

Medicine early and developed Middle Ages

**Middle Ages - an era of feudal or serf relations includes
12-13 centuries**

The feudal system has been started

- **In China - about III-II centuries. BC.**
- **In India - in the first century AD**
- **In the Caucasus and Middle Asia - IV-VI centuries.**
- **In Western Europe - V-VI centuries.**
- **The Old Russian state - IX in.**
- **In all countries, feudalism had 3 main periods: formation, development and decline**


Byzantium


- After the fall of the Western Roman Empire was saved the Eastern Roman Empire, called Byzantium
- Byzantium became the largest cultural center in Eastern Europe (the capital - Constantinople)
- The state religion of the Byzantine Empire was Christianity




ВИЗАНТИЯ в 9 — 11 вв.



 Византийская империя в середине 9 в.

 Территории, присоединенные Византией к 1025 г.

 Границы Византийской империи в конце 11 в.

**Μιρελείον (γρεχ. Μυρελαίου)
Church in Constantinople**



Monastery of Hosios Loukas in Phocis



The positive role of Byzantium

- **Preserving the ancient culture of the Ancient World, and pass it on to other nations**
- **It promoted the revival of culture in Western Europe**
- **Among the many cultural achievements of the**
- **Byzantine Empire retained main works and traditions of Eastern, Greek and Roman philosophy, including the legacy of Medicine**

The development of medical knowledge

- **The main source of medical knowledge in the Byzantine Empire was "Hippocratic Collection" and the writings of Galen.**
- **However, the search for explanations of the disease nature was stopped.**
- **Came to the fore to study practical methods of treatment. Medicines and their healing properties have been the subject of special study.**

Famous medical scientists of Byzantium

- **Oribasius (325-403 gg.) - Made medical encyclopedia in 70 volumes, which summarized the works of Hippocrates, Galen, Democritus, and others.**
- **Collection of 9 volumes of "Review" or "Synopsis" have survived to our foundation of ancient medicine**
- **Synopsis for many years served as a textbook for doctors**
- **Oribasius also compiled a collection of simple recipes how to prepare easy medicines**

Famous medical scientists of Byzantium

- **Aetius from Amida (502-572 yy.) - Created a very useful for medical practice essay "Four Books" in 16 volumes Alexander from Trall (525-605 yy.)**
- **For work about internal medicine and practices was called healer**

Famous medical scientists of Byzantium

- **Paul from Island Aegis (625-690 yy.) - Known as the surgeon early Middle Ages**
- **The main achievement this Byzantine of scientists collected and analyzed a rich heritage of ancient medicine.**
- **These scientists added in the encyclopedic reference books much of their own work and critical comments**

Development features of medicine Byzantium

- **Organized by the Higher School (taught philosophy, mathematics, astronomy, medicine)**
- **The training system has been designed to acquire secular education**
- **The most famous were the school in Alexandria and Constantinople**

Development features of medicine Byzantium

- **Medicine in Byzantium was considered theoretical discipline and studied manuscripts of ancient authors**
- **Particular attention is paid to methods of treatment worked out in previous centuries, and the study drugs**
The dead bodies has not been dissection

Development features of medicine Byzantium

- In the early Middle Ages there were the first civilian hospitals.
- The organization of these hospitals connected with the idea of hospitality and assistance to the needy, the poor, the infirm.

Development features of medicine Byzantium

- **Hospital held on the money of the church - was developed monastic medicine**
- **Hospitals operated on the basis of monastic charters and played a great role as insulators to prevent epidemics**
- **One of the first monastery hospital was founded in the IV. Caesarea**

- **High organization of hospital case relates to the period of late Byzantium**
- **Example:**
- **Hospital in Constantinople, founded in the XII century - 5 offices**
- **The permanent staff of doctors and their assistants**
- **Reception incoming patients**
- **Training medical skill was in hospital**

- **Compared with Western Europe, the hospital business in Byzantium was at a higher level**
- **Byzantium 10 centuries of its history has created an original culture and had a great influence on the development of culture and medicine for many nations**

**In the second half of the IX century in the vast lands of Eastern Europe formed the Old Russian state –
Kievan Rus**



Old Russian state IX-XI centuries.



