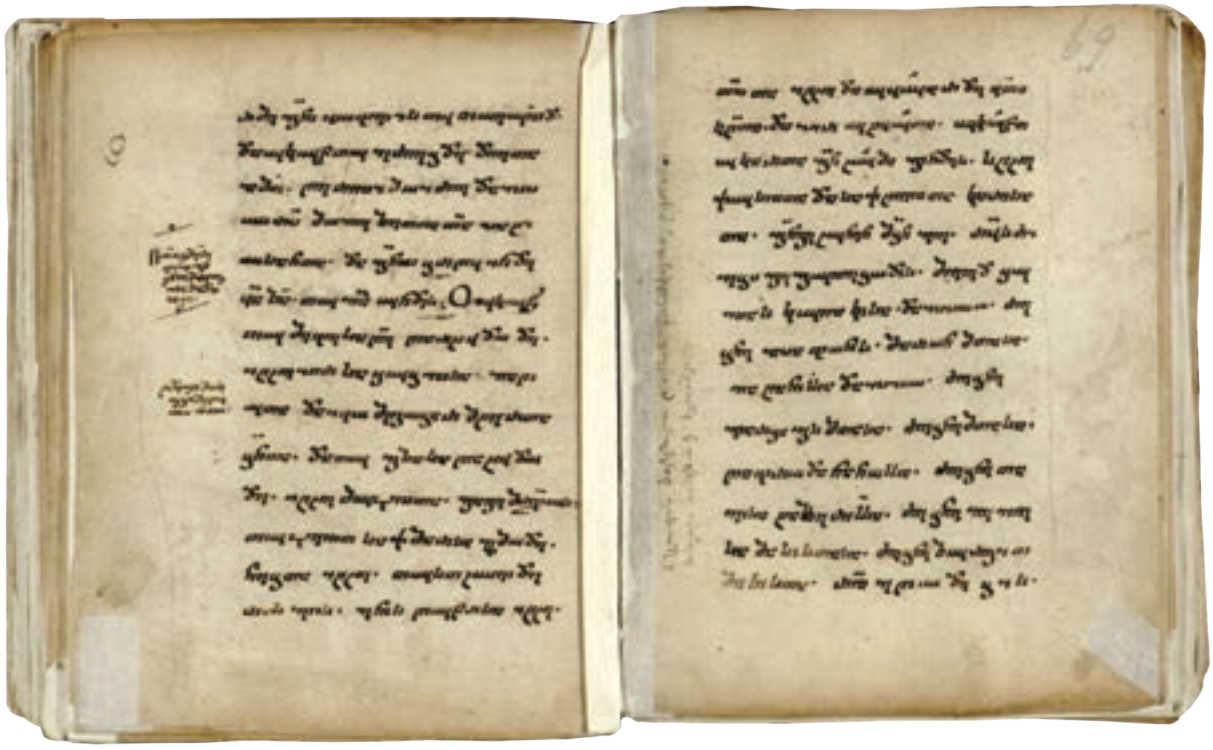
194 f.; 25x17.5 cm.; Paper; black and red ink; Nuskhuri, lacks the beginning and ending passages.

NCM, Q 26

The Collection

A collection of various works, includes liturgical, historical, canonical, ascetic compositions, readings, “sayings of philosophers” etc. The collection includes a medical passage as well as a folk and spell text.

Qarabadin and some medicinal formulas are inserted in the text: for treatment eye pain, medicine against cough, freckles, skin diseases, body cleansers, etc. There are specific cases of using herbal remedies against fever, pain killers, dancing mania, for curing burns, urinary incontinence, migraine, low back pain and other diseases.



XIV-XV c.

147 f.; 13.8x10,9; paper; black and red ink; Nuskhuri, Mkhedruli; Initial letters capitalized.

NAG, 1446/75

Eucologion

The liturgical collection, along with various prayers includes prayers for health: “Prayer for haircut”, “Prayer upon the oil for the venomous bite”, “Prayer for all disease and the passions of the soul”, which implied the inclusion of psychotherapy along various treatments; The book also refers to treatments for “liver and pelvic pain”, “for the liver”, “for the attack of the worm”, “against alopecia”. A 1110 should be a version of an early collection containing medical knowledge.

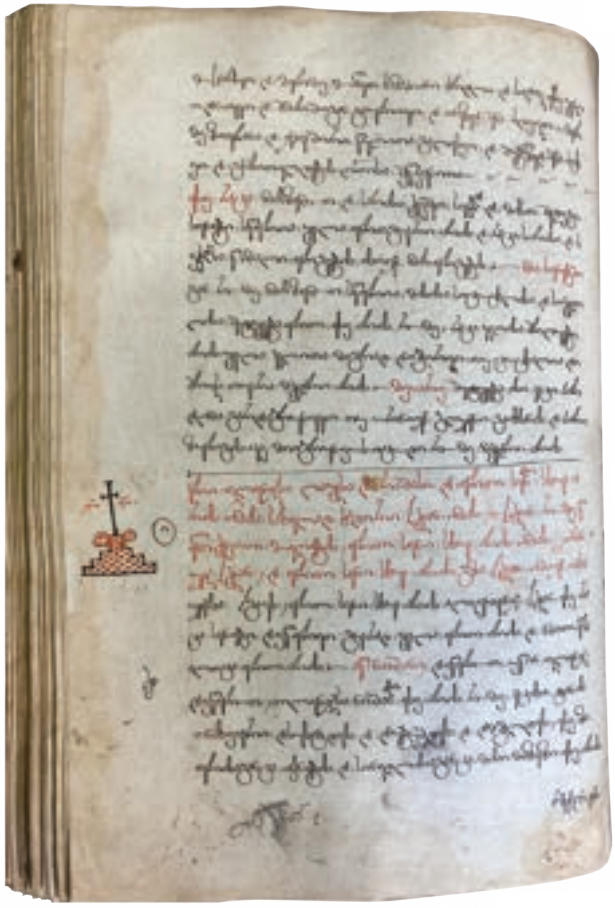
15th c.

118 f., 116 f. paper and 2 f. parchment; 24,5x20,5 cm., Oriental paper, ink red and black; Richly decorated.

NCM, A 1110

Zaza of Panaskerti.
The Medical Book - Qarabadin

The Georgian original medical work of compilatory structure. Covers almost all fields of medicine, description and treatment of diseases of separate organs. Old Georgian medical works are used as a literary source, including “Incomparable Qarabadin”; contemporary folk remedies are also included. The essay consists of two main parts. The first (f. 1-24r) outlines the general issues of medicine; The second discusses the main issues of pathology and therapy, diseases of individual organs, their symptoms and methods of treatment, various forms of medicines.



15th c.

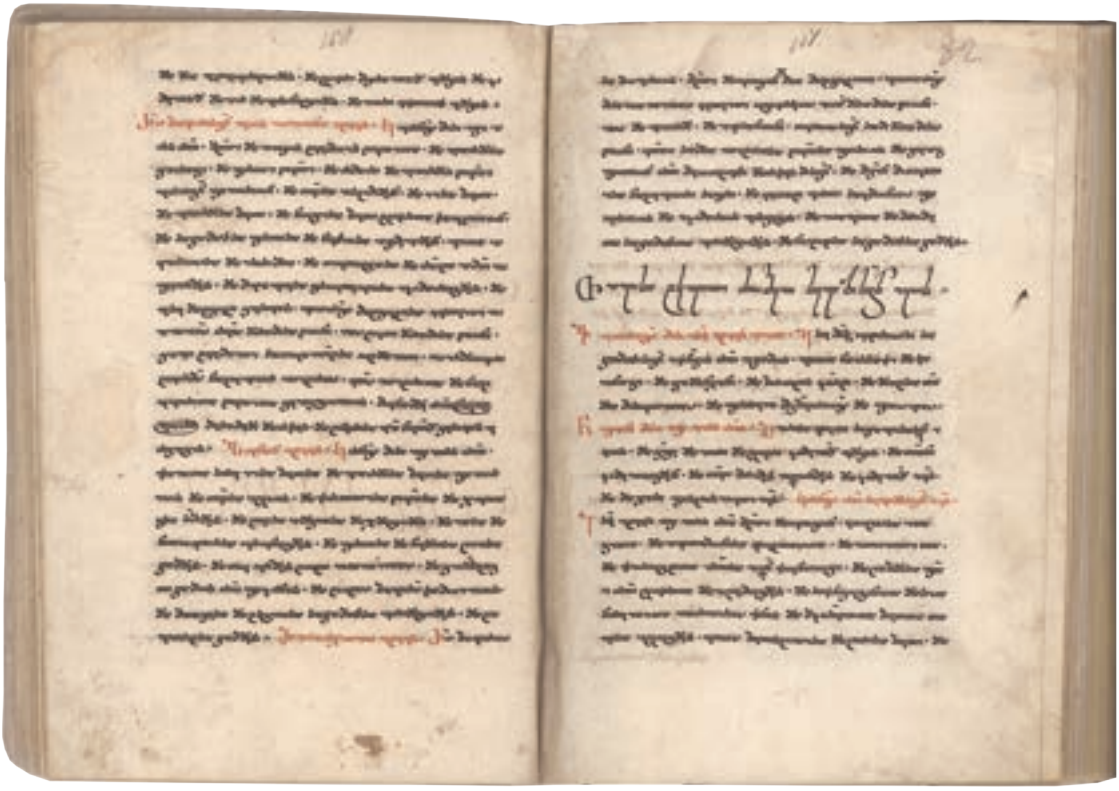
684 f., 36x23 cm.; Paper; black and red ink; Mkhedruli (hand of two scribes is detected); lacks the beginning.

NCM. Q 877

The Book of Medicine

The fundamental work of the encyclopeadic composition “The Book of Medicine” was translated into Georgian by former-Khoja at the beginning of the 13th century. The essay consists of two parts: the first part deals with general philosophical-medical therapy, the importance and benefits of medicine; The duties of a physician, philosophical views on human nature are listed; human anatomical-physiological information etc. is included. The second part deals with general pathology and therapy; Diseases of the human organs, treatment methods and remedies; External (skin) diseases and tumours are described; Feverish diseases; Injuries and burns, reptile bites are discussed.

The work is distinguished by the abundance of authors / sources (methods and treatments of 22 authors are certified).



15th -16thcc.

406 f.; 30x20 cm; Paper; black and red ink; Nuskhuri; Lacks the ending.

NCM, S 1274

Dautkhan / David Bagrationi.
Yadigar Daud

Compilatory, scientific-popular work. According to the author, it is collected from "two Tatar books" ("Muntakhab Shafi" – the selected treatment and "Yadigar Sharif" – my memorative, commemorative); It consists of three parts: the first book deals with "medical activities" or contains information on human anatomy and physiology; The second book deals with "foods, majuns and sharbats", which discusses dietary issues and prevention; The third book deals with the "causes, symptoms and medicines of all diseases and ailments" and describes general pathology.

17th c.

260 f; 39x27 cm; Paper; black and red ink; Mkhedruli;

NCM. Q 270

18th c.

