

THE GREEK FACTOR IN MUSLIM PHARMACY A SURVEY

HAKIM MOHAMMED SAID*

ABSTRACT

The fact that the Prophet of Islam himself ascribed the utmost importance to medicine provided a stimulus to the development of medicine proper on the soil of Arabia Desert. The entry of the Greek factor into the Arab world was through the school of Jundi-shapur in eastern Iran. The influence of the Greek factor seems to have gained ascendancy, with the conquest of Syria and Egypt in the 7th century A.D. Islamic medicine employs both simple and compound remedies. Muslim physicians attained a high degree of skill in the making of polypharmaceuticals, while the Greek factor did stimulate Muslim pharmacy, the vastly expanded materia medica of the middle ages led to the preparation of polypharmaceuticals having non-Greek origin.

The fact that the Prophet of Islam himself ascribed the utmost importance to medicine provided a stimulus to the development of medicine proper on the soil of Arabia Desert. Rufaida was the first female nurse in human history in the proper sense.

The entry of the Greek factor into the Arab world was through the school of Jundi-shapur in eastern Iran.¹ The first Arabic physician of whom we have any record was Harith ibn Kalada al Thakesi who was Makkan—born and received medical

training in Jundi-shapur. Having practised medicine for years in Iran, where he numbered among his patients the Iranian emperor, Khusraw, he ultimately returned to Arabia. Ralph Major in this context observes :

Harith, although the physician of Muhammad, never embraced Islam and may even have been a Christian. This act of Muhammad in selecting an unbeliever as his physician doubtless was a powerful example of his followers that a

*President, Hamdard University Library, P.O. Madinat Al-Hikmat. Sharea Madinat al-Hikmat, Bund Murad Khan, Karachi.

1. Ralph H. Major, *A History of Medicine* (Springfield. Ill., 1954), vol. 1, p. 228. cf. Edward G. Browne, *Arabian Medicine* (Cambridge, 1921), pp. 19-24.

Muslim might exercise his judgment in the selection of his physician without the theological considerations. His example was followed by his successors, and at least two thirds of the physicians in the household of the celebrated Saladin (1138-1193) were either Christians or Jews.²

The influence of Galen seems to have penetrated into what was developing into Islamic medicine by the 8th century A.D. Wahhab ibn-Munabbih (died ca. 732), about whose life not much is known, had perhaps certain ideas about human physiology according to the Greek ideas. Thus he speaks of the four primary qualities and the four humours related to them and "of the balance of temperament which signifies health."³

The Arabic poet. al-Farzadaq (d. 728) uses the word, *ma* (water) for an eye complaint. This may well reflect the Greek influence as the words *hypokhymos* or *katarraktes* (cataract) were later translated as *nuzul al-ma* (the descent of water) or simply *al-ma*.

The influence of the Greek factor seems to have gained ascendancy,

with the conquest of Syria and Egypt in the 7th century A.D. From Abu Raihan Al-Biruni's *Kitab al-saydanah* (Book of Pharmacy and Materia Medica) written in the 11th century A.D., we find references to Greek writers like Aetios of Amida, Theophrastus, Paulos Aegineta, Rufus of Ephesus, Pythagoras, Plato, Philumenos of Alexandria, Dioscorides, Philagrius, Galen, Oribasius, Nicolans Damascenus and Hippocrates.⁴ Theodog (*Thiyadug* in Arabic) was a Syriac Christian who apparently wrote in Syriac and was physician-in-Chief to Hajjaj bin Yusuf, practised Hellenic medicine, as did Masarjawayh, said to have been of Jewish-Iranian descent and who flourished during the earlier Abbasid period. Another was Isra'il, who was physician to the Ummayyad Caliph, Sulayman bin 'Abd al-Malik (715-17)).

It is not my intention to go into the history of the translations of Greek works into Arabic. The Greek factor passed into the Arabic through the school of Jundi-shapur and Syriac works.