The ancient Slavic cities of Kiev, Smolensk, Polotsk, Chernihiv, Pskov, Novgorod became a major center of crafts and trade.

The most important trade artery of ancient Russia was "a great way from the Vikings to the Greeks", which connected Russia with Scandinavia and Byzantium.

Ancient Russian State

- Russia came to feudalism bypassing the slave system
- The most important event in the history of Russia was the adoption of Christianity as a state religion
- Christening of Russia was in 988 during the reign of Prince Vladimir

Christening of Russia



The value of adoption of Christianity

- 1. For the development of the Old Russian state was greatly influenced by: facilitating the development of culture, the creation of written monuments, art and architecture.
- 2. Changing the international position of the Old Russian state. It becomes like the Christian states of Europe.
- 3. Establishment close relations with Byzantium
Christianity brought with it many of the achievements of Byzantine and ancient medicine.
- 2. Изменилось международное положение Древнерусского государства. Оно становится в общий ряд христианских государств Европы.

Doctors in Old Russian state:

- ✓ Lechtsy - representatives of traditional medicine
- ✓ Doctors professionals - invited foreign doctors



Common names of diseases in Kievan Rus

- **Night-blindness**
- **Cardiac angina**
- **Barley tuberculosis**
- **Cancer**
- **Wicked cramp**
- **Vestnitsa (scurvy)**

Views on the causes of disease

- **The personification of disease and tribulations in Slavic mythology were demonic entities - Grief and Litho.**
- **Reached our days transmitted verbally conspiracies addressed to the pagan gods that can get rid of the disease.**
- **Patients were treated by various means of plant, animal and mineral origin.**

Treatment of vegetable origin

- Sagebrush
- Scythian herb (rhubarb)
- Garlic, onions
- Plantain Juniper
- Birch juice
- Leaves of birch and linden
- Nettle Bark of oak, ash

Treatment of animal origin

- Milk, including mare of milk
- Butter
- Young deer antlers
- Raw cod liver
- Honey

Treatment agents of mineral origin

- Chrysolite in particulate form
- Sawdust from copper
- The powders from silver and gold
- Vinegar
- Saltpeter
- Turpentine
- Copper sulfate
- Used the healing properties of mineral water (Narzan)

**Old Russian
bathhouse
Kiev. The National
Museum of Medicine
in Ukraine**



A hospital in Russia

- ✓ **First free hospital open at the monastery in Pereslavl in the XI century.**
- ✓ **Monastery Hospital in Kiev appeared in the XII century .**

A hospital in Russia

- Experienced doctors worked in hospitals monastery
- The monastic hospitals were available to the public
- Medical care was free

A hospital in Russia

Old Russian monastic hospitals were centers of education: they collected Greek and Byzantine manuscripts and taught medicine

Monks supplemented their own knowledge based on the experience of Russian folk healing

Sources of information about the medicine in ancient Russia

1. Izbornik Sviatoslav (XI century) - described by some diseases, methods of their treatment
2. Lechebnik "Alimma" (ointments, XII cent.) - General remarks on hygiene, hygiene of marriage, food hygiene, external disease, internal disease
3. Therapeutic collections of "Vertogradov", "Trawniki", "Zelnik" - practical advice of traditional medicine
4. Charter Grand Prince Vladimir Svyatoslav (end of X - the beginning of XI century) - to determine the legal status of the doctors

Sources of information about the medicine in ancient Russia

5. "Russian Truth" - a set of legal norms of Kievan Rus (XI - XII century) - asserted the right to medical practice and the legality of charging for treatment
6. Paterik - chronicle of Kiev-Pechersk Monastery (XI - XIII century) - the charter of the monastery hospital, healers information about the monastery, about medical ethics
7. Domostroy - XVI century - the rules and regulations of household hygiene
8. Resolution of the "Stoglav of the cathedral" – about the sick and maimed,

In various forms healing existed in the Ancient Rus

- **Among the people - the people's healing**
- **After the adoption of Christianity - developed monastic medicine**
- **Since the reign of Yaroslav Mudrogo appeared secular medicine in Russia**

