


## THE FACULTY OF MEDICINE PUBLICATION No. 4

# THE ABRIDGED VERSION OF "THE BOOK OF SIMPLE DRUGS" 

OF
AHMAD IBN MUHAMMAD AL-GHÂFIQî.

BY
GREGORIUS ABU'L-FARAG (BARH 'BRAEUS).

Edited from the only two known Manuscripts with an English Translation, Commentary and Indices

## BY

M. MEYERHOF
M. D., Ph.D. Hon. Caus.
G. P. SOBHY m.D., Ch.B.

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\text { CAIRO } 1932
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Unto Him who has revived the Cultures of the
PHARAOHS \& ARABS
after their Extinction : to Him who protects SCIENCES \& ARTS;

The GUARDIAN
of the Actual Renaissance in Egypt;
Unto our

KING \& LIEGE

## H. M. FUAD THE FIRST

We humbly dedicate this our Book as a Sign of LOYALTY \& SUBMISSION to

His AUGUST MAJESTY
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尸A卫I I

## INTRODUCTION

## INTRODUCTION.

Pharmacology is one of the glories of Arabic Science, that is of the science of Arabic. writing scholars of the Islamic World during the Middle Ages. The source of Arabic phar. macology is to be found in Greek pharmacology, especially the Materia Medica of Dioscurides and the book on Simple Drugs by Galenos. In the centuries following his death the closer connection of the Byzantine Empire with the Orient favoured the importation of many Persian and Indian drugs which had been unknown to the Greeks. Byzantine and Syrian Christian physician sincorporated those into the fundamental stock of their remedies. But is was only after the rise of Islam that the "Materia Medica" of the Occident and Orient were collected in a systematic way, and that Botany and Mineralogy were enriched by new knowledge.

We give in the following pages a chronological list of the authors of important treatises on simple drugs from Greek times down to the XVIIth. century A. D., particularly those who are mentioned in the text of al-Ghâfiqî's book.

# l. List of Authors of Botanical 

and

## Pharmacological Treatises.

## A. Greelk Pexiod.

1. Theophrastus of Eresos (Island of Lesbos), born in 370 B. C., died about 285 B. C. A pupil of Plato and a fellow-pupil of Aristotle. Wrote a famous"Enquiry into Plants," now accessible in a good Greek edition with English translation (see Bibliography). His book was never trans. lated into Arabic.
2. Pedanios Dioskurides of Anazarba (Asia Minor). Visited, as military surgeon to the Roman Army, many lands and composed, about 78 A. D, his celebrated "Materia Medica" in five books. We quote it after the newest and best edition, that of Wellmann (see Bibliography), adding to al-Ghâfiqî's quotation of the Book (aiter the name of Dioscurides) the number of each chapter in brackets. This book must have been early translated into Syriac. A bad Arabic translation was made in the first haif of the IXth. century A. D. by the Christian translator Stephen son of
 and improved upon by Hunain ibn Is-hâq 809 -

877 A. D. in Baghdad). He composed at the same time a Syriac version of the book. In 948, the Emperor Romanos of Byzantium sent a fine illustrated Greek copy of the work as a present to the Ruler of Cordova, the great Abd-ar-Rahman III عبد الرهri, and three years later the same Emperor sent the monk Nicholas to read and explain the book to the scholars at the Moorish court; he verified the names of the plants given in the Arabic translation and created a better edition, under the supervision of the Jewish physician and minister Hasdaï ben Shaprût. Several of the Hispano-Moorish physicians mentioned hereafter wrote commentaries on the Arabic version of the "Materia Medica" of Dioscurides. A few fine copies of Hunain's Arabic version of the book exist in European libraries: one, with numerous glosses, in Paris at the National Library, another, with fine illustrations including a miniature painting of a drug store, in Constantinople. (No. 3704 Aya Sofia Library ). ${ }^{1}$ No printed edition of Dioscurides’ Arabic " Drug-Book" is in existence.

Omitting the Roman Latin pharmacologies which remained unhnown to the Arabs, we pass on immediately to.
3. Galenos of Pergamos (Asia Minor; lived from about 129-200 A. D.). Well-known to Syrian and Arab sholars. His enormous literary output was translated into Syriac as far back as the VIth., and into Arabic mainly during the IXth. century A. D. Galen's book on Simple Drugs

[^0](De Simplicium Medicamentorum Temperamentis et Facultatibus ) is published in the Greek text in Kuehn's great edition of Galen's Works (vol. XI, p. 379-vol. XII, p. 377, Leipzig 1826). We quote in our translation the volume and page of this edition in brackets after the name of Galen. The "Simble Drugs" of Galen was translated into Syriac by Yûsuf al-Khûrî and by Ayyûb, two minor Christian translators of the IXth. century A. D. Hunain translated it again about 840 A. D. into Syriac, and later on into Arabic for his protector ' Ali b. Yahyâ , Secretary of the Caliph al-Mutawakkil. ${ }^{1}$ This translation exists in manuscript only ${ }^{2}$ in the libraries of Constantinople, the Escorial, Florence, Paris, London, etc. It has never been published in print.
4. Oribasius was the physician in ordinary to the Roman Emperor Julianus Apostata (361-3 A. D.). He wrote in Greek a medical encyclopedia in 70 books and ( about 390 A. D.) an extract (synopsis for his son Eustathius) of this too bulky work. ${ }^{3}$ This book contains also section on simple

[^1]drugs which is sometimes quoted by Arabic authors. The works of Oribasius were translated into Syriac and Arabic
 but nothing remains of these translations; they are all lost. Many fragments of Rufus of Ephesus (IInd. cent. A. D.) are preserved in his books.
5. Paul of Aegina (Paulus Aegineta) was a Greek physician in Alexandria shortly before the conquest of Egypt by the Arabs, 640-2-A. D.). He left a compendium of medicine in seven books, compiled from the works of Galen and others. The last of the seven books comprised simple drugs and was frequently quoted by Arabic writers on the knowledge of drugs. ${ }^{1}$ This work, too, was translated into Syriac and Arahic by the indefatigable Hunain, but only a fragment of the part on Poisons is left in Arabic MSS. which are extant in several libraries. ${ }^{2}$
6. Ahron al-Qiss al نرن الأسl (i. e. "Aaron the Priest") is the last Alexandrian physician of the Pre-islamic period. He must have been a contemporary of Paul of Aegina. He wrote a great "Medical Pandect" (kunnâsh ${ }^{3}$ fi't-tibb كاش فاش فا الطب) in 30 books. It is possible that he wrote it originally in Greek.

[^2]Anyhow, it was translated from Syriac into Arabic by Mâsargawaih (see the following no. 8) and formed one of the fundamental sources of Arabian Medicine.

## B. Islamic Period

We mention here a series of physicians who wrote on remedies and who were mostly quoted by al-Ghâfiqî. The less important names occurring in his text are explained in the notes.
7. Thiyâdruqu (probably a misspelling for Thâûdût تودgh i. e. Theodotu's) was one of the first Christian physicians under Islamic rule. He was, according to Arabic historians, the physician of Haggâg b. Yûsuf $\operatorname{inc}$ capable but cruel general of the Umayyad Calif ‘Abd al-Malik. Thiyâdûq died 708 A. D. and left several books, a medical Kunnâsh and a book on remedies and their substitutes (both of them lost). It was probably from the last-mentioned work that al-Ghâfiqî extracted his occasional quotations.
8. Mâsargawailh or Mâsargês Persian Jew ; seemed to have lived in Basra ('Irâq) during the first half of the Vllith cent. A. D., viz. under the Umayyad Caliphs. His works, now lost, were frequently quoted by later Arabic physicians; besides the translation of Ahron's "Pandect", he left a book on aliments and simple drugs. It is this latter book which is quoted by al-Ghàfiqî. Rhazes and Ibn al Baitâr call Mâsargawaih"The Jew" sogrol.
9. 'Isâ b. Hakam 5 of Damascus; lived in the second half of the VI!Ith. cent. A. D. He is quoted by alo

Ghâfiqî under the name of Masîh ča- (i.e. "Christ"), and the Mediaeval Latin translators sometimes call him "Christianellus". The main work which he left was a Kunnâsh on medicine containing a section on drugs. It is lost.
 of the first members of a celebrated family of Christian physicians who were in favour under the Abbassid Caliphs during three centuries. He lived at the end of the VIIIth cent A. D. and was one of the court - physicians to Hârûn ar - Rashîd. His Kunnâsh is quoted by Rhazes, al-Ghâfiqî̀ and others.

We come now to the IXth cent. A.D. during which flourished physicians of great repute.
 called in Latin translations Joannes filius Mesue or Janus Damascenus. A Christian physician, lived at the Persian Academy of Gondê-Shâpûr and in Baghdad as head of the
 of the IXth cent. A. D. He left several capable pupils among whom was Hunain ibn Is-hâq, and wrote many books, some of which are still extant in libraries. Among them were works on Aliments and on Poisons quoted by later authors.
 Persian converted to Islam ; flourished under the Califate of al Mutawakkil to whom he dedicated, in 850 A. D., his most important work, a medical compendium called Firdaws al -

Hikmaáa and al-Ghâfiqî go under the names of 'Alî b. Zain على بن زين or at-Tabari الطبـ،

## 13. Hunain b. Is-hâd

 Was a Christian contemporary of the above mentioned ; a prominent physician and at the same time the most celebrated translator of Greek medical works into Syriac and Arabic ${ }^{2}$. He certainly produced more that 150 translations and wrote more than 100 original books; the bulk of this enormous output is now lost. Arabic Pharmacology is indebted to Hunain for the translations of Dioscurides' "Materia Medica" and Galen's "Simple Drugs", as we stated above. He created many of the Arabic scientific terms and identified the Greek drug-names with the Arabic, Persian and Syriac ones of his time. These names passed immediately into the medical works of his contemporaries ${ }^{3}$. Moreover, Hunain made extracts from and commentaries on the pharmacological treatises which he had translated. Ibn Abî Usaibia a ${ }^{2}{ }^{2}$[^3]historian of Arabian physicians ${ }^{1}$, enumerates seven such tracts. None of them has reached us, but Hunain's name is frequently to be found in al-Gliâfiqî's pharmacology.

The following authors were all Christians:
 nephew and most prominent pupil, translated many medical works mostly of Galen, from his master's Syriac version into Arabic. He also left several books of his own, among them a work on simple drugs. This latter is now lost, but known by the quotations in Rhazes' and al-Ghâfiqî's writings.
 son and second-best pupil. Left, besides many translations of mediçal and philosophical works by Galen, Aristotle and Plato, several original books; and among others a treatise on simple drugs, equally lost.
16. 'Isâ b. 'Alî seems to have left a pharmacological treatise, which is only known by quotations.
17. 'Isâ b. Mâsa ${ }^{2}$ about whom Ibn Abî Usaibi'a (vol. 1 p. 184) gives but a very short account. He wrote a book on the virtues of aliments, which is lost.
18. Y ûhannâ b, Sarâbiyûn يو (Joannes filius Serapionis) of Damascus (?) was a Christian practitioner of the IXth. cent A. D. He composed a Kunnâsh on medicine which was well-known and often quoted on account of

[^4]its pharmacological information. It was early translated into Latin and printed for the first time in Venice 1479; eight more printed editions are known. But the Arabic original was lost a long time before, and the only copy seems to be one in the Aya Sofia Library at Constantinople (Istanbul).
 sician of Baghdad who emigrated to North Africa and entered
 of Qairawân (now Tunisia) who reigned 816-837 A. D. Later on Is-hâq lost the favour of the prince and was cruelly put to death. He left about a dozen books, among them one on simple drugs repeatedly quoted by al-Ghâfiqî.
 a celebrated Jewish physician in Qairawân, and pupil of the last mentioned. Was the author of several medical and philosophical books, some of which were translated into Latin and were famous in Europe down to the XVIIth cent. Is hâq's book "On Simple Remedies and Aliments" is quoted by al-Ghâfiqî̀ under the name of $a l$-Isrấl̂l̂t.

## 21. Qustâ b. Laqua

 was a Christian physician of the end of the IXth cent. and a prominent translator of Greek medical and philosophical works. Among his own works, a book on aliments is to be cited, some quotations of which were made by later authors.Before we leave the IXth cent. A. D., we have to cite four authors of works which are not strictly pharmacological.

## 22. Abû Yêsuef Yáqûb b. Is hâq al-Kindî im

 (d. after 870 A. D. in Baghdad), called "the Philosopher of the Arabs", was the first great Muslim scholar of universal erudition. He wrote on philosophical, theological, medical, musical, mathematical, astronomical and physical questions. He was quoted by al-Ghâfiqî on account of his writings on stones, metals and plants. It is not known whether his "Summary of Galen's Simple Drugs" survived him long.23. Al-Filôha ar-Rêmiyya ri. e. "The Greek Agriculture", is frequently quoted in al-Ghâfiqî's text. This is nothing else than an Arabic translation of one of the Hellenistic compilations on Agriculture and Husbandry. Several of them were translated at the end of the VIIIth cent. The work which is mentioned above seems to be that which was ascribed to a certain Qustûs wame who was frequently mistaken for the translator Qustâ b. Lûqâ. Finally it was proved by Ruska ${ }^{1}$ that this is a book by Cassianus Bassus, the Greek original of which is extant ${ }^{2}$.

## 24. Abô Bakr Almad ibn Waleshiyya il

 a (about 820 A. D.) was the ill-famed author of several writings which he alleged to be translations from very old Babylonian sources. Among them is "The Nabataean Agri-[^5] quoted by al-Ghâfiqî. Apart from fantastical etymological explanations, it contains many useful remarks on animals and plants.
25. Abû Hanifá al-Dînawarî (d. 895
A. D.), an Arabic philologist and scientist of Persian extraction. Was the author of a famous "Book on Plants" (Kitâb
 numerous quotations and by al-Ghâfiqî, became the main authority on plant-names for all the Arabic lexicographers. It was criticised by another philologist, 'Alî b. Hamza ملى بن who is equally quoted in al-Ghâfiqî's text under the name of al-Basri یת••l.

We now come to the Xth cent. A. D. in which the predominance of Christian physicians and translators ended in favour of Muslim scholars. The most prominent of them was;
26. Abû Bakr Muhammad b. Zakariyyâ ar-Râzî呂 known in Europe mostly under the latinized name of Rhazes. He was a Persian Muslim, lived in Rayy (Persia) from 865-925 ${ }^{1}$ and produced a most incredible number of works on Medicine, Natural Science, Logic, Metaphysics, Mathematics, Alchemy, Theology and Ethics. Ibn

[^6]Abî Usaibi‘a (I pp. 315-21) enumerates about 250 books of his writings. Among them are works as bulky as his great
 es on Therapeutics. Most of them are lost. This "Continens", as well as his great Pharmacology (Aqrâbâdhîn اقراباذين (1) ${ }^{1}$, his "Drug-book" and "Book on Substitutes for Drugs" were quoted by al-Ghâfiqî. It is probable that he sometimes copied from the many literary extracts given by ar - Râzî who was acquainted with the entire Arabic medical literature created until the end of the IXth cent. A. D. Most of the abovementioned works are lost.
27. 'Alî b. al -‘Ab̄bâs al-Magûsî Was also a Persian Muhammadan physician (d. 994 A. D.). He wrote a fine encyclopedia on the whole domain of medicine Kâmil as-Sinâ' $a$ áclinll (i. e. "A Complete Treatise on the Art") called later by medical men $a l$ - Malak $\hat{\imath}$ (-ul (i. e. "The Royal Book"). It is indeed an excellent, perhaps the best work on Medicine in Arabic. Happily it survived and has been published in print (in Cairo-Bûlâq 1294 A.H.); Al-Ghâfiqî sometimes quotes this work. Constantine the African translated the book into Latin, about 1070 A. D., under the name of Pantegni, ascribing it audaciously to himself. A later and better translation was completed by Stephen of Antioch in 1127, under the title "Liber Regius" (printed in Venice and Lyons 1523).

[^7] of Hîrow (North Persia). About 970 A. D.; wrote, for the Samanid Sultan Mansùr I., a pharmacological treatise in Persian; it is one of the first monuments of modern Persian in prose. It was never translated into Arabic and had no influence on Arabic medicine ; but it was very useful to us for the identification of Persian drug-names. Unhappily the original text ${ }^{1}$ was not at our disposal, but only Achundow's translation.
 was a Christian physician in Egypt, living in the first half of the Xth. cent. A.D. He is little known; the quotations under his name, Abû Guraig the Monk or Ibn Guraig, are probably from his main work, a now lost Kunnâsh on Medicine.
30. Muhammad! bo Ahmad at-Tamîmî of Jerusalem, was a physician in the service of Ya'qûb b. Killis , , the powerful vizier of the first Fatimid Califs in Egypt (second half of the Xth cent. A. D.). AlGhâfiqî's quotations refer to at-Tamîmî's drug-book alMurshid (i. e. "Guide to the Right Way"). Of this valuable book there only exist a few fragments which were analyzed by L. Leclerc.

[^8]31. Al-Bâlisisin اللـى was an almost unknown physician who lived in Egypt. He wrote a book at-Takmîl fíl-Adwiya al-Mufrada كتاب الـ.هميل في الادو ية المفردة (The Perfection on Simple Remedies") for Kâfûr كفور the Vizier of the Ikhshîd Dynasty in Egypt ( about 940 A. D. $)^{1}$. It was sometimes quoted by al-Ghâfiqî concerning Indian drugs.
 commonly called Ibn al-Gazzâr ابنالجزان (d. about 1000 A. D.) A Tunisian Muslim, was the most prominent pupil of Is-hâq al-Isrâ̂illî (see supra no. 20). He wrote about 25 books on Medicine, one of which, treating of simple remedies, K. alI'timâd reble which was lost, and one on Substitutes. Both were sometimes quoted by al-Ghâfiqî.

## 33. Abû Dâwûd Sulaimân b. Hassân أبوداود سليمن بن

 a distinguished Hispano-Moorish physician at the court of the Caliph Hishâm II. in Cordoba. There he wrote, in 982 A. D., an "Explanation of the Names of Remedies in the Book of Dioscurides" تغسـيـ أبماء الادو ية الافردة من كتاب ذيوسةريذس and a "Discourse on those Remedies Used in Medicine which were Omitted by Dioscurides in his Book" ${ }^{2}$. These books are now lost, but were frequently quoted by al-Ghâfiqî. Moreover, he wrote a short "History of Physicians and Philosophers" from which Ibn Abî Usaibi'a copied many passages.

1. Ibn Abî Usaibía II p. 8f.
2. See Ibn Abî Usaibi'a Il p. 48, line 10 foll
3. Aloû Bakr Hâmid ibn Samgûn أبو !! (d. 1001 A. D.).' A Muslim and Hispano-Moorish physician in the service of a Hâgib $\underset{\rightarrow}{ }$ (vizier) at Cordoba. His treatise on simple drugs is lost, but was quoted by al-Ghâfiqî.

## 34. Abu'l-Qâsim Khalaf b.al~'Abbâs az-Zahrâwi

lived, like the two last-mentioned physicians, at Cordoba in the second half of the Xth cent. A.D. He is famous for his book at-Tasrîf incell on Medicine, in 30 sections. It was early translated into Latin under the title "Liber Theoricae nec non Practicae Alzaharavii"; the surgical section (section XXX) is particularly famous as "Chirurgia Abulcasis" and was translated into Hebrew, Latin and French. The XXVIIth. section of the Tasrîf contains an alphabetical list of simple drugs, the XXVIIIth (known in Latin as "Liber Servitoris") their preparation, and the XXIXth their synonyms and substitutes. ${ }^{2}$ It was these three chapters which were quoted by al-Ghâfiqî and others. There exists no known complete MS. of the Arabic text of the Tasrîf; but we may hope that in the future a copy may be brought to light from the treasures in the libraries of Constrantinople.
30. Aboû 'Alî al-Husain b. 'Abdallâh known as Ibn Sîna 1 and lived from 980-1036 A. D. He is considered as "the

[^9] with Rhazes, the greatest physician and, with Averroes, the greatest philosopher of the Islamic world. We only mention here, among his enormous scientific output, the "Canon of Medicine" (al-Qânûn fi't-Tibb كماب القانون فی الطب) because it contains a section on simple drugs which is frequently quoted by al-Ghâfiqî. It forms in the Cairo printed edition of $1294 \mathrm{~A} . \mathrm{H}$. the second half of the first volume (vol. I, pp. 243-470). A fairly good Latin translation is to be found in the last of all the many printed Latin editions of the Canon ${ }^{1}$. We have used both these editions. The descriptions of the drugs are very short; Avicenna mainly laid stress on the enumeration of their healing properties.
37. Abu'r-Raihân Muhammad Ibn Ahmad alBîrûnî̀ (973-1048) a Muslim from Transoxania, contemporary with Avicenna, lived at the court of the Sultans of Ghazna (now Afghanistan). He was the most original and perhaps the greatest of all the Islamic scientists. He specialized in Mathematics, Chronology, Physics and Indian History; but was also a remarkable theologian and linguist. His Materia Medica Kitâb as-Saidana كاب الصيد (Book of Drugs) was only known in a Persian version ${ }^{2}$, until recently when Dr. Zeki Welidi, professor at the Uni-

[^10]versity of Istanbul (Constantinople) discovered an old and defective Arabic copy of this invaluable book in the Government Library at Brussa (Asia Minor.). At the request of Dr. Helmut Ritter, both the discoverer and the Turkish Mintister of Education gave us permission to have the MS. copied, although Z. W. himself intended publishing a part of it. We wish to offer here our hearty thanks for this generosity. This MS. allowed us to identify several Persian and Indian drugs; for al-Bîrûnî never omitted to give the synonyms of drugs in many languages, e.g. Syriac, Persian, Greek, Baluchi, Afghan, Sindi and Indian dialects. That is perhaps the reason why the text of his book early became corrupted and why it remained unknown to nearly all the writers on Pharmacology in the more Western parts of the Islamic world. It is doubtless one of the most original books on the subject, and was most useful for our commentary.
 al بi! (d. 1100 A. D.). Was a Christians physician converted to Islam. He composed a book on Medicine arranged in tables and a Pharmacology Minhâg al-Bayân نا Bibliography). Both works were very well known in the Islamic world and numerous copies exist in public and private libraries. The Minhâg is sometimes quoted by alGhâfiqî. We used it occasionally for our commentary.
> 39. Abu’l Hasan 'Alî ibn Ridwân أبو الهُن كلى بن رضوان
(about 980-1060 A. D.) was a distinguished Muslim medical practitioner in Cairo, a keen student of Greek medicine and philosophy, and known by numerous writings as well as by
 Baghdad. He left an alphabetical treatise "On Simple Drugs" which is lost to us, but quoted by al-Ghâfiqî and others.
40. Abu'l-Mutarrif 'Abd ar-Rahmân... ibn Wâfid al-Lakhmî أبر الاطر ف عx. . . . . بن وافد الالغثى (known in the Occident as Abenguefith was a Spanish Muslim who lived in Toledo about 998-1074 A. D. as a statesman and physician. He wrote, besides other medical books, a "Materia Medica" of which a Latin translation exists in MSS. under the title "De Medicamentis simplicibus" ${ }^{1}$. This book was frequently quoted by later authors and sometimes severely criticised by al - Ghâfiqî.
41. Abû ‘Ulbaidallâh b. ‘Abd al-Azîz al-Bakrî̀ (d. 1004), a famous Hispano-Arab geographer and phılologist. Lived mostly in Cordoba. He described many plants in his great geographical work K. alMasâlik wa'l-Mamâlik Ellally gront (Book of the Routes and Kingdoms). The quotations by al-Ghâfiqî, however, seem to have been extracted from his work "On Plants and Trees of Andalusia" ${ }^{2}$ which has not survived.

[^11]Here ends the list of the XIth cent. A. D. The following century was that of our author al-Ghâfiqî and his contemporaries. Naturally they are not mentioned by him, but they are nearly all quoted by Ibn al-Baitâr.
42. Mechithar of Her (Armenia) wrote, in 1187, a medical treatise "Consolation in Fevers" ${ }^{1}$ compiled from Arabic, Persian and Armenian sources. It was unknown to the Arabs, but was useful in our investigations on the names of plants and remedies.
 known as Maimonides (1135-1204 A. D.) was the celebrated Jewish philosopher, theologian and physician who lived from 1166 onwards in Cairo. Among his numerous writings, we mention here only his book "On Poisons and the Protection from Deadly Drugs". The intended edition of the Arabic text was delayed by the sudden death of the editor Dr. Hermann Kroner (d. 1930). An old Latin translation by Blasius of Montpellier exists in MSS. only; a modern French and a German version are both out of print ${ }^{2}$ and are extracts rather than translations.

1. The Armenian text was printed in Venice in 1832; an excellent German translation with commentary was published by E. Seidel, In 1908 (see Bibliography sub: Mechithar).
2. J. M. Rabbinovicz. Traité des poisons etc. Paris 1865. M. Steinschneider, Gifte und ihre Heilung, von Moses Maimonides (In Virchow's Archiv vol. 52, pp. 66-120).
3. Abû́Abdallâh Mơhammad... b. Idrîs لهو
 (1100-1166 A. D.) was a Muslim prince and a famous geographer who lived, during the last years of his life, as a refugee at the court of the Norman kings of Sicily. Besides his great geographical works, he wrote a pharmacology Kitâb al-Gâmi" كتاب الٍإن "The Universal Collection" which was often quoted by Ibn al-Baitâr. The original was lost, but half of it has recently been discovered by Dr. Helmut Ritter in a precious MS. at Constantinople (Fâtih no. 3610) ${ }^{1}$. The discoverer was kind enough to procure for us a photo. graphical copy which was utilized by us in the preparation of the commentary.
4. Abû Ga ${ }^{6}$ far Ahmad b. Muhammad al-Ghâfiqî أبو جـغف, (d. about 1160 A. D.). His work forms the subject-matter of the present publication We devote a special paragraph to him ; see below.
5. Abû Zakariyyâ' Yahyâ ... ibn al~'Awwâm .ابن الهوام, a Spanish Muslim of Sevilla (d. about 1200 A. D.) He wrote a book on agriculture (K.al-Filâha 42 likll 5 ) which was quoted by Ibn al-Baitâr and other. It was edited in Arabic and translated into French: ${ }^{2}$.

[^12]47. Amîn ad-Dawla Hibatallâh ... ilbn at-Talmîdh解 (1073-1164), a Christian practitioner in Baghdad, physician to the hospital and "Head of the Physicians" ; wrote several books on drugs and remedies. His two treatises on compound remedies were very famous in the Orient. He also composed extracts from the "Simple Drugs" of Galen, and notes to Ibn Gazla's (see no. 38) Minhâg 飞rus. But none of these literary productions has survived.

During the XIII th cent A.D. there was a regular reviv. al of pharmacolog'y by quite a number of medical men some of whom were very original in their conceptions while others were mere compilers. Among the former we have to mention in the first place:

 and an-Nabâti icill i. e. "The Botanist". He was born at Sevilla (ab. 1170 A. D.) made, on the occasion of his pilgrimage, a long journey through North Africa, Arabia Syria and Mesopotamia and died in 1239 after his return to his birth - place. He left a description of his journey arRihla الرlas which is unhappily lost, but known by numerous quotations from it by Ibn al-Baitâr, his pupil. In this work he described many plants in the most lucid manner, and spoke rationally about their species and varieties, so that he well deserved his surname. He also wrote on the names of simple drugs of Dioscurides and on the composition of remedies, But all his literary output is lost.

Another most original botanist of the XIIIth cent. was
49. Rashîd ad-Dîn Mansûr ... ibn as-Sûrî̀ $د$, , الدين ه:ـدور بنج السوىى who lived in Syria about 1177-1243 A. D. He travelled in the Near East accompanied by a painter, and not only described many unknown plants, but had them painted as fresh plants and as dry drugs. Unhappily, his book which must have been besides the old edition of Dioscurides' "Materia Medica" the first illustrated drug - book of the Arabs, is lost; and Ibn al-Baitâr does not even mention it.
50. Diyâ' ad-Dîn Abû Muhammad 'Abdallâh
 born at Malaga (Spain) at the end of the XIIth cent. A. D. travelled, like his master Abu'l - 'Abbâs in North Africa and the near East and died in 1248 A.D. at Damascus. Leclerc ${ }^{1}$ calls him 'the greatest botanist of the East". This is somewhat exaggerated, but he was the greatest and the most intelligent compiler of pharmacological works in the Arabic-writing world. We shall prove in the next chapter and by our edition itself, that he took al-Ghâfiqîs book as a basis for his work and added quotations from later authors with some remarks of his own. Anyhow, the editions af his great Gâmi" "Collection" on Remedies is invaluable, and hundreds of scholars have based their studies of Arabic botany and pharmacology on the printed edition of that book and on the

[^13]learned translation of the same by Lucien Leclerc ${ }^{1}$ He also wrote a book on the uses of remedies, al-Mughnî $\mathfrak{v}$, $k$ ll and another one on the errors of Ibn Gazla (see no. 38) in his Minhâg ervis.
51. Al-Malik al-Ashraf 'Umax Yûsuf ... Ibn
 of the Land of Yemen in South-Arabia, was a learned prince who composed several scientific works before he mounted on the throne. One of these books has survived; it is an alphabetical list of simple drugs followed by a useful list of synonyms. The noble author called it $K$. al Mu'tamad asaell 1 lor i. e. "the Trustworthy Book" (on Drugs) and stated that he extracted it from the books of Ibn al Baitâr and at-Tiflisî̂, whom we mention below.
52. Abư1-Fadl Hasan b. Mbrâhîm at-Tiflîsî i أبو الid is of uncertain period, but was probably a contemporary of Ibn al-Baitâr. He wrote a book
 the Bodleian Library at Oxford. (no.535). It has not, until now, been published in print. ${ }^{2}$

53 Abu'l-Munâ Dâwûd b. Ab̂̂ Nasr known as


[^14]Cairo in the XIIIth cent. A.D. and composed in 1295 a book on the composition of remedies divided into 25 chapters.
 ment of the Shop") had a wide-spread reputation and is still used by all the native bazaar druggists of the Near East. It survived in many MSS. and was printed five times since 1287 A. H. ( 1870 A. D.) in Cairo alone.
54. Abu'lrFarag Gregorius. called Barhebraeus (ابو الغرج غر يغوربو س ( (d. 1286). We shall speak about him and his work in chapter III of this Introduction.

Of the later centuries four authors only are to be mentioned, because their works survived; two of which works exist to-day in printed editions:
55. Dâwn̂d b. 'Umar aluAntâki داو بن عo, (d. 1599) lived in Cairo and left an alphabetical list of drugs and medical.terms known as Tadkhirat Ulî $a l$ - Albâb an $_{3}$ أولى الال!اب" "Memorandum for Intelligent People". It was published in print for the first time in Cairo in 1254 A.H. (1838 A.D.) and again nine times since. It is, like the Minhâg adDukkàn, much in favour with the Oriental druggists. We used the book frequently for our commentary.
56. Madyan b.'Abd ar-Rahmân al-Qawsûnî مـدين .نَ عهد الر هن القو سونى (XVIIth. cent. A. D.) Muslim physician in Cairo, published, in 1628 A.D., a medical dictionary Qamus al-Atibba’alalalal Arabic diçtionaries. A manuscript copy of this book exists
in the Egyptian Library in Cairo ( $\rho^{*}, \mathrm{~b}$ ) and we occasion. ally consulted it for our commentary.
57. 'Abd ar-Razzâq b. Muhammad al-Gazâïrî ex ex (XVIIIth. cent.) was a Muslim physician of Algiers. He travelled through North Africa and wrote a book on drugs and plants which was edited and translated by L. Leclerc ( see 'Abd ar-Razzâq, Kashf ar-Rumûz فer الر in our Bibliography). It is not very original, but provided in some very rare cases useful information for our commentary.
58. Qâsim b. Muhammad al Wazîr al Ghassânî
 Sultan Ahmad al-Mansûr and composed, in 1586, a book on herbs and drugs which contained 379 articles on simple drugs each of which was methodically described; it contained moreover, a remarkable attempt to classify the plants which is unique in Arabic literature. See H. P. J. Renaud, Un essai de classification botanique dans l'œuvre d'un médecin Marocain du XVIe siècle (Mémorial Henri Basset, Paris 1928, pp. 197 - 206).

## II. Ahmad al-Ghâfiqî and

## his Book on Simple Drugs.

The author of the book which forms the subject of the present publication is very little known. Ibn Abî Usaibi'a (vol. Il p. 52 ) devotes to him a short paragraph which reads as follows:
"He is Abû Ga'far Ahmad b. Muhammad b. as-Sayyid
 learned doctor who was counted among the prominent men of Andalusia. He was the most experienced of his contemporaries about the faculties, uses, properties and essential qualities of simple remedies, and in the knowledge of their names. His book on Simple Drugs is not equalled in excellence or in sense; he abridged the writings of Dioscurides and the great Galenos in succinct language yet (preserving nevertheless) their full meanings. After their text, he mentioned all that was new in the sayings of later scholars concerning simple drugs, and what everyone of them had collected and known afterwards; thus his book became a collection of the sayings of those who excelled in (the knowledge of) simple drugs, and an encyclopedia to which one had to refer in case of necessity for verification. Books written by al-Ghâfiqî : Book of Simple Drugs (كتاب الأدو :المردة )".

This is all that we known about our author. Ibn Abî Usaibi'a places him in the Vlth cent. A.H. (XIIth cent. A.D.) and Wüstenfeld ${ }^{1}$ makes him die in 1164 A.D. We do not know the sources from which he extracted his information. As to his surname ( nisba $a_{m i n}$ ) it is probably derived from his birthplace Ghâfiq which was, according to Yâqût's Geographical Dictionary ${ }^{2}$, a small fortress (hisn نač) near Cordoba. Professor Miguel Asìn Palacios, the eminent Arabicist of Madrid was kind enough to inform us that he thought the name of Ghâfiq was still etant in the village of Guijo near Pedroche in the district of Cordoba.

Another scholar of the same place seems to have been a contemporary and perhaps a relative of our author. This was Muhammad b. Qassûm b. Aslam al - Ghâfiqî̀ ن̣و وam:
 al-Murshid fi"l Kuhl الرشد فـ الـک mology" ${ }^{3}$.

Ahmad al-Ghâfiqi's book is lost, but large parts of it are preserved in more than 200 quotations given by Ibn al-Baitâr. Therefore, Leclerc (II 79) was able to recögnise the originality and the great value of the former's work. At the moment

[^15]when the abridged edition of al-Ghâfiqî's pharmacology came in our hands we stated that Ibn al-Baitâr copied not only the above-mentioned quotations from it, but that he had copied the whole book, and that his sole merit was to have added many quotations from later authors ( e. g. al-Idrîsî and Abu'I'Abbâs an $\cdot$ Nabâtî) and, only occasionally, his own experiences or opinions. This was so evident that we were able to make use of Ibn al-Baitâr's text as a third witness in places where our two MSS. of al-Ghâfiqî were doubtful or corrupted. It is now certain that Ibn al-Baitâr's pharmacology is nothing more that al-Ghâfiqî's book with some enlargements and commentaries. This would be still more evident if we had the original book of the latter. Consequently, Leclerc's judgment (II, p. 225) on Ibn al-Baitâr that he was "the greatest botanist in the Orient", has to be revised. Indeed he was nothing more than a very diligent and learned compiler. Ibn Abî Usaibi'a wrote moreover, (vol. II, p. 133 line 14) that Ibn al-Baitâr always took with him, on his voyages the "Materia Medica" of Dioscurides and Galen and the drugbook of Ahmed al-Ghâfiqî.

Moritz Steinshneider, the famous bibliographer of the Arabic scientists, had extracted from a Latin translation of al-Ghâfiqî's abridged Pharmacology (existing in three different MSS. in Munich, Bâle and Berne) all the names of simple drugs ( see Bibliography sub Steinschn.), and identified them as far as he could. We have sometimes referred to this publication

We have no need to insist on the merits of al-Ghâfiqîs book. They are well-known by Leclerc's French translation of lbn al-Baitâr's text and will become still more evident, we hope, by our English translation and commentary. Unfortunately, as we have already said, the original text is lost, and only an abridged copy is extant; this was made by a prominent scholar, Barhebraeus ${ }^{1}$.

1. Wüstenfeld, (p. 98) and Brockelmann "Geschichte der" arabishen Literatur," 1898; vol. I, p. 488), relate that in the BodJeian Library at Oxford (no. 632) thére is another abridged MS. of the book, ascribed to a certain Ahmed b. 'Alî al-Gumhurî̀ . We ordered a photographic copy of the first pages of this work and can state that it is an anonymous medical treatise which has nothing whatever to do with alGhâfiqî's Pharmacology.

## III. Barhebraeus and the Abridged Edition of the Treatise on Pharmacology.

Gregorius, called Abu'l - Farag Ibn al - 'Ibrî أبو الفرج بن المre "Son of the Hebrew", Iatinized Barhebraeus, a Christian, was born in Malâtiya ablo (Asia Minor) and lived from 1226 to 1286 A. D. At first he studied Medecine, but later became a priest and reached the second highest dignity in the Jacobite
 of the Patriarch himself. His district was "the East" viz. the formerly Persian lands between the Mediterranean and the Caspian sea. Continuously travelling, and that during the dangerous period of the great Mongol invasions, he was nevertheless able to produce an incredibly rich literary output. A great many of his productions were compilations. He wrote about History, Theology, Philosophy, Grammar, Chronology and Medecine, and also composed poems and narratives. The best known of his works is the Chronicon Syriacum, the first part of which he translated into Arabic ${ }^{2}$; the second and third parts contain a valuable ecclesiastical history. He translated into Syriac several philosophic and medical works by Ibn Sînâ, and commented on the medical treatises of

1. From Syriac Maphreyânâ, ๙xš" $\mathbf{E}$ : i. e. "the frugiferous" because he was a kind of superior mission-bishop.
2. Mukhtusar Ta'rîkh ad-Duwal Beyrouth 1890.