One work, which consists of a list of *Succedanea* (Ar. *abd-al-*

2. *Op cit.*, 229.

3. Manfred Ullman, *Islamic Medicine* (Edinburgh, 1978), p. 5.

4. The Naka'id of Jarir and al-Farzadak : ed. Anthony Ashley Boran (Leiden, 1905-7), nr. LXI 23, Sami K. Hamarneh, *Al-Biruni's Book on Pharmacy and Materia Medica* (Karachi, 1973), Appendix III, pp. 106-37.

adwiya) shows what drugs the apothecary may employ as substitute when he cannot procure the prescribed drug. Of the second work about twenty five fragments are preserved.

Ullmann in this context observes :

From these it can be seen that the book had its subject 'simple remedies'. It deals partly with drugs originating in India and unknown to the Greeks, as for example, marsh nut and banana. On the other hand, from time to time the degree of the effectiveness of the drugs is mentioned, and this is typical of Galen. The book must therefore have arisen where the lines of transmission from India and Greece intersected and this was presumably Sasanid Iran....⁵

Singer observes about Dioscorides :

After Celsus comes Dioscorides in the first century A.D. He was a Greek military surgeon of Silician origin who served under Nero and in him the Greek intellect is obviously beginning to flag. His work is prodigiously important for the history of botany yet so far as rational medicine is concerned he is almost negligible. He begins at the wrong end, either giving lists of drugs with the symptoms that they are said to cure or to relieve

or lists of symptoms with a series of named drugs. Clinical observation and record are wholly absent, and the spirit of Hippocrates has departed from this elaborate pharmacopoeia.⁶

This judgement notwithstanding us single work on Greek materia medica has influenced Islamic pharmacy and materia medica. Not only the five original books of the *Greek Herbal* of Dioscorides but also the apocryphal books VI and VII on poisonous plants and animals were rendered into Arabic. The Arabic version most widely circulated was prepared by Istafan ibn-Basil and revised by Hunayn ibn-Ishaq. Even today it is preserved in numerous manuscripts often very beautifully illuminated.

Indeed, almost major writers of Arabic materiae medicae have lavished unstinted praise upon Dioscorides. Ibn al-Baytar cites him as the primary authority and al-Biruni in his *Kitab al-Saydanah* says. "If Dioscorides had lived in our country and had turned his efforts into determining the effects of the plants in our hills and valleys, these would have been used as medicines (*Adwiya*) and the fruits would, as the result of his experiences, have become medicaments (*ash fiya*)."⁷

5. Manfred Ullmann, *Op. cit.*, p. 18.

6. Charles Singer, *Medicine* in "The Legacy of Greece" (Oxford, 1962) p. 241.

7. Manfred Ullmann, *op. cit.*, p. 12.



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Albert describes the *Greek Herbal* as "a precipitation of all foregoing knowledge of the subject from Plato to Nero."⁸ Major observes that Dioscorides botanical descriptions are so excellent that Tournefort, the French botanist, stated in 1700 that, while he was in Levant, he was able to identify a great number of plants previously unknown to him from Dioscorides' description. It was from his description that Muslim pharmacists prepared burnt lead or lead sulphide (*Molubdos Kekaumenos*), mercury from cinnabar (*Vdragures*), and potash from tartar.⁹ The entry of red ochre, Lemnian earth, and flowers of copper into Muslim pharmacy owe themselves to Dioscorides.

It is most probable that during the Hippocratic period the materia medica used by the Greeks came not only from the Mediterranean region but also from foreign countries. For example, the marking nut comes from southern subcontinent.

