ARABIC BOTANY AND PHARMACOLOGY

WITH PARTICULAR REFERENCE TO THE WORK OF AL-ZAHRAWI AND IBN JULJUL IN MUSLIM SPAIN

THESIS SUBMITTED TO THE

ORIENTAL STUDIES FACULTY BOARD

FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

BY

PENELOPE C. JOHNSTONE

ST. HUGH'S COLLEGE

JUNE 1972 MT

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A B S T R A C T

This thesis attempts to add further details to the knowledge of the theory and practice of medicine and botany in 10th-century Andalus, Islamic Spain. It concentrates mainly upon the botanical aspect, since medicine consisted to a great extent of the knowledge and use of herbs and medicinal plants. Botany as we know it today was preceded by medicinal botany, considering plants solely from the point of view of their usefulness to man. This aspect, too, gives the greatest scope for enquiring into the specifically national or regional character of medicine as practised in Andalus.

The foundations of medical studies were laid by the Greeks, from whom the Arabic writers took their principles and methods. Translation from the Greek medical texts preceded further study and gradually gave rise to an Arabic literature on the subject. Arabic medicine consisted not merely of Greek but of many other elements, including the use of local customs and herbs where these were appropriate.

In Andalus in particular there was an interest in local names, variants of plants, and methods of processing herbs and drugs. The writers here were very much aware of the problems inherent in the translations, problems both linguistic and botanical, and of

the regional variations in climate, landscape and consequently plant life. They were moreover interested in local indigenous plant names - in the language which they called Latīnī or ʿajamiyat al-Andalus.

Chapter 1 gives the geographical background of Spain and s summary of the historical events leading up to the period here dealt with. During the reign of ʿAbd al-Raḥman III and his two successors, much work was done in botany and medicine, and three writers and practitioners are chosen to illustrate the kind of work produced. These are Ibn Juljul, al-Zahrāwī and Ibn Samajūn.

Chapter 2 introduces the first, probably the earliest of them: Ibn Juljul. He wrote a History of Medicine, which is of considerable interest, as well as works on plant names and medicinal plants in general.

Chapter 3 gives an account of the Herbal of Dioscorides, one of the greatest of all works on plants and herbs. Various problems involved in the translation from Greek to Arabic, and the transliteration into Arabic characters of Greek names, are discussed and illustrated.

Chapter 4 considers the possible nature of the Tafsīr or "Explanation of the names of the drugs in Dioscorides' Book" written by Ibn Juljul. The names appearing in the Madrid fragment of this work are given, and compared with their equivalents

in the edited version of the Arabic Dioscorides, and with the transliterations and translations given in some other extant works.

Chapter 5 discusses the question of new drugs, unknown to the Greeks or not used by them, and how the Arabs incorporated these into the existing scheme of medicine. Ibn Juljul wrote a Supplement dealing specifically with "drugs which Dioscorides did not mention", comprising about sixty drugs mainly of plant origin.

Chapter 6 gives the translation of Ibn Juljul's Supplement, being an explanatory list of these drugs, together with my own annotations.

Chapter 7 moves on some two centuries to consider a work written in Marrakesh, commenting directly upon the Tafsīr and the Supplement, which shows that both these works were considered valuable and useful. A translation is given of the introduction and latter part of this work.

Chapter 8 introduces the second writer, al-Zahrāwī, famous for his work on surgery. He was however equally expert as a botanist and pharmacist, and these aspects have here been chosen from his huge volume of 30 Maqālāt which altogether cover the whole of medicine studied at that time.

Some of his work on drugs is then discussed. Chapter 9 deals with his Maqāla 24 on Marāhim (Ointments), which al-Zahrāwī intended for the use of those who already had a good knowledge of the fundamentals of medicine.

In Chapter 10 the translation is given of the first prescription, Galen's Palm Ointment, considered to be a basic and important one. A list is given of the rest of the prescriptions for ointments, some being al-Zahrāwī's own and some taken from Greek and Arabic writers; this is followed by a list of the principal plant ingredients used. Al-Zahrāwī provides a much fuller account and gives a greater number of prescriptions than can be found in other Arabic works of this kind.

Chapter 11 discusses his Maqāla 28 on processes and methods, a very detailed account being given of the procedures to be followed. It is obvious that what al-Zahrāwī here describes he understood and knew from years of practice. He follows the Greek writers, but also has his own variant methods, suggestions and comments.

Chapter 12 deals with Maqāla 29, which is in five sections, three of which are here selected for discussion as being particularly relevant. In the section on Drug Names in the different languages, al-Zahrāwī quotes frequently from Ibn Juljul, who was evidently by then an acknowledged expert. He often gives the equivalent names in Greek, Berber and ʿajamiyat al-Andalus, and is concerned about proper identification of the plants. In another section he gives rules for storing drugs, the sort of containers to be used and the length of time the "powers" remain unaltered. He deals with all these questions methodically and concisely, referring to his own experience. He also has a brief section on Definitions of Medical Terms, other than drugs -

including anatomical and philosophical terminology often met in the books of medicine and for which al-Zahrāwī felt there was need of a concise explanation.

Chapter 13 introduces Ibn Samajūn, of whom very little is known for certain except that he practised and wrote at this period. He provides a contrast with his two colleagues, being apparently a writer more than a practising botanist. He is known for one work, a Drug Book, which is a compilation of extracts from all the best authors - Greek and Arabic - dealing with the naming, identification, characteristics, "powers" and dosage of the drugs then in use. He hardly refers at all to his own experience, and is content to give the comments of predecessors and contemporaries. His methods and his main interests are discussed, especially his frequent references to local plant names, some of which, in Latīnī, are recognisable as an early form of Spanish.

Chapter 14 gives the text of two extracts from his Drug Book, chosen in order to show his method of working and his selection and use of his authorities. One article is on Kāfūr, a drug which appears also in Ibn Juljul's Supplement and in parts of al-Zahrawi's work. The other is on Tāfsiyā, also met with in Ibn Juljul's Tafsīr and in al-Zahrāwī's Maqālas 28 and 29. All three writers when dealing with this plant rely very much upon Dioscorides.

Chapter 15 has some concluding remarks on these three medical writers, the inter-relation of their work and its value

in the whole scheme of medicine and botany in Andalus.

There follows the Arabic text of works translated into English in the body of the thesis: Ibn Juljul's Supplement (in Chapter 6); relevant portions of the Commentary on Ibn Juljul (in Chapter 7); the opening portion of al-Zahrāwī's Maqāla on ointments, on Galen's Palm Ointment (in Chapter 10); Ibn Samaǧūn's articles on Kāfūr and Thafsiyā (in Chapter 14) and some of his drugs with Spanish names.

An Appendix gives a glossary of Arabic plant names which occur in the text and discussion, together with their Latin botanical names.

PREFACE

Medicine in the 10th century consisted largely of the knowledge and correct administration of drugs and herbs. The principles were handed down from the Greeks, whose medical writings were transmitted to the Arabic-speaking peoples by means of translations made in Baghdād and elsewhere from the 9th century onwards. Despite the debt to the Greeks, much original work was carried out, especially in Andalus.

This thesis considers mainly the botanical and pharmacological aspects of medicine as then studied, and singles out three individuals to illustrate the progress made during that period. Ibn Juljul and al-Zahrāwī are outstanding in their originality and practical approach, whereas Ibn Samajūn is more of a theorist.

A good deal has been written about al-Zahrāwī, generally concerned with his great contribution to surgery; he was equally expert as a botanical pharmacist, and this aspect of his work is here considered. Ibn Juljul's work on plants and drugs helps to show the use the physicians of Andalus made of the Greek heritage, and their original contribution. Both of these medical writers carried out research into the plants and herbs growing in and around Qurṭuba, and their work was thus of immediate practical value. Ibn Samajūn, in contrast, refers very seldom to

his own experience; his Drug Book is an example of painstaking compilation, a work of reference for the scholar. A very small portion of his work has yet been published. Certain aspects are here discussed, in particular his interest in local plant names.

In concentrating on these points I have attempted to highlight the areas in which the Arabic medical writers in Andalus show their originality, practical skill and independence. While acknowledging their debt to the Greeks, they were able to pursue their own line of study and to make a valuable contribution to the advance of medical studies in their own part of the Islamic world.

In presenting this thesis, I should like to express my gratitude firstly to Professor A.F.L. Beeston and Dr. G.L. Lewis who have supervised my work and have been unstinting in giving advice, encouragement and help with textual and other difficulties encountered. I am also grateful to other scholars who have given help and advice with various problems; among whom I should mention Dr. R.W. Walzer, Professor W.D.M. Paton, Dr. D. Latham, Dr. S.K. Hamarneh and Dr. A. Crombie.

Also I should like to acknowledge the assistance extended to me by the Libraries of the Bodleian, the British Museum, the Biblioteca Nacional, Madrid, the Bibliotheque Nationale, Paris, El Escorial, Nuruosmaniye, Istanbul, the Oriental Institute, Oxford, and the Süleymaniye, Istanbul.

ABBREVIATIONS OF NAMES OF WORKS REFERRED TO IN THE NOTES

Adams	Adams, F., The Seven Books of Paulus Aegineta, translated from the Greek ... London, 1844-48
Ainslie	Ainslie, W., Materia Indica ... London, 1826
Dubler and Terés, Dioscorides	Dubler, C.E., and Terés, E., La Materia Médica de Dioscórides ... Tetuan and Barcelona, 1953-59, Vol.II, Arabic text
E.I.^{2}	Encyclopaedia of Islam, 2nd edn., Leiden, 1954
GAL	Brockelmann, C., Geschichte der Arabischen Litteratur, Leiden, 1937
Ghaleb	Ghaleb, E., Dictionnaire des Sciences de la Nature, Beirut, 1965
al-Ghāfiqī	The Abridged Version of "The Book of Simple Drugs" of Ahmad ibn Muhammad al-Ghafiqi, ed. Meyerhof, M., and Sobhy, G.P., Cairo, 1932-40
ᶜUyūn	Ibn Abī Uṣaibiᶜa, ᶜUyūn al-anbā' fī ṭabaqāt al-aṭibbā' ed. Müller, Cairo, 1882
Jāmiᶜ	al-Jāmiᶜ li-mufradāt al-adwiya wa'l-aghdhiya, Ibn al-Bayṭār, Cairo, 1291/1874
Ibn Juljul, Ṭabaqāt	Sulaiman b. Ḥassān b. Juljul, Ṭabaqāt al-aṭibbā' wa'l-ḥukamā', Cairo, 1955
Ṭabaqāt al-Umam	Ibn Ṣāᶜid al-Andalusī, Ṭabaqāt al-Umam, ed. Cheikho, L. Beirut, 1912
Issa	Issa, A., Dictionnaire des Noms des Plantes en latin, francais, anglais et arabe, Cairo, 1930

Leclerc, Histoire	Leclerc, L., Histoire de la médecine arabe ... Paris, 1876
Levey	Levey, M., The Medical Formulary or Aqrābādhīn of al-Kindī, Wisconsin, 1966
Maimonides	Sharḥ asmā' al-ʿuqqār, ed. Meyerhof, M., Cairo, 1940
al-Majūsī, Kāmil	Kāmil al-ṣināʿa al-ṭibbiya, Cairo, 1294/1877
Qifṭī, Tārīkh	ʿAlī b. Yūsuf al-Qifṭī, Tārīkh al-ḥukamā', ed. Lippert, J., Leipzig, 1903
Sharaf	Sharaf, M., An English-Arabic Dictionary of Medicine, Biology and Allied Sciences, Cairo, 1926
Siggel	Siggel, A., Arabisch-Deutsches Wörterbuch der Stoffe aus den drei Naturreichen, Berlin, 1950
Steingass	Steingass, F., A Comprehensive Persian-English Dictionary, London, 1930
al-Ṭabarī, Firdaus	ʿAlī b. Sahl Rabban al-Ṭabarī, Firdaus al-ḥikma, ed. M.Z. Siddiqi, Berlin, 1928
Ullmann, Medizin	Ullmann, M., Die Medizin im Islam, Leiden/Cologne, 1970
Gl. Man.	Glossaire sur le 'Mansouri' de Razes, ed. Colin, G., and Renaud, H.P.J., Rabat, 1941

MSS:

Seh.	Sehit Ali Pasa 2093 (al-Zahrawi's Maqala 28)
Vel.	Veliyüddin 2491 (al-Zahrawi's Maqala 29)
Br. 47 & 48	Bruce 47, Bruce 48 (Ibn Samajun's Drug Book)

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CHAPTER 1

GENERAL BACKGROUND: ANDALUS IN THE 10TH CENTURY

The study of Arabic medicine in the Middle Ages has until now concentrated mainly on the work done in the eastern end of the Caliphate during the 9th to 12th centuries A.D. The great importance and prestige of al-Majūsī, al-Rāzī and Ibn Sīnā, among others, have partially overshadowed their fellow-workers in Andalus, sometimes thought of as a relatively remote and independent province. In a general treatment of the subject, Andalus is often given only brief mention.[1]

Islamic Spain, however, enjoyed a high standard of culture and learning, although scientific work here began a little later than in the east; and considerable progress was made, especially in the 10th century. This was a time of great splendour and prosperity, when the ruler supported research, translation and study; the province was famed throughout the Islamic world and also the Christian nations of the west.

This period has been chosen in order to illustrate particular aspects of medical work, and three authors will be discussed: al-Zahrāwī, Ibn Juljul and Ibn Samajūn.

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1 E.G. Browne, Arabian Medicine, Cambridge 1921, p. 97-98
M. Meyerhof in The Legacy of Islam, p. 330-331

Just as in Baghdād an initial period of translation from Greek and Syriac into Arabic was followed by commentary, explanation, adaptation and original work, so in Qurṭuba (present-day Cordoba) scholars studied the works obtained from the east, using these as a basis for independent research, practical observations and commentary. As their knowledge and skill increased they were able to supplement or replace these works by their own writings, appropriate for use in their particular circumstances.

In this context the word "Arab" or "Arabic" needs some comment, for it does not refer simply to racial or geographical identity. The word "Arabic" will here be used to designate the work and writings of all those who practised medicine within the confines of the Islamic religion and empire and who, whether of Arab or foreign birth or extraction, spoke and wrote the Arabic language. Under Muslim rule there was unity of faith and culture from Khurāsān in the east to Andalus in the west, and this unity was expressed in the common use of the Arabic language for all works of religion, science or law.

The term "Arabic" as applied to medicine does not disregard the fact that much of the material comes originally from the Greeks, Babylonians, Syrians, Ḥarrānians, Persians and Indians. The Arabs were able to amalgamate these disparate elements into a science which is truly their own and in which they became the acknowledged masters. Theirs is the credit for having preserved the great Greek writings

which were eventually transmitted to medieval Europe through the medium of Latin translations, from the 12th century onwards.[1]

The terms "medicine", "botany" and "pharmacology" do not entirely correspond, as used here, to the sciences studied today under those names. Tibb, medicine, is a term of wide application. Islamic science has to be seen as part of the medieval Islamic culture, where all learning would fit into a scientific-religious framework in conformity with the teachings of the Qur'ān. Medicine was defined as "the preservation of health and its restoration when disturbed", for instance by ʿAlī b. Rabban al-Ṭabarī in his work on Hifz al-Sihha.[2] This was to be accomplished firstly by careful diet, secondly by the use of simple drugs, and then, if these failed, by compound drugs. The physician had to know the composition and natural qualities of the human body and of those drugs occurring naturally in the plant, animal and mineral kingdoms which were appropriate for every illness.

It was acknowledged that one of the most important requirements for the physician was a good knowledge of the Simple Drugs; so one could say that "botany" formed a large part of medical science

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1 See A. Crombie, Augustine to Galilen, London 1952, p. 23-30 for a summary of translations from Arabic into Latin.

2 Bodleian MS. Marsh 413, f. 3b
Cf. Galen, De Sanitate Tuenda; ed. Kuhn 1823 Vol.VI, p. 1-452

at that time, for most drugs were of plant origin. Many writers would deal with "Foods and Simple Drugs" under the same heading, discussing in the case of each item its uses in the diet or in treatment.[1]

The use and application of drugs, derived from the Greeks, depended upon the theory of the humours: man, in common with all things beneath the sphere of the moon, was composed of different combinations of the qualities Hot, Cold, Moist and Dry, or alternatively of the four elements, Earth, Air, Fire and Water. The qualities formed the humours, Blood, Bile, Black Bile and Phlegm, which then mingled to constitute the body, so that "the interaction of the qualities of the four elements determines the temperament of the human being".[2] If the humours were evenly balanced, the body was healthy; if not, and if one humour were predominant or deficient, there was an imbalance which had to be corrected by administration of a drug which would, as appropriate, purge or increase the offending humour. Each drug was assigned its own qualities, in certain "degrees" of strength, and by a knowledge of these the intelligent physician would know how to treat an individual patient or specific disease.[3]

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1 e.g. Al-Majūsī, Kāmil, Vol.I, p. 176 ff.

2 S.H. Nasr, An Introduction to Islamic Cosmological Doctrines, Cambridge, Mass., 1964, p. 254

3 Humours: see introduction to Hippocrates, Works, translated by W.H.S. Jones, London 1923.

The Arabic view of pharmacology does imply the recognition, study and processing of drugs; and the Arabic writers, after their own fashion, had a scientific approach. Within certain limits, plants were classified; the action of a drug was graded, and its processing carefully regulated. Medicine, botany and pharmacology formed one whole study, aimed at the production of therapeutic substances and at their correct administration. Comparatively little was known about the structure and composition of the plants themselves, and it was only later that any detailed systematic study of plants was carried out; so at this period botany was a branch of medicine and only later developed into a separate science.

"Islamic Spain" perhaps needs some explanation. The name used by the Arabic writers is almost invariably al-Andalus, and evidence of its use dates back to the year 716 A.D. The Latin equivalent was "Spania", the name for the province, and this or "Hispania" was used by the earliest Spanish chroniclers to refer to the whole peninsula. The name al-Andalus is apparently connected with the Vandals (al-Andalīsh), earlier inhabitants of Spain, who called Baetica* Vandalicia. Among Arabic writers, the name al-Andalus referred only to the Muslim territory, which gradually decreased with the progress of the Reconquista. The Arabic name Ishbāniya was also sometimes used, indicating the peninsula as a whole. During the 10th century A.D., the territory under Muslim

*(another name for the province)

rule remained fairly constant and well-defined, bordered by the Thughur or Marches, the frontier regions, in the north. Andalus is here used as the equivalent to "Muslim Spain".[1]

Both the geography and the history of Andalus helped to encourage the advance of medical-botanical studies, in a somewhat different way from those carried out in the rest of the Muslim world. The independent development of the area was caused in large part by natural physical phenomena, for Andalus is at the far west of the Islamic world divided from the Maghrib (roughly the present Morocco) by a strip of sea and was linked by land with the Frankish kingdoms in the north; and also perhaps by the racial and linguistic characteristics and general attitude and outlook of the people.

Spain is part of the Mediterranean area, her climate and vegetation having much in common with the other countries of this region.[2] She forms the link between North Africa and the west of Europe, so that from south to north the hot lush coast lands give way to the arid meseta or table-land, and this in turn to the colder regions nearer France. Within the peninsula there is great variety of climate, altitude and soils; rainfall is slight in the centre and south, and the central plateau is mainly sparse upland with little natural vegetation. In the north the plants and trees are typically European, and in the south of the Mediterranean type, the olive being especially abundant.

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1 E.I.^{2} s.v. Andalus.

2 Naval Intelligence handbook Spain and Portugal, 1941, Vols. 1 and 3

Towards the south, the plateau and high plain gradually rise to the Sierra Morena, which is generally not over 3500' in height, and there are many minor Sierras. South of this range is the plain of Andalusia, of mainly clay soils with limestone outcrops, through which there flows the Guadalquivir (al-Wādī al-Kabīr of the Arabs) the great river of southern Spain, which generally carries a good flow of water even in the summer. To the south of the plain rises the Sierra Nevada, the highest mountain range in Spain, whose summit is 11,420'. These mountains are always cool, and snow may remain on some peaks all the year round.

The southern areas can be very fertile, provided that water is available, and during the period of Arab rule intricate methods of irrigation were developed. Some of these remained in use in southern Spain for centuries; for instance the huge water wheels, similar to those at Hama in Syria, whose name noria is of Arabic origin (nā'ūra). The name in Spanish for an irrigation channel, acequia, similarly comes from the Arabic, al-sāqiya.[1]

The wide variety of natural conditions has given Spain a larger number of distinct species of plants than can be found in any other region of comparable size. Many of these plants are similar to those found at the eastern end of the Mediterranean, but there are also others peculiar to Spain. Particularly in the

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1 J.B. Trend, The Language and History of Spain, London 1953, p.61. A. Mekinassi, Léxico de las palabras españolas de origen árabe, Tetuan 1963, pp. 2 and 85

Sierra Nevada are found plants which occur nowhere else, and these have long been known to the Arabs of North Africa.[1]

The Muslims of Andalus seem to have shown great interest in all aspects of life in the country; agriculture was well developed, but there was an awareness of the value of plants which still grew wild. The "Cordoba Calendar" of the mid-10th century gives many details about the crops harvested in Andalus and about the plants, fruits and vegetables grown in gardens or gathered from the fields and mountains, where raw materials of medicine and food could be found in their wild state.[2]

It may be too that the temperament of the Muslim of Andalus had something to do with his approach to the natural sciences. He seems to have had a spontaneous curiosity and interest in the world about him, shown particularly in poetry and literature but also found in the scientific works of scholars who were very conscious of their natural surroundings and had keen powers of observation.

Henri Pérès speaks of the distinctive characteristics of the Spaniard: composed of a mixture of races, he combines the fine qualities of each, having an instinctive adab and love of culture. Pérès stresses too that the man of Andalus was in no way a pure Arab: "l'Hispano-musulman est un amalgam d'arabe et d'ibère, de wisigoth et de berbère, de persan (de bagdadien) et de slave; c'est une

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1 E. Boissier, Voyage Botanique dans le Midi de l'Espagne pendant l'année 1837, Paris, 1839-45. Vol.1 Narration et Géographie Botanique.

2 C. Pellat, Le Calendrier de Cordoue, Leiden 1961 (a re-edition of Dozy's work).

conjonction heureuse de sémite et d'aryen .."[1]

These views, while applied by Pérès to the study of poetry, would seem to hold true in the realm of science and medicine; and while one should not over-stress this theory of "mixed race" in its application to Andalus, since the same is true throughout Islam, it is certainly relevant here. The Roman heritage and contact with Christian states gave access to western, non-Islamic influences; and the population was composed of even more widely differing ethnic elements than was the case in the east. On the whole all these lived in harmony, and the risings and revolutions which took place do not seem to have been based on racial discontent.

The advancement of learning and science was dependent in large part on stable conditions of government and relative security, and it was not until Andalus was united and at peace under a strong central government that we find any signs of much scientific activity.

The Muslim armies reached the southern part of Spain in the year 711 A.D., commanded by Mūsā b. Nuṣair who entrusted the first invasion to Ṭāriq b. Ziyād. There was little serious opposition from the inhabitants, and the Muslims rapidly advanced northwards until their defeat by Charles Martel near Poitiers in 732. During the original conquest and advance, and the period of rule by military governors which lasted until 756 A.D., there were unsettled conditions throughout Spain. In 756 A.D. ʿAbd al-Raḥmān

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1 H. Pérès, La Poésie andalouse en arabe classique au XI siècle: ses aspects généraux et sa valeur documentaire. Paris 1937. p. 10

one of the few survivors of the massacre of the Umayyad family in Damascus in 750 A.D., entered Andalus and defeated the general then in command. ᶜAbd al-Raḥman made himself Amīr, ruler, with his capital at Qurtuba where he reigned until his death thirty-two years later. During the reigns of ᶜAbd al-Raḥman's successors, first his son and then others of his descendants, the Muslim power grew stronger, despite rebellious elements within the Islamic territories. There was soon scope for civilisation and culture to develop. Even under ᶜAbd al-Raḥman I great building projects were undertaken, in particular the Great Mosque of Qurṭuba, which was enlarged under later rulers. During the reign of ᶜAbd al-Raḥman II (822-852 A.D.) there was considerable contact with the ᶜAbbāsid capital, Baghdād - the successors of the Umayyads had transferred the seat of government to ᶜIrāq - and eastern fashion and eloquence, art and culture, entered the court of Andalus. These were all typified in the person of Ziryāb the singer and arbiter of fashion, who became the model for all Andalus. In the general expansion and the enthusiasm for things eastern, learning and science also had their part.

It is however with the reign of ᶜAbd al-Raḥman III (912-961) that Andalus entered upon its greatest period of material prosperity, international prestige and cultural advance. The young ruler, only 21 at his accession, at once set about consolidating the power of the central government, gradually overcoming rebels and

bringing these regions under direct control of Qurṭuba. He was on the whole tolerant of Christians, and did not attempt to increase his territory northwards, but concentrated his power in the south, establishing and developing a fine civilisation.

The province of Andalus was by this time virtually independent of Baghdād, although nominally subject to the Caliph there. During the early part of the 10th century the Fāṭimids established themselves in Tunisia, gradually spreading their influence across all North Africa and into Egypt, where in 969 they captured Fusṭāṭ and founded their own city of al-Qāhira (Cairo). They thus created an effective barrier between Andalus and the ᶜAbbāsid government in Baghdād, where political power was concerned. This may have had a good deal to do with ᶜAbd al-Raḥman's decision in 929 to declare himself Caliph of western Islam, thus making official his actual independence and removing any threat of Fāṭimid religious propaganda in Andalus. This new status as Caliph gave ᶜAbd al-Raḥman III, who took the name of al-Nāṣir li-Dīn Allāh, even higher prestige, and during his reign Andalus became one of the important powers of the western world.

Independence from the ᶜAbbāsids, however, did not mean isolation from the rest of the Islamic world. Qurṭuba was said to be second only to Baghdād, within Islam, and was famous for her splendid mosques, especially the Great Mosque founded by ᶜAbd al-Raḥman I, for her public buildings and gardens, and for the

general high standard of living of her people. There was much contact with the eastern end of Islam, as well as with the Byzantine empire and with the Franks of the Christian kingdoms to the north. Qurṭuba was well in advance of the latter, and enjoyed considerable political prestige; ʿAbd al-Raḥman III was even asked sometimes to arbitrate in disputes among the Christians.[1] Confirmation of the splendour of the Spanish Muslim civilisation comes from such writers as Ibn Ḥauqal, who travelled from the east to visit Andalus in the middle of the 10th century. At the same period, al-Maqdisī relates the glories of Qurṭuba, and praises the courage and excellence of the inhabitants of Andalus.[2]

Besides enlarging and beautifying the capital, ʿAbd al-Raḥman decided upon the construction of a new city, known as Madīnat al-Zahrā', some five miles to the north-west, just beneath the lower slopes of the mountain. He lavished expenditure on this new seat of government for the caliphate, where he would receive embassies from other countries, and a large and prosperous city grew up. Only ruins remain today, but excavations during the present century and recent reconstruction work give some idea of the extent and beauty of the city, standing as it does in a very

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1 Abdurrahman Ali al-Hajji, Andalusian Diplomatic Relations with Western Europe during the Umayyad period: An Historical Survey. Beirut, 1970.

2 Ibn Ḥauqal, Kitab Surat al-Ard, ed. J.H. Kramers, Leiden 1938 p. 111-112.
Al-Maqdisi: C. Pellat, ed. and translation as Description de l'Occident Musulman au IV - Xe siècle, Algiers, 1950. p.33.

lovely natural setting.[1]

After the death of ᶜAbd al-Raḥman al-Nāṣir, Andalus continued to flourish under his son al-Ḥakam II (961-976) who was a less firm ruler, but capable. He was himself an enthusiastic scholar, who encouraged learning and science.

In 976 al-Ḥakam was succeeded by his son Abu'l-Walīd Hishām, who was only 12 years old; too young to rule, he came under the influence of his Vizier, Abū ᶜĀmir Muḥammad b. Abī ᶜĀmir al-Maᶜāfirī, who later took the name of al-Manṣūr (the Almanzor of the western historians). This man was the real ruler of Andalus for about twenty years, although the Umayyad prince remained the nominal caliph. Al-Manṣūr ordered the destruction of many books of philosophy and other "heretical" sciences; medicine and mathematics were however exempted from the decree.

In 979, al Manṣūr began the building of a new administrative capital, called al-Madīna al-Zāhira, a short way to the east of Qurṭuba, and installed himself and his ministers there in 981. After this Madīnat al-Zahrā' ceased to be the centre of diplomatic and political activity, but probably continued to be a commercial, cultural and scientific centre. This only lasted until 1013, when the Berbers sacked Madīnat al-Zahrā' and blockaded Qurṭuba.

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1 A description of Madīnat al-Zahrā': No. 85 in Kitab al-Rauḍ al-Miᶜṭār of Abd al-Munᶜim al-Himyarī, ed. E. Lévi-Provencal. Leiden 1938 See L. Torres Balbas, La Mezquita de Cordoba y Madinat al-Zahra, Madrid, 1965.

After the death of al-Manṣūr in 1002, Andalus went through a period of strife with continual deposition, appointment, removal and re-appointment of Caliphs and rulers, and this lasted until 1031, when the caliphate was formally abolished and a council of state established. Then began the rule of the Mulūk al-Ṭawā'if or "party kings", in Spanish "reyes de taifas", when the former caliphate of Andalus split up into factions under numerous petty dynasties.

Work and writing in science and medicine continued until the very end of the 10th century, and even during the upheavals which followed; but the destruction of Madīnat al-Zahrā' marks the end of a period when Andalus was famous for every aspect of culture, and enjoyed a higher degree of civilisation than any other state in the west.

With the break-up of the caliphate, much was destroyed, and there is no trace left of the great libraries which once existed in Qurṭuba. Much valuable material must have been lost; and the availability of texts has to dictate, to a large extent, the choice of works and writers to illustrate the state of botany and medicine in 10th-century Andalus. Information about the persons concerned is found in the work of Ibn Ṣā'id al-Andalusī (d.1070) whose Ṭabaqāt al-Umam gives an account of the scholars of the period. Ibn Juljul's own Ṭabaqāt al-Aṭibbā' wa'l-Ḥukamā'

deals briefly with some of his contemporaries, and Ibn Abī Uṣaibi°a (d.1270) in his °Uyūn al-Anbā' fī ṭabaqāt al-aṭibbā' devotes a chapter to physicians of the west, the Maghrib and Andalus. Fortunately some of the work of Ibn Juljul, al-Zahrāwī and Ibn Samajūn has been preserved, though only a small proportion has yet been published.[1]

Although a physician's reputation in the final analysis depended on his skill and success in treatment, his status in the eyes of his contemporaries and of later generations was commensurate with his written works and their acceptance as authoritative. He was expected to conform to the religious law and Muslim teachings, to have a good grasp of philosophy, to pay due respect to the "Ancients", the Greek writers, and to follow the principles they had laid down as the basis for medicine. These were contained primarily in works such as the Hippocratic corpus and the writings by or attributed to Aristotle, Galen, Oribasius, Dioscorides, Paul of Aegina and others. Translations of these works, often first into Syriac and then into Arabic, were carried out especially during the reign of the Caliph al-Ma'mūn (813-833) who founded the Beit al-Hikma as a centre for translation and study in Baghdād.

Philosophical and medical works were studied, these two subjects being then complementary rather than separate.

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1 Ibn Ṣā°id al-Andalusī, Kitāb Ṭabaqāt al-umam, ed. L. Cheikho, Beirut 1912.

"The good physician must be a philosopher" was their view, in keeping with Galen's ideas; and the Arabs were conscious of a need to put philosophy first as the foundation for all other sciences. In the general revival and development of learning, medicine had a very important place, for it was second only to theology, as al-Zahrāwī reminds his readers in the introduction to his compendium of medicine.[1]

In the east a man might be at one and the same time a philosopher, mathematician, poet, statesman and physician, counting medicine as but one of his many accomplishments, as did such men as Ibn Sīnā.[2] It seems, however, that in Andalus at this time the physician was first and foremost a man of science, concentrating upon this study and devoting all his time to it. He might moreover be known especially for one branch of medicine in which he excelled.

Three men seem to stand out from the general background of medical and botanical studies at this period, each illustrating a somewhat different aspect. These are: Ibn Juljul, Abu'l-Qāsim al-Zahrāwī, often known to the west as Albucasis, and Ibn Samajūn.

Ibn Juljul has left a brief but comprehensive History of physicians and sages, as well as other works specifically on herbs and drugs, which show his practical interests.

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1 Galen, ed. Müller, Erlangen, 1873, ὅτι ἄριστος ἰατρος καὶ φιλόσοφος ed. Kühn, 1823, Vol.I, p. 53-63.
Al-Zahrāwī: MS. Beşir Ağa 503, Süleymaniye, Istanbul.

2 For his life, see Qifṭī, Tārīkh, p. 413

Al-Zahrāwī is a practising physician, deeply concerned with the welfare of his patients, the spread of knowledge and the improvement of techniques. Particularly famous as a surgeon, he wrote a compendium which includes the entire medical science of his time and is best known for the section on surgery. Here however it is the sections dealing with drugs, their recognition, use and processing, which will be discussed.

Ibn Samajūn is mainly a herbalist, a patient painstaking anthologist, whose Drug Book contains quotations from the authorities of earlier periods and his own day. He is interesting for his contrast with the other two, in his literary and theoretical approach.

These three worked independently, although they were contemporaries living in the same area. They refer to the same well-known authorities on medicine, and at times to one another's works; and they are themselves quoted by later writers.
In particular there are references to their works in the great Jāmi^{c} of Ibn al-Bayṭār of Mālaga, acknowledged as the greatest of the Arabic herbalists. His vast work has made Spanish Islam famous for its botanical studies, but he was continuing a tradition dating back to the 10th century and probably even earlier.

Medicine as studied in Andalus was based on the ancient texts, but it is likely that there was an inherited drug lore, in a country so well provided with plants and herbs of all kinds,

and men of science in Andalus would have used their own traditions as well as the learning of the Greeks. In their books are frequent references to local conditions, and authors point out where in Andalus a herb can be found and how it can be recognised.

As the study of medicine developed, more attention was paid to the importance of drugs and knowledge of therapeutic substances. It is not possible to discover the origins of drug lore, which must surely go back to very remote times when man first learnt to avoid certain plants and substances and to take others for specific ills from which he suffered. Some old-established remedies have little basis in fact, and may have been adopted because of some supposed resemblance or sympathy between a plant and some part of the body, while others are valid and still used today. Also, in earliest times religion, magic and medicine were closely connected and even confused. Some of this inter-relation survived, even after the coming of Christianity and then Islam, neither of which could completely abolish the belief in magical properties of plants or in the efficacy of witchcraft, whether friendly or hostile.[1]

Although Arabic medicine owes much to the Indians and Persians, the greatest debt, so far as written works are concerned, is undoubtedly to the Greeks. They dealt with plants as part of their

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1 Survivals of Spanish drug lore are discussed in the Introduction to P. Font Quer, Plantas Medicinales: El Dioscórides Renovado, Barcelona, 1962. For "mago-medicos" and the origins of medicine, C.E. Dubler, La Materia Médica de Dioscórides, Vol.I, Tetuan and Barcelona, 1952.

medical work, but also as a subject of investigation in their own right; botany and pharmacology were separate though very closely related subjects. Theophrastus' Enquiry into Plants deals with their useful and medicinal properties, though not as the first consideration; and Galen has various works on drugs, mainly of plant origin.[1]

The Book of Plants attributed to Aristotle - actually by Nicolaos of Damascus - discusses the nature of living things rather than their direct use to man. It was translated by Ḥunain b. Isḥaq (d. circa 873 A.D.) and may have helped to give an impetus to the study of the vegetable kingdom.[2] Among the Arabs the greatest interest, at any rate in the earlier period, seems to have been in plants considered as a necessary part of the study of medicine. Great attention was paid to the "powers" of a drug, generally stated in their "degrees"; for instance a drug might be hot in the second degree and dry in the third, and thus could be useful for an illness caused by excess of cold and moisture in the body. This description of drugs is found in the works of al-Ṭabarī (9th century) and al-Majūsī (10th century); and the Abridgement of Galen's work on drugs is careful to give degrees of strength for each item.[3]

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1 Theophrastus, Enquiry into Plants, ~~ed. and~~ translated by Hort 2 vols., London 1916

2 ed. Abdurrahman Badawi, Cairo, 1954

3 Mukhtaṣar of Galen, MS. Ṣehit Ali Paṣa 2093, Istanbul.

According to Leclerc, al-Nabāṭī (d. 1239) was the first Arabic scholar to study plants apart from their medicinal use.[1]

Botany in the 10th century was mainly subordinated to what we should now term pharmacognosy, the recognition of drugs and their utility. A particular plant might be known as specific for some disease, and it might be described as "tested" - mujarrab. One wonders what this testing involved; probably it simply meant that the drug in question had been used consistently for that particular illness and generally brought about some improvement. Al-Zahrāwī has various methods, mostly taken from the Greeks, for testing the efficacy of the Tiryāq (theriac) described in Maqāla 4 of his work. Although dosages were generally mentioned, it was understood and specifically stated that these would often have to be varied according to the requirements of the patient.

Purity and quality of drugs had to be safeguarded, so that the physician would be certain of getting the genuine article. It was well known that frauds were practised, and a whole section of the administration was concerned with regulations for the production and sale of foods, drugs and similar material. Several works have survived on Ḥisba, the control of markets and public places, dealing with Andalus, and from these one can gain

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1 L. Leclerc, Histoire de la médecine arabe, Paris, 1876, Vol. I, p. 246.

interesting information on procedures and practices.[1]

Perhaps most evidence of all is found in the medical writings themselves, whence one can deduce the state of medicine and botany in Andalus at this period. The physicians give their own comments, sometimes adverse, on physicians in general, and their directions often presuppose certain conditions and provide technical details.

There was a certain amount of specialisation within the medical field, and separate names presumably indicate distinct professions. The Ṭabīb, physician, treated patients and prescribed diet and medicines, and knew the workings of the body and the "powers" and effects of drugs. Medicines would generally be obtained from the Ṣaidalānī or pharmacist, seller of drugs and perfumes, his art being Ṣaidana or Ṣaidala, the knowledge and processing of drugs. The Ṣaidalānī would perhaps buy his raw materials from a specialist in plants and herbs, known as a Shajjār, or sometimes ᶜUshshāb, a botanist or herbalist, seller of medicinal plants. He was probably the most knowledgeable about the plants in their natural state, except in cases where a physician had himself made a detailed study of the subject. The ᶜAṭṭār, seller of drugs and perfumes, did not need to have any particular medical knowledge; he might sell to the general public too.

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1 Ibn al-Ukhuwwa, Maᶜālim al-qurba fī aḥkām al-ḥisba, ed. R. Levy, London, 1938; Al-Saqaṭī of Mālaga, Kitāb fī adāb al-ḥisba: un manuel hispanique de ḥisba, ed. G.S. Colin and E. Lévi-Provencal, Paris, 1931; El Lévi-Provencal, Seville musulmane au debut du XIIe siècle, Paris, 1947: a translation of Ibn ᶜAbdūn's treatise on the ḥisba; Text published in Journal Asiatique, 1934.

He was primarily a merchant, selling his products to the medical profession but without its ethical standards; the ʿAṭṭārūn, as we see from the Ḥisba literature, were apt to practise frauds of many kinds: if some drug was imported and therefore rare and expensive, they would often adulterate it or even substitute some completely different substance. The Ḥisba manuals give careful advice for the detection of such frauds, while admitting that this is hard and really needs specialised knowledge.

Various kinds of medical work were available at the time, for study and commentary. There were translations of the Greek texts, including the comprehensive compendium-type, which could be very lengthy, based on the study of philosophy. There were the Arabic works produced by such writers as al-Ṭabarī and al-Rāzī, covering every aspect of medicine. Practical handbooks for the physician might consist of abridgements of the more extensive works, or selections from them. Some writers divided their work according to their classifications of diseases, for instance dealing with them in order from the head downwards - as does al-Ṭabarī in Firdaus al-Ḥikma. Others might prefer to produce a formulary dealing with remedies of many types, specifying in each case the illnesses for which it would be most useful - as does al-Kindī.[1]

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1 M. Levey, The Medical Formulary or Agrābādhīn of al-Kindī, Wisconsin, 1966 (text and translation)

The Aqrābādhīn, Formulary, was a fairly common type of medical work. These books were written with the physician in mind, and seldom deal with methods of production, apart from directives as to amounts of the ingredients needed in any particular prescription. The books on Mufradāt or al-Adwiya al-Mufrada, Simple Drugs, briefly describe each drug, giving its chief uses and its powers and effects, sometimes adding the synonyms in other languages; this last feature could develop into a separate study.

Ibn Ṣāᶜid al-Andalusī complains that in Andalus the physicians have mostly relied upon the Kunnāsh or note book, [illegible], and neglected to study in any depth the basic texts of medicine. These men, he says, are anxious to acquire fame and wealth by serving rulers and noblemen, so they study abridged works in order to shorten the time needed for their training.[1] Al-Zahrāwī realised this tendency, and his work was in part intended to combat it, so he can scarcely be included in the general opprobrium of Ibn Ṣāᶜid.

Together, Ibn Juljul, al-Zahrāwī and Ibn Samajūn represent the best type of physician and herbalist at this time. All three have a respect for their predecessors, and a concern for accuracy whether they are dealing with the process of making some medicament or the correct recognition and naming of a plant.

It is hoped that further study of these writers could shed more light on medical and botanical knowledge in the 10th century.

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1 Ṭabaqāt al-umam, p. 78

There must have been a previous tradition of study, investigation and practical work, before such books as theirs could have been written. Al-Zahrāwī's writings reveal a great interest in practical medicine and pharmacy and in techniques of medicine and surgery. Ibn Juljul's work, in particular his Supplement to Dioscorides, shows in particular that the physicians of Andalus did not merely accept and study the Greek texts but were able to make their own discoveries and to fit new facts into the accepted scheme which they had inherited.

CHAPTER 2

IBN JULJUL AND HIS HISTORY OF MEDICINE

Abū Da'ūd Sulaimān b. Ḥassān, known as Ibn Juljul, lived in Qurṭuba and was personal physician to al-Mu'ayyad bi-llāh Hishām (977-1009) during whose reign he wrote most of his medical works. He is said to have been born in 332/944 in Qurṭuba, and studied grammar and tradition from the age of 10. At 15 he began the study of medicine, in which he soon became very skilful; he died after 994 A.D.[1]

The biographers who mention Ibn Juljul all agree that his medical interests were wide-ranging, including the history of philosophy and medicine, though not all refer to his botanical work.

The fullest account we have of his life is given by Ibn Abī Uṣaibi'a, who calls him a worthy physician, an expert in the treatment of illness, an excellent practitioner of the art of medicine and a man of great discernment and knowledge in the art of Simple Drugs. He gives an autobiographical extract from Ibn Juljul, telling us he studied the subject of Materia Medica in some depth, aiming to revive knowledge which might otherwise have been lost.[2] He gives a list of his works:

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1 Dietrich in E.I.^{2}, s.v. Ibn Djoldjol

2 'Uyūn, Vol. II, p. 46-48

1. Book of Interpretation of the Names of Simple Drugs contained in the book of Dioscorides, composed in 372/982 (Tafsīr).

2. Maqāla on the Medicines which Dioscorides did not mention in his book, which are used in the art of medicine and are of benefit, and those which are not used (but are here mentioned) so that they may not be forgotten (Supplement).

3. Risāla exposing various errors of the mutaṭabbibīn (people who profess medicine). The word mutaṭabbib can be used to refer to one studying medicine. The scribe of one of al-Zahrāwī's manuscripts, MS. Veliyüddin 2491, describes himself as such, probably out of modesty; Ibn Juljul here doubtless means "quacks".

4. Book containing biographies of physicians and philosophers (Tabaqāt).

Not included by Ibn Abī Uṣaibīʿa, but generally attributed to Ibn Juljul, is

5. Maqāla on the Tiryāq.

Al-Qifṭī also speaks of him with approval: an excellent and learned physician, who knew about the men of former times and compiled a book on the History of the scholars; he does not mention any other works.[1]

It seems to be agreed that one and the same man wrote the books on plants and the History; but we find a slight difficulty

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1 Qifṭī, Tārīkh, p. 190

in Ibn al-Abbār's work al-takmila li-Kitāb al-Ṣila, where he mentions a Muḥammad b. Ḥassān, older brother of Sulaiman the doctor:[1]

محمد بن حسان من اهل قرطبة يعرف بابن جلجل وهو اخو سليمن بن حسان الطبيب وكان اسن منه سمع من وهب بن سرة و احمد بن الفضل الدينورى وابى زكريا بن الشامة وغيرهم وعنى بالحديث ولقاء اهله وفى كتبه تقييد سماع اخيه سليمن من هولاء المذكورين حكى ذلك فى كتاب طبقات الاطبا من تاليفه

Also, Sontheimer in his work on Ibn al-Bayṭār has brief biographies of physicians of Andalus, and seems to deal with two named Ibn Juljul, one being Suleimān b. Ḥassān and the other Da'ūd Suleimān b. Ḥassān. To the former he attributes a compendium on the history of philosophy, a work on the Simple Drugs omitted by Dioscorides and one on the Theriac; to the second, the works mentioned by Ibn Abī Uṣaibi'a. Thus he duplicates the authorship of the Supplement, and probably has made two people out of one man with a variety of interests.[2]

Ahmad 'Issa in his account of Ibn Juljul speaks of his studies undertaken "with his brother Muḥammad" under various teachers in Qurṭuba, Madīnat al-Zahrā' and elsewhere.[3]

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1 ed. F. Codera, Madrid 1886-9. Vol.I, p.101-102, No. 346.

2 J. Sontheimer, Grosse Zusammenstellung über die Kräfte der einfach Heil- und Nahrungsmittel von Ebn Beithar .. aus dem arabischen übersetzt. Stuttgart 1840. Vol.II, 1842; p. 740-743.

3 Mu'jam al-Aṭibbā', Cairo 1942. p. 207.

Aḥmad b. Yaḥyà al-Ḍabbī and Abū ᶜAbdallāh al-Ḥumaidī have the identical brief notice that Ibn Juljul was famous for medical and literary work, and wrote on physicians of al-Andalus.[1] Ibn Ṣāᶜid merely mentions him as a physician of the period, without reference to any written work.[2]

Certainly Ibn Juljul was a man of great energy, devoted mainly to two fields of interest: the history of medicine, and the knowledge of plant drugs. In his latter capacity, as botanist, he was an acknowledged authority in his lifetime, frequently quoted with approval by al-Zahrāwī and Ibn Samajūn, although on a few occasions they disagree with him.

The only work of Ibn Juljul to be printed is his Ṭabaqāt al-Aṭibbā' wa'l-Ḥukamā', edited from a unique manuscript found in 1950 in a private collection.[3] Its editor describes it as an important early source for the history of medicine in Andalus, during the 10th century in particular, and points out that Ibn Juljul was the first person in that region to write on the history of medicine. He was closely involved in much of the research and translation going on in Qurṭuba, and had access to information about his predecessors; and his work was used as a source by Ibn Abī Uṣaibīᶜa for his chapter on physicians in the west of Islam.

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1 Al-Ḍabbī, Bughyat al-Multamis fī tārīkh rijāl ahl al-Andalus, ed. F. Codera and J. Ribera, Madrid 1885, p. 285, No. 767. Al-Humaidī, Jadwat al-Muqtabis, Cairo 1966, p. 225, No. 452.

2 Ṭabaqāt al-umam, p. 80

3 ed. Fu'ād Sayyid, Cairo, 1955.

The Tabaqāt has brief sections dealing with every period from the legendary fathers of medicine down to his own contemporaries in Andalus and the east. Ibn Juljul quotes from Arabic sources now lost; and although he does not refer to any works recently produced in the east, he was apparently the first to use, to some extent, translations made from Latin into Arabic. He refers to translations from the "Ancients" - the Greeks - and from the Latin chronicles. His authorities include the History of Paulus Orosius and the Chronicle of St. Jerome which Ibn Juljul mentions in his introduction. He does mention Isidore of Seville, but Ullmann thinks there was probably no Arabic translation from his Etymologies, since there is only one reference to him.[1] Apart from any written works, he made use of oral traditions.

Ibn Juljul says that the earlier medical workers in Andalus, as in the eastern caliphate, were Christians, who studied the ancient works such as al-Ibrīshim - probably referring to the translations of Hippocrates' Aphorisms (al-Fuqūl in Arabic) and similar writings. Ibn Sa°id mentions al-Ibrishīm, as meaning Majmū° or Jāmi°, a collection; he seems to have a poor opinion of medical work in the earlier period.[2] Ibn Juljul, however, says

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1 Ullmann, Medizin, p. 230, n.2. See Ibn Juljul, Tabaqāt, p. 41

2 Tabaqāt al-Umam, p. 78.

that there were good physicians, although no original works were written until the reign of ʿAbd al-Raḥman III. He speaks also of the journeys made in search of knowledge and the considerable contact between the eastern caliphate and Andalus. A number of physicians during the 9th and 10th centuries came from the east, while others travelled from the west to Baghdād to study under famous teachers, and then returned to the west to put their knowledge into practice and pass it on to their own students.

Ibn Juljul does not give much detail about individual physicians, but has comments on the circumstances of the various periods into which he divides his history, and he succeeds in conveying the impression that much valuable work, theoretical and practical, was carried out in Andalus during his own generation and the preceding century.