Hunain b. Is-hâq and others; also on some Greek works of Hippocrates and Galen.

He was undoubtedly particularly interested in pharmacology; for he condensed the Materia Medica of Dioscurides and the drug - book of our Ahmed al-Ghâfiqî ${ }^{1}$. It was known that a copy of this latter work existed in the Grand-Ducal Library at Gotha (Germany) under the no. Halep 177. Meyerhof was able to see this MS. in 1928, and found that its text was so corrupt that it would have been useless for publication. But in the same year he was informed by the Egyptologist Dr. Keimer, that Ahmed Taimûr Pacha, the greatly lamented Writer, beloved friend of scholars and great collector of Arabic manuscripts ${ }^{2}$, had acquired for his library an old MS. on simple drugs. We very soon saw that this was a fine old copy of the pharmacology of al-Ghâfiqî in its abridged form by Barhebraeus. With his habitual generosity, Taimûr Pacha gave us permission to procure a photocopy of it. It is an excellent. MS. copied by the hand of a scribe in 1285 A.D. one year before the death of Barhebraeus. It is quite possible that it was transcribed directly from the original MS. of BH himself. The text of this MS. is very good, and the many Greek terms are well transliterated into Arabic.

[^16]As to the character of the "Selection" (muntakhab بin.) made by Barhebraeus out of the pharmacology of al-Ghâfiqî, we find that it was judiciously done as might be expected from a trained scholar like BH . He left out from the Greek quotations many names which were useless to Arabic physicians, and suppressed several passages concerning Spanish or Latin names of drugs of no interest to Eastern scholars. He also left out the numerous repetitions found in the carefully collected quotations of old authors. However, Barhebraeus, as he stated in his fore-word, did not altogether suppress the parts about the therapeutic action of the drugs, and, according to his own words, the book became more readable and very instructive.

## IV. The Manuscripts.

The Cairo MS., 'T' = (Taimûr Pacha), is a papermanuscript in an excellent state of preservation. It measures $23 \times 15.5 \mathrm{~cm}$, and the written part of the pages measures $19.5 \times 11.6 \mathrm{~cm}$. There are 140 pages of 28 lines each written in compressed Naskhî-hand, doubtiess that of a scholar. Diacritical points are frequently missing, but the MS. is nevertheless very legible. The date of the copy given at the end of the MS. is "end of Rabî 'Akhar 684 A. H.", i. e. beginning of July 1285 A. D. The name of the copyist is unfortunately missing; he was probably a Muslim as otherwise he would have added a Christian date. Although this MS. was copied during the life-time of the author Barhebraeus, it already shows a certain number of copyists' blunders, and, in several places, serious disorder. In one case the half of a paragraph concerning a plant has been transferred several pages backwards and added to another paragraph with which it has no connection. The printed Bulâq edition of Ibn alBaitâr and an old MS. of the same in the possession of Dr Meyerhof sometimes helped us to restore the original text. On the contrary, very frequently the MS. 'T' gave a better reading than the edition of Ibn al-Baitâr and helped to improve on the original text of the latter.

The Gotha MS. (Gi) measures $21.5 \times 15.5 \mathrm{~cm}$, has 358 folios or 715 pages of 15 lines each and is written in a
clear and beautiful Naskhi-hand of modern type, probably by a professional copyist. He gives the date and his name at the end of his MS. thus: "Month of Shubât ش (February)
 by the name of al-Munir will". Another hand added the Muhammadan date 1138 A.H., corresponding to about 1735 A.D.

This MS. gives a text which is absolutely dependent on the text of ' T '; it repeats all the errors, misspellings and omissions thereof, and must have been copied directly from it or from another copy based upon it. It is, moreover. the work of a very ignorant scribe, the number of errors being enormous. This copy helped us on rare occasions to elucidate the reading of a faintly written word or to correct an error in ' T '.

Both MSS., ' $T$ ' and ' $G$ ', must have existed for centuries in Egypt. ' $G$ ' was written probably by a Syrian Christian, ' $T$ ' belonged to a Coptic religious Institution long before it was sold to Taimûr Pasha.

## V. Some Remarks on Text,

## Translation and Commentary.

We have based our edition of the Arabic text entirely on the good MS. ' $T$ '. The MS. ' $G$ ' is so full of errors that their enumeration would have filled half of every page of the printed text. In order to show how great is the difference between ' $T$ ' and ' $G$ ', we inserted in the textnotes of the authors' foreword all the divergences existing between the two texts. Further on we did not take any notice of the numerous and often stupid errors in ' $G$ ' and follow'ed only the text of ' $T$ ' of which we gave the pagination. ' $G$ ' was only used for comparison, particularly in the spelling of Greek names. Sometimes our text was corrected by a better reading from the edition of Ibn al-Baitâr.

In the translation, we took pains to translate as literally as possible. This resulted in a not very elegant English phraseology. We have to apologize to English-speaking readers for such a result; for in scientific works the beauty of the language has to be sacrificed to the precision of the facts and any attempt to make our English of a higher standard might have affected the exactitude of the translation.

We tried, however to give the commentary in the way adopted by Leclerc and Berendes (see Bibliography), benefiting from the more modern publications which were not at their disposal, and particularly from the studies of

Oriental plants by Schweinfurth, Sickenberger, Ascherson and others. Moreover, we collated copies of unique MSS. of al - Idrîsî and al - Birûnî recently discovered ( see Bibliography ) as well as E. Seidel's learned notes in his edition of Mechithar. For the knowledge of names of animals and min. erals the new dictionary by Dr. Mohammed Sharaf ( Cairo 1929 ) was very useful to us, and for plants that of Ahmed Issa Bey which was published when we had nearly finished the first par of our edition. It is by far the best record of Arabic plant-names which has ever been written, and will be of invaluable help in our further investigations. The Synonyms in eight ancient and modern languages will, we hope, be welcome to linguists.

An edition like the present one requires an enormous amount of time. The text and translation are not difficult, but to produce a good commentary several hours and even days are sometimes necessary for a single paragraph: the literature is so vast. Our professional duties occupying us both during the day time, we find that we shall need at least two years or more for the present publication, at the end of which we hope to add several carefully prepared indices in different languages. The reader may be reminded that all the great editions of pharmacological works recorded in the Bibliography required several years before their appearance.

We hope that the present edition will not only give a historical text of great importance, and at the same time the first English translation with commentary of an Arabic
pharmacology, but will also help to fix actual botanical and pharmacological terms in Arabic and to revise old ones.

Last, but not least, we wish to thank from the depth of our heart the members of the Comittee of Publications of the University with H. E. Aly Pasha Ibrahim at their head for their combined authority in allowing the publication of the book at the expense of the University. We aiso thank Mrs. Devonshire and Mr. Walt. Taylor, lecturer at the Egyptian University, for many suggestions and corrections and for the interest they took in the work. May they earn the gratitude of scientific scholars all over the world.

## VI. List of Abbreviations

## and Bibliography

| ABD AR-RAZZÂQ | Kachef er - Roumoûz (Révélation des énigmes) d'Abd er-Rezzaq ed-Djezaïry . . . trad. par Lucien Leclerc. Paris 1874. |
| :---: | :---: |
| ABÛ MANSÛR | Die pharmakologischen Grundsätze des Abu Mansur Muwaffak bin Ali Harawi . . . Übersetzt von Abdul Chalig Achundow (Histor. Studien aus dem Pharmakolog. Inst. d. Kaiserl. Universitât Dorpat) Halle 1893 pp. 137-414. |
| ADAMS | The seven Books of Paulus Aegineta Transl. from the Greek etc. . . . . . by Francis Adams. 3 vols London 1844-7. |
| 'AVNI | Dictionnaire des sciences médicales <br>  ج. ج , Constantinople 1290 A. H. |
| BERENDES | Des Pedanios Dioskurides . . . . Arzneimittellehre in 5 Büchern. Uebersetzt von Prof. Dr. J. Berendes. Stuttgart 1902. |
| BERGGREN | Guide français-arabe vulgaire ... par J. Berggren. Upsal 1844. |


| BH | Barhebraeus ( Gregorius Abu'l - Farag <br> b. al-'Ibrî ). |
| :---: | :---: |
| BIR $\hat{U}$ NT | The book on Drugs ( by Abu'r-Raihân al - Bîrûnî; MS. in the Government Library at Brussa (Turkey). |
| BLATTER | Flora Arabica (in Records of the Botanical Survey of India, Vol. VIII nos. 1-3) by Ethelbert Blatter. Calcutta 1919-21. |
| BOTICA | La oficina de farmacia (Dorvault) <br> ... por J. de Pontes y Rosales y <br> R. Casas Batista. Madrid 1872-78. |
| BROCKELMANN | Lexicon Syriacum auctore Carolo Brockelmann; editio secunda. Halis Saxonum 1928. |
| BUDGE | Syrian Anatomy, Pathology and Therapeutics or " The Book of Medicines" . . ed. by E. A. Wallis Budge. 2 vols Oxiord etc. 1913 |
| COPT. MED. PAP. | Un papyrus médical copte publ. et trad. par Emile Chassinat (Mém. de l'Inst. Fr. d'Arch. Or. du Caire t. XXXII) Le Caire 1921. |
| DAMIR ${ }^{\text {I }}$ | Zoology 2 . 2 vols, Bûlâq 1275 A. H. |
| DÂWÛD | Pharmacology -جal لil |

Slb; الا 1282 A. H. ( and many later editions ).
DIOSC.
DOZY
DRAGEND.

DUCROS

DYMOCK

FIGARI

FORSKAL

FREYTAG Georgii Wilhelmi Freytagii Lexicon arabico - latinum. 4 vols, Halae 1830 37.

| GALEN | Claudii Galeni opera omnia, ed. Carolus Gottlob Kuehn. 22 vols, Lipsiae 1821-33. |
| :---: | :---: |
| Gh | Abû Ga'far Ahmad b. Muhammad al - Ghâfiqî. |
| G | Gotha manuscript of his pharmacology ( see Introduction chap. IV). |
| HANDJERI | Dictionnaire Français : Arabe - Persan et Turc. Par le Prince Alexandre Handjéri. Moscou 1840-1, 3 vols. |
| HARAWİ | A Persian - Arabic medical dictionary, lithographed in Dihlî (Delhi, India) <br>  |
| HOBSON - JOBSON | A Glossary of colloquial Anglo Indian words etc. By Henry Yule and A. C. Burnell. New edition London 1903. |
| HONIGB. | Thirty-five years in the East . . together with an original Materia Medica . . . by John Martin Honig berger. 2 vols. London 1852. |
| IB | Ibn al-Baitâr, Arabic edition of his <br>  4 vols. Bulaq 1291 A.H. |

IBN AL-'AWWAM Le livre de l'agriculture d'Ibn-al-

Awwam ... . traduit de l'arabe par J. J. Clément-Mullet. 3 vols, Paris 1864-66.

IBN GAZLA

IDRÎSİ

ISSA

JAYACAR

KEIMER

LANE

LECL.

LISÂN

His Pharmacology : •هُ (الانسان لــحي بن عيسى بن جزله (three MSS. in the possession of M. Meyerhof.
His Pharmacology : كاب المإم أشثات الن.:ات للشريغ الادريــى MS. No. 3610 of Fatih-Library in Istanbul (Constantinople).
Dictionnaire des noms des plantes en latin, français, anglais et arabe, par Ahmed Issa Bey. Le Caire 1930.

Ad - Damiri'; Hayât al - Hayawân (A Zoological Lexicon) translated from the Arabic by A. S. G. Jayacar. 2 vols, London \& Bombay 1906-8.
Ludwig Keimer, Die Gartenpflanzen im alten Aegypten. vol. I, Hamburg \& Berlin 1924.
An Arabic-English Lexicon . . . by Edward William Lane. 8 vols and Supplement, London 1863-93.

Traité des Simples par Ibn el - Beïthar, traduit. par Lucien Leclerc 3 vols, Paris 1877-83.
The great Arabic dictionary : اسان الهرب

|  | 居 20 vols, Bûlâq 1304 A. H. |
| :---: | :---: |
| LOEW | Immanuel Loew, Die Flora der Juden. 3 vols (until May 1932), Wien and Leipzig 1924-31. |
| LORET | La flore pharaonique, par Victor Loret. |
| - | Paris 1892. |
| LUERSSEN | Medicinisch-pharmaceutische Botanik etc. von Dr. Chr. Luerssen. 2 vols, Leipzig 1879-82. |
| MADYAN | Arabic medical dictionary قاموس الأطباء (لمدن MS. in the Egyptian Library in Cairo (No. 30 Tibb ). |
| MEYER | Geschichte der Botanik von Ernst H. <br> F. Meyer. 4 vols. Königsberg 1854-7. |
| MECHITHAR | Mechithar's des Meisterarztes aus Her "Trost bei Fiebern", uebersetzt und erläutert von Ernst Seidel. Leipzig 1908. |
| MUKHASSAS |  17 vols, Bûlâq 1321 A. H. |
| MUSCHLER | A Manual Flora of Egypt, by Reno Muschler. 2 vols, Berlin 1912. |
| MU'TAMAD | Pharmacology of 'Umar b. Yûsuf |

 Cairo 1327 A. H.

| PLINY | C. Plini Secundi naturalis historiae |
| :---: | :---: |
|  | libri XXXVII. Many editions; we used that of Ludovicus Janus, Lipsiae 1870. |
| RAMIS | Bestimmungstabellen zur Flora yon |
|  | Aegypten, von Dr. Aly Ibrahim Ramis. Jena 1929. |
| RUSKA | Das Steinbuch des Aristoteles . . . . ed. Julius Ruska. Heidelberg 1912. |
| SAMY | Dictionnaire francais - turc illustré (3e édition ) par Ch. Samy-Bey Fraschery. Constantinople 1901. |
| SCHLIMMER | Terminologie médico-pharmaceutique etc. française-persane . . . . par Joh. L. Schlimmer (Lithographie in - folio) Theheran 1874. |
| SCHWEINFURTH | Arabische Pflanzennamen aus Aegypten, Algerien und Jemen, von G. Schweinfurth. Berlin 1912. |
| SEIDEL | Die Medizin im Kitâb Mafâtîh al'Ulûm, von Ernst Seidel. Sitzungsberichte der Physik.-Mediz. Sozietät Erlangen vol. 47 ( 1915 ) p. 1-79. |
| SERAPION | Les noms arabes dans Sérapion ou Liber de simplici medicina, par $P$. Guiges. Beyrouth - Paris 1905. |

SHAKESPEAR Dictionary Hindustani and English... by John Shakespear. London 1834.

SICKENB. PLANTES. Ernest Sickenberger,LesPlantes égyptiennes d'Ibn al-Beithar. Le Caire 1890.
:SICKENB. ARZN. Die einfachen Arzneistoffe der Araber im 13. Jahrhunderte christl. Zeitr. von E. Sickenberger (Pharmaceutische Post 1891-3, als Sonderabdruck erschienen ) Wien 1893.

STEINGASS

STEINSCHN.

T
Taimûr Pasha's manuscript of alGhâfiqî's Pharmacology; ( see Introduction chapter IV ).

THEOPHR.

TSCHIRCH
Theophrastus, Inquiry into Plants, ed. Sir Arthur Hort (Loeb Class. Library no. 79). 2 vols, London 8 New York. 1916.

Handbuch der Pharmakognosie von A. Tschirch. 6 vols, Leipzig 1906-27.

| VULLERS | Joannis Augusti Vullers Lexicon |
| :---: | :---: |
|  | Persico-Latinum etymologicum. 4 vols. and Supplement, Bonnae ad Rh. 1855-67. |
| WIEDEMANN | Beiträge zur Geschichte der Naturwissenschaften von Eilhard Wiedemann. 79 fascicules, Erlangen 1904-28. |
| YÂQUT | Jacut's Geographisches Wörterbuch (Arabic text of the greatest Creographical Dictionary of the Muslim Period ). Ed. Ferdinand Wüstenfeld, Leipzig ( 6 vols ) 1866-70. |

## 卫A卫T II

## TRANSLATION \& COMMENTARY

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# [Fol. 1 r.] Selection ${ }^{1}$ from (the Book of) al - Ghâfiqî on Simple Remedies, 

Selected by the Unique in (his) Time, the Most Learned Man of the Period, the Holy Father, the Pious, the Exponent of Truth and the Revealer of the Minute ( mysteries ),

Gregorius, Vicar (Mafrayân) of the Patriarch of the East,may God augment his Grace and prolong (the days of) his. Jurisdiction! 2

[^17]
## [Fol. 1 v.] In the Name of God the Merciful the Compassionate!

The following is a resumé of the meaning of what Abû Ga'far Ahmad ibn Muhammad ibn Ahmad ibn Khulaid alGhâfiqî, may God have mercy on him, said.

The book which I had begun to prepare was originally intended as a memorandum for myself. I did not wish to publish it for two reasons: firstly, because I knew of the public's imperfect knowledge of the difference between the authentic and the non-authentic works; secondly in order not to expose myself to the censure of critics, covetous of those who possess intelligence and perspicacity. When one of my friends, however, encouraged me in its copying, I wrote a preface to express its purpose ${ }^{1}$ and the method of its production, and this was also in two parts : first a collation of the sayings of the Ancients with that of the Moderns on this subject, and second a commentary on the unknown names.

Various people had tried to work on these two lines; but I did not find among them anyone who attempted to verify the exactitude of his own work; on the contrary, most of them repeated the mistakes of their predecessors. Thus, some of them made faults in collating the sayings of others, as did Ibn Wâfid when he collated the text of Dioscurides with that of Galen on two different remedies and thought

[^18]they were the same; and others did not say the truth, as was the case with Ibn Sîna when he ascribed to them words which they never said. Generally speaking, there was not one of all those who wrote on these two lines who did not commit great mistakes, from ar-Râzi ( Rhazes), who was the first of themin, down to our time. ${ }^{1}$

With the help of the Almighty I took up the questio. as carefully as possible, trying to avoid mistakes and without seeking self-glory. I made a complete record of all the remedies that were mentioned by Dioscurides and Galen and added to their sayings those of their successors, as correctly as possible. I drew attention to faulty readings of the names occurring, and I did not include the authority of those who could not verify what they mentioned but had it merely copied. Moreover, l added to it some herbs which are emplôyed by my countrymen at present ${ }^{2}$ and which were not mentioned by any of our predecessors.

The discussion on aliments, perfumes and the divisions of the faculties of remedies, I intentionally omitted, as previous authors had already treated it lengthily enough. My intention was to discuss what was missing and had not been studied by anyone before me, viz. the plants among the remedies, their selection and the distinction between the good

[^19]2. See Introduction $p$.
and the bad. If our physicians thought that this ought to interest the druggist rather than the physician, their idea would have been right if they did not prepare the medicines themselves. How shameful it was for any of them to ask for simple remedies and to get such as he did not know were the required drugs or not, and to administer them to his patients, blindly following the opinion of botanists and herborists, people who neither read books nor knew about remedies except very little!

Sayeth the slave who is in need of the mercy of God the Very High ${ }^{1}$ Gregorius the Vicar:

Therefore I restricted myself in this abridged edition to the enameration of the remedies, their selection, and only the better known of their names and faculties, omitting whatever may be prepared therefrom of potions, oils, etc. . Thus it came out easily in its vocabulary, and though small in (fol. 2x.) size, yet useful in its subject and perfect in its discussion.

Let us now begin with the task we have set for ourselves. The first is the letter Alif ${ }^{2}$.

[^20]
## LETTER ALIF.

1. $\mathbf{A}, \hat{A} R \hat{U} \hat{N}$ i, Cabaret (Asarum europaeum L) (Lecl. no. 61 ).

Diosc. I. (10): it is called wild-nard; its leaves resemble ivy-leaves, but are smaller and more round. Its flowers, situated between the leaves near the root, are purplecoloured and resemble the flowers of the henbane (Hyos cyamus). Its seeds are like those of the cartham. It has many roots bearing thin knots and curved like the roots of dog's grass (agrostis), but much thinner; they are fragrant, heat and prick the tongue. It grows on richly wooded mountains. ${ }^{1}$

Galen VI (ed. Kuehn XI, 840): Its useful part is the root, and its strength is like that of sweet flag (acorus), even stronger.

Ibn Samgûn: The best kinds are the Chinese and the Spanish, while the best kind of the Spanish one is that which is brought from Algeciras.

The Author: The original asarum is that which comes from Greece. That which is used in Spain is not the

[^21]real asarum although it looks like it-especially that from Algeciras - and though it is believed that its faculties are the same. It is a plant which has a slender and round stem, about a cubit high and with knots wide spread, remote one from another. Its leaves are like those of the small centaury, green with a shade of black. At its upper part is a tuft of twigs touching one another, on whose ends are small buds of the size of grains of wheat; their interior contains white downy hairs. From its roots - smaller than the little finger - thin twigs of the length of the tip of a finger, branch off, of fragrant smell and flavour. ${ }^{1}$

There is another kind of asarum which is of bitter taste and disagreable odour. Many people take it for one kind of the long birth-wort (zarâmand digl: $;$, aristolochia). It is a plant which has smaller and harder leaves than those of the ivy, is blackish or greyish, and has thin shoots by means of which it holds fast to near objects and climbs up trees. It has purple-coloured flowers like those of aristolochia, and produces fruits like those of the caper tree (capparis) from which come seeds resembling those of the marshmallow ( althaea ). It has many knotty roots creeping under the earth, of grey or yellow - blackish colour, strong odour and bitter taste, burning the tongue and mouth a little. It is particularly

[^22]this kind which is a useful antidote for poisons and bites of all kinds of snakes, its fruit, seeds and roots being used.

Another kind has leaves smaller than those of aristolochia and small shoots which spread on the ground. Its flower and fruit are like those which we have described above, only somewhat smaller, while its roots are soft, without knots, of yellow colour and spring up from a single root like the black hellebore. It is of bitter taste and fragrant smell, like that of (the real) asarum. It grows mostly in white earth on the mountains. Some believe it to be a kind of swallow - wort


Diosc. I: It is diuretic and an emmanagogue; seven drachms ${ }^{1}$ of it with honey-water purge like white hellebore. It is used in aromatic mixtures.

## COMMENTARY.

IB quotes this chapter of Diosc. in its entirety (I, 23-24; Lecl. I p. 56-58), adding short extracts from Ibn Sînâ, ar-Râzî, al-Idrîsî, and some unknown authors. Ibn Samgûn the HispanoMoorish physician's statement that the best asarum comes from China is very interesting, and is confirmed by Idrîs $\hat{\imath}$
 inall. There exist, indeed, two great Japanese kinds, Asarum Sieboldii Miq. and A. albivenium Rieg., while there are still others in the Far East.

[^23]lbn Sînâ (ed. Bulâq I, p. 248) attributes to asarum a diversity of medical actions in dropsy, sciatica, lumbago, scars of the cornea, diseases of the liver, jaundice etc. It is the aristolochiacea Asarum europaeum L. . The Rhizoma asari is still official in several pharmacopoeas. Its active principle is asarin, an emetic; it also contains an essential oil.

Asarum was a much esteemed emetic before the intro duction of Ipeca. According to Achundow (Abû Mansûr p. 340), in Persia it is always adulterated with a kind of Valeriana which haș no emetic action.

Synonyms: Gr.: ä̈oaeor (asaron); Arabic: âsârun
 nukhail ( or nakhâl) al-Hind دid خíl (Dâwûd); Turk. : tshobân dudugît (i. e. shepherd’s flute) ('Avni); Pers. : esârân shâm̂̂t اسارون شاركا; Enge.: asarabacca, cabaret; Fr.: asaret cabaret; Germ. : Haselwurz. See Loew I, p. 223.
2. IDHKHIR , إ , Aromatic Rush (Andropogon Schoenanthus L.) (Lecl. no. 29).

Abû Hanîfa: It has a root buried in the ground, thin twigs and a pungent odour. It is like the rush (asl $\mathrm{j}-1)^{1}$, the
 Post ), but wider and of smaller internodal spaces; and has a fruit like the blossoms (brushes?) of the reed except that they are thinner and smaller. It is said that when you fix an

[^24]isolated plant with your eye and look well at it, you will find that there are others and that sometimes the whole ground is covered with them. It grows in sandy places and river-beds, and when it dries it becomes white.

Ibn 'Imrân' ${ }^{1}$ : That which grows in the Higâz (Western Arabia) is called haram $\hat{\imath}$, > , and is of superior quality, and that which grows in Qafsa ${ }^{2}$. and on the coast of Africa is inferior.

Diosc. I (17) : $\sum_{\text {xioivos (schoinos) or aromatic rush. }}^{\text {a }}$ That which comes from Nabataea is the best, and after it comes the so-called Babylonian which some people call (Fol. 2 v.) veviuls (teuchitis). The variety from Libya is inferior, and the best of all is the fresh one with many red flowers, of a roseal fragrance and the colour of which, when split up, is purple.

Galen VIII ( XI, 136) : Its flower is a little heating, a little astringent and diuretic. When applied in compresses it is an emmenagogue and useful for the swellings (tumours) of the liver and the stomach. Its root is more astringent and its flower more heating.

## COMMENTARY.

iB quotes the same authors and others. He criticizes ar-Râzî and Ibn Sînâ. Idhkhir is the graminea Andropogon

[^25](Cymbopogon) schoenanthus L. and A. laniger.Desf. Many oriental names of the plant are mentioned by Dymock (III, 562-4.) Herbx Schaenanthi or Junci odorati provided by Andropogon laniger was not long ago a medicinal drug. The root was known under the name of Iwarancusa. In Arabia the powdered plant is known under the name ghasâl $ل$ gex and is still in use as a perfume for the bath. In Egypt to-day, it is a well-known bazaar drug ( Ducros no. 1).

Synonyms: Gr: ayoiros (schoinos); Lat; juncus odoratus (Scribonius ,Largus); Ar.: idhkhir , خ̇ذ, khilâl ma'mun̂̂̀
 (Idrîsî p. 19, 1.18), hâlfầ Makka áo slst- (Meccan grass) Dâwûd,
 gôr-giyâh otr, 5 , i. e. wild asses' hay, (Schlimmer p. 36 ); Turk.:
 Issa p. 16. Engl.: lemon-grass, sweet rush, camel's hay; Fr. : jonc odorant, citronelle; Germ. : Bartgras, Kamelheu.
3. USHNA أی: Fragrant (Tree-) Moss. Odorant Lichen. Alectoria usnesides Ach. (Lecl. no. 85 ).
 ( shaib al - 'aĝ̂z ) and grows on oaks and other kinds of trees.

Diosc. I: Roinn (Bryon) or tree-moss. It grows on the

[^26]larch-1, walnut-, oak-and olive-trees. The best is that which grows on larch - trees on mountains; after it comes that which is found on walnut-trees. The best kind is the one which has a fragrant smell and is white; the blackish in colour is inferior.

Galen Vl. ( XI, 855): It is moderately astringent and possesses resolvent and remollient properties, especially thie kind which grows on pine - trees.

## COMMENTARY.

The name ushna is applied in the Orient to many kinds of odoriferous lichens, mostly of the species of the Usneeae ( which name is derived from the Arabic one ). In the Cairo drug-bazaars there still exist many kinds of lichens which are used as ingredients in baking, native bread. J. Mïller (Revue mycologique, 27th. Dec. 1881) enumerates the following species, all named in Arabic shêba: Ramalina calycaris (two varieties) ; R. gracca Mïll. Arg.; Parmelia sulcata Tayl.; P. physodes; Physcia ciliaris. Georg Schweinfurth(Über Brotbacken unter Zusatz von Flechten, Archiv f. Wirtschaftsforschung im Orient 1918, 1-2) found, moreover, Ochrolechia, Lecanora esculenta and Usnea florida Hoffm. This latter and Alectoria (Parmelia) usneoides Ach. are the kinds which are called to-day ushna. According to Sickenberger this Arabic term. designates all kinds of moss growing on trees.

[^27]Synonyms: ${ }^{1} \mathrm{Gr}$ : Bov́o (bryon); Lat. : muscus arboreus, modern Lichen odoriferum; Ar. (Egypt) : shaiba (Dâwûd); Turk. : eyîkokân yosûnn أى كو كن يوصون (Honigberger); Pers.: dewâle, dewâleh all, (Ab̂̂ Mansîr), (Schlimmer p.272, Evernia Prunastri); Eng. : fragrant moss; Fr. : mousse odoriférante; Germ. : wohlriechende Bartflechte. Issa (pp. 121 and 186) gives the name ushna to Muscus arboreus, sheba to Usnea barbata.
4. ARMALL أر. Cortex Culilawan (?) (Lecl.no. 46).

Ibn Mâsawaih: It resembles the clove-bark (cinnamon).
Ibn Mâsa al-Basrî : A wood like that of cinnamon, of fragrant smell ; it is imported from the Yemen.

At-Tabarî: A plant whose rods are like those of the dill ${ }^{2}$.

Ar-Râzî: I heard that al-armâl is a light wrinkled wood from which were made web-beams ( or yarn beams ). Physicians unanimously agree that it is good for diseases of the mouth.

## COMMENTARY.

It is written armâluloj, armâk \{ُ أ, (Ibn Sinâa and Ab̂̂ Mansûr),


1. For many Arabic synonyms for lichens in general, see Sharaf D. 440.
2. This can refer only to the size or diameter of the rods. We were not able to find the quoted phrase in at-Tabarî's original work which was recently published (Firdawsu'l-Hikmat or Paradise of Wisdom of Alîb. Rabban at-Tabarı̂, ed. by M. Z Siddiqî. Berlin 192S).
is probably the same word changed by copyists of MSS. Ibn Sinâ $(1,260)$ and Abû Mansûr ( 152 ) were the first to describe it. According to Birrûnt, armâk is the more correct reading. Sickenb. (Arzn. p. 7 ) who found it in the Cairo bazaars declares that it is the Cortex Culilawan, the bark of a cinnamon tree from the Moluccas. Dragendorff (239-40) designates five other cìnnamon varieties as producers of the Culilawan-bark. It was un known to the Greeks. The Yemen, which is considered by the Arabic authors as the land of origin, was only the place of transit-trade of this drug as well as of many others. 'Issa (p.176) identifies it with the styracea Symplocos racemosa Roxb. ( lotur-bark ). See Dymock III; 373 and Loew I, 24-26.
3. ABHUL Jur Savin (Juniperus Sabina L.) (Lecl. no. 7 ).
(The Book of) Agriculture ${ }^{1}$ : There are four kinds. The first is the Indian and is called Dîbadâr ${ }^{2}$. It is a tree that reaches a considerable height and its branches grow long ; its fruit is like the hazel-nut. The second has leaves like the tamarisc, the third is like the cypress, and both of them have many thorns and a disagreeable aud pungent smell. They bear fruits smaller than cypress-nuts. The fourth spreads out ( grows) in breadth but not in height and does not bear any fruit at all.

[^28]lbn 'Imrân ${ }^{1}$ : The savin is a kind of juniper with large leaves like those of the tamarisc. It has red, oily fruits like those of the nabk-tree as to colour and size ; they are woolly in the interior and have kernels whose colour is red. When they are ripe they are of sweet flavour and taste like the dripping liquid during the vintage of grapes.

Diosc. I ( 75 ): The savin is of two kinds; one has thorny leaves like those of the cypress and a disagreeable smell. .It is round and grows more in width than in length. The other has leaves like those of the tamarisc. This is a plant of strong desiccative qualities, cleansing dirty u!cers and is an emmenagogue. It removes unhealthy granulations and is useful to the living ones.

1bn Sina ${ }^{2}$ : The savin - fruit resembles the medlar, save that it is blacker. It has a pungent odour. Ad-dîbadâr is one of its kinds called "the Indian pine tree"; its rods are like those of the zedoary. (Till. 3 v.). Shîr-dîbadâr ${ }^{3}$, i. e. its milk, is hot, burning, thirstgiving and astringent. There is nothing more excellent for the relaxation of the nerves, hemiplegia, facial paralysis and epileptic convulsions. It crushes stones of the kidneys and bladder and constipates the bowels.

1. Is-hâq b. 'Imrân was .. celebrated physician who lived in the first half of the INth. cent. A. D. at the court of the Aghlabite prince Ziyâdat-Allâh I. in Qairawân (now Tunisia). He wrote a book on simple drugs. See Introduction I, no. 19.
2. This paragraph is not to be found in the printed editions of Ibn Sinars Canon in the chapter abhul - savin.
3. Shir $\leadsto$ is the Persian worl for "mille".

Masîh ${ }^{1}$ : It relaxes the bowels and kills worms, ascaries :and tape - worms.

## COMMENTARY.

It is the conifera Juniperus Sabina L. with its two varieties war. cupressina and tamariscifolia All. In this, Dioscurides is right, and so is the "Book of Agriculture" when it describes a third variety, a creeping one, forma prostrata. But the dîbadâr has nothing to do with juniperus; it is the beautiful Himalayan cedar-tree Cedrus Deodara Loud., deva-daru, i. e. "tree of the gods". The Arabs were better acquainted with a variety of the Cedrus Libani Barr. under the name of sanawbar hindî $\mathcal{N}$ i. e. "Indian pine-tree". Savin oil is a strong poison. The abortive qualities of this drug were well-known to the Arabs. For Deodar see Hobson-Jobson p. 305-6.

Synonyms: Gr. : Beáơv (bràthy); Ar. : sarw gabal̂̂

 sabine, savinier ; Germ. : Sadebaum, Sevenbaum. For the nany other Arabic names see Issa p. 102.
6. ATHL if, Oriental Tamarisk (Tamarix articulata Vahl) ( Lecl. no. 17 ).

1. His real name was 'Isâ b. Hakam זیی . He lived in the IXth. cent. A. D. as a physician in Damascus and Baghdad. See Introduction I, no. 9.

Ilbn 'Imrân: It is a large shady tree, has green wood and branches with red tints, and green leaves resembling those of the (European ) tamarisk; its flavour is acrid. It has no flowers, but bears fruits at the knots of its twigs in the form of grains like chick-peas and which are yellowish-grey. In their interior are small grains clogged together, which are called the palatable grains of tamarisk. They are collected at the end of July.

Diosc. I (89): :4̌axaỉis (akakallis), i. e. Oriental tamarisk (Athl), is the fruit of a tree in Egypt, resembling the tamarisk fruit. Its infusion is used for eye-salves that fortify the sight.

## COMMENTARY.

The Oriental tamarisk, Tamazix articulata Vohl, is of very frequent occurence in North Africa, particularly in Egypt. Its
 Assýrian ashlu, Ancient Egyptian $4 \begin{aligned} & \mathrm{C} \\ & \text { 'sr, and Coptic OCI. }\end{aligned}$ The supposed fruits are in reality galls provoked by the sting of a small wasp of the kind of Cynips. The galls are still to be found in the Cairo bazaars under the name of tamr el-atl "אر الآل


Synonyms: Gr.: arazazkis (akakalis); Pers.: (the


1. Abu Mansûr confounds this name with that of jashmizaj
 absus L. See M. Meycrhof, Histoire du Chichm, remède opthalmique des Egyptiens. In Jamus (Leyde XIX. 1914, p 246 note 1).
 Idrîsî ( p. 20 ); Engl. : Oriental tamarisk; Fr. : tamarisc oriental. According to Leclerc ( I, 27 note 1 ), another Arabic name for the galls of this tamarisk is 'uähba d. . See Issa p. 177.
> 7. $\mathbf{A R A K}$, أرا, Salvadora Persica L. Gaertn. (Lecl.no. 50 ).

Abûu Hanifa ${ }^{1}$ : Its root is most excellent for rubbing the teeth, and it is the most perfumed pasture-food for cattle. It is a thorny, high and lofty tree; its fruits grow in clusters. There is a wild kind that has bigger grains and smaller clusters. It has small, round and hard kernels, and its fruits are a little larger than chick-peas. The largest of its clusters fills the hand, while the big kind is bigger than coriander-fruit. Both of them begin by being green, then become red and sweet with some acridity; afterwards they become black and their sweetness increases, but there is some burning in it. They are sold like bunches of grapes. It grows in valleys and sometimes, but rarely, on mountains. Its thorns are few and scattered.

Ibn Gulgul: Its decoction, drunk, stirs the urine (i. e. is diuretic).

Ibn Ridwân ${ }^{2}$ : Its fruit, inspissated, fortifies the stomach.

[^29]
## COMMENTARY.

It is Salvadora persica Gärtn.-Garcin, a tree that grows in Arabia, Persia and India; it was unknown the Greeks; it is to be found in Upper Egypt and the Egyptian desert (Ramis p. 149). Its fruit was still in use at the time of Forskal (p.32), and known by the name of kabâth r. Short pieces of the branches and roots are generally in use, in the Near East, as tooth-brushes under the name of miswâk. The best kind is said to come from, the Holy places of the Higâz (Arabia) (Mohammedan tradition). Dymock (II, p. 380-2) gives a record of the botany and history of the plant which fully confirms the sayings of Ibn 'Imran as quoted by al-Ghâfiqî. It is missing from Idrisi's book. The use of the footh-stick is a pious duty to Muhammedans, as the Prophet himself practised it. See numerous references in 'Wensinck's Handbook of Muhammedan Tradition (Leiden 1927) p. 230.
 -i-miswâk Sh و.... Zahnbürstenbaum. For other Arabic names see Issa (p. 161 ).