- **1237 was marked by an attack on the Russian land Mongol hordes**
- **During the invasion killed a variety of cultural values, record, books, monuments of culture**
- **During the invasion of the conquerors did not destroy the monasteries and left them all rights as he used before the conquest**

Medicine during the period of Mongol-Tatar

- **During the Mongol period medicine was developed in two directions:**
 - **1. further developed traditional medicine**
 - **2. to developed medical services in monasteries.**

- **The liberation struggle of the Russian people against the Mongol-Tatar yoke was completed in the XV century. Russian lands were united into one state - the Moscow state.**
- **During the formation of the Moscow state a greater role in the development of medicine played Cyril-Belozersky Monastery.**

Arab Caliphate - Islamic feudal land



- **By the VIII century the Arabs conquered the Syria, Egypt, North Africa, Arabia, Iran, Armenia, part of Central Asia.**

Features of medicine in the Arab Caliphate

- **Doctors Arab caliphate kept the precious heritage of medicine ancient world (Ancient Greece and Ancient India)**
- **Approx medicine to the natural sciences, chemistry,**
- **Developed the doctrine of poisons and antidotes**
- **To lay the foundations of toxicology**
- **To verify the correctness of treatment**
- **Studied the effects of drugs on animals**
- **Improve the organization of hospitals**

Features of medicine in the Arab Caliphate

- **For religious reasons autopsies was not conducted, resulting in the level of anatomical studies was small. Therefore, surgery and obstetrics developed weaker than the study of infectious diseases, hygiene, pharmacology**

Representations about diseases

- Under the influence of ancient Greek knowledge formed the doctrine of 4 bodily juices.
- According to the ideas of the Arabs, each of the fluids involved in the creation of the 4 qualities: heat, cold, dryness and humidity that determine “mizadzh” (temperament) each person.
- Temperament can be normal if all the components is balanced

The organization of hospitals:

- Have chambers for the treatment of patients with the same disease.
- Department of the hospital were divided into male and female, surgical, to treat eye diseases in patients with fever, etc.
- At most hospitals have pharmacy The main feature of the hospitals - rooms for lectures.

Hospitals of Arab Caliphate

- **Hospitals for the poor (providing from the funds the governor of the state)**
- **Small private hospitals (financed by private doctors and public figures)**
- **Military hospitals (moved with the troops and accommodated in tents)**

Famous doctors of the Arab Caliphate

1. Ar Razi (Rhazes)
2. al Zahrawi
3. Abu Ali Ibn Sina (Avicenna)

Ar Razi (Rhazes)

- **He founded a hospital in Baghdad**
- **Organized by the school doctors combine theoretical training with hospital practice**
- **Author of over 200 works A comprehensive book on medicine (25 volumes)**
- **The work "On smallpox and measles"**
- **These books for a long time served as a textbook in the universities of Western Europe**

