The Manuscript deals with some industries, for example those related to the manufacturing of pearls, the artificial ruby, ambergris and its uses in medical treatments, musk perfumed soap, roses and carnations perfumes, the working of metals and the making of black inks. It also gives some of the perfume industry’s secrets. The manuscript further differentiates between pearls of rock origin (mineral) and those of marine origin; as well explaining the Persian method of refining those pearls of mineral origin.
al-Dur al-Manzūm Wa-al-Sīr al-Maktūm
(The set pearls and the hidden secret)

... (Al-B. ...)

al-Sīr al-Maktūm – Number 194 (Tal'at), Microfilm 19454

With some industries, for example those related to the manufacturing of pearls, the
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metals and the making of black inks. It also gives some of the perfume industry’s
further differentiates between pearls of rock origin (mineral) and those of marine
the Persian method of refining those pearls of mineral origin.

al-Dur al-Manzūm Wa-al-Sīr al-Maktūm
The manuscript gives an account of the methods of calcining (calcinating)
Lime, by the use of white Rashidi table salt, where it becomes like flour; giving details of the ensuing processes, needed to
make it eventually transparent.
(Ḥagar al-Amlāḥ al-Mustakhragah (dhakhāʾir al-dhakhāʾir)
(The stone of extracted salts; the treasures of all Treasures)

ʿAbd al- Khāliq al-Maṣrī (…/…)

Ḥagar al-Amlāḥ al-Mustakhragah (dhakhāʾir al-dhakhāʾir) – Number 1 (Muṣṭafā Fāḍil, Chemistry), Microfilm 4095:
The Manuscript deals with the formation of stone in Nature, then moves on to the subject of salts, which it considers as of two kinds; basic salts, and extracted salts. It also specifies the origin of metals (i.e. those of gold, silver, copper, iron, tin, lead and mercury). Next it deals with the types of salts; including tetra sodium borates (Annamtron or Albowareq), the white stone salt, the clear salt (Andrani Salt), the gunpowder salt and alum. The work then comes to the conclusion that all stones and metals (minerals) are mixed with salt; which preserves their internal structures.
The manuscript deals, as well, with the salts that are extracted from metals; such the black lead salt and the salts of tin, iron, gold, copper and silver. It also deals with the salts of plants, such as the salts of vine and pusley (purdiane); as well salts extracted from parts of the human body (e.g. the black hair salt, nails salt and blood salt). The sea salts, on the other hand, were described as of two kinds; one was blown out to the coast and became rock, and another obtained by the drying out of sea water in the heat of the sun. The chemical processes used in extracting salt from sea water were also described, and the smoke salt (extracted from descending smoke at dusk) received added attention.
gar al-Âmîlûh al-Mustakhragah (dhakhâ’îr al-dhakhâ’îr)
(The stone of extracted salts; the treasures of all Treasures)

Arabic alphabet

Hâgar al-Âmîlûh al-Mustakhragah (dhakhâ’îr al-dhakhâ’îr):
The manuscript gives detailed account of the transparent stone; regarding its locations. Its formation in Nature, its shape and crystalline color. Their locations for some kinds include the surface of the earth and the sides of mountains; while other kinds may only be found in wells and the depths of the Earth.
Avicenna was born in the village of Bukhārī, in Khurasān; and died in Hamzān (Iran). He learnt the
Quran by heart and studied religion, literature, arithmetics and algebra; by the age of ten. By the age of
seven, moreover, he excelled in Philosophy and Logic, Poetry and Politics. Avicenna was an encyclopedic
scientist who travelled all over the place, debating with other scientists. He had his chemical theories;
especially concerning the fallacy about transforming base metals into gold. Moreover, he had many
elegant achievements in applying chemistry to herbal medicines and medical drugs; extracting these
from their natural sources, with a high degree of purity. In doing so, he laid the foundations for the
pharmacological sciences. Furthermore, he was in fact the first to discover the first law of motion; which
was later attributed to Isaac Newton. He was also the first to use anesthetics, as well as some kind of a
syringe to inject medicines into the body; and he introduced surgical procedures for the repair of severed
nerves. His works include the following:

- Heart Medicines
- The Secrets of Oriental Wisdom
- Signals and Warnings
- Plants and Animals
- An Essay on Form/Astronomy
- The Majestic
- The Canon in Medicine
- The Grand Summary in Logic

al-Barqāh al-Ḥamra’ Wa-al-Asrār al-Kubrā Fīmā Yakhṣūṣ al-Amliḥ (al-risālah al-shihābiyāt fī ‘ilm al-labīb) – Number 1543 (Medicine, General Collection), Microfilm 31276
Avicenna begins this Manuscript by giving advice and guides to the Chemistry student. These include
determined and active pursuit of the sciences and branches of knowledge; particularly those of Wisdom,
Industry and Medicine. Next it moves to the subject of metals; their types and properties. Attention was
given to Mercury sulfide (of the air type), arsenic pyrite (water type), sulfur (fire type) and arsenic sulfide
(earth type). The manuscript also features a text (incorporating some verse) that deals with the interactions
of those substances, and their uses in medical treatments. Next the manuscript moves to the subject of
making good kohl from antimony and the subject of treating of eye diseases, scabies, itching, freckles and
tinnitus; by minerals and plants. Avicenna, moreover, supported his subjects with lists of materials and
their amounts in interactions. The manuscripts finally devote a whole chapter to the drugs that connect
chemistry to medicine; explaining how olive oil and salts are effective against poisons, and the use of an oil
extracted from egg shell in some preparations.
n 'Abd Allah, Abu ‘Ali, Sharaf al-Mulk (370/428H): the village of Bukhari, in Khurasan; and died in Hamazan (Iran). He learnt the died religion, literature, arithmetics and algebra; by the age of ten. By the age of celled in Philosophy and Logic, Poetry and Politics. Avicenna was an encyclopedic above the place, debating with other scientists. He had his chemical theories; the fallacy about transforming base metals into gold. Moreover, he had many in applying chemistry to herbal medicines and medical drugs; extracting these ces, with a high degree of purity. In doing so, he laid the foundations for the es. Furthermore, he was in fact the first to discover the first law of motion; which iss Newton. He was also the first to use anaesthetics, as well as some kind of a ines into the body; and he introduced surgical procedures for the repair of severed de the following:
es 'Oriental Wisdom
arnings
mals
orm/Astronomy
Medicine
mary in Logic

al-Baqarah al-Asrār al-Kubrā Fīmā Yakhūṣ al-Amlāh (al-risālah al-shihābiyyah fī ilm al-Medicine, General Collection), Microfilm 31276

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al Ibn Sina, 19th century

al-Baqarah al-Ḥamra’ Wa-al-Asrār al-Kubrā Fīmā Yakhūṣ al-Amlāh

In this Manuscript, Avicenna deals with the methods used in the preparation of the white lead and tin by baking the ores, together with other ingredients (such as olive oil, salts, alum and pure vinegar). The manuscripts proceeds, further, to explain the methods of preparation of other metals.
Nakhb al-dhakhā’er fī Aḥwāl al-Jawāhir
(The best of Treasures in the conditions of jewels)


Ibn Sā‘īd was born in a place on the borders between Iraq and Syria; but he moved to Cairo, where he settled down, until the time of his death. There, he was in charge of the drug store of al-Manṣūrī Cairo Hospital, which meant that he had to approve the purchase of medicines requested by the medical manager of the hospital. Assinjari was, moreover, a physician, an astronomer, a researcher in chemistry and physics, a sage and a poet. His works include the following:

- What the ordinary persons needs, in the absence of a doctor
- The garden of minds in the matter of doctors
- The utmost hopes in knowing about fevers
- Revealing the mystery about eye conditions

Nakhb al-dhakhā’er fī Aḥwāl al-Jawāhir - Number 151 (Mustaﬁā Fāḍil, Collections), Microfilm 16333

The work summarizes earlier and later contributions on the matter of highly valued jewels: their qualities, and benefits. It starts with corundum and its types and colors; the highest being ruby (red), then the yellow, and then the white type. The color in ruby is rich with water; and the highest quality of which is the one with stable color and water, and that without impurities. Corundum is a hard mineral stone with many names that are different for different countries. In this context, Ibn Sā‘īd al-Sinjārī refers, in this manuscript, to the medicinal benefits of ruby; in strengthening and pleasing the heart, in preventing blood clots and encountering poisons.