Its fruit bears the Arabic name kibath
8. ABAXNÛS Then, Ebony (Dalbergia Melanoxylon and Diospyros sp. ). (Lecl. no. 9 ).

Diosc. I (98) : The strongest is the Ethiopian. It is black without stripes (veins), resembling polished horn in its smoothness., If broken it is compact. It stings when tasted by the
tongue, and is, if burnt as incense, of fragrant smell. If fresh it is, on account of its oil, easily inflammable when brought near to fire. If rubbed on a whetstone, its colour becomes ruby-red. There is a variety in India in which are white and ruby-reddish veins. Some kinds of a thorny tree ${ }^{1}$ and the kind of wood which is called owxáuvo (sykámina) are sold instead of ebony. But the latter is loose in texture ( $p$ orous ) and easily breaks into splinters of purple colour which do not burn the tongue; and when put on fire they do not exhale any smell.

Galen VI (XI, 867): This wood is one of the objects which, when rubbed with water, are dissolved like certain stones. Its juice strongly clears dimness of sight.

## COMMENTARY.

$\hat{A} b \hat{a} n \hat{u} s$ are the different kinds of the ebenacea Diospyros, especially D. Ebenum Kon. from India. The Ethiopian ebony is probably the wood of the leguminosa Dalbergia Melanoxylon G.D.R. The false ebony of Diocurides may be, amongst other kinds of wood, that of the leguminosa Ebenus creticus L., the "red ebony" from Greece.

Synonyms: Gr. $\begin{gathered}\text { そ̌evos (ébenos ); Lat. : hebenus (Pliny); }\end{gathered}$ Near Oriental languages: âbanûs آبذ, Eng. : ebony; Fr.: ébène ; Germ. : Ebenholz.

1. This is the translation of Dioscurides' ¿xávova gúda (âkánthina xyla); ovxáunos (sykâminos) is the mulberry-tree.

As to the etymology see Loew I, 588-9.
The word probably comes from Ancient Egyptian
 (Loret)
9. $\hat{A} S \mathrm{w}^{\mathrm{T}}$, Mrele (Myrtus communis L.). (Lecl. no. 69).
 North Africa and Spain) ', on the coast as well as in the mountains; it is evergreen and grows until it becomes a tree. It has a white flower of fragrant smell and a black fruit which, when ripe, becomes sweet; but there is in it at the same time (foll 3 zv .) some bitterness. It is called qatmir noba.
 the (cultivated) myrtle, is deep green inclining to black and more useful than the white, particularly the mountain variety; but the fruit of the black kind is weaker (less efficient) than the fruit of the white one.

Galex VIT (XII, 81): It is composed of opposite faculties, the earthy and cold substance being predominant in it.

Disse: : The monisaron (myrtidanon) is something that grows on the stem of the myrtle-tree and is rugged like the

[^30]bark of the Egyptian thorn ${ }^{1}$. Its colour is like that of the trunk of the myrtle. In its form it resembles a hand and is of stronger astringency than the myrtle itself.

Ar-Râêin the "Book of the Specific Properties": When you take a ring of fresh myrtle wood and put it on the little finger of a man who is suffering from a swelling in his groin it soothes the pain.

## COMMENTARY.

It is Myrtus communis L. The Myrtidanon is probably an excrescence of the bark. IB who generally copies al-Ghaffiqi's text carefully omits the superstitious belief recorded by ar-Râz in his book of the Specific Properties. This book is lost and the authorship of ar-Râzî may be doubtful, although it is recorded in al-Bîrûnî's catalogue of ar-Râzî's works ${ }^{2}$. Ar-Ràzî was, as far as we know, not at all inclined to superstition although he cultivated, in his early years, alchemy and astrology.

Synonyms : Gr.: uvoivn (myrsine); Lat. : myrtus (Pliny);
 Eng. : myrtle; Fr. : myrte; Germ. : Myrthe.

Idrîsî ( p. 10-11), whose paragraph on âs is much

1. The word bunk et, is missing from most of the Arabic dictionaries. Accolding to the Persian dictionaries (Vullers and Steingass) it is the bark of the Acacia nilotica The same sense is found in Issa p. 2, no. 12. See below no. 119.
2. Julius Ruska, Al-Birûni als Quelle für das Leben und die Schriften al-Râzi's, In Isis V (1922) p. 48 no. 183.
longer, gives three lines of synonyms. He gives as an Arabic name raihânuls,-which is the ordinary name for basil-royal, as the Persian name for the plant marziyânaj ế fruit mûrd; moreover, the Berber name ajmâm lọl. See also Loew's etymological explanations (II, 257-60) and Issa (p. 122-3) who adds some more Arabic names.
 (Lecl. no. 21 ).

It is known amongst us as "cow's eye " عnن الإقر.
 tree. Its fruit is bad for the stomach, butlaxative to the bowels. The fruit of the Syrian plum-tree, particularly that of Damascus, is, on the contrary, when dried, good for the stomach, but constipating.

Galen VII ( XII, 32 ): The plum, particularly when fresh, is laxative to the bowels; when dry it is less laxative. As to Dioscurides, I do not know how he pretends that the Damascus plum constipates the bowels when we find that it is manifestly laxative, though less laxative than that coming from Inner Armenia ${ }^{1}$.

Ilon Mâsawaih ${ }^{2}$ : It empties the yellow gall and lowers the temperature ( of the feverish body). The black kind is stronger in this action than the white one; and the small kind has a weaker laxative effect.

1. Galen's original text reads Iberia and not Armenia.
2. See Introduction I, no. 11.

The Israelite ${ }^{1}$ : The white (plum) is slow of digestion, bad for the stomach and slightly laxative. The best of it are the fully ripe ones.

The Nabataean Agricultore ${ }^{2}$ : The wild plum is a small tree with round leaves smaller than those of the cultivated plum-tree. Its fruit is frankly sour and it does not grow well in gardens.

Galen: The fruit of the wild small plum is very astringent and constipates the bowels.

Diosc: When the leaves of the plum-tree are boiled and the decoction is used as a gargle, it checks the flow of matter to the uvula, the tonsils and the gums.

## COMMENTARY.

This is Prunus domestica L. and its varieties, e. g. Damascena, Prunus Italica, divaricata etc. Idrîsîmentions a red variety and the names given hereafter.

Synonyms: Gr. roovup , ( proumne, Theophrastus),

 Egyptian ), already given by Dâwûd.

4才: idb (Loret, ancient Egyptian), khôkh خя (modern


[^31] al̂̂̀ - yi-berqâhî الوى كرفأن Schlimmer; Eng. : plum; Fr. : prune (prunier); Germ. : Pflaume, Zwetsche.

See Loew II, 163-9, and Issa p. 149.
 Limonum). (Lecl. no. 16 ),

Abû Hanifa : It is a cultivated plant and does not occur wild. Its tree produces fruit once a year, for twenty years. Its leaves resemble (in shape ) those of the walnut; it is of a fragrant smell. Its blossoms are like narcissus-flowers, only thinner; its tree has thorns as hard as iron.

Diosc. I (115) KedQúmio (kedrómela) : its fruit remains on it during the whole year ${ }^{1}$, and is long shaped, of golden colour and fragrant with but a little disgusting smell ${ }^{2}$. Its seeds are like those of pears.

The Israelite: That kind the interior (pulp) of which is tasteless, is cold and moist in the second degree; and that kind the pulp of which is sour and stinging, is cold and dry in the third degree.

Galen XII (77) (fol. 4r.) : Its bark is difficult to digest.

[^32]A small dose of it strengthens the stomach and promotes digestion on account of its hot and acid qualities．

Another（author ${ }^{1}$ ：The confection of the pulp with honey is better and more convenient to the digestion．

IDn Mâsawaih：Its bark perfumes foul breath．
Diosc．：It is said that，when put into clothes，it preserves them from being eaten（by moths）．

## COMMENTARY．

The word futrug，utruj is Persian and now designates the orange．The citron or lemon is the fruit of Citrus Limonum Risso with its variations．
 （Mêdika，Persika mêla）；Lat．：citrea（Pliny）；Ar．：Iaimûnjsẩ； Pers．：lêmû g．̊ं；Turk．：limôn نو ；Eng．：citron，lemon；Fr．： citron；Germ．：Zitrone；Copt．：⿻上丨иепи（Scala Magna）．

12．ANBAG（Anbaj），飞，Mango．（Lecl．no．173）．
Agriculture ${ }^{2}$ ：The mango－tree is frequent in the regions of＇Omân，and grows as a cultivated plant．It is of two colours：one has almond－shaped fruits and is always sweet from the beginning of its growth；the other，plum－shaped，is

[^33]sour in the beginning and becomes sweet when it ripens. Both have in common a specific odour and a fragiant smell. The sour kind grows in court-yards until it reaches the size of a walnut-tree. Its leaves are like the walnut leaves. When it reaches maturity the sweet is yellow and the bitter red. When it is unripe it should be cooked in earthen pots.

## COMMENTARY.

It is the fruit of Mangifera indica L., very well-known in all tropical and sub-tropical countries, but unknown in antiquity. For Indian names see Dymock I, 393.

Synonvms: Ar.: anbag $\underset{F}{ }$ : or $a n b \hat{a} L: 1$; Pers.: same names; Turk. : hind kerâzi (Samy); Eng. and Germ.: mango; Fr.: mangue

For other names see Issa p. 114.
13. AMLAG (Amlaj), 飞ৃo Emblic Myrobalan ( Phyllanthus emblica Willd. ). (Lecl. no. 145 ).

Ibn 'Imrân : Its fruit is black resembling plums and has round stones, sharp-pointed at both ends. If the bark is removed the stones are split into three parts.

Hubaish ${ }^{1}$ : When macerated in milk it loses some of its astringency; that is the shir amlag; it is the sovereign of remedies ${ }^{2}$.

[^34]Badigoras ${ }^{1}$ : It strengthens the stomach and is useful for black-bile affections.

Mâsargawaih ${ }^{2}$ : It strengthens the roots of the hair.

## COMMENTARY.

It is the fruit of Phyllanthus emblica Willd., an euphorbiacea which has nothing to do with the different kinds of myrobalan (Terminaliae). It was introduced into the pharmacopoea by the Arabs as an astringent and anti-diarrhoeic remedy. Its Persian name is doubtless of an Indian origin âmâlaka ( see Dymock III, 263 ).
 Dawûd; Pers. : unomla; Turk.: âmulé anol, Samy; Eng.: emblic myrobalan or myrobolan; Fr.: emblic officinal; Germ. : Myrobalanus emblica, Purgierpflaume.
14. $\hat{\mathbf{A}} \mathbf{Z} \hat{\mathbf{A} D}$ - DIRAKHT أزاد درضت , Persian Lilac (Melia azedarach L.).
(Lecl. no. 60 ).
Ibn Gulgul : A Persian name the meaning of which is "the free tree". Some people pretend that it is the Persea (labakh ).

Ibn al-Gazzâr ${ }^{3}$ : Its tree is large and grows in Khurâsân

[^35]and Syria. It has fruits like those of the medlar in shape and colour, growing in scattered bunches. In their interior are stones like those of the medlar. It has a big stem and is very lofty.

Mâsargawaih: Its fruit which resembles that of the lotus-tree (Zizyphus Lotus Lam.) if eaten, kills. Women apply its leaves to their heads to make their hair grow. The expressed juice of the ends of its branches, mixed with honey and boiled grape-juice, is useful against deadly poisons.

Ibn Mâsa ${ }^{1}$ : Its flower is a reconstituent for old and cold-tempered people. Its bark, when boiled with black myrobalans and fumitory (fumaria), is useful for mucous fever and black-bile affections; it is to be taken in spring and autumn only.

## COMMENTARY.

Melia azedarach $L$. is, like the two preceding ones, a plant which was first made known in the West by the Arabs. It is a native tree of Persia, and is not to be confused with the Indian lilac (Melia azadirachta L.). Its toxic qualities were known for a long time in India ( see Dymock I, 330 foll.). Ab̂̂ Mansûr (152) ascribes to it the same effects given in the orginal documents of our author. AlIdrîsî (p.24, no. 39) furnishes a very exact description of the tree. The bark of the roots (Cortex azedarach) is a vermifuge.

[^36] كاط ( Dŷuria, Dâwîd) ; garûd Mod. Egypt :
 lakht dij $^{\prime}$ (Sharaf)- all mutilations of the Persian name.
 Schlimmer) ; Turk. : tesbih âghâji Moslem beads) ; Eng. : Persian lilac, bead tree, pride of India; Fr.: azédarac, margousier, lilas des Indes; Germ. : chinesischer Holunder, Paternosterbaum, Paradiesbaum.

The names given by Issa ( p. 116) refer partly to the Indian lilac.
15. AMBARBARIXS vulgaris L.) (Lecl. no. 146).

Most people erroneously write, instead of the first bâa $y \hat{a}$; but the correct reading is a $b \hat{a}$ with one point only, a sukûn on the mîm and a kasra under the $b \hat{a}^{1}$; the mîm can just as well be written a nûn ن .
(Agriculture) : Some people thought it was the red box-thorn (lycium), 'awsag عو ; but it is not.

Of both of them come the box-thorn-berries, and both have iron-hard thorns similar to those of lycium. The Khorassanian kind is better than the Greek and the Vemenite.

Ar-Râzî (Rhazes): It confines the bowels and is good for the inflamed stomach and liver.

[^37]
## COMMENTARY.

Berberis vulgaris $L$. and other kinds were unknown in the Greek pharmacopoeia. In former times the roots, leaves and fruit were official drugs (Radix, Folia, Fructus Berberidis).

 (Abî Mansîr and Dâwâd); Turk. : qadyn tuzlughyy (Samy) ; Eng.: barberry, pepperidge; Fr. : épine-vinette; Germ. : Berberitzé, Sauerdorn.

The bark of the roots is called by the Berber name ârghîs (IB no. 4). For more names see Issa p. 30.
16. AKHARSÂG $T$, 1 , (Undetermined). (Lecl. no. 26).

Nabataean Agriculture : It is a tree which (fol. 4 v.) grows in hot and arid places; it reaches the height of a tall man. Its wood and leaves are like those of the fig-tree, only a little larger, of palatable flavour; its fruit has no stones and, if eaten, is carminative and cleanses the orifice of the stomach. From this tree and its roots small, short spiders generate. They are veiled by a white membrane beneath which they creep when it is lifted up; and this is the reason why it disgusts people and makes them abstain from eating it. The decoction of the fruit and leaves, when poured on a gouty swelling, soothes the throbbing pain.

## COMMENTARY.

Nobody has been able, until now, to identify this plant. According to Meyer (III, p. 61) and Lecl. (I, p. 34) it must be a kind of fig-tree. The Persian dictionaries do not help us. Vullers (I, p. 636-7) gives the names of khârsak or khârsa as that of a triangular spine called in the West
 terrestris L.)
17. ARUZ أرز, Rice (Oryza sativa L.) . (Lecl. no. 42).

Diose II (95): "O@vకん ( Oryza ); it is a kind of a commonly used grain ; it grows in swamps and wet places. It is a little nourishing and confines the bowels.

Galen VIII (XII, 92) : It confines the bowels moderately and is more difficu!t to digest and less nourishing than the そórd@os (khondros, i. e. groats of wheat or spelt) ${ }^{1}$.

Ibn Mâsawaih : Its grains are the most nourishing next to wheat. and the best tempered. They strengthen and tone the stomach.

Ibn Mâsa: The Indians allege that it is the best and most useful of all the aliments if taken with fresh milk; and they pretend that a strict diet of rice prolongs life and does

[^38]not form in the body yellow gall or any other by-products.
The Israelite: When boiled with bran-water or whey, it considerably increases the spermatic fluid.

## COMMENTARY.

Rice ( Oryza sativa L.), as is evident from the quotations by al-Ghâfiqî, was not greatly valued by the Oreeks. An interesting passage in the Persian Ab̂̂u Mansûr's book (p.141) informs us that the Greeks preferred wheat as an aliment, but that the Indians recognised, from an early period, the nutritive and dietetic value of rice. It was from India that the medical knowledge about rice came to Moslem physicians.

Synonmys: Ar. : aruz j ${ }^{1}{ }^{1}$; Pers. : birinj $\hat{e}$. $;$ Turk.:
 p. 11, no. 6 ); Eng. : rice; Fr. : riz; Germ. : Reis.
 arvensis L.).
(Lecl. no. 167).

Diosc. II (178) : Some people call it ж九о́@七ov (kikhórion, chicory ). It is of two kinds: one has an azure-blue flower;

[^39]this is the female, and the other an intensely red flower; this is the male. Both are plants which spread out on the ground, have small round leaves like those of the plant called Ensivm (helxine, probably Parietaria) on quadrangular stalks; also round fruits. Both are used against the spread of malignant ulcers. It is said that the blue kind reduces the prolapsed anus, but that the red one increases the prolapse, when used as cataplasms.

Galen VI ( XI, 829 ): Both of them extract arrowheads ( from wounds).

Oribasios: Its expressed juice, with headed thyme (hâshâ libl, Thymus capitatus Lk.) and black mustard ( khardal خرد, Brassica sinapioides Roth.), extracts leeches from the throat ${ }^{1}$.

## COMMENTARY.

Anagallis arvensis $L$. is a wide-spread primulacea. Its active principle is saponin. $A l$-Idrî̀î ( p. 16 no. 20 ) gives a more detailed botanical description of the plant, with many synonyms ( Berber, "Latin" i. e. Spanish etc.). Sickenb. ( Arzn. p. 24 ) identifies it with Anagallis arvensis L. and $A$. coerulea Schreb.

Synonyms: Gr. : draya入kis; Lat. : macia ( Marcellus

[^40]Empiricus); Ar.: qâtil al-'alag (i.e. el that which kills leeches) or hashîshat al-alaq (in Spain, Idrîsî ) ${ }^{1}$; Fers.: ânâghâlis أناظالس ; Turk. : bagirsâq otu باغر سات أوقהى (Honigb, p. 517), merbejâné \&ix ゥ. ('Avni p. 33); Eng.: pimpernel; Fr.: mouron; Germ. : Gauchheil, Hühnerdarm.

For more Arabic names see Issa p. 14.
19. ADHÂN AL-EAR AL-BUSTÂNî

( Lecl no. 31 ).
Diosc. II ( II, 183 ) ${ }^{2}$ : Its leaves are like the ears of mice. It is called in Greek $\dot{a} \lambda \sigma i \neq \eta(a l s i n \hat{e})^{3}$ i. e. growing in gardens, because it grows in shadowy places and in gardens. It
 leaves without downy hairs. When rubbed in the hands it exhales a smell of cucumber. Its faculty is cooling and astringent.

Galen VI (XI, 874): It resembles in its faculty the herb which melts glass ${ }^{4}$ for it is cooling and moistening and generally acts like $\hat{\varepsilon} \hat{\wedge} \xi=m$ ( helxinê).

1. Modern Egyptian names: lubbên ind, umm laban il أُم qunfud dìà (Schweinf. 6) ; the latter name is used in the Western Oases of the Egyptian desert.
2. The text reads Diosc. IV, an error which has been copied by Ibn al-Baitâr.
3. This word is derived from ädoos (álsos ), grove.
4. Not so in Galen's original text.

## COMMENTARY.

This plant cannot be determined with certainty. It might be Parietaria cretica L. ( pellitory ). Ibn Sînâ, Abû Mansûr, al-Bîrûnî and al-Idrîsî do not help us, as they only know one kind of myosotis, evidently that described by al-Ghâfiqî in the following chapter.

 hashîshat ar-raml حشيشة الرمل (Sharaf, 605), hashîshat ar - rîlh
 (Avni 448); Eng.: wall pellitory, Fr.: pariétaire: Germ.: Glaskraut. For other names see Issa p. 134.

In Coptic it is called"ears of the mouse" vis\&ze милл (Crum, Dictionary, infra verbum).
20. $\hat{A} D H \hat{A} N$ AL - FAR AL - BARRI Wild Myosotis (Myosotis palustris L.).
( Lecl. no. 32 ).
Diosc. II (183) : $\mu v o$ s ${ }^{\text {®iois ( }}$ myós otís) has many stalks growing from one root which is of the size of a finger, (fol. 5r ). Their lower part is reddish and hollow, and they have long yellow-blackish leaves with pointed ends standing in twos (zygophyllous) with a space between them. From the knots, small twigs branch off on which are small azureblue flowers. It resembles, in general, the оходолєขд@cov (skolo-
pendrion, hart's tongue), except that it is less rougher and smaller.

Galen VII (XII, 80): It dries in the second degree, but has no perceptible heating power.

## COMMENTARY.

It is probably Myosotis palustris With., but might be Asperugo procumbens L., according to Sickenb. (Arzn. p. 6).

Synonyms: Gr.: uròs öris (myós otís): Lat.:
 (Morocco): 'ain al-hudhuld دهده qûlâghi 1509-10) ; Eng.: mouse ear, forget-me-not; Fr. : myosotis, pensez-à-moi, ne m’oubliez pas; Germ.: Vergissmeinnicht.
21. ADHÂN AL-FAR BARRÎ ÂKHAR آذان
. Another Wild Myosotis (Heliotropium undulatum Vahl.).
(Lecl. no. 33).
Anonymous Author ${ }^{1}$ : A plant which grows in the sand, spreading out its twigs on the ground. It has small leaves resembling those of the domesticated myosotis. Its

1. IB (p.171.16) ascribes this chapter to al-Ghâfiqî, but the above quotation shows that the latter copied it from the worls of an anonymous author who probably was a Medieval Egyptian Arab. This chapter has been much abridged by BH.
expressed juice, smeared on the penis and soft parts of the abdomen, restores potency to old men and those incapable of coitus; it grows very commonly near Cairo and Alexandria.

## COMMENTARY.

Dragendorff ( p . 563) thinks that this plant is Myosotis stricta $L k$. But we believe it to be one of the numerous desert plants, and think that Sickenb. (Plantes p. 20) is right in identifying it with the borraginacea Heliotropium undulatum Vahl., which agrees well with the description.
 Another Myosotis (unknown).
(Lecl. no. 34).
Ar-Râzî (Rhazes, in his "Book for Those Who Have no Physician at Hand") ${ }^{1}$ : It is one of the euphorbias (tithymals) with leaves like those of myosotis, and downy white hairs on them ; it has thin thorns also, covered with white downy hairs. When it is plucked, milk flows from it. It is a powerful purgative and emetic.
 Medicine of the Poor») is the 3Sth in the long list of Râzi's works given by IAU (I. p. 316 1. 18 foll.). It was printed at Lucknow in 1886, but that edition is very rare, and we are not able to verify the above-mentioned quotation.

Hubaish: Its strength is less than that of the raper spurge (Euphorbia lathyris, mâhiùdinna aiدgalo), and the wild kind, growing far from water, is sharper and thinner.

## COMMENTARY.

Identification of this plant has hitherto been impossible.
23. AWTHU $\mathbf{U} \mathbf{N A}$ (Uthûnâa) أوثو , 'Ovóva Othonna (unknown).
(Lecl. no. 208).
Diosc. II (182): It is said that it is the expressed juice of the black रekitórov (chelidonion, celandine), or of the horned poppy (glaucium); it is also said that it is the juice of the poppy called requitus (keratitis) or the horned (Glaucium corniculatum), or that it is the juice of the blue anagallis. O)thers say that it is a plant growing in that part of Arabia contiguous to the frontier of Egypt (i. e. the Sinai Peninsula), with leaves like those of the water-cress, full of holes as if eaten by moth-worms, sapless and brittle. The flower is saffron-coloured and its petals are large. Some people therefore take it for a kind of anemone. Its juice cures dullness of the sight. Others say that Othonna is a copper-coloured small stone in Upper Egypt, burning when touched with the tongue.

## COMMENTARY.

It has not been possible, so far, to identify with certainty the plant Othonna. Dâwûd mutilates the name to Uwwaina $a_{2}^{2}$, ${ }^{\text {, }}$ but givas the same description. Sickenb. (Plantes p. 25 ) observes that Sprengel, Fée and others did not pay attention to the fact that all their identifications ( $T a$ getes, Argemone etc.) were with plants of American habitats. Sickenberger himself proposes Glaucium corniculatum Curtis, the horned poppy. To this, however, we object,
 mêkôn keratitis Diosc. IV, 65) and an Arabic one (mâmîthâ $\left.L_{0} \mathrm{~L}_{\mathrm{s}}\right)$ for this plant which has always been well-known. According to Loew (II, 374-5) it is not possible to identify the plant; the name is neither Syriac nor Arabic. Issa (p. 131) identifies it with a kind of ragwort-composita to which modern botanists gave the name Othonna $L$.
24. $\hat{\mathbf{A} G \mathbf{H A}} \hat{\mathbf{A}} \mathbf{Q} \hat{\mathbf{U}} \mathbf{N}$ انظرية. 2 , Fungus of the larch, Purging agaric ( Polyporus officinalis Fries).
(Lecl. no. 1622 Gharîqûn غاريڤون).
Diose. III (1): It is a root similar to that of silphium (see no. 34), though not dense from outside like its root but quite loose. It is of two kinds, male and female. The female is the better one; it has in its interior flat
layers; but the male has no such layers at all. Both of them are alike as to flavour, giving, when first tasted, a flavour of sweetness that changes to bitterness. Some people allege that it is the root of a plant; while others believe that it is generated from putrefaction in trees when worm-eaten, like those on which mushrooms are generated. That which is generated on larch-trees in Cilicia is easily crushed and of weak strength.

Galen VI (XI, 813): It is a compound of two substances, airy and earthy. (fol. 5 v.) It opens obstructions of the liver and repels thick mixtures (of the humours).

Another Author: The dose of it is one mithqâl. It is said that he who carries it about is never stung by scorpions. The hard and black specimens, which are the old ones, are very bad.

## COMMENTARY.

This is Polyporus officinalis Fries. IB who gives a much longer chapter on it, calls it ghârîqûn غاریּ, a name still in use in most of the Mohammedan lands, (IB II, 146; Lecl. III, 4-6). This fungus grows on larch trees and in antiquity came from Russia (Sarmatia). The officinal Fungus Laricis was, in the XIXth cent., a well-known laxative, mostly from the Siberian larch-tree, ( Achundow, Abû Mansûr p. 339), The active principles of the drug are agaricine and a resin.

Synonyms: Gr: ixyoゃón; Lat.: agaricum; Ar. and
 19) ; Eng.: purging agaric, fungus of the larch; Fr.: polypore du mélèze, agaric blanc; Germ.: Lärchenschwamm.
25. ISHKHIS اشخیn, Pine-Thistle etc. (Atractylis, Echinops and oihers).
(Lecl. no. 86 ).
This is the resin-thorn ${ }^{1}$ and in Greek zo.nathémy or chamaeleon; it is called xauaıдécu on account of the difference ( in colour) of its leaves, which occur in bright green, white, sky-blue, or blood-red, according to the place in which the plant is growing. Xauaıरérov $\lambda$ हvxòs (khamailéon leukós) 2 or the white qauaıネśwn (chamaeleon), is also called $i \xi i a$ (ixia) because the plant produces at its root in some places ísós (ixós) i. e. a viscous matter; from izós is derived "sio, the meaning of which is "the viscous". Its leaves resemble those of the thistle called in Syria ' $a k k \hat{u} b$ ب which is called oxolvaios (Scolymus hisp., golden thistle). In its middle grow thorns like the prickles of the sea-urchin or
 1B (I, 36), a Spanish-Moorish name.
2. This name of the plant is given by Theophrastus ( IX, 12, 1) and Dioscurides (III, 8). The quotation of the latter is mis. sing from our MSS.
the thorns of the zonáa (kinára, artichoke). It has purple flowers like hairs, and fruits like those of the cartham. The root in earthy soil is thick, and in rocky soil thin and white inside. It is of a somewhat disagreeable odour; its taste is sweet. Its root, wheri taken in a drink, expels tape-worms and stirs ${ }^{1}$. When kneaded with water ard oil it kills dogs, pigs and mice, and the drinking of it is useful against the bite of venomous reptiles.

Diosc. III (9); zquatiécon "urıas, (Khamailéon mélas) or the black, has'leaves also like the thistle called arólv $\mu 0^{5}$ (skólymos), except that they are smaller, thinner and bloodred in colour. Its stalk is as thick as a finger and of a span in length, its colour is almost blood-red, and there is on it an umbel (corymb) with thorny and thin flowers, the colour of which resembles that of the flower called viárurvos (hyákinthos, hyacinth ) on which there are spots. Its root is thick and solid, burning the tongue when chewed. It grows in dry deserts, on hills and sea-shores.

Galen VIII (XII, 154): Its root possesses a deadly poison, and is, therefore, useful for scabs, eczema and white leprosy (vitiligo).

## COMMENTARY.

The white chamaleon is Atractylis gummifera L., the

1. Viz. urine, menses etc. The word could be a copyist's

black Cardopatium corymbosum Pers. (Dragend. p. 685); 'akkûb is Echinops viscosus D.C.; окórvuos Scolymus hispanicus L.; rú@a Cynara Cardunculus L. They are all thistle plants, most of them were mentioned by Theophrastus. The artichoke-gum (kankarzad $2 j, \int-5$ ) is a product of these plants.

 شوك (Maghrib: Dâwûd); Eng.: pine-thistle, spindle wort, Fr.: caméléon blanc; Germ.: Mastixdistel, Gummidistel.

Issa (pp. 27 and 64) gives many other Arabic synonyms.
26. AQANTHIYÛN (Akanthion) Cotton Thistle ( Onopordon Acanthium L.).
(Lecl. no. 122 ).
This is the thistle which is known by the name of tawb 1 1 .

Diosc. III (16): It is a thistle-plant with leaves like
 the bâdhaward 2 . 2 . It has thorny heads, and it is said

1. IB II, 419 (Lecl. no. 1480 bis) says-probably from alGhâfiqî's unabridged work-that tawba $a, g$ was the foreign name which the Christians in Spain gave to the acanthion - thistle. It is still the name used in Spain.
2. Persian bâdhaward 3, , i. e. the thistle Cnicus Acarna I. ( Picnomon Acarna Coss.).
that it has downy hairs which, when gathered, resemble cotton. Its roots and leaves, in drinks, are useful for plegias.

Galen VI (X1, 818): Its root and seeds ${ }^{1}$ are useful to sufferers from spasms.

## COMMENTARY.

It is Onopordon Acanthium L. (Dragend. p. 688), a thistle growing in Central and Southern Europe, and in Asia Minor.

Synonyms: Gr.: wadiven"; Lat.: acanthium, Pliny;
 1335), shôk al-homâr , شو (Loew I, 448) ; Pers.: kangar , Cer Turk.: eshek divini ( Eng.: cotton-thistle; Fr.: charbon aux ânes, fausse acanthe; Germ.: Eselsdistel, Krebsdistel, Wegdistel; Span.: cardo borriquero, toba (Botica 398).
27. AFSINTIN in in wormwood (Artemisiá Absinthium L.) and others.
(Lecl. no. 113).
The leaves of the wormwood resemble greatly those of the carrot; its flower is yellow and it is this part which is used ${ }^{2}$.

[^41]Diosc. III (23) : It is a well-known plant and is found in Cappadocia, on Mount Taurus.

Ibn Guraig ${ }^{1}$ : It is of many kinds. It is brought from Persia and the Eastern regions, as well as from the Lukam (Amanus) Mountain. The best is that from Tyrus and Tarsus; it is covered with downy hairs and has nodosities like the seeds (fol. $6 \mathbf{r}$ ) of the Persian marjoram (Origanum) . That (kind) is strongly bitter, and, when pounded, tiny particles splinter away from it like the splinters of Socotrine aloe; they are yellow like the down of young pigeons.

Galen (in the Methodus Medendi): All kinds of wormwood are possessed of two qualities and two faculties $^{2}$, but that which is imported from Pontus is most astringent.

Diosc.: It purges the galls (bilious humours) from the stomach, is laxative and diuretic.

## COMMENTARY.

This is mostly Artemisia Absinthium L., and other kinds of Mediterranean Artemisia, A. arborescens L., A. pontica $L$. etc. The active principle is absinthine.

1. Nastâs b. Guraig $\underset{\sim}{6}$ : vilam; with the surname" the monk" الراهب, was a Christian physician in Egypt in the Xth cent. See Introduction I, no. 29.
2. Viz. astringency and bitterness.

Bîrûnû says that，according to Ibn Mâsawaih and ar－ Rasâ＇ilî，there are many kinds of wormwood，－Nabataean， Persian，Khorassanian，Syrian and North－African（maghribî $\left.0, \delta_{0}\right)$ ．The best is the Syrian，particularly that of Tarsus （Tarsûs b，b b which resembles the down of chicken in its yellow colour＂．He adds that some physicians call it ＂Greek wormwood＂（shîh rûmî ふのこで～）．In Egypt Artemi－ sia Absinthium L．is lacking（Ramis p．193）；Sickent． （Plantes p． 21 ）thinks that the afsintinn of Egypt is Ambrosia maritima L．．But this plant bears，according to Forskâl （p． 161 ）the name of damsisa a a ．

Synonyms：Gr．：duyinvov；Lat．：absinthium，santonica

 （＂white hair＂），shagarat Maryam f．．． 0 （Algeria）Lecl．I， 105 ；Berber：tâshtalt تشاش

 common wormwood；Fr．：grande absinthe，armoise amère， aluyne；Germ．：Wermut，bitterer Beifuss；It．：assenzio ；Span．： yenjo．

Ibn al－Baitâr（IB I，41）gives the name damsîsa aman as the Egyptian name of the wormwood，in the XIIIth． century．On the other hand，Ascherson and Schwein－ furth stated that none of the above－mentioned kinds of Artemisia grows in Egypt．So the Egyptian damsîsa must have been the name of one of the other species of this
composita. Sickenberger proposes Ambrosia maritima L., Sick. (Plantes p. 21 ). Vide suprâ.
28. USTÛKĤ̂DHUUS vandula Stoechas L.).
(Lecl. no. 62 ).
Diosc. III (26): It grows on the islands Eiooxádes ${ }^{1}$ (Stoichades) which are in the Land of Iakatia (Galatia, i. e. Gallia) opposite Magacizia (Massalía, i.e. Marseilles). This drug herb was designated by the name of one of those islands. It has a main part (i.e. foliage) like that of the thyme (origan), except that its leaves are longer and of pungent and slightly bitter taste. It is good for diseases of the chest, like hyssop.

Galen VIII (XII, 136): It fortifies all the inner organs.
Ibn Mâsa: Its virtue is to clear the brain, and it is useful against black - bile diseases.

Diosc. V (42 and 43): Its wine reduces thick swellings and inflations; a vinegar is prepared from it in the same manner as the wine ${ }^{2}$.

1. Called do-day "Isles d'Hyères".
2. The description of the preparation of this wine of lavender has probably been deleted by BH , but is to be found in IB (I, 24) .

## COMMENTARY.

Lavandula Stoechas L., the "French lavender" is to-day common on the whole Mediterranean coast; it forms, moreover, in some parts of Western and Southern Anatolia the most important part of the vegetation. On the other hand the lavender varieties which are to-day so frequent in Southern France are Lavandula spica D. C. (spike) L. and vera D.C. or L. latifolia Vill.. Therefore Dragend. (571) thinks that these latter are the kinds corresponding to the stoichás of Dioscurides and the Arabs. Curiously enough this drug, though existing everywhere in Southern Europe, was much appreciated until a century ago, where it was collected and dried in Northern Arabia, whence it was exported to Venice via Cairo and Alexandria, under the name of Flores Stoechados arabicae (note by Achundow in Abû Mansûr 339).

Bîrûnî says that it was brought to his town (Ghazna in Afganistan) from the Mountains of Lengistân

Synonyms: Gr.: orowás (stoikhâs); Lat.: stoechas;
 s:-a. ن. (Daiwuid). Many other names in Issa p. 106. Ar.
 tive of the Greek word); Turk.: husâme a.añ, lavanda otut
 lavender; Fr.: lavande stoechas; Germ.: Schopflavendel.

Lecl. (I, 60) gives several modern Arabic and Berber names of the plant.

There seems to be no other Persian name than ustûkhîdhûs, (Mu'tamad p. 389). Bîrûnî mentions the name dahâr iles as known in Sind (lower valley of the Indus); indeed the name dhâru is still vulgarily used in India (Dymock III, 93). Naficy (II, 21) gives Arabic names used in Persia.
 nalis L.)
(Lecl. no. 140).
'Eגerioqazon (Elelísfakon) is the sage (as-sâlima anlu).
Diosc. III (33): It is also called oqxáyvo (sfágnon), and is a long vápros (thámnos) i. e. shrub or bush, with many branches the shoots of which are quadrangular and of whitish colour. Its leaves are like those of the quince tree; only they are longer, narrower and a little rougher. At the end of the twigs is a fruit like that of the will öguvov (horminon) i. e. al-qilqil ${ }^{\text {allalal }}$ 1; it grows in rough, uneven places. The decoction of its leaves and branches is diuretic, emmenagogue and abortive and is useful for the sting of the marine revzòv (trygôn) ${ }^{2}$.