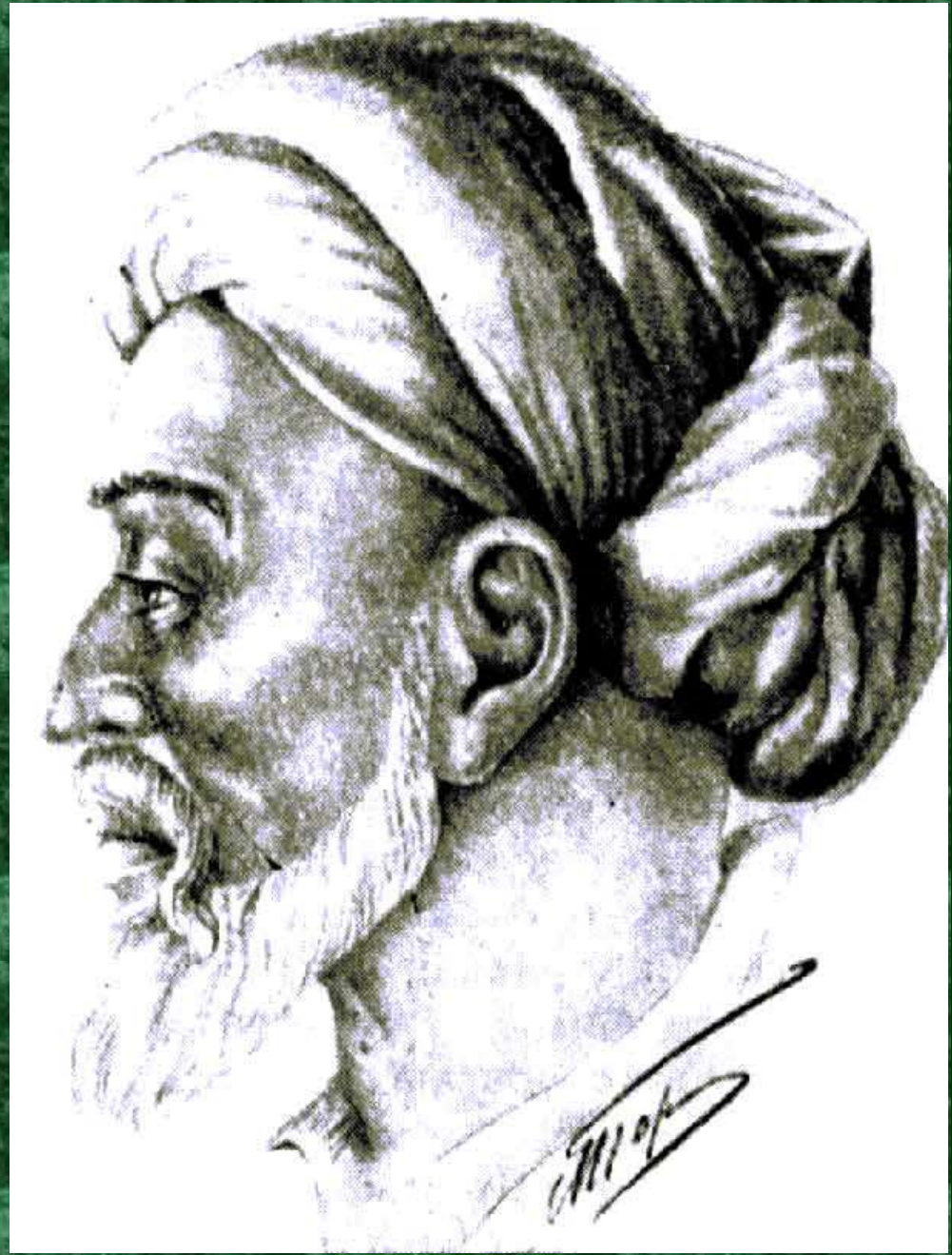
Ar Razi (Rhazes)

- **Apply Variolation**
- **He studied the effects of drugs on animals**
- **Proposed tool to extract foreign objects from the throat**
Apply catgut Attached great importance to specialized
of doctors

