

GRECO-ARABIC INFLUENCES ON THE PUBLIC HEALTH LEGISLATION IN THE CONSTITUTIONS OF MELFI

Liber Augustalis, promulgated by the Emperor Frederick II in 1231 for the Kingdom of Sicily, stands, in the words of Antonino de Stefano, as « il più insigne monumento della legislazione medievale »¹. It is a product of the age of scholasticism and of the revival of Roman law, a distillation of past legal knowledge and the fruit of present experience². From the research of scholars such as Brandileone, Vergottini, Trifone, Buyken, and Dilcher, there has emerged a complex picture of the influences of Roman law, Byzantine law, Lombard law, Norman law, and Canon law on the development of this legislation³. But the forces shaping the legislation of Frederick II can not be limited to legal texts alone. As Professor Hermann Dilcher has shown, there are numerous examples in the constitutions for which there is no clear evidence of a model in previous legal collections, either for entire laws or for particular provisions of the legislation⁴. The absence of such evidence suggests the need to examine other possible sources, even those of a non-legal nature, with a view to further extending our knowledge of the influences on the Constitutions of Melfi and, consequently, of the nature of

¹ ANTONINO DE STEFANO, *La Cultura alla corte di Federico II Imperatore* (Palermo, 1938), p. 149. I have not been able to consult ALFRED BAEUMER, *Die Aertztegesetzgebung Kaiser Friedrich II* (Leipzig, 1911).

² *Ibid.*, p. 13. See also the introduction to my translation of *Liber Augustalis* (Syracuse, 1971), p. XXI.

³ For the works of these authors, see the bibliography to HERMANN DILCHER, *Die Sizilische Gesetzgebung Kaiser Friedrichs II: Quellen der Constitutionen von Melfi* (Köln, 1975), pp. X-XXVI.

⁴ *Ibid.*, for example, p. 683, with reference to LA III, 45. « Auch fuer die angehenden Aertze vorgeschriebene testimonium fidei ist ohne Quellen-vorbild in den untersuchten Rechtsordnungen ». This type of statement appears throughout the work.

the society and the Court of Frederick II, which produced these laws. In the present paper, I wish particularly to examine a group of laws in the Constitutions of Melfi that taken together, form a public health code, of which Professor de Stefano has written: « Con le sue costituzioni di Melfi egli ci ha lasciato un vero e proprio codice sanitario, di gran lunga superiore alla legislazione precedente e straniera »⁵. We may, without exaggeration, I believe, refer to it as the first public health code in European history.

This legislation is found in book three of *Liber Augustalis*, which is devoted chiefly to private law. The pertinent statutes are: Title 44, a law of King Roger concerning the acceptable experience for physicians; Title 45, a law of Frederick II, concerned chiefly with the licensing of Physicians; Title 46, a novel of Frederick II, promulgated in 1240, which fixed norms for medical education as a basis for examination and licensing of physicians; Title 47, which established the number of pharmacists to be appointed for the making of medicines; Title 48, which dealt with air and water pollution; and certain sections of Title 49, which regulated the sale of foodstuffs. The legal sources for these laws have been studied most recently by Hermann Dilcher in *Die Sizilische Gesetzgebung Kaiser Friedrichs II: Quellen der Constitutionen von Melfi und ihrer Novellen* (Köln, 1975)⁶. Although Dilcher finds some relationships between parts of these laws and earlier legislation, his results are frequently references to laws dealing with similar subjects or providing similar penalties rather than actual exemplars from which the laws of Frederick drew inspiration. In fact, the early commentators on the Constitutions of Melfi faced this same problem in attempting to provide references to earlier legislation. For example, Andreas de Isernia relates LA III, 45 (Frederick II) to legislation controlling the admission of lawyers (LA I, 83). He provides as precedent for this law a reference to C 2, 7, 14, which celebrates the importance of lawyers to the State⁷. But this legislation provided no model for the examination of physicians and, as Dilcher says, the relationship seems uncertain⁸. On the other hand, for LA III, 4, the law of Roger II which introduces this section of the Con-

⁵ DE STEFANO, p. 298.

⁶ DILCHER, pp. 682-698.

⁷ *Ibid.*, p. 683 and with reference to LA I, 83, see pp. 343-4.