1. This is an erroneous translation: ợumoz of the Greeks is a kind of sage (Salvia viridis L.) whereas al-qilqil is very probably Cassia Tora L.
2. A kind of sting-ray, perhaps Raja clavata.

Galen VI (XI, 873): It is manifestly hot and slightly astringent.

Ibn Gualgul: It is useful for numbness of the tongue and for aphasia.

## COMMENTARY.

It is Salvia officinalis $L$. and its variants (see Dragend. 576). The medicinal parts used in the pharmacopoeias are the leaves, Folia Salviae. Dâwûd gives the mutilated Greek name alfâfis الانافی,
 Ar.: sâlima allw, siwâk an-nab̂̂ Loew II, 102) ; maryamiyya ${ }_{\text {a }}^{\text {_ }}$ (Mod. Egypt., Schweinf.), quwêsa $a^{\ldots \mathbf{z}}$ : (Syria, Berggr.). Other names in Issa p. 162; Pers.: (Abû Mansûr has no name for it), giyâh-i-tashnak .ریـ كولى ( (502) ; Turk.: ada chaby, دإش اوڤف (Honigb.) ; Eng.: common garden sage; Fr.: sauge officinale, petite sauge; Germ. : Salbei.
30. IKLÎL - AL - MALIK sunt int Melilot.
(Lecl. no. 128).
Is_hâq b. 'Imrân: This plant possesses leaves which are round like a dirham (piece of money) ${ }^{1}$; it is green, sappy,

[^42]with very thin twigs and scarce leaves. It has small yellow flowers followed by thin and curved hucks (mazâwid $\boldsymbol{2}$. resembling children's bracelets; they contain small round grains, smaller than the grains of mustard. The part used is this ring-shaped pod (iklill $\quad \forall 1$ ) with its contents.

Author: There are so many differences of opinion that I have no precise knowledge of the question, except that for me, the kind mentioned by is-hâq is the best. It is a plant of a bitter flavour and fragrant smell. But that which is commonly used in our land (i.e. Spain) is another plant known under the name of Trefolia ${ }^{1}$ which has broad leaves nearer to those of the larger plantain, also coloured, bent and thick pods variegated with white, green and purple. The seeds are smaller than those of the fenugreek; they are viscous and devoid of flavour and smell.

Some people use another plant which has thin twigs. It spreads out on the soil with leaves like those of the watercalthrop (Tribulus terrestris). Its fruits are horns curved like swords, resembling the horns of oxen. They grow together in sixes or sevens ( $f$ oll. 6 vo.), having inside them fruits like fenugreek seeds.

Some people allege that the melilot which is used in Alexandria is a plant of a fragrant smell, high - grown, and whose leaves resemble those of the trefoil; its smell is like
 50 1.16) qurnûliya al ,
that of the fig-tree, somewhat aromatic; its flowers are yellow. and thin, and at the end of its twigs there are sleek pods like those small and yellow larvae which are found under the ground in the spring ${ }^{1}$.
lbn Sina: It is a plant with a flower of straw colour, semilunar in shape and hard though of light consistency; some kinds of it are yellow and some are white, the latter being the best, particularly when they are very hard.

Diosc. III (40): Meriikuros (melilôtos). The best kind is that which grows in Attica, Kyzicus ${ }^{2}$, Karchedon ${ }^{3}$ and Chalcedon ${ }^{4}$. It is yellowish-white and of fragrant smell. A little of it grows in Campania near Nola ${ }^{5}$; it has seeds resembling those of fenugreek and is of a fragrant smell.

Galen VII (XII, 70): its faculty is astringent, combined with dissolving and maturing power.

## COMMENTARY.

It is the leguminosa Melilotus officinalis Lam.; Dra-

1. Jbn al-Baitâr ( $1,50,1.25$ foll.) writing-about a century after al-Ghaffigi-says that at his time this variety of melilot was unknown in Alexandria.
2. A sea-port of Mysia on the Marmara

3, The Greek name of Carthage. It is an interpolation by an early copyist.
4. A sea-port of Bithynia (Asia Minor).
5. In Italy near Rome,

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gend. (p. 315). however, knows 16 medicinally used kinds of melilot. Ab̂̂ Mansîr (p.150) speaks of seven kinds of melilot in Persia. In Egypt there exist, in our days, four kinds (Ramis p. 109). But the officinal melilot is not extant in Egypt, and so IB's assertion is right. The Egyptian kind mentioned by Gh is, according to Sickenb. (Plantes p. 23), Trigonella hamosa L.. The officinal drug Herba Meliloti is still used in many countries for plasters and compresses against rheumatic affections.

Synonyms: Gr.: $\mu \varepsilon \lambda i \lambda \omega \tau 0 \leq s:(m e l i l o ̂ t o s) ; ~ L a t .: ~ m e l i l o t u s ~$
 r̈ン. (Dâwûd); more names in Issa p. 116. Pers.: iklîl al-malik; Turk.: guzel (Samy), or nefîs qoqulu sari yonja كوز أز (i.e. "sweet-smelling yellow trefoil"), Avni 375, pira otu يِيـ1 (Honigb.) ; Fr.: melilot officinal; Germ.: Steinklee, Honigklee; Span.: trebol oloroso, corona del rey (litteral translation of the Arabic iklîl al-malik i. e. "the king's crown").

## 31. 1KLÎL NABÂT GABALI $\hat{\mathbf{I}}$, Rose-

 mary (Rosmarinus officinalis L.)(Leçl. no. 129).
It is a well-known plant reaching more than a cubit in height with long and thin leaves like fringes, coarse and blackish. Its wood is rough and hard. It has, at the origin of the leaves, a tender whitish-blue flower. Its fruit is hard
and opens itself when dry to let out thin seeds, thinner than those of the mustard-plant. In its leaves is a sharp, bitter and astringent flavour, with an aromatic smell. It is diuretic, dissolvent and aperient ${ }^{1}$. In our country (Spain) hunters put it in the interior of venison to prevent its rapid putrefaction.

## COMMENTARY.

Rosmarinus, officinalis $L$. is also a well-known la-biatae-plant. The leaves and flowers are medicinal drugs (Folia, Flores Rosmarini). It is curious that al-Châfiqî does not quote Dioscurides who describes the rosemary under the name of irouporis (libanotis) in book III chap. 75. IB, who always follows al-Ghâfiqî, rebukes there al-Idrîsî who quotes this chapter from Dioscurides (IdrîSî p. 18, 1. 5); but IB is wrong, as already stated by Lecl. (I, 120). The Arabic
 "crown or umbel of the mountain".

Synonyms: Gr.: RiBurwis; Lat.: rosmarinus (Scrib.
 نllex, ill vex (Mod. Egypt. Sickenb., Schweinf.) ; qardmâtâ Hiban (?) (Egypt, Dâwĥd). For more Arabic names see Issa p. 175. Pers.: like Arabic, and ghushtâr (Idrîsî p. 18, 1. 5 ); Turk. biberiyé ${ }^{\text {ane }}$ (Avni); Eng. : rosemary; Fr.: romarin; Germ.: Rosmarin; Span. : romero.

[^43] (Lecl. no. 159 ).

Diosc. III (56): The best is that which is bitter, fresh, with numerous seeds and of which no scales falls off like bran (rubbish in the sieve), which is of a strong smell, particularly that from Crete; after it comes the Egyptian.

Galen VI (X, 833): The most useful part of it is the seeds; they are sharp, bitter, diuretic, dissolvant confining (the bowels), aphrodisiac and a theriac (antidote) against the poisons of reptiles ${ }^{1}$.

## COMMENTARY.

The umbellifera Pimpinella Anisum L. s'original home was probably the Orient (Asia Minor, Egypt). It provides fruits as a drug (Fructus Anisi vulgaris) and oil (Oleum Anisi). As a spice it was already in use in Ancient Egypt.

Synonyms: Cr.: ür $\eta_{\eta} \sigma \sigma o v$ (áneson), Diosc. and Theophr., üveov, Galen; Lat.: anisum (Scrib., Larg., Pliny); Ar.: ânîsîn نيّ


 (Vullers). Other Arabic names in Issa p. 140. Pers.


[^44](Schlimmer, 463), ragłhûn khâmîn inolخ (Idrîsî) ; Eng.: sweet cumin, anise; Fr.; anis vert; Germ. and Span. : anis.
 cedanum officinale L.).
( Lecl.no. 176).
Diosc. III (78): Пquxésuron (peukédanon) is a plant with a thin stalk like that of the plant which is called нáocưor (márathon, fennel). It has near its root an abundant thick tuft; its flower is yellow and its root black and of an offensive smell, thick and full of moisture ( sappy). It grows on mountains that are shaded by trees. The root is incised, while fresh, with a knife, its juice flows out and is put in the shade because its faculty grows weaker in the sunshine. He who collects this juice suffers from headache and dimness of sight if he does not (previously) anoint his nose with attar of roses and put some of it also on his head. The best of the sap of this plant comes from Sardonia (now Sardinia) and Samothrake; it is of an offensive smell, red, and stings the tongue. If rubbed into the head with vinegar it is helpful to hípagyos (lêthargos), perriths (phrenitis), obstructions ${ }^{1}$, epileptic fits, chronic headache and plegia.

[^45]Galen VIII (XII, 99): The milk is more active than the root. (fol. 7 r ) ; the juice heats powerfully and is useful for diseases of the chest and lungs, and for induration of the spleen.

## COMMENTARY .

This plant is Peucedanum officinale $L$., an umbellifera containing a resinous gum. The root was in former centuries an officinal drug throughout Europe. The Arabic name andrâsiyûn is doubtless derived from a Greek name, perhaps from àvocócaцио (andrósaimon) which, however, designates another drug (St. John's wort). IB gives a much longer chapter on this drug, doubtless extracted from al-Ghâfiqî's original work, as he puts the drug under the letter $y a$ s according to its Spanish-Latin name Yerba Tora (IB IV, 208-9; Lecl. III, no. 2310 ).
 Pers. and Turk.: andrâsiyûnn iو ill bakhûr al-akrâd

 Eng.: sulphur-wort, hog's fennel, maiden-weed; Fr.: peucédane, fenouil de porc ; Germ.: gemeiner Haarstrang , Saufenchel.
34. ANGUDÂN iأخxi, Silphium (kind of Ferula).
(Lecl. no. 158 ).
Ibne 'Imrân: This is a plant the gum of which is the
 of it is white and aromatic, and some black and stinking; it (the white) is called that of Sarakhs ${ }^{2}$.

Al-Bakrî ${ }^{3}$ : The black is stronger than the white and unfit as an aliment. It has a thick root from which leaves spread out on the ground and are contracted like a fist. They are composed of small leaves like those of the carrot resembling the pierced metallic sheets which are (fixed) under the rings of doors. From the leaves shoots out a tender stalk on the end of which is an umbel like that of the aneth (garden dill), except that it is larger. It is then succeded by grains enclosed in thin, wide and lengthy sheaths of a disgusting smell.

Ab̂u Hanifa: It grows in the sands between Bust and the land of Qîqân ${ }^{4}$, and the inhabitants of those regions cook the grains of the asafoetida and eat it.

1. This word may designate a root having the form of a plough or a poker for stirring the fire (mihrâth © $\boldsymbol{i}$ ). Bîrûnî, however, denies energetically that mahrith is identical with angudân. He gives also several interesting quotations from old authors which are too long for repetition here.
2. A town in Khorâsân (Eastern Persia).
3. See our Introduction chap. I. no. 41.
4. In the text of $G$ these names are totally mutilated, when $T$ writes Sibta (Ceuta) and Qi‘àn (Qairawân?) so that the coast of North Africa might be meant. But as the author of

Ibn 'Abdûn ${ }^{1}$ : It is a plant like the lovage (kâsham مut', Ligusticum levisticum L. ), growing in Babylonia. The greengrocer sells it amongst spices.

Diosc. III (80): Eîipıor (silphion, i. e. the asafoetida plant) grows in Syria, Armenia and Media (Mâh olo). Its
 the galbanum-plant ${ }^{2}$. Its leaves are like those of the celery


Galen VIII (XII, 123): The milk-juice of this plant
this quotation, Abù Hanîfa ad-Dînawarî, was a Persian, it is more likely that he referred to places near his country; we have therefore adopted the names which are transmitted by $I B$ (I. 59, 1. 2). Bust was a town near Herât, and al-Qîqân a region near the western frontier of India (now Balûchistân).

1. Muhammad b. 'Abdûn was, according to Ibn Abî Usaibi'a ([I. p. 46) a Hispano-Moorish physician who travelled in the Near East from 958 to 971 A.D. He lived for some time in Fustât blbag (Old Cairo), and in Baghdad where he became the disciple of the celebrated Muslim philosopher Abû Sulaimân
 unknown, and it is therefore not possible to state wherefrom Gh. abstracted the quotation,
2. The names are mutilated in both MSS. It is to be read:
 is the translation of Diosc. III (80)'s vớ@Vŋそ (nárthêx), an undetermined kind of ferula. The Arabic names probably designate Ferula galbaniflua Boiss.
3. This is an erroneous translation from Diosc. III (80) who says that the seeds of the silphium are called " $10 \gamma v \delta a \varrho<s$ mágydaris.
is of very hot faculty and so are its leaves and twigs; its roots are violently heating.

He says, moreover, in the second book: Asafoetida is useful for swelling of the uvula, just as the ratoria (paionía, peony) is useful for epileptic fits.

He (says) in the Karò Tép (Katà Gêne, i. e. Galen's work De Compositione Medicamentorum per Genera): The heating faculty of the opoponax (gâwshîr جاوشی』) is near to that of the asafoetida.

Diosc. : Its root is softening, drying, difficult of digestion and noxious to the bladder. Its gum is collected by making incisions into the root and the lower part of the stalk.

Ar-Râzî: The mahrût كروت (see above) is hot, dry, fortifying the liver and stomach and helpful to the digestion.

He says, moreover, in his book On Aliments: When macerated in vinegar it makes aliments more palatable and more digestive, and some of its (the drug's) acridity diminishes.

Diosc.: The best kind of asafoetida is that which is reddish, clear, resembling myrrh, of a strong and not disgusting flavour and a smell not unlike that of the leek, and which, when macerated, turns whitish. The asafoetida known as Kvenpuixxos or that from Cyrene, when tasted, cools the body at once.

That known as Mindwà̀s (Medikós) meaning "the Med-
ian" i. e. that from Media, and that known as इveıazos (Syriakós or from Syria) both are of weaker strength than the Cyrenaic, and of worse smell. It is often adulterated before it is dried with sagapenum (gum of Ferula persica), flour of beans and gum-ammoniac. The stalk of this plant is called oìpoov (silphion), its root mavídagis (magydaris) (fol. 7 v.) and its leaves $\mu a ́ \sigma \pi \varepsilon \tau a$ ( máspeta). The strongest of all is the gum, next to it come the leaves and then the stalk.

Ar~Râzî: I found asafoetida efficient in the phlegmatic diseases of the nerves.

Hubaish ${ }^{1}$ : It is hot in the first class of the fourth degree, noxious to the liver and stomach, and, as to smell and heat, near to the marking-nut (fruit of Semecarpus Anacardium L.). Some people pretend that thein habitants of Sind throw it into their rivers so that its smell may kill beavers and insects, thus saving their crops. The Armenians use it as a treatment for wounds from poisoned missiles thrown on them in times of war.

## COMMENTARY.

The Cyrenaic silphium of Dioscurides is until now undetermined; some scholars have thought it might be the gum of Ferula tingitana L. (North Africa); but others have contradicted this identification. Viviani (Sickenb. Arzn. p. 21) thinks it to be his Thapsia Silphium Viv.

[^46]The "Median silphium" corresponds without any doubt to the asafoetida, the gum of different Persian and Afghan species of Ferula, viz. Ferula scorodosma Benth. et Hook. (F. Asa foetida L.), F. Narthex Boiss.; F. alliacea Boiss.; F. persica Willd. etc. For literature and history see Flückiger 281, Dymock II (147 foll.), Loew III (452 foll). The pretended use made by the inhabitants of Sind (now Panjâb) of the assafoetida for killing animals as recorded by Hubaish, is not mentioned by any modern author and may be legendary. The medicinal, drug Asafoetida is still to-day in use as an antispasmodic. See also Schlimmer's long article on this drug (p. 56-8).

Synonyms: Gr.: oikpoov (silphion); Lat.: laserpitium, laser, Pliny; Ar.: angudân (the plant), mahrûth (the root), hiltitt, haltit $-1>$ (the gum), hantit أبو كـيـ (Mod. Egypt, Schweinf.), al-kabir (Egypt, Dâwûd);


 شيُطان بوق ( Avni); Many other names are given by Issa p. 82. Eng. asafoetida, foetid assa; Fr.: ase fétide; Germ. : Stinkasant; Teufelsdreck.
35. USHSHAQ irnai, Gum-Ammoniac (from Dorema ammoniacum Don.).
(Lecl, no, 83).

Ushshaq أشش in called also ushshaghag and washshaq وششق.

Diosc. III (84): 'Am gum of a plant resembling in shape the galban-ferula (kalakh $\underset{\sim}{\mathcal{E}}$, i. e. vá@ $\vartheta_{\eta} \xi$ nárthêx). It grows in the land of Libya, further inland than Cyrene. The shrub is called doaov $\lambda$ is (agasyllis). The choicest is that which has a beautiful colour, free from stones and wood, whose particles resemble a lump of frankincense as to purity and density, the odour of which is that of castor and the flower of which is bitter. The kind containing dust and stones is called "mixed". ${ }^{1}$

It is brought from a place called Ammon, and is the juice of a shrub resembling the galban-ferula.

Galen VI (XI, 828) : Its gum flows out of a straight stem ${ }^{2}$. Its faculty is laxative; it heals induration of the spleen and resolves scrofulous glands.

## COMMENTARY.

Gum-ammoniac (medicinal drug Gummi-resina Ammoniacum) is the resin of the umbellifera Dorema Ammoniacum Baill. or Dori. This drug probably came to the Greeks from the Persians, as the plant grows only in their land and in the neighbouring regions. Dr. Polak who lived a long time

[^47]in Persia asserts that it is the produce of Dorema Aucheri Boiss. (Persien, vol. II, p. 280), and this is confirmed by Schlimmer ( p. 30). But the drug as described by Dioscurides seems to be Ferula tingitana L. (Flückiger p. 289), The Doremagum was mostly used for plasters.

According to Bîrl̂nî the first Arabic-writing authors gave the name of ushshaq to the produce of different plants ( poppy and others).

Synonyms: Gr.: ${ }^{\circ} A \mu \mu \omega \nu \iota a x o ́ v$ (Ammôniakón), $\vartheta \varrho \alpha \tilde{v} \mu_{\mu}$. (thrausma, Diosc.) , фv́equa (phyrama, Diosc.); Lat.: hammoniacum, ( Pliny XII and other places); Ar.: ushshaq اشق
 (i.e. "cementing or soldering gold") (Bîrûnû,

 (Mod. Egypt, Ducros p. 100), samgh hûshâdirî kadhdhâb cio ( نوشادرى كذاب , (The Same), ushshaq kadhdháb أشق كاب (i. e. false gum-ammoniac, the Same); Pers.: same names, moreover the plant is called in the province of Lûristân لورستان: bilshir , (Schlimmer p. 30); Turk: : ushaq الش , kelekh if , châdir ushâgi شادر اشیاغیى (Avni 30); Eng.: gum-ammoniac; Fr.: gomme ammoniaque Germ.: Ammoniakgummi.
36. USHTURGHAZZ
(Lecl. no. 84 ).

Ibn 'Abdûn ${ }^{1}$ : A root growing in Khorassân. It is cooked with meat as a condiment; its faculty is like that of ferula asafoetida (angudân ís i ; see no. 34).

Diosc. III (80, p. 97); Another asafoetida (angudân انجدان ) which is said to grow in Libya. Its root resembles that of asafoetida save that it is thinner. It is sharp, soft and devoid of gum, and as active as oilpory (silphion).

Ar-Râzî: The ushturgaz lim even when macerated (in vinegar) is not free from heat (ing faculty), particularly when macerated for a long time; it is carminative and stimulates the appetite.

## COMMENTARY.

 (wrongly) shuturghâr شترغار, is a Persian word the meaning of which is "camel's food". Curiously enough the Persian medical and pharmacological dictionaries of Ab̂̂ Mansûr and Schlimmer do not know this Persian name. But it is probably identical with Schlimmer's Ferula asa dulcis (p. 55-
 Vullers in his great dictionary identifies ushturghâz with the above-mentioned laserpitium, a kind of asafoetida, and with another plant the roots of which are used as pickles in

[^48]vinegar. Freytag identifies this latter plant with horminum or Salvia silvestris, which is probably wrong. Bîrûnî and Harawî, who were Persians, say: ushturghâz is the root of the
 Bulâq I, 253) names the plant but does not give its description. The Latin translator, Plempius (II, 45) translates it by Magydaris libyca, evidently based on Dioscurides. IB (no. 84), and other Arabic authors translate the Persian name with "camel-thorn", confounding shutur-ghâz $\mathrm{j}_{\mathrm{k}}^{\mathrm{j}} \mathrm{H}=\mathrm{m}$ with shutur$k h a ̂ r$ (i. e. Alhagi Maurorum, Camel's thorn). Any how it must be one of the numerous Persian kinds of Ferula. See Loew III, 455.

Synonyms: Gr.: ęre@a mavúdciers; Lat.: laserpitium; Ar.: kâsham fît (Idrîsî p. 41 ); Pers.: ushturgház الشترغ

37. ANZARUTT انزروت, Persian Gum (Sarcocolla). (Lecl. no. 171 ).

Ibn Sinâ: It is the gum of a thorny shrub.
Diosc. III Da@жохо́дло (sarkokóllon) ${ }^{1}$ is the gum of a shrub in Persia, resembling frankincense, with small lumps; its gum is bitter.

Galen VIII (XII, 118): It heals and cicatrizes wounds.

[^49]Another Author: When drunk without any corrective, it is deadly. It causes baldness particularly to people of mature age, according to the dose in which it is drunk.

## COMMENTARY.

The anzarît, sarcocolla, still largely used and sold in the East, e.g., in the drug bazaars of Cairo, is a drug which is hardly known in Europe at the present time. It has not been possible to state in a definite manner, the plant from which this gum is extracted. Schlimmer (425) names Penaéa mucronata L., Dragend. (343), moreover, P. Sarcocolla L. and P. squamosa L., when Dymock proves in Pharm. Journ. and Transactions 1879 that the Indian drug at least, is the product of an Astragalus (leguminosa) which he calls Astragalus Sarcocolla Dym. (see also Dymoçk I, 476 foll.). There is also a "false sarcocolla" produced by the composita Microrhynchus spinosus Benth. (Dragend. 692), of Afghanistan. The drug is still much in use in the Orient for eye-diseases ( see Ducros p. 11).

Synonyms: Gr.: оаежокó д̀a (sarkokólla); Lat. : sarco-




1. It is derived from Persian tshashm $\hat{\sim}$ i. e. eye or eye-salve; it is still in use in the Near East to day as shishm (a name for the seeds of Cassia Absus L. or any eye-remedy).


 dote for the eye, as Dâwûd gives the Arabic translation:


## 38. ÂLÛSUN Ting Alysson.

(Lecl. no. 1).
Diosc. III (91): It is a coarse plant used as fuel ${ }^{1}$, with a single stem. It has fruits at the origin of the leaves, of the form of lupin (turmus $\quad$ ) composed of two layers with seeds not inclined to be wide (somewhat narrow). It grows in mountainous places and rugged regions. It is believed that it heals the bite of rabid dogs and that, when suspended in houses, it preserves the health of their inmates. Drinking of its decoction soothes the afebrile cold, and it acts in the same manner when held in the hand and looked at ${ }^{2}$.

Galen VI (XI, 823): It is called by this name because it is useful against the bite of the rabid dog by a specific property of its whole substance. Its faculty is moderately drying, resolvant and cleansing.

[^50]He (Galen) says in the De Antidotis copying Damocrates ${ }^{1}$ : (fol. $8 \mathbf{r}$ ) This plant resembles the hore-hound (marrubium, Ar.: frâsiyûn $ن$ ن $\quad$ geáocon) save that it is coarser and thornier all round. Its thorns grow round with a dark red colour like that of the liver. This drug must be collected at the time of the rising of Sirius (in the Dog-star days, i. e. in the hottest time of the year), dried, pounded, sieved and stored. It is to be administered against the bite of rabid dogs in the dose of one spoonful to four and a half ounces of honey-water.

Author: These qualities do not correspond to the description given by Dioscurides. We saw this plant as described by Galen according to Damocrates. On the other hand that which is mentioned by Dioscurides is a plant called at home (in Spain) al-hâra المارة and also al-qâra 2 . Its description does not correspond in all parts to that given by Dioscurides. It is a plant the branches of which are big, and spread out from one root. They have leaves which are a little larger than those of the marjoram They

1. The Arabic text reads Demokrates دئ قر اطيس. Damocrates was a Greek physician who described many compound remedies and antidotes in verse. The above quotation is to be found in De Antidotis II under the name of Antoninus of Cos (Lecl. I, 7 ).
2. It is written in both MSS with a $f \hat{a}$, but IB says (I, 4, 1.8) expressly that it is written with the letter qâf i, i e. al-qâa .القار: IB, at the same time, contests al- Cxhâfiqî's opinion and identifies qâra with the Greek stachys (ciázvs, woundwort).
grow in thick tufts on the twigs that curve badckwards, and incline downwards with a hidden slit. Their colour, and that of the branches is whitish, and at every leaf, there are grains of the size of coriander-seeds, white with downy hairs on them and containing black grains of the size of grapes. This plant discharges the black bile, strengthens the heart and is useful for the bite of rabid dogs.

There is still another plant very much resembling the aneth as to stem, leaves and smell. It grows in thin and stony soil and has a long root like a long turnip or a carrot. Its taste is sweet with much acridity. A dose of two drachms of the bark-fibres (lihar' '2) of this plant mixed with fresh milk causes a person, who is bitten by a rabid dog, to vomit, and cures him ${ }^{1}$, even if he be already hydrophobic and dying.

There is another plant with branches resembling those of Daphne Gnidiunn L. (al-mathnân نbuall). Its leaves are long, narrow with sharp edges, thick, green, very smooth and with thickened ends. Its flower is bell-shaped, of reddish-grey colour, hanging downwards and strongly bitter. The nomads of our deserts take a little of the juice of the leaves and drink it with oil, which makes them vomit very violently.

[^51]It is useful for the bite of rabid dogs and for leprosy; it is a strong remedy and unreliable if one is not careful in using it. I believe this plant to be the karâth 1,5 (Daphne Tartonraira L.) of Abù Hanîfa ${ }^{1}$.

## COMMENTARY.

Botanists have found great difficulty in identifying the above-described plants. It is uncertain what may have been the alysson of Dioscurides. Its name has been given to the crucifera Alyssum saxatile L., a mountain plant of Southern Europe. The description, however, better suits Farsetia clypeata R. Br., another crucifera (Dodonaeus, Historia Stirpium 1550); see Loew I, 474. Idrîŝ̀ (no. 67) only repeats the description of Dioscurides. As to the plants described by al-Ghâfiqî it is not possible to have them identified except by a professional botanist particularly acquainted with the flora of the Spanish mountains. One of the plants may be Thymelaea Tartonrairu All., the other - as suggested by IB - one of the kinds of Stachys (Stachys germanica L. or St. recta L.), Issa (p. 174). Sickenb. suggests (Arzn. p. 8) Marrubium Alysson L.

Synonyms: From the Greek äivooov (álysscn) the meaning of which is "protecting against canine madness"

[^52]
 IB ${ }^{1}$; Pers.: azdasht $\operatorname{E}$ (Dâwhd; doubtful, as not confirmed by our Persian sources) ; Eng.: madwort; Fr.: alysse.

## 39. ASQLIBIYÂS أسغal, Asclepias.

(Lecl. X, no 66 ).
Hunain called it in the book of Galen al-qanâbir 2.
Diosc. III: A plant with long branches on which are oblong leaves like those of rooòs (kissós, ivy) as to form, with many thin roots and flowers which are heavy in odour;
 grows on the mountains. Its roots, drunk in wine, are useful against colic and the bites of venomous reptiles.

Galen VI (XI, 840): I have no knowledge of this herb and have never experimented with it.

## COMMENTARY.

This plant was identified with Asclepias Vincetoxicum L.,

1. Issa ( p. If ) identifies the plant with Alysson saxatile L. and gives several other Arabic names. This plant is called in English:反ुold-basket or yellow alison, in French: alysse jaune, corbeille d'or:
2. This book is Galen's treatise Or Simple Drugs translated by Hunain. The latter rendered ḋordntıás by qanâbir, a translation against which IB writes in strong terms (I, p. 26 last lines; Ieecl. I. p. 6'). It is very probable that this passage is due to al-Ghâfiqi and only omitted by BH .
3. Coronilla securidaca L. (Berendes 327).
but has no fragrant roots. So Fraas identified it with a kind called by him Asclepias Dioscuridis which he found on the mountains of Euboea (Greece). See Loew I, 281 foll.

Al-Idrîsî (I p. 31), however, says that the Latin name of the plant is qanâbarî He gives a more detailed description of the plant, not in accordance with that of Dioscurides. He may be speaking about another plant as he finds asclepias in Diosc. IV instead of III.

Synonyms: Gr.: ảoxגŋлıás (asklepiás); Ar.: qâmi" assimm (i. e. checker of poison), Sharaf; Pers.: no name ${ }^{1}$ Turk.: qâhir-i-sumûm قاهر (i. e. conquering poisons), quduz otu "ودوز اوتى" ('Avni and Samy); Eng.: asclepias; Fr.: asclepiade; Germ.: Schwalbenwurz.
40. AMBRÛSIY $\hat{\mathbf{A}}$ 1, Sea-Ambrosia(Ambrosia maritima L.).

It is the bilinjâsf ${ }^{2}$. ${ }^{2}$.

1. Al-Idrîsî gives in the article Asclepias the name barghasht
 certain wild pot-herb resembling spinach and growing on the banks of rivers. This description does not correspond with that of Dioscurides' asclepias.
 error. Bilingasf or Biringasf is the southern-wood, a kind of artemisia (Artemisia vulgaris L.). The above statement is erroneous, as ambrosia and artemisia are two different kinds of plants; it may be a copyist's interpolation.

Diosc. IIII (114): It is a Vóúuros (thámnos, shrub) with many branches, about three spans high. Its leaves grow from the origin of the stem and from the root; its twigs are full of seeds ${ }^{1}$ resembling bunches of grapes before they ripen. Its smell is like that of the rue (sadhâb سذابس) and its roots are thin and about two spans long. The inhabitants of Cappadocia use it for making wreaths.

Galen VI (XI, 824): When used for cataplasms it is astringent and prevents excretions from curdling.

## COMMENTARY.

The àub@oaix of Diosc. is generally identified with Ambrosia maritima L., a composita.

Synonyms: Gr.: à,ubeocio ; Lat.: ambrosia (Pliny, who confounds it with several other plants); Ar.: damsîs , (IB), damsîsa amımos, ambrûsiya La (IB); Pers.: amrûsira امروهرة Steingass; Turk.: 'anbariye deres, yaila (yailé) chi-
 absinthe batarde; Germ.: Ambrosia.
41. AWNANTHI أوناثي, Oenanthe2 (Spiraea filipendula L.).

[^53](Lecl. no. 136 ).
Diosc. III (120): It is a plant with leaves like those of the carrot, white flowers and a thick stem about one span high. Its fruit is like that of orach (sarmaq anan , àvdeúpozıs, äт@ápásus, Atriplex hortensis). Its root is enormous with many round bulbs. It grows amongst rocks. Its fruit, stem and leaves are drunk with the wine called oivóncil (oinómeli, a kind of mead) to expel the placenta and to clarify the urine.

## COMMENTARY.

Theophrastus knows two kinds of oenanthe, one of which seems to be identical with that of Dioscurides. It is identified by most of the botanists with Pedicularis tuberosa L., a scrophulariacea, but by Fraas and Littré with Spiraea filipendula $L$. (drop-wort), a rosacea.

Synonyms of the latter plant: Gr. : oivórıŋn (oinánthê); Lat. oenanthe, (vitis labruscae uva), Pliny; Ar.: al-qandûl القندول, Berggr., Persian ${ }^{1}$ : rîsh-baz ريش بُز (Naficy); Turk.: qandûl أركمصحصقالى
2. Al-Idrîsî gives the Persian name ardasht or azdasht ارد ازدشت which does not exist in any dictionary - the Syriac term matrâ-batrâ $\mid \ddot{r}_{0}$ and the Berber term mâkashfâl Jist. Issa (p.127) calls the plant Oenanthe L. and gives the Algerian-Arabic name mashfîl هشُيْل
dule; Germ.: knollige Spierstaude, roter Steinbrechwurz, Erdeichel.
42. $\hat{I} M \hat{A} R U Q \hat{A} L I ̂ S$ أياروتالس, Yellow Day-Lily (Hemerocallis fulva and flava L.).
(Lecl. no. 209).
Diosc. III (122): It is also called inusooچaráגスazion (hemerokatallakton). Its leaves and stem are like those of the lily, but they are leek-coloured. It has three or four blossoms of an intense yellow colour and a root like that of the onion called bokbòs (bolbós, Pancratium maritimum?) though it is bigger.

Galen VI (XI, 884): Its root is like that of the lily as to appearance and faculty. Its use is to cause hot swellings. of the eye and breast (mamma) to subside. It is also used for burns in the form of applications ${ }^{1}$.

## COMMENTARY .

The lily described by Theophrastus as inuceozaxiks (hemerokallés) is the Martagon-lily and differs from the ipusoourakis (hemerokallis) of Diosc. The latter plant may be Lilium bulbiferum (according to Mathiolus) or Hemerocallis fulva L. The description of the latter is well in accordance with that

[^54]given by Diosc. IB (no. 290) says that the yellow lily was shown to him by a notable of Cairo who had brought it from Syria. Sickenb. (Plantes p. 11; Arz. o. 25 ) says that Schweinfurth discovered plants of the Hemerocallis fulva in the old Wakf-Gardens of Cairo though they had disappeared from the modern Egyptian gardens. He thinks that they may date from the time of the successors of Saladin when the Qâdi al-Fâdil introduced them into Egypt from Syria (beginning of the XIIIth. cent. A. D.).

Synonyms for Hemerocallis fulva and flava L.: Ar.:
 and Turk.: same names; Eng.: yellow day-lily, lemon-lily; Fr.: hemerocalle, lys jaune; Germ. : gelbe Taglilie.
43. AIDHUSÂRÛN أيذسارون 1 , Hedysaron, AxeWeed (Securigera Coronilla D. C.).
(Lecl. no. 136).
Diosc. III (130): It is called by the druggists ле凤гкivos (pelekinos). It is a vauros (thamnos, shrub) with small leaves like those of the chick-pea, and husks, (ghuluf ik, capsules 2.06oi ) resembling in form those of the Syriarl carob. There are red seeds in them resembling two-edged axes, of bitter

[^55]taste．They are good for the stomach as a drink．
Galen VI（XI，883）：It grows amongst wheat and barley．It is useful for obstructions of the viscera and，when used in the form of pessaries，prevents pregnancy ${ }^{1}$ ．

## COMMENTARY．

This plant was also known to Theophrastus under the name $\pi \varepsilon \lambda \varepsilon x i n o s$（pelekinos）．It is probably the South－European legumiosa Securigera Coronilla D．C．，axe－weed，an emetic． （Berendes p． 349 ），and not one of the kinds of Hedysarum for which Issa（p．91）gives Arabic names．

Synonyms：Gr．：ทidúacoov（hêdysaron），лeえzxĩvos（pelekî－ nos）；Lat．：pelecinus，Pliny；Ar．；Pers．and Turk．：no term；${ }^{2}$ Eng．：axe weed；Germ．：schwertförmige Kronwicke．

44．AWNÛSMA ${ }^{\text {in }}$ ，Onosma．
（Lecl．no． 193 ）．
Diosc．III（131）：It is also called ỏoućs＇（osmás），q久onĩııs （phlonîtis）and övovıs（ónônis）．Its leaves are like those of

1．These last assertions are equally given by Dioscurides， and are not found in Galen＇s text．

2．Issa（p．91）gives，as terms in Arabic，al－fâ＇s الفأس and ＂adas murr ，ع⿰亻⿱丶⿻工二又（i．e．＂bitter lentils＂）．

3．Misspelt in $T, G$ and IB into onoma 1.
ä’̌ovoa (ánchusa i.e. alkanet, Alkanna tinctoria Tausch.), oblong, soft, four fingers long, and about one finger wide. They spread out on the ground. It has neither stem, fruit nor flowers, and the root is thin, weak, long and blood-red in colour. It grows in rugged places. It expels the foetus during labour.

Galen VIII ( XII, 89) : Its substance is hot, sharp and bitter. Taken with wine it kills embryos.

## COMMENTARY.

Most of the botanists follow now Fraas who identifies the örooun of Diosc. with the boraginacea Onosma echioides L. In India it is used as a substitute for borage (Dymock II 524). Issa (p. 128) gives some Arabic synonyms.
45. IMIY ÛNÎTÎS أيوبونيطيس, Milt-Waste, (Hemionitis). (Lecl. no. 210).