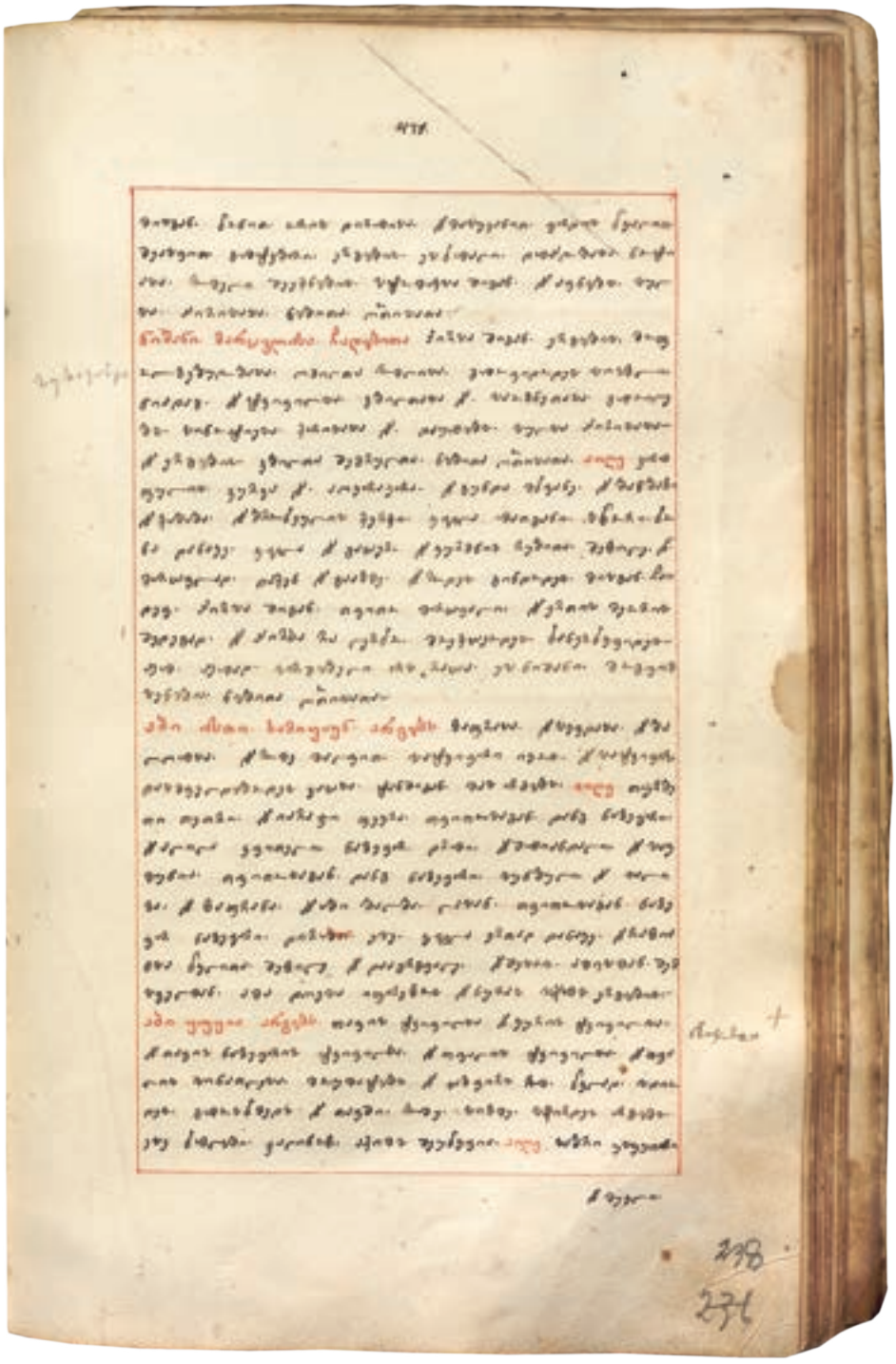
176 f.; 32x21 cm.; Paper; Mkhedruli; black and red ink.

MGMH, 46, 3.

1785

88 f.; 20x17cm.; Paper; Mkhedruli; black and red ink; Scribe: Giorgi Makharoblishvili.

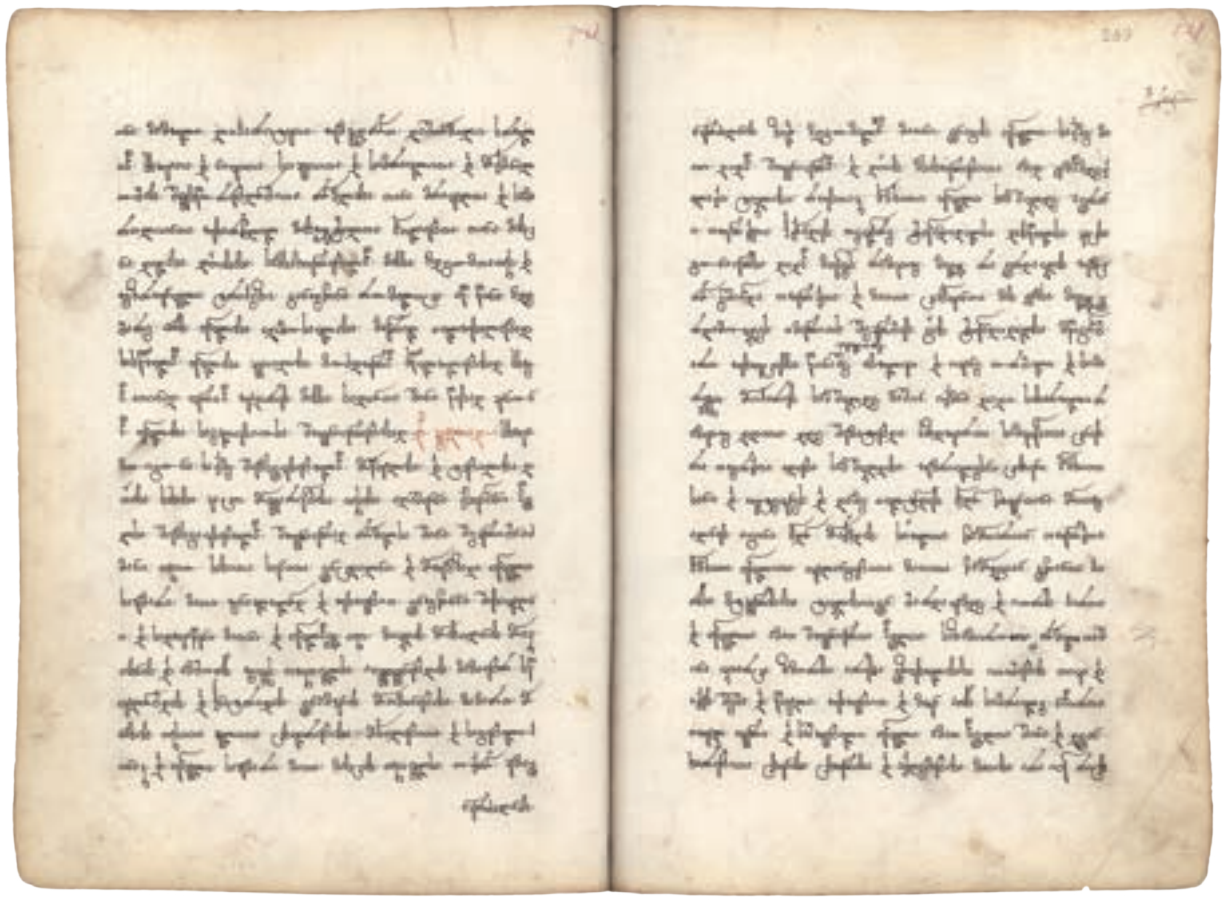
IOM RAS, E46(E38)



329 f .; Paper; Mkhedruli; brown and red ink; Scribe: Nikoloz Baghinov; [1st half of 19th c.]
Mat, 17

Kartlis Tskhovreba (The Georgian Chronicles)

The manuscript of Queen Mariam contains the oldest edition of the text, apocryphal narratives, the works of Leonti Mroveli (Leonti of Ruisi) and Juansher, the Chronicle by Sumbat, the son of David, the “Chronicle of Kartli”, the works of the historian and chronicler of David Agmashenebeli.



1633-1646

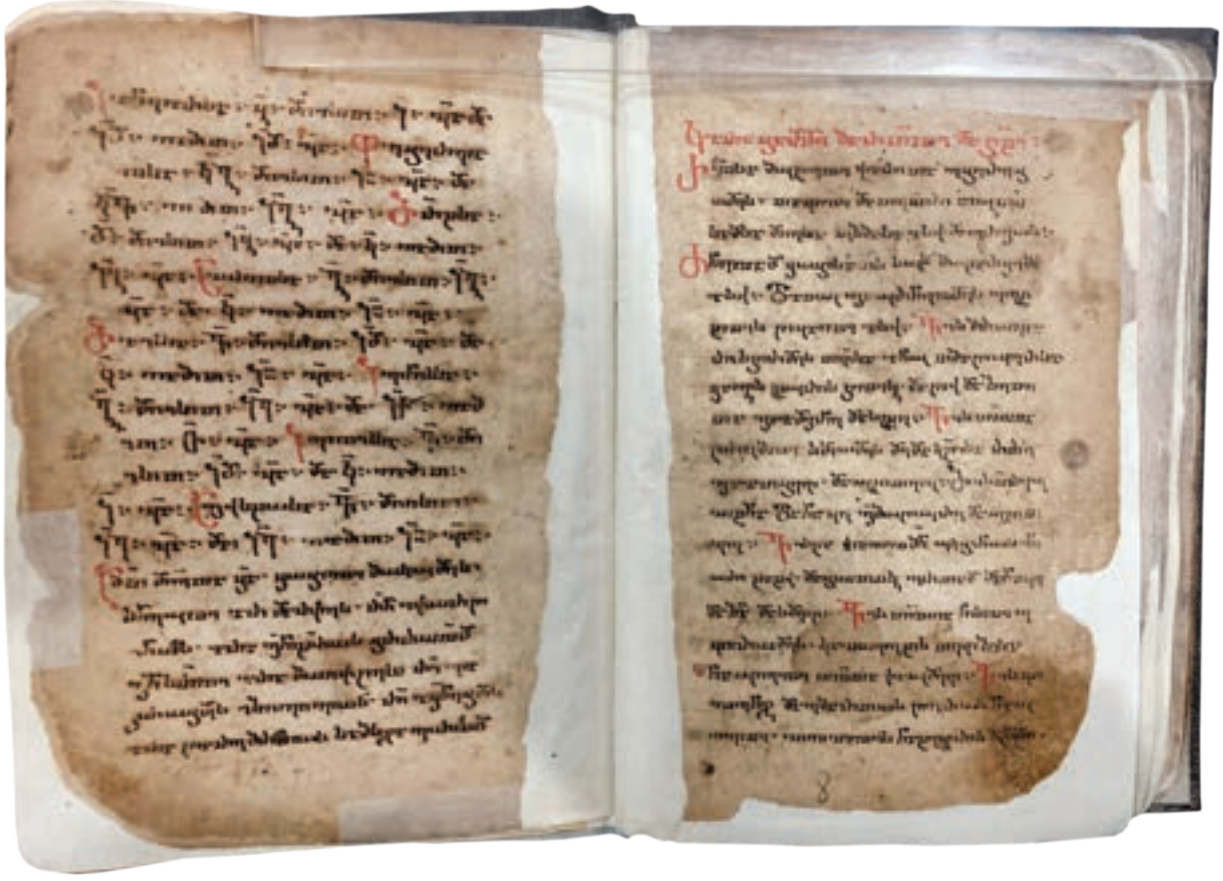
470 f.: 32,5×23 cm.; Paper; black and red ink: Mkhedruli; compiled by the order of Queen Mariam, spouse of Rostom, King of Kartli

NCM, S 30

Abraham's Qarabadin

The work belongs to the group of "mosaic qarabadins"; It contains astronomical-geophysical information, list of evil days, treatment, samples of Christian and magic-pagan medicine ... Such collections are intended to protect human health from diseases, atmospheric variability and other external forces.