⁸ *Ibid.*, p. 683.

stitutions of Melfi, Dilcher sees better precedents in Roman Law, most notably in D 50, 9, 1. King Roger had provided for examination of those desiring to practice medicine by royal officials, with a penalty of imprisonment and confiscation of goods for failure to comply. The expressed purpose of this law was to protect *regnicoli* from inexperienced physicians. Dilcher cites as his first source D 50, 9, 1, which deals not with examination of credentials for the practice of medicine but with the question of the responsibility for fixing the number of physicians in each city. However, he also cites C 10, 53 (52), 10 which does deal with this issue but within the context of regulating the number of physicians. It is interesting to note that Andreas de Isernia makes no reference to these precedents in Roman law. For him, the best example was that found in LA I, 83, regulating the appointment of lawyers. He also sees as the reason for the harsher penalty found in LA III, 44 the greater risk to human life incurred in the practice of medicine⁹. The Roman legal sources provided by Dilcher may be accepted as partial models for this law of King Roger, but they do not set any precedent regarding penalty, nor do they establish an incontrovertible exemplar regarding State examination of physicians. In the course of this *relazione*, I hope to show that there was a much better precedent for this legislation of Roger II in the actual situation of the early twelfth century Byzantine medical profession than we find in Roman law. Moreover, Dilcher's examination of the other legislation in this group has shown that previous legal systems provided little in the way of direct precedent for Frederick's public health code. For example, his detailed study of LA III, 46, Frederick II's novel, *De Medicis*, from the year 1240, reveals that only one of its provisions, that requiring physicians to give free advice to the poor, has even a possible source in Roman law or any of the other collections used by Dilcher. However, in this case, Dilcher does not believe that C 10, 53 (52) is a model for this provision of LA III, 46. What does emerge from his examination is his conclusion that LA III, 46 is founded chiefly on existing practice at the medical school of Salerno¹⁰.

⁹ For the comment of Andreas de Isernia, see Naples (Kingdom). Laws, statutes, etc. *Constitutionum regni Siciliarum Libri III cum commentariis Veterum Jurisconsultorum* (Naples, 1773), p. 404. Hereafter cited as Cervonius.

¹⁰ DILCHER, pp. 684-8.

However, he does not pursue this suggestion further since it lies outside the scope of his research. It is for this reason that it, too, will be treated here.

We can get a clearer idea of the way in which near contemporaries viewed these laws from the commentator, Andreas de Isernia. Of LA III, 46, *De Medicis*, Andreas states: « This is a good constitution, and useful, if it were observed »¹¹. Of LA III, 47, *De Syrupis et Electuariis*, he says: « This ordinance is not observed »¹². And concerning LA III, 48, *De conservatione aeris*, his view is similar: « This constitution concerns the common good, although it is badly observed »¹³. Finally, in commenting on LA III, 49, Andreas takes a position that echoes that of the chronicler, Salimbene de Adam, regarding the imperial promulgator of this legislation: « The Emperor Frederick was of great prudence, if he had been on good terms with the Holy Roman Church. He established most discretely the life of his subjects in their daily affairs, and he prudently considered frauds and dishonesty in sales, which he opposed by the imposition of penalties »¹⁴. These opinions make it appear that Frederick's legislation was ahead of his time, at least insofar as the machinery of enforcement was concerned. They also reflect contemporary admiration for the emperor himself. They indicate a sense of novelty about this kind of legislation, which was felt by those who were affected by it. In this respect, the acceptance given to it by the commentators, including Andreas de Isernia, points up the fact that such ideas were being entertained among the intellectual classes of southern Italy and indicates the existence of an audience that favored this kind of legislative initiative on the part of the ruler. It suggests as well that study of the legal sources, important though that is, does not begin to exhaust the possibilities for reaching a fuller understanding of the Frederician constitutions. This level of understanding can best be achieved when the laws are viewed in their cultural context, building upon the excellent foundations erected by Haskins and his successors for the study of cultural and scientific development in Norman-Swa-

¹¹ CERVONIUS, p. 405.

¹² *Ibid.*, p. 406.

¹³ *Ibid.*, p. 406.

¹⁴ *Ibid.*, p. 407.

bian Italy¹⁵. The study of Frederick's public health legislation, therefore, requires us to examine not merely the legal sources but also those pertaining to social and intellectual history, particularly, of course, those relating to the history of medicine.