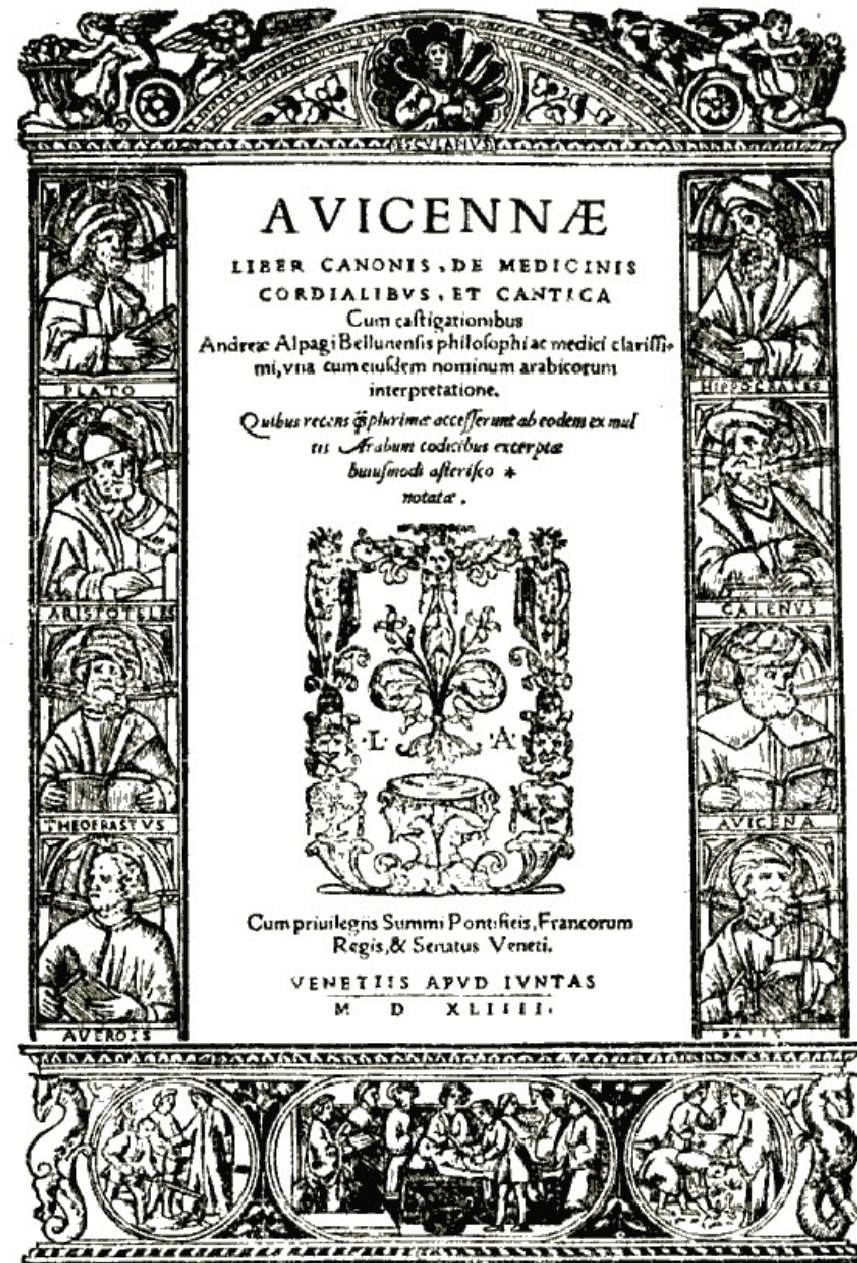
Al Zahrawi - famous surgeon medieval caliphate

- **Proposed lying position during operations on small pelvis**
- **Author of new surgical instruments**
- **Developed methodology cauterize blood vessels in the wound**
- **Wrote encyclopedic work on surgery**
- **After translating it into Latin in the XII century, it became a handbook of Surgeons in Medieval Europe**

Ibn Sina (Avicenna) 980-1037.



"Canon of Medicine"
This medical encyclopedia,
consider all that relates to human
health and disease



"Canon of Medicine"

- **This is the most important encyclopedia of medical knowledge of the ancient world**
- **It summarizes the experience of ancient Greek, Roman, Indian and Central Asian, doctors selected best medical practices**
- **Ibn Sina was not limited to retelling of the past, and made a critical analysis of medical knowledge that existed at the beginning of the XI century**

Postulates of Medicine

in the XII century was translated from Arabic to Latin



"Canon of Medicine"
consists of 5 books

In the first book
describes the
theoretical medicine



**"The main thing in the art of preserving health -
a balancing of the factors necessary ..."**

- **The serenity of nature**
- **choice of food**
- **Get fit**
- **Improving what inhaled by nose**
- **Accommodation clothes**
- **The serenity of physical and mental state**