He points out that the physicians of Andalus based their work on the "Ancients", among whom the most prominent were Dioscorides and Galen, whose works in Arabic translation formed the basis of study and research. The Drug Book or Herbal was a popular type of medical-botanical work, since it was necessary to understand the "powers" of drugs and foods. There was no system of classification as we now understand it, and drugs might be grouped together according to their "powers" or uses for particular illnesses.

CHAPTER 3

DIOSCORIDES' HERBAL AND ITS TRANSLATIONS

The greatest of the Greek botanical writers was Dioscorides of Anazarbe in Cilicia, who composed his famous work on Materia Medica, περὶ ὕλης ἰατρικῆς, during the 1st century A.D. It was unique in its full treatment of plants, its careful descriptions of the appearance and properties of each drug and its instructions for making such things as the oils from various plants or trees, and it had a great influence upon all further study of the subject.[1]

The work deals with about five hundred plants, of which about a hundred and thirty appear in the Hippocratic corpus and had been in use for a long time. Dioscorides was probably influenced by earlier herbals, especially the illustrated work of Kratevas, herbalist and physician to Mithridates VI of Pontus (120-63 B.C.); and he quotes from the works of Hippocrates, Theophrastus, Erasistratos and Nicander.[2]

Dioscorides' Herbal is arranged in five books: the first on Spices, Oils, Ointments and trees; the second on animals and animal products, cereals and vegetables; the third and fourth on medicinal plants and roots; the fifth on wines, drinks and minerals.

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1 C.E. Dubler in E.I.^{2}, s.v. Diyuskuridis.
2 C. Singer, "The Greek Herbal in Antiquity", Journal of Hellenic Studies, 1927.

Each book contains short chapters on the separate plants or substances, and gives the name, any synonyms, a short description, its place of origin or habitat, the method of preparation and its uses in medicine.

Manuscripts of the Greek text survive in various libraries, in one or other of the recensions of which there were at least two by the end of the 2nd century A.D. From the 4th century onwards, there appeared copies in which the plants and drugs were re-arranged in alphabetical order. One of these is the famous Julia Anicia manuscript, written about the year 512 and now in Vienna, of which a facsimile has been published; another is the Codex Neopolitanus, dating from the 7th century, in Naples; the 9th-century Bibliothèque Nationale MS. Grec 2179 is of the original non-alphabetical arrangement. The Julia Anicia incorporates parts of the Herbal of Kratevas, together with some of its illustrations which are generally considered to be of a higher quality than those which are found in the original Herbal of Dioscorides.[1]

Dioscorides' Herbal was translated into Arabic in the 9th century in Baghdād, by Iṣṭifan b. Basīl, and corrected by Ḥunain b. Isḥaq; it was variously known as:

هيولى علاج الطبّ ؛ كتاب الادوية المفردة ؛ كتاب الحشائش

(Elements of medical treatment; Book of simples; Book of herbs).

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1 Dioscurides Codex Aniciae Iulianae picturis illustratus nunc Vindobonensis Med. Gr. 1. Phototypice editus Moderante Iosepho de Karabacek. Lugduni Batavorum 1906.(2 volumes)

The Arabic version produced in Baghdād was not complete, however; Ibn Juljul states that "when Iṣṭifan did not know the correct Arabic equivalent for some Greek name he simply put the Greek (transliteration) and left it, hoping that some later person would be able to complete his work".[1]

There were two separate problems involved, linguistic and botanical, not always clearly distinguished in practice but which both caused considerable difficulty to Arabic herbalists and physicians.

Firstly there was the problem of rendering a Greek name in the Arabic language; sometimes a plant was well known by some characteristic which gave it its name, which could then be simply translated. For instance, al-Zahrāwī explains the Pentaphyllon as Dhū khams waraqāt.[2] فنطافلن معناه ذو خمس ورقات Generally the Greek name was put as a heading in Arabic script, and this meant that the vowels and consonants had to be adequately conveyed in Arabic. On the whole the transliteration of Greek names into Arabic was fairly consistent, and the confusion probably arose when scribes with little or no knowledge of the subject had to copy out these names. This can be seen by the variations

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1 quoted by Ibn Abī Uṣaibi°a, °Uyūn, Vol.II, p.46-48.

2 MS. Veliyüddin 2491, Istanbul, f. 74b.

which occur in any one name appearing in several manuscripts. Where a scribe came upon an unfamiliar name he would often omit or alter the diacritical points; a later scribe using this copy might have his own ideas for alteration or improvement, and even the outline might be changed. Thus a Greek φ may be transcribed correctly as ف (f) or else by ق (q) or even by م (m), whereas the correct letter can often be restored by reference to the Greek text.

It is not certain whether the Arabic scribes worked only from the written texts or had any way of referring to the pronunciation of the original Greek. We know that Ḥunain spoke Greek, but probably scribes did not and so merely copied out what they considered the nearest approximation to the correct name.[1]

The Greek η where initial is generally transliterated as ا or ي, and at the middle or end of a word, ي
A rough breathing is ignored.

Cf. Διόσκουρος → ايسقوالمس ; ἥμερος → ايمروس

The diphthong ευ is found spelt with ف (f) - as it is pronounced in modern Greek. λευκος → لفقس or لفقوس
It also occurs transliterated with و لوقرس (BM. Or.3366, f. 8a)
μεγα may be ماغا or ميغا

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1 For the scheme of transliteration, see L. Leclerc, "Etudes historiques et philologiques sur Ibn Beithar", Journal Asiatique, 1862, p. 433.

The Greek β may become ب - again, as in modern Greek. (v)

βουφθαλμον → بوفثلمون

βρομος → بورومس

καννάβις → قناوى

The Arabic equivalent, where given, does not vary so much from one manuscript to another, since the correct form could be more easily ascertained by the scribe; but it is still not possible in all cases to identify the name of a particular herb or to trace its use in remedies appearing in other works.

Secondly, there was the problem of the correct identification of the plants, a difficulty to those Arabic writers who did not sufficiently appreciate that some plants might not exist in their own country, or might be represented by different species from those described by the Greeks. On the whole, however, the medical and botanical writers in Andalus seem to have realised the difficulties inherent both in the languages themselves and in the regional and climatic differences between Andalus and Greece. They were, moreover, interested in adding the local equivalents where known; these were in the language they called Latini or ʿajamiyat al-Andalus, recognisable in many cases as an early form of Spanish; some names have survived almost unchanged to the present century.

The Arabic version of Dioscorides has been published by C.E. Dubler and E. Terés, as part of their work on the Materia Medica of Dioscorides and its medieval and renaissance transmission. There is a valuable introduction, as well as notes and glossaries of terms and names. Dubler and Terés used mainly the manuscripts Madrid 5006 and El Escorial 845, which they collated with Paris Bibliothèque Nationale MS 2849; and they referred to BN 2850 and BN 4947.[1]

In this edition there are some short gaps, for their manuscripts had "lagunas que dejan el texto truncado"[2]; in some cases these can be completed by reference to the Bodleian MS Hyde 34, to which Dubler and Terés did not have access. This manuscript is in a good state of preservation, and contains all five books of Dioscorides; the Greek names and chapter numbers for most items have been added, in 1685 according to a note inserted in the front. It also contains some articles which occur in the Paris BN 2849 but not in the Madrid and El Escorial MSS and therefore in the printed edition are in the Appendix.

Some manuscripts, such as Hyde 34, are not illustrated, but some beautifully produced Arabic versions have survived, with full- or half-page coloured pictures varying in quality.

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1 C.E. Dubler and E. Terés, Vol.II: La version árabe de la 'Materia Médica' de Dioscórides (texto, variantes e índices). Tetuan and Barcelona, 1952-7

2 Introduction, p. xiv

One manuscript in Aya Sofia, Istanbul (AS 3704) is a very fine example; the Date Palm (f. 25a), Pomegranate (25b) and Ginger (57a) are particularly well executed, whereas Papyrus (20b) is rather stiff and unnatural, and the Iris (13a) bears little resemblance to any known plant and was perhaps simply copied from a previous drawing. Some of the illustrations to BN 2850 are unrealistic, for instance the Laurel (f. 32b) and Mustard (106b), though there are some good lifelike pictures, for instance the Onion (90a). BN 4947 has a solid-looking symmetrical Cypress (f. 13b), but a Pine tree with very finely drawn needles (14b). The British Museum's MS Or. 3366 is incomplete, a much smaller book altogether, with illustrations aptly described by the Catalogue as "neat"; they are highly coloured and generally betray the illustrator's concern with symmetry and design rather than botanical accuracy. There are some good likenesses, as with the Aloe (f. 17b) and Thistle (12b).

A revised translation was made by al-Ḥusain b. Ibrahīm al-Nātilī in the late 10th century.[1] He does not seem to have made any major alterations, nor to have undertaken a complete new translation. In the Topkapi Library, Istanbul, there is a large manuscript of this work (Topkapi 2175) with a magnificent

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1 GAL I. 229; Supp. I. 371

frontispiece and very pleasant colourful illustrations. Some of the animals and plants owe more to imagination than to observation, but the Cypress (f. 37a) is worthy of a book of poetry as much as a work on materia medica, and the Pine tree (33a) is delightful with a russet trunk and big feathery branches. The Leiden MS Or. 289, also of al-Nātilī's version, has less good pictures, which are somewhat diagrammatic, for instance the Cypress (f. 21b); the Palm (44a) has a huge bunch of "dates" hanging down each side of a stiff centre bunch of leaves.

The value of the Herbal of Dioscorides was appreciated throughout the Arab world, and it was not long before it reached Andalus and helped to give an impetus to botanical studies there. According to Ibn Juljul, the translation by Iṣṭifan and Ḥunain was known and used in Andalus, but it was in the reign of ᶜAbd al-Raḥman III that a complete revised version was produced.

Ibn Juljul in his Ṭabaqāt gives high praise to Dioscorides, quoting Galen's opinion that, having examined fourteen books on Simple Drugs by different authors, he had found none of them as good as this of Dioscorides; Ibn Juljul himself calls him the most learned and skilled of those who wrote on therapeutics and Simples.[1]

In another of his works he gives an account, preserved by Ibn Abī Uṣaibiᶜa although the original is lost, of the arrival of the Herbal in Andalus and its subsequent translation.[2]
He relates that in the year 337 (947 A.D.) the "king of Constantinople, Armānyūs" (Romanus) sent to ᶜAbd al-Raḥman al-Nāṣir presents of great value including a Greek manuscript of Dioscorides with beautiful illustrations. This Armānyūs is presumably Romanus II, son of Constantine VII who was the Emperor at that date (912-959); Romanus ruled from 959-963. Constantine was a "political nonentity .. a savant, an artist and a scholar" so might have initiated this cultural contact, while Romanus, the more forceful personality,

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1 Ṭabaqāt, p. 21, No. 7
2 ᶜUyūn, Vol.II, p. 47-48

was the one whose name was better known to the people of Andalus.[1]

Romanus, continues Ibn Juljul, wrote in his letter to al-Nāṣir that "the book will yield its profit only to one able to explain it well in the Greek language and who is knowledgeable about the individual drugs". But there were no Christians in Andalus at that time who could read the ancient Greek (which he calls "Ighrīqī, the ancient Yūnānī"). ᶜAbd al-Raḥman asked the king to send him someone who spoke the ancient Greek as well as Latin, which was known to the people of Andalus, who could then help and instruct translators.

So in the year 340/951 a monk called Nicolā arrived in Qurṭuba to join the group of physicians working on medicinal botany who were eager to learn the identity of such drugs as they did not know; chief among them was Ḥasdai b. Shabrūṭ, the Jewish scholar. Nicolā headed the team of translators in producing a revised Arabic version of Dioscorides, identifying and translating all the drug names, whether or not previously known in Andalus. Ibn Juljul gives the names of the other physicians concerned with this work, including Ibn al-Haitham, Abū ᶜAbdallāh al-Ṣiqillī, and one Muḥammad known as al-Shajjār (the botanist); and he himself later joined them and took part in the work. All the drugs were put into names current in Qurṭuba at that time, "except for a few, about ten in number".

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1 C.W. Previté-Orton, The Shorter Cambridge Medieval History, Cambridge 1952, Vol.I, p. 258.

Ibn Juljul's account is interesting in that it shows the enthusiasm of the scholars of Andalus and their anxiety to make full use of such an important work. At first sight this may seem an unnecessarily complicated procedure, seeing that the Herbal in its Baghdad translation was already available in Andalus. It is possible that the Emperor did not mention the name of the author but simply presented a magnificent herbal; the recipients then would not realise its identity until the translation was well under way. It would seem more probable, however, that he did explain that it was the Herbal of Dioscorides - this being known to be the best - and the scholars of ʿAbd al-Raḥman's court then wished to check up on the translation they already had and which they realised was defective in certain respects.
The Caliph was therefore prepared to admit to the Emperor that none of his subjects could translate from the ancient Greek - not in fact so very ancient really, but presumably quite unfamiliar - and scientific advance came before royal prestige. This in turn would be served better by the new knowledge thus gained than by the possession of a beautiful specimen of calligraphy and illustration. The emphasis was evidently on practical rather than aesthetic value.

CHAPTER 4

IBN JULJUL'S TAFSIR

It would seem that even the new translation was not sufficient on its own; for among Ibn Juljul's works is the Tafsīr, the "Explanation of the names of simple drugs in the book of Dioscorides". It is therefore uncertain whether the translation made in Qurṭuba was a complete new one, as one would gather from Ibn Juljul's account, or more a revision and correction of the earlier Baghdād version.

It is not even possible to compare the Herbal with the Tafsīr, since of this latter, unfortunately, there is but a fragment extant, in Madrid (Biblioteca Nacional MS 233). This contains only a proportion of the contents of the Herbal: three drugs taken from the latter part of Maqāla 3, twelve from Maqāla 4 and eleven from the first part of Maqāla 5. The copy is apparently from the 16th century.[1]

Most of these drugs have difficult names, and the transliteration or translation would have presented problems; this is borne out by comparison with the edition of the Arabic Dioscorides, where there are variations noted in pointing and even outline between different manuscripts. Particularly complex are the following numbers from the Madrid manuscript of the Tafsīr: 6, 7, 8, 9, 12, 13, 14 and 19.

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1 Madrid, Biblioteca Nacional, Catalogue No. CCXXXIII

In the Madrid manuscript the name is given in red - often with the diacritical points added in black - followed by wa-huwa (which is ..) and then the best-known Arabic name. Once or twice the Lat̄inī name only is given, and in the case of Tābsiyā (Thapsia) only the Berber equivalent Idrīs appears.

This manuscript could be a direct extract from the original Tafsīr, or from a later abridgement of it; for with the material at present available, it is not known what the Tafsīr really was. It could have been a complete explanation of all the names occurring in the Herbal of Dioscorides, or could have dealt only with the difficult ones. Thus the problem of the Tafsīr is connected with the whole question of the translation made by Nicolā and his collaborators, of which no copies are known today; such translations as survive are in the version of Iṣṭifan and Ḥunain, or of al-Wāṭilī. In this connection, Dubler thinks that there was no complete translation made in Andalus. [1]

If Nicolā and his colleagues produced a complete item-by-item translation of Dioscorides, this would supersede the version of Iṣṭifan and Ḥunain while duplicating much material contained in it. Then any scholar or physician already possessing the Baghdād version would merely need a concise handbook giving the results of the latest research.

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1 C.E. Dubler, La Materia Médica de Dioscórides .. Vol.I, p. 48

The Tafsīr could have been an abridgement of the new Arabic translation of Qurṭuba, giving the explanation of all names but omitting descriptions and details which were adequately rendered in the previous Arabic text. Or it could have been a selective abridgement giving all, and only, those names which were previously doubtful or whose translation was missing from the Baghdād version.

If, however, Nicolā's new translation was a shortened one, it is hard to see the exact scope and use of the Tafsīr. If this were simply another name for the translation itself, it might have been thought of later as a separate work and described as such. But Ibn Juljul only says that he helped with the translation and claims no more than a share of the credit; so it seems likely that he did produce some work based directly upon the translation, which would be the Tafsīr.

In the list which follows are given the twenty-six items from the Madrid MS 233: the original Greek name, transliterated into Arabic characters, has in each case been copied as it is, but the Arabic equivalents are here put into English characters, as these names are known and do not vary from one manuscript to another. Following each item from the MS 233 is the equivalent in the Arabic edition of Dioscorides' Herbal, for comparison. The list is followed by notes and identification of the items.

1. انيامس = Bābūnaj, 3 species, also called حاملن
انتمس = Bābūnaj, with several variants
3.131 incl. حاملن

2. التاءَ = Khiṭmī
الثاا = Khiṭmī
3.139

3. يوثانيون = Uqḥuwān
فرثانيون = Uqḥuwān, and several variants
3.131.b

4. ابوسقيامس = Banj, and in Laṭīnī ملمندر
ايسقواامس = Banj, which some call ادامنق
4.60

5. بثريرن = Diflà
نيريرن = Diflà, which some call
4.66 رودودفنى

6. باليطون no explanation given
ثاليطون " "
4.80

7. جرسطيس = Jirjīr

جريسطس = a plant which some call حروسوقومى
4.47

= Jirjīr اوزمن
2.141

8. تابسيا = Idrīs in Berber
- (see notes)

9. فركس = Narjis, and in Laṭīnī: الدنبقيس

= Narjis, which some call Līriyūn نركسوس
4.112 ليريون

10. الايرس مالس = Kharbaq Aswad

= Kharbaq Aswad, with other variants اللابورس
4.114

11. اسقمونيا = Saqamūniyā

= Saqamūniyā السقمونيا
4.118

12. خاما لاون = Māzariyūn, which is Khaṣīrā الخصيرا

= Māzariyūn, with other variants خاما لايا
4.119

13. ملسعددس = Qar^{c}a barriya, which is Ḥanẓal

قولو قنتا انمريا = Ḥanẓal, which some call
4.121 سيقو بقرا

14. افثيمون = Ṣa^{c}aitara

ابيتمون = Afīthmūn
4.122

15. الكثوث is here called Ṭaniya, which
means Qar^{c}a طنيه

- (see notes)

16. انيالس ابوقروس = Karm al-^{c}Anab al-ma^{c}ṣūr

انبالس اونوفورس = al-Karma, from which is pressed Sharāb
5.1

17. انيافيون = Nabāja, which is Ḥisrim

انفافيون = ^{c}Aṣārat ḥisrim al-^{c}anab
5.5

18. اپرا = al-Sharāb bi-anwā^{c}ihi

اونو = al-Ashriba
5.6

19. اونومالی = Khamr wa ʿAsal

اونومالی does not translate but explains method using wine and honey
5.7

20. مالی قراطن = ʿAsal muqaṣṣar ? عسل مقصر

ماليقراطن = wine, of a strength like 5.7
5.8

21. اوذروا = al-Mā'

اوذر = al-Mā'
5.9

22. اوقس = al-Khall

اوقس = al-Khall
5.11

23. اوكسومالی = Sakanjubīn

اكسومالی = Sakanjubīn
5.12

24. اوقسلم الس = Khall wa Milḥ

اوكصلمی = Khall wa Milḥ
5.13

25. نوموا صلم = Khall wa Ḥāshā

نوموقصلمی = Hāshā wa Milḥ wa Sawīq al-Shaʿīr wa Faudhanj barrī wa mā'
5.14

26. شقلا طيقل = Khall wa ʿAnṣal

سقيلطيقون اوقس = Khall wa ʿAnṣalān
5.15

NOTES

Identifications are taken mainly from Issa's Dictionary.

Abbreviations:

Ar : Arabic edition of Dioscorides by Dubler and Terés

BM : British Museum MS. Or.3366 of Arabic Dioscorides

Diosc : Wellmann's edition of Dioscorides

H : Bodleian MS. Hyde 34

J.An : Julia Anicia MS. of Dioscorides - Greek, with some Arabic names written in the margins.

M : Madrid MS. 233 of the Tafsīr

P : Paris, BN MS. 2849

1. Anthemis nobilis, Compositae, Camomile.

Diosc. III.137 ἀνθεμίς

Ar. therefore has the correct reading, but one of the variant names is given as حاجلى which appears in H as حماملى

2. Althea officinalis L., Malvaceae, Marsh Mallow.

Diosc. III.146 ἀλθαία

Ar. adds that this is said to be the Khiṭmī, which is a variety of wild Mulūkhiyā. H has الثااء BM, 106a الثآ J.An. 16b آلثيا

3. Chrysanthemum parthenium PERS., Compositae, Fever-few.

Diosc. III.138 παρθένιον

All MSS agree in calling this the Uqḥuwān, although they vary in their transliteration of the Greek, the nearest being H فربانيون

and Ar. فرثانيون . The latter gives as an alternative اماراقن for which H has امارقون

Cf. J.An. 31b, Αμαρακον, اماروقو = افحوان

BM, 101a, مرمالون is the Uqḥuwān.

4. Hyoscyamus albus/niger, Solanaceae, Henbane.

Diosc. IV.68. Υοσκύαμος.

H has in the margin that the Laṭīnī name is ملمندر which apparently is the Portuguese memendro.[1]

BM, 134b, اوس كوامس is explained as Banj.

5. Nerium oleander L., Apocynaceae, Oleander.

Diosc. IV.81, νήριον, also called ῥοδόδενδρον, ῥοδόδαφνη. This last name survives in Greek, whereas the ancient νήριον is now lost.[2]

BM, 140a برنون وهو الدفلى . H has the same transliteration as M, considerably altered from the correct one which appears in Ar.

J.An. 283b ῥοδοδάφνη = دفلى

6. Thalictrum flavum L., Ranunculaceae.

Diosc. IV.97. Θαλίητρον.

In neither Ar nor H is any Arabic equivalent given.

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1 L. Leclerc, "De la Traduction arabe de Dioscorides et des traductions arabes en général", Journal Asiatique, 1867.

2 R. Dawkins, "Semantics of the Greek names of plants", Journal of Hellenic Studies, 1936.

7. Jirjīr = Eruca sativa MILL., Cruciferae, Rocket.

Khrusūqūmī = Chrysocoma L., Compositae. Diosc. IV.55 Χρυσοκόμη.

There seems to be some confusion here. Ar gives Jirjīr for a different plant, 2.141, the اوزمن and for Khrusūqūmī says that some call it جريسطس

Cf. J.An. 118a Ευζωμον, اوزومون = جرجير

In H, خروسوقومى is explained as Bābūnaj Jabalī

The "Jirīstis" is perhaps the plant in J.An. 372a,

Χρυσοκομη ἡ Χρυσιτης.

BM, 130b, has خروسوقومى ومن الناس من سميه جرسطس

8. Thapsia garganica, Umbelliferae, Drias plant or smooth Thapsia.

Diosc. IV.153 Θαψία.

This article does not appear in Ar, but in H and P تافسيا comes after Ar. 4.109 and the Greek marginal note in H explains it as Θαψίας (in Kuhn's edition it is IV.154 or 157) 157,

BM, 160a بابسيا. In H, only the Berber name is given; this name, Idrīs, had a variety of spellings, as did Tābsiyā. Al-Zahrāwī and Ibn Samajūn also deal with Tabsiyā, or Thāfsiyā.

9. Narcissus poeticus L., or N. tazzetta L., Amaryllidaceae.

Diosc. IV.158 νάρκισσος.

H has an incorrect transliteration, though all agree that it is the Narjis. Ar and H both say that some call it Līriyūn.

The Laṭīnī name seems to be otherwise unknown.

BM, 162a, has برقسوس

10. Helleborus niger/albus, Ranunculaceae; Hellebore.

Diosc. IV.148 ἔλλεβορος λευκός IV.162 ἔλλεβορος μέλας.

J.An. 114b, ἔλλεβορος λευκος = الوورُوس لَفقُوس

and on 115b is ἔ. μελας = الوورُوس ميلاس

In neither case is the name translated into Arabic.

J.An. 67b has the Ακονιτον, اقونطون اخر which is explained as خربق سياه (Persian for black Kharbaq).

Dawkins says that the ancient ἔλλεβορος represented any species of Helleborus, also the Veratrum album.[1]

11. Convolvulus scammonia L., Convolvulaceae, Scammony.

Diosc. IV.170 Σκαμμωνία

BM, 169b سقمونيا . J.An. 331b, again the Arabic transliteration and translation are almost identical, as is the case in M and Ar. سقمونيا = اسقمونيا

12. Māzariyūn is Daphne mesereum L., dwarf Laurel or Mezereon, Thymelaceae. Khamālāyā and Khàmālā are D. cnecrum. Khaṣīrā is presumably meant to be Khuḍairā', a variant name for the D. alpina L. It is unlikely that any clear distinction was drawn between different species nor between Māzariyūn and Khamālāyā.

Diosc. IV.171 Χαμελαία and IV.172 Θυμελαία ἡ Χαμελαία

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1 See p. 50, n. 2

J.An. 134b, تيملیا BM, 170a, the two names of Tūmālāā and Khàmālāā are given. ثوماليا وقديمى حاماليا

13. Qar^{c} appears to be the more general term for the Cucurbitaceae; it is here perhaps Cucurbita maxima or C. pepo, or Lagenaria vulgaris the bottle-gourd. Again, probably different species were confused. Ḥanẓal is the Citrullus colocynthis or Cucumis c., Cucurbitaceae.

Diosc. IV.176, κολόκυνθα ἀγρία, οἱ δὲ σικύου πικρού, οἱ δὲ κολοκυνθίδα καλοῦσι.

i.e. the Sīqū biqrā of Ar.

J.An. 190b κολοκυνθίς = BM, 172b. قولوصنا احمرا حنظل

14. Afīthmūn is Cuscuta epithymum MURR., Convolvulaceae, Dodder of Thyme, also known as Qari^{c}at al-Kittān.

Diosc. IV. 177 Επίθυμον.

J.An. 107b has ابى ثمون not translated.

BM, 173b, does not translate but describes it as one of the sorts of plant called Ḥāshā (Thyme) resembling barley in its hairiness, with fine thin leaves.

15. Kashūth is also C. epithymum; in Ar. it does not appear separately and should probably be considered as part of the same article, a variant name for Afīthmūn. The name Ṭaniya does not seem to occur elsewhere.

16. Anbāliṣ, the first article of the 5th Maqāla, is Vitis vinifera L., Vitaceae, Vine.

Dioscorides V.1. ἄμπελος οἰνοφόρος

17. Ḥiṣrim is wine from unripe grapes of V. vinifera L.

Dioscorides V.5 ὄμφάκιον

18. Sharāb is wine; Ar puts it into the plural, agreeing with

Dioscorides V.6 οἶνοι.

19. Ūnūmālī is interpreted by M as wine and honey; Ar explains the method, using these two ingredients, but does not give an Arabic name.

Dioscorides V.8 οἰνόμελι comes from old bitter wine and good honey.

20. Mālīqrāṭun: Dioscorides V.9 μελίκρατον δὲ τὴν αὐτὴν τῷ οἰνομέλιτι δύναμιν κέκτηται.

Its strength is similar to that of Ūnūmālī; Ar translates the definition of Dioscorides; M calls it عسل مصفّى

21. Water: Dioscorides V.10 ὕδωρ

22. Vinegar: Dioscorides V.13 ὄξος

23. Sakanjubīn: Oxymel. Dioscorides V.14 ὀξύμελι

Ar explains that it is made with vinegar, sea salt, honey and water.

24. Vinegar and salt. Diosc. V.15 ὀξάλμη

25. Vinegar and Thyme. Diosc. V.16 θυμοξάλμη

Ar explains it is made of Ḥāshā (Thymus capitatus, Labiatae), salt, Sawīq al-shaʿīr (a sort of barley broth) and Faudhanj barrī (Mentha pulegium, Labiatae) with water.

26. The last part of this word is damaged in M but probably only a little is missing. Vinegar and ʿAnṣal (Scilla maritima, Liliaceae) is the equivalent of Diosc. V.17 σκιλλήτικον which is σκίλλα with ὄξος

Cf. J.An. 297b, σκίλλα, Arabic عنصل, transliterated from the Greek as اشقيل

CHAPTER 5

IBN JULJUL'S SUPPLEMENT

Apart from the materia medica contained in the Herbal of Dioscorides, there were drugs used by the Arab herbalists and physicians but apparently unknown to the Greeks and not included in their works. Al-Majūsī mentions this point in his section on testing and discovering the powers of drugs, but does not discuss it at any length.[1]

It seems that the first to devote a single work to this subject, dealing specifically with new drugs, was Ibn Juljul, who wrote a Supplement to the book of Dioscorides, probably a good while after his Tafsīr. The Supplement contains about sixty drugs or foods which the Greek writer did not mention "but which are of use in medicine, or should anyway be known". These are mainly plants, with four of animal and four of mineral origin, mostly well-known at the time, but not previously described specifically as new drugs and collected into a separate work.

In accordance with the scientific ideas of the time, Ibn Juljul generally gives the appearance, action and nature of each, its place in the accepted scheme of medicine, with its Mizāj ("mixture" or temperament), its "powers" and its effect on any particular humour or organ. Although he is supplementing the work of Dioscorides, he does not imply any criticism of his

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1 Kāmil, Vol.II, p. 85-86

Herbal; he is simply adding a list of drugs which had previously been unknown or little used.

This is mentioned by Ibn Abi Uṣaibi'a as one of Ibn Juljul's works;[1] it was quoted by other Arabic authors on materia medica, and seems to have been accepted as authoritative in much the same way as was the work of Dioscorides himself. Al-Ghāfiqī (12th century) and Ibn al-Bayṭār (13th century) refer to Ibn Juljul's works, both the Tafsīr and the Supplement. These are thus of use in evaluating the place of Dioscorides' work in 10th-century Andalus and the amount of original work in medicine and botany carried out there. It appears that the Arabic writers, although depending very much on the Greeks, were able to make use of newly discovered properties of plants and drugs, while fitting them into the framework already supplied.

The new drugs mentioned in the Supplement were sometimes completely unknown to earlier physicians, and some had been introduced quite recently from the East. Ibn Juljul gives the origin - as far as he knew it - of all but seventeen of these drugs: 28 from India, 2 from Yemen, 2 from Egypt (one of which also from Qayrawān), one from Ceylon, one from Khwarizm. A few are from Andalus: one from the country in general, 2 from near Qurtuba, one from near Qādis (Cadiz); the Khaizurān (Bamboo) has two types, an Andalusī and an Indian. One item is from the "mountains, especially Mayafāriqīn", and one drug, 'Anbar (Ambergris) is found

1 'Uyūn, Vol. II, p. 46-48

in the sea. When a plant comes from Andalus, he sometimes mentions the name of the physician or herbalist who first recognised and used it, or who told him about it.

The Arabs may not always have known the ultimate origin of a drug, or have concealed this; and it may have been confused with the place whence it was re-exported and which acted as a trading centre. Some plants originally from abroad might be grown also in Andalus by now; and there was a flourishing trade with the East.[1] However, when Ibn Juljul states that a drug is found in Andalus, it is doubtless something which he knows well, and which could have been easily checked by a contemporary.

Some of these items would not today be described as "medicinal"; but the dividing line between food and medicine was not so clearly drawn at that time, when much treatment consisted of regulating the diet. Ibn Juljul himself aims at giving an account of those items which are interesting and useful. They are generally identified sufficiently for the purposes of his contemporaries in Andalus: where a drug was well-known and frequently used, there is only a brief description, and probably little distinction was made between species. It is not enough today to enable us to identify in more than general terms some of the plants, especially taking into account

1 W. Heyd, Histoire du commerce du Levant au Moyen Age, Leipzig 1923 and S.M. Imamuddin, Some aspects of the socio-economic and cultural history of Muslim Spain 711-1492 A.D. Leiden, 1965

the more elaborate classification schemes of recent years. For the purposes of translating and explaining the Supplement, reference has been made largely to the dictionary of Issa, for plants, and of Siggel for minerals, for identification and vowelling.

In some cases Ibn Juljul does not describe the drug or food, since it was evidently too well-known to need more than naming. On the whole he gives a brief description, except when he has any particularly interesting details to add.

He quotes once from Aristotle, but otherwise his only reference to the Greeks is where he specifically says a drug was not mentioned by Dioscorides. He refers to Arabs in the eastern caliphate: Abū Ḥanīfa, Yaḥyà b. Serābiyūn, al-Rāzī and "other Baghdād physicians". He states when he himself does not know a drug, so the implication is that in other places he is speaking from first hand knowledge. Thus his Supplement would have been of particular value and interest to the physicians and herbalists of Andalus.

Ibn Juljul's contemporary Ibn Samajūn in his Drug Book includes articles on more than twenty-five of the drugs mentioned in the Supplement; in none of these does he refer to Ibn Juljul, but he does quote frequently from him in other cases. Al-Zahrāwī refers to him about forty times during the course of a fairly brief section of his Maqāla 29, dealing with drug names and synonyms.

This was a speciality of Ibn Juljul, who was obviously already considered an authority on the subject and whose writings were appreciated in Andalus. Al-Zahrāwī's extracts seem to be taken mostly from the Tafsīr, though three of the drugs he mentions occur in Ibn Juljul's Maqāla on the Tiryāq.

Al-Zahrāwī's use of Ibn Juljul's work indicates that the latter had put a great deal of research into the question of drug identification and could thus be quoted with complete confidence. Al-Zahrāwī was no doubt aware that his colleague had the same careful approach and concern for accuracy as he himself had. Between them they seem to have had a comprehensive knowledge of the plants and drugs of Andalus.

Quotations from Ibn Juljul also occur in the work of Abū Jaʿfar Aḥmad b. Muḥammad al-Ghāfiqī (d. circa 1165) who came from near Qurṭuba. His book al-Jāmiʿ fi'l-ṭibb fi'l-adwiya al-mufrada was abridged by Abu'l-Faraj b. al-ʿIbrī (Barhebraeus), and in the parts published there are several quotations from Ibn Juljul. These are not always identical with the text in Hyde 34, where the Supplement occurs, but on occasions a doubtful word or phrase can be verified by comparison with Ghāfiqī's text.[1]

He quotes from the Supplement on: Bustān Abrūs; Baladhur; Bāzuhr (a shorter and slightly different version); and Julbān,

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1 ed. M. Meyerhof and G.P. Sobhy as The abridged version of "The Book of Simple Drugs" of Ahmad ibn Muhammad al-Ghafiqi by Gregorius Abu'l-Farag (Barhebraeus) Cairo, 1932-40.

where he repeats Ibn Juljul's account of "lathyrism". He mentions him also on Ḥajar al-Baht, in an article on اكتمك or "Eagle Stone", and on Atruj; on Būzīdān the extract is not from the Supplement.

Another writer who made use of Ibn Juljul was Abū ᶜImrān Mūsā b. ᶜUbaid Allāh b. Maimūn (Maimonides) who died in 1204. Among his many works he wrote Sharḥ asmā' al-ᶜuqqār, "Explanation of the names of drugs", giving many synonyms in Berber and ᶜajamiyat al-Andalus. He does not quote directly from Ibn Juljul, but mentions him among those from whose works he learnt, and he was one "dont il était inspiré".[1]

Maimonides deals with the following drugs from those occurring in the Supplement: Atruj; Amīr Bārīs; Bahman; Būzīdān; Balādhur; Julbān; Jauz Jundum; Zidwār, Jadwār and Zurunbādh; Jauz al-Hind (Nārjīl); Dam al-Akhawain "which in the west is the Shayyān"; Halīlaj; Harnuwa "which in Andalus is called Fulaifila" (Ibn Juljul has an article on each); Waras - as a herb and as the "stone" in a cow, whereas Ibn Juljul considers it only as a plant; Ḥabb al-Zalam; Tabāshīr or Ramād al-ḥayya; Tarkhūn; Yasmīn, also Rāzagī which is the oil of Yasmīn, or Zanbag; Kabbāba; Maḥlab; Rībās; Shīr-Amlaj; Tamr Hindī; Khiyār Shanbar.

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1 M. Meyerhof, ed., Sharḥ Asmā' al-ᶜuqqār, Mémoires de l'Institut d'Égypte, Cairo, 1940.

Perhaps the most famous of all the botanists among the Arabs is Ibn al-Bayṭār from Mālaga, who studied in Seville, travelled to Egypt and was there appointed chief botanist, and then settled in Damascus. His great work is al-Jāmi^{c} li-mufradāt al-adwiya wa'l-aghdhiya, a methodical compilation dealing with a vast number of plants. He referred mostly to Dioscorides' and al-Ghāfiqī's works, but quotes from a large number of other botanists and physicians, including Ibn Juljul. From him he quotes on fourteen of the drugs occurring in the Supplement, sometimes verbatim, sometimes with slight variations or giving only a shortened extract. These are: Tamr Hindī; Būzidān; Maḥlab; Bustān Abrūz; ^{c}Anbar; Yasmīn; Nauz; Buqqam; Jauz Jundum; Shajarat al-Kaff (where he seems to contradict Ibn Juljul); Julbān (omitting the account of "lathyrism"); Māsh; Ḥajar al-Baht; Kurkum. Ibn al-Bayṭār includes some drugs which occur in the Supplement, without any reference to Ibn Juljul; in these cases he does not quote Dioscorides, but only Arabic writers, except once where Aristotle is named.

This Supplement was for some while referred to as a lost work by Ibn Juljul or possibly extant in the Bodleian; it is in fact Bodleian MS Hyde 34, f. 197b - 201a.

In 1833 it was used by Dietz, who published a small book in Latin on Ibn al-Baytar, in the front of which he put a short section "Elenchus Medicamentorum secundum Ibn Cholchol, quae omisit Dioscorides". He translated all the drug names into Latin and added brief remarks, but did not give the complete entries by Ibn Juljul.[1]

After that, however, the work was overlooked for a considerable time. Leclerc mentions it, contrasting Ibn Juljul somewhat unfavourably with al-Nabāṭī, who carried out original work while Ibn Juljul, he says, wrote on simples unknown to Dioscorides, but took it all from books.[2] This does not seem a fair judgement, as Ibn Juljul frequently refers to first-hand information.

In 1932 it was referred to by Meyerhof as a lost work, and again in 1935.[3]

Subsequent writers have noted the existence of this Maqāla: Brockelmann states that it is in the Bodleian Catalogue[4]

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1 F.R. Dietz, Analecta Medica ex Libris MSS, primum edidit Fridericus Reinholdus Dietz, Fasc. Primus: 1. Elenchus materiae medicae Ibn Beitharis Malacensis secundum codices MSS. Lipsiae 1833

2 L. Leclerc, Histoire de la médecine arabe, Paris 1876, Vol.I,p.246

3 M. Meyerhof and G.P. Sobhy, op.cit.
M. Meyerhof, "Esquisse d'histoire de la Pharmacologie et Botanique chez les Musulmans d'Espagne", Al-Andalus, 1935

4 GAL I, p. 237

and the "Commentary" and "Supplement" are referred to by Sarton.[1] It is again mentioned by Paul Kahle in his work on Ibn Samajun,[2] and by S.K. Hamarneh in his catalogue of the Zāhiriya Library, Damascus.[3]

In the MS Hyde 34, the Supplement follows the work of Dioscorides. Like the rest, it is written in dark brown ink, with headings in red. The text is clear on the whole, except for a few doubtful readings where the scribe's handwriting gets smaller and less careful. There are a few marginal additions made by a later hand.

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1 G. Sarton, Introduction to the History of Science, Baltimore 1947-1952. Vol.I, p. 682.

2 P.Kahle, "Ibn Samaǧun und sein Drogenbuch", in Documenta Islamica Inedita, Berlin 1952.

3 S.K. Hamarneh, Index of MSS on Medicine, Pharmacy and Allied Sciences in the Zâhirîyah Library. Damascus, 1968.

CHAPTER 6

DRUGS IN IBN JULJUL'S SUPPLEMENT

1a	Halīlaj Aṣfar	Myrobalans
b	Halīlaj Kābulī	"
c	Halīlaj Aswad	"
e	Amlaj	"
d	Balīlaj	Phyllanthus emblica
2	Marrow of Khiyār Shanbar	Cassia fistula
3	Tamr Hindī	Tamarindus indica
4	Khūlinjān	Galanga
5	Qāqulla	Cardamon
6	Jawz Buwwā	Myristica fragrans (Nutmeg)
7	Kabbāba	Piper cubeba
8	Qaranful	Eugenia caryophyllata (Clove)
9	Zurunbādh	? Zingiber zerumbet
10	Darūnaj	Doronicum scorpioides
11a	White Bahman	Centaurea behen L.
b	Red Bahman	? Statice limonium
12	Būzīdān	Orchis morio
13	Tabāshīr	Bambusa arundinacea concretions.
14	Fūfal	Areca catechu (Betel)
15	Tanbūl	Piper betel
16	Amīr Bārīs	Berberis vulgaris
17	Harnuwa	? fruit of Aloexylon

18	Fulaifila	Capsicum; or = Harnuwa
19	Mahlab	Prunus mahaleb (Cherry)
20	Jawz al-Hindī	Cocos nucifera
21	Nāranj and Līmūn, types of Atruj	Citrus: Orange and Lemon
22	Bustān Abrūz	Amaranthus tricolor
23	Balādhur	Semecarpus anacardium
24	Zarunb	? Curcuma zedoaria
25	Yasmīn	Jasminum officinale/ sambac
26	Khaizurān	Bambusa arundinacea
27	Kāfūr	Camphor
28	Misk	Musk
29	ᶜAnbar	Ambergris
30	Duhn al-Turunj	Oil of Citrus
31	Duhn al-Kādhī	Oil of Pandanus odoratissimus (a palm)
32	Shiyān	Dracaena draco juice
33	Sandal	Santalum album; Pterocarpus santalinus
34	Baqqam	Caesalpina sappan wood
35	Sāj	Tectona grandis (Teak)
36	Būsh Darbandī	plant crushed for eye salves
37	Mauz	Musa paradisiaca (Banana)
38	Khiyār	Cucumis sativus (Cucumber)
39	Qurn al-Ḥitw	Rhinoceros horn; or Narwhal; or beak of Hornbill ?
40	Yāqūt	Corundum; Ruby

41	Mās	Diamond
42	Bāzuhr	Bezoar stone, from goat
43	Ḥajar al-Bāhi	"Eagle stone"
44	Ḥajar al-Khall	"Vinegar stone"
45	Qinbīl	Mallotus philippinensis
46	Jauz (or Jaur) Jundum (or Kundum)	? Lecanora (edible lichen)
47	Shajarat al-Kaff	? Vitex agnus castus; Portulaca
48	Māhī Zuhra	Anamirta cocculus
49	Rībās	Rheum ribes (Rhubarb)
50	Julbān or Julubbān	Lathyrus
51	Bādhinjān	Solanum melongena (Aubergine)
52	Māsh	Phaseolus mungo
53	Isfānākh	Spinacia oleracea
54	Ṭarkhūn	Artemisia dranunculus
55	Ḥabb al-Zalam	Cyperus esculentus
56	Waras	Memecylon tinctorium
57	Kurkum	Curcuma longa (Turmeric)

TRANSLATION OF THE SUPPLEMENT

-/1976

In the name of God, the merciful, the compassionate.

The blessings of God upon Muhammad and his family.

This is an eighth Maqāla, in which we shall mention those things which Dioscorides omitted from his book, such as are used in the Art of Medicine and are beneficial, as well as some which are not used but which we shall not neglect to mention, God willing.

So we include:

1a YELLOW HALĪLAJ: It is an Indian drug, in whose mixture cold and dry predominate. It has a power purgative of yellow bile. Some say that it purges by means of its juice, some say by the resinous substance it contains. Galen's opinion is that it contains a purgative power which has a relationship with the matter to be voided, which leads to its evacuation. This is its speciality; and we do not grade it, so that we may follow the opinion of Dioscorides in his book; the simple dose is 4 dirhams in respect of a moderate treatment.

1b KĀBULĪ IHLĪLAJ: One of the Indian drugs, brought from the land of Kābul which borders on India. Its mixture has some heat and also dryness. It is purgative of black bile which is not mixed with the yellow bile. Dosage, 4 mithqāls.

1c BLACK IHLĪLAJ: Called the Chinese. This lowers the black bile

produced by burning of the yellow bile. Its mixture has some heat together with dryness. Dosage, as for the Kābulī.

2 Marrow (Pulp) of KHIYĀR SHANBAR: There are an Egyptian and an Indian variety. It is found in a black, hard pod, which is the fruit of its tree, inside which are delicate globules; and the pulp is black in colour, arranged in between these globules. It contains a stickiness which attaches itself to the hand. Its taste is sweetish with some sourness; the Egyptian variety is sour, abrasive, until it is a year old. It lowers the yellow bile, and breaks the heat of the blood, and is beneficial for hot swellings of the throat and liver. Dosage, 8 mithqāls dissolved in water. Its mixture is coldish.

3 TAMR HINDĪ: There are an Indian and a Baṣran variety. The people of Baṣra call it Ḥumar. It is a plant with leaves like the leaves of Lūbyā (Bean); it is hard, has fruit in thick black coverings, on which is a stickiness which adheres to the hand. Inside the coverings is a hard, centrally placed grain, red in colour. It lowers the yellow bile, breaks the heat of the blood; it contains sweetness and some strong sourness, quenches thirst when it is sucked. Dosage, 8 mithqāls, dissolved in water and the juice drunk. Sometimes it is abrasive to the intestines by reason of sourness.

ld BALĪLAJ: An Indian drug, which resembles Halīlaj except in having smoother rinds; contains some softness. It is yellow, and

contains a power by which it lowers the yellow bile to a slight degree. It has a pleasurable astringency; in its mixture cold and dry predominate. It has a special benefit for flatulence and haemorrhoids, and it dries the moistures of the intestines and stomach. Dosage is similar to that of the Ihlīlaj.

J.198a

le AMLAJ: An Indian drug, round, black in colour. When broken it splits into four hard pieces; it contains astringency and some sourness. When made into a Rubb with camels' milk it is called Shīr Amlaj, and is useful for flatulence and haemorrhoids and dries up moisture of intestines and stomach. Dosage is as for the Ihlīlaj; mixture predominantly cold and dry; it breaks the heat of yellow bile.

4 KHŪLINJĀN: An Indian drug, hot, moist, aphrodisiac; healthful for the cold stomach. Aromatic, strengthens stomach and cold liver, strengthens the internal organs.

5 QĀQULLA: The large variety. It is called Hāl and Hayl: an Indian drug, hot, with some dryness, strengthens stomach and cold liver, sweetens the breath, is digestive to food; it is one of the aromatic spices.

6 JAWZ BUWWĀ: An Indian drug, hot and dry, aromatic, sweetens the breath, strengthens the stomach and heart, expels flatulence; it is digestive to food, and is one of the wonderful spices.

7 KABBĀBA: It is called Habb al-ʿArūs; it is round, aromatic, hot and dry. It strengthens the stomach and internal organs.

8 QARANFUL: Hot and dry, aromatic; strengthens the heart, brain, stomach and bowels; it is one of the highly scented drugs.

9 ZURUMBĀDH: An Indian drug, hot and dry; it strengthens the heart, thins the thick melancholic blood; it is useful against melancholy delusions and fancies; it resembles Zanjabīl (Ginger).

10 DARŪNAJ: An Indian drug, resembles the roots of Sausan Asmānjūnī (Iris or Lily). Hot and dry, it strengthens the heart and brain and is beneficial for delusions and melancholic thoughts.

11a WHITE BAHMAN: White roots, twisted, hard, shining. Its mixture combines heat and moisture; it strengthens the heart, is aphrodisiac; beneficial for fancies and melancholy.

11b RED BAHMAN: Mixture is heat and moisture; strengthens heart and brain.

12 BŪZĪDĀN: White root, crooked in shape, very white, hard. Its mixture is heat and moisture; strongly aphrodisiac, beneficial for the pains of gout. Certain of the reliable persons said that it is the Sarghant (Telephium, Orpine) which here has its characteristic form, but the oriental variety is harder and whiter.

13 TABĀSHĪR: A white substance, with some ashen colour. It is an Indian drug about which there is considerable disagreement, some saying that it is the burnt bones of elephant, and some that it is roots of Qinnā, which is an Indian cane; and this is the correct identification. Its constitution is cold and dryness. It is beneficial for high fevers and it strengthens the overheated liver,

soothing its excess heat. It dries out sepsis from the stomach, and restricts excessive bowel movement when this is from yellow bile.

14 FŪFAL: An Indian drug, which is the Atmat; it is the Indian Bunduq (nut) and is the seed-fruit of slender Indian palms, which are pliant because of their slenderness and which have boughs bearing the Fūfal, which is a red seed in the shape of birds' hearts; it is aromatic, sweetens the breath, strengthens the heart. Its constitution is cold and dryness.

15 TANBŪL: Indian leaf of an aromatic tree. Indians use it a great deal, chewing it every morning. It reddens the gums, sweetens the breath, and gladdens the heart. Its mixture is moderate heat.

16 AMĪR BĀRĪS: A grain like the Nānkhāh (Cumin), having a sour taste; its flower heads are called Zirishk. It is cooling, calms the yellow bile; useful for fevers. J.1986

17 HARMUWA: A grain brought from the land of ? Somalia which is the coastal lands of Ethiopia. Hot, dry, aromatic, with a spicy flavour; it warms the cold stomach; one of the spices.

18 FULAIFILA: A berry resembling the Fulful (Pepper), of grey colour, hot and dry. It is said to be the white Fulful of which Dioscorides spoke, but we are not informed of this by anyone who spoke with certainty; it is just a statement.

19 MAHLAB: A round kernel, having upon it a peel inclining towards red and black in colour; its grain has a woody peel, inside which is a white aromatic edible substance, somewhat bitter; which is the grain of a tall tree; the latter has a thick wood (~~shell~~ or bark).

Mahlab is used in embrocations and cleansing medicaments; its kernel is beneficial for the stone in kidneys and bladder. Its constitution is hot and somewhat dry.