The general outlines of the history of science and of medicine in the *Regno* are already well known. Two of the titles in Frederick's public health code, LA III, 45 and 47, directly refer to the medical school at Salerno, which had flourished since the tenth century or earlier, but about whose early history we have relatively little information¹⁶. However, it is clear from the works of Constantinus Africanus in the eleventh century and from twelfth century writings that have been connected to the school that « its significance in the twelfth and early thirteenth centuries as a centre of Greek and Arabic medicine, of surgery and anatomy, was very great »¹⁷. King Roger II's law requiring the examination of physicians by State Officials (LA III, 44) provides no direct evidence of close ties between his court and school of Salerno, such as we have noted in the laws of Frederick II, but there is ample evidence from other sources of his interest in science, and specifically in Greek and Arabic learning. His court was a center for the preparation of translations from the Greek by figures such as Henry Aristippus and the Emir Eugenius, whose work has received careful attention from Evelyn Jamison¹⁸. The most important Arabic work was the Geography of Al-Idrisi, which was undertaken at his command¹⁹. In the court of Roger II, we find ample evidence that in the twelfth century the *Regno* was realizing the potential of its position on the southern cultural frontier of Europe. Professor David

¹⁵ CHARLES H. HASKINS, *Studies in the History of Mediaeval Science* (New York, 1967) and his *Studies in Mediaeval Culture* (New York, 1965). See also JOSEF FLECKENSTEIN, ed., *Probleme um Friedrich II* (Sigmaringen, 1974) for some indications of recent work by German scholars and the bibliography to THOMAS C. VAN CLEVE, *The Emperor Frederick II of Hohenstaufen* (Oxford, 1972), esp. pp. 585-6 and pp. 596-7.

¹⁶ HASTINGS RASHDALL, *The Universities of Europe in the Middle Ages*. Revised edition by F. M. POWEICKE and A. B. EMDEN. 3 vols. (Oxford, 1936), I, 85-6.

¹⁷ *Ibid.*, I, 86.

¹⁸ EVELYN JAMISON, *Admiral Eugenius of Sicily* (London, 1957).

¹⁹ DE STEFANO, p. 69.

Douglas has recently summed up the significance of the Norman cultural contribution in the early twelfth century ²⁰.

The Norman influence on Europe as displayed between 1100 and 1154 was manifestly pervasive and profound. It enhanced the strength of the West and at the same time modified its temper and its political structure. The great Norman kingdoms which were then established were a source of power, and within those kingdoms new trends of thought were developed and new principles of governmental organization which might disturb what had hitherto been the accepted relations between the spiritual and temporal authorities in Latin Christendom. The great access of power attained by the West during these years gave a new turn to the relations between Rome and Constantinople, and between Western Europe and the Eastern empire, and a new era inevitably opened in the confrontation between Christendom and Islam.

This movement continued and, to some degree, intensified under the two Williams, finding expression not merely in the presence of Greek and Arab courtiers in their entourage, but in the great monuments of the late Norman period, above all in Monreale.

Frederick II was the heir to this diverse intellectual tradition. His major work, the *De Arte Venandi cum Avibus*, is a true work of science, permeated by his intense curiosity and his desire to verify by experience the knowledge he gained from previous writers and to increase that knowledge through his own observations ²¹. But his interest went beyond falconry, which was a subject especially dear to him because of his nobility and his love of hunting, to natural science, mathematics, philosophy, and medicine. His relations with Michael Scot, who made for him a translation of Aristotle's *History of Animals*, have been discussed by Haskins ²². He was deeply interested in the mathematical work of Leonardo Fibonacci of Pisa, whose *Liber Abaci* was dedicated to the Emperor in 1228 ²³. He addressed philosophical questions to Moslem savants and received a reply from Ibn Sabin in the famous « Quesiti Siciliani » ²⁴. He conducted correspondence with the Sultan of Egypt

²⁰ DAVID DOUGLAS, *The Norman Fate* (Berkeley, 1976), p. 154.

²¹ HASKINS, *Mediaeval Science*, pp. 299-326.

²² *Ibid.*, pp. 272-298.

²³ DE STEFANO, pp. 53-57.