During the Homeric times some of the medicines and simples came from Egypt. In the Hippocratic works are found many samples

with the adjective, "Egyptian", e. g. Egyptian alum, Egyptian bean, Egyptian cumin and Egyptian salt. Whether this is because of commerce or because Hippocrates travelled to Egypt we have no means of knowing. In fact, even today Islamic medicine employs prescriptions like *Angruya-i-Kabir* and *Basliqun Kabir* which are based on Hippocrates and employs ingredients wild rue, horned poppy, celandine, round aristolochia, *Plantago zeylanica*, cloves, and so on.¹⁰ It is quite possible that the Indian ingredients are the original ones incorporated by Hippocrates. Legend has it that *Basliqun Kabir* was prepared for Basilicon by Hippocrates.

Some scholars have advanced the view that Pythagoras and others had been to India and brought back to Greece the Indian medicinal lore.¹¹ Theophrastus states that the aromata for salves came by ship from India.¹² *Nardostachys jatamansi* (N. O. Valerianaceae) is, for example, the *Nardos* of Dioscorides, who states about it :

"Of the Indian one kinde is that which is called Gangeticall, from a

8. Quoted in Ralph H. Major *A History of Medicine* p. 176.

9. *The Greek Herbal of Dioscorides*, Englished by John Goodyear; ed, Rober T. Gunther (New York 1959).

10. *Qarabadin-i-Hamdard* (Karachi, 1968), pp. 32-33. cf *Hamdard Pharmacopoeia of Eastern Medicine* (Karachi, 2nd impression, 1970).

11. L. von Schroeder, *Pythagoras und die Inder* (Leipzig, 1884).

12. B. Lanfer, "Sino-Iranica," *Field Museum of Natural History*. Anthropol. Ser. 15, 185-630 (1919).

certain river named Ganges running by the hill where it grows. Being some-what weaker in strength because it cometh out of watery places, and it is higher, and hath more eares comming out of the same roote, both full of haire, and

one wrapt in ye other, having a poysonous smell".¹³

A rather interesting survey on the origin of the sweet flag has been made by Levey and al-Khaledy⁽¹⁴⁾ in a tabular form as follows :

Ar. wajj, *Acorus Calamus* L., sweet-flag.

Sum. GI. DUG

Akk. *qanu tabu*

Gr. *αχορον αοηλνιου*



Modern Ar. *aikar, ighir, ikkur,*

Turk. *egur*



Hieroglyphic Egyptian *ks*



Coptic

kas

Sans. *vucha* or *vaca*

GUZERAT

vaz

Deccan

bache

Malabar

vazabu

Concan

vaicam

Hindi

gora vach



Pers. *vaj*



Ar. *wajj*

The sweet-flag is from China, Japan and India.

The same authors estimate that in the medical formulary of al-Kindi 31 per cent of the medica comes from Persian-Indian sources, 33 per cent Mesopotamia, 25 per cent from Greek origins, 5 per cent from Arabic, and 3 per cent from ancient Egyptian origins.⁽¹⁵⁾

Islamic medicine employs both simple and compound remedies. As far as the field of pharmaceuticals is concerned, Galen's *pharmaka hapla*

and the *pharmaka syntheta*, and the books *De simplicium medicamentorum temperamentis ac facultibus* and *De compositione medicamentorum secundum locos et secundum genera* served as a literary model.

The criteria (*qawanin*) by which drugs can be tested were originally formulated by Galen and followed by Muslim physicians. The first and surest method is to try a drug on a sick and a healthy body. This has

13. *The Greek Herbal*, Bk. I. 10.

14. Martin Levey and Noury al-Khaledy, *The Medical Formulary of Al-Samarqandi* (Philadelphia, 1967), p. 27.

15. *Idem, Ibid*, p. 29.

been accepted as a canon by the practitioners of Islamic medicine. Galen sets forth eight conditions which have to be fulfilled.