20 JAWZ AL-HINDĪ: which is the NĀRJĪL or RĀNIJ: It is the fruit of a very lofty thin palm tree; if anyone climbs up into the tree it causes them to sway about. It has clusters which may contain thirty Coconuts; when it is split, in a fresh state, there flows from its clusters a sticky liquid called Tawāq; when drunk it causes intense intoxication. If it is left until the morning it becomes sticky vinegar. Coconut is aphrodisiac when eaten with sugar; and from it is made a Duhn beneficial for flatulence. Constitution is hot and moist.

21 NĀRANJ and LĪMŪN: Two species of ATRUJ (Citrus), Indian, aromatic and very pure of scent. Constitution is coldish because of the sourness in their interiors. Their scent is strengthening to the heart and beneficial in cases of swooning.

22 BUSTĀN AFRŪZ: A plant which grows to a height of more than a cubit. It has a spiny stalk bearing leaves like the Qithā' (Cucurbitaceae), upright; and at the ends of its branches are flower clusters like those of the Bādharūj (Ocimum), pretty purple in colour. It has no aromatic scent. The first to recognise it in Andalus was Yūnus al-Ḥarrānī, then his son Aḥmad b. Yūnus. Its juice, squeezed and drunk, is an antidote against the deadly drug which is known as Nabāl, and which is Aqūnīṭun (Aconitum) according to Yaḥyà b. Sarābiyūn in his book.

23 BALĀDHUR: It grows in India, and other places; it is a chestnut, heart-shaped, black; in its interior there is a kernel like the Lauz (Almond), surrounded by a sticky substance which is the "honey of Balādhur". In its constitution it is hot, dry, inflammatory; beneficial for cold diseases like paralysis, facial paralysis, loss of memory. In the language of Rūm it is called Anqardiyā, which is interpreted as "the heart".

24 ZARUNB: Grows in India and other places; it is a wood, somewhat like the Kurkum; it strengthens the heart and the stomach. Constitution is cold and dry.

25 YĀSMĪN: A plant with a pliant stem which arises from a single root and then spreads out into branches. It has leaves like those of the wild Khaizurān (Bamboo) and it bears some resemblance to heads of Ās (Myrtle) except that it is softer and greener, tending to black. Trellises are made of it. It has white petals which branch into four parts, and a sweet aromatic scent. There is also a yellow variety. If a Rubb is made of its flowers, with oil of Simsim (Sesame), then there can be pressed from it a Duhn called Zanbaq, which is also called Rāziqī, not mentioned by Dioscorides. It is beneficial for cold diseases like hardness of the sinews and cramp.[1] Its constitution is heat with some dryness, and when made into a Rubb with olive oil it is drier.

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1 Lit. "prevention of movement"

J. 199a

26 KHAIZURĀN: There is an Indian variety and one which grows in Andalus. It has leaves like those of Ās except for being more pliant. It has very pliant branches, about twice a man's stature or more, smooth, shiny; the Indian variety has a yellowish-white wood, and the Andalusī is green. In the interior of its wood are ducts penetrating from the bottom to the top of it, whereby water can be sucked up and reaches the mouth of the one who sucks it. Indian Khaizurān is not used at all medicinally, but tables, chairs and ladders are made from it. However, the Andalusī is used in treatment: one washes in its water as an anodyne.

27 KĀFŪR: Indian. The gum of a tree which grows in India, resembling the Ṣanaubar (Pine); inside it is the Kāfūr, a sort of gum and like resin; it is gathered and washed with water, then distilled, and becomes as white as snow; but its colour at first is yellowish-red. The water with which it is washed is called Mā' al-Kāfūr; it is a sticky Duhn, sweet-scented, which can be used as a substitute for Duhn of Balsān (Balsam). Kāfūr is cold and dry when distilled, but before being distilled it has a share of heat. It is beneficial for bilious fever, hepatitis and acute fevers, when it is sniffed and when introduced into medicine.

28 MISK: An Indian drug, which consists of pouches filled with Misk which fall from the haunches of an animal the size of an antelope; on its haunches grow excrescences which go on increasing in size and filling with the blood of that animal; when they have come to their maximum they drop, and in them is Misk. It is said also

that the pouches are in the musk-bag of this animal. Misk is strengthening to the heart, and it thins the thick melancholic blood; it is a stimulant to the spirits and innate heat; it strengthens the brain; it is a precious and important scent. Constitution, hot and dry.

29 ʿANBAR: Product of a sea animal which feeds in the sea upon the "Amber herb"; and when it is replete with this it is upset by it and spews it up as excrement. In form it is like large arrows of wood. It is fatty, flabby, oily, like pitch, and floats upon the water. Its colour is tending to blackish-grey; the black variety is no good; the grey is dry, with little moisture. The best type is composed of black mixed with grey. Constitution is hot and dry. Aromatic, and strengthens the heart and brain. It is beneficial for paralysis and facial paralysis and diseases of thick phlegm. It is the chief of perfumes. It is tested by fire; and then its scent is noticeable.

30 DUHN AL-TURUNJ: It is made in the Far East; it is the best of Adhān for the cold diseases like paralysis, facial paralysis, and slackness of the limbs. Its constitution is heat and dryness.

31 DUHN AL-KĀDHĪ: It is made of the sticky substance of a palm known as the Kadhī. It is a Duhn which strengthens feeble slackened limbs, giving them firmness and strength.

32 SHIYĀN: which is the Ayda[c] and Dam al-Akhawain. It is the gum of a tree which grows in India, in the shape of a palm, and gives out this gum. It is red, shiny, and therefore ? its best kind is called "gemlike". It is beneficial for discharge of blood from chest and anus; if sprinkled on wounds which are bleeding, it swiftly puts flesh on them. Its mixture is tending to coldness. In Andalus it is found on the peninsula of Qadis, as I was told by reliable persons who saw and examined it. It is not plentiful there, however, as in that place there was only one tree.

33 SANDAL: The wood of a tree which is in India, aromatic, of which there are three varieties: one is red as blood, a tough and heavy wood, one is yellow, and one is white. All are aromatic, their constitution cold and dry. They are beneficial for fever and bilious heats when they form a constituent of pastes; and when the ground-up powder is sniffed it is beneficial for pleurisy and inflammation. When its paste is used as an embrocation with Rose water, or the juices which occur along with it are extracted, it is beneficial for Humra (hot swellings) and swellings of hot gout and Shirā (Urticaria).

34 BAQQAM: An Indian tree with red root, branch and boughs, with leaves like the leaves of green Lawz (Almond), according to Abu Hanifa. I do not know of any medicinal use for it, but it is said that when a quantity of its root is crushed and drunk it is fatal.

35 SĀJ: An Indian wood, blackish, hard; the tree grows very high and has very large leaves: a man can wrap himself in a portion of its leaves and be shielded from the rain, according to Abu Hanifa, author of the Herbal. From the fruit of the Sāj is made a Duhn, known as Duhn of Sāj, used for adulteration of pouches of Misk. It is dropped into the pouch, then it mixes in with the Misk so that it can never be removed and it does not appear on the surface of the Misk. It increases the weight of the pouch. Now with any Misk, when you crush it and it does not stick to what you crush it with, then it is genuine; if it sticks, it is adulterated with Duhn of Sāj. Many of the merchants of Fars (Persia) told me this. Constitution of Sāj is hot; its wood is sold at a high price.

36 BŪSH DARBANDĪ: It is an eye powder, from Darband which borders on the land of the Khazar (Caspian Sea area) and comes from a herb found there. It is shaped like the Ihlīlaj Kābulī, and is dissolved in juice of Kuzbara (Coriandrum) and Rose water; it is beneficial for swellings of hot gout, Humra, and Rīh (flatulence, or rheumatism). It is a drug not long ago introduced into Baghdād, and in fact is quite recent.

37 MAUZ: A tree whose stem is shaped like a palm, with leaves emerging from the stem in smooth green spears. Its leaves are very broad, veined, smooth, attractive in appearance. It has clusters like palm boughs, in which the Mauz comes forth like the Qithā'; when it first appears it is green, then it becomes yellow and lastly black, when it is ripe. Inside is an edible substance like butter,

sweet, soft, pleasant, eaten with sugar. It is moistening to the dry stomach, and has a gentle cooling action; it softens the chest and is beneficial for a dry cough.

38 KHIYĀR: It is a species of Qithā' except that in its body are excrescences like warts and it is shorter than the Qithā'. It is appropriate for the maḥrūrīn (fevered); its scent is sniffed, and cools the brain.

39 QURN AL-HITW: It is said to be the horn of a viper; from it are made knife-handles which are placed upon the tables of kings. If there is any poison in their food, the handle sweats, for this is its peculiarity, for which the mighty kings use it; a single handle may be sold for 500 dīnārs.

(Margin: His statement about Qurn al-Hitw is an error; it is simply a tooth which is brought from Constantīnā and is sold in the land of Egypt by the best dealers, and is expensive. It is not the horn of a viper as this man asserts, but simply the tusk of a sea fish, the length of a tooth being about a cubit, equally hard as the tusk of an elephant).

MENTION OF STONES which Dioscorides did not mention: among them the

40 YĀQŪT: A stone which is classified into four colours: white, red, yellow and blue. It is found in mountains in Serendīb (Ceylon); the best and finest and most expensive is the red; it is red as fresh blood and very expensive: a single stone may be sold at 100 dīnārs or more, according to its size. When crushed and drunk it

is cordial, and good for worms. There is a white sort which is inferior to the red and low in price; there is a blue, after the red and below the yellow in value. They have various uses.

41 HAJAR AL-MĀS: An Indian stone; there are a white and a yellow variety. It is a stone which destroys every solid body, and breaks other stone; with it one can pierce pearls, but lead shatters it and splits it open. A valuable stone: if of a mithqāl weight, a single stone is worth 100 dīnārs in coin. The white is more valuable than the yellow; if drunk it is fatal.

42 / HAJAR AL-BĀZUHR: It is that which counteracts all poisons, by the whole of its nature, and is beneficial for every poison both hot and cold. A yellowish stone with white streaks in it. Abū ᶜAbdallāh al-Ṣiqillī told me that he saw it once in the mountains of Qurṭuba, for he was concerned with that. It is famous in the East, found among the great kings. J. 200a

43 HAJAR AL-BAHT: It is a reddish stone; when you shake it you hear inside it a rattling noise as is heard from cow bells; but when it is broken you find nothing at all inside it. It is Hajar al-yusr (Stone of ease)[1] and it eases difficult parturition, if it is tied to the woman's thigh, and this is its regular property. Aristotle said that among the eagles, when their females have difficulty in laying eggs, the male goes and fetches the stone

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1 Maybe should be Hajar al-Nasr, Eagle stone

and puts it in the nest, and the female lays at once. The male takes the stone and throws it away, and then it can be found.

44 HAJAR AL-KHALL: Dioscorides did not mention it; this stone when thrown into vinegar quickly goes out of it, and if anything is pickled in vinegar the stone comes out of it and does not stay in it at all. We have it here in Andalus, and Ibn Haitham (may he rest in peace) knew of it.

45 QINBĪL: Abū Mūsā told me that he saw Ibn Masrūr al-Ṣaidalānī al-Qarawī who was a prominent apothecary; a woman was enquiring about Qinbīl and he gave her dust of Barqa, for removing Ṣafār (an intestinal worm) from the belly, and he said this was Qinbīl. I asked Abū Muḥammad al-Baghdādī al-Kāfūrī about Qinbīl and he told me "wood, by which one seeks to remove Ṣafār and Ḥabb al-Qar° (round worms) from the belly". This remark, in my view, was confirmed by the words of a certain member of the medical profession, one who composed a Kunnāsh; he spoke of wood of Qinbīl. But I myself have never seen this.

46 AL-JAUR JUNDUM: "Dust of Honey". It is reddish dust which breaks down honey and makes it into the consistency of a Sharāb when it is infused in water. It is the Turāb known to us as Turba.

47 SHAJARAT AL-KUFF: Ishṭīban did not mention it in the translation of Dioscorides at the end of the fourth Juz' (division). (Margin: but he did mention it). Its various kinds are among the categories of poisons. It is a tree which has a root resembling

the human hand, with palm and five fingers; it is known as Kaff Maryam. Ṭāriq the herbalist, among us in Qurṭuba, knows it; he is the first to have made it widely known. Women make from it pessaries to help in childbirth.

48 MĀHĪ ZUHRA: It is a herb beneficial for gout. It consists of bitter rinds, the outside of the roots of this herb. This name has merely been used by metaphor for bitter things, and the real meaning of the name in Persian is bitterness (or gall bladder) of the fish.

49 RĪBĀS: Muḥammad b. Zakariyā al-Rāzī mentioned Sharāb of Rībās, as did other Baghdād physicians. They said that it is a Sharāb whose action is stronger than that of the flesh of Atruj and that of Sharāb of Higrim in the way of cooling the inflamed liver, diminishing the heat of smallpox and measles; and it is beneficial for erysipelas in pestilential fever. I enquired about the Rībās from a group of people from the Far East and some of them told me that it is a sour-tasting vegetable with fleshy leaves like those of Humād (succulents); and one reliable merchant, who knew about how it is used, told me that Rībās is extremely sour roots which are found in snowy mountains, being especially plentiful in the mountains of Mayafāriqīn. They are dug up and extracted from beneath the earth and brought to Baghdād and from there to the regions of great cities, and there made into Sharāb

of Rībās. The truth is that it is sour roots, the roots of a herb which they call Rībās.

Dioscorides did not mention in his book the Julbān nor the Bādhinjān among all the foodstuffs; I do not know why he omitted them, so we intend to mention them.

50 JULBĀN: One of the edible leguminaceae; a plant with square thin stems spreading on the ground. It has leaves surrounding the stems, lengthwise, twisting upon the stem; its flower clusters are reddish, and when they fall they are followed by pericarps containing a round whiteish seed, but not truly round. It is sweet, and is eaten raw in the spring; later, it is dried, cooked and eaten. It is a very strong-smelling seed. When someone sleeps on the germinating seed, he loses the power of walking. For it has a peculiarity which is exceedingly harmful to the nervous system. We have seen a person who thereby lost his power of walking and never regained health.

51 BĀDHINJĀN: This is one of the summer vegetables here; it is a shrub about a cubit high, cultivated in gardens. It has a hard stem and branches bearing leaves like those of Qithā' or Banafsaj (Violet), but longer and harder. It bears blooms, reddish and whiteish; then these fall and are succeeded by a round seed, slightly elongated, red, shiny; inside it is a fleshy substance containing bitter-tasting seeds. Upon the berry one recognises a square integument which clings to the head of the berry like the

Juft on the Ballūt (the inner wrapping of the acorn). When ripe it is picked, split into four, its interior stuffed with salt, and left for an hour for its juice to run out, a black juice; then it is boiled in water, removed, and sprinkled with oil, vinegar and Murī (a kind of salty pickling fluid) and used as a relish. Mixture is hot and dry; it heats the blood of one who eats it often, and produces black bile. Good for haemorrhoids, if it is fried in oil and then they are rubbed with that oil. It bears some resemblance to the Hanzal (Colocynth).

(Margin: Dioscorides did compare the colour of one species of Kundur (Frankincense) to Bādhinjān; and it is clear from this that the Bādhinjān was well-known among them and because of its common occurrence he did not mention it; but God knows best).

52 MĀSH: One of the edible leguminaceae. It is a small round grain, bigger than the Fulful, with a green colour, shiny. It has a small "eye", like this, whiteish, thin, like that of the Lūbyā. Its bush grows to a cubit or more. It resembles the Lūbyā in its leaves, and in the covering in which the grain is found. It is sweet to the taste, light upon the stomach, it improves the blood, producing clean blood; it is inclined to dryness. It originates from Yemen.

53 ISFĀNĀKH: A vegetable with leaves like those of Hindabā' (Endive) when it first appears. It is spreading, its leaves are bushy as they come out from the stem. It is harvested and its seeds left on it for the space of three days; it is short-lived and

quickly dries up. It is a light vegetable, good for the fevered, those with hot fevers and much yellow bile. Mixture, cold and moist.

54 TARKHŪN: A vegetable eaten raw like Hindabā' and Khass (Lettuce) at the table. It expels flatulence from the belly, helps the digestion; it has some resemblance to the Hindabā'. Its root is said to be the "excrement of flies". I was told that if anyone hangs up ropes in kitchens and flies' droppings accumulate on the rope, which is then buried under the earth and watered, it causes Tarkhūn to grow up. I was told this by Yaḥyà b. ᶜAlī al-Andalusī. / We have seen in the case of broth made of animals' heads, when the heads were cooked and their water poured into a dunghill of cattle manure, in the place of each drop there grew fungus, that is, ~~bad~~ truffles. I saw this with my own eyes; and the wise men have said thus, about rams' horns, that when they are planted in dunghills, fungus grow there. J.201a

55 HABB AL-ZALAM: It is an aphrodisiac. It is called in India Hanjara; also called Fulful al-Sūdān. Plentiful in Egypt and Qayrawān; has a taste like the Almond. It contains heat and moisture.

56 WARS: A plant which grows in Yemen, in gardens; it has heads like those of cotton, inside which is the Wars, which is a yellow substance used for dyeing as is Zaᶜfrān (Saffron) The poets have spoken of Wars dye. If a man wraps himself in a robe dyed in Wars, and sweats in it, then it is aphrodisiac.

57 KURKUM: An Indian drug, which the ᶜIrāqīs call Kurkum, which is al-ᶜUrūq al-ṣufr (the yellow roots). It consists of hard roots which resemble Zanjabīl (Ginger) except for containing some small pitted holes. If you crush it you see the powder is yellow. The Syrians call it Hurd. It is a constituent of ointments which are good for Jarab (scabies) and it dries up ulcers. Its mixture is heat and dryness. It is said to be the roots of Shajarat al-Khaṭāṭīf (tree of the swallows).

NOTES ON THE SUPPLEMENT

1. HALĪLAJ (or IHLĪLAJ), BALĪLAJ and AMLAJ are often all referred to as Myrobalans, although the Amlaj is said also to be the fruit of the Phyllanthus emblica. Halīlaj: Ibn Juljul deals with the Yellow, Kābulī and Black. Halīlaj in general is the Terminalia citrina. Dozy refers to three types, the citrina, chebula and the aswad or Hindī. Al-Zahrāwī in Maqāla 29 gives as synonyms: هرنك ; هرسوار (Vel. 81a). Ibn Juljul refers to Galen on the subject of its special powers of attraction; this may be from "Natural Faculties" I.xiv, p.83, where it is stated that "everything which exists possesses a faculty by which it attracts its proper quality, some more and some less".

πεπεισμεθα των ὀντων ἑκαστω δυναμιν τιν' ὑπαρχειν, ἡ την οἰκειων ἑλκει ποιοτητα, το μεν μαλλον, το δ' ἡττον.

1d BALĪLAJ: Terminalia bellirica, belleric myrobalans. This is mentioned by al-Ghāfiqī (No. 124) where Meyerhof and Sobhy say it was unknown to the Greeks but that the Byzantines learnt about it; it was used in the Middle Ages in the East and the West.

1e AMLAJ is apparently the fruit of Phyllanthus emblica Willd. Steingass says the amlaj (for Persian āmulah) is the Myrobalan tree, and Shīramulaj its fruit. Shīr Amlaj, as Ibn Juljul says, is Persian by origin. Al-Zahrāwī in Maqāla 29 (Vel. 80b) explains Shīramlaj as Amlaj murabba with milk; which is also the explanation given by Ibn al-Bayṭār. In Maqāla 28 (Seh. 98b) he gives the process of seeking Amlaj in sour milk.

Adams says that the Greeks before the Arabian period knew nothing about the stone fruits known today as the Myrobalans. He describes five species: Citrine, Belleric, Chebulic, Emblic, Indian. The Emblic is the Phyllanthus emblica. (III. 440).

2. KHIYĀR SHANBAR: Cassia fistula L. Al-Zahrāwī in Maqāla 29 (Vel. 77a) says it is the same as Qiṯhā' Hindī - the name given to it by Maimonides (No. 387). In Maqāla 28 (Seh. 87b) he says that its speciality is purging burnt-up bile, and he explains which is the best sort. Ibn Samajūn quotes only Arabic writers and says it is the Indian Kharrūb (Br.48, 137a)

3. TAMR HINDĪ: Tamarindus indica, the Tamarind. It has various names: al-Zahrāwī in Maqāla 29 (Vel. 59b) says that it is also called حمر and المرمر and it is plentiful in Arab lands. In Maqāla 28 he too says that it purges yellow bile and has a fairly strong purgative power (Seh. 87a). Ibn Samajūn (Br.48, 114b) quotes Abū Ḥanīfa as saying that it is from ʿUmān, and some call it حوسر . According to Adams we are "definitely indebted to the Arabs" for this drug. (III. 439).

4. KHŪLINJĀN: Alpinia galanga. Levey (No. 93) says it is the root of Alpinia officinarum, the name taken from the Persian khawlinjān, perhaps originally Sanskrit. Maimonides (No. 398) says it is the Persian كسرودارو.

5. QĀQULLA: Amomum (cardamomum) the Cardamom, of which there are two types, a large and a small, perhaps not always

differentiated by the Arabic writers. Dozy says it is Amomum granum Paradisi, but Issa disagrees. It could be also Elletaria cardamomum; also known as Hāl Buwwā, Hāl, Hayl. Al-Zahrāwī in Maqāla 29 (Vel. 80a) gives various names, including Hāl Buwwā or Hāl as the small Qāqulla. Ibn Samajūn says there are two types, large and small, according to both Isḥaq b. ᶜImrān and Isḥaq b. Suleimān (Br.48, 38b).

6. JAWZ BUWWĀ: Myristica officinalis (Siggel) or M. fragrans (Issa); generally M. fragrans (Levey, No. 226). Nutmeg. The Basbāsa or Mace is its shell. Al-Zahrāwī in Maqāla 29 (Vel. 61a) says that Basbāsa is the bark of the tree of the Jauz Buwwā. Hāl is another name for it although usually this indicates the Qāqulla.

7. KABBĀBA: Piper cubeba. The name is from the Persian Kabābah. Al-Zahrāwī in Maqāla 29 (Vel. 66a) gives as a synonym Habb al-ᶜarūs; so does Maimonides (No. 194). Ibn Samajūn (Br.47, 77a) quotes al-Zahrāwī; he quotes Galen from "the seven" saying that this drug tastes and acts like Fū (Valeriana) but is more gentle. Under Habb al-ᶜarūs he remarks that al-Zahrāwī said this is the Kabbāba. (Br.47, 26b).

8. QARANFUL: Eugenia caryophyllata, Thunb. Clove. The name is also used for Dianthus L., "clove" carnation - as in Lebanon. Or Caryophyllus aromaticus L. Al-Zahrāwī says that in Rūmiya it is قرماقل (Maqāla 29, Vel. 77a)

9. ZURUNBĀDH and 24. ZARUNB: There seems to be some confusion here, among the Arabs themselves and those who have translated the names. Issa gives Zarunb for Amomum zedoaria or Curcuma zedoaria Rosc., which latter Sharaf and Siggel say is the Zurunbādh. Siggel gives various names for Zarunb, none agreeing with those given by Issa. Ghaleb says Zurunbādh is the Zingiber zerumbet or Amomum zerumbet. Issa gives Zarnab as the Yew. Maimonides (No. 81) says that Jidwār or Zedwār is a type of Zurunbādh, which (No. 145) is called by the Egyptians root of Camphor. عرق الكافور . Meyerhof explains this as root of Zingiber zerumbet. Adams describes the Zeduaria and Zerumbeth as fairly similar roots, generally confused by the Arabs (III.456). Ainslie (I. 489) thinks that Zeduaria zerumbet is probably the Judwar of the ancient Arabs who distinguished it from the Zerumbad. They seem to have been very similar roots. Ibn Samajūn (Or. 11a) says the Zarunb is hot and dry; on Zurunbādh (Or. 11b) he quotes, among others, Isḥaq b. ʿImrān who says its substitute is Darūnaj.

10. DARŪNAJ: Doronicum scorpioides. Levey (No. 99) says this can also be D. pardalianches; Ghaleb gives Doronicum in general for Darūnaj, and D. scorpioides for the درنوفق عقربي Al-Zahrāwī in Maqāla 29 (Vel. 62b) states that there are two types, the Khurāsānī and the Shāmī. He agrees that they are good for the heart, and adds that they are used in Musk medicines; the drug is called هدوار .

11. BAHMAN, White and Red: White: Centaurea behen L. Siggel gives Rheum raponticum for White Bahman, but Issa gives other names for the R. raponticum. Red: Statice limonium (Siggel). Al-Ghāfiqī (No. 139) quotes Ibn Riḍwān and "another" saying that there are two types, white and red. Maimonides (No. 50) explains that only the roots are used; the Red does not grow in the Maghrib but in ʿIrāq; the White in ʿajamiyat al-Andalus is called yerba shana يربه شانة . Gl. Man. says that this is not known in the Maghrib, and what is used there is not "true".

12. BŪZĪDĀN: Orchis morio L. Al-Ghāfiqī (No. 140) quotes Ibn Juljul (but not from the Supplement) that it is Indian, imported, little used, and he has seen it sometimes; Ibn al-Bayṭār has this same short passage, as well as quoting from the Supplement. Al-Zahrāwī in Maqāla 29 (Vel. 54b) says it is ذعى الثعلب (which is denied by al-Ghāfiqī and by Maimonides (No. 56).) He says he knows this, for it has numerous varieties and he has himself seen most of them. Adams (III. 459) speaks of the Buzeiden as the Orchis morio.

13. TABĀSHĪR: Concretion of Bambusa arundinacea Willd. Dozy quotes from Ibn al-Jazzār's Zād al-Musāfir that it is "bones of elephant" - he has the word "Tabash", however, a synonym of Ivory عاج so this may have given rise to the confusion.

Ibn Samajūn (Br.47, 32b) quotes only Arabs; but one, Ḥakīm b. Jubayr, quotes Dioscorides and Galen. The word is Persian by derivation from the Sanskrit tavakshīra (Steingass). Maimonides (No. 171) calls it رماد الحية. Meyerhof explains it as a Persian word, meaning "manna of bamboo". Leclerc (Histoire, I. 389) explains that it is from concreted liquid of the green bamboos, but Tamīmī confused it with lichen. II. 232, he names it as one of the substances introduced by the Arabs.

14. FŪFAL and TANBŪL : Betel nut and leaf. FŪFAL is the 15. nut, Areca catechu L. Ibn Samajūn (Br.48, 33a) quotes only from Arabs, beginning with Abū Ḥanīfa who says it is from a palm like that of Nārjīl. Al-Zahrāwī in Maqāla 29 (Vel. 53b) says the Bunduq Hindī is the Fūfal, and he too quotes Abū Ḥanīfa. Al-Ghāfiqī (No. 102) under اطموط says this is not the same as فوفل but is the Bunduq Hindī. He gives the same quotation from Abū Ḥanīfa which Ibn Samajūn has.

TANBŪL: also spelt in other ways, such as تانبول Piper betel. Neither Ibn Samajūn nor al-Zahrāwī mentions it. This leaf and nut were of interest to the Arabs apart from the medicinal uses, such as they were. Ibn Baṭṭūṭa (II. 204) gives a lengthy explanation of how the Indians use Tanbūl and Fūfal, breaking up the nut with the leaf and chewing both. The Indians consider the Tanbūl an important item and a valuable gift.

16. AMĪR BĀRĪS: Berberis vulgaris L. Al-Zahrāwī in Maqāla 29 defines زرشك as الحماض الجبلى said to be Amīr Bārīs and Barbāris. In Maqāla 28 (Seh. 78b) he describes the extraction of its juice. Al-Ghāfiqī (No. 15) says that it is usually spelt امير but this should be امبر . Meyerhof and Sobhy comment that it was unknown to the Greeks, and give the Persian synonym as زرسك . There is the possibility that Ibn Juljul was mistaken here, since in Dioscorides (No. 1. 100 in the edited Arabic version) there occurs the اقسوا قنطس which is explained as الامير باريس which some call قيطر انتيا Ibn Samajūn (Or. 47a) quotes Ahmad b. Da'ūd on Zirishk: it is Persian for Amīr Bārīs.

17. HARNUWA: There is some difficulty here, as some authors say it is the Fulaifila (No. 18) which Ibn Juljul deals with separately. Issa gives both as Capsicum TOURN and also as seeds of Aloëxylon agallochum LOUR., which is repeated by Ainslie (I.480) and Steingass. Commenting on al-Ghāfiqī's No. 261, Meyerhof and Sobhy say Harnuwa is seeds of chillies (Capsicum minimum Roxb.) Al-Zahrāwī in Maqāla 29 (Vol. 81a) says of Harnuwa that the people of Andalus call it ملعله ; it is of the shape of Fulful, yellowish in colour with an aromatic scent. Maimonides (No. 113) says it is called in Andalus فليفلة . Meyerhof comments that Leclerc says the Arabs identified it with Aloëxylon agallochum and thought that "Indian pepper", capsicum, came from India.

The name Ibn Juljul gives for its place of origin appears as

Ṣaqāliba, which certainly is not the coast of Ḥabash. He might have meant Somalia, which is more plausible; or "land of slaves" could have indicated East Africa

18. FULAIFILA: probably the same as the Harnuwa; or could be Capsicum (Ghaleb) or another name for Nāṅkhāh, or fruit of Fanjangusht (Ibn al-Bayṭār). Al-Zahrāwī in Maqāla 29 (Vel. 81a) defines the Harnuwa as the Fulaifila (in Andalus); and Vel. 66a he says that the كف الحزما is said to be العصكس and is the tree of العليفلة

19. MAḤLAB: Prunus mahaleb, or Cerasus mahaleb. Sharaf: wild cherry. Ibn Samajūn (Br.47, 152a) quotes only Arabs, beginning with Abū Ḥanīfa; Isḥaq b. ᶜImrān says that it comes from Azerbaijan and Nihāwand, and there is an Andalusī type. Ibn al-Bayṭār says it is not mentioned by Dioscorides or Galen, and he quotes from Abū Ḥanīfa and from Ibn Juljul. In this latter extract the text has قشر خشبية i.e. a woody bark, not Ethiopian. The comment by Nūr has قشر حسنه

20. JAUZ AL-HINDĪ or Jauz Hindī: Ibn Juljul says this is the Nārjīl or Rānij. Fruit of Cocos nucifera, the Coconut. Al-Zahrāwī gives the different names: Maqāla 29, Vel. 61b, he defines the Bāranj as Nārjīl and Jawz al-Hind; Vel. 63a, Rānij Vel. 70a, Nārjīl is Jawz al-Hind. Issa gives Bāranj as the Persian name; and Ainslie (I. 77) gives Nārjīl as a Persian not Arabic name. Ibn Samajūn (Br.47, 160b) quotes Abū Ḥanīfa on the names: Jawz al-Hind, Bāranj, Rānij. The milk is al-Aṭwāq and is very intoxicating. He describes how it is tapped from the tree.

It can be drunk immediately, or if left until the morning it turns to vinegar. Ibn Baṭṭūṭa describes it at some length (II.207). Ropes are made from the fibres; oil, milk and honey from the nut. The juice is called اطواق (Ibn Juljul calls it طواق) and is extracted from the branches of the fruit be incising and then tying a jar under to catch the juice. Adams says "no mention of it is made in the works of the Greek writers on medicine" (III.438) and Ainslie describes the toddy and vinegar prepared from toddy. (I. 451 and 461)

21. NĀRANJ and LĪMŪN: types of ATRUJ which is Citrus medica cedrata or Citrus medica Risso var. Limonium; it is a synonym of Turunj. In notes to al-Ghafiqi's No. 11, the Atruj is equated with the κεδρόμηλη of Dioscorides.

NĀRANJ: Citrus aurantium (Ainslie, Issa); C. sinensis (Siggel); C. amara (Ghaleb); C. bigaradia (Sharaf). An orange. Issa says the name comes from Sanskrit.

LĪMŪN: Citrus medica Risso (Issa, Siggel); Citrus (Ghaleb); Lemon (Steingass); Lime (Siggel); True lemon (Sharaf).

There seems to be some confusion about these fruits, and one imagines that the Atruj is intended as citrus in general, Līmūn the lime or lemon, Nāranj the orange; there are various types of each, which may not have been clearly differentiated.

22. BUSTĀN AIRŪZ (or BUSTĀN ABRŪZ): Amaranthus tricolor L. Siggel and Issa have the spelling Abrūz, Issa adding Afrūz as a variant. Al-Ghāfiqī has Bustān Afrūz (No. 156); he quotes from Ibn Juljul. The name apparently means "illuminating the garden" in Persian. Ibn al-Bayṭār also quotes from Ibn Juljul. Both these extracts contain the reference to arrow poison, Ibn al-Bayṭār adding another name, طائف . Meyerhof and Sobhy say of al-Ghāfiqī's version that this poison is napel, Aconitum napellus or monk's hood, wolf's bane.

23. BALĀDHUR or ANQARDIYĀ: Anacardium officinale (Siggel, Ghaleb); Semecarpus anacardium (Issa, Meyerhof and Sobhy, Adams, Steingass, Ainslie). Al-Zahrāwī in Maqāla 29 (Vel. 56a) calls it an Indian drug resembling Qasṭal, containing a sticky substance; it is called Anqūrdūn and Qardiyā which mean "like the heart". In Maqāla 28 he describes "honey of Balādhur". (Seh. 101a). Al-Rāzī in his Aqrabadhin speaks of the Maʿjūn of Balādhur, saying "this is the Tiryāq", calling it a wonderful drug and "tested". (MS Marsh 537, 161b). Maimonides (No. 62) says the Balādhur is Angardiyā. Meyerhof comments that the latter name is Byzantine, unknown to Dioscorides; the Arabic-Persian name is from the Sanskrit.

25. YĀSMĪN: Jasminum grandiflorum, J. officinale, or J. sambac. Al-Zahrawi in Maqala 29 (Vel. 63a) says that راراقی is said to be الریق . Ibn Samajūn (Br.47, 49b) says that its Duhn is زنبق and it is good for cold and phlegmy diseases.

He quotes only from Arabic authors, all of whom agree that it is hot and dry. Levey (No. 107) explains Rāzīqī is Jasmine oil from J. officinale or J. sambac, with (No. 129) Zanbaq a Maghribī synonym for it.

26. KHAIZURĀN: Bambusa arundinaceae, Bamboo. Siggel explains it as Elletaria cardamomum, as does Dozy who adds that in Spain Khaizurān baladī is wild myrtle, and Steingass agrees with this. Ibn al-Bayṭār has an article on آس بری which he says is called in Andalus الخيزران البلدى . Under this latter name he says that this name is used in Andalus for the wild myrtle, mentioned by Dioscorides in Maqāla 4. This does not appear in the edition by Dubler and Terés, but in the Paris manuscript, in BM Or.3366 and in Hyde 34, after No. 103 there is مرسينى اغريا Otherwise it could be Dubler's 1.120, مورسنى اماروس which is الاس البستانى

27. KĀFŪR: Camphor from Cinnamomum camphora Nees, or Laurus camphora, which are similar trees. Ibn Samajūn quotes from several Arabic authors, including Khalaf b. ᶜAbbās (al-Zahrāwī) on the fact that it is cold and dry in the third degree (Br.47, 95b). Al-Zahrāwī in Maqāla 29 (Vel. 77b) quotes the Book of Plants that صفور is كافور . In Maqāla 28 (Seh. 81b) he gives the method of making Mā' al-Kāfūr from pine wood, and a method of making it with roses.

28. MISK: Musk, from Moschus moschiferus; the name can also signify the musk-root, Sumbul radix (Sharaf). According to Adams it is "the inspissated secretion of the follicle in the prepuce of the Moschus moschiferus L." (III. 468). Ibn Samajūn quotes from Arabic authors, giving a good deal of information on its places of origin, such as Tibet (which provides the best) and China. He mentions some prices, and describes the frauds sometimes practised. (Br.47, 138b)

29. ᶜANBAR: Ambergris. The name is also used for a plant, Amberboa moschata, and for resin, liquidambar. Ibn Samajūn (Br.48, 7b) quotes a number of Arabic authors, including al-Rāzī, who, as he coments, is the only one to say it "falls from the sky". The others are agreed that it comes from a sea creature. The people who import it from the furthest west, says Ibn Samajūn, report that they sometimes find it in the belly of a huge sea creature called البليئه . It is hot, dry, strengthening.

30. DUHN AL-TURUNJ: Oil from Citrus medica Risso, or the Orange. Turunj is a Persian name, for the same fruit known as Atruj. (No. 21)

31. DUHN AL-KĀDHĪ: Oil of Pandanus odoratissimus L. Ibn Samajūn (Br.47, 94b) quotes Abū Ḥanīfa: it is a palm from ᶜUmān, especially prized for its Duhn; al-Rāzī says that this Duhn is excellent for eradicating leprosy, and for smallpox pustules Al-Zahrāwī in Maqāla 29, on كادى (Vel. 66b) also quotes

Abū Ḥanīfa that it is from ᶜUmān and is used for Duhn al-Kādhī. He also has a definition of Kufurrī: first جفرى (Vel.57b) which is the shell of Talᶜ of palm, called الكفرى and الكافر He explains كفرى and كامور as قشر الطلعة (Vel. 66a).

32. SHIYĀN: or Dam al-Akhawain or Aydaᶜ: Resin from Dracaena draco L. or from D. cinnabari L. "Dragon's blood" (Steingass). Al-Zahrāwī in Maqāla 29 says that Jawzshiyāwishān is the name for Dam al-Akhawain and Shiyān (Vel. 58a) and he defines Dam al-Akhawain as Shiyān and Dam al-Thiᶜbān (Vel. 61b) Maimonides (No. 96) defines Dam al-Akhawain as القاطر called in the Maghrib الشيبان . The Persian is خونشاوشان (Levey, No. 101, says this should be khūn-i-siyāwushān, "blood of the dragon").

33. SANDAL: Three varieties: Red is Pterocarpus santalinus, White is Santalum album, Yellow is S. citrinum. Ibn Samajūn quotes Isḥaq b. ᶜImrān that there are three types, but al-Baṣrī gives only two. (Br.48, 7a). Al-Zahrāwī in Maqāla 28 (Seh. 95) describes Mā' al-Ṣandal as being manufactured in the same way as Mā' al-Kāfūr; and he describes the "scraping" of Ṣandal, which is used for hot swellings.

34. BAQQAM: Red wood, from Caesalpina sappan. Pronounced differently it can refer to other trees or plants, for instance Buqqam or Buqqum is the fruit of Datura metel. Ibn Juljul quotes Abū Ḥanīfa; this reference is found in No. 80 of the edited

portion; he says it is used for dyeing, and comes from India and Arḍ al-Zanj. Al-Zahrāwī in Maqāla 29 says it is an imported red wood, used for dyeing. (Vol. 72b).

35 SĀJ: Tectona grandis, Teak.

36. MŪSH (or BŪSH) DARBANDĪ: from Darband, in Armenia, a plant made into plasters. It can be spelt with M or B: Steingass gives both and says it can be used as an eye salve. Dozy only gives it spelt with B, but he agrees with Steingass that it is a plant, or leaves of a tree, reduced to a plaster and used for swellings. Kuzbara or Kusbara is Coriandrum sativum L. Shayāf in general are eye salves, or "pieces" of medicament (Gl. Man. 1154)

37. MAUZ: Banana, Musa paradisiaca. Ainslie refers separately to Plantain and Banana, saying they were not always differentiated. (I. 316). Ibn Juljul describes it in some detail, so one imagines it was not very well known. Yet the Cordoba Calendar refers to bananas as starting in September; in November the seedlings are covered up to protect them from the frost. The Mauz grew near Granada, according to Himyarī (al-Rauḍ al-Mi°ṭār, No. 19). Ibn Baṭṭūṭa describes it at some length: the people of Mogadishu eat it cooked unripe with fresh milk (II. 183) and at Kilwa the banana and fish are the main items of food (II. 191).

The resemblance to the cucumber is noted by Gabriele Capodilista in his Itinerario in Terra Santa, 1458, who remarked that they are

"like little cucumbers, except that they turn yellow when they are ripe" (quoted by R.J. Mitchell, The Spring Voyage, London 1964, p. 85). Adams says the Plantain was noticed by Theophrastus (H.P. IV, 5) but does not occur in the works of the Greek and Latin physicians (III. 465).

38. KHIYĀR: Cucumis sativus L., cucumber.

Al-Zahrāwī in Maqāla 28 describes the taking of the juice of the sweet Khiyār; its speciality is purging of yellow bile in stomach and intestines, and it softens the chest. Ibn Samajūn quotes only from Arabs, such as Ibn Māsawaih, who agrees with al-Zahrāwī about its uses; Ḥubaish, who says the juice is good for fevers and thirst; and al-Rāzī, who calls it cold, thirst-quenching and diuretic.

39. QURN AL-HITW: unlikely to be a viper's horn. It could be the beak of the Hornbill (Ghaleb). Steingass describes قُنْو as, among other things, "a Chinese bird, of whose bones they make handles to knives, which, being dipped into any victuals suspected to be poisoned, are said to have the virtue of immediately discovering it".

40. YĀQŪT: in general, according to Steingass, Yāqūt is the hyacinth, ruby, cornelian or any precious stone; Ghalab says this is the Corundum. The red Yāqūt is generally agreed to be the ruby; Ghalab says the yellow is the "hyacinth"; Siggel says the Yāqūt is ruby, sapphire, corundum. Probably all these names apply, the red being the ruby and the sinnūrī the sapphire.

41. MĀS: Diamond. Ibn al-Bayṭār quotes from the Book of Stones that there are four types: Indian, whiteish; Maqdūnī, the same colour but larger; Ḥadīdī, iron colour; Qubrusī found in mines. Small pieces are put on the end of lead (instruments) for cutting other stones, and rubies and pearls.

42. BĀZUHR: Bezoar stone, generally from an animal, originally from a goat. Sharaf speaks also of a vegetable Bāzuhr, sometimes found in the nut of Jauz Hindī. The name was sometimes used to refer to an antidote in general, but ḥajar al-Bāzuhr indicates the stony mass known as a bezoar. Al-Zahrāwī in Maqāla 29 says that this is said to be a Persian name, meaning anti-venom; said to be a yellowish-green stone, which is crushed with water and drunk (Vol.56) Also it is a general name for drugs used against poisons (Vol. 83a). Al-Ghāfiqī (No. 185) quotes from the Book of Stones, and gives the extract from Ibn Juljul. Adams says the bezoar stone was described by no Arabs apart from Ibn Bayṭār, but the bezoar in general as an antidote was frequently mentioned (III. 426). Ainslie says this is found in the stomach of an animal of the goat type; it "appears to have been first

used as a medicine by the Arabs". (I. 35)

43. HAJAR AL-BAHT: seems to be the "Eagle Stone" of the pseudo-Aristotle's Book of Stones. Al-Zahrāwī in Maqāla 29 mentions the حجر النسر which eases parturition if tied to a woman during difficult childbirth. (Vol. 59a). Al-Ghāfiqī (No. 108) on the اكتمكث quotes the first part of the extract from Ibn Juljul, and also quotes al-Rāzī. Meyerhof and Sobhy comment that Freytag calls it Indian, although the Persians said it was Syriac; in Greek it is ايطيطيس, ~ ἀέτίτης. Ibn al-Bayṭār on Hajar al-Baht says that according to Ibn Ḥassān (Ibn Juljul) this is حجر الاكتمكث also known in Egypt as حجر الماسكة. De Mély in Les Lapidaires de l'Antiquité et du Moyen Age, Paris 1898, has a section dealing with the Eagle Stone, which was said to make a ringing noise when shaken. This stone was used as an amulet, with an eagle carved on it. In the Glossary of Greek Birds, by D'Arcy Wentworth Thompson, the ἀέτός is explained as the eagle, while ἀέτίτης is the Eagle Stone, said by Pliny to be found in eagles' nests. Thompson says these stones were "geodes" of various kinds, with nodules within, of which the stone was said to be pregnant. Not in Wellmann's edition of Dioscorides, but appearing in Kühn's as "suspectum caput" is a section V.CLX (Vol. I p. 818) on τον ἀέτιτον λιθον: A stone which when shaken gives off a sound, as if pregnant with another stone. It was tied first to the left arm of the pregnant woman, and after childbirth to her thigh.

44. HAJAR AL-KHALL: Vinegar stone, which cannot be contained in vinegar. There are no further details about it, and no-one else but Ibn Haitham appears to have known it.

45. QINBĪL: Mallotus philippinensis, the Kamala. Steingass calls it "an earth which, when baked, becomes yellow ... a small grain like manna falling in Yemen ..." and good as a vermifuge. Issa says the seeds are small, yellowish, like sand - so it could easily have been confused with some sort of yellow earth. Ibn Samajūn (Br.48, 52a) quotes only from Arabs. It is a red earth, he says; found on the ground in Khurāsān. Crushed and drunk it expels worms from the belly. Ibn Māssa al-Baṣrī calls it a substance like very yellow sand; al-Razi says it falls from the sky. Al-Zahrāwī in Maqāla 29 says it is of a reddish colour, brought from مدينة قمره . It is crushed and drunk as vermifuge. (Vel. 75b)

46. AL-JAUR JUNDUM: known as honey earth. This is of Persian origin, and spellings vary, since the K is from the Persian G, and it is uncertain whether it should be Jūr or Jauz or Jaur.

گور گندم ، جوز گندم ، جوز جندم ، جور جندم

Possibly an edible lichen, Lecanora (Meyerhof, Siggel) or Garcinia (Ghalab) while Sprengel quoted by Adams suggests Garcinia (III. 463) and Ghalab has another possible name Arbutus. Ibn Samajūn under كوز كندم says this is the جوز جندم . Isḥaq b. ᶜImrān says it is turbat al-ᶜasal and comes from Barqa and Khurāsān (Br.47, 106a). Al-Zahrāwī in Maqāla 29 explains

Jauz Hundum as turbat al-ᶜasal, a grain like Humus.
Ibn al-Bayṭār says this is a Persian word; also called Shahm al-Arḍ, and in the east of Andalus, turbat al-ᶜasal; here he quotes Ibn Juljul's comments, but adds that it comes from Qayrawan.

47. SHAJARAT AL-KAFF: The name Kaff is given as Portulaca, purslane (Issa, Siggel) or also Vitex agnus castus (Issa). Kaff Maryam in Egypt is the Vitex agnus castus or Anastatica hierochuntia, Rose of Jericho. Here it is said to be a tree, therefore the Vitex. Al-Zahrāwī in Maqāla 29 speaks of كف الحدما which is the Fanjangusht العنكبس or the tree of العليغد . There were several different transliterations of the Persian panj-angusht, i.e. five fingers.

48. AL-MĀHĪ ZUHRA: A Persian name meaning gall (or bitterness) of fish, given to it because of the bitterness of these seeds, which come from Anamirta cocculus (Siggel, Issa, Sharaf, Adams) or Menispermum cocculus(Ainslie, Adams). Steingass explains the name as a poisonous yellow-flowering milk-grass.
Ibn Samajūn quotes from Ḥubaish b. al-Ḥasan that it is the fibre of a tree, which should be used when fresh; if thrown among fish it intoxicates them. Al-Rāzī says it is one of the Yattuᶜāt (Euphorbiaceae) (Br.47, 47a). This name may have been given to more than one plant, used for much the same purposes.

49. AL-RĪBĀS: Said to be a sour vegetable; or (more reliably) very sour roots, found in snowy mountains. This is probably a sort of Rhubarb, Rheum ribes; but the name can be used for

the currant, Ribes. Steingass calls it Sorrel or Rhapontic. Ibn Samajūn (Br.48, 73b) quotes only Arabs, including al-Baṣrī and Isḥaq b. ᶜImrān from whose descriptions it could well be Rhubarb; it is thin, with large green leaves. Ibn al-Bayṭār has the same quotations from al-Baṣrī and Isḥaq; he says it is not found in the Maghrib or Andalus but is plentiful in Syria. Adams says this is Rheum ribes or Rheum raponticum; Rhubarb as a general purgative was definitely introduced by the Arabs (III.478). With this, Ainslie agrees (I. 342-3).

50. JULBĀN: or JULUBBĀN: Lathyrus sativus L., or a species of Lathyrus (Issa, Ghaleb, Meyerhof); Vetch (Meyerhof & Sobhy); Pease (Steingass); Pisum sativus (Siggel). Probably the Lathyrus, judging by the effects which Ibn Juljul describes. Al-Zahrāwī in Maqāla 27 on foods, Section 15, describes five distinct species of Julbān, one being very harmful to the nerves; if used for bedding, it produces confusion of the legs so that the man can hardly walk; this he says is a common occurrence. None of the five species is very good as food. Al-Ghāfiqī (No. 215) gives the extract from Ibn Juljul. According to al-Rāzī it is bad for the nerves. Meyerhof and Sobhy comment that Lathyrus was not mentioned by Dioscorides but has been cultivated in Europe since early Greek times, being the λάθυρος of Theophrastus. Ibn al-Bayṭār quotes from Ibn Juljul but omits this reference to the harmful qualities. R. Stockman in an article in Janus,

1932, discusses leguminous plants and "lathyrism", a type of paralysis which can be caused by poisonous properties in Lathyrus sativus, L. cicera and Ervum ervilia. The first of these is the Greek λαθυρος not mentioned by Dioscorides; but as there is difficulty in exact identification of leguminous plants he may not have distinguished between this and other peas. The Latin names were cicera (L. cicera) and cicercula (L. sativus) but these were often confused. Columella said they were used in Spain as cattle fodder. In Hippocratic writings the disease was traced to Ervum ervilia; from the 16th century onwards, paralysis was generally due to Lathyrus. Small amounts are not poisonous, but at times of famine too much would be eaten, in place of wheat or barley flour, and then these effects would be noticed. This article by Stockman is referred to by J.M. Watt and M. G. Breyer-Brandwijk, in Medicinal and Poisonous Plants of Southern and Eastern Africa.[1] On p.614-5 they say that this disease "lathyrism" is common in North-west and central India and has also been reported from Spain and Syria. The L. cicera from North Africa also has been known to cause poisoning. Normally the seed of L. sativus L. is harmless, but excess amounts may be eaten in times of famine.