²⁴ *Ibid.*, pp. 91-95.

not merely regarding diplomatic negotiations but also on scientific questions. He was celebrated in poetry by his Greek subjects, and his Constitutions of Melfi were translated for them. Living as he did at a time of intense interest in Greek and Arabic learning in the West, Frederick was still unusual in the degree to which as a secular ruler he involved himself in these important intellectual currents. It was a characteristic marked by his contemporaries and not always accepted favorably by his opponents, particularly Popes Gregory IX and Innocent IV²⁵. In fact, however, Frederick's interests were not really atypical of his age so much as they were unusual for a layman, and especially for one who occupied the exalted office of emperor. A century that produced Albertus Magnus, Thomas Aquinas, and Roger Bacon seems an appropriate milieu for the intellectual concerns of Frederick II and his court.

Frederick seems to have had a special interest in medicine, one that was personal as well as scientific. We know, for example, that he was worried about the danger of paralysis²⁶. But the best evidence of his patronage of medical learning comes from the various medical works that were dedicated to him. The *De regimine et via itineris et fine peregrinantium*, which goes under the name of Adam of Cremona, was probably written before 1227, since it provides advice on matters of diet and health for the Emperor prior to his departure for the crusade²⁷. The *De balneis puteolanis* of Pietro da Eboli treated the curative powers of the baths at Pozzuoli²⁸. Karl Sudhoff edited a letter of Frederick's court philosopher, Theodore, from a Marburg codex, based on the *Secretum secretorum* of Pseudo-Aristotle. This probably should be dated about 1239-40²⁹. The *Super regimen sanitatis* of Petrus Hispanus (Pope John XXI) was believed by Thorndike to have been written and

²⁵ *Ibid.*, pp. 305-309. JAMES M. POWELL, *Frederick II and the Church*, in « Catholic Historical Review », 48 (1963), 487-97. I would now modify somewhat the views expressed in this essay, though my essential position is still the same.

²⁶ DE STEFANO, p. 68.

²⁷ ADAM OF CREMONA, *Aerztliche Verhaltensmassregeln auf dem Heerzug ins Heilige Land Fuer Kaiser Friedrich II* (Borna-Leipzig, 1913).

²⁸ DE STEFANO, p. 66.

²⁹ KARL SUDHOFF, *Ein diaetetischer Brief an Kaiser Friedrich II von seinem Hofphilosophen Magister Theodorus*, in « Archiv fuer Geschichte der Medizin », 9 (1915-16), 1-9.

dedicated to Frederick between 1246 and 1250, when Peter was serving on the faculty of arts at Siena³⁰. Thus, there is evidence from every period of Frederick's reign for his interest in medicine. While such an interest was by no means unusual in medieval rulers, it does suggest that those constitutions of the emperor dealing with matters of health might have been of some personal concern to him, that in them we might find further evidence of that distinctive scientific and experimental cast of his mind so evident in the *De arte venandi cum avibus*. However, the question of Frederick's role in the formulation of these laws does not rest on these general suppositions alone. I shall present one small piece of evidence that convinces me that Frederick did take a personal interest in these laws. Further, I will show that the chief influences shaping the public health legislation of Frederick II came from a combination of Byzantine regulations concerning the practice of medicine, from the observations and experience available at that time regarding medical education, and from the medical knowledge which was current at the court and which the emperor himself undoubtedly possessed. Thus, it is my hope to add a dimension to our understanding of the sources of *Liber Augustalis* by showing that in this public health legislation there was a fusion of Byzantine state regulation and a Western European desire for fundamental structuring of education with the Greco-Arabic science of medicine.

The presence of direct Byzantine influence on the development of the public health legislation of Roger II and, at least indirectly, of Frederick II seems evident from an examination of LA III, 44 and 45, the first a law of King Roger, the second of Frederick. In 1949, Professor Grumel published an interesting note, « La Profession médicale à Byzance à l'époque des Comnènes », which provides essential information for our study³¹.

Grumel presents a text of the Patriarch Leo Stypes (1134-43), concerning the organization of the medical profession at Byzantium under John II Comnenus, whose interest in public health is well

³⁰ LYNN THORNDIKE, *A History of Magic and Experimental Science*. 8 vols. (New York, 1923-58), II, 489; DE STEFANO, p. 57; see also V. MAZZI-BELLI, *Pietro Hispano Papa Giovanni XXI*, in « Rivista di Storia della Medicina », 15 (1971), 39-87.