1. The drug must be free from every accidental quality.
2. The illness must be simple, not complex.
3. Contrary illnesses must be treated with the drug.
4. The drug must be more powerful than the illness so that its effect can be clearly seen.
5. One must note the length of time during which contrary effects appear so that one can determine which of the two effects is only accidental.
6. One must look for the length of time during which contrary effects present themselves so that one may be able to determine which of the two effects are accidental.
7. One must note whether the effect of a drug is the same for everyone at the same time. If so, the effect is due to the nature of the drug; otherwise the effect is only accidental.
8. One must observe whether the effect is specific for human

beings. In an animal it can have another effect. (This has set the approach of Tibb *en regard* the pharmacology of a d.ug.

9. One must distinguish between foods and drugs; a drug warms the body by its quality and a food by its entire substance.¹⁶

The Galenic theory was elaborated by Ibn-Sina through his study on the temperament of 760 drugs and his restatement of the theory of temperament, viz. hot, cold, humid and dry.

The direct influence of Dioscorides on al Kindi can be traced in several instances. For example, Dioscorides (III : 86) has glaucium (horned poppy) as the juice of a herb in Heliopolis in Syria. He recommends this juice for eye ailments while they are in their incipient stage. Al-Kindi employs *shiyaf mamitha* (dry collyrium) in a preparation for the cure of ptergium and a yellow eye powder.

The compound electuary, *iyarij*, has also come from Greek materia medica. Ali bin Rebban al-Tabari, for instance, mentions two types of *iyarij*. One is *iyarij arkaghanis* (of Archigenes of Apameia) and *iyarij fiqara*. *Iyarij* is derived from the Greek 'iepx' (*iera*). Al-Bitriq prescribes this electuary for the stomach,

16. Manfred Ullmann. *op. cit.*, p. 104.

while al-Cindi employs it in a prescription for haemorrhoids of adults and children. In another prescription the sick part is moistened with *iyarij* and castor oil for serious epilepsy. In the *Kitab al-murshid*, al-Razi considers *iyarij* to be an important ingredient in the compounding of drugs.¹⁷

Muslim physicians attained a high degree of skill in the making of poly-pharmaceuticals. It has been claimed that this represents an evolution of the Egyptians. A proper

remedy for any disease has to compromise the base, adjuvants, synergists, and elements which might be replaced by *succedanea*. This procedure is claimed to have originated with Aesclepiades.¹⁸

While the Greek factor did stimulate Muslim pharmacy, the vastly expanded materia medica of the Middle Ages led to the preparation of polypharmaceuticals having non-Greek origin.



17. *Firdaws al-hikmat*. ed. M. Z. Siddiqui (Berlin, 1928), pp. 457-58.

18. Charles H. La Wall, *Four Thousand Years of Pharmacy* (Philadelphia and London, 1927), pp. 93-94.

सारांश

मुस्लिम फार्मैसी में यूनानी घटक : एक सर्वेक्षण

—हकीम मुहम्मद सईद

यह तथ्य कि स्वयं इस्लाम के पौगम्बर ने चिकित्साशास्त्र को बहुत ही महत्व दिया, अरब की मरूभूमि पर चिकित्साविज्ञान के विकास के लिये प्रेरक सिद्ध हुआ। पूर्वी ईरान की जुन्दी-शापुर परम्परा द्वारा यूनानी घटक का अरब जगत में प्रवेश हुआ। ऐसा प्रतीत होता है कि ईसा बाद सातवीं शताब्दी में शाम और मिस्र पर विजय प्राप्ति के साथ इस यूनानी घटक के प्रभाव में और वृद्धि हुई। इस्लामी चिकित्सा पद्धति में एकाकी एवं यौगिक दोनों प्रकार की औषधियों का उपयोग होता है। मुस्लिम चिकित्सकों ने बहुभेषजीय योगों के निर्माण में उच्च कोटि की दक्षता प्राप्त करली थी। यद्यपि यूनानी घटक मुस्लिम फार्मैसी को प्रेरित किया है अपितु मध्ययुग का अतिविकसित द्रव्यगुणविज्ञान बिना यूनानी मूल के बहुभेषजीय योगों के निर्माण में सहायक बना।