The manuscript also speaks of Al Bahlash (Allāh) in Persian, which is a red transparent and clear jewel; and Al Yaṣṣīd (Abanāfsh), which resembles ruby: except that it does not glow, its color is fiery, and that it is smoky. The text further refers to its provenance, its kinds and its remedial benefits. Among the other exceptional jewels, the manuscript also deals with diamond: which is a very hard and slightly bright stone that is invariably conical in shape and comes in various colors (white, oily, yellow, red, green and blue). Diamond is used in cutting and piercing other jewels. There are also pearls which form inside shells. The best and the greatest known historical pearl is the one called the “Orphan Pearl” of ‘Abdul Malik ibn Marwān; which is heavy, pure and clear. Amethyst is another jewel that was treated in the manuscript; it is pink in color and is found in Hijāz. There is also Jasper; which is found in white, oily and yellow colors. The Chinese use jasper to decorate swords. The manuscript further deals with countless other precious stones.
Nakhb al-dhakhā’er fī ʿĀlāw al-Jawāhīr
(The best of Treasures in the conditions of jewels)

Muḥammad ibn ʿIbrāhīm ibn ʿAṣīr ibn ʿAbī ʿAbd Allāh

a place on the borders between Iraq and Syria; but he moved to Cairo, where he
time of his death. There, he was in charge of the drug store of al-Mansūrí Cairo
that he had to approve the purchase of medicines requested by the medical manager
was, moreover, a physician, an astronomer, a researcher in chemistry and physics,
works include the following:
ary persons needs, in the absence of a doctor
minds in the matter of doctors
mystery about eye conditions

ʿĀlāw al-Jawāhīr – Number 151 (Mustafa Fāḍil, Collections), Microfilm
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orate swords. The manuscript further deals with countless other precious stones.

Nakhb al-dhakhā’er fī ʿĀlāw al-Jawāhīr:
al-Sinjarī deals, in this manuscript, with all matters concerning the precious stones; such as diamond and others. Among
these, there is the green emerald; which is found in India, China and Morocco. The deep green saturated emerald is the best;
it has a glow and brilliance, and is not blemished by veins or spots or intrusive yellow color. If painted with linseed oil, the
glow of emerald would be enhanced; but if left unpreserved with oil coating, it will lose its water.
Mukhtasar Ñâµìî 4 al-Ásrâr Wa-Nûr al-Afkâr fi Riyâd al-Áhhâr
(Summary of all Secrets and the light of ideas in the garden of stones)

Añmâd al-Mîrî (…/…)

Mukhtasar Ñâµìî 4 al-Ásrâr Wa-Nûr al-Afkâr fi Riyâd al-Áhhâr – Number 223 (Chemistry and Physics), Microfilm 18865
The Manuscript begins with a verse by Ibn Yazid, in chemistry; on mercury, fire and magnesium oxide (magnesia), then quotes Jabir ibn Hayyân on the importance of dissolving minerals (total dissolution). It also asserts that the cosmic elements that hold life together are: the fire which is inside sulfur, the air which is inside mercury, dust which is inside the earth and water which binds all of that together.

The work also concentrates on the dissolution of solid matter in water or other solvents and the removal of all impurities; explaining that in detail, and organizing the chemical processes used to harden metals. Next, the manuscript differentiates between the naturally bright earthly matter (such as gold, silver, crystal, marine and mineral pearls and white salt); and the earthly dark matter (like copper, lead, iron, tin, kohl, arsenic and sulfur). Stones in the latter category are formed from fatty substance.
Mukhtasar Jami' al-Asrār Wa-Nūr al-Afkār fī Riyāḍ al-Abhār:

The manuscript explains that the green myrtle plant is a variety of sweet basil that are known to remain fresh for a long period of time; and that it has an important role in the removal of impurities on the surfaces of stones.
al-Jamāhir fī al-Jawāhir (Juz' 1)
(A Comprehensive Catalogue of Jewels; Vol. I)

al-Bārūnī, Muḥammad ibn Ahmad, Abū al-Riḥām, al-Khawarizmi (362/440H)

al-Bārūnī was born in Khawarizm and travelled to India, and became an accomplished scholar in both Greek and Indian Philosophies. He specialized in mathematics and had an extensive experience in Engineering, Astronomy and Geography; and was also a man of letter, a physician, a linguist and a historian. al-Bārūnī was first to prove that the Earth was spherical in shape, and that all bodies are pulled towards its centre. He also indicated that the speed of light is faster than that of the Earth. While al-Bārūnī did not devote a special book for chemistry; it was, however, incorporated in his book on Pharmacology “al-Jamāhir fī al-Jawāhir.” In this, he differentiated between the dyes that are soluble in water and those that are soluble in other solvents. He further explained the method for preparing the alkaline copper carbonate, the different kinds of precious stones; and concluded with the method of preparing mercury sulphide. His works include the following:

- The relics of past centuries
- Pharmacology in Medicine
- Astronomy and what occurs in the simple sphere
- A Comprehensive Catalogue of Jewels; 3 volumes

al-Jamāhir fī al-Jawāhir (Juz’ 1), Number 3188 (Medicinæ), Microfilm 45411

The Manuscript begins with the body senses, and its structure. Next it moves to the magnesium silicate stone; and asserts that the gold and silver minerals are natural stones, and that there are many jewels buried in dust and in stones on sea beds; quoting the Holy Quran on that, In the breaks between two scientific subjects, the manuscript treats a topic on the people’s general affairs. This begins with an estimate of the total amounts of jewels owned by the kings, and kept in their safes; classified according to their weights. In dealing with the different kinds of highly precious stones, the manuscript lists corundum at the top, having been celebrated in the Quran; and this is because it is considered to be the purest and does not change. The manuscript also indicates its provenances and colours.
al-Jamāhīr fī al-Jawāḥīr (Juz' -I)
(A Comprehensive Catalogue of Jewels; Vol. I)

n Ahmed, Abū al-Riḥān al-Khawārizmī (362/440H)
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He specialized in mathematics and had an extensive experience in Engineering, 
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(P Medicine)
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(P (Juz' - I), Number 3158 (Medicine), Microfilm 48411
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al-Jamāhīr fī al-Jawāḥīr (Juz' - I)
al-Bairūnī has organized the highly precious jewels according to their rankings in the Quran; then follows with the lesser 
 kindness, beyond those (i.e. of second ranking). The latter include (e.g.) al-λα' 4-al-badāghshāh; which is red in color, clear and 
transparent, and almost matches ruby in value, and can even be more attractive.
al-Ĥjăr al-mulûkı̊ah Lil-Tifâšî
(al-Tifashy’s Royal Stones)

al-Tifashy, Âḥmad ibn Yūsuf ibn Âḥmad ibn Abi Bakr ibn Hamdîn ibn Hajjîj ibn Muḥammad ibn Sulîmân ibn Sa’d Alqîsî (S80/651H)
The author comes from Tifash in Africa (where he was a judge), hence the name “al-Tifashy”. He studied in Cairo and travelled to Damascus, Iraq and Persia. al-Tifashy was a chemist who had also engaged in physics and had expert knowledge of the precious stones. Apart from that, however, al-Tifashy was a refined poet.

His works include the following:

• The jewels of stones
• The stones kept in the coffers of Kings and the treasures of chiefs
• The final word on perception and the five senses
• The Joy of Heeding in the science of Hearing

Khawâq al-Ĥjăr Wa- ManâFâha (The properties of stones and their benefits), Number 169 Physics (Ta’lî), Microfilm 47429

The manuscript presents the jewels that are kept in the coffers of kings, the sultans and chiefs; as well the useful stones exchanged between them. The jewels recorded in this manuscript include (among countless others) corundum, emerald, aquamarine, amethyst, garnet, diamond, coral, obsidian, jasper, cat’s eye, turquoise, magnet, carnelian, lapis lazuli and jade. Each recorded (listed) mineral was, moreover, dealt with in detail (e.g. with regards its formation, quality, impurities, benefit, value and prices at the time of issue).
al-Aḥjār al-mulūkīyah Lil-Tifāshi
(al-Tifashy’s Royal Stones)

Tāṣuf ibn ʿAḥmad ibn Abī Bakr ibn Hamdūn ibn Ḥājjāj ibn Māmūn ibn I (580/661H)

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fānāfī’āha (The properties of stones and their benefits), Number 169 Physics 9

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al -Tifashī’s Khawās al Aḥjār (Almulūkīyah) Wa- Manāfī’āha
al-Tifashī brings a new type of royal stones, the magnet, to the attention. The Magnet was previously not known, and its mineral forms under continued conditions of excessive heat. As the water in its mineral evaporates, its stone becomes dry and extremely hard; and turns black in color, and attracts iron in nature.