Diosc. III : Some people call it spleen-wort (at-tuhhâl̂̂ لى (lûf لوف) סeazóvzıov (drakóntion, dragon's wort, Arum Dracunculus L.). and are semi-lunar in shape. It has many roots but neither stem, seeds nor flowers. It grows amongst rocks.

1. In the text of $T$ and $G$ lauz $j$ (almond); this is a copyist's blunder that we have corrected.

The taste is astringent and, when drunk with vinegar, it resolves the spleen (i.e. the excessive growth of the spleen).

## COMMENTARY.

Most of the botanists agree to see in Diosc.'s ímorirıs the polypodiacea Scolopendrium Hemionitis Sw. (milt-waste, eckiger Zungenfarn). The íucóvov (hêmiónion) of Theophr. seems to be identical.
> 46. ANDRÛSÂQÂS أندروساظاس, Androsakes 1 .

(Lecl. no. 165).
Diosc. III (133): It is a plant that grows on the shores of Syria, renewing its growth every year. It is white, has thin twigs, is of bitter and sharp flavour and has no leaves; on its tips there is a sheath (ghilâf $\mathrm{Cl}_{\dot{E}}$ ) containing seeds. Two drachms of it, drunk with wine, are strongly diuretic to ascitic people. It is useful in gout in the form of a cataplasm

Galen VI (XI, 830) : Like the sayings of Dioscurides ².

## COMMENTARY.

The European botanists early recognised that the and-

[^56]rosakes of Diosc. is not a plant, but a marine zoophyte, probably the Tubularia Acetabulum (according to Sprengel), a kind of hydroid polype. IB (I, 62, 1, 16) gives it the Arabic names of mallâhh $\tau^{-1}$, kasmâ hw and kamlag 飞r.r. Idrîsi (I, 28) gives the Persian name kulkh (Steingass: "a kind of herb"). Dâwûd gives the Persian name kânih $\mathcal{C}^{6}$. The name of Androsaces Tourn. has been transferred, however, to a group of plants belonging to the species of the primulaceae. For this group the above-mentioned Arabic names are in use; some others are given by Issa (p. 16-17).
47. ANTHÛLIS أنيوليس, Anthyllis (uncertain).
(Leçl. no. 157.).
Diosc. III (136): There are two kinds of this plant: one has soft leaves like those of lentils, perpendicular branches about one span in length and a thin small root. It grows in swampy and in sunny places, and is of salty taste.

The other kind (fol. 9 r) has the leaves and branches of the zauaímizvs (chamaípitys, ground-pine), save that they are more downy and shorter, in length. Its blossom is purple-red and of a very heavy smell. It cures, when drunk, epilepsy, dysuria and pains in the kidneys.

Galen VI (XI, 833): Both of them heal ulcers.

## COMMENTARY。

The first kind of Diosc.'s dinguldis (anthyllis) had been
already determined by Prosper Alpinus (De Plantis Exoticis, Venice 1629) as the convolvulacea Cressa cretica L. See Loew I, 452 ("Salzwinde").

As to the second kind, it is not determined with certainty. The old botanists (e.g. Clusius) took it for Ajuga Iva Schreb. (see Loew II, 71 72), whilst Fraas proposed to identify it with Frankenia hirsuta (Berendes 352). Idrîŝ̂ (no. 52 p. 28) gives anthillishun $\dot{j}$. name and as the Arabic one az-zahra الزهرة, which simply means "the flower". His description absolutely corresponds to Dioscurides. These names probably refer to the leguminosa Ebenus creticus L. which provides a kind of red ebony. Issa (p.73) gives the name of zahra to this plant.
48. UQHUWÂN أَّ 1 , Fever-Few (Chrysanthemun Parthenium Pers. $)^{1}$.
(Lecl. no. 121 ).
Diosc. III (138): Пaevévıon (parthénion) - some people call it áućearon (amárakon) -has leaves resembling those of coriander and a white flower with a yellow centre, of heavy odour and bitter flavour. When drunk - mixed with oxymel (sikangabin incis, i. e. honey with vinegar) or

[^57]with salt in the manner in which zліяvиоу(flax-weed, Cuscuta Epithymum) is taken, it causes the discharge of phlegm and black bile, aud becomes useful against asthma.

Galen IV (XI, 823): It is hot in the third, and dry in the second degree.

Ibn Mâsa ${ }^{1}$ : It is soporific and lethargic when inhaled. It is also diuretic: and when used as a pessary (farzaga $\pi$ røadóov) is emmenagogue.

## COMMENTARY.

It is one of the kinds of Matricaria, very propably M. Parthenium L. (i. e. Ciysanthemum Parthenium Pers. or Pyrethrum Parthenium Smith). The different kinds of camomile were not clearly distinguished by ancient and medieval botanists. See the very detailed paragraph of Loew (III, 375-8) on Anthemis. Idrîsî distinguishes three kinds; bâbûnag

 kon), \evxáv̨̧̀̊uov (leukánthemon), Diosc.; Lat.: parthenium;

 Egypt, erroneously acc. to IB), shagarat Maryam (Man an

1. See our Introduction chap. I. no 17.
(Andalusia, IB), kâfîriyya sopath Africa, IB ), shagarai
 Schweinf. p. 13, in Modern Egypt), ahdâq al-maradâ احـاق الر (Vullers I, 116), 厄hubz al-ghurâb خبخ الغر اب (ibid.), rigl ad-duggâga



 (IdrîSî p. 22) ; Turk. 'âdî̀papative fever-few, bachelor's buttons; Fr.: matricaire, espargoutte; Germ : Mutterkraut, Mutterkamille.

Bîrînĉ's paragraph on uqhuwân is too long to be reproduced here; he quotes abstracts from early Arabic poems in which the name of the plant is mentioned.

Idrîsî (p.22) who gave many synonyms for each plant, cites the Modern Greek word hamamidî $v \lambda_{n}+\pi$, probably mutilated \%unouin: (chamoméli); and the Berber name âlûshan The Indian and Syriac names are mutilated.

Dâwald says that the kind known in Egypt by the name urbiyân in the subject of an old Coptic superstition: if it is cut with a golden knife on the nineteenth day of the Aries and carried by a person, it is believed he shall not lose his gold.

Issa gives the name of uqhuwân to three different compositae: Anthemis cotula L. (p. 18), Chrysanthemum Parthenium (p.48) and Matricaria chamomilla L. (p. 115) for each of which exist numerous other Arabic names.
49. ÂNÂGHÛRÛN ris foetida L.). (Lecl. no. 156 : Anâghûris أناغورس).
'Avárveor. ${ }^{1}$ is the "carob of pigs" (kharnûb al-khinzîr ( ) ; it is called ayâghîrân reading, and must be spelt innáyv@os (anágyris or anágyros).

Diosc. III (150): It is a ঐáuvos (thámnos, shrub) the leaves and branches of which resemble the plant called ${ }^{\circ}{ }^{2} \gamma v o s$ ágnos (Vitex Agnus castus, chaste-tree). It has a very heavy smell, blossoms like those of the cabbage and fruits in oblong sheaths. The form of the fruit is that of a kidney, and its colour is variegated: it becomes hard about the season when grapes ripen. The juice of its root is dissolvant and maturing, and its fruit is violently emetic.

Galen VI (XI, 829) : This is a plant of the shrub kind, fetid in smell, hot and resolvant. It atrophies soft swellings, and its seeds stop vomiting.

## COMMENTARY.

The äváyv@os or ávápvers (anágyros or anágyris) of the Greeks corresponds to the papilionacea Anagyris foetida $L$. It is a shrub with large yellow flowers, common in the Mediterranean region.

[^58]Synonyms: Gr.: ỏpáqveos, ảvárveıs, üroros (ákopos), Diosc.; Lat.: same names, Pliny; Ar.: kharnûb al-khinzîr , Gh., habb al-kilâ
 many other Modern Arabic names see Loew (II, 418-19), and Issa (p.14-15). Pers. and Turk.: kharnûb-i-khanâzîr ('Avni) ; Eng.: bean trefoil, bean-clover; Fr.: anagyre, bois puant; Germ.; gemeiner Stinkstrauch.
50. AMLILLUS Therern, Barren Privet (Rhamnus alaternus L.).
(Lecl. no. 5 ).
Amlîlûs is a Berber name ${ }^{1}$. It is a tree, taller than a man and spread out. Its leaves are like those of green myrtle; it is smooth and has red fruits of the size of the grains of Pistacia lentiscus (dirw , $\quad \dot{0}$ ). When ripe they become black and smooth to the touch. The wood is hard inside, whitishyellow and shining, with a slight reddishness. Some people
 $e^{(i i)}$ ) of the fibres of its root is laxative, strengthens the liver and spleen and removes their obstructions. It causes jaundice, when cooked with meat and the broth thereof is drunk.

[^59]
## COMMENTARY.

Lecl. (I, p. 12) has found out that this plant is Rhamnus alaternus $L$. . It bears, indeed to this day, the Berber name mlîlis $س$.ل. (Schweinf. 223), the Arabic one is sfêrâ', sofîrâ' sem and others similar (Loew HII, 141). IB adds to the above given description of Gh. another given by his teacher Abu'l 'Abbâs an-Nabâtî.

Synonyms: Berber : âmlîlis
 (Syria, Issa), ‘̂̂d al-khair (Issa) ; Eng. : alaternus, barren privet; Fr.: alaterne, nerprun, bourg - épine; Germ.: immergrüner Kreuzdorn.
51. AWNÛBRÛKHÎS أونوبروخيس, Esparcet (Onobrychis).
(Lecl. no. 192 ).
Diosc. III (153): It is a plant the leaves of which are like those of small lentils, but a little longer. It has a stem one span high. The flowers are bright red, and the root is small. It grows in uninhabited places.

Galen VIII (XII, 89) : Applied fresh as a cataplasm it dries abcesses. When dried and drunk in wine it is good for dysuria, and when triturated with oil and smeared over the body, it acts as a diaphoretic.

## COMMENTARY.

It is, according to Sprengel, the papilionacea Onobrychis sativa Lam., and according to Fraas, Onobrychis caput galli L. (crista galli Lam.). Anyhow it is a kind of esparcet. Its seeds are still used as a diuretic.

Synonyms: Gr.: ovobevxis (onobrychís); Ar.: silla du

 520 ); Pers. : no proper name, ( see Schlimmer p. 309, Hed-
 giyâh-i-mu'azziza، كـ, 'Avni (p.538); Eng. : esparcet, honeysuckle, French grass; Fr.: esparcette, sainfoin; Germ.: Wickenklee, türkischer Klee, Esparsette.

## 52. AFIMÎDIY $\hat{U} N$ أفـمـديون , Epimedium.

(Lecl. no. 117 ).
Diosc. IV (19): Its stem is smail and its leaves are like those of ruooós (kissós, ivy); they number about ten or twelve. It has no fruit (or flower) ${ }^{1}$, but has thin black roots of a heavy smell and no taste. It grows in watery places. Its leaves, mixed with oil, and applied to the breasts prevent their over-

[^60]growth. Five drachms of it, if drunk by a woman after her menses, prevent her conception.

Galen VI (XI, 876) : It is slightly cooling, and is said to promote sterility when drunk.

## COMMENTARY.

The old European botanists agreed to see in the $\dot{i \pi} \mu \mu \boldsymbol{h}_{\delta 100}$ of Diosc. the berberidea Epimedium alpinum L. Berendes (p. 376) remarks that this identification does not agree with the habitat of the plant. A note in the Arabic translation of Diosc. confirms, the fact that the plant afîmîdiûn grows in water (Lecl. no. 117). Other botanists proposed the ophioglossacea Botrychium Lunaria Sw. or Marsilea quadrifolia (Littré); but their character is again not in accordance with Diosc.'s description. Thus the question remains unsettled.

The Greek name $\begin{gathered}\text { zrumindov } \\ \text { is rendered in Latin, by Pliny, }\end{gathered}$ as epimedion. The Epimedium alpinum bears the English names barren-wort and bishop's hat; Fr.: épimède des Alpes, chapeau d'évêque; Germ : Sockenblume, Bischofsmütze.

Issa gives ( p .76 ) the Arabic name hurfat al-barriyya . حر رة البرية
53. ÀKHIY ÜN أخيون, Viper's Bugloss (Echium rubrum Jacq.).
(Lecl. no. 24).

This is the Greek name of the af'awân 1 .
Diosc. IV (27): Some people call it $\delta$ copis (dôris), others $\dot{a}^{2}$ cubiadésıo (alkibiádeion). It is a plant with rough leaves, oblong and thin like those of äprovau (ánchusa, Anchusa tinctoria $L$.), but smaller. They ooze a certain fluid which sticks to the hand. On the leaves there are small thorns like downy hairs. The plant has small thin branches on either side of the stalk (and small leaves) ${ }^{2}$. One of the branches has smaller leaves than the others. Near the leaves there are purple blossoms carrying fruits which resemble, as to their shape heads of serpents. Its root is thinner than a finger and of a blackish colour. Its root when taken with wine soothes backache and is a galactagogue.

## COMMENTARY.

It is Echium rubrum Jacq., a borraginacea of Southeastern Europe, or Echium plantagineum L. and vulgare L. The latter furnishes the officinal drugs Herba Echii and Rádix Echii or Buglossi agrestis (Luerssen II, p. 972).

Synonyms: Gr.: $z_{\gamma / \prime \prime}$ (échuon); Lat.: echios, Pliny;

1. This Arabic name has probably the same meaning as that

2. Missing in the texts of Gh. and IB, probably an early copyist's blunder.
 (IB), af awâniyya ${ }_{3}^{1} \mid$,.:I (Idrî̂î p. 21); Pers. and Turk.: akhiyûn ن. aux vipères; Germ.: roter Natternkopf.
3. $\hat{A} \mathbf{L A} T \hat{I} N \hat{I}$ indi, Cancerwort (Linaria Elatine Mill.).
(Lecl. no. 138).
Diosc. IV (40): A plant, the leaves of which resemble those of the bindweed (Convulvulus arvensis, lablâb بلإبا). only smaller, rounder and covered with down. Its branches are thin, about one span long, and each five or six grow from one root. They are densely covered with leaves which are acrid. It grows among the stalks of wheat and in cultivated land. Its leaves applied with barley-gruel as a cataplasm, are useful for hotswelling of the eyes, and its decoction controls diarrhoea caused by intestinal ulcers.

Galen VI (XI, 873): It is moderately detersive and astringent.

## COMMENTARY.

All authors agree that the elatine of Diosc. is a climbing kind of Linaria (scrophulariaceae); but it is uncertain whether it is L. Elatine Mill. (according to Mathiolus.), L. spuria Willd. (Sibthorp) or L. graeca Bory (Fraas). A variety of

Linaria spuria Mill. is often confused with L. Elatine (Luerssen, II, p. 997).

Synonyms: Gr: Zhazion (elatine); Lat.: same name,
 (Abu'l 'Abbâs al Magûsî), shahîmiyya $a^{\circ}{ }_{2} \approx \star$ (Medieval Spain,
 (Modern Syria, Berggren.). Other names by Issa (p. 109).

 auriculaire; Germ.: Leinkraut.
55. ADHARIYÛN ${ }^{\text {Tr, }}$ T, Marigold (Calendula officinalis L.).
(Lecl. no. 30).
 see no. 40), sometimes yellow, and sometimes red.

Ibn Ganâh ${ }^{1}$ : Its blossom (nuwwâr ${ }^{\text {i }}$ ) is golden and has in its centre a small black capitulum.

Ibn Gulgul: A plant growing to the height of one cubit. It has longish leaves of the length of one finger, whitish in colour covered with down It has numerous twigs like (wild) camomile (lâbûnag t'وبو).

The Nabataean Agriculture: Its flower (ward $\quad$ g) is

[^61]yellow and without odour; if there is any odour in it at all, it is fetid. It is a plant which turns round with the sun and closes its blossoms by night. It is said that if a pregnant woman carries it continually in her hand she aborts, and that mice flee from its smoke and flies from its blossom. If pounded and applied as a cataplasm on the lower part of the back, it provokes erection.

Another Author: Its root is useful for scrofula when suspended (at the neck of the sufferer), and if carried by a sterile woman, it cures her.

## COMMENTARY.

The name Toذ âdhariyûn is Persian (pronounced today âzariyûn). Vullers reads also âdhar-ĝ̂n اذر, i. e. "flamecoloured, fiery red", a name given as well for a red anemone as for a kind of camomile, doubtless our plant. It is probably Calendula officinalis L., a composita of Southern Europe, or another Calendula variety.

Bîrûnt, in his short paragraph on âdhariyûn, confirms the Persian name of âdharkûn اذركون (Issa p. 36 reads اذز جون), and gives the name of al-hanwa o, 21 as an Arabic name which is found in early Arabic poems alternatively with âdhariyûn.

Al-Idrîsî ( p. 25 foll.) gives a description of this plant which is independent of that of Gh. We quote here the translation of the first part of his the paragraph :
"Âdhariyûn اذريون: Diosc. did not mention it. Its name
in Latin is adhriûz اذر, in Persian malhâral Jlado 1 , in Syriac
 the variegated plants ${ }^{3}$; it grows a multitude of branches rather high over the soil springing from one stem. It has leaves like those of the broad basil (habaq 'arîd
 officinalis ). Its blossom is blackish-yellow, and in its centre there is a black spot from which come the seeds. It is of two kinds, domesticated and wild..."

Then follows a paragraph on its medical qualities.
Synonyms: Ar.: hanwa дy: , Birûnî, kahlâ M完, sahlâb̂̂ , H. (Modern Egypt, Schweinf.), bakhûr Maryam fo, (Medieval Egypt, Dawûd); Pers.: âdhariyînn اذريون, Ab̂̂u
 Turk.: nergis ;~; ; Eng.: marigold; Fr.: souci, calendule; Germ.: Ringelblume, Totenblume.

## 56. $\hat{A} R A D Y \hat{A B I} \hat{I}$, The Uncertain.

(Lecl. no. 1).
Hubaish: A shrub the leaves of which are like those

1. Not found in dictionaries; may be mutilated by missing diacritical points. Dâwûd spells it malgal̂̂l dytato
2. Equally missing from the dictionaries. Hartâmetâ is the chickpea. Dâwûd spells it hartâmâ lilb, $\quad$.
3. In the text nabât an-namsh $\quad$; probably a copyist's blunder for thammus uiŝ (Váuros, shrub.
of the caper-plant (kabar r.5), of a strong smell. It has seeds inside sheaths with appendices like tongues. It is near to coldness and dryness (in its qualities), resolves external hot swellings, mixed with nightshade (inab ath-tha'lab بand ens) and winter-cherry (kâkang $\underset{r}{ } \leqslant$ Physalis Alkekengi) and, when applied locally, soothes the pain provoked by the sting of a hornet.

## COMMENTARY.

The name $\hat{a} r a d y a \hat{a} b \hat{\imath} \hat{\imath}$ is missing from all the dictionaries and from most of the Arabic pharmacologies, e.g. from IB and Dâwûd. We found in Ibn Sîna (1, 262) the same drug, under the name of ardqiyani اردقيانف . Ibn Gazla gives the same description under the name of ardqiyâq̂̂ "Simple Drugs". Idrîsî (p. 26) copies his paragraph under the title of $\operatorname{ardqanâ} y \hat{\imath}$ ى الز. ing to Sprengel, it is Zygophyllum Fabago (not Tabago) L. . More important are the notes abstracted by Vullers (I, 77 foll.) from Persian authors. He spells the drug âridfanânî
 ("asses’ cucumber", Greek oíros ärocos, sikys ágrios, i. e. Ecballium Elaterium Rich.). This is not probable, but the plant may be another kind of wild cucurbitacea. Persian authors say that the name is of Greek origin. We think that it could possibly be a mutilation of övou ro $\lambda 0 \% \sim \not v \vartheta \eta \eta$ (ónou kolokynthê, i. e. asses' vegetable marrow) or some other similar name. In Biruni and IB the name is missing.
57. AMSUKKH خ. أan, Horse-tail (Equisetum arvense L.).
(Lecl. no. 149 と̌mıl).
It is called in the vernacular language (of Spain) shitita an=1. It is of two kinds; one is small with thin, knotty and contiguous branches like the leaves of the Spanish broom (es-parto-plant, ratan F; , Spartium junceum S.) ; these leaves, when pulled out, separate at the knots. They are large, compact and have a thick woonden stem as thick as the little finger. It grows to the height of about one span. It has no flower, but a flame-red fruit which is astringent and mildly bitter. if this plant is, taken with wine it checks diarrhoea and if applied as a cataplasm causes a hydrocele to disappear.
(The other kind is) bigger, has a thicker stem and shorter branches; its fruit is red, but becomes black when ripe. Its uses are similar to those of the first kind. Some people count both as different kinds of horse-tail (equiseturn).

## COMMENTARY.

There is no doubt that this plant is Equisetum, a cryptogam which has no real fruit but an archegonium (ovary). The two kinds described by Gh. may be Equisetum arvense L. and the greater E. maximum, or giganteum Thunb., or

[^62]E. Telmateja Ehrh.. They were used officinally as diuretics under the names of Herba equiseti minoris and majoris (Luerssen).

Synonyms: Gr.: itraveıs (híppuris); Ar.: amsûkh ${ }^{1}$ خ, aol亡,mol (probably a Berber name), dhanab al-khail لillij, hash-
 Arabic and Syriac names see Loew (I, pp. 1-5), and Issa (p. 76 ): Pers.: same names; Turk.: hashîshet et-tûgh 2 an $\dot{\varepsilon}$ glll Avni; Eng. : horse-pipe, horse-tail ; Fr. : prêle, queue de cheval; Germ.: Schachtelhalm, Rosschwanz.
58. UDHN AL-ARNAB أنن الار نب, Hound's tongue ( Cynoglossum cheirifolium L.).
(Lecl. no. 35, آان الارنب ( ).
Udhn al-arnab (i.e. rabbit's ear) is called (fol. $10 \mathbf{r}$ ) udhn al-ghazâl أذن ال:الزال (gazelle's ear), and the Berbers call it udhn ash-shâh أذن الثاه. (sheep's ear ${ }^{3}$ ). It is a plant with

1. IB and Dâwûd spell it amsûh حوmol, and give as the Spanish name inishtella ain. We suppose that this is a mutilation of the Spanish asprilla, Italian asperella (French presle, prêle)
2. tugh $\dot{\varepsilon}$ ( or $\dot{g}$ (Turk.) for horse-tail.
3. IB (p. 17-18) who copies the whole of this chapter in a quotation from Gh., spells these names adhân ils, i. e. the plural of $u d h n$ أذن (ear). He gives, moreover, the name of lasîq $\hat{\imath}$ inn which seems to mean: "sticky".
leaves like those of the waybread (lisân al-hamal dill i. e. Plantago major L.), except that they are thinner and rougher. It is of a blackish colour and on it are soft hairs like white dust, in which character it also resembles the borage (lisân aththawr as a thumb, growing to the height of more than a cubit. (It carries) a blue and slightly white blossom like the flower of flax (kittân $ن \boldsymbol{i}$ ) It is funnel-shaped with calyces containing four grains (nutlets); it is rough, shiny and sticks to clothes. The root has (long) hranches like the hellebore (kharbaq i. خ), black outside and white inside. If it is extracted and rubbed on the face, when fresh, it makes it rosy and beautiful. Its decoction is drunk for dryness of the chest.

There is a second kind, smaller than the first one as to height and leaves; its blossoms are crimson-red.

## COMMENTARY.

Probably Cynoglossum cheirifolium $L$. The smaller kind may have been the C. officinale L., the root of which (radix Cynoglossi) was not long ago an official drug.
 a less circumstantial description of the plant mentioning, however, that it grows in Sicily. Dâwĥd says that the Egypt-
 me with you" on account of the burdock-like stickiness of the fruit. According to Schweinfurth and Aly Ibrahim Ramiz the plant does not grow in Egypt to-day.

Synonyms: Lat. (modern) : cynoglossum ; Ar.: udhn

 Pers. khar-gîshak , خركوش , (Vullers I. 680); Pers. and Turk.: lisân el-kelb $ب$ K_ll Fr.: cynoglosse, langue de chien ; Germ.: Hundszunge, Venusfinger.

## 59. ÀTARMALA 1 Thedetermined).

(Leçl. no. 99).
A plant, the stem of which reaches the height of about a cubit; it has no branches and its leaves are like those of
 and arranged in four parallel rows. It has an ear about a span long, very regular and lined with super-imposed sheaths which are round with open orifices, in the shape of the sheaths of hazel-nuts (bunduq بندق), except that they are much sma!ler. Inside are fruits shaped like hazel-nuts and of the size of chick-peas, containing thin red-blackish seeds. On this plant there is an exudation, which is viscid like honey. It (the plant) has thin white flowers which may sometimes be yellow. It grows in barren soil and wild lands qafr $\mu^{i \xi}$ ). The seeds are applied as an eye-salve for trachoma (garab جرب) and early stages of ophthalmia (ramad $\quad$ ).

## COMMENTARY.

In spite of al-Ghâfiqî's minute description no old or
modern botanist has been able to identify this plant âtarmâla Nobt IB simply copies Gh.'s whole chapter, Ed. Meyer in his "History of Botany" (III, 213) thinks that it may be Scrophularia sambucifolia L.; but Dragend. (p. 604) vigorously attacks this hypothesis. The name might be Berber or Spanish.
60. ASABBI• SUFR أه (Lecl. no. 90).

A plant known to the botanists as "the hand of 'Aisha" or "the hand of Mary". Its leaves are like those of khusâa adh-dhîb خمى الذئب ( "wolf's testicles"); the stem is tall, thin and carries purple flowers from below upwards. Its root is as big as a suckling's hand, which it resembles in shape, with five fingers. It is very humid and grows in the sand and near the sea.

Ibn Ridwân: Some kinds resemble the palm of the hand with five or six fingers, and others are like a lion's paw. Its colour is yellow and it is hot and resolvent.

Ibn Sinnâ: Its shape is like the palm of the hand, greyish-yellow to white, hard and slightly sweet. Some are greyish-yellow without whiteness, hot and dry in the second (degree). It clarifies the skin and the nervous organs. It is used against insanity.

Al-Maĝ̀usî: It is useful against poisons and (poisonous) insects and against abortion.

## COMMENTARY.

It is not possible to determine which plant is meant by the foregoing description. The name of asâbi" sufr ("yellow fingers") or 'urûq sufr عروق هـر ("yellow roots") is applied to-day in the Cairo bazaars to the roots of Curcuma longa L. (turmeric) (Ducros no. 158). The name of kaff Maryamn ro. ("palm of Mary") and the like is reserved to the Jericho-rose (Anastatica hierochuntica L.) (Ducros no. 201). But the description of the plant does not agree with either of them, nor with any of the other plants to which, according to Issa (p. 63 no. 3), the name of asâbi، sufr is given, viz. Vitex agnus castus L. and Memecylon tinctorium L.. Another mention of the Arabic name will follow in the chapter kurkum s, 5 (turmeric). $\operatorname{Idrîsî}$ ( p. 26 no.
 al-‘adhrâ اطايعي اليذراء|, the first meaning, "fingers of the leprous woman", the second, "the Virgin's fingers"; he adds that there exist several kinds of this plant. Bîrûni, on the contrary, treats of asäbi‘ sufr and asäbi‘ al-' $\hat{a} d h i ́ r a ̂$ in two separate chapters, treating them as different plants.
61. ALANG Alangium Lamarckii Thwaites.
(Lecl. no. 135, al-bugg eli).
Ibn Ridwân: Roots brought from India, with black spots, bitter taste and a hot quality, I have had experience
with it against urticaria (sharâ $v_{\sim-⿱}$ ), and it was wonderfully effective. I gave it to be drunk on the first day, in the dose of half a drachm with two ounces of oxymel of malobathrum ; on the second day I gave half a mithqâl and on the third day one drachm, and it caused the urticaria to disappear entirely. It has the same action when it is smeared on the body with oil of roses.

## COMMENTARY.

The name of this drug is misspelt in our MSS. and Leclerc's French edition of Ibn al-Baitar (albang, albîg, albugg etc.). The Cairo edition gives the correct reading, and Dymock (II, 164 foll.) records the Indian names of the plant. It is Alangium Lamarckii Thwaites, a cornacea of India. The root contains a very bitter alcaloid which is provisionally called by Dymock alangine.
62. ISFÂNÂKH acea L.).
(Lecl. no. 210).
Agriculture ${ }^{1}$ : It is a known vegetable; the wild kind is like the domestic one, only of thinner and finer roots and does not grow so high above the ground.

[^63]Ar-Râzî: Temperate, soothing (fol. 10 v ) to the chest and laxative to the abdomen. It is suitable, by virtue of its temperate quality, to cold and hot temperaments. It does not cause any flatulence like other vegetables, nor does it increase the phlegm in the blood.

Ibn Sina: Cold and moist in the last stage of the first degree. It is a better diet than orach (sarmaq anan). It clears, washes and controls the bile, and is useful against congestive backache.

## COMMENTARY.

This now universally known vegetable is not mentioned by Greek and Roman authors, except in Byzantine times as oruvárıoy (spinákion). It seems to have its origin in the C)rient and to have been imported into the Occident by the Arabs.
 isfânâkh $\dot{\tau}^{ن ا \operatorname{loml}}$ l and similar names (see Loew I, 341 and Issa
 nâq ${ }^{\text {l }}$; Eng. : spinach; Fr. : epinards; Germ.: Spinat.
63. $\hat{A R A} \mathbf{A} \hat{U} S$ آرا!إوس 1 , Vicia cracca L. (?).

1. The MS. G. and IB spell arâqîa $1, \underline{\theta} \mid, 1$, which may be an old copyst's fault, or be derived from the Greek genetive of arakos.
(Lecl. no. 43, 1,51 ) 1 ).
Galen, in the Book on Aliments (VI, 552): Small, hard, round grains growing amongst lentils ${ }^{1}$.

Agriculture: A similar herb growing also amongst lentils. It carries black grains within sheaths which, when dried, are round. If powdered and mixed with vinegar and water and left in the sunshine for six hours, then thrown into fresh water and made into a paste and painted on hot and very hard swellings, it softens them and relieves the pain.

## COMMENTARY.

The identification of this plant with the leguminosa Vicia cracca $L$. is not certain, but very probable See below the article 131 Biqa as.

Synonyms: Gr.: üquazos (arakos), Galen; Lat.: aracos, Pliny; Ar.: arâqû الـا:در (IB ), dandarân (Issa p. 188);
 tufted vetch, cracca; Fr .: vesce craque; pois à crapaud; Germ.: Vogelwicke. For more names see below art no. 131.
64. ISLÎKH (Lecl. no. 67).

1. Galen writes on ügaros also in book I chap. 27 of the same work (ed. Kuehn VI.541),
T. (Ab̂ Hanifa): An herb with long branches, yellowish in colour, growing in sand and resembling watercress (gargîr جu )

Author: A known plant used by dyers. The decoction of its leaves resolves phlegmatic swellings, and with barleyflour is useful against erysipelas. There is a wild kind with much smaller leaves than the first one; its stem possesses many branches spreading on the ground and of greyish colour. At the ends of the branches are many sheaths one above the other; though resembling the sheaths of hyoscyamus (bang飞゙! ) they are smaller and softer. Inside them are very minute black grains. The roots are as thick as a finger, between yellow and red and very acrid in taste. It grows in sandy places and in white (chalky?) sites on the mountains. It is called in foreign (Spanish) language rîbâl , It is useful, when drunk, against flatulent colic and against poison.

## COMMENTARY.

The Spanish name rîbâl may be misspelt from rîsâd, reseda?

Synonyms: Lat.: reseda; Ar.: îslikh (Modern Egypt, Forsk., Schweinf.), waiba ${ }_{\text {ar }}$ (idem); other names in Issa (p. 154). Pers.: isparak S 5 -1, warth $ث$,
(Schlimmor) ; Turk: muhabbet chicheyi Gaso ب (Samy); Eng.: dyers' weed; Fr.: gaude, herbe à jaunir; Germ.: Färber-Wau.
 Rhiza.
(Lecl. no. 213 ).
Diosc. IV (44): A plant with leaves like those of wild myrtle. Near the leaves grow long filaments like those that creep round vines. On them the flowers of this plant grow. The root is astringent, and is drunk against diarrhoea; it is also hemostatic.

Galen VI (XI, 888): There is a strong astringency in its taste. It stops hemorrhages when drunk or applied locally, and is useful against intestinal ulcerations.

## COMMENTARY.

This name has not yet been identified. Some botanists thought it to be Ruscus hypophyllus L.; others took it for Streptopus amplexifolius D.C.; both species are liliaceae.
66. ANGIBAR 准i, Snake-Weed (Polygonum bistorta L. ).
(Lecl. no. 155 ).
A plant which commonly grows on the banks of rivers
and amongst brambles ('ullaiq ${ }_{\mathrm{G}}^{\mathrm{l}}$ ). Its leaves are like those of trefoil (ratba a,b, ), and covered with down like dust. It has small twigs thicker than those of trefoil, reddish in colour, weak,rising up to a man's height or higher, bending and getting entangled with the brambles on which its branches grow. It has a blackish-red flower. All the parts of this plant are powerfully astringent. It exudes gum, and the juice of its roots, when squeezed, becomes red like mulberry-juice. If mixed with sugar and boiled wine (maibukhtag $\underset{\sim}{-\infty}$ ) it is useful against hæmorrhage from any part, and against abrasions of the intestines and chronic diarrhoea. It heals fractures and cicatrizes wounds. I heard from a reliable person that he cured an ulcer of the lung of three years' duration by its means though the sufferer had become very emaciated. He also cured another of hæmaturia and gastric hæ. morrhage after ten years.

## COMMENTARY.

This is the polygonacea Polygonum bistorta L. The root is used in many lands as a remedy for the bite of snakes. That drug which is sold to-day in the Cairo bazaars under the name of 'irq el-ingibâr عرق الان̣يار is, however, Potentilla tormentilla Sibth. (Ducros p. 88). The Polygonum is still in use in some lands as a medicinal drug known under the name of Rhizoma Bistortae (Luerssen).

Synonyms: Ar.: angibâr iņin; for other names, e.g. sultân al-ghâba

قورد 'Avni ; Eng. : snakeweed, bistort; Fr.: bistorte; Germ.: Natternwurz, Schlangenwurzel.
> 67. ASAL أسل, Rush (Juncus).
> (Lecl. no. 65).

Abûu Hanifa: It is the kawlân i . It grows in tiny stalks with no (fol. 11 r) leaves or thorns, but with sharp edges; they do not branch, and possess no wood. Mats are prepared from it; it is beaten and ropes are made from it. In ‘ عراق sâq sieves are made from it. It grows only near water.

Diosc. IV (52): axoivos (schoinos) of the marshes. It is of two kinds: one is called $0 \xi$ órououos (oxyschoinos), with sharp edges, and it, also, is of two kinds; the first has no fruit and the second bears round, black fruits and twigs thicker and more fleshy than those of the other kind. There is yet a third kind with still thicker and more fleshy twigs than the last two, and this is called okoozouros (holoschoinos). It bears a fruit on its extremity which resembles that of one of the two above mentioned kinds. The fruit of this kind and the fruits of one of the first two kinds, when grilled and drunk with mixed wine, constipate the abdomen, stop uterine hemorrhage, and are diuretic, but cause headache. The fruit of the third kind acts as a soporific when drunk, and when abused causes lethargy.

Galen VIII (XII, 136): This plant is of two kinds, one thin and strong and the other thick and soft. The fruit of this kind is soporific. The first kind is also of two sorts: one is fruitless and the other has a soporific fruit which is less so than the fruit of the first kind. The faculty of these two kinds is a compound of slight earthy and aerial substances. Consequently it produces sleep with a slight cold vapour.

## COMMENTARY.

It is evident that Diosc.'s description comprises several kinds of rush. The $\dot{\delta j \sigma \sigma \% o v o s ~ m u s t ~ b e ~ J u n c u s ~ a c u t u s ~ L ., ~ t h e ~}$ second kind with black fruits called by Theophr. (IV, 12) ushayr@avis (melankranis) - Schoenus nigricans L., the ohóoxovos Scirpus Holoschoenus L. The fruitless and the fruit-bearing kinds are probably one species only (Juncus maritimus L.?).

Synonyms: Gr.: axoĩos (schoinos), ésúaxowos (oxyschoinos), óhóz\%oıvos (holóschoinos) (Diosc.), "siavreavis (melankranis ), ( Theophr.); Lat.: juncus, schoenus, Pliny; Ar.: asal أسل, kawlân لان , 5amâr , al-bût bg.ll, (Egypt, Dâwâd), and many other names ( see Issa); Pers. asal l, kawlân il لا, nayy bûriyâ $\begin{aligned} & \text { (Shlimmer); Turk.: same names and }\end{aligned}$
 Eng.: rush (bulrush, bag-rush) ; Fr.: jonc (jonc aigu, piquant etc.); Germ.: Binse (Strandbinse, Sumpfbinse, grosse Simse).
68. ÂMÂRANTXUN ín íhi, Golden Sunflower, Helichrysum stoechas D. C.).
(Lecl. no. 150).
Called by Huncin uiz Indian cumin (kammûn hindî
 not know for what reason.

Diosc. IV (IV; 57) : Some people call it Exiyovaon helichryson, and others call it yevodivizuov chrysánthemon. It is a plant used in the crowns of statues. It has a straight white stem and tiny leaves like the leaves of southernwood (qaisûm
 round umbel (gumma $\mathrm{a}_{\text {a }}$ ) containing a round body of a golden colour like the heads of thyme when dried. It has a tiny root which grows in rugged places in the depth of the ground. The umbel, with wine, is used against dysuria, insect bites and sciatica. It is also emmenagogue. This plant is also placed between the clothes in order to prevent their being eaten (by moths).