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1 Edinburgh and London, 1962

51. BĀDHINJĀN: Solanum melongena L., aubergine or egg plant. One synonym is مغد which is also used for the Mandragora officinarum L., and another is حدق as given by al-Ghāfiqī (No.133). He says it is a Persian name; the Bādhinjān generates black-biled blood, and on the whole is not a good food. Meyerhof and Sobhy comment that this is the Solanum melongena, which the Arabs thought was unknown to the Greeks; but Clément-Mullet in his translation of Ibn al-ʿAwwām (II.236) identifies it with Theophrastus' στρυχνος ἐδωδιμος (VII.7) and Dioscorides' στρυχνος κηπαιος (IV.70) or garden nightshade. In Dubler and Terés' edition this is 4.62, سطروخنس البستانى explained as عنب الثعلب. The origin of the plant and the name are probably Indian. The Sanskrit is vartaku or bartaku; the S. indicum L. is bhantaki, batinghan.

Juft al-Ballūṭ: the غشاء under the bark wrapped around the Ballūṭ itself (Issa, on Quercus ilex). Al-Zahrāwī in Maqāla 29 defines it as the thin shell upon the Ballūṭ, which is under the upper shell (Vel. 57b). In the Leiden manuscript of Dioscorides, Or. 289, the Ballūṭ is drawn with an unusual covering - not the round acorn-cup but one with a point, very similar to the covering of the egg-plant.

52. AL-MĀSH: Phaseolus mungo, Indian peas. Māsh Hindī is a sort of vetch (Steingass). Al-Zahrāwī in Maqāla 26, Section 4, recommends soup of Māsh for coughs and similar complaints; in Section 7 he says it is a suitable food for melancholy and Sawdā'. In Maqāla 27 he describes the Māsh and its method of cooking. In Maqāla 29 (Vel. 75b) he says that the ماش is said to be the Māsh Hindī mentioned by Ibn Juljul. Ibn Samajūn quotes only Arabs (Br.47, 57a) and also gives his own comments: a small grain, green, shiny, with an eye like that of Lūbyā. He adds that the people of Andalus confuse this with the Julbān. Ibn al-Bayṭār's extract from Ibn Juljul begins by saying that this is by some confused with the Julbān. He adds that its root is called الاقطف. Ainslie says that one of the two types of pulse most often used is the mowng of the Hindus, the Arabic ماش.

53. AL-ISFĀNAKH: Spinacia oleracea, Spinach. Al-Zahrāwī in Maqāla 29 simply calls it a "well-known vegetable" (Vel. 52b). Adams refers to Spinach, "the Greeks and Romans appear to have been unacquainted with it" and it was introduced by the Arabians (I. 113).(III. 478).

54. AL-ṬARKHŪN: Artemisia dranunculus L., Tarragon. Al-Zahrāwī in Maqāla 29 says it is said to be the herb of ᶜAqirqurḥā. Maimonides (No. 173) confirms that some say it is the leaf of ᶜAqirqurḥā, but others call it a type of Karafs. Ibn Samajūn (Br.47, 30b) quotes only from Arabs, several of whom

consider it hard to digest, and al-Masih b. al-Hakam says it is the ʿAqirqarḥā.

55. HABB AL-ZALAM: Cyperus esculentus. Maimonides (No. 161) calls this thin roots which resemble the edible Suʿd Kūfī; called Fulful al-Sūdān. Meyerhof says these are sold under the name of Ḥabb al-ʿAzīz. He refers to Dioscorides, I.4 (in Dubler and Terés' edition, this is the سعد which in Greek is the قيفاروس). Ibn Samajūn (Or.3366, 62a) quotes from Arabs. He himself comments that it is brought from the land of the Berbers and wrongly called Fulful al-Sūdān.

56. WARS: A yellow dye from Memecylon tinctorium. It is apparently a name also used for Qinbīl (Issa) or for Kurkum. Siggel mentions it as Flemmingia rhodocarpa, but Meyerhof says this is the Wars which was formerly thought to be Memecylon tinctorium. There seems to be some confusion, probably because the yellow dye could be obtained from a variety of similar plants, and in everyday use the plant of origin was not always specified correctly. Al-Zahrāwī in Maqāla 29 says that it is cultivated in the Yemen, a plant rather like the Simsim; there is also an Ethiopian variety (Vol. 81a). Maimonides (No. 123) says it is a herb which grows in Yemen and produces a yellow dye. The name is also used for a hard stony mass found in the gall of the cow.

57. KURKUM: Curcuma longa, Zingiberaceae (Siggel, Ghalab, Sharaf, Levey; Issa gives also the name هرد). Steingass calls it Saffron. Al-Zahrawi in Maqala 29 says كركم is said to be a name for Za^{c}frān, but "among us" it is al-^{c}Urūq al-ṣufr (Vol.66a) and these he later defines as the large ماميران said to be Kurkum. Ibn Samajūn (Bṛ.47, 104) quotes Ibn Juljul: the people of Syria call Hurd Kurkum, while in ^{c}Irāq it is called al-^{c}Urūq al-ṣufr. Ibn al-Bayṭār quotes from al-Ghāfiqī: this plant is said to be the root of what Dioscorides called خاليدونيون طوماخا . The Kurkum "known here" is from India and is called ورد in Persian. He quotes from Ibn Juljul, with a few minor variants. Lisān al-^{c}Arab (Vol.IV, p.447-8) gives Hird or Hurd as roots used for dyeing, said to be Kurkum.

CHAPTER 7

THE COMMENTARY ON DIOSCORIDES AND IBN JULJUL

Although several authors quote Ibn Juljul as an authority on the names and qualities of plants and drugs, there is one work which is specifically based on his books. This is a 12th-century commentary upon Dioscorides' Herbal as explained by Ibn Juljul (the Tafsīr) and upon the Supplement, though in each vase only a selection from the whole work.

One copy is known, now in Istanbul in the Nuruosmaniye Library (MS 3589). It is described by A. Dietrich in Medicinalia Arabica,[1] among various manuscripts on medical subjects which he examined in Turkish and Syrian libraries. On p. 174 he deals with Nuruosmaniye 3589: 26.1 x 18.5 cm, 130 folios, 25-26 lines per page, Naskhi script, dark brown ink on brown paper, written 667-8 A.H. The collector and scribe is ʿAbd al-Salām b. ʿUthmān b. Ṭurkhān al-Ṭabīb. The Catalogue of the Nuruosmaniye Library lists this manuscript as a Majmūʿa (collection) under the name of Yaʿqūb b. Isḥaq al-Isrāʾīlī, who is in fact the author of part of the collection (f. 26f).

On p. 183 Dietrich describes the relevant portion, folios 80b - 129b, as a Pharmacopoeia based on Dioscorides but with new items; folios 128a - 129b contain the "Anhang" with Ibn Juljul's drugs not mentioned by Dioscorides (the Supplement).

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1 Göttingen, 1966

The author does not give his own name, but he wrote in Marrakesh, in which city he "read under" Abū Muḥammad ʿAbdallāh b. Ṣāliḥ al-Kattānī al-Ḥarīrī al-Shajjār in the year 583 (1187 A.D.) basing his work upon Dioscorides' Herbal and Ibn Juljul's work on it, both of which he describes as being of great use and value.

Dietrich gives the name of this teacher as al-Kutāmī, but both Ullmann[1] and Brockelmann[2] give al-Kattānī. This seems preferable, and the name appears in the Kitāb al-Ansāb of al-Samʿānī.[3] A certain Muḥammad b. al-Ḥassan of Qurṭuba is known as Ibn al-Kattānī, a literary man and a poet, a physician, who wrote on medicine and on literature; and it seems more likely that Abū Muḥammad had a name already known in medical circles.

Ullmann refers to this work as being possibly by Abu'l-ʿAbbās al-Nabātī (Ibn al-Rūmiya). Apparently he and his master ʿAbdallāh ibn Ṣāliḥ were both teachers of Ibn al-Bayṭār. The latter quotes ʿAbdallāh's views and researches several times during the course of his Jāmiʿ, generally in connection with Berber names or customs. It appears that ʿAbdallāh was of a most enquiring mind, and used to find out how the Berbers used the various plants; which is in accordance with his various comments in the Nuruosmaniye manuscript.

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1 Medizin, p. 279
2 GAL, I. 489
3 Facsimile edition, Leiden, 1912. p. 475.

The author states that after he had finished reading Dioscorides' Herbal under the supervision of his master, he next read Ibn Juljul's works (both the Tafsīr and the Supplement), and this seems to have been the accepted practice. For Marrakesh, as for Andalus, Ibn Juljul's work would be of immediate relevance and a useful addition to Dioscorides' Herbal, which seems to have been left in its original state, any new drugs being added in a separate section. The Tafsīr is described here as a Maqāla, implying that it was not of great length.

Then, he tells us, after having studied these books he saw fit to add his own Maqāla, the result of his and his master's studies and research, for the benefit of his contemporaries. He is careful to point out that he intends no criticism of Dioscorides, still the acknowledged master of the subject, for there are many reasons why names or details of plants may vary. He understands the linguistic and botanical problems already mentioned in connection with the translations, for he refers specifically to the change in language since the time when Dioscorides wrote, and to the fact that there may be different species of plants here in the Maghrib: Dioscorides may sometimes have been describing another variety, unknown in the west or now extinct.

His aim, he says, in producing this Maqāla is similar to Dioscorides' own, which was to enable the student to recognise plants

on sight and thus to put them to good use. Therefore it is important that one should study under a reliable master, as he himself did. He is most emphatic about the need to study plants while still growing in their natural habitat whenever possible; only as a last resort should one use books alone, for these give insufficient detail and are liable to have additional material added by scribes. Also, the master must instruct his student all about current local names for the plants, as his own master did for him.

Although the author says he is dealing with all the plant drugs mentioned in the Herbal apart from wines and Adhān, there are only 36 from Maqāla 1, 23 from Maqāla 2, 39 from Maqāla 3 and 10 from Maqāla 4. Generally he gives the Greek (transliterated) name then qāla S(uleiman b. Juljul) wa-huwa .. and the Arabic name or names. Then there is qala ʿA(bdallāh) .. which may be simply wa-ka-dhālika yusammà al-yaum.. or he may give an alternative name.

In the section on Ibn Juljul's Supplement, the author of this work gives only fifteen of the drugs; in five cases ʿAbdallāh states that Dioscorides did mention the drug in question. He may agree or disagree with Suleiman, or he may expand the description in some way, as with Kāfūr. The procedure, again, is to give the name of the drug then qāla S .. followed by

qāla ʿA .. In one or two places where the text of Hyde 34 is not clear, the phrase is completed with the help of Nuruosmaniye 3589; there are some slight textual variations in these quotations.

In the case of both the _Herbal_ and the _Supplement_ it is not clear why so few of the items are dealt with here. In the former, the author may have had access only to an abbreviated version; in his introduction to his _Maqāla_ he speaks of studying the _Herbal_ and the _Tafsīr_, but appears to comment on the _Tafsīr_ only. This text may then contain the genuine _Tafsīr_, which would itself appear to be a shortened version of the _Herbal_ or a commentary upon it. Some of the plants in this work appear in the Madrid manuscript of the _Tafsīr_, whereas some which occur there are not dealt with in this later work, so there is no direct correspondence.

Of the _Supplement_, he may have had only an abridgement, or may have considered that for most of the drugs no further comment nor correction was needed. The complete work may not have been available; or ~~ʿAbdallāh may have used a copy containing only these items which he felt needed further explanation.~~ he is very likely making his own selection, based upon experience and local needs. Sometimes he has to admit he does not know a plant or its correct name, and twice his only contribution is to say that there is "much confusion".

This study of the works of Dioscorides and Ibn Juljul, made in the 12th century, indicates the esteem in which Ibn Juljul

was still held and the value of his contribution to the study of medicinal plants. His Tafsir brought the knowledge of the ancient Greeks within the grasp of his contemporaries in Andalus, and the Supplement put the various newer drugs into the setting of Greek medicine. Both works seem to have been studied with great care and to have been of value to contemporary and later botanists in western Islam.

There follows a translation of relevant portions of the manuscript: the general introduction, and the part which deals specifically with Ibn Juljul's Supplement.

TRANSLATION - NURUOSMANIYE 3589

Dioscorides in his book on materia medica aimed first of all at illustrating each type of simple drug mentioned therein, according to his ability, so as to enable the reader, if he carefully studied each one of these illustrations, to recognise the forms of these species, that is, those forms existent in his time and place, when he observed them, through their correspondence with the pictures of the forms shown.

If anyone wished to gain the benefit of this book, which was the aim of the above-mentioned Dioscorides, it was vital that he should study it under a teacher whose word could be trusted and who was knowledgeable either about all such forms of species mentioned in it as were existent in his time, or about most of them, or else as many as possible. This was so that he could instruct his pupil, during his time of apprenticeship, of what he himself knew of them. If possible this should be while they were upon the plant after it was fully grown, or failing that, then after it had been rooted up from its habitat, which would be while it was still fresh; or failing those alternatives, when it was dry; or failing all three ways mentioned, let him tell his pupil all about it. Otherwise let him instruct him of all he can, in any way possible, and tell him the rest, and collect together for him as much as he can, however is feasible.

Moreover, he should tell his pupil such names as he knows, widely known at the time of his studies, either in the tongue of his own people or in another tongue, or both. To acquire that knowledge from books on his own is very difficult, even though it may be apparently possible for one who pays careful attention to it.

I read this book of Dioscorides under the instruction of the Sheikh Abū Muḥammad ᶜAbdallāh b. Ṣāliḥ al-Kattānī, al-Ḥarīrī, al-Shajjār, God be gracious to him, in his shop in the city of Marrakesh, God guard it, in the year 583.

When I came to the mention of a drug which Dioscorides did not describe in detail but was one which he himself had observed and knew, he dictated to me its description, according to what he had seen. When I came to the mention of a drug which had varieties which he did not enumerate, (ᶜAbdallāh) dictated the varieties which he had himself observed; when I reached mention of a drug which Dioscorides had described, but of which he had perhaps given an inadequate description, or one which was contrary to what ᶜAbdallāh had himself observed, then ᶜAbdallāh's description completed what was lacking from that of Dioscorides; and the things which Dioscorides had said which contradicted ᶜAbdallāh's own observation, he related according to what he had himself observed.

When I came to mention of a drug which Dioscorides had classified and described, but in his description of the "classes" had contradicted ᶜAbdallāh's own observation - that is, he had given the description of one variety to another variety - then he told me that too.

When I came to the mention of a drug which he did not know and had not seen, he said to me "I have not examined this drug and I do not know it". When I came to mention of a drug in regard to which Dioscorides had not omitted anything which ought to be mentioned, then he told me so too. Sometimes he told me stories about some of the drugs, either at first hand or from someone else, which have some profit in the exposition of this book.

Moreover he used to tell me the well-known names given to drugs known to him during my apprenticeship under him, any f.81a whose names he knew in any language whatever. / He used also to draw my attention to any mistakes occurring in the matter of the name of a drug, if another name is used for it nowadays, or something like it. I noted all this down in his presence.

Then after we had completed the book of Dioscorides, I studied under him the Maqāla of Ibn Juljul on the names of the drugs occurring in the book and the one on the drugs supplementary to it, which Dioscorides had not mentioned in this book of his, following the method mentioned in the book of Dioscorides.

When I had finished all that, according to what I said, I saw fit to add a single Maqāla, so that I might give a share in the benefits to be gained from it to those of our brother students who so wished (may God grant us and them success, and give us benefits from what we have learnt).

I saw fit to follow the path of Dioscorides in the arrangement of drug names and maqālas, and not to leave unmentioned a single one of the plant drugs which he mentioned, whether well or little known, except the Adhān mentioned in the first Maqāla, since there is no additional advantage in giving them in this one.

Likewise I have not attempted to deal with any of the contents of the fifth Maqāla, because the herbal drugs he mentions therein are the cultivated and the wild vine, grapes, the vines' flowers, and drinks; and there is no advantage to be gained in mentioning anything from this Maqāla. Therefore I do not treat of the remainder of this fifth Maqāla, of non-vegetable drugs, nor what he said in the sixth and seventh Maqālas which follow it, since this is outside the scope of the present treatise.

I saw fit to translate each of these medicines by the first name according to which Dioscorides rendered it, to facilitate the finding of it in his book.

If it was a drug which the above-named Abū Muḥammad knew, I'll have mentioned it, and I mention the manner by which he recognised it, just as I had taken it down from him.

If however it was something he did not know, I have said so, after what he had to say.

On the whole, I have dealt with all the plant drugs mentioned in Dioscorides' book, according to his arrangement, and I have completed everything which I took down from the aforementioned Abū Muḥammad, in each case according to what I noted down from him.

Because I prefer to be precise, I have decided to make the symbol for Dioscorides' name the form of the first letter from his name, that is, the letter Dāl; I have done the same with the names of Jālīnūs, Suleiman b. Juljul and the above-named ʿAbdallāh ibn Ṣāliḥ.

Because some of those who consult this Maqāla may perhaps think that the aim in presenting it was to refute Dioscorides in respect of a part of what he said in his book, and to suggest that he is at fault in another part, I have been compelled to make some remarks about that, and so close this introduction.

First I should say that if the case is that Dioscorides left aside the explanation of a drug recognisable on sight and with a name widespread in his own time, there is no advantage to be gained over him thereby (i.e. by mentioning it now); similarly there is no censure upon anyone who explained it after him, provided that he recognises it; especially if the situation has changed since his time. On the contrary, it is even more suitable that he should be deserving of thanks. Likewise, too,

it is no criticism that he should not give the full description of some drug/if it was something similar to what was well known in his time and he simply drew attention to it and it was merely necessary for him to note it for it to become immediately recognised. This is the position of anyone who completed it after him. The same must be said about his leaving the classification incomplete.

As for what has been said in a way different from what is found today, in this or other regions, there too he is free from blame in the matter; for it may be that a plant differs according to the different regions. The same is to be said about the divergence occurring in the description of varieties; however, even if this divergence were not in this book occasioned by regions, then we would find the way to clear him completely from error and blame and attach them to some other factor, such as the length of time which has passed since his book was written and the way language change has occurred; and the imagination of copyists of the book for all comparable material that could possibly be added to it. In support of this is the rareness of what is found in his book which needs apology in this way; and the fact that all professional men after him have regularly and repeatedly borne testimony to the excellence of this method in this book.

Also it may be that two drugs differ in appearance but are completely matching in strength and action; it may be that Dioscorides examined only one of them, described it and explained

its action; then that someone after him saw the other one only, and tested its action; thus the opinion comes about that the two drugs are one in every way, and that the one which Dioscorides observed is the one examined by his successor; yet the matter is not so.

It may be possible for whoever wishes to increase these excuses to find some way to do so; as for myself, since my object in producing this Maqāla was only to deny the previously mentioned opinion, I have seen fit to cut short this introduction here, for its aim in general is here finished; and then to commence with mention of the first drug from the first Maqāla of the book of Dioscorides; then similarly all the rest in succession, until my declared aim in publishing this Maqāla is complete, by the help of God most high.

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f. 128a Here ends Maqāla D

Now we shall mention (some) of the drugs which Suleiman says that Dioscorides omitted from his book, among those which are used in the Art of Medicine and are beneficial, or which are not used but which we shall not neglect to mention; the plant drugs about which one could raise a query in any way, or in respect of which one could draw attention to any beneficial aspect in a way that conforms to the purpose of this Maqāla.

Among these: The DARŪNAJ:

1(10) S. said: an Indian medicine, resembles the root of Sausan Asmānjūnī. ᶜA: The Darūnaj is found among us; it is a plant with leaves spread on the ground, like leaves of ? San but it is somewhat yellowish. Animals eat them. There grows out from the middle of the leaf a hollow stem, more or less two cubits in length, and along the length of the stem are a few leaves, about five, at some distance from each other. The leaves on the stem are both narrower and longer than those on the ground; on the tip of the stem is a hollow flower, yellow like a goldsmith's blowpipe. This plant has a root shaped like a scorpion, part of which wastes away every year and propagates

f. 128b itself from the remaining part. / Sometimes the roots increase until they resemble two or three scorpions in one root; and the part of this plant used as medicine is its root.

2(11) The WHITE and RED BAHMAN:

S: Roots, white, twisted, hard and shiny. ᶜA: We have not examined this drug. There is considerable controversy about both its varieties, and we have not been able to check its identity.

3(12) BŪZĪDĀN:

S: Intensely white curling root, hard. ᶜA: There is great argument about this drug also.

4(13) TABĀSHĪR:

S: White substance, with some ashen colour. It is an Indian drug, about which there is disagreement; some say it is burnt elephants' bones, others say it is the roots of the Arabian Qinnā, which is the Indian reed; and this is the correct identification. ᶜA: I have seen someone who burnt bones and sold them as Tabāshīr.

5(16) AMĪR BĀRĪS:

S: A berry like the Nānkhāh, sour tasting, and its flowers are called Zarashka. ᶜA: Amīr Bārīs: there is much argument about it, for S says that the above identification is correct, and others say it is the Sour of the Zaᶜrūr, and others that it is the sweet variety of it, and another says it is the Rībās; that is the mountain Ḥumāḍ; but I declare it is the seed of the plant growing together with the Ḥudud, which resembles the berry of the white grape, and we have mentioned it in the chapter on Lūqūyun which is the Ḥudud, in Maqāla A of Dioscorides' book.

6(18) FULAIFILA:

S: A berry like the Fulful, of grey colour, hot and dry; it is said to be the white Fulful mentioned by Dioscorides.

ᶜA: Fulaifila today here is the name used for the Nānkhāh and the berry of the Fanjangusht.

7(19) MAḤLAB:

S: A round berry with a rind, inclining towards red and black, whose berry has a rough rind, inside which is a white scented kernel, rather bitter. The berry of a tall tree which has a thick wood.

ᶜA: The berry of the Maḥlab is the berry of Fīlūrā which Dioscorides mentioned in Maqāla A.

8(22) BUSTĀN AFRŪZ:

S: A plant which grows to the height of more than a cubit, has spiny stems bearing leaves like those of Qithā', longish. At the ends of its branches are flower heads of a pretty purple colour, like those of Bādrūj. It has no scent. ᶜA: Bustān Abrūz. Someone read out to me from some books that it is the Khrūsūmughālī which Dioscorides mentioned in Maqāla D, and today here it is called Dhanab al-Qitt, and we have mentioned it there.

9(27) KHAIZURĀN:

S: There is an Indian variety and one which grows in Andalus.

ᶜA: Dioscorides spoke of the Khaizurān in Maqāla D, as it is the one which he called Mirsīn Aghryā. S said there that it is al-Ās al-barrī, and D said describing its leaves: it has leaves

like those of al-Ās al-bustānī, except that they resemble the tip of the point of a lance. / f.129a

10(27) KĀFŪR:

S: Indian, and it is the gum of a tree which grows in India, like the Sanaubar, containing Kāfūr which resembles gum and resin; it is gathered and washed in water, distilled, and becomes white as snow although its colour previously was yellowish-red.

ᶜA: I have seen in the mountain of Banī Fīlwāṭ, in its cultivated lands, trees like the Sanaubar, but not it; they resembled the Arz, but were not; they resembled the ᶜArᶜar, but were not; they were very lofty, huge. Their scent was like that of Kāfūr, the taste of their roots somewhat salty. They bear cones long in shape but even, and smooth; in these cones, which are their fruit, is found a gum which produces the scent of Kāfūr, of which one may gather from a single cone as much as a quarter of an awqiya. In the place mentioned, I saw some Berber women stripping off the bark of this tree, and mixing it with the dye with which they were dyeing water skins. So I asked them about that, and they told me that the water-skin which was dyed with this bark together with the dye-stuff itself makes the water exceedingly cold, and it stays like that until it falls to bits. Then I wished to distil wood of this tree, for a purpose which occurred to me; but it began to be the case that every time I lit the fire under it, I was overcome with shivering from the distillation vapour; and because of all that I inferred that this tree is the tree of Kāfūr.

11(47) SHAJARAT AL-KAFF:

S: Istīfan did not mention it in his translation of book D at the end of the fourth section, and he depicted it among the varieties of poisons. It is a tree with a root like the human hand, with a palm and five fingers, and is known as Kaff Maryam. Ṭāriq the herbalist among us in Qurtuba knows it, and he is the first who made it known. Women make pessaries from it to help in childbirth. °A: We do not know a plant with a root such as he describes, except the one which we have mentioned among the types of Khiṭmī, in Maqāla J. But that is not a poison, but is an aphrodisiac, and women also use it for what he mentioned. As for Kaff Maryam, the name is used here today for the leaves of Banṭāfilun and for another plant which is brought from the desert and is used by women to ease childbirth.

12(48) MĀHĪ ZUHRA:

S: It is a herb which is beneficial for the disease of gout; it is the bitter barks of the root of this herb, and this name is only borrowed from the gall (bladder); the true meaning of the name in Persian is gall of the fish. °A: Others have given this name to the leaves of the °Ainūr which is known here today as ? Shīr Bālis. It is bitter tasting.

13(50) JULBĀN:

S: When someone sleeps on the germinating seed of this plant, he loses the power of walking, because it has a property whereby

it is exceedingly harmful to the nerves. We have seen someone who
f.129b lost his power of walking and never/regained health. ᶜA: This plant he speaks of is a variety of Julbān which in Andalus is called Ḥanjara; the people of Buṭrafās call it Karfala, derived from its action upon the legs, in their language. Some of the Berbers also call it ? Ankankara. Its flowers are red, its grain triangular; when one eats it constantly, it also has a narcotic effect. We have tested that, with the grain and other parts.

14(56) WARS:

S: A plant which grows in Yemen, cultivated; it has heads like those of cotton, in which is the Wars which is a yellow substance used for dyes, in the same way as Zaᶜfrān. ᶜA: The name Wars is also used for what is found in the belly of the cow, which is the best known usage here. Some apply this to the plant which in Andalus is called al-Līrūn (Reseda) which dyers use.

15(57) KURKUM:

S: It is an Indian drug, called by ᶜIraqis Kurkum, and it is al-ᶜUrūq al-ṣufr. ᶜA: Dioscorides did mention this medicine in Maqāla B and called it Khālidūnyūn; we have spoken of it in its chapter; also Suleiman mentioned it saying: Khālidūnyūn Tē Māghā: it is Shajarat al-khaṭāṭīf according to al-Ṣiqillī, may God be merciful to him.

NOTES ON NURUOSMANIYE 3589

(The numbers refer first to the order of the drugs in Nur.3589 and secondly to the drugs to which they refer, from Hyde 34)

1(10) DARŪNAJ: This extract is quoted by Ibn al-Bayṭār, more or less verbatim; but where Nur. has "like leaves of ?Sāṇ" he has al-lauf, Luffa, a gourd (one of the Cucurbitaceae) with large yellow flowers, heart-shaped leaves, and cucumber-like fruit. Ibn al-Bayṭār adds that this plant is plentiful in the mountains of Beirut, known as العقيربة and also in the mountains of Andalus. Dozy quotes this extract from Ibn al-Bayṭār under his entry for مِنْفَخَة with the meaning of مِنفَخ "un instrument pour souffler".

5(16) AMĪR BĀRĪS: Lūqūyun - this is the Ḥudud. In Dubler and Terés' edition (1.107) لوقيون and Hyde 34 لوقيُون is the Ḥudud or ᶜAwsiṯ, Lycium afrum, box thorn. Rībās, No. 49 in the Supplement, is said to have leaves resembling those of Ḥumād. Dubler and Terés' No. 1.100: اقسوا قنطس is الامير باريس

6(18) FULAIFILA: A small pepper-like berry, probably hard to identify precisely. Fanjangusht is the Vitex agnus castus, "five fingers" in Persian. Nānkhāh is Cumin.

7(19) MAḤLAB: Dubler and Terés' No. 1.103: ضيلورا is given as الشمشال resembling the ḥinnā tree, with fruit like that of Maṣṭikā. It is Phillyrea latifolia, Oleaceae.

8(22) BUSTĀN AIRŪZ: Khrūsūmūghālī: Dubler and Terés' No. 4.47 is خروسوقومی which is Bābūnaj Jabalī, and also occurs in the Tafsīr, Madrid MS. 233, No. 7. It is Dioscorides' IV.55, Χρυσοκόμης. 4.48 is خروسوموغوش, not translated into Arabic but the equivalent of IV.56 Χρυσογονον.
In Hyde 34 this is spelt the same way as it is in Nur., خروسوموحالی. Dhanab al-Qitt is Chrysocoma L.

9(26) MIRSĪN AGHRYĀ: occurs in the Nur. MS of the Tafsīr, in Maqāla 4; it is not in the edition of Dubler and Terés', but appears in the Paris MS and in Hyde 34, after 4.103 in the edition: P: مرسینی اغریا ; H: فرسالیون اغریا
It is however not translated. The BM MS of Dioscorides has on f. 155a: مورسینی اغریا. This would be the IV.146 μυρσινη αγρια.

10(27) KĀFŪR: Here the author gives his teacher's observation in some detail.

11(47) SHAJARAT AL-KAFF. KAFF MARYAM: There is quite a bit of confusion here, for a good many trees have leaves or roots which could be thought to resemble a hand. Khiṭmī is a mallow, and Buntāfilūn is Pentaphyllon, i.e. five leaves.

12(48) MĀHĪ ZUHRA: °Ainūr and ? Shīr Bālis have not so far been traced.

13(50) JULBĀN: a variant name is فرغاله according to Issa. Ankankara, the Berber name, has not been traced yet.

14(56) WARS: الليرون is Reseda Ascolaich or R. luteola, used for dyeing. Maimonides also speaks of Wars as being something in the belly of a cow.

CHAPTER 8

Al-ZAHRAWI

Abu'l-Qāsim Khalaf b. ᶜAbbās al-Zahrāwī, the surgeon and physician, from Madīnat al-Zahrā', is better known than Ibn Juljul; but despite his reputation in his own and later periods very little is known for certain about his life. Such information as is available has been presented in the study by S.K. Hamarneh and G. Sonnedecker, A Pharmaceutical View of Abulcasis al-Zahrawi in Moorish Spain.[1] The authors give an appreciation of al-Zahrāwī's work, supplemented by an edition and translation of part of his Maqāla 25 on the Adhān (essential oils) with explanation and commentary. They give a brief outline of his medical compendium, al-Tasrīf li-man ᶜajiza ᶜan al-ta'alīf, which covered the entire range of medical knowledge and practice of his time.

They discuss various theories about al-Zahrāwī's life, and consider that he was born in Madīnat al-Zahrā' after 936 A.D., that he lived and worked there and died early in the 11th century. The date of his death is deduced partly from the reference by Ibn Ḥazm (994-1064) that he had seen al-Zahrāwī; the emphasis on this is taken to imply that the latter was a good deal older and had died a long while before Ibn Ḥazm wrote.[2]

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1 Leiden, 1963

2 Ibn Ḥazm as quoted by Ibn Bashkuwāl, Kitāb al-Ṣilah, ed. F. Codera, Madrid 1882-3.

Again, Ibn Bashkuwāl states that al-Zahrāwī died after the year 400 (1009/10 A.D.) which is taken to mean soon after that date.[1] It is unlikely that he survived the sack of Madīnat al-Zahrā' in 1013, and one hopes that he died peacefully before that terrible event.

Despite the scarcity of information, one can gather from al-Zahrāwī's own writings that he practised medicine for many years, and was skilled in every aspect of the art. It seems that he had studied under a worthy and conscientious master, one who was himself much concerned with the welfare of his patients and had a great interest in the correct processing and compounding of drugs, and presumably in surgical procedures. He may however have studied pharmacy and surgery under different teachers. He is outstanding in both fields, and his enthusiasm and skill must have been well directed in his early days. If he practised for so many years before collecting al-Tasrīf, as we gather from his frequent mention of the years of experience he has had, he must have begun his studies while quite young. He seems also to have had a sound religious training as a youth, for his references to the duties of the physician and his responsibilities towards his patients give the impression of sincerity. He considers religious knowledge essential for the physician, but

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1 Kitāb al-Ṣilah, Vol.I, p. 166, No. 368

does not make the same claim for philosophy. This may be due not so much to his own convictions as to the fact that, at this period, philosophical studies were discouraged, and a philosopher would be suspected of heresy. It was about this time that al-Manṣūr ordered the destruction of works of philosophy and similar subjects.

He might have travelled in North Africa while acquiring his excellent knowledge of herbs, although this would not have been essential since Andalus was so well supplied with plants and herbs of all kinds, while eastern drugs were imported and generally available. One wonders whether he met Ibn Juljul, or knew only his writings, from which he quotes frequently when dealing with drug names; the two were studying the subject at much the same time.

Hamarneh and Sonnedecker refer to the opinions of various writers that al-Zahrāwī was a court physician to the Umayyad caliphs;[1] but, as they point out, there is no confirmation for these views in the writings of his contemporaries or biographers or indeed of al-Zahrāwī himself. Ibn Abī Uṣaibi'a specifically speaks of him as a man of learning and religion, an astute and experienced practitioner who was knowledgeable about drugs.[2]

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1 op. cit., p. 17-18
2 'Uyūn, Vol. II, p. 52

In this connection, it is remarkable how many physicians were described by their biographers as "appointed at court", and one gathers from the omission of any such reference that al-Zahrāwī was not. The fact that his own book is not dedicated to any patron is significant. We know, however, from his surgical section that he treated servants of the court. He seems to have busied himself with treating the general public, carrying out his own researches and teaching his students, of whom he probably had quite a number.

Al-Zahrāwī's great medical compendium al-Taṣrīf deals with every aspect of medicine; parts of it were probably written over a fair period of time, but the whole collected together after many years' practical experience. He addresses the book to "my sons", meaning those who came after him in the profession; but occasional remarks seem to indicate that he hoped some parts would be used by others who would refer to the work intelligently as need arose. There are certain things which should be dispensed only by an experienced physician; but matters of diet are of concern to all, and a knowledge of diet therapy is of practical use.

On the question of al-Zahrawi's writings, Ibn Abī Uṣaibi'a refers to "several works" of which "the most famous" is Kitāb al-Taṣrīf.[1] It appears that he speaks here of individual Maqālas,

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1 'Uyūn, Vol. II, p. 52

which would have been written as the need arose and certainly not all at the same period; these as a whole would then constitute the "most famous book". It is unlikely that al-Zahrāwī wrote any other works than this one which is specifically intended to be comprehensive and independent, and the parts of which are much interrelated. It is just conceivable that he may have written learned specialised treatises for the benefit of his colleagues, which treatises might themselves be included among the ta'ālīf which al-Tasrīf was intended to supersede. There is no mention anywhere of another work by name, so we can safely assume that this is the only book written by al-Zahrāwī.

The title has given some difficulty to translators, and examples are given by Hamarneh and Sonnedecker who do not in fact translate it directly.[1] One translator whom they do not mention is L. Leclerc, who discusses al-Zahrāwī's contribution to European medicine by way of the Latin translations made of parts of his work.[2] For the title, Leclerc himself chooses: "La Pratique (ou bien présent) à qui ne peut recueillir (une collection médicale complète)" He quotes other previous suggestions: by Pétis de la Croix, "La Pratique pour ceux qui ne savent pas composer les remèdes"; Channing, "Collectio in illius usum cui desunt aliae compositiones";

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1 op. cit., p. 36-7
2 Histoire, Vol.II, p. 437-457

Wüstenfeld and Fluegel, "Concessio ei data qui componere non valet"; Hebrew Catalogue, "Le livre des manipulations, pour celui qui est incapable de composer des recettes". Ullmann gives "Zurverfügungstelle ... "[1] and Sarton refers to the "Vademecum".[2]

G.L. Lewis gives what he calls a literal though inelegant translation, "The Book of enabling him to manage who cannot cope with the compilations".[3]

The point of the title is, as al-Zahrāwī states in his book, that it should be a comprehensive, and easily comprehensible, guide to the practitioner.[4] There should be sufficient detail to provide all that the physician needs without recourse to the weighty complicated volumes produced by other writers, but nothing vital is omitted for the sake of brevity. The aims he speaks of at the beginning of the book are conscientiously implemented throughout al-Taṣrīf, and the work earned him a reputation for theoretical and practical skill in medicine which has lasted from his day to the present. He gives clear instructions and descriptions, new and improved recipes and prescriptions as well as old tested ones, with the explanation

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1 Medizin, p. 149 2 Introduction, Vol. I, p. 681
3 Forthcoming edition and translation of the surgical section of al-Zahrāwī's work, by G.L. Lewis and M.S. Spink, Introduction, xiii
4 Zahrāwī's own introduction - MS Besir Aga 503, f. 1-2

of any points which might not be understood, but there are no irrelevant digressions.

Al-Zahrāwī seems to have been impelled to embark upon the compilation of al-Tasrīf partly by his concern for the state of medicine and surgery at the time, and his consequent anxiety to produce a compact and authoritative book for the guidance of physicians. In 10th-century Andalus the medical practitioner needed an encyclopaedic knowledge of his subject as well as thorough training in the practical details.

One wonders how he managed to find the time to process his drugs, instruct others in the procedures, and to treat patients. Doubtless so busy a man must have had assistants to help, but these would have been men trained by himself. One particular advantage of supervising the manufacture of his own medicines must have been that he would be able to gauge the exact strength and thus the quantity needed in each prescription, and he would have no worry about the harm caused by adulteration of drugs by some unscrupulous pharmacist. Although in Andalus, as in the eastern caliphate, there were men who specialised in the gathering and preparation of herbs and drugs for use by physicians, al-Zahrāwī presumably preferred not to rely upon these men.

Even granted the amazing energy and output of Arabic writers, al-Zahrāwī must have given a great deal of time to the compiling of al-Tasrīf. He is said to have taken some forty years in producing the whole work, so the complete al-Tasrīf was perhaps

compiled after he had retired from full-time practice.

It is clear from al-Zahrāwī's very detailed instructions that he expects those studying his work also to carry out these procedures, which they would not necessarily know about already. Some he had learnt from his own master or masters, and in Maqāla 28 he twice refers to some process which he learnt not from books but taqlīdan, by copying a previous method; this he calls a "secret of medicine", learnt by personal transmission.[1]

Technical details occur frequently in al-Zahrāwī's work. Although he is best known for surgery, he is equally competent in the preparation of drugs of all kinds and in the uses to which they were put. In this context, we are considering selected Maqālas: 24 on Marāhim (ointments), 28 on preparation of raw materials for medicinal use, and 29 dealing with names of drugs in the various languages, substitutes, stability, and technical terms. Closely connected are 26 and 27, on diets and foods, 4, on the Tiryāq (theriac), and 25 on Adhān (oils).

Al-Zahrāwī takes care to explain details and to discuss reasons and variations where relevant. In this practical aspect he differs from many other writers who would give the description of a drug, its place of origin and similar details, but would not

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1 MS. Şehit Ali Paşa 2093, f. 91a and 91b

as a rule give instructions on how to prepare it for use. For instance, al-Kindī wrote on the distillation and preparation of certain items, but generally assumed that drugs were available ready for use. He described the preparation of sweet scented oils and salves, distillation of aromatic waters, and the making of substitutes for expensive rare drugs, in his Kitāb Kīmiyā' al-ʿiṭr wa'l-tasʿīdāt.[1] Neither in this work nor in his Aqrābādhīn[2] did he have nearly as many recipes as are given by al-Zahrāwī.

All the sections of al-Taṣrīf are valuable, but some have received more attention than others; for a long while it was even thought in the west that the work consisted only of Maqālas 1, 2, 28 and 30, since these were translated, studied and commented on.

Al-Zahrāwī, like all the Arabic authors, quotes frequently from the "Ancients", especially Hippocrates, Dioscorides, Galen and Paul of Aegina; he refers also to his Arabic predecessors. At the very beginning of his book, he quotes al-Rāzī on the aim of medicine, which is the preservation of health and its restoration when disturbed; and he next quotes Hippocrates' famous saying "Life is short, the Art is long .." [3] Whether he refers more to the Greeks or the Arabs in any particular Maqāla depends upon the subject he is discussing.

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1 ed. K. Garbers, in Abhandlungen für die Kunde des Morgenlandes, Leipzig 1948

2 M. Levey, The Medical Formulary or Aqrābādhīn of al-Kindi, Wisconsin, 1966

3 MS Beşir Ağa 503, f.1

Hamarneh and Sonnedecker in their evaluation of al-Zahrāwī's work compare it to that of two other writers: Paul of Aegina, a 6-7th-century Byzantine Greek, and al-Majūsī, a 10th-century Arabic physician who worked in ᶜIrāq, a slightly older contemporary of al-Zahrāwī. In the present work the same two books have occasionally been used for reference and comparison: The Seven Books of Paulus Aegineta, translated by F. Adams, London 1844-8; and Kāmil al-Sināᶜa al-Ṭibbiya, by ᶜAlī b. ᶜAbbās al-Majūsī, edited Cairo 1294/1877.

Manuscripts of al-Zahrāwī's work have been preserved in Istanbul, India and in various European libraries. The only two complete copies of the whole al-Taṣrīf are in the Süleymaniye Library in Istanbul (Beşir Āga 502 and 503). Other manuscripts contain only parts of the work, the most numerous being copies of Maqālas 2 and 30. The latter was translated into Latin, and had a great influence on the later development of surgery in Europe. This has recently been edited and translated into English, with a commentary, by G.L. Lewis and M.S. Spink. Maqāla 28 was translated into Latin under the name of Liber Servitoris in the 12th century, and into Spanish during the 16th century.

The present whereabouts of manuscripts extant in libraries are well documented in the book by Hamarneh and Sonnedecker, so in the present work only the relevant ones will be referred to, as well as one copy of Maqāla 28 not mentioned by them.

For Maqāla 24 on Marāhim, MSS Beşir Āğa 502 and 503 have been collated with MS Şehit Ali Paşa 2020 and a microfilm of Vienna MS 211D. Bankipore MS 16 cannot be consulted as this library apparently has no microfilm machine in working order and the librarian reports that "the mamuscript is not suitable for photocopying".

Maqāla 28 has been taken from MS Şehit Ali Paşa 2093, Istanbul (a collection of medical texts, not mentioned by Hamarneh and Sonnedecker, which contains no further works of al-Zahrāwī); this has been collated with MS Beşir Āğa 503 and a photocopy of MS Veliyüddin 2491. No copy has been obtained of MS Ali Emiri Arabi 2854. Variations are only slight in the copies examined so far.

For Maqāla 29, MS Veliyüddin 2491 has been consulted.

CHAPTER 9

AL-ZAHRAWI'S WORK ON MARAHIM (OINTMENTS)

Al-Zahrāwī devotes a whole Maqāla, 24, to the subject of Marāhim (ointments), and goes into great detail in his description of the preparation of basic recipes and the uses of each medicament. He begins by comparing these with the Admida (dressings) described in Maqāla 23, which are for more generalised use all over the body, while Marāhim are more specifically intended for wounds, abcesses, ulcers and similar troubles. He divides the Marāhim into two main types, those which mainly "loosen" تحلل , or "tighten" or strengthen, تقوى while some are mid-way in "power". The different types are suitable for the different kinds of body. Altogether al-Zahrāwī gives some eighty-six recipes for Marāhim, and in a few cases goes into considerable detail about the uses and benefits.

He begins with the Palm Ointment of Galen who, in his opinion, is the greatest authority on the subject; it is interesting to see that al-Zahrāwī specifically states that he is writing here only for those who are already conversant with Galen's works, and who know about the Mizāj and the powers of organs, and understand the "times" of illnesses. This Maqāla assumes that the reader is well acquainted with the basic principles, and it contains prescriptions to be dispensed by the trained physician, not remedies to be attempted by the amateur.

The Palm Ointment of Galen is described in great detail, for, as al-Zahrāwī says, he is copying down all that Galen said, since there is little scope here for improvement or addition. He gives the variations appropriate for different cases, with modifications according to the time of year, the circumstances and nature of the patient, with instructions for the preparation and application of the medicament. Subsequent ointments are not described so fully, although some have a large number of ingredients. This first one is the exemplar, and the basic methods of making an ointment are given, so al-Zahrāwī does not repeat them in other prescriptions. Several others are derived from Galen, including one which he is said to have composed for a nun (69).[1]

Other Greek ointments are the Diyākhīlūn (7, 85, 86) and the Bāsilīqūn (39, 40). Of the former, in Greek διαχυλων, one is taken from Yahyà b. Māsawaih and one from al-Rāzī; the latter is the Greek βασιλικον or τετραφαρμακον (a kind of plaster).

Three other prescriptions come from al-Rāzī; four are from Ahrun the priest, one from "Sāduq"; one is said to have been found in "the temple of Solomon son of David, where it was carved on white marble" (57). Several ointments are simply described as the Black, the Green, the White, or by the name of the chief ingredient, or by the name of the illness for which they are recommended. One, mentioned twice, is that called "The Twelve, or of the Apostles".

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1 See list, p. 165

Ingredients are of animal, vegetable and mineral origin. Among the most common bases are Zeit (oil) and Sham^{c} (wax). The Adhān are often included, and al-Zahrāwī assumes that they are readily available; they are not described in detail here, since this has been done in Maqāla 25. Plants are used a great deal, whether their gums, seeds or juices; so are rose water and extracts from roots. Minerals include Mirtak or Murdāsanj (litharge), Isfīdāj (white lead) and Natrūn (natron).

Animal products are mostly fats, e.g. of calf or goose or swine. There seems to be no objection to using the fat of swine, which animals were kept in Andalus, mostly by the Mozarabs. Its inclusion in medicaments for external use was evidently allowed even for Muslims.

Some prescriptions, if they vary from the type described in (1), do include careful instructions about procedures. Others simply give the list of ingredients and either a very brief sketch of the manufacturing process or the directive to cook "as in the last ointment" where the basic recipe is given. Where there is any particular point to watch for, al-Zahrāwī comments on this: for instance in (76), one has to cook until the ointment turns black, for this is the sign of its readiness, نضج. In (3) and (4), one has to cook until it becomes the thickness of a Marham ثخن مرهم ; or until it reaches the consistency قوام of a Marham, in (32) and (48); (86) has to

be cooked until it is "thick as honey", and the Yellow Ointment, (17), until it is the colour of apples.

Precise quantities are given, except where such things as oil and water are concerned; these in particular may vary in the amount needed according to the season: one uses more oil in winter. In (80), oil of unripe olives is included in winter, but Duhn of Banafsaj (Violet) in summer. In (8A) one must add "as much as one needs" of vinegar, and the same instruction for Duhn of Ās (Myrtle) occurs in (35). Water used in (27) will vary: cold in summer, tepid in winter.

Although the fullest description of any ointment is that of the Palm Ointment, together with its uses and administration, in other prescriptions al-Zahrāwī quite often gives the order in which drugs must be mixed. Generally the gums, the moist and the dry ingredients have to undergo some separate process before being all mixed in together. Most items have to be pounded for a long time until very fine.

In other prescriptions than (1), he gives the method of adapting the basic ointment: in (5), he explains how to adapt it for "soft" bodies; and (6), the "original" Green ointment, can be altered as the need arises. In (61), he speaks of adaptation "according to the opinion of the doctor".

(19) has to be cooked in earthenware, and (22) has to be stored in lead; but on the whole in this Maqāla there is little specific mention of types of utensils and containers to be used.

Application of ointments is generally with a cloth, in (59) a linen cloth; for (21), one can use a feather or leaf, but for applying to the pustules of smallpox a cloth must be used.

Al-Zahrāwī emphasises in this Maqāla the need to use one's own judgement and experience and to adapt a prescription as appropriate for the particular type of body or illness; but when describing Galen's Palm Ointment he says that there is no point in trying to improve on the prescription as it stands.
It is apparent throughout the Maqāla that the author is a practising physician, referring to his own experience. The prescriptions are taken from a variety of sources, and al-Zahrawi adds his own comments and modifications.

If we compare al-Zahrāwī's treatment of the subject with that of Paul of Aegina and al-Majūsī, we find that he goes into more detail and has a greater number of prescriptions than either.

Paulus deals with ointments and plasters, and includes a prescription for the Diachylon - which, says Adams, is much the same as Galen's; he also has a "Basilicon or Tetrapharmacon". He divides his plasters according to types of ingredients: earthy, oily, or made mainly from juices or seeds; and again classifies them according to their purpose: for healing wounds, making flesh grow, or soothing, dessicative or suppurative. He has a Palm Plaster, which is to be stirred with palm branches while it is cooked; one copied from Galen; a Rue plaster; some for fractures.

Oils and ointments he classes together; "Restorative Ointments" or Acopa are treated in Book VII, Chapter 19. These oils and ointments may be simple or compound, the latter being made chiefly of aromatic herbs, boiled in the oil, with or without added juices. In Book IV Paulus deals with ulcers and here he gives medicaments for them, including Plasters.

Al-Majūsī has one chapter dealing with Admida (dressings).[1] He has no general description or discussion of the subject, but begins with the first prescription. The first few seem to be of Greek origin, and two are from Ḥunain b. Isḥaq. In all there are 44 prescriptions for a Dimād and one for a Talà; mostly they are named after the complaint for which they are recommended.