Qarabadin consists of three main parts: the first, astronomical-geophysical information; the second, Qarabadin is righteous and true; the third, excerpts from the Gospels, pagan spells, Christian prayers of the Holy Fathers (pursuing against the devil).



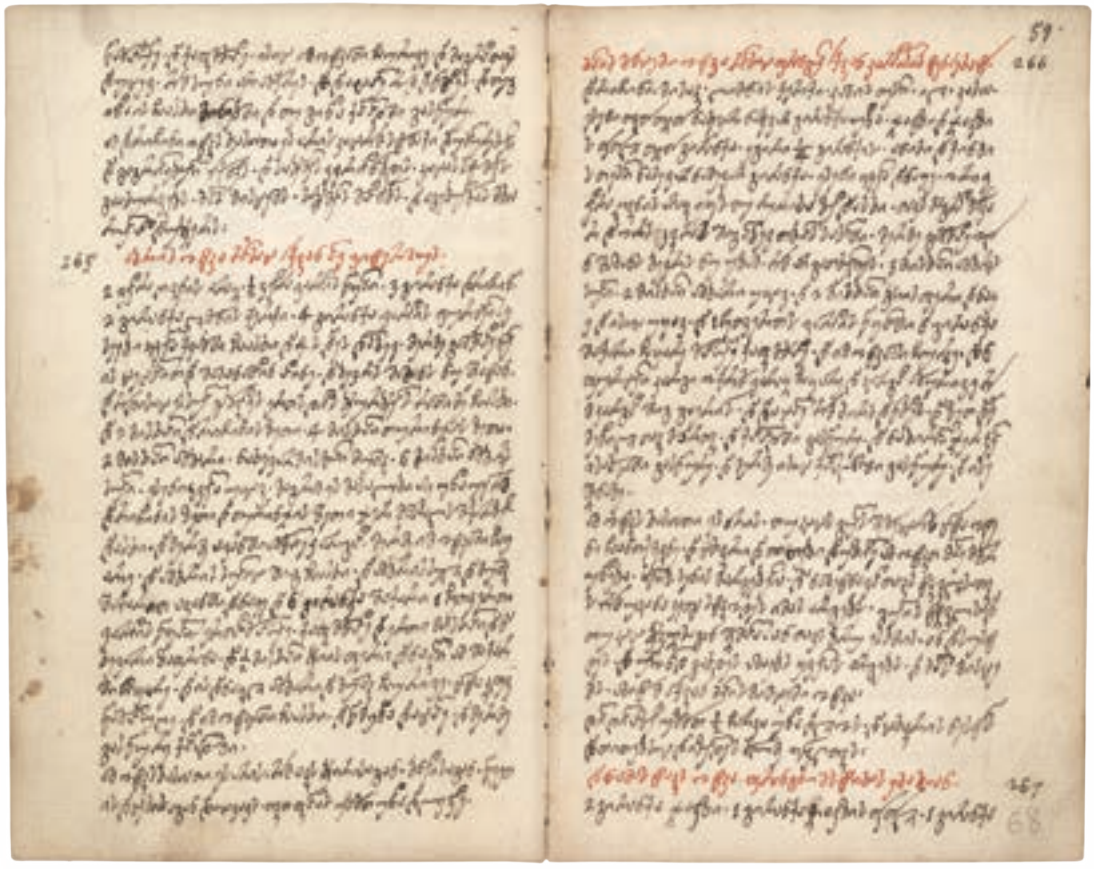
18th c.

82 f.; 20x14 cm.; Paper; Nuskhuri; black and red ink. Scribe/Copiest/Compiler "Father Abraham".

NCM, H 916

Vakhtang VI, The Book of Oil Mixing and Making Chemistry

The work compiled by Vakhtang VI is based on Eastern (Ar-Razi's "Treasure of Secrets"), Russian, Latin sources, national traditions, and the results of experiments conducted by the author himself. The monument contains medical paragraphs presenting the formulas for making fragrant waters, balms, "sleeping" remedies, and gargles used in cosmetics; Optics issues (correction methods) are discussed, the technology of making glass lenses is described, the material needed for the optical workshop is indicated, for example, crocus, a kind of resin that "will come from France".



40-ies of the 18th c.

72 f .; Paper; 16 x 10 cm; Mkhedruli; Scribe and compiler of drawings: Prince Vakhushti; Place of execution: Russia

NCM, S 3721

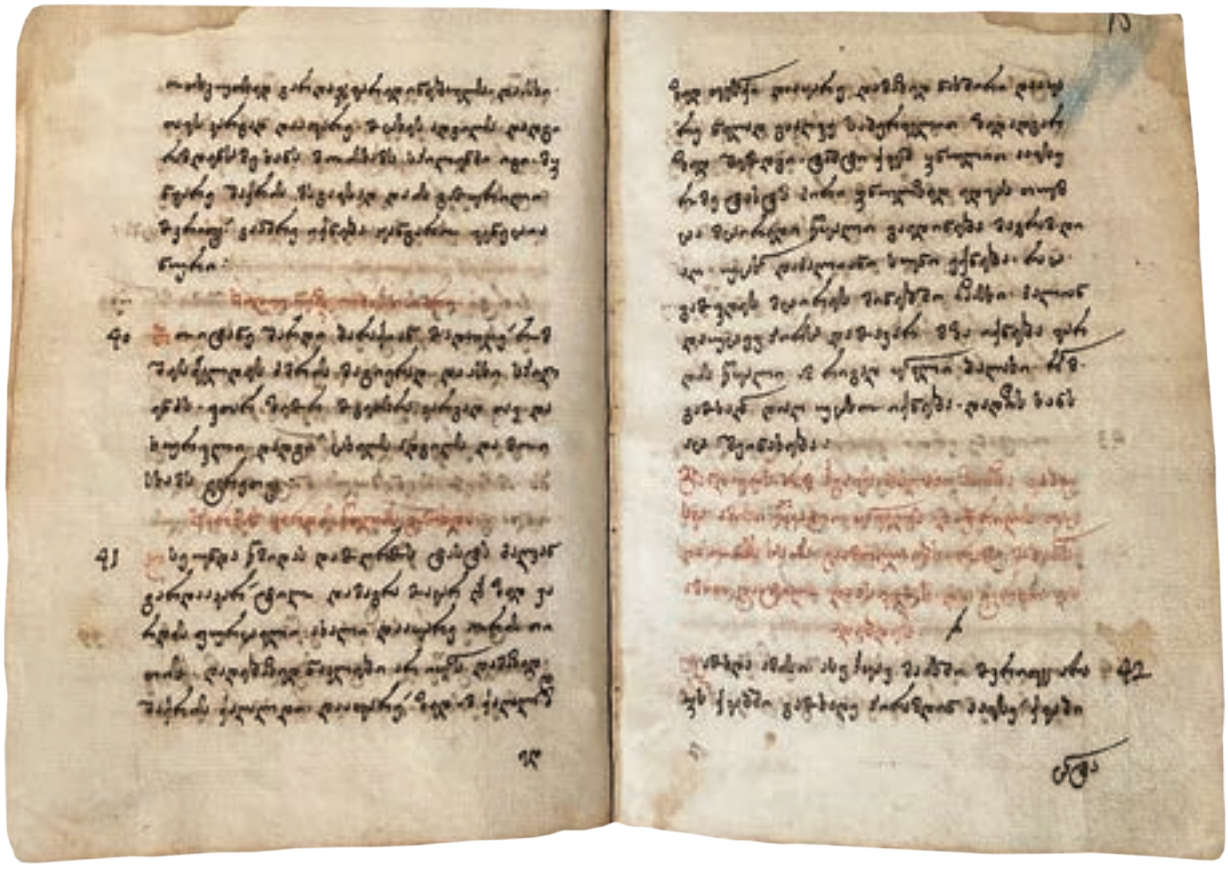
The Collection

The manuscript is a sample of a mixed collection, which combines: “Alexandrian”, “A Bird Qarabadin”, “Breach of Jerusalem”. Qarabadin presents treatment methods for birds, tips on caretaking and appropriate places and temperature for their storage and reproduction.

18th c.
48 f.; 16 x 18 cm; Paper; Mkhedruli; black ink;
NCM, S 26

Family Qarabadin

The manuscript presents metallurgical-jewellery, sanitary-hygienic tips; Medical tips, animal and bird medicines, etc.



19th c.

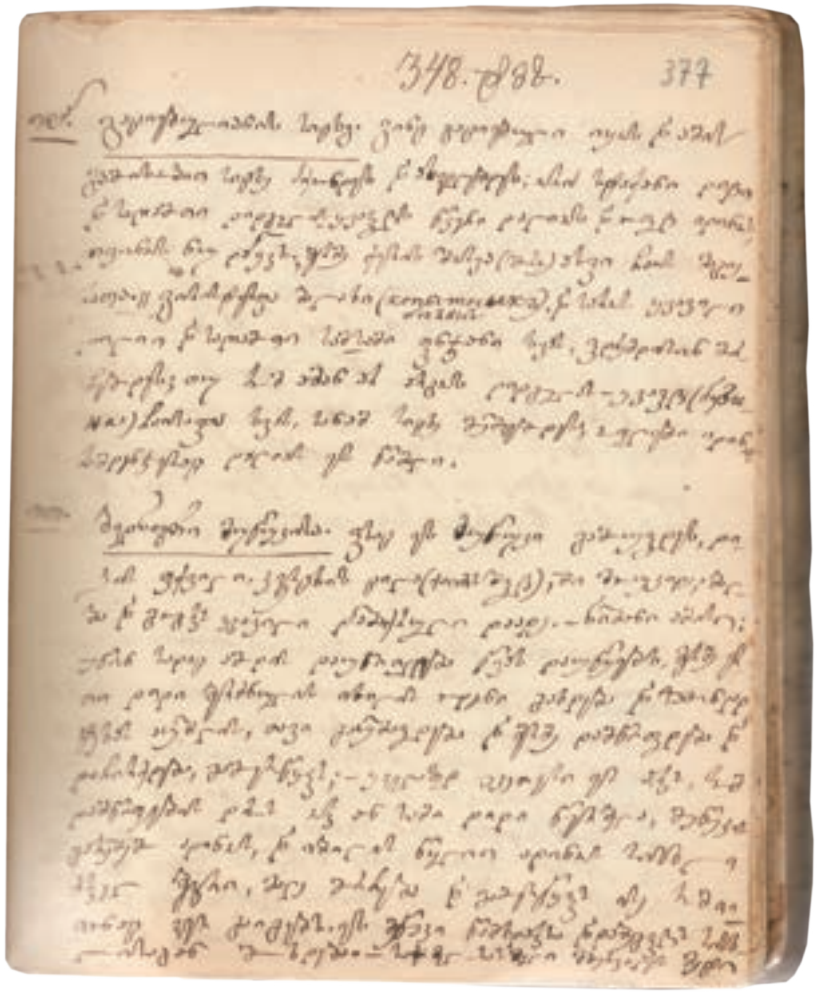
55 ff.; 15.5x11 cm; paper, Mkhedruli (various hands); black and red ink.

MGL, 25227.6.

Big Georgian Qarabadin

Qarabadin is a scientific book. Russian, oriental, Georgian folk sources are indicated; footnotes, definitions, lexical material, arranged in alphabetical order in Latin and Russian, are attached; Types of remedies are given (kurs, majun, sharbat, oil, caper spurge, etc.). Diseases are grouped by field.