الاشتباق المفاصل طمخة نظول احد للفقير اعصت الرايس اذ انظر عصاره
ورقه مع دهن الورد مع لاله في قشر الرمان في الاذن نفع من وجع الاذن وكذلك
قشر البطيخ اذ فعل به ذلك وطبخه عشول الحمران اعصت العبرن على اصمغه
وزهره طلحة البصرة اعصت العبرن ثم ناعفة من نفع للبرم وقشره ايضا اعصت
العبرن اعصت اذ خرج العلق **عالمه** الاورام الغالية للبرن
الاورام الصلبة اعصت الرايس الغالية تائب في دهن المان او الحمرى وينظم
في الاذن الوجعة وشمة سنع المصروع ونعته والمسكوت وسكن الصواع البار
واذا جعل منه في الشرب اسكرة اعصت الصبر ثم الغالية نفع من القلب
اعصت النفض الغالية ناعفة من اوجاع الرحم جولا ومن اوجاع الصلبة و
البلغتة وبرد الطنفة تستنز الالجم المحتق والمابل وسقيه بحية للجبل
تم الكتاب الثاني
من كتب الفانوز في الطب والحمد لله العالمين
والصلوة على منة محمد وآل الطيبين الطاهرين
وفرح من شهره منتصف شهر شعبان عظم السمرقند
مدينة السلم سنة سبع و مئتين و ثمانين

مكتبة
477
577
11

In the second book,
describes the teaching
about medicines and
their test

٢ ٣
على مثل في المشبل في الرصاص والاناكردا كان من المراج ما استجكاه هذا
الاستجكاه فلا يعجزان كون من المراج ما هو الحرارة العزينة التي فيها عن نعين
سبابه وما كان هكذا فهو المراج الموقن فان كان معجلا فهو في البرد على علمه
الى ان تصب صوته وبلهجة انا صرر عنه فعل واجره واما اذا لم يكن المراج موقنا
بل رخوا سلبا الى الاتصال فيجوز ان يمتزج سبابه عند فعل طبيعته فيه
وتنزل بعضها عن بعض ويكون محنة القوى فتعمل بعضها فعلا وتعمل الاخرية
فادان الاطبا ان جد احدى قوته مركبة من قوى متضادة فلا يخلو عن هم
انفسهم وانفسهم ان جردوا اجزا حارة وبرودة فتعمل كل واحدة منها بانفرادها
كالتمتيز فان ذلك لا يمكن بلها في جز من مغلين هو مركبتا واما الاسب
ان يظن ان ذلك الحس من الادوية ليس مركبا من قوى متضادة فان جميع الادوية
مركبة من قوى متضادة ليجعل منهم من ذلك انهم بعضهم انما بالبعاد وقوى متضادة
او قوتها من الغل لان في اجزا مختلفة لم يتبع بعضها في بعض فعلا بانما جعل
لكل متضادة القوة تشابها ما ولا يلازم متضادة القوة حتى اذا حصل بعضها في جز
عصولهم ان حصل الاخر معه لانه ان كان متضادة القوة لم يخلو فعله في البرد الشدة
وان كان متضاد الاخر وعكس القوى جازان لا يخلو ايضا ان شدة في البرد كان
اذا حصل من سبب في عموم راقية ما لا زمة من السبب الاخر فيحصل منهما
الغلو والاثرا الذي يودي اليه فعلا بما في جميع اجزا ذلك العنصر على السواء
كل واحد من اجزائه معه عاين عن عام فعمله متميز من اللتم الا ان يكون جز اعني
فان اجزا السبب في الاخر الطسعة تسعمل احدهما وترفض الاخر

The third book is devoted to the description of certain diseases and their treatment.

وعلمت كل شيء يقع في الجلياء والشهيرة لامة صبغة سهل ان كطلبه في الجلاول
 هو لم يطمع الادوية المذرة التي تقع في سرعة والورج السادس في
 افعالها في الاورام والبثور وجرباها كما ذكره في صفة مدكروافه باصابعه كل واحد
 منها والورج السابع كذلك للفرج والجلطات في الكسور باصابعها والورج
 الثامن لامراض المفصل والاعضاء مصبوعة كذلك والورج التاسع لامراض
 اعضاء المراس كلها مصبوعة باصابعها والورج العاشر لامراض اعضاء العين
 والورج الحادي عشر لامراض اعضاء النخس مصبوعة باصابعها والورج الثاني
 في امراض اعضاء العذرا مصبوعة باصابعها والورج الثالث عشر لامراض اعضاء
 النخس مصبوعة باصابعها والورج الرابع عشر في الحيات وما ملق بها
 والورج الخامس عشر في نسيه الادوية التي السبوم والورج السادس عشر
 في امراض الحنق في دواها وجميع الالواح واما ما يوجد في بعضها الاخص
 الالواح وما وقع من الحيلولة الرهالة على في الادوية التي يجهت العقالة
 الثامنة وهذا ختم هذا الكتاب مستلذا عنه الى الكتاب الثالث