Galen IV (XI, 824): Its faculty is to refine and dilute theblood coagulating in the stomach and bladder; this blood is bad to the cardiac orifice of the stomach ${ }^{1}$.

## COMMENTARY.

Helichrysum (Gnaphalium) Stoechas D. C., a compos-

[^64]ita, bears to this day in Greece the name of amáranton. Crowns and garlands of this plant were found in Egyptian tombs at Hawâra ( II to III. cent. A. D.) according to Keimer (I p.12). It was formerly an officinal drug under the name of Stoechas citrina.

Synonyms: Gr.: ảúgayıov (amáranton), érǐgvaov (helíchryson ), ұovoávę,nov (chrysánthemon) ; Lat.: amarantus, Pliny; Ar.: kammûn hindî sدi: ن, .5 (Hunain b. Ishâq); Pers. and Turk.: no name; Eng. : cassid ony: Fr.: gnaphale, helichryse; Germ. : Immortelle, Strohblume.
69. AGHIRÂTUN أغير اطن, Sweet Maudlin, (Achillea Ageratum L.).
(Lecl. no. 106 ).
Diosc. IV (58) : A váupos (thámnos, shrub) used as fuel, about two spans in length, short; and lying on the ground. It very much resembles the plant called oboíyonos origanos (mar. joram ). It carries a crown with a flower that resembles water bubbles ${ }^{1}$, golden in colour. It is smaller than $\varepsilon$ हíx evoor (golden sunflower, see no. 68) and is called àýégroy (agératon) from the long duration of its flower on it without changing or falling off. It is diuretic, and when applied locally, resolves induration of the uterus.

[^65]Galen VI (XI, 814): Its faculty is dissolvent.

## COMMENTARY.

It is the composita. Achillea Ageratum L. frequent in - Southern Europe.

Synonyms: Gr.: civé@atov (agératon); Lat.: same name;
 1. 15) ${ }^{1}$; Pers. and Turk.: no name; Eng.: sweet maudlin ; Fr.: achille agératoire, eupatoire, de Mesué; Germ. : Garbe.
 vain (Verbena officinalis L.).
(Lecl. no. 211 ).
Diosc. IV (60): It is called re@ıag@éan (peristéreôn, dovecote).

It is a plant the twigs of which are about one or more cubits long, angular, covered with sparse leaves like the leaves of the oak (ballût ber ), except that they are smaller and finer, with dentate edges, and of a flavour not exactly sweet. Its root is longish and thin. Both the root and the leaves are good against the bites of insects when drunk with wine, or when applied locally; and against jaundice and chronic phlegmatic

[^66]swellings. When macerated in water and sprinkled about where people are drinking (wine) it makes them very sociable and pleasant, ( foll. $\mathbf{1 1} \mathbf{v}$ ). It is so called because it is used in purifications when hung on the walls. The name means "the sacred" or "the priestly plant".

## COMMENTARY.

This is the well-known verbenace a Verbena officinalis $L$. It is an officinal drug under the name of Herba Verbenae. In antiquity it was used for magical purposes. It is still used; particularly in France, for tisane.
 (peristerêôn), cıóqeĩııs (siderîtis); Lat.: verbenaca, Pliny; Ar.;
 م纺 (for other names see Issa p. 188) ; Pers.: akmûn-bazân

 Eng. : vervain, holy herb, pigeon's grass; Fr.: verveine commune, herbe à tous les maux; Germ.: Eisenhart, Eisenkraut.

## 71. ASTRÂGHALUUUS أسطر اغاغوس, Tine-Tare (Orobus

 sessilifolius and tuberosus).(Lecl: no. 68).
Diosc. IV (61): A small siounos (thamnos, shrub) with

[^67]flowers and branches like those of chick-peas (hinmis war). The flowers are small and of purple colour, and the root is
 which spread black, very hard excrescences, as hard as horns and entertwined together, so that it is difficult to pound them. They are astringent in taste. It grows in windy, shady and snowy places. It is common in Pheneus in Arcadia ${ }^{1}$.

Galen VI (XII, 841): It has astringent roots, therefore it is used to dry and heal inveterate ulcers. It constipates the abdomen and stops hæmorrhage.

## COMMENTARY.

This is not, as supposed by the majority of translators, one of the numerous kinds of the leguminosa Astragalus Tourn. of to-day. This latter plant-group is high, wood-shaped, thorny and provides the tragàcanth. The áoreáyazos astrágalos of Diosc. aud Galen is, according to Fraas, another leguminosa or a kind of vetch, either Lathyrus (Orobus) tuberosus L. or L. (O.) sessilifolius Sibth. (according to Berendes p. 396). Moreover, in Modern Greek the name of Cicer and Lathyrus is still дotequákuon (astragálion) (Loew II, p. 442) after Fraas.

Synonyms: Gr,: ¿̇oroáyor.os (astrágalos); Lat.: astragalus, Pliny; Ar.: astrôgghâlûs أسطراغاغالو ; Eng.: axe-vetch?; Fr. gesse tubéreuse. Germ.: Knollige Platterbse.

[^68]72. AWAQINTHUUS أواتُؤى , Oriental Hyacinth (Hyacinthus orientalis L.).
(Lecl. no. 191).
Diosc. IV (62): A plant the leaves and stem of which are like those of bulbûs بو (purse-tassel)' '. The height of its stalk is about a span, smooth, and thinner than the little finger. It has a (curved) umbel filled with purple flowers. Its root when drunk with white wine or when children are anointed with it stops night-pollutions. It arrests chronic diarrhoea when drunk, and is useful against (jaundice).

Galen VIII (XII, 146) : Its root is bulbous, drying in the first degree, cooling in the second. When applied to the pubis it retards for a long time the growth of hairs thereon. Its fruit is drying in the third degree, of moderate heat and cold.

## COMMENTARY.

It is the liliacea Hyacinthus orientalis $L$.
Synonyms: Gr.: víarergos (hyakinthos) ; Lat.: hyacinthus,
 other names (see ISSA p. 9j); Pers.: sunbul لim, khîrî barrî
 Avni ; Eng. : oriental hyacinth ; Fr.: jacinthe orientale; Germ.: gemeine Hyazinthe.

[^69] (Lecl. no. 113 ).

Diosc. IV (67) : It grows in fields of wheat and in ploughed grounds. Its leaves are like those of rue (sadhâb سim) its branches are small, and its faculty is like that of opium which is the resin of poppy.

Galen VIII (XII, 48): It is cooling in the third, (degree) so that it does not differ much from poppy.

## COMMENTARY.

This plant is generally identified with Hypecoum procumbens L., a papaveracea. of Southern Europe, containing a narcotic alcaloid (fumarine)?

Synonyms: Gr.: írízoov (hypêkoon); Lat.: hypecoon,
 (ISSA p. 96), al gahîra onfجll (Algeria); Pers. and Turk.: no name; Eng.: horned cumin ; Fr.: cumin cornu; Germ. : Lappenblume.
74. ANGURA أخ, Roman Nettle (Urtica pilulifera L.).
(Lecl. no. 165).
It is the qurrais قريس and known as al-hurraiq الـريق ("the burner").

Ibn Hassân: ${ }^{1}$ It has rough leaves, yellow flowers and minute thorns which are not easily visible. When touched by any part of the body, it burns, pains and reddens it. It is of two kinds, a small and a large one with many yellow leaves. Its seeds are like lentils, and are used in medicine.

Author: The nettle is of three kinds. The first is already mentioned, the seeds of which are like lentils in their size and shape. It is shiny green and hard, in round rough buds from which hang long thin filaments. The second is the bigger of the two kinds mentioned by Dioscurides. Its leaves are like those of wild thyme (sinsibîr ...id, Sisymbrium ), except that it is blacker and rougher and the stem reddishblack. It carries many more leaves than the other two and it is the roughest of them all. Its seeds are about the size of mustard-seeds, except that they are more flattened, white and blue in colour. The third kind is the smallest and weakest and possesses the smallest seeds.
 one is rougher and blacker than the other. Its leaves are wider, its seeds smaller than the seeds of hemp (shahdânag filup $\hat{0}$ ). The other has very small seeds and softer leaves.

Galen VI: (XI, 817): The faculty of its leaves and fruit is resolvent and aphrodisiac, particularly with syrup of

1. A Spanish muslim physician of the XIIth Cent. A.D. See IAU II p 79.
grapes, and moderately relaxes the bowels and warms them; it is (foll $1 \mathbf{1} \mathbf{r}$ ) an antidote for poisons.
$=$
Gralen VI: Its fruits are not used in medicine, and the faculty of the plant is like that of the plant called Bowbinnow (bubônion, Aster tripolium L.), but it is far inferior to it..

## COMMENTARY.

The main kind mentioned by Gh. and Diosc. is the Roman nettle Urtica pilulifera L. and its variety $U$. balearica $L$. The seeds wefe formerly a medicinal drug (Semina urticae Romanae). The third kind mentioned by. Gh. is Urtica urens L. and dioica L.; Idrisî (no. 15, p. 14) gives a somewhat different description.

Synonyms: Gr: : wion (knídê), Hippocrates, ảzadipn ( akalêphê), Diosc., äruzúpon, Theophr. and Galen; Lat.: urtica
 (all these names designate burning, stinging) banât an-
 (Lower Egypt, Schweinf.). For other names see Issa p. 186.
 Avni; Eng. (Roman) nettle; Fr.: ortie (romaine) ; Germ. : Pillennessel, Brennessel.
75. $\hat{\mathbf{A} K H I N U U S ~ ا ٔ خ ي: و س, ~(C a m p a n u l a ~ r a m o s i s s i m a ~}$ Sibth ${ }^{1}$ ).

[^70](Lecl. no. 25 ).
Diosc. IV (141): A plant that grows near to rivers and to lakes formed from natural sources. Its leaves are like those of basil (bâdhrûg باذروج, Ocimum Basilicum L.) though it is smaller and higher and is crenated; it has five or six twigs from one cubit to one span in length, a white flower, and a small, black, astringent fruit. Its twigs and leaves are full of moisture.

Galen VI ( XI, 880): Its fruit is astringent and checks the matters which are carried to the eye and ear.

## COMMENTARY.

This plant has been identified with several kinds of Ocimum and Campanula. Fraas' hypothesis Campanula ramosissima Sibth. seems the most suitable of all, as this plant has its habitat in Greece.

Synonyms: Gr.: ęzũos (ekhinos), ëolvos (érinos); Lat.: erineon (Pliny).
76. USHNANN أش:ان, Salt-wort (Salsola kali L.) (Lecl. no. 87).

Abûu Hanifa: It is the hurd $\boldsymbol{\text { 人 }}$, used for washing clothes. It is of many kinds and they all belong to the salty plants.

Ibn Guraig: It is the kali-plant.

Another: It is a plant with no leaves, but with branches and twigs and with something like knots. Its bunches are full of moisture. It grows very big and develops very thick wood, which is used as fuel. It has a salty taste, and (when burnt) causes a very hot fire; the smell of its smoke is disagreeable.

## COMMENTARY.

It is Salsola Kali L., a well-known chenopodiacea of North African and many other deserts. The other kinds mentioned by Abû Hanîfa may be Salsola soda L. and the like.

Bîrûnî gives an extract from a "Book of Poisons" (perhaps that which was ascribed to the alchemist Gâbir b. Hayyân جابر بن حيان ? ? ) saying that five drachms of the Persian ushnân provoke abortion, and that ten drachms kill an adult person. The best kind resembles sparrow's dung and is
 the washers. He then quotes an unknown author, at-Tezekji
 النأئ:أ. Abû Hanîfa said that the purest and best us/mân was growing in the valley al-Khadarim in the region of Yamâma (Central Arabia).

 ك, Bûrûn̂̂ ; Turk.: same names; Eng.: salt-wort, kali; Fr.: soude, kali; Germ.: gemeines Salzkraut.
77. ABÛFÂYIS أبو فإس, Thorny Spurge (Euphorbia spinosa L.).
(Lecl. no. 10).
Diosc. VI (159); Some call it Abûfâûs ابو فاوس. It is a plant with which clothes are washed; it grows on the shores of the sea and in the sand. It is a $\begin{aligned} & \text { áuvos ( thamnos, shrub) }\end{aligned}$ used as fuel, growing very plentifully ${ }^{1}$, possessing small leaves like those of olives but thinner and softer than they are. Between the leaves there are hard thorns, whitish, angular, and sparse. (Its flower) resembles the buds of the plant called «coós (kissós, ivy), as if it were bunches accumulated together except that they are smaller and softer, with some redness and whiteness in their colour. Its root is thick, but soft, full of a sap which is extracted like the sap of $\vartheta$ auia (Thapsia garganica L.) ${ }^{2}$ and is stored either separately or with flour of bitter vetch (karsana $\begin{gathered}\text { ans } \\ \text {, Vicia Ervilia Willd.). }\end{gathered}$ If taken in the dose of one obolus it purges the abdomen of bile, phlegm and humidity. Its juice acts in the same manner.

## COMMENTARY.

There is no doubt that this is Euphorbia spinosa L. It

[^71]is frequently confused with the following plant (no. 78).
Synonyms: Gr. : iлли́ques (hippóphaes); Lat.; hippophaes,
 رجل الفر خ (Spain, Gh.), al-'aqrab̂ (Spain, Gh.); Eng.: thorny spurge; Fr.: hippophaé des Grecs, euphorbe épineuse; Germı: Stachelige Wolfsmilch.

## 78. ABUEAISTUNN أ: 1 فيسطون, Hippophaiston.

(Lecl. no. 99).
Diosc. IV (160): It is a plant which grows in company with Hippophaes. It, too, is a kind of thorn-plant with which clothes are washed. It is a plant which grows creeping on the ground, with soft buds and small leaves only but no flower. Three oboli of it with $\mu s \lambda i r e a z o v$ (melikraton, i. e. honey-mead ) purges the phlegmatic humour and is good for orthopnoea, (intisâb an-nafas انتص.|ب ال:فس ), epileptic fits and neuralgia.

Author: It is of very many kinds, and the best known in our land is that kind which is described above ${ }^{1}$; it

 resemble the tails of scorpions. Our physicians use it instead of qâqal Gقَلقَ (Cacalia verbascifolia Sibth.). Another kind is called tardag $\boldsymbol{x}^{2}$. Its leaves are like those of hayy al-'alam

[^72]$\left.\boldsymbol{N}^{(l a l}\right)^{(S e m p e r v i v u m ~ a r b o r e u m ~ L .) ~ e x c e p t ~ t h a t ~ t h e y ~ a r e ~ f i n e r . ~}$ They are bushy and inclined to be purple-coloured. It has fine seeds and its shrub grows horizontally, but it rises to about two cubits in height. Its wood is white and hard and is called ar-rughl الرغل (Atriplex, sea-orach) and al-ushnân alfârisî الاشنان الذارسى (Persian salsola, Salsola soda L. ?) ${ }^{1}$. One kind called al-ghâsûl $ل$ gmilill rises to a span and its branches are as thin as needles: it has fine leaves, so thin that they look like seeds. It has a white flower, very thin indeed, and slightly reddish. Its branches are numerous and spread on the ground. It grows in salty soil in the company of qaizan ${ }_{\text {.ab }}^{\text {.a }}$ (Salsola vermiculata L.?). ${ }^{2}$ It melts gum-lac.
 Two drachms of it, when drunk, are diuretic. There are other kinds, the qâqal being one of them; they all have a saltish taste.

## COMMENTARY.

This important paragraph containing al - Ghâfiqî's own botanical knowledge is missing from IB's book. Chapters 76 to 79 are also missing from the Gotha MS... But the Taimûr MS. is better and there is no apparent gap.

1. See commentary of chap. 76.
2. The name in this form is not found. Foureau gives the name of qedhdhan (قذن or or $)$ ( vermiculata.
3. Viz. Spanish; perhaps cera de gale?

The many kinds of Hippophaiston which Gh. describ-
 cket (Cacile maritima Scop.; ISSA), a crucifera. At-tardag. الطردج is perhaps a kind of Atriplex (rosea L.?). The Arabic name ruggh $j \dot{j}$, is specia!ly applied to the chenopodiacea Atriplex halimus L., (ISSA p. 27) and A. dimorphostegium Kar. (Burton). Ghcisûl is a common Arabic name for plants used for washing clothes on account of their containing potash. In the present paragraph the Author probably means the chenopodiacear lead -grass (Salicornia fruticosa L., Issa p. 160). Salsola Kali L. (see no. 77) is equally used for washing.
79. $\hat{A}$ FIY ÛS Ting Pear-Rooted Spurge (Euphorbia apios L.).
(Lecl. no. 118).
Diosc. IV (175): It is sometimes called iozás (iskhâs) and youcußảdayos (khamaibálanos), also wild radish (figl barrî :ج.: (الall). It is a plant growing from the ground in two or three sticks resembling the sticks of lemon grass (idhkhir اذخر, Andropogon schoenanthus $L$. see no. 2), fine and red, and slightly raised above the ground. Its leaves are like those of rue (sadh$\hat{a} b$ سim) except that they are more elongated. It may be green with a small fruit and a root like asphodel (al-khunthâ जixl, Asphodelus ramosus L.), but rounder resembling the
shape of a pear, and full of juice; it has a black bark, and a white inside. The upper part of this root causes vomiting of bile and phlegm, and the lower part is laxative. The juice of the root causes vomiting and purgation. It is extracted by pounding the root and putting it into an urn. Water is then poured on it; the whole is stirred up, and what floats of the juice on the surface is removed by means of a feather and dried.

## COMMENTARY.

This plant is generally admitted to be Euphorbia apios L., a plant frequent in Greece and in the southern Mediterranean islands.

Synonyms: Gr.: ärıos (ápios), iowús (iskhás), Diosc., @áquxios ỏesío (rhaphanos oreia) Theophr.; Lat.: apios ischas, Pliny; Ar.: âfiyûs آَيؤ
 spurge ; Fr.: euphorbe à racine de navet; Germ. : Birnwolfsmilch.
80. ÂFITHIMUUN أثيّهون, Dodder of Thyme (Cuscuta Epithymum Murr.).
(Lecl. no. 112).
Diosc.: IV (177): It is a flower of the kind of hard plants which resemble thyme (sa'tar $\boldsymbol{r}^{\prime} \times \mathrm{m}$ ). These are fine
buds, light, with filaments like hairs. When drunk in the dose of four drachms mixed with honey and salt and a little vinegar it purges phlegm and black bile. It grows in abundance in Cappadocia and Pamphylia.

Galen VI (XI, 875): Its faculty resembles the faculty of headed thyme (al-hâshâ $\lfloor\boldsymbol{H} \mid \boldsymbol{l}$, Thymus capitatus $L K$ ), but it is more effective in every sense. It heats and dries in the third degree.

IDn Garaid: The best kind is the red one with a sharp smell which is imported from Crete.

Hubaish: Its faculty is strong in getting rid of black bile; it does not suit sufferers from yellow bile, and it causes them to vomit.

Bulus (Paul of Aegina) ${ }^{1}$ : It is given in the dose of six drachms pounded in nine ounces of milk.

Another ${ }^{2}$ : To be mixed with the decoction when it begins to cool and then crushed and strained, because cooking destroys its faculty.

Paul (VII): As for énivoub@ov (epithymbron) it is something growing on thyme; it purges almost like epithymum, but is weaker.

[^73]Author ${ }^{1}$ : This is the epithymum used by all physicians of our time, whereas the real epithymum is not known by them. This plant is imported from the country of the Berbers. It is a kind of cuscuta (kushûth $\dot{H}$ ) ; most of what grows on the thyme are very fine filaments as red as agate, with no roots nor leaves, but with small heads, whitish and smaller than those of kushûth; it is very soft with a delicate flower that grows in the spring time. It destroys the plant by entertwining with it. Its faculty is like that of epithymum, but slightly weaker.

## COMMENTARY.

This parasitic plant is the convolvulacea Cuscuta Epithymum Murr., growing on Thymus Serpyllum etc. The Ancients had probably confused the different kinds of Cuscuta ( $C$. europaea L., growing on nettles and hemp, $C$. Epilinum Weihe, flax-weed, growing on flax etc.). The kind described by Gh. in his note is probably a North-African variety of C. Epithymum, perhaps var. Trifolii Choisy. IB (Lecl. I, p. 99) says that in his time it came to Egypt (where it does not grow in our time, according to Ramis) from Crete and Jerusalem. Abû Mansî̀r (p. 150) mentions under
 kind of Cuscuta which is, according to Schlimmer (p. 172

[^74]foll.) Cuscuta monogyna Vahl which grows also in Egypt and in other hot lands. Its medicinal use is very ancient.

Synonyms: Gr. $\quad$ zrîrupor (enithymon, Diosc., Galen), Eriouvubeor (epithymbron, Päul of Aegina); Lat.: epithymum

 see the long and learned paragraph of Loew (I, pp, 453-62) and the synonyms by Issa (p. 63); Pers.: aflanja axadol,
 "'Ali's bread" ( Idrisî p. 241.4 ), shan نش, ( Schlimmer 173);
 dodder, heelweed; Fr.: cuscute, epithym, cheveux de Venus; Cerm.: Kleeseide, Flachsseide etc.
81. ALUFUN ألون , Globularia (Globularia Alypum L.).
(Lecl. no. 139, Alûbunn ألوبن).
Diosc. IV (178): It is a plant used as fuel, with a reddish colour and fine twigs. It has a soft, light flower and a root like white beet (silq قاس, Beta vulgaris L), full of acrid juice. It has seeds resembling those of epithymum (dodder). It grows abundantly on shores, particularly those of Lybia. The seeds, with vinegar and salt purge like epithymum and slightly irritate the intestines.
(Author) ${ }^{1}$ : Al-Bitritq الٍط in his translation of Galen's book ${ }^{2}$ said that Alypias grows on sands and coasts; it is hot and purgative. The choicest kind of it is that which is (prepared) by pulling out its roots, peeling them and throwing away the pulps. It is to be known by its good bark and its white tubes with a resinous secretion which are easily broken and are not fibrous. He asserts that it is the turpeth (turbid $\quad$, Ipomoea turpethum R. Br.), and that the foregoing description applies to of it; but this is an error. Paulos mentioned this remedy ${ }^{3}$ without mentioning its root, and citing its seeds only, as likewise did Diosc. (Ibn Wâfid thought this latter to be roıльィıon (tripolion) and connected it with the sayings of) ${ }^{4}$ Diosc. on Trifolion which is also called Tripolion ${ }^{5}$; this is the turpeth.

## COMMENTARY.

The plant is Globularia Alypum L. of the Mediterranean

1. Henceforward the text is in disorder in both MSS. We found most of the missing part two pages further on (fol. 14 r ) in the paragraph no. 91, and were able to restore the original text with the help of IB's text.
2. We were not able to find out which book of Galen is meant; in the De Simpl. Alypon is not mentioned.
3. Viz. Alypon: see Adams III p. 55.
4. This phrase is missing from both MSS. and has been restored by us according to IB p. 53.
5. The names are very much mutilated in all the three texts. On the top of fol. 13 r follows a phrase belonging hereto.
region, since a long time used as a popular remedy (purge). Al-Bitrîq is mentioned by Ibn Abi Usaibi‘a (Uŷ̂n al-Anbâa ع I, p, 205) as a translator of some works of Galen. He is perhaps identical with Politianos, Patriarch of Alexandria a physician, who died, according to Ibn Abi Usaibi'a (II, p. 83) in 902 A.D.

Synonyms: G. : c̈rurov (álypon); Lat.: alypon (Pliny
 for other names see Issa p. 88. Turk. : hashishe-i-kürreviye an丸丸 (Avni p. 265 ); $\mathrm{P} \in \mathrm{rs}$ : : givâll-i kurravî Eng. globularia; Fr.: alype, globulaire, thé arabe etc. (see Issa p. 88); Germ.: Dreizähnige Kugelblume.
82. $\hat{I} R I G H \hat{A} R U N$, إير يغارن, Groundsel (Senecio vulgaris L.).
(Lecl. no. 215 ).
Diosc. IV (96): A plant, the lengh of the stem of which is about a cubit ; its colour is slightly reddish ; its leaves are like those of the rocket ( $\operatorname{qargitr}$, ج. . Eruca sativa Mill.), dentate, only much smaller. The smell of its flower is like that of apples; it blossoms and spreads out rapidly and in its centre appears something upright like hair which becomes white in the spring. When drunk it causes suffocation. The meaning of its name is "the old man in the spring" ${ }^{1}$. Most

[^75]of it grows on fences (of walls) ${ }^{1}$. and in towns. Its root is not used in medicine.

Galen VI (XI, 884): Its faculty is composite, cooling and resolvant.

## COMMENTARY .

This plant is the composita Senecio vulgaris L.. It is a weed very common in Europe and Asia, and served in former times as a medicinal drug under the name of Herba Senecionis (Luerssen).

Synonyms: Gr.: jovéquv (érigérôn) (Theophr., Diosc. and Galen); Lat.: senecio (Pliny XXV); Ar.: îrîghârûn
 p. 167; Pers.: arîghârûn اريغارون; Turk.: qanarive otu تَارية اوتى (Avni) ; Eng.: ragwort, groundsel; Fr.: seneçon commun; Germ.: Gemeines Kreuzkraut, Kreuzwurz.
83. $\hat{\text { ITHIYUUFIS }}$ ايثيوفيس 1 , Aethiopian Sage (Salvia Aethiopis L.).
(Lecl. no. 212 ).
Diosc. IV (104) A plant the leaves of which are like
 sîbâkhât س. ساخات (pools, manures). The first reading is, however, the correct translation of the Greek text.
those of qhóuos (phlómos ma iol , mullein, Verbascum), downy, lying on the ground round the root. It has a square rough and thick stem resembling the stem of usiuzzaim (melittaine
 burdock, Arctium tomentosum Schkuhr). Many tufts grow from it issuing from one stem; they are long and thick. When dried they become black and hard like horns. It has a fruit of the size of the bitter - vetch (al-karsana aim, Vicia Ervillia Willd.), in each cavity of which are two grains. It grows abundantly in Messenia and on Mount Ida. The decoction of its root is useful for sciatica, intercostal pain and roughness of the throat, in the form of a drink or as a linctus with honey.

## COMMENTARY.

This plant is the labiata Salvia Aethiopis L., frequent in Southern Europe as a weed on rubbish heaps.

Symonyms: Gr.: aivioris (aithiopís); Lat.: aethiopis

 Fr.: (sauge) éthiopienne; Germ. : Filzblättriger Salbei.
 tium tomentosum Schkuhr).
(Lecl. no. 30).

Diosc. IV (105): It is also called iic«roṽoon (arkiûron.) It is a plant the leaves of which are like those of qiर́ouos (phlómos, mullein, Verbascum), save that they are more downy and more round. Its root is sweet and white, its stem soft and long and its fruit like small cumin-grains. The decoction of its root and fruit soothes tooth-ache when gargled; with wine it is diuretic. It is useful for sciatica when drunk and for burns when smeared on them.

Galen VI (XI, 837) : Its faculty is extremely refining and it cleanses a little.

## COMMENTARY.

Most of the modern botanists agree to see in the arktion of Diosc. Arctîum tomentosum Schkuhr, a composita growwing as a weed on rubbish, in Europe and Asia. The botanists of older times thought it to be Conyza candida, Verbascum limnense or $V$. ferrugineum (according to Berendes p. 426 -7). See Loew I, p. 378 foll.

Synonyms:Gr.: ä@rııov (árktion); Lat.: lappa, (Pliny XXI, 104); Ar.: âraqtiyûn ارو ; Pers.: same name, and

 lation of arctium, Samy); Eng.: woolly burdock; Fr.: bardane (laineuse); Germ. : Filzige Klette.
85. ANOTHER ARAQTIYÛN ${ }^{1}$ أرتطون ${ }^{1}$, Medicinal Burdock (Arctium Lappa L.).
(Lecl. no. 90).
Diosc. IV (106): Some call it rooболis (prosopis) and reooб́ruov (prosôpion). Its leaves are like those of the pump-
 blackish: They are covered with down. It has no stem, and its root is large and white. The eating of two drachms of it is useful for ulcer (abscess) of the breast.

Galen VI (XI, 837): It is drying, dissolving, astringent ; it heals inveterate ulcers.

## COMMENTARY.

This second Arctium is doubtlessly the composita Arctium Lappa L. or Lappa officinalis All. The root (Radix Bardanae), the oil from the root, the leaves and extracts from them are still to-day used as medicinal drugs in European pharmacopoeias.
 Diosc., rрооштís(prosopís), Galen, rеоббтио (prosôpion), Diosc.;


[^76]عه (i. e. "uncle, take me with you") (Berggr. 833),
 same names as for the above mentioned (Arctium tomentosum); Eng.: medicinal burdock; Fr.: bardane officinelle; Germ.: gebräuchliche Klette.
 arabica L.? or Herniaria glabra?)
(Lecl. no. 114).
 rinê); it is a small sóupos (thamnos shrub) with small leaves. It is drunk against toxic drugs and against pain in the liver.

Qustâ (ibn Lûqâ) in his (Book of) Corrections of Remedies ${ }^{1}$; It is a small $\vartheta{ }^{\prime} a_{j}$ vos with small leaves like those of the rue (sadhâb $\quad$ بin, Ruta graveolens L.) with nearly invisible dentations. It has a thin stem on which is white down like that on the stem of the big kind of endive (hindibâ بد: ه: Cichorium Endivia L.). Its height is about three to four fingers, and it has thin twigs of the height of one finger spreading out from about the middle of the stem to its top. Its grains are like black cumin (shûnîz $\underset{\text { jig, Nigella }}{\text {, }}$ sativa L.), sometimes red and sometimes black, but very rarely white. It is kept in sheaths like the seeds of radish

[^77](figl $\sqrt[1]{2}=0$ ). They are not long. The colour of the flower is allways like that of the fruit. It grows in places easily reached by water and in those near to the sea. It often grows
 or mixed with barley and wheat. Its smell is like that of lemons (utrug اترت (i) and its root is aromatic. It has the shape of (fol. 1 $\mathfrak{y} \mathbf{v}$ ) triffle (kamâ'ah ois ). It is smooth, with no vessels in it. Some people think that it:grows in the sand and in stony soil; it is often found on the coasts of Syria and of 'Alexandria. It is well-known to many people, and they use it against poisonous drugs and pains or obstructions in the liver and spleen, drunk thoroughly pounded in doses of half a mithqâl لlào on three successive days.

## COMMENTARY.

The description given by Diosc. is too short and too vague to allow an identification of the plant. The description by Qustâ b. Lûqâ gave rise to various interpretations. Sprengel thought it to be Herniaria glabra L., a Cephalanthera or a Spicanthes. Fraas identified it with Epipactis grandiflora All. (Cephalanthera ensifolia Rich.), and Littré with Neottia spiralis. But Sickenb. (Plantes p. 21 foll.) objects that all these plants are orchidaceae which do not grow naturally in Egypt. He proposes to identify Epipactis with Cleome arabica L. This plant, however, bears several Arabic names ( see Issap.52), and the question is therefore still unsettled.

Synonyms: Gr.: ìnuazzis (epipactis); Lat.: epipactis
 The English name for Herniaria glabra L. is rupture-wort.
87. AWNAGHRA أوْغ 1 , Onagrade (Epilobium hirsutum L.).
(Lecl. no. 161)
Diosc. IV (1直7): It is also called ivoigca (onothêra) and onoũeos (onoûros, better reading onothouris). It is a treelike đóunos (thamnos, shrub) of considerable size; its leaves are like those of the almond-tree (lawz ${ }^{2}$, Prunus amygdalus Stock.), except that they are broader; they resemble also those of the lily (sawsan flower is large, like that of the pomegranate. Its root is small ${ }^{1}$, white, and exhales, when dried, a smell like wine: it grows on mountains. It prevents the spreading of malignant ulcers.

Galen VII (XII, 89) : The smell of its root, when dried, is like that of wine.

Rufus ${ }^{2}$ in the (Book on) Melancholy: A plant by means of which the lion is tamed, because it contains a faculty which soothes the spirit.

[^78]
## COMMENTARY.

It is the onagracea (oenotheracea) Epilobium hirsutum L.; but the oैvareor (ónagron) of Galen is sometimes identified with E. angustifolium $L$. The first named plant has been found in the crowns of Egyptian mummies and in tombs of the Greco-Roman period in the Fayyûm (Keimer). The onotioas (onotheras) of Theophr. (IX, 19, 1) is perhaps the same plant, alhough Sir Arthur Hort ${ }^{1}$ renders it by Nerium Oleander.

Synonyms: Gr.: örayoct (ónugra), ôvờņa (onothêra).
 Galen; Lat.: oenotheris (Pliny XXIV) ; Ar.: awnaghrâl أونأ,

 Eng. onagrade, apple-pie; Fr. epilobe hérissé, onagre; Germ: Rauhhariges Weidenröschen, St. Antoniuskraut.
 (Aster tripolium L.).
(Lecl. no. 64 ).
Ihn Wafid took it for the astringent al-hâliba $\begin{aligned} & \text { and } \\ & 2\end{aligned}$ i. e.

[^79] he was wrong in that, as it is the plant which is called in foreign (i. e. Spanish ) language Castila (qastîla $d_{n} b_{m i n}$ ).

Diosc. VI (119) : It is also called Govbconton (bubônion). It is a plant which has a hard and rough stem, on the end of which is a yellow flower resembling that of the camomile (bâbinnag ب: با: بن ). It is sometimes inclined to a purple colour. It has incised heads and leaves which, in shape, resemble stars. But the leaves issuing from the stem are oblong and covered with down.

Galen VI (XI, 852): This plant is called Bovbariov (bubônion), a name derived from the appellation of the groin, as it heals any swelling in it when applied to or suspended on it (or when its flower is held in the left hand) ${ }^{1}$.

Diosc.: It is useful for gastritis, for hot swellings of the eye and laceration of the pupil ${ }^{2}$. The drinking of (the infusion of) the purple flower is useful for croup and the epileptic fits of boys.

## COMMENTARY.

This plant has been identified with Aster Amellus L.,

[^80]and Aster Tripolium L., a composita mostly European. The root and leaves (Radix, Herba Asteris Attici sive Bubonii) were medicinal drugs not long ago in use for the diseases specified by Diosc.As to the Spanish name, it is given in a note to the Arabic translation of Diosč. as qastâla diba.́ (castella?, Lecl. I, p. 63).

Synonyms: Gr.: àrŕpºAtukós (astêr Attikos, Diosc.),
 ophr. IV. 12, 2) Lat.: aster, bubonia (Pliny XXV II) Ar.: hâlibî (IB no. 552), khurram خالـى (Hunain, accord. to Loew I, p. 368); Peís: gul-i-minâ L. 5 (Schlimmer p. 54), gul-i-urba كلار. 4 (Richardson); Eng. : sea-starwort, Michaelmas daisy; Fr. : aster maritime, tripolium; Germ.: Strandaster.

ISÛFURUUN capreolata L.)?

Diosc. IV (120): It is called qaбйиov( (phasêlion) because it is a plant which resembles the qaónhos (phásêlos), i.e. the white kidney-bean, (lûbiyâa لؤب, Dolichos Lubia Forsk. or Vigna sinensis Endl.). At the origin of the leaves issues something white resembling threads, twisted like the ones issuing from the white kidney - bean plant. At the end of the plant are fine heads filled with seeds the flavour of which is like that of


[^81]the wine called $\mu \varepsilon$ ingaton ( melîkraton, honey-mead) for pains of the liver and chest, and for cough.

Galen VI (XI, 891): A little astringency exists in its seeds. It cleanses, checks the thick chyme and tones the limbs.

## COMMENTARY.

This plant has not been identified with certainty. It is more likely to be Fumaria capreolata $L$. or its variety $F$. Vaillantii Loisl. (Fraas), which is frequent in Greece in shady valleys and on rocks. Sprengel prefers another fumariacea Corydalis claviculata Pers. which is equally frequent in Greece.

Synonyms: Gr.: iod́rvoov (isópyron), cpaóriıov (phasêlion Diosc. ), quoioiov(phasiolon, Galen); Lat.: isopyron, phasiolon (Pliny XXVII); Ar.: isûfûrûn إِصوؤوزون , إِووفورن ; Pers. and Turk.: same name; Eng.: (creeping) fumitory; Fr.: fumeterre (rampante); Germ. Rankender Erdrauch.
90. $\hat{\mathbf{A} B \mathbf{U} G \mathbf{H L}} \hat{\mathbf{U} S \hat{U} N}$ أبوغالوسن, Horse Tongue (Ruscus Hypoglossum L.).
(Lecl. no. 67 ).
Diosc. IV (129) : It is a small $\vartheta$ qúpzlos (thamnos, shrub) with leaves like those of that wild myrtle (al-âs al-barri (الآس البیى) which are thin (Ruscus aculeatus L.). It has a thorny tuft, and at its end, near the leaves, excrescences resembling tongues; (the latter) are useful in softening
ointments and are used against headache when carried on the head.

## COMMENTARY.

The description agrees with the liliacea Ruscus hypoglossum L. which is frequent in Southern Europe and on the Mediterranean Islands. Its leaves with R.hypophyllum L. were formerly used as a medicinal drug (Herba Uvulariae sive Bonifacii sive Bilinguae) (Luerssen).