Symptoms of ketosis, mumps, dizziness, burns, pox, insomnia, wounds, liver, heart and other diseases are described. The author points out that he collected medicines and the rules of their use from both well-known doctors and among the population.



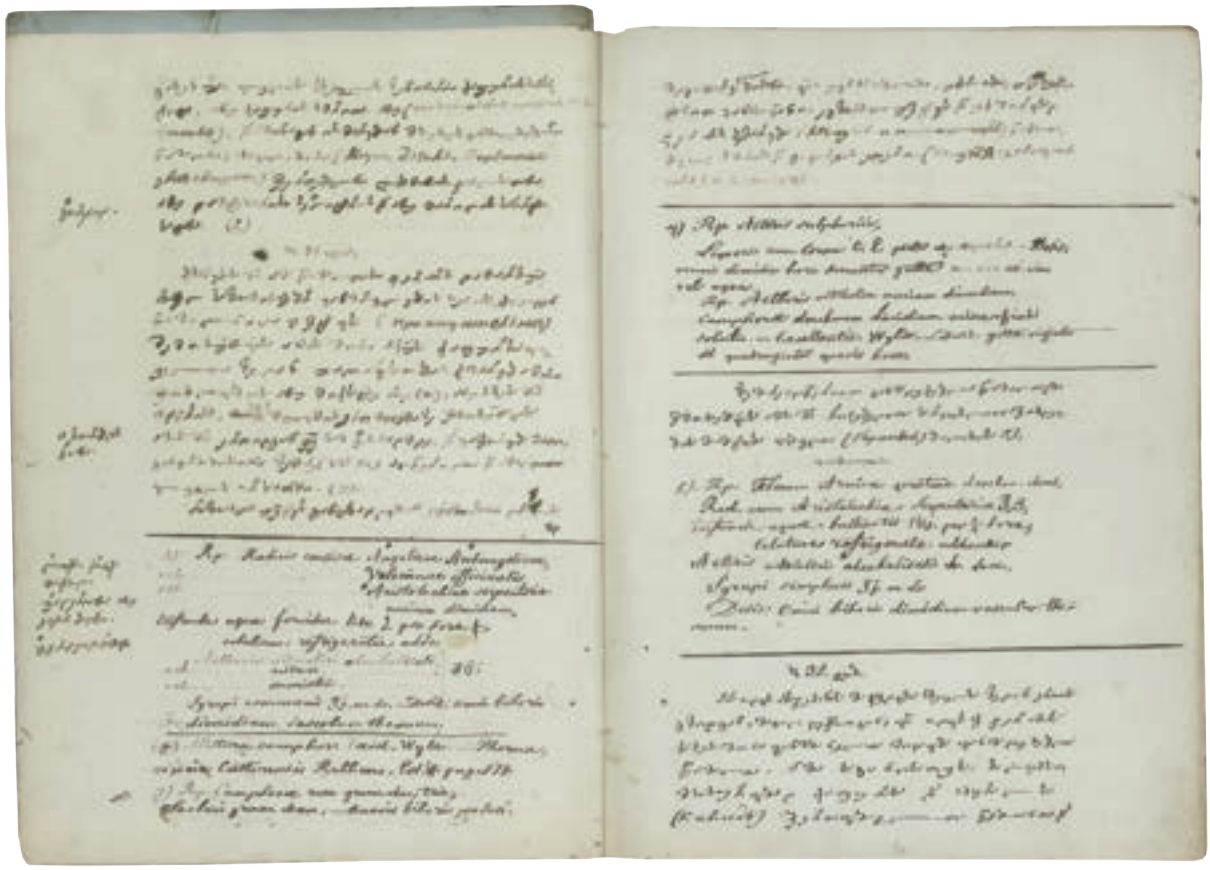
1855-1906.

278 f. ; Paper; 22 x18 cm; Mkhedruli. Author and compiler: Alexander Garsevanishvili, son of Svimon.

GHEM, 96/7205

Qarabadin on Nervous and Tuberculous Diseases

The manuscript is a sample of a scientific book. The text refers to the description of “typhus” and its causing nervous state. The story follows the following scheme: the name of the disease, the origin of the disease, spreading of the disease, the end of the disease, happy end and the time of cures. The work is based on Latin / European sources. It talks about psycho-somatic phenomena, diseases related to polluted air and water, secular trouble, bile/problems, etc. Rules for the treatment of tuberculosis are given with reference to Latin sources and with minor comments; Footnotes, definitions of Russian and Latin terms are given.



19th c.

14 f.;Paper; 21 x 31.5 cm; 22 x 34 cm; Consists of three notebooks: 6 folios, 12 folios, 8 folios; Mkhedruli;

NLR, IN, 63.

Healing Collection

The collection contains: 1. “Yadigar Daud” (D edition) by Dautkhan (the Prince David); 2. Qarabadin (medical recommendations); 3. “A Horse Qarabadin” by Vakhtang VI. A testament to many manuscripts is attached to the Yadigar Daud; followed by lunar eclipse, medical recommendations, zodiac signs and table of contents; Horse qarabadin in addition to the main text contains astrological references, tables, names of medicines in various languages.

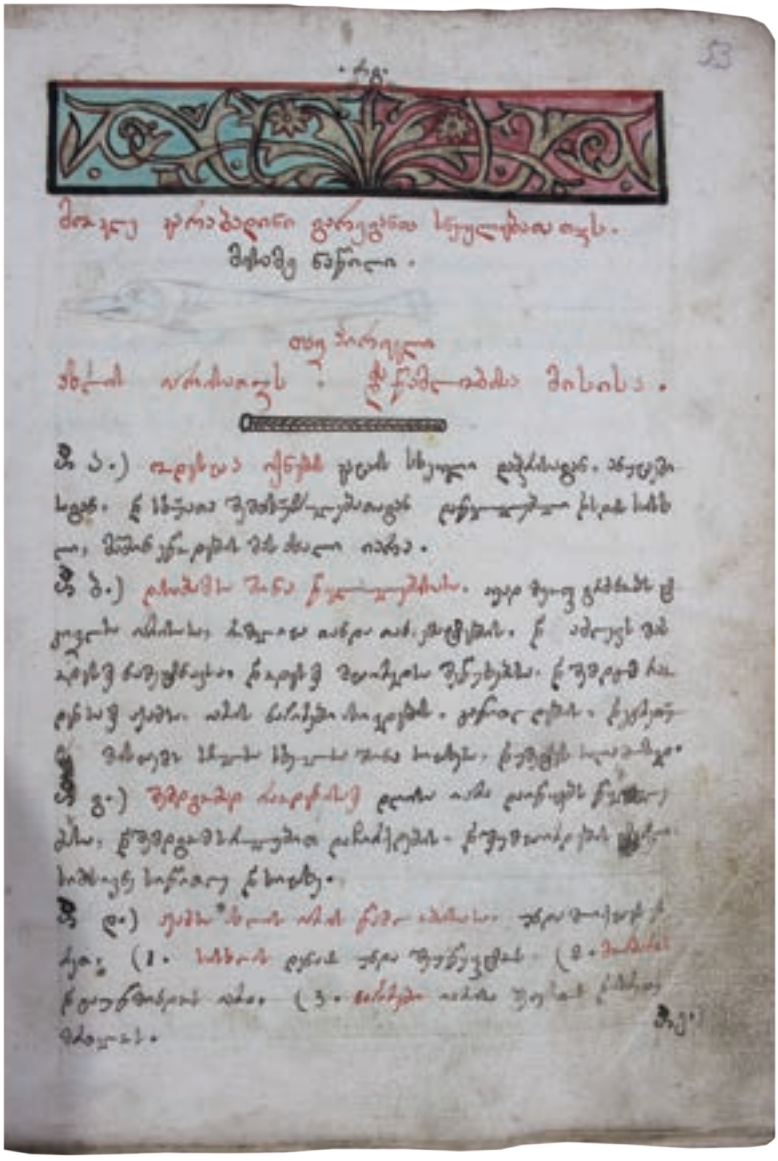
1834

321 f.; 34 x 21.5 cm; paper; black and red ink; Mkhedruli; Scribe: Nikoloz Baghinov; Corrector and last owner: Svimon son of David Tsotadze

NCM, Q 281

Qarabadin

“The Short Qarabadin” was translated from Russian by Peter Clapitonov. Authors known from Eastern sources are mentioned. Qarabadin is designed for “those who reside far from big cities and do not have a doctor”. A list of drugs, mixing and usage, rules of treatment of the patient are presented; sources are certified.



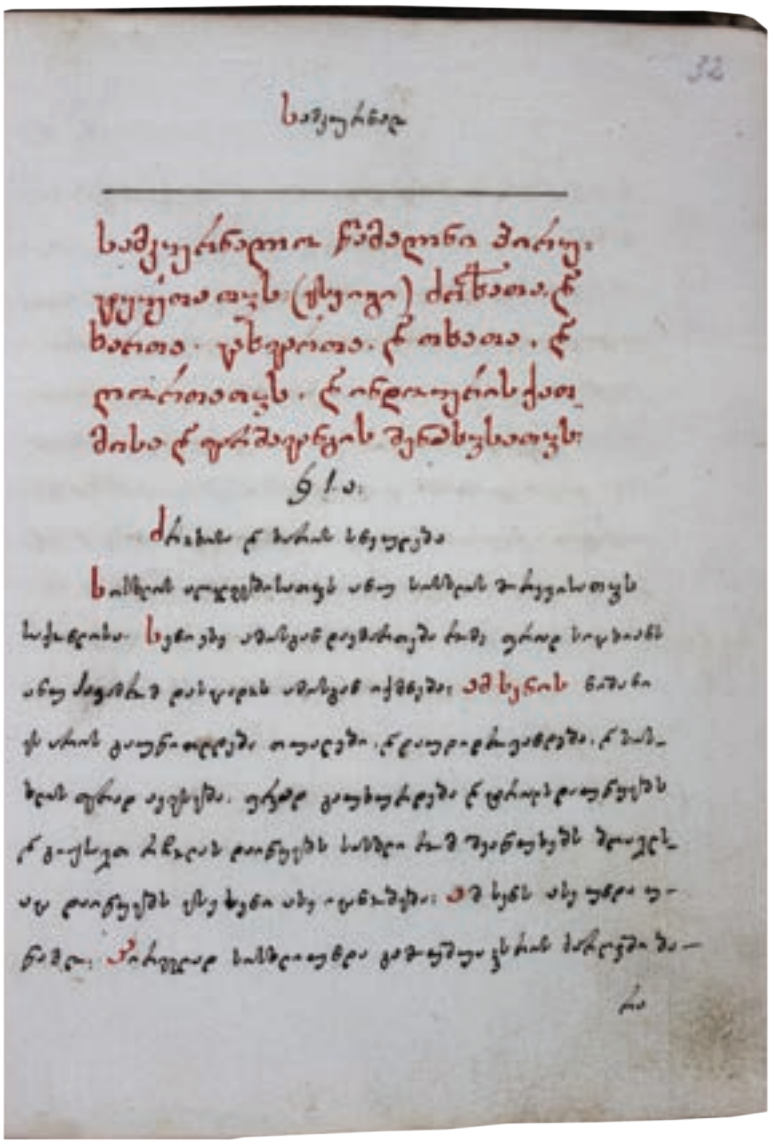
19th c.

132 f.; 30 x 20 cm; Paper; black and red ink; illustrated;

KSHM, K 212

Animal Qarabadin

Translated from Russian “The Collected Qarabadin” by the Prince Bagrat refers to the treatment of horses, cows, bulls, pigs and other domestic animals and birds. More extensive is the horse qarabadin part. The collection includes sketches of veterinary equipment and “for knowing the blood vessels” (indicating the sites of blood-letting for the horse).