A few chapters later, al-Majūsī deals with Marāhim and Talà for wounds:[2] there are 24 Marāhim, mostly of fairly straightforward type. In one ointment, he includes large thick palm leaves, stripped, but this particular one is not named after Galen nor palms. He gives a recipe for the Bāsilīqūn, and the smaller Bāsilīqūn; one for the Diyākhilūn; and there is one called Ointment of the Apostles. Otherwise his prescriptions are mostly named after their chief ingredient. Altogether his treatment of the subject is less extensive and detailed than al-Zahrāwī's.

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1 Kāmil, Vol. II, p. 580-584
2 Vol.II, p. 602.

It is also interesting to compare the chapter on ointments given by ʿAlī b. Rabban al-Ṭabarī, whose Firdaus al-Ḥikma was completed in 850, some hundred years before al-Zahrāwī and al-Majūsī wrote.

Al-Ṭabarī's chapter on the Adhān[1] contains a number of recipes for compound Adhān, not very carefully described. On p. 495 he begins his chapter on the Marhamāt. He gives very detailed instructions on the quantities and types of ingredients, which are numerous in some of the prescriptions, and on the order in which they are to be processed; sometimes there are several successive cookings. Twice he says that an ointment is "tested" - مجرب. One is called Marham al-Rusul (of the Apostles); one is the Marham Bāsilīqūn; one is said to have been used by Shirīn the wife of Kisrà; and the final one contains incantations, unusual in an Arabic book of medicine. Another is called "of Abī Miḥjan" ابی محجن said to have been provided by a caliph for the army, for the treatment of sword wounds, fractures of the skull and all other kinds of wounds.

The table shows the comparative prescriptions of Paulus, al-Ṭabarī, al-Majūsī and al-Zahrāwī for the Bāsilīqūn and Diyākhīlūn ointments, also Ibn Sīnā's for the former. The Arabs when they borrowed prescriptions from the Greeks usually followed them quite closely. Al-Zahrāwī does not aim at originality here but is reproducing well-tried classic remedies which all should know.

1 Firdaus al-Ḥikma, ed. M.Z. Siddiqi, Berlin, 1928, p. 488

BĀSILĪQŪN

	Resin	Wax	Pitch	Oil	Galbanum	Arsenic	Suet/Fat
Paulus	X	X	X				X
al-Ṭabarī	X	X	X				X
al-Majūsī		X	X	X	X	X	
small B.	X	X	X	X			
al-Zahrāwī, 39	X	X	X	X	X		
" 40	X	X	X	X			
Ibn Sīnā	X	X	X	X			

DIYĀKHĪLŪN

	Litharge	Oil	Linseed	Mallow	Fenu-greek	Plantago
Paulus	X	X	X	X	X	
al-Majūsī	X	X	X	X	X	
al-Zahrāwī, 43	X	X	X	X	X	X
" 71 (al-Rāzī)	X	X	X	X	X	
" 85			X	X	X	
" 86 (Ibn Māsawaih)	X	X	X	X	X	X

The last-named, 86, also contains Cress, Tragacanth, Dolichos, Fat and other ingredients.

There follows a translation of the beginning of the Maqāla, the author's introduction to the subject and the description of the Palm Ointment taken from Galen. This includes modifications according to the illness being treated, for instance the stage which the swellings have reached; the powers accordingly needed; the proportions of Duhn to ointment when the two are to be mixed. He mentions goitre, fractures, dislocations, and various types of hot swelling. We see the surgical and pharmaceutical interests of the author combined here, when he discusses the specific complaints and also the various plant juices which can be added to the base ointment as need arises. Although these prescriptions are taken from Galen, we can be fairly sure that al-Zahrāwī was only handing on what he had himself tried and tested during his years of practice.

There follows then a list of the names and descriptions of the ointments in this Maqāla, and a list of the principal plant drugs included among the ingredients.

CHAPTER 10

THE MAQĀLA ON MARĀHIM

J.4846 In the name of God, the merciful, the compassionate; Lord, make this easy by your mercy.

The 24th Maqāla on the Marāhim (of the book of al-Taṣrīf li-man ᶜajiza ᶜan al-ta'ālīf of the most noble learned Sheikh Abu'l-Qāsim Khalaf b. ᶜAbbās al-Zahrāwī. Said the author): Ointments are near in method to Admida (dressings). The difference between them is that the dressings are for more generalised treatment; ointments are more specialised for Kharājāt (abcesses) and Jarāḥāt (wounds). Ointments are one of the divisions of medicine which is necessary in the treatment of opened ulcers and wounds.

I begin by stating that among ointments are those which tighten more than they loosen, and those which loosen more than they tighten; and some which contain both powers. Some are soft, moist, weak in astringency, appropriate for moist bodies like those of youths, women and eunuchs, while some are harsh, highly astringent, suitable for dry bodies. Some are soft (or: between soft and astringent) suitable for the moderate type of body. We shall complete the description of every ointment with its predominant power, so that the student may attain his aim and reach what he desires without undue trouble. For this book of mine is meant only for the physician who has trained in the works of Galen and other books, and has acquired knowledge of the

Amzija (temperaments) and the variation in the powers of the organs, and the times of illnesses.

I start off this Maqāla with an ointment of Galen, known as the Palm Ointment. I have put it as a pattern for all the other ointments, in accordance with what he himself did in the book of Qāṭājānus.* I have contented myself with that - for there is no higher limit than Galen, and no end, in all his works. So let the student follow Galen's description and explanation of that ointment. I have narrated it from many texts of ointments (or: of his ointments), in his words from which ability is attained and which are sufficient. And there is no strength save with God the most high and powerful.

DESCRIPTION of Galen's Palm Ointment:

Take old pig fat, which is the base, or otherwise calf fat, 2 riṭl; old oil, 3 riṭl; Mirtak (litharge), 3 riṭl; Qulquṭār (vitriol), 4 awqiya. Purify the fat of its membranes, crush it well and finely, then melt over the fire, and cleanse it of the membranes; when you have done that, next take 2 riṭl of it; take the 4 awqiya of the Qulquṭār, pound it and mix it with the oil, pound the Mirtak and mix it with the Qulquṭār and the oil. Pound the lot in the mortar for a long while, and throw the fat onto it in the mortar. Beat it well, then put into a cauldron and stir it with a palm leaf, using its thick end after you have stripped off the outer skin. Whenever the end gets dried,

* see p. 311

cut it off and throw it away. Then take more palm leaves, peel them, cut into small pieces and throw onto the medicine before the cooking of the ointment is completed. Cook the lot together until it reaches the point where it is of the consistency of wax melted with Duhn and the moisture of the leaves has gone out into the medicament.

The leaf must be only recently cut, not one that was cut several days before; for when it remains a long while it dries out and the moisture you require fades away. The longest it should be used after cutting is one day, in the winter; if it is the summer, it should be used the very same day.

When you have cooked the medicament according to this description, until it reaches a consistency which does not melt, then it can be used for treating ulcers which are difficult of healing, and fresh wounds (or: abcesses), and for swellings of gout, arthritis (lit: pain of the joints), inflammation arising in the hands and feet caused by snow (i.e. chilblains), broken bones, muscular strain, and all swellings caused by the fluid matters; it must be used for treatment melted with Duhn.

Often when people treat Qila (hydrocele) by making an incision and put on it this medicament, it has the same effect as Nuṭul (warm compress) with Duhn, and as the dressing. If you add to it half a riṭl of Qulquṭār, it has a great power of forming flesh on

J. 485a

wounds and of causing ulcers to heal over when they are hard of healing; however, its efficacy in this is one not attributable to many medicaments, even if its function be the very same.

When it is softened by the oil, you must have more trust in it than you have in all the other medicaments for swellings arising from attracted matters and pains of gout and the joints, at all times when there is no severe pain present which requires purging of the body, or a warm compress, or soothing dressing.

So long as these and similar ills are still at an early stage, or are increasing, melt this medicament, cool it, put it into the mortar and sprinkle onto it pure wine and beat by hand in the mortar until the wine permeates it. And if the wine can be of the very astringent sort, pure, thin, not thick, and can be of a moderate age; if it is of this description, it will have good penetrative power into the depth of the organs. And let the amount poured on be just so much that none of the medicament will float upon it when one ceases to beat it.

When the swellings are still in the incipient stage, the medicament which one administers should be predominantly astringent; when they increase, you must lessen its astringency a little and increase its "loosening" (or dissolving) power. When the two powers - that is, the "preventive" and the "loosening" powers - are not in equal proportions, and when there is no severe pain, one needs a medicament to quieten it; when the swelling

reaches its point of decline, then the medicament should be predominantly "loosening" and should have no wine at all mixed with it.

When you wish also to melt the medicament, you must see that its predominant power is astringency, and must melt it with a little oil, pressed from fresh olives. If we want the two powers to be equally balanced then we must melt it with oil sweet of taste, hot in power, neither new nor old. If we want the medicament to be loosening, then the most suitable of Adhān for that purpose is old oil, or Duhn of Khirwa^{c} (Castor) or something similar of the Adhān. The rule for keeping of ointment is as I shall describe.

The amount of medicament must be slightly more than that of the Duhn, especially in the summer. The amount to be taken of the medicament is 10 awqiya, and of the Duhn, 7 awqiya; in winter, it is enough to take 2 awqiya less than this amount. It is clear that when you take more of the ointment, then the medicament is stronger. The thicker you make it, the greater is its power to soothe and to lessen pain.

This ointment goes into the consistency of melted wax, suitable for embrocation, when you take 1 riṭl of it, melt it with half a riṭl of oil; this medicament, melted as described, is good for swellings when they decrease; there is nothing more useful for the swellings which arise in the anus and the rectum, of their own accord with no apparent reason. One must then melt with a greater amount of oil so that it penetrates straight away to the rectum.

Galen often used to melt this ointment, in these sorts of illness, with rose Duhn; he put the vessel in which he melted it inside a pot containing hot water, placed over a smokeless fire of embers or charcoal. When the medicament is melted until it reaches the amount I have already mentioned, that is, the consistency of wax melted to a moist degree with Duhn, then it is beneficial also for ulcers arising in the anus or the pubes and other ulcers; and it is even beneficial for ~~burning in the extremities~~ Frostbite caused by snow, when there is ulceration, and for burns. That is because it prevents them from swelling, and is of very swift benefit in all these cases, making strong healthy flesh to grow in them, especially so when one adds a little extra Qulqutar and wine. One must mix wine with this medicament when one desires this action. When one mixes in vinegar, it then becomes a surpassing medicament for healing burns, when it is administered immediately, and even if it is applied after a delay, whenever it is applied; whether or not the site of the burn has blistered.

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And it is not hidden from you that when a man is scalded by boiling water being poured on him, and if this medicament is put onto the scalded limb before it develops a swelling, there is nothing to equal it for preventing the onset of swelling.

So it comes about, as I said previously, that some people, when they incise a large blister, treat the place of the incision straight

away without first treating with fomentations of hot water and oil or Duhn, which they pour on the place. Moreover it is beneficial for dislocation and fractures and every accident that may occur to any of the limbs in any way whatever. When it is put on it, moist, it is melted and over it is tied a bandage as one binds up broken bones. Also it is wonderfully beneficial for every swelling and eruption. If the body contains any harmful humours, and the body is most unclean, then when this medicament is put at the beginning onto the limb where the break and dislocation occur by reason of a blow or shock, one must mix with it juice of fresh Banj (Hyoscyamus). If you cannot obtain fresh Banj, either because it is the wrong time of the year for finding it or because there is none to be found in the country where you are, then add dry Banj which you have kept from the summer.

If you mix with this medicament the juice of Yabrūḥ (Mandragora), you make it stronger and more excellent for quietening pain. It suffices you to mix 1 awqiya of this juice with 1 riṭl of the ointment after it has melted, and you should increase or decrease this amount in accordance with the requirements of the illness. If you melt this ointment with rose Duhn it is also appropriate for these sorts of bodies.

In the case of limbs where dislocations occur because of a fall or a blow, and when it happens that the site has already become green coloured, then this medicament must be applied

straight away, mixed with wine as I have described. On the third or fourth day at the latest, when the affected limb has not swollen, the wine must be omitted from the medicament, and it is melted with old oil. For if the Duhn thickens on the place which has gone green and its astringency is more than this amount, you will make that green mark hard to dissolve and to root out.

Galen said that, in the treatment of hot swellings arising from the blood when they were inclining to the nature of the swelling called Humra, in the early stages, he used to employ this medicament melted with rose Duhn taken from oil of unripe olives, with no salt in it, because Duhn taken from this type of oil is beneficial for Humra. When you have melted it as I have described, mix with it in the mortar some juice of ᶜInab al-Thaᶜlab (Solanum nigrum) and beat it until it all mixes in well. If you cannot obtain juice of ᶜInab al-Thaᶜlab, then substitute juice of Bazr Qutūnā (Plantago psyllium). If it is summer, mix with it juice of Ḥayy al-ᶜĀlam (Sempervivum, or Sedum). This is because juice of Ḥiṣrim (unripe grapes, or olives) alone is simple, and has more astringency than the case requires. And when the astringency is great, until it reaches that limit, it is more harmful than the Humra, for it confines the heat of the blood and retains it
J. 486a inside the member, by its thickening of the outside of the skin.

Juice of Buqla Ḥamqā (Portulacea) also on its own cannot be extracted because of its stickiness. Thus the best thing for

you when you have pressed the Hisrim juice is to pour it onto the Buqla Ḥamqā, which is crushed in the mortar, and crush it until it is mixed with the Hisrim liquid. When it is mixed together, press the lot and take the juice in this same way; extract the juice of Ḥayy al-ʿĀlam; and if you take also juice of ripe Luffāḥ (fruit of Mandragora) at the time when it is ripe and ready on its shrub, and mix it with this medicament, you will make it more appropriate and suitable for your requirements of quietening pains. If it is not the season for Luffāḥ, then you must mix in the juice of the dried product.

Galen used to mix with it the juice of Banj, and sometimes mixed with it Afyūn (Opium) and Māmīthā (Glaucium poppy) or juice of wild or garden Khass (Lettuce) or juice of Hindabā (Endive) or of Bursiyān Dārū (Polygonum) or of Ḥasak (Tribulus terrestris). If he could not find any of these juices, he would mix with the medicament vinegar and water.

All these drugs should be very cold with a soothing coolness, for which one puts the vessel containing the medicament into exceedingly cold water; and thus the ointment under discussion must be cooled in this manner when it is used for treating the swelling called Humra*, so as to make its heat fade away and the inflammation die down. It is not unknown to you that the medicaments which are beneficial to the swelling called Humra, so that it fades away, by an acquisitive quality they contain,

* erysipelas

must always be cooled, especially when the Ḥumra of the swelling is pure, unmixed with anything of the hot swelling arising from the blood. When the inflammation of the Ḥumra is quietened and reduced, it is either a hot swelling, in which case you have no need for an acquisitive coolness; on the contrary, you must then guard against the use of juices which have much cooling action; or you must mix with the ointment when you have melted it things with slight cooling action; then after that mix with it juice of seeds of Kattān (Flax) and juice of Bābūnaj (Camomile). Afterwards use the ointment alone as it is, melted, not mixed with anything else. If the swelling called Ḥumra has turned green, and it has become discoloured by reason of the cold things with which it has been treated, then at that time you cannot call the illness Ḥumra, and you must take care not to mix wine with the ointment, but mix rose and astringent Adhān.

The Palm Ointment completely dissolves the Ḥumra which has gone discoloured and is turning black, if it is melted with old oil; and at the same time one pours hot water onto the limb where the ailment is, and scarifies it with the lancets. If you see that it is right to do that, then begin by applying the ointment melted and beaten with wine; remove the wine from it after a day. If you come across a case where you must treat Ḥumra already cooled by the physicians who make it exceedingly cold to a greater extent than is correct, so that it has turned

to a black colour, then make your principal treatment fomentation and incision.

And mix also with the ointment, without treatment by fomentation and incision, Nūra (Quicklime) washed in water and apply it. If the body of the patient is moist, soft of flesh, then mix with it washed Nūra and juice of Kuzbara (Coriandrum) also; when mixed with the ointment, at such a time, it is restrictive.

This juice, mixed also with wax melted with rose Duhn, is marvellously beneficial. As for the illnesses in which the matters are attracted into the organ, this ointment is the most beneficial of all medicaments. When you have seen if the patient has a moist body and soft flesh, or is a woman, mix the medicament in these amounts and weights which I have already specified for you. If the patient's body is strong or firm, then increase the amount of Qulquṭār, according to the strength and firmness and vigour of his body, and increase it by 1 or 2 awqiya, or more than that, according to your observation of the firmness and strength of the patient's body. If the patient has soft flesh, or is a woman, then decrease by that amount.

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PRESCRIPTIONS OF MAQĀLA 24

1 Galen's Palm Ointment

2 A white ointment

3 Ointment good for dog bites and ulcers

4 White ointment good for malignant ulcers

5 Another white ointment, "superior", good for grazes and burns

6 Green ointment, the "basic recipe", recommended by Galen. For ulcers and tumours.

7 Another green ointment, to make the flesh grow

8 Green ointment

8A Simple green ointment

9 Yellow ointment

10 Green ointment

11 Ointment

12 Another ointment

13 Another ointment, prepared as the above

14 Another ointment, good for gangrenous sores

15 Yellow ointment good for weak joints

16 Another ointment which dissolves internal pustules and quietens pain

17 Yellow ointment; this method is appropriate for all the yellow ointments.

18 Green ointment, composed by Galen, known as the "ointment of two colours"

19 Ointment, from Galen's teacher, to help scarring

20 Another ointment, used with Laudanum

21 Ointment good for smallpox ulcers and abcesses

22 Another ointment, for all ulcers

23 Another similar ointment

24 Another white ointment

25 Another white ointment, made with wine

26 Black ointment, good for fractures of the skull, called the Excellent Ointment, mentioned by Galen, who used it for many very difficult cases of broken bones

27 Ointment for fracture, whether or not with open wound

28 Ointment for swellings, dislocations and fractures, used by Galen

29 Ointment good for fractures, used by Galen

30 Another ointment, called "the ointment which does not melt" used by Galen

31 Another ointment, useful for fresh wounds

32 Ointment, a black one good for split bones especially in the head; prevents swellings; good for cuts and ulcers

33 Ointment used by Galen, beneficial in the same cases

34 Ointment of the Apostles

35 Ointment good for splits on the legs caused by cold

36 Ointment of Farbiyūn, good for ? stroke which afflicts the nerves and makes them swell; for dog bites, stings of scorpions, and all cold pains

37 Ointment of dry Palm

38 Ointment, a general sort, good for drawing poison

39 Ointment of Bāsilīqūnī

40 Yellow Bāsilīqūnī

41 Ointment of Zinjafr

42 Ointment of al-Sāduq, good for gangreneous sores, and dries ulcers

43 Ointment of Diyākhīlūn, useful for hard swellings in any limbs

44 Ointment of lead, which makes flesh grow and dries ulcers

45 Ointment good for alopecia

46 Ṭalà good for Jarab; to be applied at night and washed off in the bath, it is useful and tested

47 Ṭalà for dry Jarab and itch

48 Black ointment

49 Ointment good for ulcers on the tongue with swelling

50 Ointment good for trembling of the nerves, and languor and looseness when this is from a cold thick mixture

51 Ointment which softens the sinews

52 Ointment of Ahrun, for pains of nerves and paralysis if caused by cold

53 Ointment of Ahrun, good for tashannuj (trembling) in nerves, and sciatica

54 Ointment good for ulcers in the bladder

55 Ointment from the book of Ahrun, for paralysis from cold

56 Ointment called "the twelve" which is the "Ointment of the Apostles", good for all swellings in the body, like scrofula, cysts and cancers, hardness of liver, thickness of spleen

57 Ointment said to have been found in the temple of Suleiman b. Da'ūd, engraved on white marble, good for all wounds

58 Ointment made with Khitmī, good for all hot swellings

59 Ointment good for pleurisy, fever, when applied to the chest

60 Ointment which softens pains of the chest and softens nerves

61 Ointment for fierce dryness of the chest, long-standing cough from which is feared tuberculosis, and for trembling of nerves

62 Another ointment, good for what we have mentioned

63 Ointment from the book of Ahrun, for long-standing pains of the chest and pleurisy, softens all hard swellings, good for chronic sciaticia, for all cold pains

64 Ointment good for swellings and wounds, swellings of stomach and spleen

65 Ointment good for hot swellings of gout, and all hot swellings

66 Ointment of al-Rāzī, to make the flesh grow; very good

67 Ointment, also of al-Rāzī, to make the flesh grow; used in hot weather

68 Green ointment of al-Rāzī, eats flesh, cleans ulcers

69 Ointmentwhich Galen made for a nun aged 30 who was much troubled by fever and dysentery, in high summer

70 Ointment from the book of the Monks, made by Galen

71 Diyākhīlūn ointment of al-Rāzī, good for scrofula, cancers and all hard swellings

72 Ointment good for swelling of the spleen

73 Ointment good for gout

74 Ointment of fats

75 Ointment effective for swellings, wounds, gout

76 Ointment good for haemorrhoids and dry wounds and ulcers

77 Ointment good for external haemorrhoids

78 Ointment for pain in the buttocks

79 Ointment good for weakness of the liver

80 Very strong ointment which cocts abcesses in the liver and is good for cough and for blackish swellings

81 Ointment of yeast, good for hard swellings, often used

82 Ointment which some call Marham al-ʿajūz, good for ulcers

83 Ointment of honey, good for scrofula

84 Ointment of verdigris, "eats" dead flesh, good for scrofula, and all swellings which are slow to heal

85 Diyākhīlūn Ointment, good for scrofula, cancers and all dry swellings, and is tested

86 Diyākhīlūn ointment of Yaḥyà b. Māsawaih who guarantees it is very good for scrofula and all hard swellings

SOME OF THE INGREDIENTS USED IN THE OINTMENTS

Īrisā	62, 63
Ās	Duhn: 19, 22, 79. Berry: 69
Afsintīn	79
Afyūn	1, 65, 77, 33
Aqāqiyā	65, 69, 77, 79
Iklīl al-Malik	36
Anzarūt	66, 68, 70, 75
Ihlīlaj Hindī	7
Bābūnaj	1, 51, 59, 86. Duhn: 60, 61, 72. Tips: 63
Bārazd	6, 15, 16, 17, 24, 27, 29, 30, 31, 33, 50, 53, 55, 56, 66
Bazr Quṭūnā	1, 43, 65, 73, 86
Buṭm, ʿIlk al-Buṭm	2, 4, 5, 7, 8A, 14, 15, 17, 26, 27, 29, 30, 33, 37, 44, 63, 75
Buqla Ḥamqā	1, 58
Balsān	Duhn: 55
Banj	1
Banafsaj	80. Duhn: 59
Tīn	29, 51
Jāwashīr	8, 27, 29, 32, 44, 50, 53, 56, 63
Jirjīr	59

Jullanār 6, 79, 80

Ḥurf 86

Ḥasak 1

Ḥisrim 1

Ḥulba 51, 59, 72, 86. Luᶜāb: 71, 85

Ḥamāmā 30

Ḥanẓal 50

Khirdal 38, 63, 72

Khirwaᶜ 18, 27, 29. Duhn: 1

Khiṭmī: 43, 57, 58, 59, 63, 86. Luᶜāb: 71
Leaf: 73. Seeds: 57, 80. Root: 86

Khall 1, 6, 7, 8, 8A, 27, 32, 33, 52, 56, 57, 67, 68, 69, 74, 81, 83. Sour: 18, 64, 72. Thick: 29
Wine vinegar: 44, 46, 69, 84

Diflà 46

Dam al-Akhawain 66, 86

Daqīq of Barley: 65. Plain: 59

Dharīra 69

Rātīnaj, Rāṭīnā 9, 11, 19, 28, 32, 34, 39, 40, 44, 51; 56, 61, 63

Rand 75

Zift 26, 29, 30, 32, 39, 40. Dry: 27, 62, 63
Moist: 48, 54, 61, 66, 82

Zufā Yabis 60

Zeit	Plain: 1, 6, 7, 8, 9, 10, 11, 12, 17, 21, 26, 30, 32, 36, 37, 39, 40, 41, 42, 43, 46, 47, 48, 52, 66, 75, 76, 81, 84, 86. Old oil: 6, 13, 16, 18, 27, 28, 31, 71; 1, 3, 4. Fresh: 1. Moist: 57. Infāq: 1, 80. White: 5
Sādhij	55
Sadhāb	50
Su^{c}d	79
Sa^{c}fa	1
Safarjal	68. Seeds: 79
Sakbīnaj	63
Summāq	69
Sunbul	79
Sūs	Duhn: 62, 63
Sausan	6
Shibith	Duhn: 60
Sharāb	19, 25, 1, 12. Old: 36
Sha^{c}īr	58, 65, 72
Shīraj	74, 75. Duhn: 41, 59, 64
Ṣābūn	81
Ṣabir	8, 31, 33, 56. Yemenī: 57
Ṣandal Aḥmar	65
Ṣanaubar	10, 12. Ṣamgh: 21, 52, 81. ^{c}Ilk: 75 Duhn: 50
^{c}Āqirqarhā	50
^{c}Adas	49

ʿIrq	Dry: 16. Cooked: 31. Plain: 8A
ʿUsfur	65
ʿAfs	46, 79
ʿIlk	4, 84; ʿIlk al-anbāṭ: 60, 80
ʿInab al-Thaʿlab	1, 49, 65
ʿAwsij	Leaf: 73
Ghār	Duhn: 50
Farbiyūn:	36, 50, 63
Fulful	2
Fanjanqusht	50
Qāqullā	38
Qardamānā	30
Qarṭumānā	63
Qarʿ	Leaf: 65
Qust	47, 79
Qiṭrān	57
Qulfūniyā	23
Qinnā	27, 34, 39, 41, 63
Qanṭuriyūn	57
Qir	76. White: 77
Kattān	Seeds: 51, 59, 80, 86. Luʿāb of seeds: 43, 71, 85
Kafūr	65
Kathirā	74, 77, 86

Karsanna 6, 28

Karafs Seeds: 63

Karm Flower: 69. Flower heads: 79

Karnab 86

Kuzbara Seeds: 1, 65

Kundur 2, 3, 4, 5, 6, 17, 25, 29, 30, 31, 33, 35, 37, 41, 53, 66, 72, 86. Pounded: 8, 8A, 27, 32.

Kundus 46, 47

Kūr 51, 55, 56, 62, 63

Kiya 70, 79, 63

Ka^{c}k Shāmī 51, 69

Lādan 6, 20, 37. Black: 13

Lubān 50, 56, 63, 70, 81. Seeds: 51

Lablāb Juice: 86

Lubnà 62, 63

Lauz Samgh: 61, 62, 86. Bitter: 55

Luffāh 1

Lazzāq al-Dhahab 13

Murr 7, 11, 30, 35, 44, 50, 51, 56, 62, 63, 69, 72. Red: 75. Seeds: 86

Maṣṭikā 6, 44, 61, 69

Mugl 64, 72, 77, 80. Blue: 34, 64

Mai^{c}a Liquid: 47, 54, 74. Dry: 86

Nānkhāh 63

Nardīn, Nārdīn Duhn: 61, 62

Narjis	63, 86. Duhn: 59
Hindaba	1
Ward	1, 5, 2, 79. Duhn: 1, 22, 46, 47, 49, 56, 58, 65, 67, 69, 73, 77, 78, 80. Rose water: 69. Leaf of red rose: 65. Dry: 57, 79. Pounded: 49.
Yabruh	1. Juice: 33.

CHAPTER 11
AL-ZAHRAWI'S MAQALA 28

Maqāla 28, on Iṣlāḥ al-adwiya wa-ḥarq al-aḥjār al-maᶜdaniya wa-mā yataṣarraf fi'l-ṭibb min dhālika, is translated by Hamarneh and Sonnedecker as "Improvement of Drugs ... " although taken in the context of the whole Maqāla it could simply mean their preparation from the raw state. Iṣlāḥ can be used to mean "correction", as for instance in the Mukhtaṣar of Galen[1], where each drug has its iṣlāḥ, another drug which could be combined with it to counteract any bad effects.

This Maqāla is included in the full work, and also occurs in MS Şehit Ali Paşa 2093 in the Süleymaniye library, Istanbul.[2] The fact that it is found separately, apart from the rest of al-Taṣrīf, supports the view that it was considered a useful practical work and worth making single copies of, for individual use. Al-Zahrāwī gives many processes in great detail, and explains each step. As always, he is methodical in his approach. He includes material from Dioscorides, but puts this into the appropriate place in his own Maqāla. One is struck by his careful organisation of the material, and his attention to detail.

He begins by stating his aim, which is to give in one place

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1 MS Şehit Ali Paşa 2093

2 Folio numbers for Maqāla 28 will refer to this manuscript

all the processes necessary for the advance preparation of drugs which are prescribed elsewhere in al-Tasrīf. This is therefore a very important part of the whole work, since the physician was expected by al-Zahrāwī to be able to supply his own drugs.

Maqāla 28 is divided into three parts: mineral, plant, animal drugs. Here we are concentrating on those of vegetable origin because of their particular relevance to Andalus and their link with the works of Ibn Juljul and Ibn Samajūn.

Al-Zahrāwī includes the method of making rose water, a well-known and much used product; he gives several methods, some elaborate and some simpler as used locally. He even appears briefly in the role of confectioner, describing the making of Fānīd from sugar and honey, at one point instructing the reader to pull and stretch it out on the slab "as one does with Halwā". (f.92b)

In Maqāla 28, section 2 on plants and plant products, al-Zahrāwī seems to be writing mostly from his own experience, despite his frequent reference to Dioscorides. He even ventures to disagree with him when describing the processing of Māmīthā - "we tried this and did not find it as Dioscorides said" (f. 76a). The point is a comparatively minor one, on the colour of the plant, but it is interesting to see that al-Zahrāwī would compare the findings of the Greeks with his own and remark upon any discrepancy; this gives one far more confidence in him as an authority to be relied upon in other matters. Further on, al-Zahrāwī quotes

Dioscorides' method of preparing ᶜAnṣal (Scilla) and follows this with an alternative (f. 79b); then he quotes Ibn al-Jazzār, who gives the directions of a "philosopher of Rūm" for preparing ᶜAnṣalān with vinegar (f. 80a).

As in Maqāla 30 al-Zahrāwī illustrates his text with drawings of instruments, so here does he give pictures of moulds for making tablets and filters for straining the juices (MS Veliyüddin 2491, f. 39a - 40a).

At the beginning of this Maqāla, al-Zahrāwī gives a summary of the subjects he will be dealing with: in his first section he includes the processing of minerals and stones such as Marqashīṯā (marcasite); Zāj, Qalqant and Qulquṭār (types of vitriol); Shubūb (alums); Amlāḥ (salts); Raṣāṣ (lead); Ḥadīd (iron); Nuḥās (copper); Ithmid (antimony); washing of Tūtyā (sulphate of zinc) and Nūra (quicklime); the manufacture of Zinjafr (verdigris).

Among plants, he promises to deal with extraction of juices, piths, the shelling of seeds, washing of oil and processing the lees; bleaching of vinegar and taking its lees; making vinegar of ᶜAnṣal, and filtration of its liquid. Also he includes the distillation of Mā' al-Kāfūr (camphor water); the making of Nashāstaj (starch) from Ḥinṭa (wheat), Shaᶜīr (barley) and Karsanna (Vicia ervillia); burning of Marjān (coral) and Kahribā (yellow amber); improvement of purgative drugs like Saqamūniyā (Scammony), flesh of Ḥanẓal (Colocynth), Turbud (Ipomoea), Māzariyūn (Daphne),

Baladhur (Semecarpus), Shubrum (Euphorbia), and their various types.

He gives details of the correct times for collecting medicinal herbs for storage, and the rules of storage for roots, seeds, flower-heads and blooms; tanning of the Adhān; and similar things.

In the third section he intends to deal with burning of shells, cloven and other hooves, bones, egg-shells; burning of vipers and serpents, hares, scorpions, swallows; taking blood from animals; bleaching of wax; processing of urine; glue from skins of animals; taking of gall bladders.

This is only a brief summary of the processes and the individual drugs which al-Zahrāwī describes in great detail in the course of this Maqāla. One has the impression that he has undertaken all the processes about which he writes, and knows it all from experience. He seems to have supervised personally every stage of manufacture, from the gathering of the plants - we know from Maqāla 29 that he would collect them himself - to the final stoppering of the finished product in its appropriate container. One is struck throughout by the logical and clear description of each stage. He has no "superstitious" practices; if a plant has to be picked at a certain time, this is because it will then be in the best state for use or storage. In Andalus at this time a knowledge of the stars was assumed, but it did not seem to influence the pharmaceutical or botanical aspects. This is

in some contrast with the sort of attitude we find shown by a herbalist like Culpeper, writing some six centuries later, who often stipulates that a herb must be gathered at the ascendant of an appropriate planet, and considers the medical man has a need for a good knowledge of astrology.[1]

Maqāla 28 gives particular emphasis to the drugs themselves and the methods of producing them, rather than the uses to which they were put. Here al-Zahrāwī shows his concern for the quality of the drugs and the care to be taken in their production. Especially noticeable is his insistence upon cleanliness: he often stipulates that a clean cloth, bowl or filter must be used, or that a receptacle must be tightly shut to avoid any dust or insects getting into it. Altogether he insists upon a high standard of efficiency and cleanliness.

His instructions are very precise, even specifying the type of container to be used for a particular process. Where something has to be baked, he often stipulates the type of oven - potter's, baker's - which presumably would vary in size and intensity of heat. At other times he says whether charcoal or wood should be used for the fire, and sometimes specifies a copper cauldron.

This second section of Maqāla 28, on plants, is divided into further sections according to the various processes and the parts of the plants concerned; for instance, the washing or burning of

1 Culpeper's Complete Herbal, Foulsham, London, n.d.

the plant itself; the extraction of juices; burning of branches of trees; refining of drugs, for use in the akhāl (eye ointments) and other medicaments; preparation of plants with milk. Then come sections on the drying and storage of plants, and the times and seasons for gathering them. So one particular plant may be mentioned in several places; on the other hand, various points may be mentioned under one heading, as is the case with the first plant, the Ṣabir (Aloe). The best type comes from Socotra, says al-Zahrāwī; he describes its washing, to avoid any harmful effects and reduce its fierceness; then how to burn it (f. 70a).

Afyūn is described near the beginning, where al-Zahrāwī gives the collection of milk of Khashkhāsh aswad (black poppy) according to the method of Dioscorides (f. 74b); later, he tells how to prepare Afyūn for use in akhāl (f. 99a). Sometimes he gives the process for one plant in some detail, adding that certain others are treated in the same way; thus ṣumūgh (gums) are mentioned in general (f. 88b), apart from the description of various individual gums and an account of the process of preparing them for use (as on 98 b).

Under each plant al-Zahrāwī gives some or all of the following points: its place of origin; the best type, and how to recognise it; its speciality; uses; colour; time for processing and gathering; resemblance to other plants; whether it can be combined with other drugs, in general or in particular cases.

He often explains carefully which type should be used: for example the best Saqamūniyā is a blue type from Antakiya, while the worst is from Syria (f. 71a). Khashkhāsh is weaker than Afyūn, and the best sort is thick, smooth and shiny (f. 75a). Vinegar for Sakanjibīn (Oxymel) must be made from white grapes (f. 81b). The yellow Halīlaj should be yellow inclining to green; the Kabuli is reddish (f. 86b). Muql or Kūr (Bdellium) should be bitter, sticky, easily broken; it should smell strongly when put on the fire (f. 88a). The best sort of Sakabīnaj (Sagapenum) should be white outside, red inside; it should be pure, with strong scent and taste (88a). When making Nashāstaj of Karsanna, one should choose that which is fresh and good (f. 92a-b). When choosing Karm branches for burning, one should take wood which is still slightly damp, cleaned well from earth; this applies to all woods (f. 96b).

He points out that wild or mountain plants are stronger than the cultivated ones, mentioning this specifically as in the case of Qanṭuriyūn (Centaurea) (f. 84b) and Banafsaj (f. 102b); he states too that the mountain rose is stronger than the garden variety, and then goes on to say that this is the case with all plants, that the wild variety has greater power. Dioscorides says this, at the beginning of the first Maqāla, but al-Zahrāwī points it out here when dealing with the plant itself, so as to emphasise the fact.

When he mentions the times or seasons at which the plants must be gathered, he recommends certain factors in the qualities and state of plants, for instance that Afsintīn (Artemisia) must be crushed before daybreak, as the juice comes out better (f. 74a). Similarly, Afyūn should be gathered at dawn while the dew is moist upon it; it must be cut carefully, and he gives detailed instructions (f. 74b). Atruj should be taken when freshly ripened, for shelling and drying (f. 103a).

Roots of many kinds are described; in each case one should wash them on the day they are gathered, cut them up very small and hang in a windy place to dry; in winter they should be placed in a kitchen where a fire is kindled so that they can dry gradually but steadily (f. 106a).

In general, plants must be gathered in mild weather, when they are ripe and mature but show no signs of wilting. Flowers are to be collected before they fall, seeds when about to dry and fall, but before they begin to decay (f. 106b - 107a).

In the course of this second section, al-Zahrāwī not only gives directions for preparing the various plants for use, but also briefly indicates their use and speciality. He mentions Yattūʿāt (Euphorbiaceae) as purgatives (f. 72a); Tāfsiyā (Thapsia) he says is used by the Berbers for cautery (f. 73a). Higrim is astringent, and burns the tongue (f. 78a); Hudud also is astringent (f. 77a).

Most drugs dealt with here seem to be used for purging, whether of bile or water or phlegm; most illnesses being thought due to an excess of one of the humours, the offending one therefore has to be purged, or decreased, for recovery to take place. Some of these plants also occur in Ibn Juljul's Supplement, and in these cases al-Zahrawi agrees with him about the specialities of the drugs. These include yellow and black Halīlaj, Khiyār Shanbar, Tamr Hindī, Ṣandal.

Many of these drugs are for purging bile, for instance the Afīthmūn and Kashūth (Cuscuta) and Lablāb (Dolichos) (f. 85b). Some purge phlegm, like the Ḥanẓal, Turbud, Farbiyūn (Euphorbia), Ḥabb al-Nīl (Ipomoea) and Aghārīqūn (Agaric) (f. 82a - 84a). "Yellow water" is purged by Māzariyūn, ᶜAlqam (Citrullus) and Shubrum (f. 84a).

Some items here mentioned appear in Maqāla 24 on ointments. Dregs of vinegar are stated in Maqāla 28 to be good for removing superfluous flesh from ulcers (f. 98a); vinegar, wine vinegar and sour vinegar are used in several prescriptions in Maqāla 24. Kūr and Muql are good for hardnesses and irritation of the intestines (f. 88a); they can be used externally as a Ḍamād, and occur in several prescriptions for ointments. Ṣandal, mentioned here as being good for hot swellings (f. 100a), occurs in one prescription in Maqāla 24 which is said to be good for that complaint.

In the comments on storage, towards the end of the section, al-Zahrāwī follows Dioscorides, who gives certain directions at the beginning of his book. These were brief and generalised, however, and al-Zahrāwī specifies in each case the sort of container to be used. It is organisation more than originality which is apparent here. He uses information from Dioscorides, but is not simply copying; he obviously started by learning from books, but what he passes on in this Maqāla is the result of many years' experience in processing plants and preparing medicaments.

His attitude throughout this part of his work reveals him as a careful and practical person: both physician and pharmacist, anxious to ensure that the best possible drugs are produced for the benefit of the patient. He is exceedingly conscientious and would never allow a poor quality product to pass his scrutiny, nor attempt to speed up a process which needed much time. He takes a pride in accurate careful work.

This Maqāla was translated into Latin towards the end of the 13th century by Simon of Genoa and Abraham Judaeus of Tortosa, and given the name of "Liber Servitoris". A Latin version exists in the Bibliothèque Nationale, dated 1471.

In his article in Janus, 1904, E. Cordonnier gives an account of a Spanish translation of 1516, then recently acquired by the Bibliothèque de l'école de Pharmacie, Paris, which he calls "une rareté pharmaco-bibliographique". Apparently Leclerc did

not know of this Spanish translation, but he said that translations were often "double" - a Jew or Arab would put the original into the local language, which would then be turned into Latin by a scholar. This Spanish translation, published in Valladolid, was made from the Latin, not from the original Arabic, and was known as "Servidor".

Cordonnier reproduces the title page of the Spanish translation of the book named Servidor of Albucasis, translated and corrected with great care from Latin into the common Castilian tongue by the licenciado Alonso Rodriguez of Tudela; it was printed in Valladolid on 8 January 1516.

The list of the items dealt with, as given by Cordonnier, corresponds with those in the Arabic manuscripts.

The Title page: Aquí le acaba el muy provechoso libro llamado Servidor de albucasis trasladado y con mucha diligẽcia corregido del latin en lẽgua vulgar castellana por el licenciado Alonso rodriguez de tudela el q̃l tambiẽ le añadio esta tabla muy necessaria al libro y le hizo imprimir por la utilidad y biẽ publico. Fue imprimido por Arnao guillẽ de brocar ẽ la muy noble villa de Valladolid a.ºs viij dias dẽl mes dẽ enero de mil y q̃niẽtos y diez y seys años +

CHAPTER 12

AL-ZAHRAWI'S MAQALA 29

Maqāla 29 is divided into 5 chapters, abwāb, and here al-Zahrāwī has collected together miscellaneous items which although important to the whole work would not individually form a whole maqāla. These are:

1. Names of drugs in the different languages - including ʿajamiyat al-Andalus
2. Definition of technical terms, other than drugs - including philosophical terminology
3. Substitution of one drug for another which is not available, and the permitted dosage.
4. Stability of compound drugs and medicines: mineral, plant and animal products
5. Explanation of measures and weights, found in the books, according to the different languages.

Numbers 1 and 4 are being considered here, as being of particular relevance, together with 2 which is of considerable interest although not strictly speaking concerned with drugs.

Number 3, substitution of drugs: this was an important subject with which the physician had to be familiar. It is a fairly common topic in medical texts.

Number 5, weights and measures, is closely linked with 3, since units of measure and weight varied considerably in different countries and even cities. It was important to know

what quantity of a drug should be used in a recipe or what the equivalent dosage of its substitute might be. This chapter has been translated, with a commentary, by M. Sauvaire.[1]

In Maqāla 29, al-Zahrāwī reaches the end of his work on drugs and general medicine, and he therefore gives an explanation of any difficulties which might be found in al-Tasrīf, and rounds off his whole work with a kind of glossary.

Chapter 1, on the names of drugs, was a type of work always useful to Arabic physicians, and there are many examples of similar work. It links up with the researches of Ibn Juljul, who is frequently quoted here. It shows al-Zahrāwī's special interest in the identification of plant drugs and their local names in Andalus; he is careful not only to give the appropriate name but also to make sure that the drug mentioned really is the same one. This chapter shows the specifically Andalusi aspect of al-Zahrāwī's work, and the extent to which he understood the regional variations. We see his concern for accuracy and his painstaking work on the question of drug names: he refers constantly to his own experience, and he arranges the names in alphabetical order so that this shall be a handy reference list.

Al-Zahrāwī as usual gives a brief introduction to the Maqāla, stating his reasons and aims in compiling it: when he had completed

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1 M.H. Sauvaire, "Traité sur les poids et mesures par Ez-Zahrâwy", Journal of the Royal Asiatic Society, 1884.

his book, he found that there were many names for the drugs in Greek, Syriac, Persian and ᶜajamiya. So he then explained those which he knew for certain, and those which he had found already translated during his examination of the books of the ḥukamā'; others he took orally from the ᶜulamā'; then he abridged this information, and compared it with the usage of the people of Andalus; and to this he then added the names of substitutes for drugs.[1] Again he shows that he was not content to copy previous works, but took the trouble to check with local contemporary usage. This part of the Maqāla gives al-Zahrāwī more scope than does most of his book for presenting his own independent opinion and the results of his investigations; for he may here have valuable contributions to make, since many plants would be peculiar to Andalus or represented by distinct species. Al-Zahrāwī obviously realised this fact, which was sometimes overlooked or underestimated by compilers of botanical works.

Most of the articles are very short, with perhaps a line or half a line where all he does is give the translation; but sometimes he goes into more detail, where there may be several alternative names for a drug or some difference of opinion about it. Some accounts finish with "I know this for certain" or "I have seen this and collected it". The latter remark occurs so

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1 MS Vel. 2491, f. 50b

frequently that one gathers that he was not content to stay in the city and write about drugs, but would go out to search for plants in the surrounding countryside. He considers it advisable for the physician or pharmacist to recognise and be able to collect his own plants. It is not apparent how widespread was the practice at this period, for botanical "expeditions" are generally connected with the later botanists such as al-Nabāṭī (d. 1239) and Ibn al-Bayṭār (d. 1248). Al-Zahrāwī's work was probably on a small scale and for his own needs, but he did go to considerable trouble to confirm his book learning by research in the field.

In one case we find a clue to the principle of "testing" drugs: on Fawāniyā he says that this plant was said to be Ward al-ḥamīr; but this was not true, as it was tested or examined امتحن and was not found to have that speciality in helping epileptics. Presumably the check in this case was not the extent of resemblance to another plant in taste, smell, appearance, but whether it had the same observed effect. One would like to know more, however: on how many patients was this doubtful one tried? - was there any real check on its efficiency? - and would the patient or patients in question have been helped by the genuine article in this case? (f. 73b)[1]

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1 Folio numbers for Maqāla 29 refer to MS. Vel. 2491

On one occasion al-Zahrāwī put himself to more than usual discomfort, though he does not say whether this was by accident or design. He gives the name of a type of fish called ʿAqrab al-baḥr, which he saw and took up "and it stung me on the hand and caused me great pain". Then he describes in detail the creature itself; it shows great nerve if he did pick up a semi-poisonous sea creature so as to be able to describe the effects and the animal itself with due accuracy (f. 71a).

When giving the names, al-Zahrāwī sometimes says that one is "in the dialect of" Saraqusṭa, Toledo, or Andalus in general; he may also say that some specific plant or drug is found in the region of Qurṭuba.

Abū Ḥanīfa is the most frequently-quoted of his authorities, followed by Ibn Juljul who is mentioned about forty times, more often here than elsewhere in al-Zahrāwī's work. This shows again that Ibn Juljul was accepted as an authority on the subject of plants, at any rate in Andalus, but perhaps not so well known in other branches of medicine. Al-Zahrāwī refers once to "his book", presumably the Tafsīr. Only one of these names deals indirectly with a drug in the Supplement: Qalth, which is said to be the seed of Māsh (f. 75a). As the Supplement was a later work of Ibn Juljul, it had probably not been written at the date of al-Zahrāwī's composition of Maqāla 29. However, al-Zahrāwī includes in this chapter the names of nearly all the drugs which

occur in the Supplement, and on the whole agrees with Ibn Juljul's remarks there. Generally when he quotes him he does so without comment, though on the question of Khundrus (Spelt) he disagrees (f. 61a).

Ibn al-Jazzār is quoted a few times (e.g. f. 75a), Ahrun once (f. 75a); in contrast to much of al-Zahrāwī's work, the names of Dioscorides and Galen only occur a few times. This part of the work is concerned with drugs and names which would be met in Andalus, and as al-Zahrāwī explains at the beginning of the Maqāla, it is intended to be of immediate practical use. Much reference to Galen or Dioscorides would be irrelevant here; what the physician in Andalus needs is a book geared to his requirements, topical and practical, and this aim is well carried out by Maqāla 29.

Chapter 4 deals with the stability of drugs, and again al-Zahrāwī shows his empirical approach. This is a subject not dealt with in great detail by most previous writers. Hamarneh and Sonnedecker point out that Paulus Aegineta did not deal in particular with this, though al-Majūsī has a chapter on compound drugs. Al-Zahrāwī, however, gives a large number of items, divided up into the three sections of mineral, plant and animal products, as in his Maqāla 28.

Al-Majūsī on "stability of Tiryāq and other drugs and Maʿjūnāt" gives the period of effective action for the various

types of Tiryāq, Maʿjūnāt of several sorts, the great Iyārijāt, laxative drugs, pastilles, Adhān, Ḍimādāt and ointments, and drinks. He merely states the period of time for which they will last, but gives no indication of his own observation or opinions.[1]

In contrast, al-Zahrāwī quotes in many cases from his own experience, and discusses most types of medication and materials. Of simple drugs he begins with minerals, which differ according to their nobility بحسب شرفها ; for instance Yāqūt and gold will last for many years; silver, copper and iron will change and corrupt in a shorter time. Salts from the earth last longer than those solidified from salty water; he has kept some for about twenty-five years. (f. 96b).

After minerals, he deals with plants, dividing these into gums, juices, "milks", Adhān, seeds, roots, barks, flower heads and flowers. Gums, he says, last longer than seeds and roots; some, like Ṣamgh ʿArabī, he has kept for about thirty years without alteration, provided they were kept from the damp. In contrast, the longest he has personally kept a juice was ten years, and it then became wormy. Milky juices can remain for a long time and he has seen Saqamūniya last for about twenty years without decreasing in power; it lasts longer than Afyūn, the power of which weakens in about three years (f. 97a).

The Adhān mostly go bad in less than two years, as they get old and dry. Seeds vary: the oily ones go bad faster, and will

1 Kamil, Vol.II, p. 533-34

last for only a year, while those like Anīsūn (Anise) and Hurf last for two or three or more years, depending upon storage conditions.