Synonyms: Cir.: ítórrwaron(hypóglôsson); Lat.: hypoglossa (Pliny XXVII), myrtus silvestris (Pliny XV); Ar.:
 faras (Issa p. 159): Eng.: horse-tongue, double tongue; Fr.: hippoglosse, langue de cheval; Germ.: Zungenförmiger Mäusedorn.
91. ANF AL~'IGL أنت الیx, Snapdragon (Antirrhinum majus L.).
(Lecl. no 162 ).
Diosc. IV (30): 'Artigevor (antirminon), and it is also called àrégotror (anárrhinon) and iwxris àroía (lychnis agría). It belongs to the plants which renew their existence every year ${ }^{1}$. It resembles Anagallis ( pimpernel) as to leaves and twigs, and its flower is like the snout of a calf ${ }^{2}$. Some people

[^82]pretend that this plant, when kept in lily-oil and used as ointment for the face, makes it acceptable (graceful).

## COMMENTARY.

It is the scrophulariacea Antirrhinum majus L., growing in the Mediterranean region, but also cultivated in more northern gardens as a decorative plant. The herb was formerly a medicinal drug with the names of Herba Antirrhini, Herba Orontii majoris sive Capitis vituli. According to Theophr. (IX, 19, 2) the man who wears it wins great fame. Diosc. and other Greek authors copied this information from him.

Synonyms: Gr.: 'Avriogtrov (antirrhinon), avágecpov (anarrhinon, Diosc., Theophr.); Lat.: antirrhinum (Pliny

 ibid). For other names see Issa p. 20. Modern gardeners

 (Samy) ; Eng.: snapdragon, calf's snout; Fr.: gueule de lion, gueule de loup, muflier; Germ. Löwenmaul, Dorant.
92. ANBATRUN أنططن, Frankenia? (Frankenia pulverulenta L.? ). (fol. 14 r. 1. 5 ) ${ }^{1}$

[^83](LCOH.110. 100 ).
Galen VI (N1. 575 ): It is alsu called "heak-like" I

 the roshs, amd on the shotes of the sea, it is (then) of salty fhanor, and. when growing far from the sea, beonmes very
 misumah or with booth. it purges phlersm and bite.

## COMMENTARY.

This plant was ifomtified by Sprengel with the umbellifera Crifimmon mortimumb L.. Whilst Fraas prefers Frankivan pulbimakota L. Gh, himself did mot know the plant otherwise he would hate suraly mentioned it.



93. UIS-HUIEAN Na.... Uncertain.

Leel, no. 71, as-mata ida.
(Abu Hanifa) : : It is a plant which creeps on the earth like ropes. Its leates are like those of colocynth

[^84](hanzal ㄹ.. , Citrullus Colocynthis Schrad.), but smaller. It has horns (husks) smaller than those of lâbiyâ Lolichos Lubia Forsk.), in which are round red grains useful for sciatica.

## COMMENTARY

Nobody, until now, has been able, to identify this plant. The description agrees with a leguminosa of the kind of jequirity (Abrus precatorius L.), but it is too vague to allow an exact identification. The name is Arabic, from sahafa ixem " to creep".
94. UMM WAG‘AL-KABID أم و. Rupturewort, (Herniaria Tourn.?).
(Lecl. no. 151 ).
Abû Hanifa: It is one of the smallest herbs. Sheep like it. It has a grey flower in a round calyx (buriuma $4, \frac{8}{\text {, }}$ ) with a very small horn. It is called by this name, because it is useful for pains of the liver and yellow gall if squeezed on the epigastrium.

## COMMENTARY.

The description given by Ab $\hat{u}$ Hanîfa is too vague to allow an exact identification of the plant. Botanists agree that it has some characters of the caryophyllacea Herniaria Tournefort. Herniaria glabra L. was in former times an
official drug (Herba Herniariae) used for pains of hernia; it contains saponin.
 ful for pain of the liver"), nabât ash-shaikh 93); Eng.: rupture-wort; Fr.: herniaire, turquette; Germ.: Tausendkern, Harnkraut.
95. UMM GHAILÂN أَغيرن Acacia (Acacia arabica Willd. var. nilotiça Dol.?).
(Lecl. no. 158).
 It is the thorn-tree al-qatâd الalal

Another Author: It is the thorn-tree al-qaraz الat.
Ab̂̂ Hanîfa: It is at-talh चlbl.
Ibn Sinâ: It is a well-known tree of the thorn-trees ('idâh ol ace) of the deserts; it is cooling, desiccating and astringent.

## COMMENTARY.

The tree in question is doubtless one of the numerous thorny and gum-producing acacias of the North-African and Arabian deserts. Al-qatâd دتقالll is to - day the name of Acacia Senegal Willd. (A. vera), in the Yemen (Southern Arabia); al-qaraz ill is to-day the name of Acacia Arabica Willd., and the husks sold in the Caire drug bazaars bear the name
of qarad ${ }^{1}$. ${ }^{1}$. Talh cib is to-day the name of Acacia gummifera Willd., of A. Seyal Del. and of A.tortilis Hayne, the last two being the main producers of gum-arabic. The
 to Acacia árabica Willd., and to Acacia vera Willd., this latter being considered by some botanists as identical with Acacia arabica. The Egyptian variety nilotica Del. has the Arabic name sant b: in, from the Ancient Egyptian os wurs in Coptic, (sittâ $\boldsymbol{x}$ y of the Bible). To the Arabic authors it is always an Egyptian plant, as it is called e. g. by Mu'tamad (p.38h 1.22) ash-shagara al-misriyya
 ( الثوكة الثق.لقية ("Coptic thorn"), by Dâwûd ash-shawka al-misriyya
 pare with Gh.'s paragraph the descriptions given independantly by two of the most prominent scholars of the Islamic world. The first is Abu'r-Raihân al-Bîrûnî (see Introduction chap. I, no. 37). In the unique MS. (preserved in the Turkish Government Library at Brussa, Asia Minor) we find on p. $29 \mathrm{v}-30 \mathrm{r}$ the following passage: "Umm ghailân i i said to be the Egyptian thorn-tree. Paulos: Some people call it the Arabian thorn-tree. It is called in the language of Sind jâmâhâa lolọ.... The acacias ('idâh cíc) are all thorny,

1. Ducros (no.29) mentions the seeds only, but not the dry husks qarad as being a bazaar drug. See Max Meyerhof, Der Bazar der Drogen und Wohlgerüche in Kairo, Archiv f. Wirtschaftsf. im Orient 1918, no. 349 p. 199.
and the samur,$\ldots{ }^{1}$ and the talh $\mathbb{E}^{\boldsymbol{l}}$ are only other kinds; the last being umm ghailân.

Hamza says: It is the wild jujube (as-sidr al-barri ر.لـll الب. Zizyphus Lotus Lami.), and this kind of talh elb has crooked thorns.

Ab $\hat{u}$ Hanîfa says: It is the biggest and the greenest of the acacias ( idâh olac) ${ }^{2}$ and that which produces the greatest quantity of gum. Its thorns are long and thick and it has no heat in its'roots (?) ; it has a calyx (bur'uma a. بی) of aromatic smell. The husks issue something like common beans or like Syrian carobs. If there are many trees growing together in a valley they are called an-nûta $a b, \|^{3}$, and the smaller are called al galâdh $\hat{\imath} \underbrace{}_{\mathcal{L}}$ لll $^{4}$. The gum of talh is red ; there appears between the "beard" (fibres of the bark) and the pith something resembling gum, but which is not gum; it is sticky, adherent to the fibres, sweet, palatable and of aromatic odour. People suck it as a deodorant to their breath. When the fibres are pulled off, something red like blood is found inside (a part of which) is thrown away, and the other is washed and chewed, and it forms the best and

1. Samur is still to-day the name for Acacia spirocarpa $H$. in the Yemen.
2. In the text ghidâh oì̇, a copyist's error.
3. I. e. a thicket of thorn-trees.
4. Plur. of guldhâ जill; the above meaning is missing from the dictionaries.
whitest chewing gum ('ilk she). As to the talh elb mentioned in the Qur'an, all commentators agree that it is the banana (mawz ;,ッ) ${ }^{1}$ taken metaphorically, and nobody would take it for umm ghailann ${ }^{\text {rl }}$, except the ignorant of the institution of grace...".

Al-Idrîsî, the famous geographer (see Introduction chap. I, no. 44) and contemporary of al-Ghâfiqî gives in his "Collection of Remedies" (Kitâb al-Gâmi" fi'l-Adwiya كتاب إِ (ف الادوية) some other interesting remarks (no. 45 on p 27, of the MS. 3610 of the Fâtih Mosque, Istanbul): "Umm ghailân is mentioned by Diosc. in his IIIrd Book. He called it äravva 'A ọab iry (ákantha Arabikê), and the meaning of those words is "Arabian thorn-plant" 2 . It is a tree which does not grow high, but is overhanging, with many curved branches. Distributed on it are pointed thorns like canine teeth. It has leaves resembling those of wild jujube ('unnâb el: , Zizyphus Lotus Lam.) and a red gum of the colour of blood".

After having discussed the faculties of the remedy umm ghailân, Idrîsî (in line 6) gives it the name of "the menstruating tree" (ash-shagara al-hầida الالخجرة الحائضة $)$ ) on account of the very red colour of its gum.

1. We shall see in the chapter talh clb that this explanation is due to the famous Arabic grammarian al-Khalil b, Ahmad (d. about 790 A.D.).
2. IB (Lecl. 1335) identifies, however, this plant with shuk $\hat{a}^{\prime} a$ ack i. e the thistle Onopordium Acanthium L.

The red colour of the gum on which both authors insist favours the identification of the tree with Acacia arabica var. nilotica Del. The expressed juice of the husks is called aqâqiyâ Latal $_{\text {alt }}$. For numerous Arabian synonyms of the desert acacias see Loew II, pp. 377-391, Blatter pp. 6823 and Issa pp. 2-3.
96. AHLAXL QUSTA (Tanacetum Balsamita L.).
(Lecl. no. 190).
(Author) ${ }^{1}$ : It is a known species of the sharp smelling aromatics sown in the gardens. Its colour is between white and green and its action is stronger than that of the


## COMMENTARY.

Botanists agree in identifying the above description with the composita Tanacetum ( Chrysanthemum) Balsamita L., still cultivated in village gardens. According to Dragend. (p.677) it is used as an antispasmodic, emmenagogue, anthelmintic, antidote and nerve tonic.


[^85]ك山川 (Issap. 177); Pers. and Turk.: tarkhûn طر (Avni p. 590); Eng.: balsamic tansy; Fr. : tanaisie odoriférante: Germ.: Balsamkraut, Frauenminze, Marienwurzel.
97. ILB $\quad$ ! , (kind of tame poison), Vincetoxicum sarcostemmoides Schwft?
(Lecl. no. 144 ).
Abbû Hanifa: A thorny tree looking like the lemontree (utrug اتر C Citrus medica Risso), growing in mountains;
 - ad-dig $\hat{a} g$ is every tree with which wild beasts are attracted and poisoned ${ }^{1}$ - and the most pernicious of them is al-ilb الاءلب. Its fresh ends are crushed, meat is mixed with them and cast to wild animals, and they are not long to die when they eat it. If they only smell it without eating it they are rendered blind and deaf. The most pernicious ilb is that
 where in Tihama alor.

## COMMENTARY.

As-Sarât is the name of a range of hills which form the limit of the table-land of Arabia and at the same time

[^86]the eastern frontier of Tihâma. This latter is the strip of coast-land running from the Sinai Peninsula south-eastward on the shore of the Red Sea to the Yemen and the south coast of Arabia. The name Khafardid is missing from all geographical dictionaries.

Abû Hanîfa's very summary description does not help to an exact identification of the $i l b$-tree. Sontheimer called it Datura ferox. Sickenb. (Die einfachen Arzneistoffe der Araber Wien 1893 p. 18) believes it to be a kind of Carissa ( Acokanthera). But we find in Schweinfurth's investigations on the flora of South-Arabia (p. 178) the name of elb (probably lc , perhaps a mis-hearing for clepiadacea Vincetoxicum (Cynoctonum) sarcostemmoides Schwf., a plant found and named by himself. It is a scarce plant, 'a strong mountain shrub. Its juice is used in East Africa as a poison for catching fishes. Probably Abû Hanîfa never saw the tree itself, as it was rare. Thus it is uncertain whether his description of a lemon-tree-like plant corresponds to the shrub Vincetoxicum.

Mu'tamid whose author, Sultan Yûsuf b. 'Umar originated from the Yemen did not mention ilb at all.
98. ALQUN ألفون ? (Rosa foetida Bost. ?)
(IB 169 and 227 b, âniqûn نgi:T?).
Ar-Râzî: It is the fetid rose; it is hot and dry, and its
 Anacyclus pyrethrum D. C. ).

## COMMENTARY.

This may be the yellow rose of Persia (Rosa lutea L.) the flowers of which - sometimes red inside - have a disagreeable smell of bed-bugs. The identification is uncertain.

Synonyms: alqûn (?) âliqûn (?) أُؤ, (Gh.), âniqûn
 Wachsrose, Feuerrose, Kapuzinerrose.
99. IDHMÂMÎDH Tree.

Ar-Râzî: A Persian name; it is a tree on the twigs of which is a kind of wool. It is of a very astringent taste and confines the bowels. He called it in another place barmivûn :برْيون of Kirman.

Badîghûrûs: It is very useful against diarrhoea by its specific property.

## COMMENTARY.

Vullers (I, p. 147) says that îdimâmîd of the description corresponding to that of Râzî. Haraw $\hat{\imath}$
 tree "( á'ik dirakht) not possible. Badighurus or Badhighuras unknown Hellenistic physician frequently quoted by ar-Râzî.
100. AFQARÂSÛN Unknown plant.
(IB, Lecl. missing ).
Ilon Sinnâ: A Persian remedy, good for the memory.
Ar-Râzì: We use it all for the memory; it is good for the intelligence.

## COMMENTARY.

Nobody has been able, until now, to identify this plant. The original article of Ibn Sînấ (I, p. 262) is a little longer and reads in the following manner:
" Aqfarâsiqun اقà, اسةَون : a Persian remedy called
 the memory, and intelligence".

The other names could not be found in any Persian Dictionaries. The first name sounds Greek. Could it be duporágдanov (agriokárdamon), i.e the wild cress?

Bîrlint mentions a drug âfârı̂qûn اناريâ which is, according to Ibn Mâsa, the stone of the wild olive, and according to ad-Dimishqî, mezereum (mâzariyûn •زريون, , Daphne Mezereum L. ) ; Birûn̂̂ does not accept these assertions.
101. AFSUN أُو.anknown Persian drug (uncertain reading ).
(IB, Lecl., missing ).
Ibn Sînâ: A Persian remedy, hot and fine, sharpens the understanding and the intelligence. In another place he says: abraq ابرق, a Persian remedy good for the memory and the intelligence; I think it is the above-mentioned drug.

## COMMENTARY.

The original text of Ibn Sinà (I, p. 263) reads aqsîn ن نáal, the Persian dictionary of Vullers (I, p. 115) aqshînn آثشون . This drug is, according to him, called sáâdat-i-khabîs wis. the inhabitants of Shîrâz (in Persia). But no identification of these names has been possible.
102. ATMÛT bgobi; Bonduc-nut (Caesalpinia bonducella Fleming? ).
(Lecl. no. 130 ).
Ibn Sinnâ: Hot in the second, moist in the first degree; it strongly clears white lepra (bahaq orr). In another place he says: Atmât blabl is an Indian remedy, and its faculty is like that of the orchid (bûzẑdân بوزيدان, Orchis Morio L.?);


[^87]
## COMMENTARY.

The identification of this drug is not quite certain. The most useful to us is the paragraph concerning it by al-Birimi: "Atmût. Some people mentioned that it was a Greek remedy; others said that it was the Indian bean, al-bâqilâal-hindî जadl, which is dotted with black, and is hard like the stone which is called in their (the Indian) language Akutmakut
 was a remedy the faculty of which was like that of bûzîdân " بوزيدان

We see that Ibn Sînâ copied ar-Râzî.

Ibn Al-Baitâr (I. p. 39) says: "Atmât, atmît and
 known as ar-ritta 40 . Some of them (the authors) alleged that it was the betelnut (fawfal ${ }^{\text {G月, }}$, Areca Catechu L.), but this is not true; it is the ritta-nut, as we have said before. The description of the Indian hazelnut will come under the letter bâ ب".

There IB (I, p. 119) gives a long paragraph beginning

1. See paragraph 108. Dymock (1p. 497 fol.) confuses the name of the stone with that of the plant.
2. Doubtless a wrong reading.
with a quotation of the well known Arabic historian al-Mas'ûdî on ar-ritta.

The description somewhat agrees with that of the bon-duc-nut from the leguminosa Caesalphinia bonducella Fleming ( Guilandina bonduc L.). Issa ( p .35 ) gives to this drug the Indian name qârah ( see Dymock I, p. 496).

Ducros (p.137) states that the bunduq hindit of the bazaar druggists in Cairo is not the Guilandina bonduc, but simply hazel-nuts.

Synonyms: Ar.: atmût bg.bl, atmât تl.bl, gawz ar-ritta
 (i. e. " Devil's testicles" popular name according to Dymock III, p. 497) ; Eng. : gray bonduc, bonduc-nut (nicker tree) ; Fr. : bonduc, oeil de chat, cniquier, guenic; Germ. : Kugelstrauch, zweistachlige Guilandine.
103. AWSİN أوسين, (better Aw-Sapîd) Indian Water Lily (Nelumbium speciosum Willd.), a White Variety.
(Lecl. no. 198, awsîd اوسيد).
Ar-Râzî: A kind of Indian water-lily (nîlîf far hindî (نيلو ف: هندى); hot and dry.

## COMMENTARY.

The Persian name of this drug seems to be disfigured
by both Gh, and IB. The correct reading is probably that of Ibn Sinci (I p. 263): "Aw-sabîd ins it it a kind of Indian water-lily. Ibn Mâsargawaih says that it is hot and dry".

It is very probable that this is a white variety of the Indian waterlily, Nelumbium speciosum Willd. This plant has mostly pink flowers and is thus described by Theophrastus and Dioscurides. It is a native of India and has been probably introduced in to Egypt by the Persians.

It was first mentioned, as an Egyptian plant by Herodotus; its fruits are edible and are called by Theophr. (IV 8) and Diosc. (II, 166) Aírúricos rúauos (Egyptian bean); it bears the corresponding Arabic name ${ }^{1}$.

Synonyms for Nelumbium spec.: Ar., Pers, and Turk.: nîlûfâr hindî water lily, "Egyptian"lotus; Fr.: lotus sacré, nélombo; Germ.: Indischer Lotos. For other names see below article no. 128.
104. ARTAD-BURAND أر تد برن- Uncertain.
(Lecl. no. 47).
Ar-Râzi: A Persian remedy imported from Sigistân ${ }^{2}$; it resembles a split-up onion. It is useful for haemorroids.

1. See the article Bâqilâ Qibtî("Coptic bean") no. 128.
2. The border district between Persia and Afghanistan.

Here is surely a short gap in the Arabic texts of T. and G, as IB ( $\mathrm{I}, \mathrm{p} .19$ last line) reads: "Al-Ghâfiqî: I am perfectly convinced that it is add-dalbûth الدلبون. "This latter name, spelt also darbûth دری, designates, with many others, a gladiole or sword-grass ( see Issa p. 87), perhaps the iridacea Gladiolus communis L. As to the Persian name, Ibn Sînâ (I. p. 263) and IB (I, p. 19) give the more correct reading of artad-burrîd ارتد بريد which designates in Persian a split up or cut root. Lecl. (no. 47) reads arûl-baríd اريد. بريد, Dâwûd (I. p. 58 last line) arrandîrand white lily (sawsan abyad Ling Lilium candidum L.). Ibn Gazla calls the drug artad-bartad ارتد بر: repeats ar - Râzîs paragraph and adds: "I do not know anything more about it."

## 105. ISFING 飞ーan Sponge.

 (Lecl. no. 75).It is called (ghaim and fé ghâmam plí).
Ibn Sînâ: It is a marine substance, porous like felt; it is said to be an animal that moves in the water and that sticks to any object whatever coming in its way, and never releases it.

Diosc. IV (120): Eróryos( spóngos ); there is a male kind, thin in its holes, condensed and called drinns (alipês): and a female kind which is the opposite of the male. Sponges may be burnt in the same manner as Halcyonium (zabad al-


Galen XI (XII, 376): The burnt ones are sharp, resolvent. One of our teachers used it in the treatment of accidental hæmorrhage after incisions, when it was dry and totally devoid of any humidity. Moreover, he dipped it in pissasphalt or in liquid pitch ${ }^{1}$. New sponges are much more effective from the fact that the faculty gained by them from the sea is still intact and active in them.

## COMMENTARY.

The "male" sponge of Diosc. may be the hard Euspongia zimocca L, the " female" the softer Euspongia officînalis L., our common sponge ( Berendes p. 542)

Synonyms: Gr. oróyyos (spongos), Lat.: spongia, spongea; Ar.: isfing $\mathbb{\text { e:inl }}$; Pers, and Turk.: same word, pronounced isfonj. The Turkish word sünger א-Kig is derived from Modern Greek aquouvágı (sphungari) Eng.: sponge; Fr.: éponge; Germ.: Schwamm.
106. TTHMID د.ı!, Stibium.
(Lecl. no. 18).
It is the kuhl Jws.
Diosc. $V(84):$ Stimisit busan $_{\sim}{ }^{2}$ : The best kind is

[^88]the one which is easily crumbled, shiny and brilliant, has layers, is smooth on the inside and clean of any impurities. Its faculty is agglutinating, astringent and cooling. It heals ulcers and removes redundant granulations in them. It stops epistaxis originating from the meninges of the brain. It may be washed in the same manner as cadmia, burnt copper and filings of lead. It is ripened by being kneaded in grease, placed in burning charcoal and left until the grease is burnt, then removed from the charcoal and administered with the milk of a woman who had given birth to a male, or with the urine of young boys mixed with old wine.

Galen: To be replaced by burnt ark 1 , 1 .

## COMMENTARY.

It is sulphurate of antimony, still largely in use in the whole Orient as a remedy and a cosmetic for the eyes.

In Ancient Egypt it was equally well known under the
 all the modern names in Oriental and European lang-

1. This word is unknown. It might perhaps be a mistake by the copyist for $\operatorname{arik} \hat{\imath}$ §رl (see no. 107). Meant is a place in the
 dernis $\chi$ ar.rour ("instead of Coptic stibium scales of copper"). The common Arabic name for scales of copper is, however, tĥbal an-nahâs
guages（stibium，antimonium ？etc．）are derived from the Egyptian．

Synonyms：Ancient Egypt．：领品品；Coptic： стни，сөне；Gr．：отіві（stibi，Diosc．），отіци（stimmi， Galen ）；Lat．：stibi，stibium；Ar．：itllmid dâl，kulhl aswad

 antimony－collyrium；Fr．antimoine，koheul；Germ．：Schwe－ felantimon，orientalische Augenschminke．
 （Lecl．no． 51 ）．

Ibn Al－Gazzâr：Al－arîkî are small yellow stones which，when burned，turn red．

Diosc．V（93）：The best kind is the lightest in weight in which the yellow colour is deep and pervades all its parts．It is easily crushed and must not be adulterated with other stones of the land of Attica．It is sometimes burned and washed as cadmia Land is washed．Its faculty is astringent and it makes hot swellings disappear．With

[^89]кnecín $(k \hat{e} r o ̂ t e \hat{e})^{1}$; it fills ulcers with healthy granulations and destroys redundant ones.

## COMMENTARV .

Ochre is a combination of hydroxide of iron with clay. It was used in Antiquity for painting (see Pliny XXXV, 35) and still is. It turns red when burnt.

Synonyms: Gr:: ©~@ (ochra) Lat.: ochra; Ar.: the above mentioned uncertain readings; moreover ukhra $\boldsymbol{\lambda}_{\text {( }}$ (from Greek) and azankân نK.ij (Berggr. p. 865), tin asfar ban ("yellow clay"); Pers. : gil-i-barsh كرش (Schlimmer p. 404);
 ochre, ocher; Fr.: ocre jaune, ochre; Germ.: Ockererde, Gelberde.
108. AKATHMAKATH $\quad$ ros $5^{2}$, Eagle-Stone.
(Lecl. no. 130 ).
It is the "stone of childbirth", the "eagle stone" and the "vulture-stone", because it is found in their nests. It is also called "the stone of facility" because it facilitates childbirth when hung on the left thigh of the woman in labour wrapped up in (a piece of) camel's skin. It is called

1. I. e. wax-plaster.
2. G reads akhtamakht تخ⿰氵-ill ; but the above spelling is the correct one.
in Greek èeritins (aetités) or belonging to the vulture because vultures carry it to their nests to show it to their fledglings.

Ibn Gulgul: It is a stone inclined to redness, and when shaken there issues a sound from it like that of beils, although when broken nothing is found inside it.

Ar-Razzì in the Book of Substitutes: Akathmakath is an Indian remedy resembling hazel-nuts except that it is flatter; it is greyish in colour. When shaken, there issues a sound from it as if something else was inside it and, if broken, something like the grain of a hazel-nut comes out of it. It is slightly whitish. I found in an Indian book ${ }^{1}$ that it facilitates childbirth when hung on the pregnant woman's thigh; I tried it and found it true.

The same Author says in the Book of Specific Qualities: It is something like the egg of a sparrow and resembles a stone containing another one inside it, which is loose.

And in the Continens (al-Hâwi s, (l) : Akathmakath is an Indian remedy which has the same action as that of the peony (al-fâwâniyâ Vilglill, Paeonia officinalis Retz), when triturated with water and anointed on an organ (fol. $15 \mathbf{r}$ ) which issues vapours of black bile.

Xenocrates ${ }^{2}$ : The stone called deritns is of four kinds;

[^90]the first is the Yemenite; it resembles in its size a gall-nut, is black and light, carrying inside it a hard stone. The second is the Cyprian; it is wider and more elongated than the Yemenite, like an acorn. It carries inside it a stone or sand or pebbles. It is smooth and very soft and easily crushed by the fingers. The third comes from Libya. It is small, soft, sand-coloured: it carries inside it a small white stone easily crushed. The fourth is the Italian ${ }^{1}$ found on the coast, resembling sand. It is white and round, facilitates childbirth and cures sterility in the form of a pessary.

## COMMENTARY.

Both the origin and vocalization of the word $\pm r_{+}+5$ l are unknown. Some spell it ikthamakth, others akthamakth, akithmakith and akthamukth. It is missing from the Sanscrit dictionaries. In Hindî and Hindûstânî one could perhaps find an explamation in the adjective $i k a t h h \hat{a} \mid \hat{\wp} \leqslant 1$ "collected together", and mukt . . pearl. According to Freytag (I, p. 46) it is an Indian word, though the Persians thought it to be Syriac (Vullers I, p. 116).

Ibn Gazla takes this drug for a plant, confounds it with atmût boobl (see no. 102) and is rebuked by IB (I, 51, Lecl. l. p. 121 ).

[^91]In the Pseudo-Aristotelian Book on Stones, a creation of the Syro-Persian period (about $500-600$ A. D.) it is said that the eagle puts this stone under his female before she lays eggs ${ }^{1}$. The cosmography of al-Qazwînî adds ${ }^{2}$ that the eagle brings this stone from India and throws it to those who approach his nest; it is also met with in the nests of vultures.

Idrîsi (p. 1811.6 ) says that " the stone Aktamakt $=$. 0.5 S is found in the mountains of India" between Qîmâs m.e.s. (to be corrected Qimâr , ا.s i.e. Khmêr or Kambodja) and Sarandîb بـıدі, (Ceylon)."

Bitûnh$\hat{\imath}$ however who is best informed about India writes as follows: Akathmakath is an Indian remedy acting in a similar manner as peony. In the Collection of Ibn Mâsawaih it is said that it can be substituted for peoney, and for this reason some people have thought it to be the fruit of the peony-plant; but I think it is far from being so, as peony is a Greek remedy and this is Indian...

Dêwûd (I, p. 78) repeats Gh.'s and IB's sayings and adds: "It is brought from Yemen ${ }^{3}$. There is a white kind with something like sand in its interior of which it is

[^92]said that it comes from our town Antioch ${ }^{1}$; but I never saw it (there). The stone which I saw was of the first kind (i.e. like an acorn) and it was procured for me by a person from Upper Egypt from the region near the emerald-mines ${ }^{2}$; but it was as big as a pomegranate, and when we opened it, we found in it something like red sand."

The Indian stone (hagar hindì stis $\underset{\sim}{\text { a }}$ ) or Tanta stone ( hagar tuntâwî जlle:b, ) of the modern Cairo druggists may have been originally the same as the eagle-stone. What is sold under these names to day is a kind of resinous mass (according to Ducros p. 100).

Sickenb. (Arzn. p. 17) thought that the eagle-stone might be a kind of pebble of the Libyan Desert which often carries another one loose inside it. But this latter is heavy and hard, and the ancient authors affirm that the eagle-stone is light and that several kinds are easily crushed.

Wittstein, in his edition of Pliny (Abil Mansıìr p. 314) thinks that the eagle-stone is a kind of brown iron ore; but it is useless to propound hypotheses on a superstitious remedy of Antiquity. The traces of this superstition are to be found in many lands.


[^93](Lecl. no. 73).
Diosc. V (88 a) : A cover of lead is placed on the mouth of a jar containing concentrated vinegar. This is covered with a cane-mat hermetically closing it to stop any steam coming out ${ }^{1}$. When the lead cover melts and falls into the vinegar the clear part of the latter is separated and the thick residue is collected in a vessel, dried in the sun and ground or pounded; the first method is better.

Galen IX (XII, 243 foll.) : White lead is formed when black lead (usrub $\left.ب,-l^{\prime}\right)$ is melted in vinegar, in the same manner as verdigris (zingrâr $\dot{\mu}$ ) is formed when copper is melted in vinegar. White lead is cooling and verdigris is heating and burning.

## COMMENTARY.

White lead is basic lead-carbonate; the principle of manufacturing white lead is still nearly the same as in Antiquity. Medically it was used by the Greeks and Arabs for dry collyria, plasters and the like.

Synonyms: Gr.: quuvivon (psimythion, Diosc.), wuquívoov




[^94]istûbej色:m(Avni p. 113); Eng.: white lead, pearl white, Roman white etc.; Fr.: céruse, blanc de plomb; Germ. : Bleiweiss.
 London and Leyden Magical Papyrus (G. Sobhy).
110. ISRING
(Lecl. no. 74 ).
It is called siring , i.e. as-saliqûn السرُغيقون and az-zarqûn and in Greek oápovzos (sándychos) ${ }^{2}$ 。

Ar-Râzíl: It is black lead burnt in a strong fire until it turns red; then salt is thrown over it. It may also be prepared by burning white lead.

Diosc. V (88 b) : White lead is sometimes pounded and placed in a deep sauce-pan on the fire ; it is then stirred up until it takes the colour of red arsenic (zarnikh $\dot{\sim}, i, j$ ); this is called oávovg ( sándyx).

Galen IX (XII, 235) : It is more refined than white lead and yet does not heat in the same way.

## COMMENTARY.

Minium is a combination of oxide and peroxide of lead

1. According to IB (I p. 321. 10) these are popular names given by the inhabitants of the Maghrib.
2. Our MSS. give the genitive while IB has the correct spelling sandîqs mägin i.e.
$\left(\mathrm{Pb}_{3} \mathrm{O}_{4}\right)$; it is still obtained in an easy way by heating white lead; and the produce is called " rouge de Paris".

Idrîsî distinguishes in white lead two kinds: annukí and rasâsî volu, ${ }^{1}$; «when the $\hat{a} n u k \hat{\imath}$ is burned with sulphur it turns ted and becomes minium. This is an error, as the result is cinnabar.

Synonyms: Gr.óásous (sándyx, Diosc.), oápos s ( sándix, Galen) ; Lat. : minium, sandyx (Pliny $X X X V$ ) ; Ar. : isring
 (Schlimmer), shangarf
 minium, red lead; Fr.: minium, oxyde rouge de plomb; Germ. : Mennige, Bleirot, Pariser Rôt.
111. $\hat{\mathbf{A}} Z \mathrm{~F} \hat{\mathbf{A} R} \mathbf{A T}-\hat{\mathbf{I} B}$ أظفار الط:- Sweet Hoof. (Lecl. no. 104).

Al-Khalîl ${ }^{2}$ : It is a black odoriferous substance resembling nails mixed with incense (for fumigations).

Diosc.: II (8) : örvers (ónyches) ${ }^{3}$ is the cover of a kind of shell-bearing animals; it is like the shell of the purplefish (forfir ${ }^{2}{ }_{2}$ ). It is found in India in stagnant and foetid waters.

[^95]Its smell is aromatic beçause this animal lives on nard (an-nârdin الناردين). A kind is also found in Babylonia which is black and small. Both are aromatic and their smell resembles slightly the smell of castoreum (gund-bâdastar rimun : ج ) . Both are useful as fumigations for atresia of the uterus (ikhtinâq ar-raham انخ:ات الرحم ). (According to Sharaf p. 384 this expression also designates hysteria).

Masîh : Hot and dry in the second, rarefying thick chyme.

Ar-Rêzî: It causes heaviness to the head and headache.

Ibn 'Imrân: As fumigations it is emmenagogue.

## COMMENTARY.

Unguis odoratus ("odoriferous nail") is the cover of a marine snail, probably Murex inflatus L. Sprengel ( $B e$ rendes p. 155) thought it to be Strombus lentiginosus, and the strongly odoriferous kind Pleurotoma Babyloniae or Pl. Trapezii. It was in former times a medicinal drug in Europe under the name of Blatta byzantina. It is still sold in the drug bazaars of the Near East and of India. The description of the drug found in the Cairo drugstores is given by Ducros ( p. 86 foll.).

Bîrûnî gives a very long and important discussion on this drug. He mentions at first the Greek, Syriac and several Persian names and the sayings of Masih on it (vide
suprâ). He then continues: "It is the shell of an aquatic animal like that which exists in the interior of a shell-fish
 (Persian name for Conchula Veneris) ; it sticks by its glutinous character to any wood in the water; it is a kind of cowry-shells (wada‘ودو).

Hamza (al-Isfahânî) said that they were the scales of the skin of mîsh-máhi wano o ${ }^{1}$.

Ibn Mâsawaih, and al-Hushakî كin 2: The mîshmâhî is adherent to its flesh and skin, and the scales are detached from the skin. It is found in the Sea of Yemen and sometimes in the estuary of the river ${ }^{3}$ in the region of Basra; it is brought fresh to Abbadân ${ }^{4}$. Most of which that is exported comes from al-Bahrain ${ }^{5}$, and it is the best for fumigations; that which has a stinking smell gives, when grilled, a breath of the perfume of ambergris.

Al-Kindî said: The animal of the (odoriferous) nails is like a piece of gut on the two ends of which are two balls, in each of which is a nail and they are said to be its eyes......

The shells are of different kinds, and the best are

[^96]al-qurashiyya ${ }^{2}+a \|^{1}$. The Indians like it and call it tah kurshî ی, $\mathrm{S}_{\mathrm{a}}$; or the qurashî-nail. They are brought also from the region between Gudda and 'Adan'2, and they are small and yellowish like asafoetida or like the hollow of the shell of the pistachio-nut. One druggist pretends that the hâshimî解 ${ }^{3}$ kind is next to it in goodness, that they are bigger than the qurashi and of red colour; but others contest this. Then comes the kind called nails (hoofs) of asses on account of their size and thickness; they are as big as a dirham ${ }^{4}$ and blackish (in colour).

Al-Hushakî: The makkî-nails are brought from Gudda and the coast of Mecca; they are inferior to those of Bahrain and not suitable for fumigations. They are like shells and their colour is reddish. When they (the shells) are taken off the animals they are prepared with perfuming substances and then sold.
 fumes them when they are dipped in it and then washed.... (illegible words).

Al-Hushaki said about this: They are macerated in water and salt for three days, then washed with hot water

1. Probably from the tribe of Quraish in Arabia.
2. Djedda and Aden, west coast of Arabia.
3. Perhaps named after the family of the prophet, Hâshim.
4. A silver or copper coin.
until their flavour and foul smell disappear, and are then dried. They are then thoroughly cooked with spices, put into Meccan sand and dried, then grilled, care being taken not to burn them.

A vegetable substance happened to come from India like the barks of pistachio-nuts, resembling human nails, white on one side and yellowish on the other, having a certain odour; it is called nâkhma $\quad:<1 ; 1$, and the Indians use it in Dhob - $\infty 2$, which is one of their fumigations".

Thus, according to al-Birlinî and his sources, the Ungues odorati came, in former times, mostly from the coasts of Arabia. The Yemenite sultan Yûsuf b. 'Umar does not mention them, however, in his Mu'tamad.

Synonyms: Gr.: övozs (ónyches); Lat.: ungues odorati Ar.: azfâr at-tîb أظظا; ; Pers.: same name and nâkhun-i-pariyân نان
 ( ("devil's nail"), Vullers II, 1271; Turk. : ezfâr-i-tîb
 Räucherklaue.
112. INFAHA a $2 i \frac{1}{\xi}$, Rennet.