³¹ V. GRUMEL, *La Profession Médicale à Byzance à l'époque des Comnènes*, in « Revue des Études Byzantines », 7 (1949), 42-46.

known, especially from his foundation of the Hospital of the Pantocrator³². Leo describes the obligations of the physician as follows³³:

To carry out his profession of caring for the body, to apply remedies to sick bodies, this is not the task for anyone, so to speak; and it is not enough simply to claim it, or only to wish it. But it pertains only to him whom education in medicine has initiated, who in his turn has received and sustained a long experience, and to whom the Proexarchon of Medical science, after having first examined him like a Lydian rock, and having recognized him as genuine, has awarded the sign of his approval.

This text makes possible a comparison of the requirements for the practice of medicine at Byzantium during the 1130s with those which Roger II included in his near contemporary constitution. First, the Grumel text requires the physician to have followed a course of study in medicine. Secondly, he should have had long experience. Thirdly, he had to undergo an examination, before a public official, the *ιατρικῆς προεξάρχων* or president of medical science. Finally, he would receive a kind of diploma or license to practice³⁴.

The Grumel text itself is quite brief, merely a portion of a larger document in which the Patriarch Leo condemned the writings of Constantine Chrysomallos. The information regarding the medical profession results from an analogy, since « the care of bodily illnesses is not entrusted to a person of no importance, but only to one whose ability is guaranteed », so the same should be the case for the care of souls. For this reason, the text does not provide a detailed picture of the medical profession, though its main provisions are clear enough for purposes of comparison. In LA III, 44, Roger II required that anyone who desired to practice medicine had to present himself before royal officials and judges for examination.

³² DEMETRIOS J. CONSTANTELOS, *Byzantine Philanthropy and Social Welfare* (New Brunswick, N. J., 1968), pp. 171-9.

³³ GRUMEL, p. 43. Καὶ τὸ μὲν περὶ σωμάτων θεραπείαν ἐνασχολεῖσθαι καὶ φαρμακεύειν ἐπιχειρεῖν πονηρῶς ἔχοντα σώματα, οὐ τοῦ τυχόντος, εἴποι τις ἄν, οὐδὲ τοῦ βουλευθέντος ἀπλῶς καὶ μόνον θελήσαντος, ἐκείνου δὲ πάντως, ὃν ὁ μὲν ὁ ἰατρικῆς τέχνης λόγος ἐμαιοῦσεν, ἡ δὲ χρονία ἐμπειρία λαβοῦσα πάλιν ἐτιθηνήσατο καὶ ὁ τῆς ἰατρικῆς προεξάρχων, ὡς λυδία τις λιθὸς προεξετάσας τὰ πρῶτα καὶ κατειληφῶς οὐκ ἀδόκιμον, τὸ τῆς ἐπικρίσεως τούτου προσεβράβευσε σύμβολον.

³⁴ *Ibid.*, p. 43.

The purpose of his law was to prevent inexperienced physicians from practicing in the *Regno*. Thus, the Constitution of Roger corresponds to the practices described in the Byzantine text, in its concern that inexperienced physicians should not be permitted to practice medicine, in its requirement for a state examination and, by implication, by the requirement for some kind of license to show that the physician had passed the examination. The degree of correspondence between Byzantine practice and the law of Roger II is striking, but the absence of other precedents is even more so. As Grumel has shown and as Dilcher has confirmed, the provisions outlined here, the first in the case of the Byzantine text, the second in the case of the Constitution of Roger II, are without clear precedent in Roman law³⁵. On the basis of the strong similarities present and the existence of other Byzantine influences at the Norman court, it seems most reasonable to conclude that this constitution of Roger II provides direct evidence of Byzantine influence. But more than this, it would seem to point to the source of that concern for the welfare of his subjects which motivated Roger in the promulgation of this law. Perhaps, we may go so far as to suggest that this Constitution shows the influence of the Comnenian concern for public health on a Western European monarchy. If so, this evidence assumes considerable importance to our understanding of cultural relations between the East and West in the twelfth century³⁶. This evidence also adds support for the efforts of those scholars who have sought to show the importance of Byzantine influence on the Norman kingdom.