Roots and barks vary in their lasting power according to their nature; Bahman he has kept for ten years, and probably could have kept it for longer. The ones containing moisture, however, become worm-eaten in a year or two. With bark fibres, he has seen their power decrease very clearly after three years. He quotes Galen on the lasting power of Dār Ṣīnī (Cinnamon), which is thirty years or so. (f. 97b)

After dealing briefly with flowers, most of which lose their power after about a year, he turns to Tiryāq, the Maʿājīn, and pastilles. Tiryāq, he says, lasts from six months to thirty years, when it begins to deteriorate but is good for use until it is sixty years old. He gives a list of items of this sort, most of which cannot be used until six months have passed but then can keep for between two and seven years (f. 98a).

Duhn of Balsān and Mā' al-Kāfūr become stronger as they age. Plasters and ointments are all effective as soon as they are made and can be safely kept for a year; but he has kept the Palm Ointment for more than a year and a half, with no alteration, and the Black Ointment for longer than that. (f. 98b)

Then he deals with Ashriba, drinks, which keep for up to two years, and even longer provided that they are carefully stored and protected from hot air or moist places, when they can last for

five or more years. Akhāl and Shayāfāt (eye drugs) can, especially if they include gums, be kept unchanged for several years; Durūrāt (dusting powders) and those which include plant drugs become clearly weaker after a year, while those made with mineral stones keep for many years (f. 98b).

In this chapter we find al-Zahrāwī relying almost exclusively on his own practical experience and observation. This was a subject on which a physician would have plenty of opportunity to carry out investigations in the course of his daily work, and to comment upon the results, but it is seldom that any medical writer went into as much detail as al-Zahrāwī. Almost every remark has to be substantiated by reference to observation, whereas most writers were content to quote the comments of previous authorities.

Chapter 2 is not really concerned with drugs but is of great interest, since it would seem to be unique among medical works of the period, being a short section defining technical terms used in medical texts. Hamarneh and Sonnedecker comment[1] that "this approach is significant to pharmaceutical technology"; as they say, neither Paulus nor al-Majūsī has any equivalent composition, and it would seem that al-Zahrāwī alone devotes any time and space to an explanatory glossary of medical terms. These he has arranged together in one place, again in alphabetical order, for easy reference.

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1 A Pharmaceutical View of Abulcasis ... p. 65

Here, as elsewhere throughout al-Tasrīf, he shows his practical concern, and anxiety that the physician should not be hindered in his studies by any difficulty of vocabulary or expression. He does not assume, as most eastern Arabic writers did, that any physician must already have studied philosophy thoroughly and be conversant with the terms used.

Al-Zahrāwī seems to be providing the link between philosophy and medicine, making it easier for the student of medicine to follow a philosophical-based text without needing first to study the terminology and methods of argument of the more abstract science. He sometimes quotes Galen, but on the whole when defining a philosophical or abstract term he does so in easily-grasped phrases and concepts, concise and intelligible. Maybe his attitude to those who devote themselves to abstruse and lengthy arguments on detailed points is summed up in his definition of Sophists (f. 91a) المحكمون بالاباطل

His definitions are arranged alphabetically, but can be classified as: anatomical terms and names of diseases; utensils (two); medicines; recipes and foods (many of which are Persian); medicaments; philosophical terms.

Anatomical words include: Awdīmā; Diyāfraghmā; Dhāt al-Janab; Diyābīṭa or Diyābīṭus; Kīlūs. Recipes and foods include: Isfīdbāj (referred to frequently in Maqālas 26 and 27); Khubz Rūnī; Iṭrīfl; Zalābiya. Medicines include: Iyārij (the subject of

Maqāla 5); Bāzuhr; Marham (the subject of Maqala 24).

Philosophical terms: Basīṭ; Jawhar; Ḥarāra Gharīziya; Ḥarāra; Kaifiya; Aᶜrāḍ; Gharīza; Shakl.

Greek medical or anatomical terms might be considered to cause difficulty, and some of these are explained: Diyāfraghmā دیافرغما is Ḥijāb al-ṣadr, dividing the ṣadr (chest) from the miᶜda (stomach) and the rest of what is below (f. 85b). Diyābīṭā دیابیطس or دیابیطا is istiṭlāq al-baul, an illness arising from heat of the kidney (f. 85b).

Kilūs: he quotes Galen that it is the moisture in an animal (f.87a).

Other medical terms are explained and defined; for instance, ḥabb al-qarᶜ is the name given to the tapeworm arising in the colon الحا العولون, so called because of a resemblance to the seed of the Qarᶜ. (f. 84b) Maghṣ معص is pain in the intestines (f. 87b). Ghashī غشی is ~~weakness of the heart~~ shock, which, if excessive, "dissolves" the soul and the man dies (f. 89b). فان افرط هذا الضعف انحل الروح الحيوانی ومات الانسان

Shausa شوصه is a swelling in the membrane dividing the intestines (f. 91a). Dhāt al-Janab ذات الجنب is somewhat similar but occurs in the Janab. (f. 85b) Al-Zahrāwī distinguishes these, although modern dictionaries appear to give both as pleurisy or pneumonia.

Definitions of philosophical and similar terms include Basīṭ - which is contrasted with Murakkab: Basīṭ refers to things

which are not compounded, such as bone, flesh and blood, while Man is compounded of these. Similarly, Elements, Soul and Mind are Basīṭ, since they are not compounded from anything (f. 83b). Here al-Zahrāwī is seen to be approaching philosophy from medicine, instead of the more usual order whereby one who knew philosophy then applied this to medical matters.

Harāra Gharīziya he defines as Man's fundamental heat, by which is life is sustained and his health continues (f. 84b). A^{c}rāḍ are such things as colours, taste and movements in bodies; similarly diseases, and anything that occurs (f. 89a). Gharīza is that which is natural and firmly fixed (f. 89b).

الشئ الطبيعى الثابت

CHAPTER 13

IBN SAMAJŪN AND HIS DRUG BOOK

The originality and practical approach of al-Zahrāwī, and to a slightly lesser extent Ibn Juljul, are highlighted by comparison with their contemporary Ibn Samajūn.[1] He is known for one work, his Drug Book, in which he carefully compiled information on the drugs of plant, mineral and animal origin known and used at this period, gleaned from the writings of ancient and modern writers on materia medica. He relied particularly on Dioscorides and Galen, using extracts from other Greek writers and from the Arabs.

He shows the same concern for accuracy and order, and his drugs are carefully arranged under the letters of the alphabet, with frequent cross-reference where synonyms are concerned.

He differs however in his approach, which is almost entirely theoretical. A student would have found in his book much useful information, put into concise and convenient form, but would not have had the sense of contact with a practising herbalist-physician that he would have with al-Zahrāwī and Ibn Juljul.

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1 I have preferred this spelling on the authority of MS Bruce 48; Paul Kahle also uses this form. The British Museum Catalogue refers to him as Ibn Samhūn; he is also known as Ibn Samjūn.

Abū Bakr Ḥāmid b. Samajūn, somewhat less well known than al-Zahrāwī or Ibn Juljul, lived and worked in Qurṭuba, and according to Ibn Abī Uṣaibi°a was an expert in the art of medicine, having a great knowledge of drugs and their uses.[1] He is said to have died about 1002 A.D.

Ibn Samajūn is known for one book, his "Collection of speeches of the Ancients and Moderns, of the physicians and philosophers, on the Simple Drugs".

الجامع لأقوال القدماء والمحدثين من الاطباء والمتفلسفين في الادوية المفردة

As the title suggests, the book is mainly composed of quotations from other authors, Greeks and Arabs. Ibn Abī Uṣaibi°a relates that Ibn Samajūn "took great pains" with this compilation and "dealt fully with the Ancients' opinions on Simples"; he refers to this book as Kitāb al-adwiya al-mufrada kitāb al-aqrābādhīn, which is presumably the same. It was composed during the days of al-Manṣūr al-Ḥājib Muḥammad b. Abī °Āmir, who died in the year 392/1002.

This work was thought to be lost until fairly recently, when a portion was acquired by the British Museum, Or. 11614[2]; there are also two volumes in the Bodleian, MSS Bruce 47 and 48.

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1 °Uyūn, Vol.II, p. 51-52

2 A.S. Fulton writes in British Museum Quarterly, XI, 1936, on two MSS then recently acquired.

A small portion of the book has been edited by Paul Kahle.[1]

MSS Bruce 47 and 48 do not contain the whole work, but appear to be two volumes of a set originally consisting of three. The first part, al-sifr al-awwal, ends on f.55a of Bruce 47, and on f. 57a the letter K begins, but in the middle of an article on Kushūth; al-sifr al-thālith is the opening of Bruce 48, and this volume ends with intahà al-kitāb al-Jāmi^{c} li-aqwāl al-Qudamā' wa'l-Muḥdathīn, but a whole section is missing. Bruce 47 contains the letters Ḥ, Ṭ, Y, K, L, M, Ṣ (one item). Bruce 48 continues Ṣ, and contains also ^{c}Ain, F, Ḍ, Q, R, S, T, Th, Kh, D, Ẓ, Gh, Sh. These two volumes are in good clear Maghribi writing, 13th century, brown paper with black or dark brown ink, the headings in red, usually with the vowels carefully inserted in black. In most cases each letter has one page devoted to a "table of contents". The books were once the property of James Bruce of Kinnaird (1730-94) and were given to the Bodleian in 1843.

The manuscript Or. 11614 is described by the British Museum Catalogue as "al-adwiyat al-mufradah, a work on simple medicines by Abu Bakr Hamid b. Samḥūn. Part ii. 13th century. 9½" x 6⅝"."

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1 P. Kahle, "Ibn Samāǧun und sein Drogenbuch", Documenta Islamica Inedita, Berlin, 1952, p. 25.

This manuscript is somewhat damaged, and the writing, which is Naskhi and smaller than that in the Bruce manuscripts, is not so easy to read. The text is written in dark brown ink on brown paper, with the names either in larger brown script or in red.

Some of the letters contained in Or. 11614 are the same as those in Bruce 47, although the manuscript begins with the letter Z. On f. 47b the letter Ḥ begins, with quite a few items which do not appear in Bruce 47, until reaching Ḥinṭa Rūmiya (f. 75b) after which the order is the same in both manuscripts. The letters Ṭ and Y are the same. K is in a different order, Bruce 47 having more than fifty extra items; the letter L is also arranged differently, Bruce 47 having four extra items.

A.S. Fulton refers to Ibn Samajūn's literary work, basing this upon a brief notice by al-Dabbī on a certain Ḥāmid b. Samḥūn, known for his eloquence, who composed a book on al-badīʿ; but it is not certain whether this is the same man who appears in Ibn Abī Uṣaibīʿa's work. Al-Dabbī in Kitāb bughyat al-multamis fī tārīkh rijāl ahl al-Andalus, said: [1] حامد بن سمحون له تصرف فى البلاغة وكتاب فى البديع ذكره ابو عامر بن شهيد واثنى عليه From the work here being dealt with, however, Ibn Samajūn does seem to have been more a scholar than a botanist, and he quotes frequently from the poets.

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1 ed. F. Codera and J. Ribera, Madrid 1885, No. 668, p. 207

Kahle chose the article on Yabrūḥ (Mandragora) to illustrate Ibn Samajūn's use of the Greek and Arabic authors, and to analyse his methods. Here he quotes mainly from Dioscorides, but from a number of other authors including Oribasius, Abū Ḥanīfa, Ibn Māsawaih, ʿĪsà b. Māssa, Yaḥyà b. Isḥaq, al-Rāzī, and Isḥaq b. Suleimān al-Isra'īlī who himself refers to Dioscorides a few times and to Galen once.

Throughout Ibn Samajūn's book, the chief authority quoted is Dioscorides, followed by Galen, then other Greeks including Paulus, Oribasius and Rufus. Where there are no Greeks, the first person quoted is generally Abū Ḥanīfa al-Dīnawarī. There are extracts from many Arabic authors, and sometimes a remark by one may be followed by several other names of those who corroborate the statement, having said the same thing or something similar: مثله او نحوه . The book is thus of particular value in giving extracts from authors whose work has been lost, especially Abū Ḥanīfa whose Book of Plants is one of Ibn Samajūn's main sources.

Several extracts from the same author may occur at intervals within one article, referring to different aspects or qualities of the drug. This is because Ibn Samajūn deals with one point at a time, generally giving first the origin or habitat, then the types and comparative value and quality, then the medicinal effects and any further interesting details. Under each point

he groups the relevant quotations, and sometimes adds his own remarks. So he does arrange and classify his material, although seldom adding direct editorial comment. This method gives a very full account of each drug dealt with, including sometimes such things as the price or how to tell the genuine product from one which is spoiled or adulterated, as he does with Misk (Br.47, f. 156b).

Ibn Samajūn quotes a good many times from Ibn Juljul, often in connection with the names of plants; so these quotations are probably from the Translation or the Tafsīr of Dioscorides. However, where he deals with a drug occurring in the Supplement, he does not mention Ibn Juljul's name, so it would seem that he compiled his book after the appearance of the new translation and the Tafsīr, but before the writing of the Supplement.

Al-Zahrāwī is quoted very seldom, and then only as confirming another author's statement, as for instance in the articles on Kāfūr (Br.47, f. 95b) and Kabbāba (f. 77a).

Where Ibn Samajūn deals with drugs contained in the Supplement, he does not mention any Greek authors, which supports the belief that these drugs were unknown to them. Plant drugs from the Supplement appearing in Ibn Samajun's book are: Tamr Hindī; Khūlinjān; Khiyār; Khiyār Shanbar; Habb al-Zalam; Rībās; Zarunb; Zurunbādh; Sandal; Tabāshīr; Tarkhūn; Fūfal; Qāqulla; Qaranful; Qinbīl; Kādhī; Kāfūr; Kabbāba;

Kūz Kindim (= Jauz Ḥandam); Māhī Zuhra; Māsh; Maḥlab; Narjīl (= Jauz Hindī); Yāsmīn. Animal origin: ᶜAnbar, Misk. Mineral: Mās, Yāqūt.

Where he does quote from Ibn Juljul, he occasionally disagrees with him. On Hadīd, (Br. 47, f. 20b), he does not trouble to be very courteous, but uses the words "gross blunder" - apparently because Ibn Juljul has attributed to al-Rāzī something which he never said. وذلك خطاء فاحش لم يقلهُ الرازى

On other occasions Ibn Juljul's testimony is generally accepted, as on Kāsham, which he has seen frequently in Galicia (Br.47, f. 69b). وقد رايته بارض جليقية كثيرا Ibn Samajūn occasionally includes Ibn Juljul's references to his own experience or familiarity with some particular drug. On Fū (Br.48, f. 24a) Suleimān b. Ḥassān declares that he has seen it often, and it grows a great deal in the mountains of Ṭulaiṭula (Toledo). On Qurrat al-ᶜAin (Br.48, f. 46b), Ibn Juljul reports that this small bush is plentiful in his area عندنا and he has seen it mostly at the foot of the mountain of Qurṭuba, in Wādī al-ᶜAqīq near the castle of al-ᶜUqāb; he has often collected it there, at the end of January, and has stored it up. واكثر ما رايته بسفح جبل قرطبة على وادى العقيق بقرب قصر العقاب وكثيرا ما جمعته هناك فى اخر شهر يناير واختزنته

On Sasāliyūs (Br.48, f. 92b) Ibn Juljul says that he has often seen it in Galicia and has collected it there; on Thīl (Br.48, f.123) he merely says it grows in meadows and damp places.

In the article on Thāfsiyā (Br.48, f. 120a) Ibn Samajūn reports on the authority of Ibn Juljul and Ibn al-Haitham "among our learned men" من علمائنا that it comes from the Maghrib, from Fās and other places; Ibn Juljul says that it is imported from there to Qurṭuba.

Ibn Samajūn seems to have little patience with any errors he comes across in the books from which he draws his material. He uses the phrase خطاء فاحش about a statement by Isḥaq b. ᶜImrān and Aḥmad b. Abī Khalid that Hudud and Kurkum are one and the same. This is impossible, he says, for their natures are different; the mizāj of Hudud is moderate, while that of Kurkum is hot in the third degree. (Br.47, f. 8b)

He sometimes compares two different accounts, or sums up the gist of the argument as with Karafs barrī (Br.47, f. 84a). Here he recounts information about the different sorts, for instance that the Maqdūnis is a variety of Karafs barrī, according to Dioscorides and "many of the Ancients and Moderns who followed him and explained his words".

كثير من قدماء الاطباء والمحدثين الذين تلوه وفسّروا قوله

Karafs jabalī is what Isḥaq b. Sulaimān used in the Tiryāq, but the correct sort is the one described by Dioscorides which grows in Macedonia. في بلد مقدونيا . He then explains that there are two main species نوعان the cultivated and the wild; the former has two varieties, and the latter five, which he then lists.

On the Yattū^{c} (Br.47, f. 47a) he explains that this is a name given to plants which have a sharp milk لبن حديد and includes the Māzariyūn, Māhūdānah and Māhīzuhra.

On Qinbīl, a "red earth" he disagrees with "most of the physicians" who say that it is hot (Br.48, f. 52a). Here Ibn Samajūn mentions his own experience: "I have examined it," he says امتحنتها - a change for him - and "did not find in its taste or scent anything to indicate heat; on the contrary, I found its taste insipid and its scent sluggish".

وقال اكثر الاطباء انها حار وقد امتحنتها فلم ار في طعمها ولا في رائحتها ما يدل على الحرارة بل وجدت طعمها تفهًا ورائحتها خاملة

On Sīsanbar (Br.48, f. 83a) he reports, without further comment, that all physicians and narrators agree that this is a Nammām of sorts, except for Isḥaq b. Sulaimān. On Taranjabīn (Br.48, f.110b) he gives his own fairly lengthy explanation of how the Manna varies according to the tree upon which it falls. In his article on Kharnūb (Br.48, f. 138a) he seems to lose patience a little; having reported from al-Ṭabarī that Kharnūb Shāmī expels al-Ṣufrā' .. and restricts the belly, he says "would that I knew ليت شعري how it can expel al-Ṣufrā' if it restricts the belly."

On ^{c}Anbar (Br.48, f. 7b) he gives a fairly full summary description and recounts the differing opinions of various authorities, including some who have imported it from the region of the furthest Maghrib - it seems that he has himself consulted

these people - but he also reports al-Rāzī's statement that it drops from the sky, the inaccuracy of which he must have realised but on which he does not comment.

On Ribās, he mentions the opinions of the physicians of Andalus (Br.48, f. 73b); on Sandal (Br.48, f. 7a) he discusses its effects as described by al-Rāzī, and says that he himself does not know any reason for them, and that no-one else has said this. On Tabāshīr (Br.47, f. 32b) he quotes from "some of the physicians" who give the Indian name; it is in fact ashes of the roots of Cana.

Ibn Samajūn was not prepared to accept what had been said by "the Ancients" if his own experience proved the opposite; on the whole, however, he is content to relate what others have said.

On some occasions, even his capacities for comparison and discernment seem to let him down. Under Fulful (Br.48, f. 27b) he reports conflicting opinions: Isḥaq b. Suleimān thinks that what is reported in the books of Dioscorides and Jālīnūs is wrong, and that this is the fault of the transmitters. Ibn Samajūn is not convinced, though he admits that there is some truth in Isḥaq's statement: "it is true, shown by analogy and the agreement of the physicians" هذا - صحيح يشهد القياس له واجماع الاطباء عليه
On the other hand, Dioscorides and Galen and Oribasius are all agreed on the fact they report, and we cannot suppose that the transmitters all happened to make a mistake at this point

in the books of each of these authorities ولیس یسوغ لنا ان
نظن ان الناقلین اتفق لهم غلط فی کتاب کل واحد منهم فی هذا المکان
and I do not know how that is, nor what is correct."
ولست ادری کیف هذا ولا وجه الصواب فیه

On Ghār (Br.48, f. 144b): most physicians say that Ghār is the Rand, as related by Abū Ḥanīfa from a Syrian. Al-Rāzī, however, mentioned these two in separate chapters of al-Mansūrī, describing them differently; Abū ʿUbaida did not equate the two, and furthermore he said that sometimes they call ʿŪd al-Ṭīb by the name Rand, agreeing with what al-Rāzī said. Ibn Samajūn himself comes to no conclusion, only the last resort of the baffled editor: والله اعلم

Ibn Samajūn shows a great interest in names, the origins of names, and the equivalents in the different languages.
On Karsanna (Br.47, f. 88a) he quotes Abū Ḥanīfa: This is Kushna, and its "root" is Siryāni but it has come to be used by the Arabs; he has heard it used in particular by those living near al-Shām.
On Karma (Br.47, f. 90a/91a) he quotes Sulaimān b. Ḥassān as saying that Dioscorides referred to both types as انبالوس while "other of our physicians" have said that the white Vine is الفشرا in Siryāniya and البوطانیه in Laṭīniya, while the black Vine is الفاشرشتین in Siryāniya.

Al-Zahrāwī in Maqāla 29 (Vel. f. 71b) defines ᶜAnab al-ḥayya as Kibr and Ḥazār Jashān; this is the Fāshirā العاشرا and is al-Karma al-Baidā'. On f. 74a he defines Fāshirā as Karma Baidā' and فاشرشين as Karma Sawdā', and in ᶜajamiya بوطانيه. In the Julia Anicia MS, f. 79a, Karma Baidā' is explained as فاشرا.

On Qātil Abīhi (Br.48, f. 97a) Ibn Samajūn quotes Ibn Juljul on the name: in Arabic al-ᶜAfār, and in Laṭīniya Maṭrūniya مطرونيه. Al-Zahrāwī has this in Maqāla 29 (Vel. f. 72b) where العفار is المطروبى and in ᶜajamiya. On f. 76b, Qātil Abīhi is defined as being in ᶜajamiya المطروبيه

Under Safartiyūn, (Br.48, f. 97a) Ibn Samajūn says that Dioscorides gives the name as ابليسقرنيوس meaning that which turns with the sun: اى الدائر او المنتقل مع الشمس In Laṭīnī it is called al-Ṭaurnashūlà الطورنشولى which reminds one of the Spanish Tornasol, a variant for the more usual Girasol. This is the ἡλιοσκόπιος of Dioscorides, IV.165. Euphorbia.

On Shauka Baidā' (Br.48, f. 154a) he quotes first Dioscorides: Aqantā lūqà (here the u of λευκη is transcribed by a vowel, not لقى as in some translations of Dioscorides)

اقنتا لوقى ومعناه باليونانيه الشوكة البيضاء

Al-Zahrāwī in Maqāla 29 deals with Shauka Baidā' (Vel. f. 79b) which is said to be translated into ᶜajamiya as اسبنه البه This could be pointed to read "Espina alba" -- white thorn.

On the Lubnà (Br.47, f. 111b) Ibn Samajūn quotes first Suleimān b. Ḥassān, then gives his own remarks: the name لبنى رومان is really Lubnà of the monks لبنى الرهبان for it is thus written in the old books. He was informed by a reliable Christian scholar اخبرنى من اثق به من علماء العباديين about the name Ruma رومة - The city is so called after Rūmalush al-Qaiṣarī who built it.

The problem of plant names and their correspondence in the different languages was one which concerned Ibn Samajūn as much as it did his two colleagues. He is conscious of the need to make his work relevant to Andalus, and every now and then he explains what are presumably indigenous names - he calls them Laṭīnī or Laṭīniya which is the same as the ᶜajamiyat al-Andalus given by al-Zahrāwī. Some of these occur under the letter Y for Yarba - now the Spanish Hierba. This latter name comes from the Latin Herba, sometimes found as Yerva; in El Cid the word is Yerba. The Academia first preferred Yerba but in 1884 changed to Hierba, which is the modern word.[1] The Portuguese word is still Yerba.

In Br.47, f.53b is Yarbah Qurajunairah: يَرْبَة قُرَجْنَيْرَة Ibn Samajūn's authorities here, and for other names with Yarba, are mainly ᶜImrān b. Abī ᶜUmar, Muḥammad b. ᶜAbdūn and

1 J. Corominas, Diccionario crítico etimológico de la lengua castellana, Bern, 1954. Vol.II, p. 912

Yaḥyà b. Isḥaq. In this case, ᶜImrān said: Yarba Qurajunairah in Laṭīnī is the Hiyūqārīqūn in Rūmiya; this is agreed, more or less, by Yaḥyà and Muḥammad, and the latter said: the Hiyūqārīqūn is called in Laṭīnī also al-Binīla, which means the small Ṣanaubar. Another said: the meaning of Yarba Qurajunairah is "heart herb" which is because the fruit is red in colour and pine-shaped, in the colour and shape of a heart.

According to Issq, هيوفاريقون is the Greek name for Hypericum perforatum L., John's wort, in ᶜajamiyat al-Andalus يربه قرجيالة nowadays Spanish Corrazonilla.

Al-Zahrāwī in Maqāla 29 (Vel. f. 80b) explains هيوفاريقون as يربه مرحونيه which is ᶜushbat al-qalb and in ᶜajamiya also البنيله [البنيل] which is الصنوبره الصغيره. He explains further: a red herb with yellow flowers, whose scent slightly resembles the pine. It has a covering غلف containing the flowers, in shape like a small pine cone. And on f. 82a, يربه مرحيله is explained as: الهيوفاريقون وهو الصنوبره ومعناه عشبه القلب

Ierva de san Juan is the Hipericon, in Spanish.[1]

On Yarbah Buṭrihi (Br.47, f. 53b) يربه بطريه

ᶜImrān said: the Afsintīn is called in Laṭīnī Yarba Buṭrihi, which means the putrid herb. Yaḥyà and Muḥammad said the same,

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1 J. Corominas, op.cit., Vol.II, p. 912

and the latter said that there are three varieties of Afsintīn, the one which grows locally being called Shānsuh in Laṭīnī also.

On Yarbaḥ Qaqīshah (Br.47, f. 53b) يَرْبَحْ قَقِيشَه ᶜAbd al-Raḥman b. al-Haitham said: its meaning in Laṭīnī is the purgative herb; some people call it al-Ḥalbūb and it is called in Yūnānī لنوسطس and the common people call it Lablāb but it is not that. Others of our physicians have said: Yarba Qaqīshah is the Lablāb whose leaf resembles the leaf of Naᶜnaᶜ.

Issa gives for Mercurialis annua, L., Euphorbiaceae, the names حلبوب or لينوزسطس (Lynozostis) and in Greek ارموبوطانيون Hermobotanion.

On Yarbaṭūrī (Br.47, f. 54a) يَرْبَطُورِى ᶜImrān said: the Yarbaṭūrī is the ᶜIrqasān and it is called Hazār Jashān (margin: Hazār Hashān). Muḥammad said likewise, and Ibn al-Haitham said in Kitāb al-mushilāt wa'l-muqayiyāt: al-Yarbaṭūrī in the Laṭīnī tongue is the plant called Fūqādhāyun in the Yūnānī.

Issa gives for Bryonia alba L., Cucurbitaceae, white bryony, the names هزار جشان، هزار كشان and Greek برونيا - For Peucedanum officinale L., Umbelliferae, the name in ᶜajamiyat al-Andalus he says is يَرْبَطُورَه and in Greek فوقادانُن or بوقيدانُن. He also gives Andrasiyun اندراسيون which agrees with al-Zahrāwī's statement (Vel. f. 52a) that Andrāsiyūn is said to be the plant called in ᶜajamiya Yarbaṭūra.

For Yāsmīn barrī, too, (Br.47, f. 54a) the Laṭīnī name is given and is recognisable. The plant has white flowers, and its Duhn has a stronger power of "dissolving" than the Zanbag; but the physicians of al-Andalus do not know this and use the name for the plant called in Laṭīniya Yarbah Difūguh يربه دفوقه which means herb of the fire عشبة النار "but this is a mistake".

Issa for Clematis angustifolia, Ranunculaceae, gives the name الظيان and in ᶜajamiyat al-Andalus يَرْبَهْ دْفُوقَهْ which means ᶜushbat al-nār. Yarba difūguh would appear to be Hierba de fuego, herb of the fire in Spanish.

In Ibn Samajūn's work we see the distinction being carefully kept between the names in the different languages. Arabic is the "standard" for most of the herbs and drugs, while languages mentioned include Laṭīnī (early Spanish, from the Latin); ᶜajamiyat al-Andalus (the local Spanish); Yūnānī (the ancient Greek, which Ibn Juljul had referred to as "ancient Ighrīqī"); Siryānī (Syriac); Rūmiya (Byzantine, contemporary Greek); Persian, as in the name Hazār Jashān, although Ibn Samajūn does not specifically say so.

Presumably the Arabic writers considered Spanish at that time to be identical with Latin, being the indigenous language. Plants would be known by their old names in the countryside, and any herbalist would therefore be obliged to have some knowledge

of local usage if he wished to find and collect his own plants. Botanical books needed to give the local country names, described as either Laṭīnī or ᶜajamiyat al-Andalus - names which "were more or less Latin or showed .. how, in the dark Visigothic ages, Latin had been moving in the direction of Spanish".[1] To us, they resemble Spanish more than Latin.

Ibn Samajūn is therefore careful to explain these names, to help the herbalist in his enquiries of the local peasantry. It is unlikely that the local system was highly developed, and these few examples from Ibn Samajūn's work are derived from the appearance, characteristics or uses of the plant in question: fire, heart, purgative, putrid. Al-Zahrāwī quite often gives the equivalent of a plant name in ᶜajamiyat al-Andalus in his Maqāla 29, though he seems to concentrate more on the Berber names.

Ibn Samajūn's book was used as a source by later herbalists, and Ibn al-Bayṭār quotes from him on several occasions. Taking just the beginning of his Jāmiᶜ, we find quotations in Book I, p.8 Ibrīsim, p.22 Azādh dirakht, p.23 Asārūn, p.32 Usrunj, p.36 Ushna, p.43 Afsintīn, p.49 Aqṭà, p.93 Basbāsa, p.132 Bīsh, p.159 Jidwār, p.176 Jauz al-Ruqᶜ; Book II, p.13 Hadīd, p.14 Harmal.[2] In each case the quotation is brief, sometimes including the name of the authority from whom Ibn Samajūn himself has copied.

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1 J.B. Trend, The Language and History of Spain, London 1953, p.57

2 References taken from Ullmann, Medizin, p. 267

The Drug Book contains a summary of the opinions of all the best and most reliable authorities, so in this way, like al-Zahrāwī's al-Tasrīf, it dispensed the student from searching through a large number of earlier works. Ibn Samajūn has set forth what he considers essential, and no doubt earned the gratitude of numerous botanists and physicians in Andalus.

His work is however theoretical rather than practical, and seems to be intended for use as a reference book for the scholar rather than a manual for the practising herbalist. It is essentially a compilation, although closer examination modifies the first impression that the author has nothing to say of his own. He has selected his sources with care, where necessary voicing doubt or disagreement. He points out inconsistencies or confusion, and sometimes records his support of one particular author.

Nevertheless, the book remains an anthology, and frequent quotation of lines of poetry referring to the drugs shows his literary inclinations. He is meticulous and accurate, perhaps somewhat intolerant - the phrase خطاء فاحش appears several times. He quotes at some length, thus often repeating the same statement as given by different authors; most of his information has obviously been taken from written works.

Within these limitations he is excellent, but there is little chance to get to know the author; we do not find realistic

touches and references to his own experience such as we find in the works of both al-Zahrāwī and Ibn Juljul. The book is carefully compiled and arranged, but never really comes to life. Ibn Samajūn himself remains a two-dimensional figure within the pages, whereas Ibn Juljul and al-Zahrāwī constantly remind us of their own lively interest in the subject and their active participation in research work.

CHAPTER 14

EXTRACTS FROM THE DRUG BOOK

f. 95b

As examples of the method Ibn Samajūn follows in his book, we have selected two drugs: Kāfūr and Thāfsiyā. The first is dealt with in the Supplement and in Nuruosmaniye 3589, and by al-Zahrāwī in Maqāla 28; Thāfsiyā appears in Maqāla 28, and also in Ibn Juljul's Tafsīr.

KĀFŪR: Ibn Samajūn chooses and arranges his quotations with care, for example splitting up the extract from Isḥaq b. ʿImrān into three parts according to his arrangement of the information. He quotes from a number of Arabic authors, but no Greeks. His description is classified: first comes the origin of Kāfūr, from India and elsewhere; then the types, in order of value and usefulness; next the properties and powers, the effects and various uses of the drug.

KĀFŪR: Ahmad b. Daud said: Kāfūr is not indigenous to the Arabs, although it occurs much in their speech. It is called Kāfūr and Qaffūr, and is an Arabised name.

The Rājiz said: اهضابها و المسك و القفور

It comes from the inside of its wood, and is split from it.

ʿUbaidallāh b. Khurdādhbeh said: the Kāfūr tree is found in Faiyūma an island of India. A single tree can give shade to about a hundred people. One splits open the tree and Mā' al-Kāfūr

pours out, enough to fill several jars. Then it is split lower down, in the middle of the tree, and there come out from it bits of Kāfūr, which is the gum of that tree, although it is within it; then that tree becomes useless and dries up.

Isḥaq b. ᶜImrān said: Kāfūr comes from Sofāla and the land of Kilāt and al-Rānij and Harnaj; the largest is from Harnaj, which is lesser China. It is the gum of a tree which grows there, greyish in colour and shiny; its wood is white, soft, inclining to black; it is found only in the interior of that wood, in holes in it which extend lengthwise. The first sort is al-Rabāḥī, which is the natural; in colour it is red, shiny; then it is distilled there and white Kāfūr comes from it. It is called Rabāḥiya because the first person to come upon it was a king called Rabāḥ; and the name of the place where he found it was Ṣanfūr, so it is also called the Ṣanfūrī. /

f. 96a Aḥmad b. Ibrahīm said: Kāfūr is the gum of a tree which is found in the mountains of al-Ranij, in India; the Rabahi sort is the natural. Its colour is greyish, shiny, with some redness; when this Rabahi is vapourised, white distilled Kāfūr comes from it.

Isḥaq b. ᶜImrān said: the best Kāfūr is the Ṣanfūrī, the scaly, the Rabāḥī; it is the finest, purest and whitest, the most brilliant, and the best of all is like a dirham or thereabouts. Next comes a Kāfūr called al-Rufūq, which is thick, dull-coloured, with none of the purity of the Rabāḥī; nevertheless it is good, splendid, with no crushed particles; after it comes a Kāfūr

called Ḥabb al-Rabāḥī, which is the one below the splendid, and less valuable than the Rabāḥī. After that is a Kāfūr called al-Karkast, which is brown, and its price is lower than that of the Rabāḥī. After it is al-Bālūs which is mixed with splinters of the Kāfūr wood, fatty, gummy, like the Almond, Chick-pea, Bean and Lentils. All these Kāfūrs are purified by distillation, and there come out from them white sheets of Kāfūr in the shape of the glass cups in which they are distilled; this is called al-ma°mūl. It is possible to extract from a mann of Bālūs and Karkast a riṭl volatilised, or a riṭl and a half. This is in the middle price range of Kāfūr. Ḥabb al-Rabāḥī is suitable for شعف [1] of scent, like the frankincense made from bitter Qist and المثلثة الشعف

Al-Masīḥ said: the power of Kāfūr is coldness and dryness, in the third degree. The same was said by Yuḥannā b. Māsawaih, °Īsà b. Māssa, °Alī b. Rabban, Isḥaq b. °Imrān, Khalaf b. al-°Abbās and Aḥmad b. Abī Khalid.

Māsarjawaih said: One of my acquaintances took six mithqāls of Kāfūr on three occasions; his stomach deteriorated until he could digest nothing at all, and he lost his sexual powers at one yet he had no other illness come upon him.

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1 This appears to be a technical term for scent; مثلثة is a particular type of compound perfume, perhaps "threefold".

Ibn Māsawaih said: Kāfūr is cold and dry, it confines the belly and hastens greying of the hair, when it is drunk; and it is beneficial for hot swellings.

Ibn Māssa said: Kāfūr is cold and dry, contains slight narcotic properties. It is good for the fevered; if taken alone or with rose water it strengthens their limbs and senses when pain overcomes them from excessive heat. When a small amount of it is mixed with medicines it restricts looseness of bowels caused by yellow bile, and prevents diarrhoea.

Al-Dimashqī said: Kāfūr is cold and dry; when it is crushed and sniffed with the juice of green unripe dates, it prevents nosebleed.

Al-Ṭabarī said the same, or something very like it.

Al-Rāzī said: Kāfūr is cold, gentle, beneficial for headache and swellings in the head and the whole of the body. Too much smelling of it causes sleeplessness. When drunk, it cools the kidney and testicles, f. 96b solidifies the sperm, and brings on cold diseases in these regions.

In al-Ḥāwī he said: It is said in the ancient medicine that Kāfūr restricts the belly and hastens whitening of the hair.

Isḥaq b. ʿImrān said: Kāfūr is cold and dry, good for those suffering from fever and bilious headache, when they smell its scent, alone or with rose water, or Sandal made into a paste with rose water; it benefits them and strengthens their limbs

and senses. When it is continually sniffed, it takes the sexual appetite away; when it is drunk, its action in that respect is stronger. When a small amount of it is mixed with drugs which restrict the belly and check bilious diarrhoea, it is a useful preventative. Continual use of it hastens the appearing of white hair. When the amount of two barleygrains is sniffed with water of Khass it is sopporific and cools the heat of the brain, and takes away headache, checks nosebleed and holds back excessive blood.

Ahmad b. Ibrahīm said the same.

In the article on Thāfsiyā, Ibn Samajūn relies heavily upon Dioscorides, quoting word for word much of the latter's description and instructions, and in detail the method of extraction and the precautions to be taken during the process, to avoid burning the skin. He has also a brief quotation from Ibn Juljul. In the quotation from Dioscorides, there are very minor variations from the text as found in the edition of the Arabic version, and the description copied by al-Zahrāwī in his Maqāla 28.

Br. 48
f. 120 a

THĀFSIYĀ: Al-Rāzī in al-Ḥāwī and al-Jāmi^{c} said: I am certain that the Thāfsiyā is the gum of wild Sadhāb; and (Galen) said in Qāṭajānis that the power of Thāfsiyā weakens in one year. He said in al-Mayāmīr: it is of no benefit after three years.

Ibn Māssa al-Baṣrī said: Thāfsiyā is al-Yantūn and some said that it is the root of the Sadhāb.

Ḥubaish said: Thāfsiyā is the gum of the Sadhāb.

Author: People are at great variance about this herb; some say it is the gum of the wild Sadhāb, and some say it is its root. Dioscorides said it is a plant, and Suleiman b. Ḥassān and ^{c}Abd al-Raḥman b. al-Haitham, of our own learned men, said: the Thāfsiyā is a plant which grows in the land of the Berbers, in the region of the Maghrib, at Fās and other places, and it is called in Berber Idrīs.

Suleiman: It has been brought to Qurṭuba and become cultivated, and is successful. He said: the people of our

region use the name for the juice of the wild Sadhāb, which is a mistake.

That is in accordance with what Dioscorides said.

Dioscorides said: the name of this medicine is derived from Thafsis, the island, because it is thought to have been first found there. It is a plant which, on the whole, resembles the plant called ? Tarataqus, which is a type of Kalkh except that its stalk is thinner, and its leaves resemble those of the plant called Marābun, that is, the Raziyānaj. At its extremities, in each branching, are "crowns" like that of the Shibith. In them are yellow flowers and somewhat broad seeds, like those of the plant called ? Tarataqus, except that it is smaller, and its root is white, large, thick of bark, pungent. From it are extracted "tears": by digging around it, and splitting its bark; or one makes a round hole in it and covers up the hole so that the "tears" may remain clean, and on the second day one takes the moisture that has collected. One can extract the juice of the root by crushing and pressing its thickness with a screw, and then crush, and dry in the sun in a thick earthenware container. Some people press the leaf with the root, and this juice is weak in power; and the difference between them is that the juice of the root has a stronger smell; and it remains soft. The juice which has been mixed with juice of the leaf goes dry and gets holes from erosion that occurs to it. / If anyone wishes to extract the "tears" he must not do that on a day of wind, but a

/1206

quiet one; for the face swells up dreadfully, and any part of the body which is uncovered will become blistered, by the fierceness of the vapour. One must first anoint the exposed places of the body with moist, liquid, astringent Qirūṭī.

The power of the root, its juice and its "tears" is purgative and cleansing to the thick superfluities if it is drunk, each one of them with the wine called Maliqratun. One should give, of the bark of the root, the amount of 4 obols with 3 dirkhamiyāt of seeds of Shibith; of the juice one gives 3 obols and of the "tears" one dirkhamī. For if one gives more, it harms the recipient. Purging with it is appropriate for thosw suffering from difficult breathing and chronic pain of the pleura. It helps expectoration of superfluities. It can be used in food, and given to those who have difficulty over emesis. The power of the "tears" and the bark over changing of the temperament is stronger than that of other drugs which are similar in power, when we need to attract something deep-seated or prepare for the thing a way to transfer it from its place to another place. So when you use the "tears" and that bark, which is moist, as ointment for alopecia, it makes the hair grow.

It can be mixed, crushed, or its juice, with equal parts of Kundur and Mūm and used to conceal blood and aubergine-coloured marks, and it removes them. One must not leave it more than two hours but it is then removed; then after that one applies a compress of warm sea water to the place, and the freckles and

the juice are completely cleansed away. When mixed with honey it cleanses ulcerated scabs, and when mixed with Kibrīt and smeared on abcesses it makes them erupt. It can be beneficial when used as an embrocation for the chronically painful pleura, and for the lung and foot and the joints.

Oribasius said: The power of the Thāfsiyā is very fierce, warming, with some moisture. Therefore it has a power of attracting strongly from deep within the body. Then it dissolves the thing it has attracted; this it does over a long period of time.

Masīḥ said: Thāfsiyā is hot and dry in the fourth degree, pungent, beneficial for expectoration and difficulty of breathing and alopecia, and it removes marks and cleanses freckles and leprosy; it cocts ulcers and makes them erupt. It is beneficial for pleurisy and pain of the lung and gout from phlegm, and pain of the joints, /and is beneficial for swellings which arise. f. 121a

Al-Baṣrī said: Thāfsiyā is very hot, with a superfluous moisture, and in its warmth is slow because of that; and it attracts from deep down after exertion, and it sinks in.

Ḥubaish said: Gum of Sadhāb, which is the Thāfsiyā, is hot at the end of the third degree, dry at the end of the second. It cures old ulceration if sprinkled on it, is beneficial for scrofula in the throat and under the armpits if a dāniq's weight is used as snuff.

Jāmi^{c} of al-Rāzī: Thāfsiyā, which is the Yantūn, is hot and dry in the fourth degree, pungent, removes whiteness and marks and

is beneficial for swellings in the nerves and pain of the joints. It is said to be the root of the wild Sadhāb.

Al-Rāzī said: Whoever drinks Thafsiyā may be subject to sharpness in the throat and stomach, which cannot be borne, and to protruding eyes and redness of the face and itching of the skin of the body. These should vomit, then be given to drink milk several times, and butter; then they should be given barley water until they are settled; they should gargle with milk and rose Duhn.

Al-Manṣūrī: Thafsiyā is very hot, burning; it makes the hair grow, in cases of alopecia; and when the body is rubbed with it, it is beneficial for general lassitude.

CHAPTER 15

CONCLUSION

These three medical writers, roughly contemporary with one another, together provide a fuller picture of the state of medical theory and practice in 10th-century Andalus than could be gained from the work of any one of the three considered separately. Each concentrates on certain aspects of medicine, adding his contribution to knowledge, supplementing and completing what the others dealt with less fully.

We can tell from their frequent use of Greek and Arabic writings that these works must have been easily available and generally studied; we gather from al-Zahrāwī that there were plenty of unauthorised people attempting to practise medicine, although perhaps the picture is not quite as black as he painted it. Possibly the sheer size and bulk of some of the medical writings led the student to prefer the study of abridged and inadequate works. Al-Zahrāwī sets out to provide a complete though concise guide which will make unnecessary the study of other texts.

Ibn Juljul and Ibn Samajūn similarly attempt to bring within the confines of a single book all the vital knowledge about the subject they are treating. All three aim at providing the physician or botanist in Andalus with texts of particular relevance to his own country and circumstances, bypassing the earlier and

more weighty works - from which they have collected the most valuable parts.

Despite the great debt to the Greeks, it is particularly noticeable that there is a specifically "Andalusi" character about all the works here considered. Even the History of Ibn Juljul devotes a large proportion of its space to physicians of Andalus. Particularly where plants and their identification are concerned is this apparent: the writers were anxious to point out any correspondence between local and traditional names, and to describe the plants in detail where they thought this necessary.

Ibn Juljul is greatly concerned with accuracy of nomenclature and identification of plants, and this is perhaps his special field. Both al-Zahrāwī and Ibn Samajūn seem to have accepted him as an authority, seldom disagreeing with his statements. Al-Zahrāwī is similarly anxious to provide accurate identifications, but devotes only a small portion of his whole work to this subject, and here he quotes from Ibn Juljul more than from anyone else except Abū Ḥanīfa. Ibn Samajūn concentrated on drugs, very largely of plant origin, choosing his extracts from both Greek and Arabic writers, among whom Ibn Juljul features prominently, especially on the equivalent names in Greek, Arabic and ʿ<u>ajamiya</u> (or <u>Lātīnī</u>).

Ibn Juljul was not only a physician but a historian, if we take it, as seems most likely, that one and the same man wrote the <u>Ṭabaqāt</u>, the <u>Tafsīr</u>, the <u>Tiryāq</u> and the <u>Supplement</u>;

this indicates a wide range of interests, with plants perhaps to the fore. In the Tiryāq, he again shows his great concern for correct identification and description of the various plant ingredients. This is not merely theoretical, for he refers to plants which he himself has seen and collected, not only around Qurtuba but further afield. Ibn Samajūn in his book several times quotes Ibn Juljul's account of his experience regarding the habitat and appearance of plants in Andalus.

Al-Zahrāwī, perhaps the best known of the three, is referred to in any history of medicine as the greatest Arab surgeon. Yet, as we have seen, he was not purely a specialist in the subject for which he is justly famous. His work al-Tagrīf covers every aspect of medicine, including the identification and naming of plants - in which field he acknowledges his debt to Ibn Juljul. He gives detailed descriptions of processes and methods employed in the preparation of drugs, and internal evidence shows that he carried out these processes himself, having first collected his own plants from the areas around Qurtuba. Here, too, his knowledge is primarily practical.

Ibn Samajūn seems to have been rather more of a theoretical botanist with literary leanings than a practitioner of the art he describes. We are told that he was in fact a physician, but one feels that he might as easily and successfully have collated an anthology on astronomy or zoology. The fact that he chose

botanical medicine may help to indicate its important position among the sciences at this period. He is careful and discriminating in his choice of extracts, which are all from the works of acknowledged authorities in medicine.

Ibn Juljul and al-Zahrāwī show themselves expert in many areas of medicine, whereas Ibn Samajūn, whatever his practical abilities as a physician may have been, chose to prove his literary skills only in the fairly limited field of drugs.

Yet this field is limited only in name. To presume to deal with drugs, their qualities, powers, and effects, presupposed an excellent acquaintance with all other aspects of medicine; to understand fully the art of treatment with drugs, the physician had to know also the fundamentals of medicine, the composition of the human body and its probable reaction to any treatment. Ibn Samajūn, showing himself a careful and painstaking writer, would not have undertaken this compilation if he had not already had a good command of all the other elements of medical knowledge. He presumably chose the subject which interested him most, or in which he felt there was a need for a comprehensive handbook designed for the physician in Andalus.

These three physicians were working and writing at much the same time. From what can be gathered from references within their works, it seems that al-Tasrīf was written over a fairly long stretch of time; the section on plant names, in Maqāla 29, at any rate was written after Ibn Juljul's Tafsīr had already

become fairly well known; it is referred to as "his book" but not by name. Ibn Samajūn appears to quote from the same work; neither he nor al-Zahrāwī quotes from the Supplement nor the Tiryāq. Ibn Samajūn does not refer on more than a few occasions to al-Zahrāwī, who was not particularly well-known as a writer on drugs and herbs. Ibn Juljul quotes from neither of his two colleagues.

It would seem that the first of these works produced during the period was the Translation of Dioscorides; next would have come the Tafsīr, in whatever form it may have taken. The Translation in particular helped to give the impetus to further works on plants and drugs. Ibn Samajūn and al-Zahrāwī wrote their works on the subject probably shortly afterwards, possibly while Ibn Juljul himself was composing his other works on herbs, the Tiryāq and the Supplement. He and al-Zahrāwī certainly seem to have taken their description of the Tiryāq from the same source, mainly the translation of Galen's work on the subject; Ibn Juljul spends more time dealing with the actual plants which composed the medicine, while al-Zahrāwī shows more interest in the dosage for specific illnesses.

These three writers between them cover all the aspects of medicine with which the physician of the period would have to be familiar. They stand out from the general background of medical studies, Ibn Juljul and al-Zahrāwī in particular showing great practical skill and versatility. They are not, however, isolated figures in a barren landscape, and there was certainly

much good work being done in and around Qurṭuba, the capital of the Caliphate in Andalus. Ibn Juljul and al-Zahrāwī highlight certain aspects, and one would gather that the physicians of Andalus were inclined to concentrate upon, and excel in, practical botany and pharmacology. The knowledge of the plants themselves and the processes involved in producing useful drugs formed the basis of therapeutics, and being of vital importance received due attention from Ibn Juljul, al-Zahrāwī and Ibn Samajūn. One presumes that the same care was devoted to these matters by a large proportion of their contemporary fellow-workers in Andalus.