[^97](Lecl. no 172).
They are the rennets of suckling animals.
Galen X (XII, 274): All rennnets are hot, refining, resolvent and dry. A rabbit's rennet triturated with vinegar is useful against epilepsy. Some people say that rabbits' rennets are useful for retained phlegm in the chest. I, however, did not try it nor dit I know of its action, and I doubted it very much, because that disease needs astringents whereas this drink is strongly irritant and resolving.

Diosc. II (75) : Rabbits' rennets: three oboli of it when drunk with wine, are good for insects' bites and chronic diarrhoea; it promotes pregnancy in the form of a pessary. It is useful when drunk with vinegar against epilepsy. (fol. 15 v)

Galen (XII, 274): The rennets of a mare confine loose bowels.

At-Tabarî: If a pregnant woman drinks of a male rabbit's rennet together with his testicles mixed with wine, she gives birth to a male. And when she drinks of a female rennet she gives birth to a female.

Al Isrâ' îlì: The rennets of donkeys and of he-goats, when drunk with wine, are useful for dropsy. ${ }^{1}$

1. This word is mutilated in the editions of $1 B$ instead of rur. Leecl. ( $I, 158$ ) gives the correct translation.

Diosc. II (75): The rennets of the he-goat, sheep, young and old gazelle, the onager ${ }^{1}$, the antelope and the calf are similar in their faculty and are good when drunk, for the poison called dizobytov (akóniton, Aconitum Napellus L.). The rennets of the sea-animal called qwirn (phóke, seal) have the same faculty as castoreum: useful when drunk against epilepsy and atresia of the uterus (hysteria). In conclusion all rennets coagulate fluids and dissolve solids.

## COMMENTARY.

Some of the kinds of animals enumerated by Diosc. were replaced by Hunain in his translation by others which were better known to the Arabs. Rennet was later on prepared as a dry powder (pulvis seriparus).

Synonyms: Gr.: rırúa (pitya); Lat: coagulum; Ar.:
 Oriental languages; so does Bîrûni); Turk.: same word and
 my); Pers.: mâya-i-panir (Vullers I, 378), panûr-maya (Steingass); Eng.: rennet; Fr.: présure, caillette ; Germ. : Lab.

(Lecl. no. 120).

1. In Diosc.'s text riavvréocos (platykérôs), i. e. dappled buck.

Galen XI (XII, 311): The flesh of vipers dries, heats and resolves when corrected with oil, salt, dill and leek. Experience has shown that when a serpent falls alive in a liquid and dies in it, and a leper drinks of that liquid, his skin becomes thickened and drops off; the rest of his flesh becomes as soft as that of a snail. (We omit here many stories that happened in our times) ${ }^{1}$. It ( the viper's flesh ) resolves a certain matter from the whole body which becomes exuded by the skin. That explains why a great number of lice are generated in the body because of it.

Diosc. II (16) : "Exıঠ»c (échidna) i.e. the viper. Its flesh, when cooked and eaten streng thens the sight and stops scrofulous glands from growing. It is said that its eating produces lice, which is a wrong statement. It is believed that people who feed on it have their lives prolonged.

Unknown Author: Abuse of feeding on vipers' flesh ulcerates the body and corrupts the temperament. If a viper is pounded and smeared over the place of its bite, it cures it.

## COMMENTARY.

It is particularly in Galen that we find the relation of a great number of miraculous cures by vipers' flesh. Andromachus, physicianin ordinary of the Roman Emperor Nero, was the first

1. This is probably a note by BH who abridged the long record of Galen.
to add this remedy to his famous theriacum, which was compounded of more than sixty drugs. The "great theriacum" with vipers' flesh was said to be an efficient remedy against leprosy; it was always the subject of various superstitions.

Idrîsì (p. 36) gives various tales on vipers' flesh. Bîrûnîs paragraph on vipers is short, and Ibn Gazla only repeats Galen's words. But Dâwĥa gives a circumstantial record of this drug, and mentions which kinds of vipers are the best for use as remedies, together with legends about the action of vipers' puison, mostly extracted from Greek sources. He mentions the Egyptian horned sand-viper, (cerastes).

Damîrî (translated by Jayakar I, pp. 56-64) abounds in legends about vipers and repeats some of the sayings of medical men (Bakhtîshû' and others).

Synonyms: Gr.: हैxısva (échidna) ; Lat. : vipera; Ar.:

 Germ. Viper; Anc. Egypt; 费 等 $2 \Omega \Omega$ Coptic. '\&qu.

## 114. IBN'TRS إبن عرس, Weasel.

(Lecl. no. 12).
Diosc. II (25) : It is uvya $2 \tilde{\eta}(m y g a l e ̂)^{1}$. When its skin is removed and the contents of its abdomen are emptied

[^98]and the rest salted and dried in the shade and taken in the dose of one mithqâl it makes the strongest antidote for (stings of poisonous) insects. Its ashes, when mixed with vinegar, are good as an ointment against gout.

Galen X (XII, 362) : I have never tried it ${ }^{1}$.

## COMMENTARY.

It is the small weasel Putorius vulgaris Briss. (Mustelidae) which is very common in the Oriental houses ${ }^{2}$. Many legends are known about this little carnivorous animal, e.g. that it brings forth its young in places where gold is hidden ${ }^{3}$, or that it brings gold as a ransom for its captive young ${ }^{4}$. Idrîsî (p. 35) gives synonyms in many languages, Dâwûd a detailed reference to its medicinal faculties.

Synonyms: Gr.: 「a $2 \pi$ (gale, Diosc. Galen), (iktîs, Aristotle); Lat.: mustela (Pliny XXIX); Ar.: ibn 'irs
 (أنو الوثاب (Damı̂r̂̂), ab̂̂ 'arûs (Syria, Berggr. 103); Pers.: khazz خ (Schlimmer p. 388), râsĥu, (Naficy);

[^99]4. 'Abd al-Iatîf, according to Damîr̂̂ (Jayacar II p. 421

Turk．：gelinjik كrin ；Eng．：weasel；Fr．：belette，fouine； Germ．：Wiesel，Hausmarder．

## 115．ARNAB أر，Rabbit（Hare）．

（Lecl．no．54）${ }^{1}$ ．
Some physicians say that when it is pounded and placed in a jug it is useful against ulcerations of the intest－ ines（dysentery）．Rabbits are sometimes burned whole and used against stones of the kidneys；if the abdomen with the viscera is roasted in a sauce－pan and mixed with attar of roses it causes hair to grow on the head．

## COMMENTARY．

All kinds of medicinal properties are still ascribed to the organs of hares and rabbits．Dâwûd＇s paragraph on this fact is very long．

Synonyms：Gr．：iay $\omega$ òs yegoaios（ lagôós chersaîos）， えavıঠsìs（lagidéus）；Lat．：lepus，cuniculus：Ar．：arnab بiر， arnabbarrî 1

 lièvre，lapin ；Germ．：Hase，Kanínchen．Egypt．胥足 wen； Coptic（Scala magna），Dśp\＆$\sigma$ wortc，c\＆ps\＆

[^100]116. ARNAB AL-BAHR أر ب الـحر, Marine Hare. (Lecl. no. 55 ).

Ibn Sinâ: A small marine animal with a solid ${ }^{1}$ reddish shell. Between its parts there is something like the leaves of the salt-wort (ushnân الشنان).

Another Author: A small marine animal with a stone in its head.
 resembles the young of the animal called $\tau \varepsilon v \vartheta i s$ (teuthîs, cuttlefish ). If smeared on a part of the body, alone or with nettle (qarîs छريص) it removes hair.

Galen XI (XII, 344): The oil in which it is cooked is used to remove hair.

Another Author: The ashes of its head are useful against alopecia. It sharpens the sight. This animal is poisonous, and when any quantity of it is taken it kills the person by ulcerating his lung.

## COMMENTARY.

The "marine hare" is, according to Sprengel (Berendes

[^101]p. 159) a harmless Mediterranean marine snail, Aplysia depilans L. which was the subject of various superstitions. Italian fishermen of to-day still believe that its mucus causes the hair to fall out.

The Oriental drug-books repeat the Greek legends of the poisonous qualities of this sea-shell, but none of their authors seems to have ever seen or tried this drug.

Birûnî says that the marine hare is a "stony piece".
Ibn Gazla says, that when it is taken it causes dyspnoea, injection of the eyes, dry cough, hæmoptysis, violet urine, and other symptoms; also taste of rotten fish in eructations.

Synonyms: Gr.: スaywòs via $\lambda \alpha \alpha_{\sigma} \sigma o s$ (lagôós thalássios);
 bahrî̀ أرنب (Ibn Sînả, Bîrûnî, IB etc.) ; Pers.: arnab-i-bahr̂̂ أرنب. كرى ; Turk.: same name; Eng.: marine hare; Fr.: lièvre de mer (Cuvier, Lecl. I, p. 53 ); Germ.: gemeiner Seehase.


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我 (
 الشٌ


 كَ كَ




 3



 قتّل بتقر كهة الرئة .













 إبن عرس

 110


 أرنب الـحر


يسهجق الاسفيدأ وهع
 و هع هذا ليس يسخخن أيصـاً
 بـع





 لط



 - الم أة وهع الحا

15 V .
شر با .




 اكثمكت دو اء هنا 15 R .




 كون الرمل .يحمل فى داخـله حجر اً أبيض لطيفاً يتفتت سريعاً ورابِها
 الو لا دة ويمنح العقر فرز جهة .
( إسفْـناج ( 1 ( 1 - 9



 الاسفيداج مبرد والزنجار مار لزاع ع





 اللعار ض



 الأر يیى حجارة صغار صفر اذ| أُحروَت امَرت .



 لأنه يو جه









كنا نستحمله للحفظ. جيد اللحقل . لان


المذكور قْل .



41 V.

أوستن
 ارتد.
اللمصل المشقوق زاوفع هن البو اسير .


 (




لأن القوة النى اكتسبها من البحر مغفو ظة قائهة فيها .

जlim : \& 6 ت 1

$d i d i d i j, l: \dot{r}$

Q乏
 لانها تنفع هن وجع الـكبد و الصفر اء اذا عصرت على الثر سو ف .
(أم 90


البادية معر و وهة بار دة يإسة فابضة .

 الباذر بِجو
ب! - 9V
 . و يطرح اللسماع فال وأخخبث الالب إلب حفر ضنض
 عرق هثّل عاقر قر ما
99

 .

1







- q. أبوغلوسون




 14 R
 أ:طن, ن

 إدرو مالى ونى المرق يسهل بلغنا ومرة .
ilina


يتداوى به هن عرق النسا .



13 V .

气

. متو



 الخبيثة .





 الى الطول مائل عليه زغب . ( ز





ايدى . طيخ عروقه ينفع من عرق النسا والثشو صة وخشُونة الحلق شربا ولعوقاَ بالعسل .
 أرتطـيون




وينفع حرق النار صباً . (


 ( ج ا













 -

$13 R$.
 إِرِ يغارن






 وراحد طو ال غالا . وإذا جفت اسو دت وصلبت كالقرون . وله ثمرة فن

 r - ن

بالسعتر وهو رؤوس دقاق خفاف لها أذناب شبيهة بالشعر إذا شُرب منه أر بر










 مهر كاون العقيق لا أصل لها ولا ورق ولها رؤوس صغار الىالمياض أصضغر








1 غ ، ت يونس
 وine



 كو رقَ حى الا





الأرض المالحة فَ زمرة القيظن و به يال 12 V .
شِر ْجاله وشرب درهمين منه يدر البول و منه أصنافِ أخر والقاقِل من أصناوه

أفيوس - Va






 أْثـثون

الخشيشة المسطة بوبو نيو نو ولكهنا دونها كثيراً .

- vo


 البجلبة الى الهين والأذن .
 أش:ان من الحَحْضن • (ابن جريم) ) 'وهى حشيشة القلى. (و غيره ) هو نبات لا و ورق


 أبو فايس
 له ورق صغار كورق الزيتون وأرق وألين هنه وفيا بين الو رق شو كـ يا يابس الى البياض مزواً متفرق ه زهره شبيه برؤوس النبات المسمى قِسوّس كأنه



























 البطن باعتد ال و بسختها


و وت تل － 79 أغير｜طن

㾍

 إيا 1 1 1 غ度


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 ． 4 iok 11
0，زه 0 أــحر اغالوس


 （

 أوا：ت：ُوس ا

11R.















- 71









 أنها أصغر والين داخلها بزر دقيق جهاً أسود وعروقه فى غلظا الأصبح بين


 إبذا إبا ر:


 T - 77 أنْجبار : نبات أ كثر ما ينبت فیشطوط الانهار و بين العليق ورقه






 وأبر أ آخر من بول الدم و المعدة بعد عشرة أعوام .
( - TV



和

 هر

 10 V.






 ه



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\begin{aligned}
& \text { ا }
\end{aligned}
$$

$$
\begin{aligned}
& \text { ت }
\end{aligned}
$$




10 R .





 وم:ه صنف ثان أصغر مقداراً وور رقاً من الأول ولم وزهرة همر اء قرمزية .
 أطرمالN






 أهـبـ صنر










 سعke هنه رأكهة


 - الاقاقر اذا محلثّه










. المرق

- 01
 خربة . (

عسر البول شر باً والماف بالْ بلزيت يدر العرق اذا دهن به اللبدن . ( Or or أفـــيـديون





 الخْ

9 V .
 بالزغب وله قصنبان صضار دقاق كثيرة من كل جانب ورق دقاق واحد من



أصله بالشر اب يسّكن و جع الظهر ويدر اللبن .



文 T ino diog. g م 9 R.
ور وته و


أَقجوان




 ويقال أَانير يس ' . هو (

 الl

.:





وو لا حق النار ضناداً .
a







 لايميو نـطيس

 الخل ذو ب العـلال
انَروساةًاس


 انثو ليس : (



我云












—升

－シン，


 عن دـو وَر اطس

8 R


 عَعه كلَ








 آخ

侕
 ناعم كشير متّكا


ل
保
 (

 .




 هر أرة .


 الحر ض ما هو و ينـت
 ( G ( $)$. .




 وأهل نباته • (الرازى) الخرو !

 النى اذا ذيف كان لو نه الى البيــاض . والـلاليتيت المحروف بقو رينايقس أى الم



 سلفيون ويسمى أصله ماغيطارس اليـس
7 V.





 بَ ro
 ما يكون من دِمحة هذا النبات ما أو

 للنه أقوى من أصله

7 R

. الطحال






 اللى بين سبتة









صغر ملس كاللدود الأصغر النى يو جد تحت الأرض فی الربيع • (ابن سينا )









الصيد فال يسرع اليه النتن .
 نgmis



للاجماع ترياق السهو م الهو ام م
بr - انار السيون : ( ! :دراسـون





 كورق السفر جل الا أنه أطول وأقول عر صاً خشن يسير اً . وله على أطر اف أف


 خدر اللسان وتوقف الك大ام .









 حس
6 V
ف





rV




6 R.

اللسقطرى و صفر ته كز غبغر اخ الحام (ج



أسطوخوذوس غالاطِا







وقيل اذا علق على أحد لم يلسعه الحقرب . والصلب منه والأسود وهو التيتق
رديئن جداً .


 تنبت فيها ـ خمالاون لو قس أى الأبيض وقد يسمى إقسيا لأنه نبات يو جا







 الشو كك المسمى سقو لومسى الا أنه أصغر وأندق منه وفيه همرة كمهرة الدم ،




الجرب و القو اجى والبهق .

r
 هو أحد اليّو عات ورقةه كاذان الفار عليه زغب أيبن و وله شو لك دقاق عليها









ظاهر 0 بكشي







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5 \mathrm{Y}
$$

o







 19



 . بـ بـ اذان الفار البرى (
-
5 R .

















 اذا صب على النقر س سكن الضر بات .
 أرز





 زيادة بينة .







ط.خت بالقدور .






- 1 \&







10











 بطبيخه قطع سـيالان المو اد الى اللالاة و اللوز تين و والثلة .






 4 R


 . 6 . التّ

 وهو رَخو رتشظظى وشظا
 بالماء اءحلت
جا



تحالو" وفيها •

3 V
 الثند يد الخغرة المائل الى السو اد انفح عا مال الى اللياض خاصه الجمبلية .
 والموهر الا رضى البِّارد فيه الا كّ


 ار بيته ورم سـكنـ، .
.



3 R


 ( 1





 الماشية ر اءُ






诺


Lo－lo，



No．l（（








任
原工是轮




 كاللنى ذ كر ناه قبله الا أنه أصغر منه وأصوله لينة غير معقدة لو هنا أصغر

 أْنه زو عن المامير ان . (






 سنْ

$$
2 \mathrm{~V}
$$

 الا





$-1 M-$
＂ غَ شَ


 الان للسى عـا
 وان كان أش⿻ه从 به

 ：
 أكملة


 مثّل زه
 وَو ية الر أَ

ا r م这
( حرف الألن )









 لك

 قوم لا يقرؤن الـكتب ولا يعرفون من الا الادو ية الا أقللا .



 شأنه بالناً فَ فنه . ولنجّدى الآن عانشر حناه . الأول حرف الألف :

 a 1
























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\begin{aligned}
& \text { هِ }
\end{aligned}
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$$
\begin{aligned}
& \text { إلور عظهر الحقائق وكشف الدقائق }
\end{aligned}
$$

كما اللّه سعادته وايِّ سيـيادته (r)
ن T


ورن .

وب大اف ع.


 جزا اه النه عنا وعن الهمل خيب اللمز اء

ماكس مايرهوف

 ديو سقور ريدس اليو نانية







 . و لا ي




والصعوبات التى اعتر ضتانـا .






الالربية يقتّغنى الادة طـع هذا الـكتاب على ضوء معلو ماتنا الخد يثة



保
 الك大ملة للمنتخبات التى اقتبسها ابن البيطار ما ينوف عن الـائتى مرة ، و قد ظهر لنا من دراسة هذا اللكتاب أن مؤ لف ابن اللبيطار ما هو إلا نسخة








 الأدوية المو جوحة فَ شمال أفريقيا و ولاد الأندلس


الأخ خير مؤ لفأ كبير أ وكاتباً شهيراً و وتر جماً غريراً .


ال:



















إلى من أحما حضارة الفر اعنة والعرب بعد مو تههما


od
Jg لأ لا
نتشرف باهداءكتانبا هنا قياماً بو اجب الو لاء
و الاغ

ماكـ مإِر هو

الجامعة المصرية

 $\infty 07 . \ddot{a}^{2}$

$\qquad$
ar
وشرووهات
والرك: و ?
الاستاذ بالمألم

الـرى




[^0]:    1. For other MSS. in Bologna, Leyden, Oxford etc. see H. Diels Handschriften der antiken Aerzte II, p. 31 ( Berlin 1906).
[^1]:    1. According to a recent publication of Hunain's own "Treatise on the Translations of Galen." See Bergstraesser, Hunain ibn Is-hàq weber die syrischen und arabischen GalenUebersetzungen (Leipzig 1925), and Max Meyerhof, New Light on Hunain ibn Ishâq and his Period (Isis vol. VIII 1926, pp. 685-724).
    2. Diels I. c. I. p. 96.
    3. All that remains of his literary output was published by Bussemaker and Daremberg (Oeuvres d'Oribase, 6 vols. Paris 185i-1876). A recent edition of the text of the Collectanea (by Job. Raeder ) is now appearing in Berlin and Leipzig 1928-9.
[^2]:    1. There exists no modern edition of Paul's original text but an excellent translation with commentary by Francis Adams (The Seven Books of Paulus Aegineta, 3 vols. London 1S45-7). See Bibliography.
    2. Diels I. c. 11. p. 78.
    3. This word is derived from Syriac kenâshâ N゙שjコ i. e. Collection.
[^3]:    1. The Arabic text of this book has recently been edited by M. Z. Siddiqi (Firdausu'l-Hikmat or "Paradise of Wisdom," of Ali b. Rabban at-Tabari. Berlin 1928) See the analysis of the worlx by M. Meyerhof in Isis vol. XV (1931) pp.6-54.
    2. See his biography given by M. Meyerhof in the Introduction to "The Ten Treatises on the Eye ascribed to Hunain b. Is-hâq", Cairo 1928.
    3. See, e. g. the afore-mentioned Firdaws al-Hikma and "The Book of al-Dakhira" (edited by G. Sobhy, Cairo 1928) ascribed to the great mathematician and physician Thâbit b. (Zurra (825-900 A. D.).
[^4]:    1. r..
[^5]:    1. J Ruska, "Cassianus Bassus Scholastikus und die arabischen Versionen der griechischen Landwirtschaft". In Der IsIam V (1924) pp. 174-198.
    2. Cassiani Bassi Scholastici Geoponica, ed. H. Becker Leipzig 1895.
[^6]:    1. Although al-Birûnî gave an exact biography and chronology of ar-Ràzî in the famous Leyden MS. Or. 133 (translated by J. Ruska, "Al-Bîrûni als Quelle fur das Leben und die Schriften al-Râzî's, in Isis V, 1922, p.p. 27-50), scholars always follow the dates given by later and less trustworthy Arabic authors. Thus, e.g., the millennium of Rhazes' death was unjustly commemorated in Paris. in 1930.
[^7]:    1. Derived from Greek raupíoov (graphidion) i. e. a small register.
[^8]:    1. "Liber fundamentarum pharmacologiae", auctore Abû Mansûr Mowaffak ben 'Ali Harawi. Ed. Romeo Seligmann, 2 vols, Vienna 1830-33. For the translation see Bibliography (Alu Mansûr).
    2. Histoire de la médecine Arabe, (Paris 1876) pp. 389-91.
[^9]:    1. Ibid. II p.51-52.
    2. A short analysis is given by L. Leclerc in his "Histoire de la médccine arabe", vol. I. pp. 447-87 and 451-3.
[^10]:    1. "Abuali ibn Tsina (Avicenna) Canon Medicinae" interprete et scholiaste V. F. Plempio. Louvain 1658, vol. II. pp. 1-311.
    2. See H. Beveridge in Journal of the Royal Asiatic Society 1902 pp. 333-5.
[^11]:    1. On fragments of the Arabic text see C. Brockelman, Ara~ bische Literaturgeschichte (Weimar 1898) vol. II p. 485.
    2. Ibn Abî Usaibi'a II. p. 52 line 9.
[^12]:    1. See M. Meyerhof, in Archiv f. Geschichte der Naturwissenschaften XII (1929 pp. 45-53 und 225-236.
    2. J. A. Banqueri, "Libro de Agricultura . . Ebn el Awam. Madrid 1802. 2 vols, and Clement-Mullet, "Le livre de l’agriculture d'rbn - el-Awam". Paris 1864-6, 3 vols.
[^13]:    1. Histoire de la médecine arabe, vol. II, p. 225.
[^14]:    1. See Bibliography under IB and Lecl.
    2. Hâggi Khalîfa in his bibliography (Lexicon bibliographicum et encyclopaedicam ...ed $G$. Fluegel, vol Il, Leipzig 1837 p. 392 no. 3489) misspells the name (Hobaish instead of Hasan).
[^15]:    1. Geschichte der arabishen Aerzte, Göttingen 1840 p. 98.
    2. Ed. Wüstenfeld, vol. III. p. 769.
    3. See Hirschberg, "Geschichte der Augenheillande im Mittelalter" (Leipzig 1905) p. 68-9. A photocopy of the unique Escorial MS. is in the possession of Mr. J. Cusi who charged Dr. Meyerhof to wanstate the important parts of the book for the next International Congress of Ophthalmology (Madrid 1933 ).
[^16]:    1. Brockelmann. "Geschichte der arabischen Literatur" (Weimar 1898) vol I, p. 339 ; Leclerc vol. II, p، 149.
    2. He died on the 26 th of April, 1930, in Cairo. His sons presented, in 1932, the invaluable Taimûr Library to the Nation
[^17]:    1. G: "Beginning " of (the book of) al - Ghâfiqî.
    2. So in T; G reads instead of this: "May God the VeryHigh have mercy on him and multiply his rewards".
[^18]:    1. $G: m y$ purpose.
[^19]:    1. This is not correct; at least ten other authors composed books on simple remedies during the ${ }^{1} \mathrm{Xth}$. cent. A. D., long before Rhazes who lived from 865-925 A. D. See Introduction.
[^20]:    1. G • Who fears his Toord the Almighty
    2. In G only.
[^21]:    1. Here follow in Dioscurides' original work the names of the lands (Pontus, Phrygia, Illyria etc.) in which the asarum plant grows. As IB I, 23 (Lecl. I, 56) gives these names, it was probably Barhebraeus who omitted them in his abridged edition of al-Ghâfiqî's Pharmacology.
[^22]:    1. Here follows in al-Ghâfiqi's text as quoted by IB (I, 23) an explanatory note:" This is the asarum which comes from Algeciras and which resembles the real asarum more than any other Spanish asarum, although it is different from the description given (scil, by Diosc.)".
[^23]:    1. In Arabic mithqâl لäa; the Greek text (Diosc.I. Well. I, 15) reads : " 7 ounces". A mithqâl has about 4.7 grams.
[^24]:    1. Here in both MSS, erroneously athl fil, i. e. tamarisk.
[^25]:    1. It is Is-hâq b. 'Imrân; see Introduction.
    2. Qafsa a $a$ is an oasis in Southern Tunisia. The name is mutilated in both MSS.
[^26]:    1. I. e. toothpicks of (the caliph) al-Mamùn; it may have been popular a name in Baghdad during and after his reign (S13S33 A D.). Ancient Egyptian: min UR knncited by Kamal, (no proof).
[^27]:    1. Shirbin $\mathrm{in}_{\boldsymbol{\prime}}^{\boldsymbol{\mu}} \boldsymbol{\sim}$, larch-tree or arind of cypress, is here and elsewhere the translation of Dioscurides \% $\begin{gathered}\text { doos cedar-tree. }\end{gathered}$
[^28]:    1. Probably the Nabataean Agriculture (Kitâb al-Filâha an-
     lived about 800 A. D. See Introduction I, no. 24.
    2. Dîbadâr ديـبدار or Dêbdâr is the Persian transliteration of the Sanscrit Dêvadâru. See commentary.
[^29]:    1. See Introduction I, no. 25.
     Cairo during the middle of the XIth. cent. A. D. See Introduction. I, no. 39.
[^30]:    1. IB ( I, 37) and Lecl. (1,66) read أرض ألدرب" "in Arabia", our two MSS. . ${ }^{4}$ " in the West", The latter is the correct reading, and, moreover, Meyerhof's hand-written copy of IB reads بil
[^31]:    1. He is Is-hâq b. Sulaimân ( see Introduction I, no. 20); the quoted passage is probably from his book "On Simple Remedies and Aliments".
    2. Of Ibn Wahshiyvya (see Introduction I, no. 24).
[^32]:    1. This is an erroneous translation from Diosc. I ( 115 )
     "for it is a plant which produces fruit during the whole yeirr in rapid succession".
    2. Diosr. : $\varepsilon \dot{u} \tilde{a} \delta a s$ merù Gágovs, i. e. fragrant with sume oppressiveness.
[^33]:    1．This author is，according to IB（10），Ibn Sînâ．
    2．According to IB（65）this passage is extracted from Abo Hanîfa ad－Dînawarî＇s＂Book of Plants＂．

[^34]:    1. He was the nephew of the famous translator Hunain (XIth. cent). See Introduction I no. 14.
    2. Shîr $\mu$ is the Persian word for milk. The following sentence is attributed by $\mid B(56,2)$ not to Hubaish, but to the Indian physician Charaka.
[^35]:    1. An unknown Byzantine or Syriac physician.
    2. See Introduction I, no. 8 .
    3. See Introduction I, no. 32.
[^36]:    1. See Introduction I, no. 17.
[^37]:    1. The name is written, indeed, in most of the pharmacological MSS., and even in the printed edition of IB ( p .55 ) amîrbarîs أهron which is a mistake.
[^38]:    1. The last words are missing from the Kuehn edition of Galen's De Simpl. Medicam Virt.
[^39]:    1. As to the names of the varieties of rice in Modern Egypt see Sharaf (p.579), and Îsa (p. 131).
[^40]:    1. This is not a rare accident in Oriental lands where stagnant waters are infected with leeches.
[^41]:    1. In Galen"s original text"leaves" instead of "seeds".
    2. This sentence is ascribed by IB (I, 41) to Abâ' Ubaid al-Bakrî.
[^42]:    1. This comparison of the leaves with a dirham is to be found also in $/ d r i ̂ s \hat{\imath}^{\prime}$ 's book (I, p. 171.20).
[^43]:    1. Here BH cuts off some lines on other medicinal properties of the drug. They are to be found in IB (Lecl. I, p. 120).
[^44]:    1. The last words are not Galen's but Dioscurides'.
[^45]:    1. Meaning obstructions of the vessels of the brain causing dizziness ( $\sigma$ жotẃmata skotômata, Diosc. III, 78).
[^46]:    1. See our Introduction chap. I. no. 14.
[^47]:    1. Translation of Diosc.' ¢̧́@́aцca (phyrama) i. e. mixed and kneaded.
    2. This passage is missing in the Kuehn edition of Galen's Simplicia.
[^48]:    1. See note 1 on p. 113.
[^49]:    1. The text of Diosc. reads cu@rozódiдa (sarkokólla).
[^50]:    1. Translation of the Greek qourávoy (phrygánion).
    2. This is an addition to Dioscurides' Greek text.
[^51]:    1. According to IB ( $p .4$ ), who has the unabridged text, alGhafiqi adrised the use of the expressed juice of the inner bark of the root.
[^52]:    1. This name karâth $\boldsymbol{H}$ is not to be confounded with the similarly spelt kurrâth or leek. Al-Ghâfiqî speaks, later on, more about this plant to which he gives also the name of "ushbat as-sibâ" (i. e. " lions' herb").
[^53]:    1. Thus reads the text of Dioscurides. He understands by "seeds" the small blossom-buds.
    2. Gh. and his compilatrr $B H$ here show their better knowledge of the language by exactly transliterating in Arabic the Greek word oivonv (oinanthe), whilst IB (no 136) disfigures the
     in $\operatorname{Idrî} \hat{\imath}$ ( $p .26$, nn. 42) , so that it must be an early copyist's blunder.
[^54]:    1. This latter passage has been abstracted from_Dioscurides; it is not found in Galen's text. Probably a copyist's blunder cor--' rected by IB.
[^55]:    1. Here again Gh. gives the correct reading where $I B$ (no. 163) disfigures the name to andûsârûn نرو jledil adopting an early copyist's error.
[^56]:    1. In IB (I, p 62), disfigured to anarûtâfîs iفm, Dâwhal andrûtâlîs
    2. Probably abridged by BH.
[^57]:    1. This paragraph is more detailed and full of personal remarks in IB (Lecl. no. 121) Ldrìsî also gives a longer section on this plant.
[^58]:    1. So spelt in the text of $T$ and $G$; but the reading of this name is uncertain also in the original Greek text of Dioscurides (see ed. Wellmann I. p. 158).
[^59]:    1. IB (I, p. 6) reads aamlîlis سلhell.
[^60]:    1. These words are missing in $T$ and $G$, but are restored by us accurding to the texts of Diosc. and IB.
[^61]:    1. A famous Spanish-Jewish philosopher; lived ab. 9851040 A.D.
[^62]:    1. Foll. p. note no. 1.
[^63]:    1. Here the "Nabataean Agriculture" is meant.
[^64]:    1. In both MSS. a slight error is present: the remedy is bad, instead of the blood.
[^65]:    1. Translation of Dioscurides' лoupolvz $\tilde{1} \delta \varepsilon s$, i. e. bubbleshaped.
[^66]:    1. Idrisi gives two other Arabic names, following a MS of Salmawaih (d 840 A D.), viz. halfâ and burdi saj.g alà; but that is an error.
[^67]:    1. Often erroneously spelt akmûbazân í í í
[^68]:    1. The Greek name of this town is $\Phi$ vivés ( Pheneós).
[^69]:    1. See below no. 135
[^70]:    1. In the old editions of Diosc., the Greek name is always misspelt époroc (érinos); Wellmann set it right in his new edition of 1907.
[^71]:    1. Translation of Diosc.'s そ̇upı $\lambda \alpha 0 p \eta$ 's.
    2. It is a sharp milky sap used as a caustic.
[^72]:    1. This remark refers to Hippophaes (chap. 77).
[^73]:    1. In the text Yùnus, cop ist's mistake.
    2. IB takes him erroneously for the author al-Ghâfiqi himself.
[^74]:    1. This paragraph by Gh. himself is missing from IB.
[^75]:    1. The Greek name of the plant is derived from
    
[^76]:    1. Thus called by Galen (XI, 837), while Diosc. calls it üอxוov or ü@zelov, arkion). This may be an early copyist's blunder in the Greek MSS.
[^77]:    1. The title of this book is missing from the lists of the literary works of this celebrated physician and translator (lived about 900 A . D., see [ntroduction). It may be identical with his "Book of Prevention of the Nocivity of Poisons" ([AU I, 245).
[^78]:    1. Diosc. calls the rootlong ( $\mu$ (riogá).
    2. The famous Greek physician who lived in Alexandria in the first half of the second century A.D.
[^79]:    1. Theophrastus' Enquiry on Plants, Loeb Class. Library, No. 79. London \& New York 1926, vol. II, p. 467.
    
     mentary.
[^80]:    1. This last phrase is missing from Galen and from IB; it is probably the interpolation of a copyist who took it from Diose. (p. 269 l. 18).
    2. I.e. iris. The text of Diosc. reads "and other prolapses of the anus ( $\varepsilon \underbrace{}_{0} \alpha$ )". It was probably in the origin "of the iris" ( $\because 010$ ) , as Ibn Sarapion also reads "iris".
[^81]:    1. Diosc. (p. 269 1. 13) reads: that the flavour of the seeds
     ümogor (anise).
[^82]:    1. An annual plant; translation of Diosc. © tóo (póa).
    2. From this fact the Arabic name is derived.
[^83]:    1. Put in order by us.
[^84]:    
    

[^85]:    1. This word is missing from both MSS. and has been interpolated by us in accordance with the text of IB (I, p. 66).

    2, In IB this paragraph is somewhat longer.

[^86]:    1. These latter two words aï tusamm ${ }^{m}$, have been disfigured in all the MSS. of IB to Ibn Nessim inn - a nonexistant author!
     Hamdânî's Geography of Arabia? (Leiden 1891, I. p. 146 l, 20).
[^87]:    1. The text of both MSS. reads al-barriypas, , , which must be a copyist's blunder.
[^88]:    1. The following is abridged by BH.
    2. Thus in T; Greads stimist Lamb. This spelling is remarkable because different from the readings of the ordinary editions of Diosc. (oripul and oribl) but very near the Ancient Egyptian reading $m s d$ in $t$.
[^89]:     We could not discover the origin of this name，nor that of ariki．Might it be derived from the Greek island Eretria？

[^90]:    1. Indian books on drugs and poisons were translated into Arabic, e g. under the reign of Hârûn ar-Rashîd (786-809 A. D.).
    2. Xenocrates of Aphrodisias (ab. Ist. cent. A. D.) wrote on drugs and aliments and their marvellous qualities. He is frequently quoted by Galen.
[^91]:    1. In both MSS. clearly spelt al-îtâlîl الا $ل$, but IB and other. sources read al-antâki Slkill i.e. the Antiochian; this is probably the correct reading.
[^92]:    1. J. Ruska, Das Steinbuch des Aristoteles, Heidelberg 1912 p. 165.
    2. J. Ruska, Das Steinbuch aus der Kosmographie des Zakariyâ ibn Muhammadibn Mahmûdal-Qazwini. Kirchhain 1S96, p 17.
    3. 'Umar' b. T'ûsuf, Sultan of the Y'emen, does not mention it in his Mu'tamad.
[^93]:    1. Dâwûd's birthplace
     Qenâ and Qusair in the Eastern Desert of Upper Egypt.
[^94]:    1. This part of the article is abridged by BH.
[^95]:    1. Both words designate" of lead" or" of tin".
    2. See note 1 to p. 203.
    3. Here the plural of orve is used.
[^96]:    1. A Persian name of a (shell-?) fish; not in the dictionaries.
    2. An unknown author frequently quoted by Bîrûnî.
    3. I.e. Shatt al-Arab in the Persian Gulf.
    4. A town, formerly island, south of Basra, now an important petrol area.
    5. A land at the east coast of Arabia, on the Persian Gulf.
[^97]:    1. From Persian nâkhun - nail.
    2. It may be spelt dhab or dhob; dhupana is a Sanscrit word for"fumigation".
[^98]:    1. Thus spelt in our MSS. T and $G$ and in Birùnì and Idrisì although this word means a field mouse. The quoted paragraph of Diosc. refers to $\gamma \alpha \lambda \tilde{i}$ (gálê), i.e. the weasel,
[^99]:    1. This is an extract from Galen's longer paragraph.
    2. In Egypt and Palestine a variety Putorius africanus (Mustela palmata) abounds.
    3. Dr. Meyerhof's Egyptian servant once dug up a part of the floor in order to discover such a treasure!
[^100]:    1．IB＇s corresponding article refers to al－arnab al－barrî．i．e． the ，hare（not rabbit）according to Diosc．（1I，19）．BH abridged Gh＇s sayings，the full text of which is preserven by lB （I，p．21，1． 20 foll．）．

[^101]:    1. The texts of Gh read لم which gives no sense. This word is missing in the Bûlâq text of Ibn Sînâ and in all the texts of JB. The old Rome edition of the Qànûn (1593), however, reads (p. 135) s which was possibly transcribed sala or so by Plempius (II, p. 63)