19th c.

52.f.; 19 x 15 cm: paper; Mkhedruli; black and red ink; illustrated;

KSHM, K 228

Qarabadin of Horse/ A book of Horse Care

The manuscript contains the materials from the works by Vakhtang VI, Ioane Bagrationi and the translation from Armenian; tips for selecting a horse and forming herd, characterizing animal behaviour, a list of the symptoms of the diseases, physical injuries and remedies. In one of the inscriptions, the translator / scribe indicates that he also used the material “discovered by Prince Ioane”.

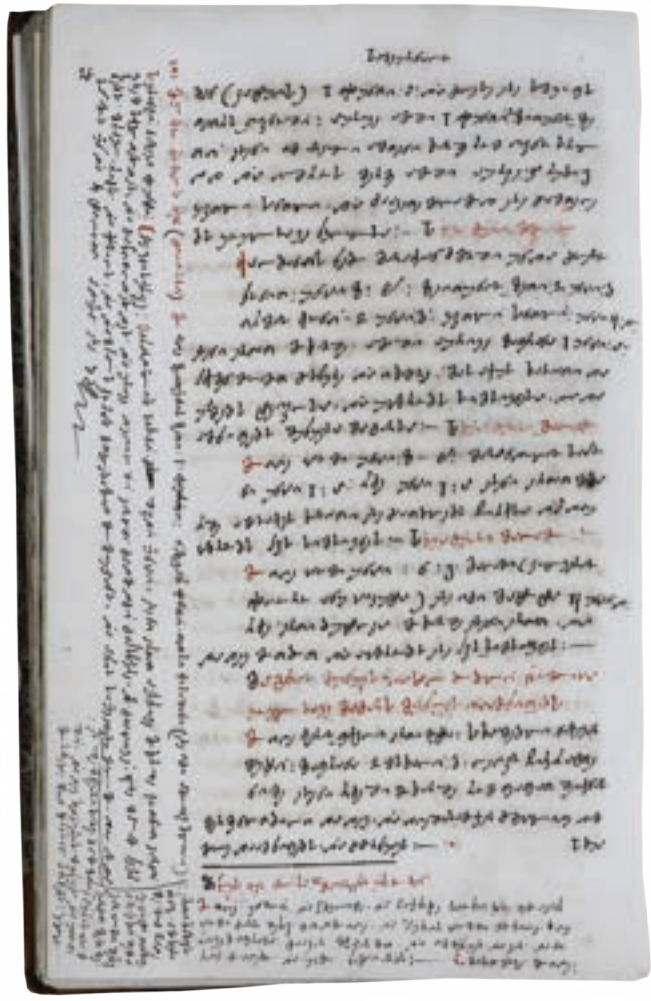
1791

66 f .; 34 x 21 cm; Paper; Notebook. Mkhedruli. Contains illustrations. Scribe: Ioane, the son of Osse, Archbishop of Sioni, Tbilisi (Georgia). Commissioner: George XII. Translator: Ioane, the son of Osse, Ter-Petros, Ter-Philippe. Colophons are attached.

NCM, S 3467

The Collection

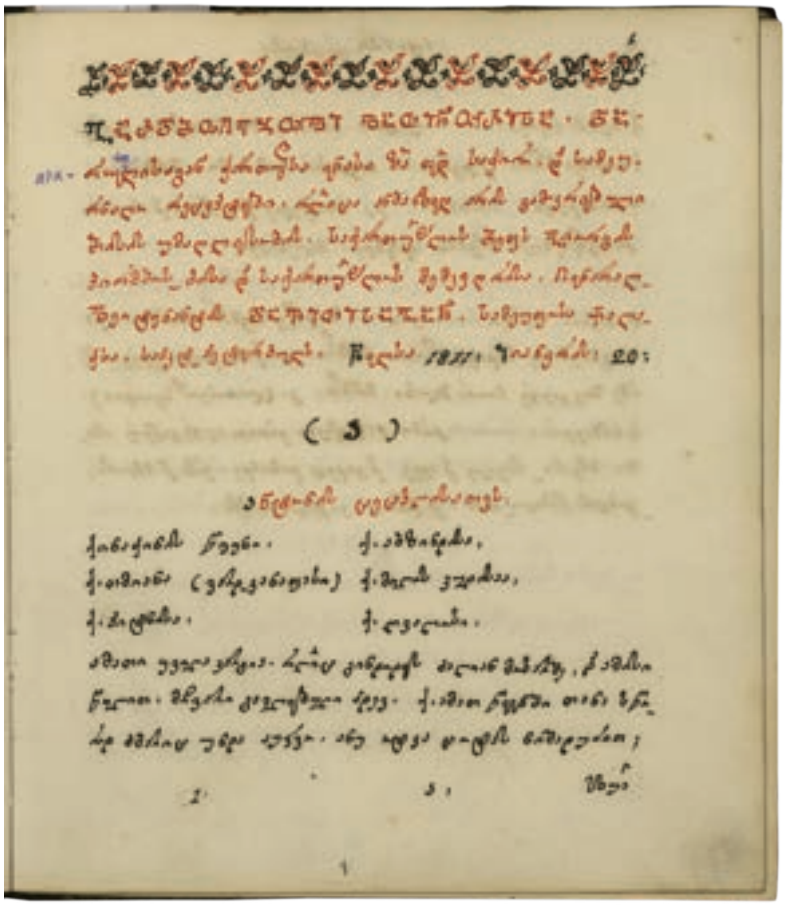
The manuscript is a convolute. Written by different authors, two veterinary works with different contents are bound together, one containing Phraj and Toros's "The Cure of Horses and Cattle" and the other "A Book of Horse Care" by Bagrat Bagrationi. Both parts are bound together in a cardboard cover. Ioane, the son of Osse, Ter-Petros and Ter-Philip Kaitmazov are the translators of Part I; Commissioner: the Prince Giorgi. Part II – "A Book of Horse Care", is the manuscript, an autograph of the Prince Bagrat. It has been compiled by him as a result of translating veterinary sources existed in Russian and is the first version of the work.



1792; 1816
131 f.; 25x16 cm.; 32.5 x20 cm; Paper; black and red ink; Mkhedruli.
IOM RAS, M37 (G194; M48)

[Prescription Rules], Translated from Latin and Russian into Georgian, Much Needed

The collection includes medicines, rules for their preparation, dosage, treatment and dietary issues during the treatment period. The names of the diseases are arranged in the Georgian alphabet. The recipe contains various forms of internal and external medicines, such as: solid and liquid pharmaceuticals, oils, ointments, elixirs, tinctures, mouth-wash, pollen or powders. The translator mainly uses Georgian terminology as the names of the diseases, while the terms “tincture” and “magnesia” are left in Latin to denote drugs, so that the practical value in the geographical area in which the collection should be used is not lost.



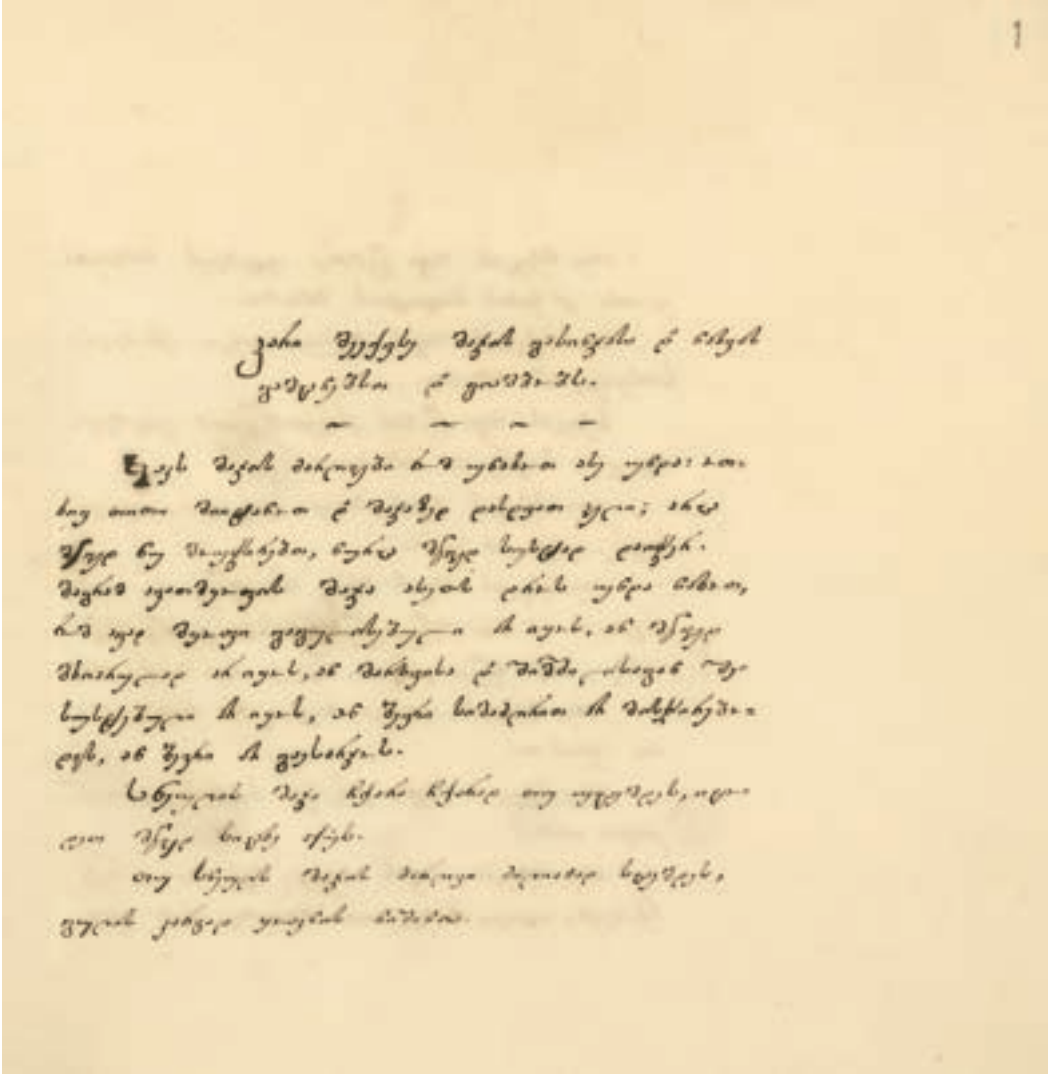
1877

92 f.; 16x21.5 cm.; White paper, black and red ink, Mkhedruli.

NRL, IN, 176

Healing of a Man

Medical collection of 14 chapters, which discusses the symptoms of various diseases – liver, kidney, scurvy, head, eye, toothache – their symptoms and means of treatment, rules, doses. In the treatment of some diseases the seasons of the year should be taken into account; there are dietary recommendations presented. The text is copied from an old traditional medical book.



19th c.