TEXT OF IBN JULJUL'S SUPPLEMENT TO DIOSCORIDES

From MS HYDE 34

f. 197b - f. 201a

< > = inserted

[ ] = probably should be omitted

M^2 = margin, another hand

MS = Manuscript reading

s.p. = Manuscript omits pointing

بسم الله الرحمن الرحيم وصلى الله على محمد وآله الطاهرين

وهذه مقالة ثامنة نذكر فيها ما قصر ؒس عن ذكره في كتابه ممّا يستعمل في صناعة الطب وينتفع به وممّا لا يستعمل ولاكن لا نغفل ذكره ان شا الله تعالى

[١٥] فمن ذلك الهليلج الاصفر وهو من الادوية الهندية وهو في مزاجه الغالب عليه البرد واليبس وفيه قوة مسهلة للمرّة الصفراء قال قوم في ذلك انه يسهل بالعصر وقال قوم بالصمغية التي فيه ورأى جالينوس ان فيه قوة مسهلة بينها وبين الشي الذي تستفرغه نسبة مشاكلة لاستفراغه وهي الخاصة ولا ندرجها لنجرى على رأى ؒس في كتابه الشربة المفردة منه اربعة دراهم عن اقصد الامور

[١٦] الاهليلج الكابلي هو من الادوية الهندية يوتى به من ارض كابل وهي متاخمة لارض الهند مزاجه فيه شيّ من حرارة واليبس معه يسهل المرّة السوداء المنفصلة عن الصفراء الشربة منه اربعة مثاقيل

[1c] الاهليلج الاسود ويقال له الصيني ينزل المرّة السوداء المتولّدة عن احتراق الصفراء مزاجه فيه شيء من حرارة واليبس فيه الشربة منه كالشربة من الكابلي

[2] لبّ الخيار شنبر منه المصري ومنه الهندي وهو يوجد في قصب اسود صلب وهو ثمرة شجرة داخله فلك رقاق يكون طبقةً في ما بين تلك الفلك ذلك اللبّ وهو الاسود اللون فيه عسليّة تدبق باليد وطعمه الى الحلاوة مع حموضة والمصري حامض مسحج الى ان يتم له عام وهو ينزل المرّة الصفراء ويكسر [الوهج] وهج الدم وينفع من اورام الحلق الحارة واورام الكبد الحارة والشربة منه ثمانية مثاقيل محلولا في الماء ومزاجه الى البرد

[3] التمر الهندي منه هندي ومنه بصري واهل البصرة يسمّونه الحُمر وهو نبات له ورق كورق اللوبيا صلب وله ثمر في غلف رقاق سود عليها عسلية تدبق باليد وداخل الغلف حبّ صلب مركن احمر اللون وهو ينزل المرّة الصفراء ويكسر وهج الدم وفيه حلاوة مع حموضة قوية ويقطع العطش اذا مصّ والشربة منه ثمانية مثاقيل اذا حلّ بالماء وشرب ماؤه فربّما اسحج المعى بحموضة

[1d] البليلج دواء هندى يشبه الاهليلج الا انه املس القشور وفيه رخاوة وهو اصفر اللون وفيه قوة ينزل بها الصفراء انزالا لطيفا وعفوصته لذيذة والغالب على مزاجه البرد واليبس وفيه خاصة تنفع من الارواح والبواسير ويجفف رطوبة المعى والمعدة والشربة منه كالشربة من الاهليلج

[1e] الاملج دواء هندى مدور اسود اللون اذا/كسر انفصل الى اربعة اقسام صلبة فيه عفوصة وشي من حموضة واذا ربى باللبن لبن النوق قيل له شير املج وينفع من الارواح والبواسير ويجفف بلة المعى والمعدة والشربة منه كالشربة من الاهليلج والغالب على مزاجه البرد واليبس ويكسر حرارة الصفراء f. 198a

[4] الخولنجان دواء هندى حار رطب زائد في الباه مصلح للمعدة الباردة عطر الرائحة مقو للمعدة والكبد الباردة مقو للاعضاء الباطنة

[5] القاقلة الكبير وهى الهال والهيل وهو دواء هندى حار مع شي من يبس مقو للمعدة والكبد الباردة مطيّب للنكهة هاضم للطعام وهو من الافاويه العطرية

[6] الجوز بوا وهو دواء هندى حار يابس عطر الرائحة مطيّب للنكهة مقو للمعدة والقلب طارد للرياح مهضم للطعام وهو من الافاويه العجيبة

[7] الكبابة وهو حبّ العروس مدور عطر الرائحة حار يابس مقو للمعدة والاعضاء الباطنة

[8] القرنفل حار يابس عطر الرائحة مقو للقلب والدماغ والمعدة والاحشا وهو من الطيوب الرفيعة

[9] الزرنباد دواء هندى حار يابس مقو للقلب مرقّ للدم الغليظ السوداوى نافع من الوسواس وحديث النفس وهو يشبه الزنجبيل

[10] الدرونج دواء هندى يشبه اصول السوسن الاسمانجوني حار يابس مقو للقلب والدماغ من الوسواس والافكار[1] السوداوية

[11a] البهمن الابيض اصول بيض معقرية الشكل صلبة برّاقة[2] مزاجه الحر والرطوبة مقو للقلب زايد في الباه نافع من حديث النفس والسوداء

[11b] البهمن الاحمر مزاجه الحر والرطوبة مقو للقلب والدماغ

[12] البوزيدان اصل ابيض ملوى الشكل شديد البياض صلب مزاجه الحر والرطوبة مقو للباه زايد فيه نافع من اوجاع النقرس ذكر بعض الثقات انه السرغنت الذى عندنا في النوع والمشرقي اصلب واشدّ بياضا

[13] الطباشير هو شي ابيض وفيه رمادى وهو دواء هندى اختلف فيه فمنهم من قال انه عظام الفيلة محرقة ومنهم من قال انه اصول القنى وهو القصب

1 MS: الامكار

2 MS: برافة

الهندى وهو صحيح القول فيه ومزاجه البرد واليبس ينفع من الحميات الحادّة ويقوى الكبد الحارّة ويقمع وهجها وينشف البلة العفنة من المعدة ويحبس البطن المستطلق اذا كان من الصفراء

[14] الفوفل دواء هندى وهو الاطمط وهو البندق[1] الهندى وهو ثمر حبّ نخيل هندية رقاق ميّادة لرقتها ولها عراجين تثمرُ الفوفل وهو حبّ احمر في شكل قلوب الطير عطر الرائحة يطيب النكهة ويقوى القلب ومزاجه البرد واليبس

[15] التنبول ورق هندى ورق شجرة عطرية يستعمله اهل الهند استعمالا شديدا يمضغُونه كلّ صباح فهو يحمر الشفاه ويطيّب النكهة ويفرّح القلب ومزاجه الحرّ المعتدل

[16] الامير باريس حبّ كالنانخاه حامض الطعم وفقاحه يسمّى الزرُشك وهو مبرّد قامع/للصفراء نافع من الحميات f. 198b

[17] الهرنوة حبّ يوتى به من بلاد الصقالبة[2] وهو ساحل ارض الحبشة حار يابس عطر الرائحة طيّب الطعم مسخن للمعدة الباردة وهو من الطيوب

[18] الفليفلة حبّ يشبه الفلفل اغبر اللون حار يابس ويقال انّها الفلفل الابيض الذى حكاه ش ولم يحك لنا ذلك من يقطع بقوله لاكنه قول

[1] MS: البندق [2] should be صمالبه ?

[19] المحلب حبّ مدوّر عليه قشره الى الحمرة والسواد ولحبّها قشرة خشبية[1] داخلها طعمة بيضاء عطرية فيها شي من مرارة وهو* حبّ شجر يسمو وله خشب غليظ ويستعمل المحلب في المسوحات والنقاوات وحبّه ينفع من الحمى في الكلى والمثانة ومزاجه الحر مع شي من يبس

[20] جوز الهندى وهو النارجيل والرانج وهو ثمرة نخيلة عليا رقيقة يميد بمن ارتقى اليها وصعد فيها ولها اعذاق يكون في العذق ثلاثون نارجيلة ويسيل من اعذاقها اذا شرطت طرية عسل يقال له طواق يشرب فيسكر سكرا مفرطا و‹اذا› ترك الى الغد صار خلا لزقا[2] والنرجيل زايد في الباه اذا اكل بالسكر ويصنع منه دهن نافع من الارواح الباطنة ومزاجه الحرارة والرطوبة

[21] النارنج والليمون نوعان من الاترج هنديان عطرا[3] الرائحة ذكياها ومزاجهما الى البرد للحموضة التي في اجوافهما[4] ورائحتهما تقوى القلب وتنفع من الغشي

[22] بستان ابروز وهو نبات يعلو في قده اكثر من ذراع له سوق شاطّة عليها ورق كورق القنا الى الطول وفي اطراف اذرعه وشايع كوشايع الباذروج لونها نرفيري مليح المنظر وليس له رائحة عطرية واوّل من عرفه بالاندلس يونس الحراني

1 ms : حبشية
2 ms : ازقا
3 ms : عطر
4 ms : اجوافها
* ms : وهى

ثم ولده احمد بن يونس وماؤه اذا شرب معصورا نفع من الدواء القتال

الذى يعرف بالنبال وهو اقونيطن قال ذلك يحى بن سرابيون في كتابه

[23] البلاذر ينبت بالهند وبغير الهند وهو قسطل في شكل القلوب اسود اللون في

داخله طعمة كاللوزة حواليها عسل هو عسل البلاذر وهو في مزاجه حار يابس محرق

ينفع من الامراض الباردة كالفالج واللقوة والنسيان ويسمى بالرومية انقرديا

تاويله القلب

[24] الزرنب ينبت بالهند وبغير الهند وهوعود فيه شبه من الكركم يقوى القلب

والمعدة ومزاجه الحر واليبس

[25] الياسمين نبات له عصى شاطة مخرجها من اصل واحد ثم تتفرع الى فروع وله ورق

شبيه بورق الخيزران البرى وفيه شبه من رؤوس الاس الا انها الين واشد

خضرة الى السواد ويصنع منه عريش وله نوار ابيض يتفرع الى اربعة فروع

طيب الرائحة عطرها ويكون منه اصفر ويربى بالسمسم بنواره ثم يعصر منه دهن

يسمى الزنبق ويقال له الرازقى ولم يذكره س وينفع من الامراض الباردة

كصلابة العصب وامتناع الحركة ومزاجه الحر مع شي من يبس واذا اربى

بزيت الزيتون فهو ايبس

[26] الخيزران منه هندى ومنه ما ينبت بالاندلس وله ورق كورق الآس الا انه f. 199 a
الين وله قضبان شاطّة جدّا تكون من قامتين فاكثر ملس براقة فالهندى منه ابيض العود الى الصفرة والاندلسي اخضر وفي داخل عوده انابيب نافذة من اسفل العود الى اعلاه يمتصّ بها الماء فيصل الى فم الممتصّ له ولا يصرف الخيزران الهندى في شي من العلاج لاكن تصنع منه الاطباق والادراج والكراسي واما الاندلسي فيتعالج به ويغتسل بمائه للاوجاع

[27] الكافور هندى وهو صمغ شجرة تكون بالهند كالصنوبر فيها الكافور كالصمغ وكالراتينج فيجنى ويغسل بالماء ويصعد فيصير ابيض كبياض الثلج ولونه اولا[1] الاصفر الى الحمرة والماء[2] الذي يغسل به يقال له ماء الكافور وهو دهن لزج طيّب الرائحة يقوم مقام دهن البلسان والكافور بارد يابس اذا صعد وهو قبل ان يصعد فيه جزء من الحرارة وينفع من حرارة الصفراء والتهاب الكبد والحميات الحادّة اذا شمّ وادخل في الادوية

[28] المسك دواء هندى وهو نوافج ملاى من المسك تسقط من افخاذ دوابّ هى في قد الظباء تصير في افخاذها زوايد فلا تزال تكبر وتمتلى بدم ذلك الحيوان فاذا انتهت[3] سقطت وفيها المسك ويقال ايضا ان النوافج تكون في صوار[4] هذا الحيوان والمسك

1 ms : او
2 ms : الملاء
3 ms : تناهت
4 ms : صارو

مقو للقلب مرقّ للدم الغليظ السوداوي منبه للارواح[1] والحرارة الغريزية مقو للدماغ وهو من رفيع الطيوب وسيدها ومزاجه الحر واليبس

[29] العنبر رجيع دابّة بحرية ترعى في البحر حشيش العنبر فاذا تملات منه قلقت به فتقذفه رجيعا وهو في خلقته كالسهام العظام من الخشب وهو دسم خوار دهني[2] كالقير يطفو على الماء ولونه الى السواد والشهوبة والاسود منه مرذول والاشهب جاف قليل الندوة والجيد منه المختلط السواد بالشهوبة ومزاجه الحر واليبس وهو عطر الرائحة مقو للقلب والدماغ نافع من الفالج واللقوة وامراض البلغم الغليظ وهو سيد الطيوب واختباره بالنار وحينئذ توعى رائحته

[30] دهن الترنج يعمل بالشرق الاعلى وهو اجود الادهان للامراض الباردة كالفالج واللقوة واسترخا الاعضاء ومزاجه الحر واليبس

[31] دهن الكاذى يصنع من كمرّى نخيل يقال له الكاذى وهو دهن مقو للاعضاء الواهنة المسترخية يشدّها ويقويها

[32] الشبيان وهو الايدع وهو دم الاخوين وهو صمغ شجر يكون بالهند في شكل النخيل وهو يصمغ هذا الصمغ وهو احمر برّاق ولذلك يقال لحجره

1 ms : للرواح
2 ms : هنى

الغصوصي وهو ينفع من قذف الدم من الصدر ومن المقعدة ويذرّ على الجراح اذا كانت بدمها فيلحمها سريعا ومزاجه الى البرد وهو بالاندلس بجزيرة قادس اخبرني بذلك ثقات[1] ممّن رآه وعاينه وليس بالكثير هناك انّما كان هناك شجرة واحدة

[33] الصندل عود شجر يكون بالهند طيّب الرائحة وهو ثلاثة اصناف منه احمر كالدم f. 199b عود صلب ثقيل ومنه اصفر/ومنه ابيض وكلها طيّب الرائحة ومزاجها البرد واليبس وينفع من الحمى والحرارات الصفراوية اذا دخلت في المعجونات واذا شمّ سحيقها نفع من البرسام واللهيب واذا طليت معجونه بماء الورد او تاخذ العصارات المتصرفة معها نفعت من الحمرة واورام النقرس الحار والشرا[2]

[34] البقم شجر هندى احمر الاصل والفرع والاغصان له ورق كورق اللوز الاخضر قال ابو حنيفة ولا اعرف له في العلاج تصريفا الّا انه يقال انّ اصله اذا شرب منه قدر ما صحوقا قتل شاربه

[35] الساج عود هندى الى السواد صلب وشجرة تسمو في السما سموّا وله ورق كبار جدّا يلتف الرجل في فرقة من ورقه فتستره عن المطر قال ذلك ابو حنيفة صاحب النبات ويصنع من ثمر الساج دهن يعرف بدهن الساج يغشّ به نوافج المسك يقطر في النافجة فيغوص في المسك غوصا لا يبرّا منه ابدا ولا يظهر على وجه المسك ويزيد في

[1] ms s.p. [2] ms: الشر

النافخة وزنا ما وكل مسك اذا سحقته فلم يلتصق بما تسحقه به فهو صحيح واذا لصق فهو مغشوش بدهن الساج اخبرني بهذا كثير من تجّار الفرس ومزاج الساج الحر وخشبه يباع بالثمن النفيس

[36] العوش الداربندى وهو شياف بداربند وهى مجاورة لارض الخزر من حشيشة هناك ويشكل شكل الاهليلج الكابلي ويحلّ بماء الكزبرة وماء الورد فينفع من اورام النفرس الحار والحمرة والريح وهو دواء ليس بقديم الدخول الى بغداد لانّه قريب العهد

[37] الموز شجرة في شكل النخيل[ساقه] وله ورق خارجة من ساقة في قضب خضر ملس وله ورق عريض جدّا مخطط املس مليح المنظر وله اغذاق كالعراجين يخرج فيها الموز كالقثا وهى في اوّل طلوعها خضر ثمّ تصفرّ ثمّ تسوّد اذا نضجت وداخلها طعمة كالزبد حلوة لينة عذبة توكل بالسكّر وهى مرطّبة للمعدة اليابسة مع تبريد لطيف وتليّن الصدر وتنفع من السعال اليابس

[38] الخيار نوع من القثا الّا انّ في جرمه زايدا كالثواليل وهو اقصر من القثا في قده وورقه كورق القثا البستاني ومزاجه البرد والرطوبة ويصلح للمحرورين ويشمّ ريحه فيبرد الدماغ

[39] قرن الحتو يقال انّه قرن افعى وتصنع منه اناصيب للسكاكين فتوضع على مواید الملوك فاذا كان في طعامهم سمّ رشح النصاب وهذه خاصّته ولهذا

اتخذته الملوك الجلية[1] يباع منه النصاب بخمس ماية دينار[2]

[40] ذكر احجار لم يذكرها تس فمن ذلك الياقوت حجر ينفصل الى اربعة الوان الى ابيض واحمر واصفر و سنّوري توجد في الجبال بسرنديب فاجودها وافضلها واعلاها ثمنا الاحمر وهو احمر اللون كالدم العبيط وثمنه كثير يباع الحجر منه بماية دينار وباكثر على قدره واذا اسحق وشرب قوّى القلب ونفع من القرع[3] ومنه ابيض وهو دون الاحمر وثمنه يسير ومنه سنّوري وهو تلو الاحمر وهو دون الاصفر ولها منافع

[41] حجر الماس حجر هندى منه ابيض ومنه اصفر وهو حجر يمحق كل جسد ويكسر الاحجار وبه يثقب الدرّ ويكسره الرصاص ويهتكه وهو حجر قيمة الحجر منه اذا كان من مثقال في وزنه ماية دينار عين والابيض اشرف من الاصفر واذا شرب قتل شاربه

[42] حجر البازهر والذى يضاد جميع السموم بجملة جوهره فينفع من السموم f. 200a

[1] ms: ا لحلة

[3] ms: الفرع

[2] margin:
هذه لي قوله قرن الحتو خطاء انّما هو نابه يوتى به من القسطنطينة ويباع في بلاد مصر من الكبراء وهو عزيز وليس بقرن افعى كما زعم هذا وانّما هو ناب حوت بحرى طول ناب نحو الذراع وصلابته كصلابة ناب الفيل سوا

حارها وباردها وهو حجر الى الصفرة فيه خطوط بيض اخبرني ابو عبد الله الصقلي انه رآه في جبل قرطبة ناظرة وكان يقوم بذلك وبالمشرق مشهور يكون عند الملوك الجلة

[43] حجر البَهت وهو حجر الى الحمرة اذا حركته سمعت داخله طنينا كما يسمع للجلجل فاذا كسر لم تجد داخله شيئا وهو حجر اليسر[1] يسهل الولادة على النفساء اذا عسر ولادها اذا علق فخذها وهذا خاصته الثابتة قال ارسطاطاليس ان النسور اذا عسر ولاد اناثها للبيض ذهب الذكر فاتى بالحجر ووضعه في العش فيبيض الانثى في الوقت فياخذه الذكر فيرمى به فحينئذ يوجد

[44] حجر الخلّ لم يذكره دياسقوريدوس وهو حجر اذا طرح في الخلّ خرج منه مسرعا فكل ما كر في الخلّ خرج عنه لا يستقر[2] فيه البتة وهو عندنا بالاندلس وكان عند ابن هيثم رحمه الله

[45] القنبيل اخبرني ابو موسى انه راى ابن مسرور الصيدلاني القروى وكان متقدما في الصيدلة وقد سالته امراة عن القنبيل فاعطاها تراب ارض برقة[3] لانزال[4] الصفار من الجوف وذكر انها القنبيل قال لي ابو محمّد البغدادى الكافورى وقد سالتة عن القنبيل فقال لي عيدان يستنزل بها اذا دقت وشربت الصفار وحبّ القرع من الجوف وهذا القول

[1] MS: اليسر ~~اليسس~~

[2] MS: s.p.

[3] MS: برقة

[4] MS: لانزال

يتحقق كلام بعض اهل الطبّ من مولّفي الكناشات فانّه قال اعواد القنبيل ولم ارهدا قطّ

[46] الجوز حندم تراب العسل وهو تراب الى الحمرة يقطع العسل ويجعله في حدّ الشراب

اذا انقع فيه من الماء وهو التراب المعروف عندنا بالتربة

[47] شجرة الكفّ لم يذكرها اشطيين في ترجمة كتاب تس[1] في اخر الجزء الرابع وصورها

في اصناف السموم وهي شجرة لها اصل يشبه كفّ انسان براحة وخمس اصابع وتعرف

بكفّ مريم وطارق الشجّار عندنا بقرطبة يعرفها وهو اوّل من اشهر امرها والنساء

يعملن منها فرزجة للحبل تعين على الحبل

[48] الماهي زهرة وهي حشيشة تنفع من علّة النقرس وهي قشور مرة قشور اصل هذه

الحشيشة وانّما استعير/هدا الاسم من المرارات وانّما حقيقة الاسم وتاويله

بالفارسية مرارة الحوت

[49] الريباس ذكر محمّد بن زكريا الرازي شراب الريباس وغيره من الاطباء البغداديين

وذكروا انّه شراب فعله اقوى من فعل حماض الاترج ومن فعل شراب الحصرم في

تبريد الكبد الحارة وكسر وهج الجدري والحصبة والنفع من الورشكين في الحمى

الوبية فسالت عن الريباس جماعة اهل المشرق الاعلى فذكرني منهم جماعة انّه بقلة

حامضة لها ورق كورق الحماض وقال لي رجل ثقة من التجّار كانت له معرفة بما

ينتفع به/انّ الريباس عروق حامضة شديدة الحموضة تكون في الجبال الثلجية f. 200b

[1] M2 بل ذكرها

وانّها كثيرة في جبال ميفارقين يحفر عليها وتستخرج من تحت الارض وتحمل الى بغداد والى افاق المدن العظام ومن هناك ومنها يصنع شراب[1] الريباس والصحيح من القول انّها عروق حامضة عروق حشيشة يعرفونها بالريباس

ولم يذكر ش في كتابه الجلبان في جملة الاغذية ولا الباذنجان ولا ادرى لاى شي اغفل ذلك فنريد ان نذكرها

[50] الجلبان من القطاني الماكولة وهو نبات له قضبان مربعة شاطة تنبسط على الارض ولها ورق حوالى القضبان الى الطول منحنية على القضب ولها نوار الى الحمرة تقع فتخلفها مزاهر فيها حبّ مدوّر الى البياض وليس بصادق التدوير حلو يوكل نيا في الربيع ثمّ يجفّ فيطبخ ويوكل وهو حبّ كثير الرياح وتبته اذا رقد فيه ابطل مشى الراقد عليه لانّ له خاصة تضرّ بالعصب اضرارا شديدا وقد راينا من بطل منه مشيه ثمّ لم يعُد بعد صحيحًا

[51] الباذنجان من بقول الصيف عندنا هي شجرة تكون طولها ذراعا تغرس في البساتين لها سوق صلب واغصان عليها ورق يشبه ورق القثاء او ورق البنفسج بل هي اطول واصلب[2] وتنور نورا الى الحمرة والبياض ثمّ يقع فيعقبه حبّ مدوّر الى الطول

[2] M2:
هذه لي قد شبه دياسقوريدوس لون نوع من الكندر بالباذنجان فدل من هذا ان الباذنجان كان عندهم مشهورا ولشهرته لم يذكره والله اعلم واحكم

[1] MS : الشراب

قليلا احمر اللون براق داخله لحمة فيها بزر مرّ الطعم وعلى الحبّة تعرّق مربع قد لزم على راس الحبة كالجفت على البلوط فاذا نضج جفى وشقّ اربع شقاق وحشى جوفه بالملح فترك ساعة حتى يسيل ماؤه وماؤه اسود ثمّ يسلق بالماء ويخرج من الماء ويصب عليه الزيت والخلّ والمرى ويتادم[1] به وهو في مزاجه حار يابس محرق للدم من ادام اكله ويولد السوداء وينفع من بواسير اذا قلي في زيت ولصح بذلك الزيت الثواليل وفيه شبه بالحنظل

[52] الماش هو القطاني المأكولة وهو حبّ مدوّر صغير اكبر من الفلفل اخضر اللون براق له عين صغير كهذا ( ) ابيض دقيق كالذى للّوبيا وشجرته تعلو ذراعا واكثر وورقه كورق اللّوبيا وله غلف كاللّوبيا فيه يكون حبّه وهو عذب في مذاقه[2] وخفيف على المعدة جيد الدم يولد دما نقيا وهو مايل الى البرد ومعدنه اليمن

[53] الاسفاناخ بقلة لها ورق كورق الهندبا اوّل ما يطلع وهو دويح ورقه كثيف في خروجه من اصله ويحصد ويخلف له بزر في ثلاثة ايام وعمره قصير يسرع اليه الجفاف وهى بقلة خفيفة مصلح للمحرورين اصحاب الحميات الحارة ولاصحاب الصفراء ومزاجها البرد والرطوبة

[54] الطرخون بقلة توكل نيّة كالهندبا والخس على المائدة طاردة للرياح التى في الجوف معينة على الهضم فيها مشابهة من الهندبا ويقال انّ اصلها دراق الدبان

1 MS s.p.

2 MS : مذاقيه

اخبرني من علق الحبال في مواضع الطبخ فتراكم على الحبال ونيم الذباب ثمّ دفن الحبل

f. 201 a تحت الارض وسقاه بالماء فانبت الطرخون اخبرني بذلك يحيى بن علىّ الاندلسي/وقد

شاهدنا في مرق الرؤوس اذا طبخت الرؤوس واديق ماؤها في مزبلة سرقين الدواب

ينبت في موضع كلّ نقطة فطرة[1] اى فقاع ورأيت هذا بعيني وكذلك قالت الحكماء في

قرون الكباش اذا غرست في المزابل ينبت فيها الفطر

[55] حبّ الزلم وهو يزيد في الباه يسمّى بالهند الحنجرة ويقال له فلفل السودان

وهو بمصر كثير وبالقيروان وله طعم كاللوز فيه حرارة مع رطوبة

[56] الورس نبات ينبت باليمن في بساتين وله رؤوس كرؤوس القطن داخله الورس وهو شي

اصفر يصبغ به كما يصبغ بالزعفران وقد ذكر الشعراء صباغ الورس ومن التحف في ثوب

مصبوغ بالورس ومن عرق فيه زاد باهه

[57] الكركم هو عقير هندى يسمّيه اهل العراق الكركم وهو العروق الصفر وهو اصول

صلبة تشبه الزنجبيل الّا انّ فيها دعاثير فاذا سحقت رأيت سحيقها اصفر ويسمّيه

اهل الشأم الهرد ويدخل في المراهم النافعة من الجرب وينشف القروح ومزاجه

الحرارة واليبس وقيل انّها اصول شجرة الخطاطيف الكبير

تمّت مقالة ابن جلجل في ذكر ما قصر عن ذكره ت في كتابه في الادوية والاغذية

والحشائش وغير ذلك والله المعين وهو حسبنا ونعم الوكيل وصلى الله على محمّد

وعلى آله وسلم تسليما كثيرا

1 MS : قطرة

2 MS : الكثير

TEXT OF THE COMMENTARY

ON IBN JULJUL

From MS Nuruosmaniye 3589
Istanbul

f. 80b - 81b
128a - 129b

بسم الله الرحمن الرحيم عليه توكلت و اليه انيت

لما كان غرض دياسقوريدوس الاوّل في كتابه في هيولى الطبّ رسم كل واحد من انواع الادوية المذكورة فيه بحسب طاقته ليمكن قارئه اذا حصل كل واحد من تلك الرسوم ان يعرف اشخاص تلك الانواع اعنى الاشخاص الموجودة منها في زمانه ومكانه اذا عاينها بانطباق رسوم انواعها المذكورة عليها وكان لا بدّ لمن قصد تحصيل فائدة هذا الكتاب وهى غرض دياسقوريدوس المتقدم الذكر ان يقراه على معلّم موثوق القول عارف اما بجميع اشخاص الانواع المذكورة فيه الموجودة في زمانه و اما باكثرها واما بما امكنه منها ليوقفه وقت قراءته عليه على ما عرف منها اما وهى بعد قائمه في نباتها ان امكن ذلك واما بعد قلعها من منابتها وهى بعد غضّه ان تعذر الاوّل واما وهى بعد يابسه ان تعذرا جميعا او يخبره بما عرف منها اخبارا ان تعذر الثلاثة الوجوه المذكورة او يوقفه على ما امكن منها كيف ما امكن ويخبره بالباقى او يجمع له ما امكن من ذلك كيف ما امكن ويخبره ايضا مع ذلك بما عرف من اسمائها المشهورة وقت قراءته اما بلسان قومه واما بغير لسان قومه واما بهما معا اذ تحصيل ذلك من الكتب وحده متعذر جدا ان كان ممكنا على ما يظهر لمن انعم النظر فيه

وكنت لمّا قرات كتاب دياسقوريدوس هذا على الشيخ ابي محمّد عبد الله بن صالح الكتانى ثمّ الحريرى الشجّار اكرمه الله وفي حانوته بحضرة مراكش حرسها الله سنة ثلاث وثمانين وخمسمائة للهجرة اذا بلغت ذكر دواء لم يحله دياسقوريدوس وكان ممّا عاينه هو وعرفه املى علىّ حليته حسب ما عاينه واذا بلغت ذكر دواء له اصناف لم يصنّفه املى علىّ اصنافه التى عاين واذا بلغت ذكر دواء حلاه غير انّه ربّما قصر في تحليته له او حلاه على غير ما عاينه هو ثمّ حليه المقصر في تحليته وحكى ما حكى دياسقوريدوس على غير ما عاينه هو على ما عاينه واذا بلغت ذكر دواء صنّفه وحلاه غير انّه ربّما خالف في التحلية للاصناف ما عاينه هو اعنى اوقع حلية هذا الصنف على ذلك الصنف وحلية ذلك على هذا عرفني بذلك واذا بلغت ذكر دواء عاينه ولم يعرف له اسما قال لي اعرف هذا الدواء وشاهدته بموضع كذا ولكني لا اعرف له اسما مشهورا اليوم واذا بلغت ذكر دواء لم يعرفه ولا عاينه قال لي لم اعاين هذا الدواء ولا اعرفه واذا بلغت ذكر دواء لم يقصر دياسقوريدوس في شئ ممّا ينبغى ان يذكر فيه عرفني بذلك ايضا وربّما حكى لي حكايات على بعض ادوية اما عن نفسه واما عن غيره لبها معونة في عرض هذا الكتاب

وكان مع هذا يعرفني بالاسماء المشهورة الواقعة على الادوية المعروفة
عنده وقت قراءتي عليه ممّا عرف لها اسما باى لسان كان / وينبهني على ما وقع f.81a
الغلط فيه من الادوية من طريق الاسماء فاستعمل بذلك غيره في زماننا هذا
وما قرب منه وكنت اعلّق ذلك كله بمحضره ثمّ قرات عليه بعد الفراغ من
كتاب دياسقوريدوس المقالة التى لابن جلجل في اسماء الادوية الواقعة فيه
وفي الادوية المستدركة عليه ممّا لم يذكرها في كتابه هذا مقتفيا[1] الطريقة
المذكورة في كتاب دياسقوريدوس

واني لمّا اكملت ذلك كله على حسب ما ذكرت رايت ان اجعل مقالة واحدة
لاشارك في الانتفاع بها من اراد ذلك من الطلبة اخواننا وقفنا الله واياهم
ونفعنا بما علمنا ورايت ان اقتفي اثر دياسقوريدوس في ترتيب اسماء الادوية
والمقالات ولا اغادر من الادوية النباتية التى ذكر دواء واحدا عرف او جهل
الا ذكرته حاشى الادهان المذكورة في المقالة الاولى اذ لا زيادة فائدة في
ذكرها في هذه المقالة وكذلك لا اعترض لذكر شي ممّا في المقالة الخامسة
لان الذى ذكر فيها من الادوية النباتية الكرمتان البستانية والبرية والعنب

[1] MS s.p.

وزهر الكرمتين والاشربة ولا درك في ذكر شي من هذه المقالة ولذلك لا
اذكر باقي ما ذكر في هذه المقالة الخامسة من الادوية غير النباتية ولا ما ذكر
في المقالتين التاليتين لها اعني السادسة والسابعة اذ ذلك خارج عن
غرض هذه المقالة ورايت ان اترجم على كل دواء منها باوّل اسم ترجم به عليه
دياسقوريدوس ليسهل وجوده في كتابه فان كان من الادوية التي عرفها
ابو محمّد المذكور ذكرته وذكرت نحو معرفته لها حسبما علقته عنه
وان كان ممّا لم يعرفه ذكرت ذلك بعد ذكره وبالجملة فاتيت كل واحد من
الادوية النباتية المذكورة في كتاب دياسقوريدوس حسب ترتيبه واتيت كل ما
علقت عن ابي محمّد المذكور على كل واحد منها حسبما علقته عنه ورايت
ايضا لايثار الاختصار ان اجعل علامة لسم دياسقوريدوس صورة اوّل حرف
من حروف اسمه وهي صورة حرف د وكذلك افعل في اسم جالينوس
واسم سليمان بن جلجل واسم عبد الله بن صالح المذكور

ولانّ بعض من يقف على هذه المقالة ربّما ظنّ انّ الغرض كان بوضعها الردّ على د
في البعض ممّا ذكر في كتابه والتنقص له في بعض اخر انا مضطرّ الى ان اقول
في ذلك بعض القول ثمّ اقطع هذا الصدر فاقول اما ان يكون د يترك تحلية دواء
كان معروف العين مشهور الاسم في زمانه فلا درك عليه في ذلك كما لا تثريب على من
حلاه بعده اذا عرفه ولا سيما اذا كان قد انعكس الامر فيه بعد زمانه بل اخلق به
ان يكون مستحقا للشكر وكذلك لا درك عليه ايضا في ان لا تستوفى تحلية دواء ما
اذا كان قريبا من المعروف والمشهور في زمانه وكان انما يعوزه التنبه عليه فيصير f. 81 b
معروفا مشهورا وكذلك حال من تمّمه بعده وكذلك القول في تركه التصنّف في
التقصير ايضا واما ما حكى على غير ما يوجد اليوم في هذا الافق او في غيره فهو
ايضا مبرأ من اللوم فيه اذ قد يمكن ان يختلف النبات بحسب اختلاف الافاق وكذلك
القول في الخلاف الواقع في تحلية الاصناف مع انّه لو لم يكن هذا في الكتاب
بحسب الافاق لكنا نجد السبيل الى تنزيهه عن الخطاء وتبرئته من اللوم والحاقها
بغيره مثل طول الزمان الاتى على كتابه وتداول الالسنة عليه ووهم الناسخين
له الى سائر ما يمكن ان يضاف الى ذلك من امثال هذه الاشياء وتعضد هذا قلة
ما يوجد في كتابه ممّا يحتاج الى مثل هذا الاعتذار عنه فيه وشهادة الجميع من
اهل الصناعة بعده له بالنسق[2] والاقرار بالفضل في منحاه في هذا الكتاب

[1] MS السعص [2] MS s.p.

وايضا فقد يمكن ان يكون دواءان مختلفا الحلية متفقا القوة والفعل من كل وجه فيكون ت انما عاين احدهما فقط فحلاه ووصف فعله ويكون من اتى بعده انما عاين الاخر فقط وجرب فعله فيقع الظن بان الدواين واحد من كل وجه وان الذى حلاه ت هو الذى عاين الاتى بعده والامر ليس كذلك وقد يمكن من اراد ان يزيد على هذه الاعتدارات ان يجد الى ذلك سبيلا واما انا ولان غرضي انما كان نفى الظن المتقدم الذكر بوضع هذه المقالة رأيت ان اقطع هذا الصدر هنا لان الغرض فيه على الجملة قد كمل ثم آخذ في ذكر اول دواء من المقالة الاولى من كتاب ت ثم كذلك على التوالى الى ان يتم الغرض المتقدم الذكر بوضع هذه المقالة بمعونة الله تعالى

f. 128a

ونذكر الان من الادوية التى ذكر س ان د قصر عن ذكرها في كتابة ممّا يستعمل في صناعة الطبّ وينفع به وممّا لا يستعمل ولاكنّه لا نغفل ذكره الادوية النباتية التى يمكن ان يعترض عليه فيها باى وجه من الاعتراض كان او ينبه فيه على شي ممّا ينتفع به على ما يشاكل غرض هذه المقالة فمن ذلك

[1/10] الدرونج قال س دواء هندى يشبه اصل السوسن الاسمانجوني قال ع الدرونج[1] موجود عندنا وهو نبات له ورق على الارض يشبه ورق الصان[2] غير انها الى الصفرة ما هى مرغبة يخرج[3] في وسط الورق قصب اجوف طوله ذراعان واقلّ واكثر ومع طول القصب قليل ورق خمس او اقل او اكثر متباعدة بعضها من بعض والورق التى على القصب اضيق واطول من التى على الارض وعلى طرف القضيب زهرة صفراء جوفاء كمنفخة الصاغة ولهذا النبات اصل شكله شكل عقرب يضمحل كل سنة منه البعض و

f. 128b ويخلف من البعض/الباقى فربّما كثرت حتى تكون كعقربين او ثلاثة في اصل واحد والمستعمل من هذا الدواء اصله

[2/11] البهمنان الابيض والاحمر قال س اصول بيض معقربة الشكل صلبة براقة قال ع هذا الدواء لم نعاينه ووقع فيه اختلاف كثير جدّا في صنفيه جميعا وليس عندنا فيه تحقيق

1 ms: الدووج

2 see notes

3 ms s.p.

[3/12] البوزيدان قال س هو اصل ابيض ملوى الشكل شديد البياض صلب قال ع وهذا الدواء ايضا فيه خلاف كثير جدا

[4/13] الطباشير قال س هو شي ابيض وفيه رمادى وهو دواء هندى اختلف فيه فمنهم من قال انه عظام الفيلة محرقا ومنهم من قال انه اصول القنا العربية[1] وهو القصب الهندى وهو صحيح القول فيه قال ع قد رايت من يحرق العظام ويبيعها[2] عن طباشير

[5/16] الامير باريس قال س حبّ كالنانخواه حامض الطعم وفقاحه يسمّى الزرشكه قال ع الامير باريس وقع فيه اختلاف كثير فزعم س انّه ما ذكر وزعم غيره انّه الصنف[3] الحامض من الزعرور وزعم اخر انّه الصنف الحلو منه وزعم اخر انّه الربيباس وهو الحماض الجبلي وانا اقول انّه حبّ النبات الذى ينبت مع الحضض الذى يشبه حبّ العنب الابيض وقد ذكرناه في باب لوقوين[4] وهو الحضض في مقالة T من كتاب T

[6/18] الغليغلة قال س حبّ يشبه الفلفل اغبر اللون حار يابس ويقال انّه الفلفل الابيض الذى حكاه س[5] قال ع الغليغلة[6] يقع عندنا اليوم على النانخواه وعلى حبّ الفنجنكست

1, 2 ms s.p.
3 ms : صنف
4 ms s.p.
5 = Dioscorides
6 ms الفلعله

[7/19] المحلب قال تس حبّ مدوّر عليه قشر الى الحمرة والسواد ولحبّها قشره خشنة داخلها طعمة بيضاء عطرية فيها شي من مرارة وهو حبّ شجر يسمو[1] وله خشب غليظ قال ع حبّ المحلب هو حبّ فيلورا[2] التى ذكرها تـ في مقالة T

[8/22] بستان افروز قال تس وهو نبات يعلو في قده اكثر من ذراع له سوق شاكة عليها ورق كورق القنا الى الطول وفي اطراف ادرعه وشايج كوشايج البادروج لونها فرفيرى مليح وليس له برائحة عطرية قال ع بستان ابروز قرئ على في كتب[3] انه هرسوموعالس[4] الذى ذكره تـ في مقالة د ويسمّى اليوم عندنا ذنب القط وقد ذكرنا ذلك هنالك

[9/26] الخيزران قال تس منه هندى ومنه ما ينبت بالاندلس قال ع قد ذكر تـ الخيزران في مقالة د وهو الذى سمّاه مرسيس[5] اغريا قال تس هنالك انه الاس البرّى وقال تـ في صفة ورقه له ورق شبيه بورق الاس البستاني الا انه شبيه بطرف سنان الرمح

[1] MS s.p.
[2] MS s.p. see notes
[3] MS blurred here
[4,5] MS blurred. See notes

f. 129a

[10/27] الكافور قال سن هندى وهو صمغ شجر يكون ببلاد الهند كالصنوبر فيها الكافور
كالصمغ وكالراتينج فيجنى[1] ويغسل بالماء ويصعد فيصير ابيض كبياض الثلج
ولونه اوّلا اصفر الى الحمرة قال ع رايت بجبل بنى فيلواط[2] من عماره
شجرا تشبه شجر الصنوبر ليست به وتشبه الارز وليست به وتشبه شجر العرعر
وليست به وهى طوال جدا عظام برائحتها كرائحة الكافور وطعم اصولها الى
الملوحة ما هو[3] وتثمر صنوبرا طويلة[4] الشكل مستوية ملساء ويوجد فى هذه
الصنوبر التى هى ثمرها صمغ يودى برائحة الكافور يمكن ان يجمع منه على
الصنوبرة الواحدة ربع اوقية ورايت نساء البربر بالموضع المذكور يسلخن قشر
هذه الشجرة ويخلطنه بالدباغ الذى يدبغن به قرب الماء فسالتهن فى ذلك
فظن لى انّ القربة التى تدبغ بهذه القشرة مع الدباغ تبرد الماء تبريدا
شديدا ولا تزال على ذلك حتّى تفنى ثم انى رمت تقطير عيدان هذه الشجرة
لامر خطر لى فجعلت كلما اوقدت النار تحتها يصيبنى البرد من بخارها
المتصاعد ولهذا كله زكت انّ هذه الشجرة هى شجرة الكافور

[1] ms فحنى
[2] ms s.p.
[3] ms blurred
[4] ms طوله

[11/47] شجرة الكف قال ت لم يذكرها اصطيفن في ترجمته كتاب د في اخر الجز
الرابع وصورها في اصناف السموم وهى شجرة لها اصل يشبه كف انسان براحة
وخمس اصابع ويعرف بكف مريم وطارق الشجار عندنا بقرطبة يعرفها وهو اوّل
من اشهر امرها والنساء يحملن منها فرزجة تعين على الحبل قال ع لا نعرف
نباتا له اصل على الصفة التى ذكر الا الذى ذكرنا في اصناف الخطمى في
مقالة ج وهو ليس سمّا بل يزيد في الباه ويستعمله النساء ايضا في ما ذكر
واما كف مريم فيقع اليوم عندنا على ورق البنطافلن وعلى نبات اخر يجلب من
الصحراء يستعمله النساء في تسهيل الولادة

[12/48] الماهى زهره قال ت وهى حشيشة تنفع من علّة النقرس وهى قشور مرّة قشور
اصل هذه الحشيشة وانّما استعير لها هذا الاسم من المرارة واما حقيقة الاسم
فتاويله بالفارسية مرارة الحوت قال ع وقد اوقع غيره هذا الاسم على ورق الـ
العينور وهو المعروف اليوم عندنا بالشرباس وهو مرّ الطعم

[13/50] الجلبان قال ت ونبته اذا رقد عليه ابطل مشى الراقد عليه لانّ له خاصّة
تضر بالعصب اضرارا شديدا وقد راينا من بطل منه مشيه ثمّ لم يعد/ بعد f. 129b
صحيحا قال ع هذا الذى ذكر هو صنف من الجلبان ويسمّى بالاندلس حنجره

واهل بطرفاس يعرفونه كرفالة مشتق من فعله في الارجل بلغتهم ويسمّيه بعض البربر ايضا اكسلره [1] وزهره احمر وحبّه مثلث الشكل واذا ادمن اكله اخدر ايضا وقد جربنا ذلك منها في الحبّ وغيره

[14/56] الورس قال تس نبات ينبت في اليمن في بساتين ولها رووس كروس القطن داخله الورس وهي شي اصفر يصبغ به كما يصبغ بالزعفران قال ع وقد وقع الورس على الذى يوجد في اجواف البقر وهو اشهر ما وقع عليه عندنا وقد اوقعه بعضهم على النبات الذى يسمّى بالاندلس الليرون الذى يصبغ به الصباغون

[15/57] الكركم قال تس هو عقير هندى يسمّيه اهل العراق الكركم وهو العروق الصفر قال ع قد ذكر تد هذا الدواء في مقالة ب وسمّاه خاليدونيون وقد ذكرناه نحن في بابه وذكره ايضا تس وقال خاليدونيون طو ملفا وهى شجرة الخطاطيف قاله الصقلى رحمه الله

[1] ms blurred

فهذا ما وجدنا لنا في ما ذكر من الادوية النباتية المستدركة له على ت
مّا يمكن فيه ما ذكرنا بحسب علمنا واذ قد انتهى بنا القول الى هذا
الموضع فقد تمّ غرضنا في هذه المقالة فلتكمل هنا بحمد الله وعونه
والحمد لله واهب العقل ومفيض الجود وصلوته على سيدنا محمّد وآله
وصحبه وسلامه وهو حسبي ونعم الوكيل

ونقل من نسخة مكتوب عليها بخطّ الكاتب ما هذا صورته بلغت[1] بالقراءة على
المولّف صحوه يوم الجمعة الثاني والعشرين من رجب الفرد عام ستمائة
بحضرة مراكش حرسها الله

[1] بلغت : MS

TEXT OF AL-ZAHRĀWĪ'S MAQĀLA ON THE MARĀHIM : GALEN'S PALM OINTMENT

From MS Beşir Ağa 503 (B)
f. 484b - 486b

Collated with
Beşir Ağa 502 (A)
Şehit Ali Paşa 2020 (S)
Vienna 211D (W)

f. 484 b

بسم الله الرحمن الرحيم ربّ يسّر برحمتك

المقالة الرابعة والعشرون في المراهم <[1] من كتاب التصريف لمن عجز عن التاليف

للشيخ الفاضل ابي القاسم خلف بن عبّاس الزهراوى قال <[1] واما المراهم <[1] فانّها

قريبة من الاضمدة في المعنى والفرق بينهما انّ الاضمدة في العلاج اعمّ

والمراهم بالخراجات والجراحات اخصّ والمراهم باب من ابواب الطبّ وكيد[2] في

علاج الجراحات والقروح المنفتحات وانا ابتدى فاقول انّ من المراهم ما يقوى

اكثر ممّا يحلل ومنها ما يحلل اكثر ممّا يقوى ومنها ما فيها القوّتان ومنها

ما هى ليّنة رطبة ضعيفة القبض تصلح للابدان الرطبة كابدان الصبيان والنساء

والخصيان ومنها خشنة شديدة القبض تصلح للابدان القحلة[3] ومنها ما هى

من اللين[4] تصلح في مثل الابدان المتوسطة وسناتى على وصف كل مرهم

بما يغلب عليه من القوّة ليدرك الطالب بغيته ويقف على مراده بلا مونة

فانّ كتابي هذا انّما هو لطبيب ارتاض في كتب جالينوس وغيرها من الكتب

ووقف على معرفة الامزجة واختلاف قوى الاعضاء وازمان الامراض وانا اقدم

في صدر هذه المقالة مرهما لجالينوس معروف بالنخلى جعلته مثالا <نبتدى به[5]>

1 only in AW

2 B : كذا

3 B : القلحة

4 S : بين اللين والقبض

5 AW omit

على سائر المراهم على حسب ما فعل هو في كتاب قاطاجانس واكتفيت بذلك
اذ لا غاية وراء جالينوس ولا نهاية في جميع افعاله فليقتد الطالب بما اتى
في ذلك المرهم من الوصف والبيان وقد حكيت من نسخ مراهم[1] عدّة ‹بلفظة
تصاب›[2] منها القدرة وفيها الكفاية ولا قوّة الّا بالله العلى العظيم

صفة مرهم النخل لجالينوس يوخذ من شحم خنزير عتيق وهو الاصل او
من شحم عجل ‹طلان› ومن زيت عتيق[3] ثلاثة ارطال ومن المرتك ثلاثة ارطال
ومن القلقطار اربع اواقى اعمد الى الشحم فنقه من الاغشية ودقّه دقّا ‹ناعما›[4]
جيدا ثمّ اذبه بالنار وصفه من الاغشية فاذا فعلت به ذلك فحينئذ خذ منه
رطلين ثمّ خذ الاربع اواقى من القلقطار واسحقها واخلطها بالزيت واسحق
المرتك واخلطه مع القلقطار والزيت واسحق الجميع في الهاون طويلا والق
الشحم عليها في الهاون واضربها ضربا جيدا ثمّ صيرها في طنجير وحركها
بسعفة نخل بالطرف الغليظ منها بعد ان تجرد عنها الجلد الظاهر
وكلما جفّ الطرف قطعته ورميت به ثمّ خذ[5] من السعفة ايضا فقشره