It was upon this Byzantine foundation that Frederick II built in LA III, 45, which Dilcher, as well as the early commentators, directly relates to Roger II's constitution³⁷. First of all, Frederick's motivation is the same as Roger's though there is considerably more rhetorical embellishment given to the idea of protecting subjects or, in this case, *fideles*, from the « inexperience of physicians »³⁸.

We see a special usefulness when we provide for the common safety of our *fideles*. Therefore, since we are aware of the serious

³⁵ *Ibid.*, p. 36; DILCHER, pp. 681-2.

³⁶ For a brief survey, see D. J. GEANAKOPOLOS, *Byzantine East and Latin West* (Oxford, 1966), pp. 11-54.

³⁷ DILCHER, p. 685 and CERVONIUS, p. 404.

³⁸ LA III, 45.

expense and irrecoverable loss that can occur because of the inexperience of physicians, we order that, in the future, no one may dare otherwise to practice or to heal, claiming the title of physician, unless he has first been approved in a convened public examination by the Masters of Salerno. The person appointed should approach our presence with testimonial letters concerning his trustworthiness and sufficient knowledge both from the masters and from those appointed by us, or, when we are absent, he should approach the presence of the person who remains in our place, and he should obtain the license for healing from us or him. The penalty of confiscation of his goods and a year in jail is commanded for anyone who dares in the future to practice contrary to this edict of our serenity.

The resemblance of the *arenga* to this law to both Roger II's constitution and our Byzantine text is immediate, but Frederick significantly alters the examination and licensing procedure established by Roger. In commenting on this Frederician constitution, Rashdall observed: « These provisions show how far the faculty of Medicine at Salerno was from enjoying the position and privileges of the medical faculties elsewhere »³⁹. However, this view seems to me to miss the significance of the Frederician revision of the Rogerian constitution. Roger had made no provision for examination by the Masters of Salerno. In this, he did not provide as did Byzantine practice for an examination before a medical expert. It is clearly this lack which Frederick is attempting to remedy. However, in doing so, he does not imitate the Byzantine practice, but turns instead to that which was developing in the universities of the West. Thus, examination of candidates by a board of medical experts drawn from the faculty of Salerno preceded in his constitution licensing by the State. Frederick's remedy seems to me to combine both Byzantine practice as contained in the constitution of Roger II and that of the universities of the West. Far from depriving Salerno of its role, he was actually moving in the direction one would expect of the founder of the University of Naples.

That it was the intention of Frederick's legislation to conform to the actual practices of the university in matters of medical education and examination is supported by an examination of his novel of the year 1240, LA III, 46 in the Carcani edition, entitled *De Medi-*

³⁹ RASHDALL, I, 83.

*cis*⁴⁰. This constitution established the number of years and the program of study required for the practice of medicine, required the observance of the law (LA, III, 47) on the making of drugs, and set down regulations for the care of the sick. It fixed a three year course of pre-medical studies (*scientia logicalis*) and a five year program of medical and surgical studies for anyone seeking a license to practice. Dilcher suggests that these requirements follow the practice at Salerno⁴¹. If his view is correct, and it does conform generally to what we know of the situation for Bologna, Paris, and other medical faculties, LA III, 46 would appear to be a further step in the direction of providing legal recognition to the educational requirements of Salerno⁴². Frederick gives no explicit reason for this legislation, but we should certainly recall that he closed the University of Bologna in 1226 and invited its professors and students to Naples⁴³. His concern for the educational development of the *Regno* seems, therefore, to be well enough attested to provide reason for Constitution 46. This same interest in education provides further argument in support of the view that LA III, 45 was aimed at bringing the regulations regarding medical examination and licensing into conformity with western practice while not abandoning the Byzantine element introduced by Roger II, which conformed in every way to the interests of the State. We may see here evidence for the review of Professor Marongiu that Roger II was one « who had assimilated the spirit and culture of Byzantium », and who did « not intend to be less than the Byzantine emperor »⁴⁴. In Frederick's constitutions, Byzantine-Norman statism was joined to a Western conception of educational organization.

The final constitution of Frederick II dealing with regulation of the medical profession is LA III, 47, *De fidelium numero super electuariis, et syrupis statuendo*. This law appoints two officials in

⁴⁰ Naples (Kingdom). Laws, Statutes, etc. *Constitutiones regum regni utriusque Siciliae mandante Friderico II...* (Naples, 1786), pp. 198-200. There is no Greek text for this novel.