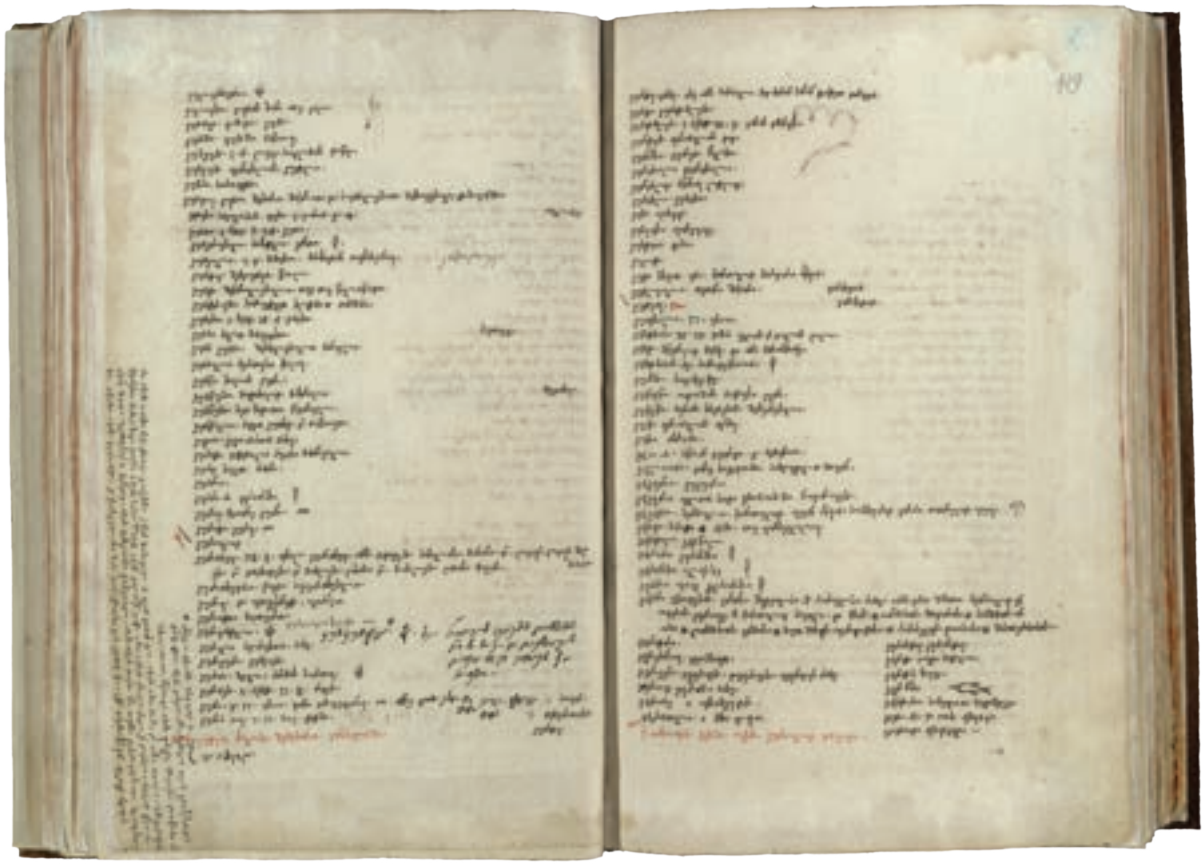
20 f.; 17x22.5; Paper, brown ink, Mkhedruli.

NRL, IN, 187

Vocabulary by Sulkhan-Saba Orbeliani, the Manuscript Compiled by the Princes David and Ioane

The manuscript depicts the process of enriching Sulkhan-Saba's "The bunch of the Words" by the Princes David and Ioane with new, Latin-Russian and definite Oriental material.

The term-entries included in the manuscript belong to the fields of zoology-botany, natural sciences, namely, mineralogy-geology; It contains many herbal remedies in Russian and Latin, "medication dosage", "medical education" and others. The lexical material is trilingual, sometimes "Tatar" and Armenian word-entries are also explained by the Princes themselves.

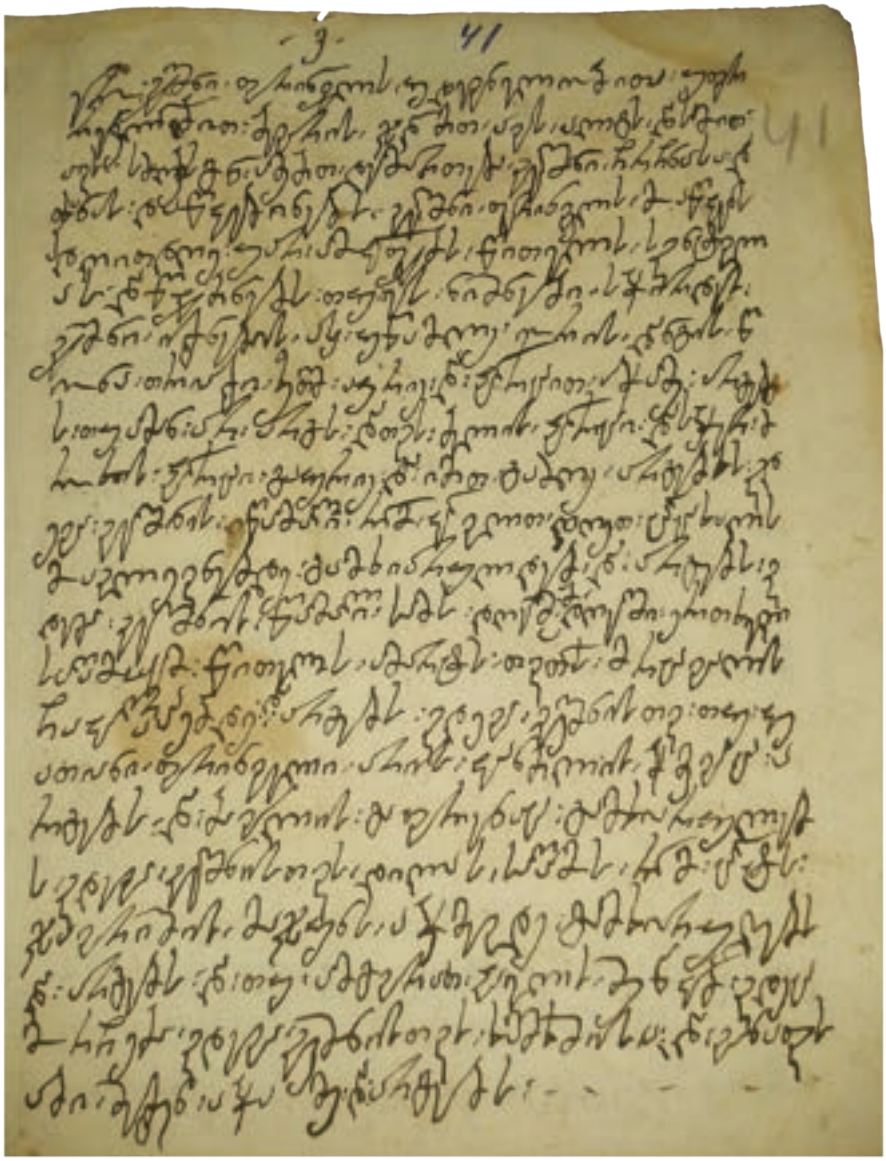


1764

286 f .; Paper; 21.6 x 17.8 cm; Mkhedruli; Scribes: Nikoloz Garsevanov (scribe of the main text), Prince Ioane, Prince Teimuraz, Prince David; Place of execution: Kizlar; Owner: Prince David; NAG, F.1446, 106

A Bird Qarabadin

The book consists of an introduction and 22 chapters. It contains a description of diseases of chicken, sparrow hawk, falcon/tercel, pigeon and other birds and methods of their treatment; Medications and helpful tips for austringer are listed.



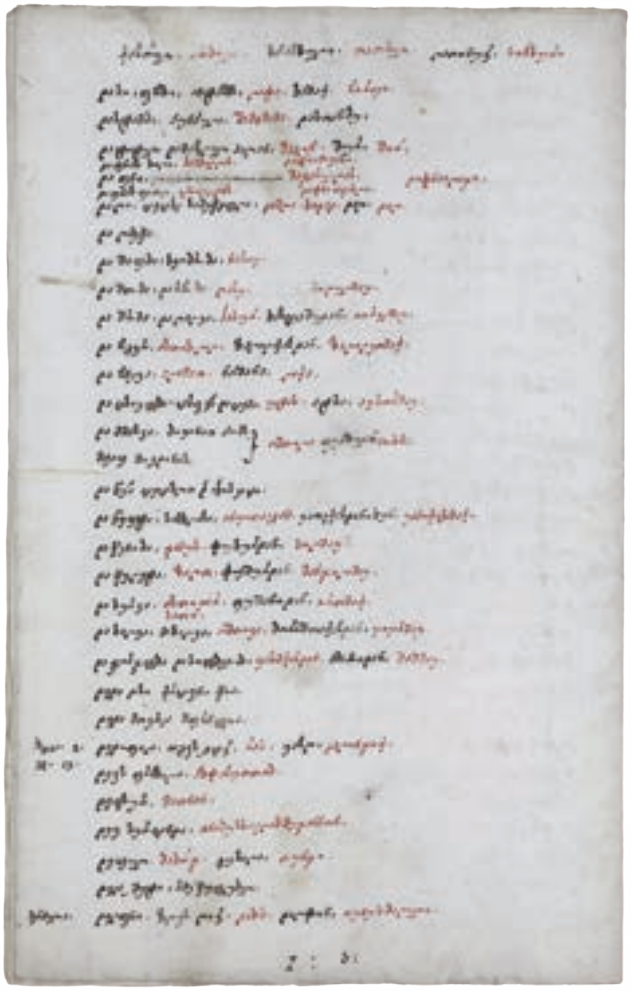
19th c.

56 f..; 205x15,5; Paper; black Ink; Mkhedruli; According to I. Bodzashvili, the manuscript must have been found in Prince Cholokashvili's house during their banishment (1924) from Akhmeta.

THM, 2482/15

Of Meadows, Seedlings, Beasts, Birds, and Reptiles, as well as Other Worms and Flies. Georgian, Arabic, Persian, Tatar, Latin, Armenian

The text is a terminological dictionary, contains 1175 entries, arranged in the order of the Georgian alphabet. The dictionary uses Old and New Testament texts as a source. According to Al. Tsagareli, the compiler of the book should be Ioane Bagrationi.



I quarter of the 19th c.
24 f.; 33.6x21 cm.; Paper; Red and black inks; Mkhedruli; headpiece at the beginning of the text; executed in St. Petersburg. The manuscript is kept together with two notebooks.
IOM RAS, H31/3 (G 96; H 40)

Glossary and Terms

[aarazɪ] – აარაზი – (Arabic. a'rād) – to examine, diagnosis.

[avadʒua/havadʒua] – ავაჯუა/ჰავაჯუა – (Meskhetian-Javakhk Dial)., Bot. (Family of perennial plant, red bugloss.

[ʌbɪ] – აბი – (Arabic. ḥabb) Medicinal form, pill; med. L. Pilulae.

[ʌbzɪnda] – აბზინდა – Absinthe, a medicinal plant, palin, wormwood, პალინ, სამკურნალო მცენარე, L.Artemisia absinthum.

[ʌdʒilgha] – აჯილღა – Vet. stallion, a bullock for horses (Saba).

[ʌgha kʌrkʌrha, ʊdʊl kʌrkʌrha] – აღა ყარყარჰა და უდულ ყარყაჰა – both are the name of the wild tarragon.

[ʌlɪsarchʊlɪ] – ალისარჩული – safflower, yellow plant, used as a dye, L. Carhamus tinctorius

[ʌmbrɪs sʊlɪ] – ამბრის სული.

[ʌmʌrʊlɪ] – ამარული – The polishing process described at that time is almost unchangeably completed today. However, instead of wool, Vakhtang indicates on gluing paper on the mold, and instead of "crocus" as a polishing substance, he refers first to "Amaruli" and then to "Trifeli", i.e. Polishing twice.