المقالة الاولى
الفصل الاول منها في امراض الادوية المفردة
 قد يتلقى الكار الاقوي بعض اوباما هذا الرواجار وهذا الرواجار وهذا
 الرواجار وهذا الرواجار وهذا الرواجار وهذا الرواجار وهذا الرواجار وهذا
 اجمع المركبات الصغرى والذاتية والحيوانية اركانها هي العناصر الاربعة
 وانما تخرج في بعضها في بعض حواله من على عادته على عالمها منها

The 4th book is devoted to surgery



5th book describes the
"complex" of medicines ,
poisons and antidotes.

Ibn Sina's contribution to the development of medical science

- **Expressed the idea of invisible infectious agents**
- **Developed Dietetics section for children, adults and the elderly**
- **For the treatment of wounds recommended the use of wine**
- **He describes the symptoms of early cancer detection**

- He offered several hundred new drugs of plant, animal and mineral origin
- He paid great importance to the experience as a method of knowledge
- He was engaged in disease prevention (advice on health protection)
- Tried distinguish between religion and science
- Rejected demonological ideas about the causes of nervous and mental diseases

Avicenna

Ибн Сина имел аналогичные идеи, как Демокрит и Левкипп материализма. Природа человека как производное от воздействия окружающей среды и образа жизни



Proceedings of Avicenna's philosophy



"The Book of rescue" ("Kitab al-Najat")



"Book of Knowledge" ("Danish-name")

"Book of Healing" ("Kitab al-Shifa")

"The Book of rescue" ("Kitab al-Najat")

"Guidelines and manuals" ("Al-Isharat Wat tanbihat")

"Book of Knowledge" ("Danish-name")

- **A great role in the dissemination of medical knowledge of the Arab Caliphate play commentators and translators of medical literature from Arabic into Latin.**

Medicine and Science in Western Europe, X-XII century

The dominant philosophy - scholasticism

Scholastica is the idealist philosophy. All possible knowledge already given in Scripture or in the writings of the Church Fathers

Center for Health Education in the Middle Ages were universities

- **In the XI century appeared in the University of Salerno
In the XI-XIII centuries. Bologna, Paris, Padua**
- **In the XIV century. In Prague, Vienna**
- **Charters and educational plans were controlled by the
Catholic Church**
- **Methods of teaching and the nature of science were
scholastic**
- **In the field of medicine famous ancient writers were
Galen and Hippocrates**

The weak development of
anatomical knowledge

Mondino de Luzzi
(1270-1325)



For medicine in Western Europe was characterized by the creation of hospitals in the monasteries

Treatment was accompanied by ritual actions.

Healing associated with the "wonders of the saints."

Pharmacy has been closely associated with alchemy

The spread of the devastating epidemics of infectious diseases (reason: the growth of cities, military-colonialist movement - the Crusades)

Introduction to the large port cities the special anti-epidemic measures:

- sets quarantine
- Appointed the special port overseers "Trustees health"
- Introduces the "Regulations" - special rules that had the purpose to prevent the spread of infectious diseases
- The city provided good drinking water

Development of surgery has been associated with numerous wars

Surgery in the Middle Ages were engaged: doctors who graduated from medical schools Practice - bone setters and barbers

Ambroise Pare (1510-1590) -
the founder of surgery in
Western Europe



Achievements of Ambroise Pare

- He summarizes the experience of medieval surgery
- He published a book about the treatment of gunshot wounds
- Improved technique of amputation
- Apply tying of large vessels in the wound
- He proposed complex orthopedic devices - artificial limbs, joints



-
- **Medicine in medieval Europe developed in adverse conditions. But under these conditions, appeared the medicine of the Renaissance.**