[1] B : مراهم
[2] AW omit
[3] AW الزيت العتيق
[4] ASW omit
[5] ASW تاخذ.. تقشره

وقطعه قطعا صغارا والقه على الدواء قبل ان يستحكم طبخ المرهم واطبخ
الجميع حتى يصير في حدّ الشمع الحذاب بالدهن وتخرج رطوبة السعف في
الدواء وينبغي ان تكون السعفة قريبة العهد بالقطع ولم يكن اتى عليها
منذ قطعت اياما كثيرة لانّها اذا طال مكثها جفّت وفنيت الرطوبة المرادة منها
واقصى ما ينبغي ان تستعمل بعد ان قطعت بيوم واحد ان كان شتاء
فامّا ان كان صيفا ففي ذلك اليوم[1] تستعمل فاذا انت طبخت الدواء على هذه
الصفة حتى يصير في حدّ لا يذوب فحينئذ تعالج به القروح التي يعسر
اندمالها والجراحات[2] الطرية التي بدمها واورام[3] النقرس ووجع المفاصل والاورام
الحادثة في اليدين والرجلين من قبل الثلج وكبر العظام وفسخ اللحم
وجميع الاورام الحادثة عن المواد السيالة ينبغي ان يعالج بها مذابا بالدهن
وكثير من الناس اذا عالج القيلة بالشق ووضع عليه من هذا/الدواء فانّه يفعل J. 485a
ما يفعله الفتول بالدهن وما يفعله الضماد فان القيت فيه من القلقطار
نصف رطل صار اشدّ الحاما للجراحات واشدّ اندمالا[4] للقروح العسرة

[1] S: ‹بنفسه›
AW: ‹بعينه›
[2] AW: الخراجات
[3] AW illegible
[4] AW الاندمال

الاندمال الا ان عمله في هذا الموضع عمل لا يجد لادوية كثيرة وان كانت
قوته بعينها فاما اذا لتّين بالزيت فينبغي لك ان تثق به اكثر من ثقتك بسائر
الادوية كلها في علاج الاورام الحادثة عن المواد المنجلبة[1] واوجاع النقرس
والمفاصل في كل الاوقات متى لم يكن هناك وجع شديد يحتاج الى استفراغ
البدن او نطول او ضماد مسكن وامّا ما دامت هذه العلل واشباهها في
حدّ الابتداء وحدّ التزيد[2] فاذب هذا الدواء وبرده وصيره في هاون ورشّ
عليه شرابا صرفا واضربه بيدك في الهاون ضربا حتى يبلغ الشراب وان امكن
ان يكون الشراب[3] القابض الشديد القبض ويكون صافيا رقيقا ولا يكون غليظا
ويكون ما اتى عليه من الزمان مقدارا معتدلا وذلك انّ الشراب اذا كان
على هذه الصفة شديد النفوص الى عمق الاعضاء ويكون مقدار ما يرشّ عليه منه
ما لا يطفو من الدواء فوقه شيء اذا قطع الضرب عنه فما دامت الاورام في حدّ
الابتداء فينبغي ان يكون الاغلب على الدواء الذي يعالج به القبض فامّا
اذا صارت في حدّ التزيد فينبغي لك ان تنقص من قبض الدواء شيئا وتزيد
في قوته المحللة متى لم تكن القوّتان متكافئتين يعني القوة المانعة والقوة

1 S: المحلبه A: المخليه W: المتخلبه

2 A: التزاير 3 ASW: من الشراب > القابض

المحللة متى لم يكن هناك وجع صعب شديد يحتاج الى دواء و[1] يسكنه
فاذا صار الورم في حدّ الانحطاط فينبغي ان يكون الغالب على الدواء في
حدّ التحليل ولا يخلط معه في ذلك الوقت شي من الشراب البتة واذا اردت
ايضا اذابة الدواء فينبغي لك ان يكون الغالب فيه قوّة القبض وان تذيبه
بشي من الزيت الذى يعتصر من الزيتون الغض وان كنا نريد القوّتين فيه
متكافئتين فينبغي ان نذيبه بزيت عذب المطعم حار القوّة ليس بحديث ولا بعتيق
وان كنا نريد ان يكون الدواء محللا فاوفق الادهان لذلك الزيت العتيق
او دهن الخروع او ما اشبه ذلك من الادهان والحدّ في ادامة[2] المرهم
يكون على ما اصفه[3] ينبغي ان يكون مقدار الدواء اكثر من مقدار الدهن
قليلا وخاصّة في الصيف فيكون مقدار ما يوخذ من الدواء عشر اواقى ومقدار
ما يوخذ من الدهن سبع اواقى واما في الشتاء فحسبك ان تاخذ اقل من
هذا المقدار باوقيتين وبين انك اذا اخذت من المرهم اكثر كان الدواء اقوى
وكلما جعلته اثخن كان اكثر تسكينا وتجفيفا للوجع وهذا المرهم يصير في

[1] W: omit و
[2] A: اذابه
[3] S: على ما وصفنا اصفه

حدّ الشمع المذاب الذى يصلح ان يطلى به اذا انت اخذت منه رطلا فاذبته
بنصف رطل من زيت وهذا الدواء المذاب على هذه الصفة ينفع الاورام عند
انحطاطها وليس شي انفع منه للاورام الحادثة في المقعدة واما في المعاء
المستقيم من تلقا نفسها على غير سبب ظاهر وينبغى ان يذاب ذلك الوقت
بمقدار من الزيت اكثر لينفذ في الحين الى المعاء وقد اذاب جالينوس
هذا المرهم في مثل هذه العلل مرارا شتى بدهن ورد بان جعل الاناء
الذى اذابه فيه في جوف قدر فيها ما حار موضوعة على نار فحم او على نار
وقود بلا دخان فاذا اذاب الدواء حتى يصير الى المقدار الذى ذكرته قبل
وهو ان يصير في حدّ الشمع المذاب بالدهن اذابة رطبة فانه حينئذ ينفع
ايضا القروح الحادثة في المقعدة او في المثانة وسائر القروح حتى انه
ينفع/احتراق الاطراف الحادث عن الثلج اذا كان فيه قروح وحرق النار وذلك f. 485 b
انه يمنعها من ان يتورّم وينفعها كلها سريعا وينبت فيها لحما قويّا
صحيحا ولاسيما ما كان قد القى فيه من القلقطار فضل قليل وشرابه فينبغى

ان يخلط مع هذا الدواء اذا كان يراد منه هذا الفعل شراب فامّا اذا خلط
معه خل فانّه يكون دواء بالغا في شفاء حرق النار اذا عولج به[1] <من[2] ساعته
وان عولج به من بعده في كل وقت يعالج به[2]> وان كان موضع الحرق قد
تنفط وليس يخفى عليك انّه اذا احترق انسان ماء مغلى يصبّ عليه فان وضع هذا
الدواء على العضو الذى احترق قبل ان يرم[3] لم يكن له نظير في منع حدوث
الورم ولهذا صار الامر فيه على ما قلت قبل من ان قوما اذا شقّوا القيلة عالجوا
به موضع الشقّ من ساعته من غير ان يعالجوا قبله بنطول يكون بالماء الحار
والزيت او بدهن يسقى به الموضع وهو مع هذا نافع للفسخ والكسر وكل ضربة
تصيب عضوا من الاعضاء على اى وجه كانت اصابته متى وضع عليه وهو رطب ذابت
وربط فوقه رباط على نحو ما يربط العظم المكسور وينفع ايضا من كل تهيّج
وانتفاخ منفعة عجيبة فامّا اذا كان في البدن الكيموسات[4] الردية وكان البدن
كثير نجس فينبغى ان يخلط مع هذا الدواء اذا وضع في ابتداء الامر
على الاعضاء التى يعرض لها الكسر والفسخ من قبل صدمة او ضربة
عصارة البنج الطرى فان انت لم تقدر على بنج رطب اما لان الوقت

1 W: omit
2 A: omit < >
3 A: يتورم
4 B: الكمرسات

الحاضر من السنة ليس هو وقت وجوده واما لانك في بلد لا يكون فيه فيلقى
البنج اليابس الذى قد حفظته من الصيف وان انت خلطت مع هذا الدواء
عصارة <الييروح جعلته>[1] ابلغ وافضل في تسكين الوجع وحسبك ان تخلط من
هذه العصارة اوقية مع رطل من المرهم بعد ان يداب وينبغى ان تزيد
في هذا المقدار وتنقص منه بحسب ما تحتاج اليه العلّة فان اذبت هذا الدواء
بدهن ورد كان ايضا موافقا لمثل هذه الابدان واما الاعضاء التى يعرض لها
فسخ من قبل سقطة او ضربة واتفقت[2] للموضع ان يكون قد اخضر فينبغى ان
يوضع عليه هذا الدواء منذ اوّل الامر مخلوطا بالشراب على ما وصفت
وينبغى في اليوم الثالث او في اليوم الرابع لا محالة متى كان العضو الواهن
لم يرم ان يحذف الشراب من الدواء وتذيبه بزيت عتيق وذلك انّك ان كثفت
الدهن للموضع الذى قد اخضر وقبضته باكثر من هذا المقدار جعلت ذلك
الاثر الاخضر عسر الانحلال والانقلاع وذكر جالينوس انّه كان يستعمل هذا
الدواء في علاج الاورام الحارّة الحادثة عن الدم اذا كانت مائلة الى طبيعة
الورم المسمّى حمرة في ابتداء الامر مذابا بدهن ورد متخذ من زيت انفاق

[1] S : omit

[2] A : omit و

وليس فيه ملح لان الدهن المتخذ من زيت على هذه الصفة نافع للحمرة فاذا
اذبته على ما وصفت لك خلطت معه في الهاون عصارة عنب الثعلب وضربته
حتى يختلط الجميع اختلاطا جيدا فان لم تقدر على عصارة عنب الثعلب
فاخلط بدله عصارة البزرقطونا فان كان الزمان صيفا فاخلط معه عصارة حبّ
العالم وذلك ان عصارة الحصرم على حدتها سادجة تقبض باكثر ممّا يحتاج
اليه والقبض اذا كثر حتى يصير في هذا الحدّ اضرّ بالحمرة لانّه يحصر حرارة
الدم ويحقنها داخل العضو/ بتثكيفه لظاهر الجلد وعصارة البقلة الحمقا ايضا f. 486a
على حدتها ليس يمكن ان تستخرج للزوجتها ولهذا من الاجود لك اذا انت
اعتصرت ماء الحصرم ان تلقيه على البقلة الحمقا وهي مدقوقة في الهاون
وتدقّها حتى يخلط مع ماء الحصرم فاذا اختلطت عصرت الجميع واخذت ماءه
على هذا المثال فاستخرج عصارة حبّ العالم وان انت ايضا اخذت عصارة
اللفاح النضيج في وقت بلوغه وادراكه في شجره خلطتها مع هذا الدواء جعلته
اوفق واصلح لما تريد من تسكين الاوجاع فان لم يكن وقت اللفاح فينبغي ان
يخلط مع عصارته اليابسة وقد كان جالينوس يخلط معه عصارة البنج وربّما

خلط معه الافيون والماميثا او عصارة الخس البرّى او البستانى او عصارة الهندبا او عصارة البرسيان دارو او عصارة الحسك فان لم تقدر على شي من هذه العصارات فاخلط مع الدواء خل وماء وليكن جميع هذه الادوية باردة برودة مسكنة بان تجعل الاناء الذى فيه الدواء في ماء بارد شديد البرد وكذلك هذا المرهم الذى كلامنا فيه ينبغى ان يبرد على هذا المثال متى عولج به الورم المسمّى حمرة الى ان تخمد حرارته ويطفى لهيبه وليس تخفى عليك ان الادوية التى تنفع الورم المسمّى حمرة الى ان تخمد بكيفية فيها مكتسبة ينبغى ان يبرد عليها دائما ولا سيما متى كانت حمرة الورم خالصة لايخالطها شي من الورم الحار الحادث عن الدم فاذا ما سكن لهيب الحمرة وقل اولم يكن حمرة في الاصل لكنها اما ورم حار فلا حاجة بك حينئذ الى برودة مكتسبة بل ينبغى لك في ذلك الوقت ان تتوقى استعمال العصارات التى تبرد تبريدا كثيرا وان يخلط مع المرهم اذا ادبته اشياء يسيرة التبريد ثمّ اخلط معه بعد ذلك عصارة بزر الكتان وعصارة البابونج ثمّ استعمل بعد

ذلك المرهم وحده على جهته مذابا لا يخالطه شي اخر فان كان الورم المسمّى حمرة قد اخضر وكمد لونه بسبب ما عولج به من الاشياء الباردة فليس ينبغي لك في ذلك الوقت ان تسقّي هذه العلّة حمرة وينبغي ان تتوقى خلط الشراب مع المراهم وخلط الورد والادهان القابضة فان المرهم النخلي يفي بتحليل الحمرة التي قد كمد لونها وصارت تضرب الى السواد اذا هو اذيب بزيت عتيق وفي هذا الوقت قد يصب على العضو الذى فيه العلّة ما حار ويشرط بالمشارط فان رايت ان فعل هذا صواب فابتد اوّلا بوضع المرهم مذابا مضروبا بشراب ثمّ احذف عنه الشراب بعد يوم فان تهيا لك ان تعالج حمرة قد بردها الاطباء الذين يفرطون في التبريد باكثر من المقدار الذى كان ينبغي حتى ان لونها قد صار اسود فاجعل اكثر ما تستعمله النطول والشرط واخلط ايضا مع هذا المرهم دون ان يعالج بالنطول والشرط نورة مغسولة بالماء وعالج به فان كان بدن العليل بدنا رطبا رخص اللحم فاخلط معه نورة مغسولة وعصارة الكزبرة ايضا اذا خلطت مع المرهم في مثل هذا الوقت كانت مانعة وهذه العصارة اذا خلطت ايضا مع شمع مذاب بدهن ورد نفعت منفعة عظيمة فامّا العلل التي تجلب فيها المواد الى

العضو فهذا المرهم انفع الادوية كلها بعد ان ينظر ان كان العليل رطب
البدن رخص اللحم او كان صبيا او امراة خلطت الدواء تلك المقادير والاوزان
التي وصفتها/لك قبل ذلك ان كان بدن العليل بدنا قويّا او بدنا صلبا f. 486 b
فزد في الدواء من القلقطار بمقدار قوّة شدّة البدن وصلابته فتجعل ما تزيد
منه اوقية واحدة او اوقيتين او اكثر من ذلك على حسب ما تراه من بدن العليل
من الصلابة والقوّة فان كان بدن العليل رخص اللحم او كانت امراة نقصت
ايضا على ذلك المقدار

TEXT OF IBN SAMAJŪN'S WORK

ON

KĀFŪR - MS Bruce 47,
f. 95b - 96b

THĀFSIYA - Bruce 48
f. 120a - 121a

SPANISH DRUG NAMES
Bruce 47
f. 53b - 54a

Bruce 47. f. 95b

كافور قال احمد بن داود الكافور ليس من نبات بلاد العرب وقد جرى في كلامهم فيقال كافور وقفور وهو معرّب قال الراجز اهضامها والمِسْك والقفور ويخرج من اجواف خشبه يشقق عنه وقال عبيد الله بن خرداذبه شجرة الكافور تكون بفيّومة جزيرة بالهند تظلّ الشجرة مائة انسان واكثر واقل يُفَقَّرُ على الشجرة فيسيل من ماء الكافور عدّة جرار ثمّ يبقر اسفل من ذلك وسط الشجرة فينساب منها قِطَعَ الكافور وهو صمغ ذلك الشجر غير انّه داخله ثمّ تبطل تلك الشجرة فتجفّ

وقال اسحق بن عمران الكافور يجلب من سفالة وبلاد كلاة والرانج وهَرَنَج واعظمه من هرنج وهى الصين الصغرى وهو صمغ شجرة تكون هناك ولونه اغبر ملمّع وخشبه ابيض رخو يضرب الى السواد وانّما يوجد في اجواف تلك الخشب في خروق فيها ممتدّة مع طولها فاوّله الرياحي وهو المخلوق ولونه احمر ملمّع ثمّ يصعّد هناك فيكون مد الكافور الابيض وانّما سمّى رياحيا لانّ اوّل من وقع عليه مَلِك يقال له رَيَاح واسم الموضع الذى وجده فيه صنفور فيسمّى الصنفورى ايضا f. 96a

وقال احمد بن ابرهيم الكافور صمغ شجرة تكون في جبال الرانج من الهند والرياحي منه هو المخلوق ولونه اغبر ملمّع بحمرة واذا صعد هذا الرياحي

كان منه الكافور المصعّد الابيض

وقال اسحق بن عمران اجود الكافور الصنفورى المفلّس الرباحي هو ارقّه وانقاه واشدّه بياضا واجله جلالا واجل ما يكون منه مثل الدرهم ونحوه وبَعْدَه كافور يدعى الرفوق وهو غليظ كمِد اللون ليس له صفاء الرباحي الّا انه حسن جلال ليس له دقاق وبعده كافور يقال له حبّ الرباحي وهو ما كان دون الجلال وقيمته اقل من قيمة الرباحي وبعده كافور يقال له الكركيت وهو اسمر وثمنه دون ثمن الرباحي وبعده البالوس وهو مختلط بشظايا من خشب الكافور مدتّم مصمّغ على قدر اللوز والحمص والفول والعدس وتصفّى هذه الكوافير كلها بالتصعيد فيخرج منها كافور ابيض صفايح في شكل جامات الزجاج التى يصعّد فيها ويدعى المعمول وقد يكون في البالوس والكركست ما يخرج من المنّ رطل مصعّد او رطل ونصف وهو اوسط الكوافير ثمنا ويصلح حبّ الرباحي لشقق العطر مثل البخور المعمول من القسط المرّ والمثلثة الشفقة[1]

قال المسيح وقوة الكافور في البرودة واليبوسة من الدرجة الثالثة

وقال يحنّ بن ماسويه وعيسى بن ماسة وعلى بن ربّن واسحق بن عمران وخلف بن العبّاس واحمد بن ابى خلد مثله

[1] MS: المشعه

قال ماسرجويه اخذ رجل من معارفي ستة مثاقيل من كافور في ثلث مرات فقصدت معدته حتى لم تهضم البتة وانقطع عنه الباه بواحدةٍ ولم يحدُث عليه مرض غير هذا

وقال ابن ماسويه الكافور بارد يابس يعقل البطن ويسرع بالشمط اذا شرب وينفع من الاورام الحارة

وقال ابن ماسة الكافور بارد يابس وفيه اخدار يسير نافع للمحرورين اذا اخذ مفردا اومع ماء الورد يقوى اعضاءهم وحواسهم اذا اصابهم الم من حرارة مفرطة واذا خلط منه كمّية يسيرة مع ادويه يعقل البطن المستطلق من الصفراء منع من اسهالها

وقال الدمشقي الكافور بارد يابس واذا اسحق منه واستعط به مع عصير البُسْر الاخضر منع من الرعاف وقال الطبري مثله او نحوه

وقال الرازي الكافور بارد لطيف ينفع من الصداع والاورام الحارة في الراس وجميع البدن والاكثار من شمّه يسهر وان شرب بردّ الكلى والانثيين / واجمد المنى وجلب امراضا باردة في هذه النواحي وقال في الكتاب الحاوي 1.96b

قيل في الطبّ القديم ان الكافور يعقل البطن ويُسرع بالشيب

وقال اسحق بن عمران الكافور بارد يابس نافع للمحرورين واصحاب الصداع الصفراوى اذا استنشقوا ريحه مفردا او مع ماء الورد او مع الصندل معجونًا بماء الورد نفعهم وقوى اعضاءهم وحواسهم واذا اديم شمّه كان قاطعا لشهوة المباضعة واذا شرب كان فعله في ذلك اقوى واذا خلطت منه كمّية يسيرة مع الادوية العاقلة للبطن من الاسهال الصفراوى نفع ومنع منه والدوام عليه يُسرع باظهار الشيب واذا استعط منه بوزن شعيرتين مع ماء الخس نوّم وبرّد حرارة الدماغ وذهب بالصداع وقطع الرعاف وحبس الدم المفرط

وقال احمد بن ابرهيم مثله

Bruce 48. f. 120a

قال الرازى في الحاوى والجامع اصبت انّ الثافسيا صمغ السذاب البرّى قال وقال[1] في قاطاجانس الثافسيا تضعف قوته سنة وقال في المياسير لا ينتفع به بعد ثلث سنين

وقال ابن ماسه البصرى الثافسيا هو الينتون[2] وذكر بعض انّه اصل السذاب

وقال حبيش الثافسيا هو صمغ السذاب

لي اختلف الناس في هذه الحشيشة اختلافا كثيرا فزعم قوم انّها صمغ السذاب البرّى وزعم قوم انّه اصله وقال ديسقوريدوس انّه نبات

وقال سليمن بن حسان وعبد الرحمن بن الهيثم من علمائنا انّ الثافسيا نبات ينبت بارض البربر في ناحية المغرب بفاس وغيرها يسمّى بالبربرية ادريس

وقال سليمن وقد جُلِب الى قرطبة واتخذ في البساتين فانجب قال واهل بلدنا يجعلونه عصارة السذاب البرّى وذلك خطاء وكان هذا موافق لما قاله ديسقوريدوس وقال ديسقوريدوس استخرج اسم هذا الدواء من ثافسيس الجزيرة لانّه يظنّ انّ اوّل ما وجد بها وهو نبات جعلته تشبه النبات الذى يقال له تاريقس يعنى نوعا من الكلخ الا انّ ساقه ادقّ وورقه شبيه

[1] < جالينوس >

[2] MS البنتون

بورق النبات الذى يقال له مارابن يعنى الرازيانج وعلى اطرافه في كل شعبة
اكلة شبيهة باكلة الشبث فيها زهر اصفر وبزر الى العرض ما هو شبيه ببزر
النبات المسمّى تارتقسُ غير انّه اصغر منه واصل ابيض كبير غليظ القشر حريف
وقد تستخرج منه دمعة بانّ يحفر حوله ويشقّ قشرُه او بانّ تحفر فيه حفرة
مستديرة ويغطّى الحفر لتبقى الدمعة نقية وفي اليوم الثاني يوخذ ما اجتمع
من الرطوبة وقد تستخرج عصارة الاصل بانّ يدقّ ويعصر ثخينه بلولب ويدقّ
ويجفّف في الشمس في اناء خزف ثخين ومن الناس من يعتصر الورق مع الاصل
وهذه العصارة ضعيفة القوة والفرق بينهما انّ عصارة الاصل اشدّ زهومة وانّها
تبقى لدنة وامّا العصارة التى قد خالطتها عصارة الورق فانّها تجفّ وتتثقب
لما يعرض لها من التاكل وينبغى/ لمن اراد ان يستخرج الدمعة الّا بفعل f. 120b
ذلك في يوم ريح ولكّن في هُدُو لانّ الوجه يتورّم تورّما شديدا ويتنفط ما
كان من البدن مكشوفا بحدة البخار فينبغى ان يتقدم بتلطيخ المواضع
المكشوفة من البدن بقيروطى رطب سائل قابض وقوة قشر الاصل وعصارته
ودمعته مسهلة مقيئة للغضول[1] الغليظة اذا شرب كل واحد منها بالشراب

[1] MS للفصول

المسمّى مالقراطن وقد يعطى من قشر الاصل مقدار اربع اوبولوسات مع ثلث درخميات من بزر الشبث وقد يعطى من العصارة ثلث اوبولوسات ومن الدمعة درخمى واحد لانّه ان اعطى منها اكثر من ذلك اضرّ باخذها والاسهال بها يوافق الذين بهم النسمة ووجع الجنب المزمن ويعين على نفث الفضول وقد يصير في الاطعمة ويعطى منها الذين يعسر عليهم القئى وللدمعة والقشر من القوة على احالة المزاج اشدّ من قوة سائر الادوية التى تشبهها في القوة اذا احتجنا ان نجتذب شيئًا من العمق او نهيّئ للشى سبيلا لننقله من موضعه الى موضع اخر ولذلك اذا الطخت الدمعة وذلك القشر[1] على راء الثعلب انبت فيه الشعر وقد يخلط وهو مسحوق او العصارة باجزاء متساوية من الكندر والعوم ويستعمل لكمنة الدم والاثار البادنجانية اللون فيذهبها ويتبغى الّا يترك اكثر من ساعتين ولكن يقلع ثمّ بعد ذلك يكمّد الموضع بماء بحرى سخن وقد يقلعان الكلف والعصارة اذا خلطت بالعسل قلعت الجرب المتقرح واذا خلط بالكبريت ولطخ على الخراجات فجّرها وقد ينتفع به اذا استعمل لطوخا للجنب الذى عرض له وجع مزمن وللربة والقدم والمفاصل

[1] margin وهو رطب

ارياسيس قوة الثافسيا حادة شديدة الحدة مسخنة مع رطوبة ولذلك صارت تجذب من عمق البدن بعنف ثمّ تحلل الشي الذى اجتذبته وفعلها ذلك يكون في مدة طويلة الزمان

مسيح ثافسيا حار يابس في الدرجة الرابعة حريف نافع من نفث القيح وعسر النفس وداء الثعلب ويقلع الاثار ويجلوا الكلف والبرص وينضج الجروح ويفجرها وينفع من وجع الجنبين ووجع الرية والنقرس من البلغم ووجع المفاصل ويتفع من الاورام الحادثة f. 121a

البصرى ثافسيا حار كثير الحرارة مع رطوبة فضليّة وفي سخونتها ابطاء من اجلها وهى تجذب من القعْر بعد الد وتفش

حبيش صمغ السذاب وهو الثافسيا حار في اخر الدرجة الثالثة يابس في اخر الدرجة الثانية يبرئ القرح العتيق ان نثر عليه وينفع من الخناوير التى تكون في الحلق وتحت الابطين اذا استعط منه بوزن دانق

جامع الرازى ثافسيا وهو الينتون حار يابس في الدرجة الرابعة حريف يقلع البياض والاثار وينفع الاورام التى تكون في العصب ووجع المفاصل ويقال انّه اصل السذاب البرّى

الرازى قد تعرض لمن يسقى الثافسيا حُرقة في الحلق والمعدة لا تطاق وجحوظ العين وحمرة الوجه وشرَى في البدن فليقيّوا ثمّ يسقوا اللبن مرات والزبد ثمّ يعطوا ماء الشعير حتى يسكن عنهم ويغرغروا باللبن ودهن الورد المنصورى ثافسيا حار جدا محرق ينبت الشعر في داء الثعلب وينفع اذا مسح به الجسد من الاسترخاء

Bruce 47. f. 53b

يَرْبَهْ قُرْجَنِيرَهْ قال عمران بن ابي عمر اليربه قُرْجَنِيرَهْ باللطينية هو الهيوقاريقون بالرومية وقال يحيى بن اسحق ومحمد بن عبدون مثله او نحوه قال محمد والهيوقاريقون يسمّى باللطينية ايضا البِنيلهْ اى الصنوبر الصغير وقال غيره معنى اليربه قُرْجَنِيرَهْ عشبة القلب وذلك ان لون ثمرها احمر وشكله صنوبرى على لون القلب وشكله

يَرْبَه بُطْرِهِ قال عمران بن ابي عمر الافسنتين يسمّى باللطينية يربه بُطْرِهِ ومعناه العشبة المرّة وقال يحيى بن اسحق ومحمد بن عبدون مثله قال محمد والافسنتين ثلاثة اصناف ويسمّى الصنف الذى ينبت منه عندنا شانسُه باللطينية ايضا

يَرْبَهْ فَقِيشَهْ قال عبد الرحمن بن الهيثم معناه باللطينية الحشيشة السهلة وبعض الناس يسمّيه الحلبوب ويسمّى باليونانية للنورسطس والعامّة تسمّيه لبلابا وليس به

وقال غيره من اطبائنا اليربه فقيشه هو اللبلاب الذى يشبه ورقه ورق النعنع

/54a

بَرْبَطُورِي قال عمران بن ابي عمر البربطوري هو العرقصان ويسمّى هزار جشان[1]

وقال محمد بن عبدون مثله

وقال ابن الهيثم في كتاب المسهلات والمقيئات البربطوري باللسان اللطيني

هو النبات المسمّى فوقاذايُن باللسان اليوناني

[1] margin : هشان

NAMES OF PLANTS

Giving the Latin names, according to the dictionary of Issa.

Letters refer to the section in which these names occur:

T Ibn Juljul's Tafsir

S Ibn Juljul's Supplement

N MS Nuruosmaniye 3589

Z Al-Zahrawi; numbers refer to the maqalas

I Ibn Samajun's Drug Book

Atruj	Citrus medica Risso, Rutaceae S, Z.28
Idrīs	Thapsia garganica, Umbelliferae T
Idhkhir	Andropogon schoenanthus L., Gramineae Z.24
Īrisā	Iris florentina L. Z.24
Arz	Cedrus libani N
Azādirakht	Melia azadirachta L., Meliaceae I
Ās	Myrtus communis L., Myrtaceae S, N, Z.24
Asārūn	Asarum europaeum L., Aristolochiaceae I
Isfānākh	Spinacia oleracea, Chenopodiaceae S
Ushshaq	Dorema ammoniacum, Umbelliferae Z.24
Ushnān	Salsola kali, Chenopodiaceae Z.24
Aṭmaṭ	Areca catechu L. (= Fūfal) S
Aghārīqūn	Polyporus officinalis Z.28
Afsintīn	Artemisia absinthium L. Z.24, 28, I
Afīthmūn	Cuscuta epithymum T, Z.28
Afyūn	Papaver somniferum Z.24, 28, 29

Aqāqiyā — Acacia arabica
Z.24

Uqḥuwān — Matricaria chamomilla
Chrysanthemum parthenium
T

Aqṭà — Sambucus nigra L., Caprifoliaceae
I

Aqūnīṭun — Aconitum napellus
S

Iklīl al-malik — Melilotus officinalis
Z

Amlaj — Phyllanthus emblica Willd., Euphorbiaceae
S

Amīr Bārîs — Berberis vulgaris L.
S

Andrāsiyūn — Peucedanum officinal L., Umbelliferae
I

Anzarūt — Astragalus sarcocolla
Z.24

Anqardiyā — Semecarpus anacardia
S

?Ankankara — Lathyrus sativus (= Julbān)
N

Anīsūn — Pimpinella anisum
Z.24, 29

Ihlīlaj — Terminali chebula etc. Myrobalans
S, Z.24, 28

Ayda^{c} — Dracaena draco (= Shiyān)
S

Bābūnaj — Anthemis nobilis
Matricaria chamomilla
T, Z.24

Bādharūj, Bādrūj — Ocimum basilicum
S, N

Bādhinjān — Solanum melongena, Solanaceae
S

Bārazd — Ferula galbaniflua
Z.24

Barsiyān Dārū — Polygonum aviculare
Z.24

Bazr Quṭūnā — Plantago psyllium
Z.24

Basbāsa — Myristica fragrans HOUTT, Myrticaceae
I

Bustān Airūz — Amaranthus tricolor L.
S

Busr — Dates beginning to ripen
I

Buṭm — Pistacia terebinthus L.
Z.24

Baqla Ḥamqā' — Portulaca oleracea
Z.24

Baqqam — Caesalpina sappan L., Leguminosae
S

Balādhur — Semecarpus anacardium L.
S, Z.28

Balsān — Commiphora opobalsamum
Amyris gileadensis
Z.24, 29, S

Ballūṭ — Quercus ilex, Cupuliferae; Q. coccifera
S

Balīlaj — Belleric myrobalan
S

Banj — Hyoscyamus albus, H. niger
T, Z.24

Banṭāfilun — Potentilla reptens L., Rosaceae
N

Banafsaj — Viola odorata
S, Z.24, 28

Bahman — Centaurea behen
S, Z.29

Būzīdān — Orchis morio L.
S

Būsh Darbandī — uncertain. Plant used for eye ointment
S

Bīsh — Aconitum ferox WALL, Ranunculaceae; A. uncinatum; A. napellus
I

Tābsiyā — Thapsia garganica
T, Z.28, I

Turbud — Ipomoea turpetha
Z.28

Turunj — Citrus medica Risso (= Atruj)

Tarənjabīn — Persian manna
I

Tamr Hindī — Tamarindus indica
S, Z.28, I

Tanbūl — Piper betel L.
S

Tīn — Ficus carica
Z.24

Thāfsiyā — Thapsia garganica (= Tābsiyā)
T, Z.28, I

Thīl — Agropyrum repens, Gramineae;
I

Jāwashīr — Opoponax chironium
Z.24

Jadwār — Curcuma zedoaria ROSC., Zingiberaceae
I

Jirjīr — Eruca sativa
T, Z.24

Julbān, Julubbān — Lathyrus sativus or var.
S, N

Jullanār — Punica granatum
Z.24

Jauz Buwwā — Myristica officinalis
S

Jauz Ḥandam — Lecanora esculenta
S, I

Jauz al-Raqᶜ — Elkaja yemenensis FORSK., Meliaceae
I

Jauz al-Hindī — Cocos nucifera
S, Z.29, I

Ḥāshā — Thymus capitatus
T

Ḥabb al-Zalam — Cyperus esculentus
S, I

Ḥabb al-ᶜarūs — Piper cubeba (= Kabbāba)
S

Ḥabb al-Nīl — Ipomoea hederacea
Z.28

Ḥurf — Nastūrtium officinale, Cruciferae
Z.29

Ḥarmal — Peganum harmala L., Rutaceae

Ḥasak — Tribulus terrestris
Z.24

Ḥiṣrim	juice of unripe grapes T, S, Z.24, 28
Ḥuḍud	Lycium afrum L N, Z.28, I
Ḥulba	Trigonella foenum graecum Z.24
Ḥalbūb	Mercurialis annua L., Euphorbiaceae I
Ḥamāmā	Amomum cardamomum Z.24
Ḥumāḍ	Rumex acetosa L., Polygonaceae; R. acetosa S, N
Ḥumar	Tamarindus indica (= Tamr Hindi) S
Ḥimmaṣ, Ḥimmiṣ	Cicer arietinum L., Leguminoseae I
Ḥanjara	Cyperus esculentus (= Habb al-Zalam) S, N
Ḥinṭa	Triticum vulgare Z.28
Ḥanẓal	Citrullus colocynthis T, S, Z.24, 28
Ḥayy al-ʿĀlam	Sedum altissimum, Crassulaceae; Sempervivum arboreum; S. tectorum
Khālidūnyūn	Chelidonium majus L., Papaveraceae S, N
Khirbaq Aswad	Helleborus niger L., Ranunculaceae T
Khirdal	Sinapis alba; Brassica alba Z.24

Khrūsūqūmī	Chrysocoma L., Compositae T
Kharnūb	Ceratonia siliqua, Leguminoseae I
Khirwa^{c}	Ricinus communis L. Z.24
Khass	Lactuca sativa L., Compositae S, Z.24
Khashkhāsh Aswad	Papaver somniferum L. Z.28
Khuḍairā'	Daphne alpina L., Thymelaeaceae T
Khaṭāṭīr, Shajarat al-	Chelidonium majus L. S, N
Khiṭmī	Althea officinalis T, N, Z.24
Khall	Vinegar T, S, Z.24, 28
Khamīr	Yeast Z.24
Khundrus	Triticum romanum, Gramineae Z.29
Khūlinjān	Alpinia galanga S, I
Khiyār	Cucumis sativus L. S, I
Khiyār Shanbar	Cassia fistula L., Leguminoseae S, Z.28, I
Khaizurān	Bambusa arundinacea, Gramineae S

Dār Ṣīnī — Cinnamomum zeylanicum, Lauraceae
Z.29

Dārūnaj — Doronicum scorpioides
S

Diflà — Nerium oleander
T, Z.24

Dam al-Akhawain — Dracaena draco (= Shiyān)
S, Z.24

Daqīq — Flour
Z.24

Dharīra, Qaṣab al- — Acorus calamus, Araceae
Z.24

Dhanab al-Qiṭṭ — Chrysocoma L., Compositae
N

Rātīnaj — Rosin; also called Qulufūniyā, Rāṭīnā
Z.24

Rāziqī — Oil of Jasminum
S

Rāziyānaj — Foeniculum vulgare, Umbelliferae
I

Rānij — Cocos nucifera (= Jauz al-Hindī)
S

Rand — Laurus nobilis, Lauraceae
I

Rībās — Rheum ribes L., Polygonaceae
S, I

Zarāwand	Ṭawīl	Aristolochia longa
"	Mudahraj	" rotunda
		Z.24
Zirishk		Berberis vulgaris (flowers of Amīr Bārīs)
		S
Zarunb		Curcuma zedoaria ROSC., Zingiberaceae
		S, I
Zurunbād(h)		Zingiber zerumbet
		S, I
Zuᶜrūr		Rhamnus disperma L., Rhamnaceae
		N
Zaᶜfrān		Crocus sativus, saffron
		S, N
Zift		Pitch, pine resin
		Z.24
Zanbaq		Oil of Jasminum
		S, Z.24, I
Zanjabīl		Zingiber officinale, Zingiberaceae
		S
Zūfā Yābis		Hyssopus officinalis
		Z.24
Zeit		Olive oil, from Olea europaea
		S, Z.24
Sāj		Tectona grandis L.
		S
Sādhaj (Sādaj)		Cinnamomum citriodorum, Lauraceae
		Z.24
Sadhāb		Ruta graveolens L., Rutaceae
		Z.24, I
Sarghant		Telephium imperati L., Mesembryanthemaceae
		S

Sasāliyūn	Seseli tortuosum L., Umbelliferae I
Su^{c}d	Cyperus longus L., Cyperaceae Z.24
Sa^{c}fa	Phoenix dactylifera leaf Z.24
Safarjal	Cydonia vulgaris, Rosaceae Z.24
Saqamūniyā	Convolvulus scammonia L., T, Z.28, 29
Sakbīnaj	Sagapenum Z.24, 28
Sakanjibīn	Oxymel (Vinegar and honey) T, Z.28
Summāq	Rhus coriaria L., Anacardiaceae Z.24
Simsim	Sesamum indicum L., Pedaliaceae S.24
Sunbul	Nardostachys jatamansi, Valerianaceae Z.24
Sandarūs	Juniperus oxycedrus L., Coniferae (= ^{c}Ar^{c}ar) I
Sūs	Glycyrrhiza Glabra L., Leguminoseae Z.24
Sausan Asmānjūnī	Iris germanica or I. florentina Z.24
Sīsanbar	Thymus glaber, Labiatae (= Nammām)

Shibith — Anethum graveolens L., Umbelliferae
Z.24

Shubrum — Euphorbia pithyusa L.
Z.28

Sharāb — Wine
T, Z.24

Sha^{c}īr — Hordeum vulgare
T, Z.24, 28

Shiyān — Dracaena draco
S

Shajarat al-Kaff — Vitex agnus castus L.
Portulaca
S

Shajarat al-Khaṭāṭīf — Chelidonium majus L.
S, N

Shauka Baiḍā' — Onopordon acanthium L., Compositae;
Picnomon acarna, Compositae
I

Shīraj — Sesamum indicum, Duhn of Simsim
Z.24

Ṣabūn — Soap, made with Duhn etc.
Z.24

Ṣabir — Aloe vera L., Liliaceae
Z.24, 28

Ṣandal Aḥmar — Pterocarpus santalinus L., Leguminoseae
Abiyaḍ — Santalum album L.
S, I

Ṣamgh — Gum
Z.24, 28

Ṣanaubar — Pinus halepensis, Coniferae; P. pinea
S, N, Z.24, 28, I

Ṭabāshīr	Bambusa arundinacea, Gramineae, concretions of S, I
Ṭarkhūn	Artemisia dranunculus L., Compositae S, I
Ṭawāq	Cocos nucifera, juice S
ᶜĀqirqarḥā	Anacyclus pyrethrum D.C., Compositae Z.24
ᶜAdas	Lens esculenta, Leguminoseae Z.24, I
ᶜArᶜar	Juniperus communis L., Coniferae; J. oxycedrus N
ᶜUrūq ṣufr	Chelidonium majus L., Papaveraceae S, N
ᶜ rqaṣan	a) ᶜUrquṣ: Boerhaavia scandens L. b) Trigonella corniculata L., Leguminoseae; also ᶜUrquṣā', ᶜUraiquṣān, ᶜAranquṣān I
ᶜUṣfur	Carthamus tinctorius L., Compositae Z.24
ᶜAfṣ	Quercus infectoria, Cupuliferae Z.24
ᶜAlqam	Citrullus in general Z.28
ᶜIlk	Gum from Pistacia terebinthus Z.24
ᶜInab al-Thaᶜlab	Solanum nigrum Z.24
ᶜAnṣal/ᶜAnṣalan	Scilla maritima L., Liliaceae T, Z.28
ᶜAwsij	Lycium afrum, Solanaceae Z.24
ᶜAinūr	? N

Ghār	Laurus nobilis, berry Z.24
Farbiyūn	Euphorbia resinifera, gum Z.24, 28
Fulful " abiyaḍ	Piper nigrum Z.24, S
Fulaifila	Capsicum TOURN., Solanaceae Aloëxylon agallochum, Leguminoseae S
Fanjangusht	Vitex agnus castus N, Z.24
Fū	Valeriana Dioscorides SIBTH., Valerianaceae I
Fūdanj	Mentha pulegium, Labiatae T
Fūl	Vicia faba L., Leguminoseae I
Fūfal	Areca catechu L. S, I
Fīlūrā	Phillyrea latifolia L., Oleaceae N
Qātil Abīhi/ᶜAfār	Arbutus unedo L., Ericaceae I
Qāqulla	Amomum cardamomum L. S
Qāqullā	Atriplex halimus, Chenopodiaceae Z.24
Qithā'	Cucumis flexuosus, L.; C. melo L. S, N
Qurrat al-ᶜAin	Nasturtium fontanum, Cruciferae; Sium latifolium, Umbelliferae I

Qarṭumānā
Qardamānā — Lagoecia cuminoides L., Umbelliferae
Z.24

Qar^{c} — Cucurbita maxima
T, Z.24

Qaranful — Eugenia caryophyllata, Myrtaceae
S, I

Qusṭ — Costus speciosus, root
Z.24

Qiṭrān — Pitch or Rosin of cedar
Z.24

Quṭn, Quṭun — Gossypium herbaceum L., Malvaceae
S

Qalth — Dolichos biflorus, Leguminoseae
Z.29

Qulfūniyā — Resin, Colophony
Z.24

Qinna/Qanà — Arundo donax L., Gramineae; Bambusa arundinacea
Z.24; T

Qinnà — Ferula galbaniflua, Umbelliferae; F. communis L.
Z.24

Qinbīl — Mallotus philippinensis, Euphorbiaceae
S, I

Qanṭuriyūn — Erythrea centaurium
Z.24, 28

Qir — Pitch, from woods of Sanaubar, Sarv etc.
Z.24

Kādhī	Pandanus odoratissimus S, I.
Kasham	Seseli tortuosum L., Umbelliferae I
Kafūr	Cinnamomum camphora, Lauraceae S, N, Z.29, I
Kabbāba	Piper cubeba S, I
Kattān	Linum usitatissimum, Linaceae Z.24
Kathīrā	Astragalus tragacanthus, gum Z.24
Karsanna	Vicia ervillia WILLD., Leguminoseae Z.24, 28, I
Karafs	Apium graveolens, Umbelliferae Z.24, I
Karfala	? (= Julbān) N
Kurkum	Curcuma longa L., Zingiberaceae S
Karma, Karm	Vitis vinifera T, Z.24, 28, I
Karnab, Kurunb	Brassica oleracea, Cruciferae Z.24
Kusbara	Coriandrum sativum L., Umbelliferae S, Z.24
Kushūth	Cuscuta epithymum T, Z.28, I
Kufurrī	Spadix of palm S, I
Kaff Maryam	? Vitex agnus castus L., Verbenaceae S, N

Kaff, Shajarat al- Vitex agnus castus L.
Portulaca
S, N

Kalkh Ferula communis L., Umbelliferae;
Zozimia absinthifolia "

Kalakh Dorema ammoniacum, Umbelliferae
Ferula sinaica "

Kamā'ī Tuber album, Tuberaceae; T. brumale, etc.
S

Kundur Boswellia ROXB., Burseraceae
S, Z.24

Kundus Gypsophila struthium L., Caryophillaceae
Z.24

Kūr Commiphora africanum, Burseraceae (= Muql)
Z.24

Kiya Pistacia lentiscus, gum
Z.24

Ka°k Shāmī "Syrian biscuit"
Z.24

Lādan Cistus hypocistis, Cistaceae, gum
Z.24

Lubān Boswellia ROXB., Burseraceae
Z.24

Lablāb Dolichos lablab
Convolvulus arvensis
Z.24, 28, I

Lubnà Styrax officinalis L., Styraceae
Z.24, I

Lazzāq al-Dhahab Dorema ammoniacum, Umbelliferae
Ferula galbaniflua, "
Z.24

Luffāḥ Mandragora officinarum L., Solanaceae
Z.24

Lūbiyā — Dolichos lubia FORSK., Leguminoseae
S,

Lauz — Prunus amygdalus
S, Z.24

Lūqiyūn — Lycium afrum (= Ḥuḍuḍ)
N

Līrūn — Reseda Asolaich, Resedaceae; R. luteola
N

Līmūn — Citrus medica RISSO, Var. Limonum
S

Mā' al-Ward — Rose water
S, Z.28

Māzariyūn — Daphne mesereum L., Thymelaceae
T, Z.28, I

Māsh — Phaseolus mungo, Leguminoseae
S, Z.29

Mamīthā — Glaucium corniculatum, Papaveraceae
Z.24

Mahūdānah — Euphorbia lathyris L.
I

Māhī Zuhra — Anamirta cocculus, Menispermaceae
Menispermum cocculus
S, I

Maḥlab — Prunus mahaleb L., Rosaceae
S, I

Murr — Commiphora myrrha, Burseraceae
Z.24

Mirsīn — Myrtus communis L., Myrtaceae
N

Masṭikā — Pistacia lentiscus, Anacardiaceae
Z.24

Maqdūnis	Carum petroselinum, Umbelliferae, Petroselinum hortense; P. sativum I
Muql	Commiphora africanum (= Kūr) Z.24
Mauz	Musa paradisiaca, Musaceae S
Mai^{c}a	Styrax officinalis, resin Z.24
Narjīl	Cocos nucifera (= Jauz al-Hindī) S, I, Z.29
Nāranj	Citrus sinensis, Rutaceae S
Nānkhāh, Nānkhawāh	Carum copticum S, N, Z.24
Nabāja	Hiṣrim T
Nabāl	Aconitum (= Aqūnīṭun) S
Narjis	Narcissus poeticus T, Z.24
Nārdīn, Nardīn	Nardostachys jatamansi, Valerianaceae Z.24
Nashāstaj	Starch Z.28
Na^{c}na^{c}	Mentha pulegium L., Labiatae; M. sativa L.; M. piperita L. I

Hāl/Hayl	Amomum cardamomum L. Elletaria cardamomum S
Hurd	Curcuma longa, Zingiberaceae (= Kurkum) S
Harnuwa	Capsicum TOURN., Solanaceae Aloëxylon agallochum LOUR., Leguminoseae (= Fulaifila). S
Hindabā'	Cichorium endivia L., Compositae S, Z.24
Hīyufārīqūn	Hypericum perforatum L., Hypericaceae I
Ward	Rosa Z.24
Wars	Memecylon tinctorium WILLD., Melastomaceae S
Yasmīn	Jasminum sambac, Oleaceae; J. grandiflorum L. S, I
Yabrūḥ	Mandragora officinarum, Solanaceae Z.24, I
Yattū^{c}(āt)	Euphorbiaceae Z.28

SOME TECHNICAL TERMS, Etc.

Iyārij: Hiera, a bitter medicine, generally made with Myrobalans (Halīlaj). Al-Zahrāwī devotes his Maqāla 5 to the subject.

Tiryāq: Theriac, of Greek origin. The most famous recipe was that of Mithridates King of Pontus (120-63 B.C.) This was modified by Andromachus, physician to Nero (54-68 A.D.) and further adapted by Galen. It was from him that the Arabic version came; the Tiryāq was originally a specific antidote against poison, but the name was also used to refer to a general tonic or medicine. It contained a great many ingredients, and some recipes included such items as the flesh of serpents. Both al-Zahrāwī and Ibn Juljul wrote a Maqāla on the Tiryāq.

Ḥumra: A red swelling or pustule on the body

Khāssa: Speciality or peculiar property of a drug; its general effect upon a humour and/or organ of the body.

Kharāj: Abscess

Khalṭ: Literally "mixture"; humour. The Akhlāṭ, the four humours, are the blood, black bile, yellow bile and phlegm.

Duhn: Essential oil, extracted from plants and animal products; the subject of al-Zahrāwī's Maqāla 25

Rubb: Medicated jelly, or thick syrup, made of fruit.

Qāṭājānus: referred to by al-Zahrāwī, Ibn Samajūn, and also by Ibn Juljul in his Ṭabaqāt (p. 43), as a work of Galen. Al-Zahrāwī gives it as the source for the Palm Ointment of Galen; it is: Γαληνου περι συνθεσεως φαρμακων των κατα γενη. in Latin de Compositione Medicamentorum per genera, Libri VII, being Vol. XIII of Kühn's edition. The Arabic version, translated by Ḥunain, is referred to by Brockelmann (GAL I, p. 206) as fī Tarkīb al-adwiya bi-ḥasb ajnāsha al-maūūf bi κατὰ γένος.

Quwwa: Power, or faculty; the power of a medicament, or its particular function

Kaymūs: body fluid; or gastric juice

Mizāj: Temperament, "mixture" of the humours.

Maʿjūn: "Electuary", a confection, generally made with honey or syrup, of a thick consistency.

B I B L I O G R A P H Y

(1) MANUSCRIPTS CONSULTED OR QUOTED

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Madrid 5007
Vienna 211D - contains Maqālas 24 and 25

IBN JULJUL

Madrid 233 - the Tafsīr
Bodleian Hyde 34 - the Supplement and the Tiryāq

ON IBN JULJUL

Nuruosmaniye 3589, Istanbul

IBN SAMAJŪN

Bodleian Bruce 47
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British Museum Or. 11614

DIOSCORIDES IN ARABIC (* = illustrated)

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(2) PRINTED BOOKS

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