[ʌnzalɪ] – ანზალი – pumpkin

[ʌpɒplezɪa] – აპოპლეზია – Apoplexy, St. Vitus dance, dancing mania; (The semantic scholar extracted the opinion of Ernesto Eustaquio de Figueiredo "On the use of bloodletting in congestion in the brain and stroke").

[ʌpka] – აპკა – membrane, brain membrane.

[ʌsɒ] – ასო – member, a separate part of the body, an organ.

[ʌtelektazɪ] – ატელექტაზი – Atelectasis (Gr. Ατελεκτασία; Ατελε – unfinished, incomplete, εκτασία – dissociative; L. Atelectasis) – the collapse of part of the lung,

being in a shrunk state. It is developed in cases of bronchial obstruction with sputum or foreign object damage, bronchial cancer, or enlargement of the lymph nodes (e.g.: in patients with tuberculosis or lung cancer).

[ʌtsra] – აცრა – Vaccination, vaccine; (Latin. Vacca – cow, vaccine – from cow) Variolation (from variola, the medical Latin word for smallpox).

[ʌvgarɒzɪ] – ავგაროზი – abraxas, amulet, charm, medicine, (Gr. αὐγάζω), protector from evil eye, healer of disease and sickness.

[avanɪ/havanɪ/avangɪ] – ავანი/ჰავანი/ავანგი – (Arabic.Persian). mortar with pestle, medical device.

[ʌvɪ zhamɪ] – ავი ჟამი – black plague (Arabic. ṭā|ūn), its sign is characterized with pimples “under the ear, or tongue, or breast, or armpit or groin”.

[ʌvsantɪni rʊmɪ] – ავსანთინი რუმი Absinthe, L. Artemisia absinthum.

[badiana] – ბადიანა – badiana, ancylis, star anise, L. Illicium Anisatum.

[bʊasili/bɒvasili] – ბუასირი/ბოვასილი – Hemorrhoids / (Arabic. Bāsūr / bawāsīr) Hemorrhoids, knot, hemorrhoidal disease.

[bʊrani/bʊhran] – ბურანი/ბუჰრან – (Arabic. buḥrān) – Med. Crisis during illness.

[bʌlghʌmɪ] – ბალღამი – pus, vomited bile – (Gr.-Arabic balġam) moisture, phlegm.

[bʌlzamɪ] – ბალზამი – Balm – (Gr. Βάλσαμο) The juice of some plants (containing various essential oils) common in subtropical countries, used in medicine and perfumery.

[bʌrʌsɪ] – ბარასი – (Arabic. baraṣ) leprosy, leper.

[chʌnchʌlɪ] – ჭანჭალი – dialect. Kidney (A 760, 77v).

[chɪa] – ჭია – worm, a parasite that infects the human intestine, helminths.

[cholera mirʌbus] – ხოლერა მირაბუს – “cholera mirabus, is the Latin name of siphoning/ swilling of bile”, see cholera.

[chorplɪ] – ჭორფლი – freckle, heat-spot, pigmented spots, often hereditary.

[chutkvʌvɪla, tsklɪs kvʌvɪlɪ/ kʃutɪ] – ჩუტყვავილა/წყლის ყვავილი/ქშუტი – chickenpox, infectious disease in children, characterized by redness of skin and blister rushes.

[dʌgozva] – დაგოზვა – puttying, plastering, Sterile closing with wax or “soft lacquer”.

[dʌnʌmʌstɪk, sʌkmel-mdzɪva, kevɪ] – დანამასტიკი – საკმელ-მძივა, კევი – mastic, vegetable resin.

[dʌrɪchɪnis tskalɪ] – დარიჩინის წყალი – cinnamon water.

[dʒʌvzɪ] – ჯავზი – (Arabic. ǧavz) nutmeg.

[dʒɪlekhɪ] – ჯილეხი – vet. Anthrax, infectious disease.

[dʒʊdarɪ] – ჯუდრი – (Arabic. ǧudr) – infectious disease, smallpox.

[dzotseulɪ] – ძოწეული – miner. garnet, precious stone, “helps those with upset stomach and had overeaten”.

[dʒuzamɪ] – ჯუზამი – (Arabic. ǧuḏam) “leprosy”., infectious disease of skin.

[eksudʌtɪ] – ექსუდატი – Exudate – (Lat. Exsudo – I excrete) fluid that is accumulated during inflammation in the tissues or cavities of the body.

[elda/ gʌrdʒa] – ელდა/გარჯა – Sudden upset stomach, indigestion.

[epɪdemɪa] - [Epidemic (Gr. Επιδημία) – ეპიდემია – a widespread occurrence of an infectious disease in a community at a particular time.

[eqɪmɪ] – ექიმი – Doctor (Arabic. ḥakīm) – the name for a healer, means wise, prudent, philosopher, doctor, even today in the oral and literary language “healer” sounds natural.

[gʌnboreba] – განბორება – leprosy.

[gʌnrghveuli] – განრღუეული – disabled, cripple.

[gʌnpokheba] – განპოხება – physiol. fatness, overweightness.

[ghlɪa/ɪghlɪa] – ღლია/იღლია – Anat. Armpit, under arm.

[ghumɪarabɪkumɪ] – ღუმიარაბიკუმი – a kind of rubber, gum.

[ghvɪnɪs kvɪs mʌrɪlɪ] – ღვინის ქვის მარილი – wine stone salt, used for depletion of intestines.

[glʊsʊni] – გლუსუნი – thick, phlegmy, “this illness will be caused of pus”.

[grgena] – გრგენა – biol. irritation, “germination of the seed in kidneys”.

[gʊndrʊki] – გუნდრუკი – incense, L. Boswelia serrata Staskh.

[gvʌmi/gʊami] – გვამი/გუამი – body, corpse.

[haɪta/tukhma/elda] – ჰაიტა/თუხმა//ელდა – (Arabic. hayḍa) cholera, stomach upset, indigestion.

[halɪ] – ჰალი – alloy.

[havɪs tsɪgnɪ] – ჰავის წიგნი – (Arabic. Kitab al-Hawi); A medical work by Muhamed Ibn Zakaria ar-Razi (Razez).

[hukna/okna] – ჰუკნა/ჰუყნა/ოყნა – (Arabic. ḥuḳnat) clyster, enema, lavement of intestines.

[hulba] – ჰულბა – see Trigonella foenun.

[kʌlʌndros] – ქალანდროს – zool. “the feather from its belly cures eyes blind… chalandre will guttle the sickness of the diseased”.

[kʌpurɪs khe] – ქაფურის ხე – camphor tree, L. Cinnamomum camphora.

[kʌrɪ] – ქარი – wind, gas; the common name for any disease; also, used to name the gas in intestines.

[kʌrva] – ქარვა – amber, yellow fossil wood raisin.

[kʌʃoetɪ/kʌʃovetɪ] – ქაშოეთი/ქაშოვეთი – leper, infectious diseas of skin.

[kʌvʌna/mkʌvʌna] – ქავანა/მქავანა – (L. Pruritus) see. Acariasis, scabies, mange; an infectious disease of skin.

[kɒlin dʒi] – კოლინჯი – colon, “bowel below navel that goes from left to right”

[kbʌkura] – ყბაყურა – mumps, contagious disease.

[kerɪ] – ქერი – bot. barley, L. Hordeum sativum.

[keʃikɪ] – ქეშიკი – caretaker of a cattle(horse) in/with foal, an experienced servant.

[ketsɪ] – ქეცი – see Scabies, mange.

[khdʌlɪ] – ხდალი – zool. Female, the opposite of male.

[khelɪs gʌkhsna, mʌdʒɪs gakhsna] – ხელის გახსნა/მაჯის გახსნა/მკლავის გახსნა – blood letting, depleting. “to blood let in accordance with the conditions of a sick”.

[khelovʌnɪ kurnʌlnɪ] – ხელოვანი კურნალნი – see scholar healers.

[khɪltɪ] – ხილთი/ხილტი – (Arabic. ḫilt) mixture, compound of body fluids.

[khorkhɪ] – ხორხი – anat. Bronchus, the top of a windpipe.

[khunʌkɪ/khunʌgɪ] – ხუნაყი/ხუნაგი – (Arabic. ḫunāḳ) – pharyngitis, tonsillitis, diphtheria.

[khuʌdɪ] – ხუადი – zool. male, the opposite of female.

[khʌrdʌlɪ] – ხარდალი – mustard, L.Sinapis.

[khʌrɪs chɪrɪs tsʌmʌlɪ] – “ხარის ჭირის” წამალი – material for vaccination against smallpox, taken from the pox pus of the diseased bull or cow.

[kɪvʌnʌkhvela/khvela] – ყივანახველა/ხველა – chickenpox, contagious disease in children.

[kɒtoʃɪ] – კოტოში/ჭიქა – cupping-glass, a medical vessel, a small rounded glass jar, placed to draw blood to the body; glass putting.

[kolera/cholera] – ქოლერა/ხოლერა – cholera, an acute diarrheal infection of gastrointestinal system.

[krɒkʊsɪ] – კროკუსი – Crocus – (Lat. Crocus) iron rust in powder form; Used to polish precious stones (also a flower that has many uses).

[kʃutɪ] – ქშუტი – see. chickenpox.

[kʊkʊkho] – კუკუხო – Anat. Hip bones (A-760, 66r), “hip-bone pain”.

[kundʒut] – ქუნჯუთი – sesame, L. Sesamum indicum.

[kuntruʃa/kuteʃa/kelʌtma] – ქუნთრუშა//ქუთეშა//ყელათმა – scarlet fever, an acute infectious disease, mainly in children, characterized with spotted rushes.

[kʊro] – კურო – zool. bull opposite of female – cow.

[kʊrtkheʊl/sʌtʌlɪ – კურთხეულ/სატალი – A Type of illness, dysentery.

[kuʃɪ] – ქუში/ქოშინი – pant, blow, breathlessness, gasping for breath, disease of breathing system, long cough.

[kvʌnʌ] – ყვანა – dysentery, an infection of intestines.

[kvʌvili/didi bʌtonebi] – ყვავილი/დიდი ბატონები – smallpox, contagious disease in children.

[kursi] - ყურსი – (Arabic. kurs) the form of medicine, tablet.

[leghvɪs sapenɪ]–ლეღვის საფენი–სამკურნალო (ჩირქგროვის მოსაშუშებლად გამოიყენება).

[lɪlɪpharɪ] – ლილიფარი – L. Heliantus Annuus.

[lmoba (of stomach)] – ლმობა (სტომაქის) – ტკივილი [tkivili] (მუცლის)(belly), upset stomach.

[lʌkhɒstakɪ] – ლახოსტაკი – ნელსაცხებელი, წარბთ საღებავი ქვა, გუნდა.

[lʌrɪ] – ლარი – ძარღვი, ბოჭკო. „ძრვანი იოგთანი ლართაგან/ნერვები, რომელნი შეიოჭებიან და განიმარტებიან“.

[mʌdʒɪs gʌkhsna] – მაჯის გახსნა – bloodletting, “blood of the sick be let in accordance of his condition”.

[mʌdʒʊnɪ] – მაჯუნი – (Arabic. ma’ğūn) – mixture elixir, compound of two or more components.

[mʌdʒʌsɪ] – მაჯა/მაჯასი – (Arabic. mağass) pulse, heartbeat.

[mʌke/mʌkeoba] – მაკე/მაკეობა – phisiol. pregnancy, pregnant cow, in/with foal.

[mʌlɪkhʊlɪa/melʌnkɒlɪa] – მალიხულია/მელანქოლია – melancholy (Gr. μελαγχολία), to expand black bile, i.e. psychic depression, Melancholia.

[mʌlʌmo] – მალამო – (Arabic. malḥamat) – ointment, gel.

[mʌnkɪ] – მანკი – millness.

[mʌtbʊkhɪʌt bʌnʌvʃ] – მათბუხიათ ბანავშ – cure of pain in back, sore throat and voice lost.

[mɒlɒkʊrɪ] – მოლოქური – skin disease, “thin pumples”

[mdʒdɒmɪ] – მჯდომი – pimple – დიდი მუწუკი შიგნით (საბა).

[metsnɪernɪ kʊrnebɪsa/khelɒvʌnɪ kʊrnalnɪ] – მეცნიერნი კურნებისა / ხელოვანი კურნალნი – doctor.

[mɪʃɪʌkɪ] – მიშიაკი – chem. (russ). arsenic.

[mkelɒbeli] – მკელობელი - lame.

[mklʌvɪs gakhsna] – მკლავის გახსნა – see. blood letting.

[mterɪ] – მტერი – epilepsy – ეპილეფსია (ისტერიული გულყრებიც იგულისხმება).

[mtskʊdnʌrɪ] – მწყუდნარი – მომაკვდავი – at the death door.

[mtverɪ] – მტვერი – აქ: ფხვნილი – dust, pollen.

[mʊnɪ/mkavanɪ/mghɪerɪ/ketsɪ] – მუნი/მქავანი/მღიერი/ქეცი კანის გადამდები დაავადება, ახასიათებს წვრილი გამონაყარი და ძლიერი ქავილი – acariasis, contagious disease of the skin, characterized with small itchy rash.

[nʌvlɪ] – ნავლი/ფიტი – stool.

[nʌzla] – ნაზლა – (Arabic. nazlat) gravedo, coryza, “fluid, running from nose to chest, is called gravedo”.

[nestvɪ] – ნესტჳ – (Gr). hole, arteria, nostril (blown into the nostrils)

[nezvɪ] – ნეზჳ – zool. sow, female, opposite of ram- male.

[nɪkrɪsɪ] – ნიკრისი – (niḳris), gout, podagra, arthritis, pain of toes and ankle.

[opɪumɪ] – ოპიუმი – Opium, painkiller, an analgetic, obtained from the juice of immature poppy seeds.

[orgʌno] – ორგანო – organ (Gr. οργαν) part of the body, member.

[ospɪ] – ოსპი – lentil (Arabic, Iran.); L. Ervum Lens.

[otka] – ოტკა – (Russ). vodka

[pʌpʊla, pʊpʊla] – პაპულა/პუპულა – pimple at vaccination site.

[pʌrtʌkhtɪ] – პარტახტი – red bleb, blotch. Exantema.

[pʌrtʌkhtɪʌnɪ tɪpɪ] – პარტახტიანი ტიფი – typhus (in Georgian „პარტახტი“ means spot, rash, bleb).

[perɪ] – პერი – foam.

[pɒrɒʃɒkɪ] – პოროშოკი – (russ). powder.

[pɪlendʒɪs kʌrɪ] – ფილენჯის ქარი – (Arabic. falğ) – dancing mania, dancing malady, dancing plague, St. Vitus' dance, paralysis of one of the part of the body.

[pɪrtʊɪsa tkɪvɪlɪ/ pɪrtʊɪs sɪtklʊle] – ფირტუისა ტკივილი/ფირტჯს სიწყლულე – tuberculosis.

[pɪtɪ/nʌvlɪ] – ფიტი/ნავლი - stool.

[pselɪ] – ფსელი – "water", urine.

[purɪ] – ფური – zool. female, cow, the opposite of male bull.

[rɒdɪnɪ] – როდინი – (L. rodin), mortar, mallet – medical device, beating utensil.

[revʌndɪ] – რევანდი – rhubarb – cleanser of gastrointestinal tract. L. Rheum officinalis.

[rɪketsɪɒzʊlɪ] – რიკეტსიოზული – rickettsial (an acute infectious)

[sʌɒple] – საოფლე – this is a contagious disease (Saba), typhus, typhoid.

[sʌbrɪ] – საბრი – aloe, L. Aloë (according to Saba, Aloe).

[sʌgʊrkvelɪ] – საგურკველი – hemorrhoids.

[sʌkhʌdɪ] – სახადი – plague, contagious disease, recovered once never disturbs a person.

[sʌlbʊnɪ] – სალბუნი – ointment.

[sʌlmɒba] – სალმობა – ailment, illness.

[sʌmkɪ] – სამყი – sumach, anacard, cashew, a plant the powder of leaves is used instead of vinegar. L. Rhus coriaria.

[sʌmʃvɪnvelɪ/sʌʃʊmɪnvelɪ] – სამშვინველი/საშუმინველი – anat. soul, smelling, breathing, lung (lungs were blown up).

[sʌndʌlɪ] – სანდალი – (Iran. Arabic). Sandalwood tree. L. Pterocarpus Santalinum.

[sʌndʌlozɪ] – სანდალოზი – yellow dye, polish, glue, laquer; "art remedy for glazing, polishing".

[sʌpɪrɒnɪ] – საფირონი – (Gr. Ζαφείρι) – healing mineral, precious stone, "cures fat".

[sʌrdɪɒnɪ] – სარდიონი – Sard, Sardion (Gr. Σαρδιών), healing mineral, a precious stone, cures the stomach and “couses diarrhea”.

[sartskhvɪnelɪ] – სარცხჳნელი – male genitals, Penis.

[sʌʃʊmɪnvelɪ] – საშუმინველი – see სამშვინველი – [sʌmʃvɪnvelɪ]

[sʌsʌkmebelɪ] – სასაქმებელი – laxative, purgative, cleanser of gastrointestinal tract.

[sʌzʌrdʊlɪ] – საზარდული – anat. groin, L. Ligamentum inguinale.

[sɪlbo] – სილბო – gastrointestinal disorder, diarrhea.

[sɪlɪ] – სილი – (Arabic. sill) “lung pain/lung problem” i.e. tuberculosis.

[sɪskhlɪs dɪneba] – სისხლის დინება – bleeding from female genitals.

[sneba] – სნება – sickness, illness.

[stomakɪ] – სტომაქი – (Gr. στομάχι) stomach, belly.

[stvɪkɪsɪ] – სტვიქისი – (Gr. στοιχείο) element, essential item, “the elements were obstructed”.

[ʃesʌkʌrɪ] – შესაყარი – contagious.

[ʃezrzɪneba] – შეზრზინება – fever.

[ʃɪra] – შირა – an extract.

[ʃobɪtgan kru da utkvɪ] – შობითგან ყრუ და უტყვი – deaf and mute from birth.

[ʃorva] – შორვა – (arab. šurba) soup, bouillon.

[ʃukʌkɪ] – შუყაყი – (Arabic. šukāk) malanders, a kind of disease (anal/vaginal fissure); also horse disease.

[ʃʌbrdzvɪneba] – შებრძვინება – set, heal up (bone).

[ʃʌhtʌra] – შაჰთარა – birthwort (Dutchman’s pipe), healing/medicinal plant. L. Aristolochia Clematitis

[ʃʌkɪkɪ] – შაკიკი – (Arabic. šaḳīḳ) migraine, thumping headache.

[ʃʌnʌrɪ] – შანარი - manually squeezed juice (from Qarabadin).

[ʃʌpa] – შაფა – (Arabic. šifā’) – treatment, cure, healing.

[ʃʌrbʌtɪ] – შარბათი – (Arabic. šarbat) – sherbet, a sort of sweet drink, syrup.

[ʃvrɪa] – შვრია – oat, L. Avena sativa.

[ʃʌvɪ chɪrɪ, ʌvɪ zhʌmɪ] – შავი ჭირი/ ავი ჟამი – black plague, malicious time; pandemic characterized with head ache, sweating, thrilling, fever, purulent ulcer, buboes brakes out in armpit, neck and thigh site.

[ʃʌvnʌghulɪʌnoba] – შავნაღულიანობა – melancholy.

[tbʌzɪɒnɪ/tɒpazɪ] – ტბაზიონი/ტოპაზი – Topaz – (Gr. Τοπάζι) – miner. a gemstone, its sediment is used to treat poisoned.

[tghʌʌghʊnɪ] – ტღააღუნი – (Arabic. ṭā|ūn) black plague.

[tɪpɪ] – ტიფი – (Gr. τύφος) Blurring of the mind, the common name for several acute infectious diseases: typhoid fever, reversible typhoid fever, paratyphoid fever.

[tkɪrpɪ] – ტყირპი – anat. spleen.

[tle/tɪlau] – ტლე/ტილაუ – (Arabic. ṭilā'u) a medical bandage, plaster, ointment.

[tselɪ] – წელი – intestine

[tsɪtela] – წითელა – measles, contagious disease in children, characterized with red rushes over the skin.

[tskhroɪ] – ცხროი – fever.

[tskhroɪʌnɪ] – ცხროიანი – fevered.

[tsklɪs kvʌvɪlɪ] – წყლის ყვავილი – see smallpox.

[tsklit mʌnkɪerɪ] – წყლით მანკიერი – hydropic, dropsied. "the Jewish was suffering from dropsy and his stomach was swelled".

[tsmelɪ] – ცმელი – Anat. belly fat.

[tsopɪ] – ცოფი – rabies, the sickly excited behavior of an angry, affecting person.

[tsopɪ, dzʌghlɪs sibrʌze] – ცოფი/ძაღლის სიბრაზიანე – canine madness, rabies, contagious disease of humans and animals, destroys nervous system.

[tsrdɪʌlɪ] – წრდიალი – "that is arthritis", gout, podagra.

[ulbo / ʃʌmbʌlɪla] – ულბო/შამბალილა – fenugreek; L. Trigonella foenun-graecum.

[unʌbɪ] – უნაბი – bot. jujube, with yellowish brown sweet fruit with stone; L. Zizyphus sativa.

[urvɪlɪ] – ურვილი – pimples, a kind of disease, "with pimples was covered his face".

[vʌba] – ვაბა – (Arabic. uabā') cholera epidemic, "will be from the scorching air".

[vʌrolʌtsia] – ვარიოლაცია – Variation – Vaccination of smallpox with human pus.

[vʌrʌkɪ] – ვარაყი – leaf/foil.

[vʌrʌmɪ] – ვარამი – Varam (Arabic Warām) – a malignant tumor.

[vʌskulɪtɪ] – ვასკულიტი – Vasculitis – Systemic vasculitis is a clinical-anatomical syndrome characterized by inflammation and necrosis of the vascular walls, ischemic changes in the tissues of the damaged blood vessel.

[verdzɪ] – ვერძი – ram, zool. opposite to sow, a female, according to Basil of Ancyra.

[xenonɪ] – ქსენონი – (Gr. Arch.) infirmary, hospital.

[zhʌmɪ] – ჟამი – plague, contagious disease, that never occurs if recovered.

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Abbreviations

ИВР РАН – IOM RAS – The Institute of Oriental Manuscripts of the Russian Academy of Sciences (St. Petersburg)

РНБ – NLR – The National Library of Russia (St. Petersburg)

Mat. – Mesrop Mashtots Institute of Ancient Manuscripts (Yerevan)

GHEM – Sergi Makalatia Gori Historical-Ethnographical Museum

THM – Telavi History Museum

NAG – National Archives of Georgia

MGMH – Mikhail Shengelia Museum of Georgian Medicine History

MGL – Giorgi Leonidze State Museum of Georgian Literature

KSHM – Niko Berdzenishvili Kutaisi State History Museum

NCM – Korneli Kekelidze Georgian National Centre of Manuscripts