⁴¹ DILCHER, p. 685.

⁴² LOWRIE J. DALY, *The Medieval University* (New York, 1961), pp. 137-40.

⁴³ ERNST KANTOROWICZ, *Frederick the Second* (New York, 1931), p. 297.

⁴⁴ ANTONIO MARONGIU, *A Model State in the Middle Ages: The Norman and Swabian Kingdom of Sicily*, *Comparative Studies in « Society and History »*, 6 (1964), 307-320.

each district of the Kingdom to supervise the making of medicines. It fixes Naples and Salerno as the only two places where medicine may be studied. It requires that medicines should be made according to the pharmacopeia and in the presence of witnesses. Concern over the making of drugs and potions was not new as we may note from LA III, 68, a law of Roger II, which provided the death penalty for anyone who gave, sold, or possessed « evil and harmful medicines or poisons that cause death... »⁴⁵ knowledge of such poisons was quite widespread. However, Frederick's Constitution on the making of medicines seems to go beyond this concern about danger to patients to one about the quality of the medicines made by the pharmacists. In its regulatory aspects, this law conforms to the pattern we have observed in LA III, 45. It is built directly upon the notion that only those with experience and training should be permitted to carry out any aspect of the medical profession.

The influence of Greco-Arabic medical knowledge on Frederick's public health legislation is best illustrated in LA III, 48, *De conservandis aeris*, which prohibited the soaking of flax or hemp within one mile of any city in order to prevent air pollution. It also regulated burials of the dead and the disposal of the cadavers of dead animals and other refuse. Medieval medicine was very concerned about the purity of air and water. The *De regimine et via itineris et fine peregrinantium*, written before 1227 and dedicated to Frederick, contains several chapters dealing with air, its pollution, and the means of purifying it⁴⁶. Avicenna's *Canon of Medicine* provided an important source on the theory of air pollution, as is evident from this example⁴⁷.

Air is deemed fresh when it is free from pollution with smoke and [water] vapour. It should be really free and open and not enclosed by walls or under cover. If however, the outside air is polluted, indoors should be preferred. The best type of air is that which is pure, clean and free of vapours from ponds, ditches, bamboo fields, water-logged areas and vegetable fields, especially of cabbages and herb-rocket. It should not be polluted with vapour arising from the dense overgrowth of trees, such as yew-trees, walnuts and

⁴⁵ LA III, 68.

⁴⁶ ADAM OF CREMONA, pp. 39-43, dealing with water and pp. 54-5, dealing with air.

⁴⁷ AVICENNA, *The Canon of Medicine* (Karachi, Pakistan, 1966), pp. 162-3.

figs. It is also essential that air should be free from pollution with foul gases. Good air should be open to fresh breezes and it should come from plains and high mountains. It should not be confined to pits and depressions where it warms up quickly by the rising sun and cools down immediately after sunset. Air which is surrounded by recently painted or plastered walls is not fresh. Air is not healthy if it produces choking or discomfort.

It has already been mentioned that some changes in the air are normal, some abnormal and harmful; others are abnormal but not particularly harmful. Abnormal changes in the air whether harmful or otherwise may be seasonal or irregular. It is best that a season should keep its own quality rather than vary, as it would then produce various diseases.

Dilcher says that the prohibition of the soaking of flax and hemp is without model in earlier legal sources, but he points to Digest 47, 11, 1, 1, which concerns pollution of water by excrement. Although this reference shows that Roman law recognized intentional pollution of water as a crime, the chapter heading and the *arenga* of Frederick's law on air pollution point to a concern about the healthfulness of the air that is more clearly related to our medical sources than to any legal precedents⁴⁸. That this law refers specifically to the soaking of flax and hemp seems to be due to the fact that this was a common and noxious practice. The law itself indicates that this prohibition arises from experience, since its author says that the quality of the air, « as we have learned for certain », is corrupted by this practice⁴⁹. It seems reasonable to conclude that this law applied the theoretical concerns of Greco-Arab medicine, which were well-known, to a particular problem that created discomfort for those dwelling in cities and other inhabited places where such soaking of flax and hemp took place. That this approach to a practical problem argues in favor of the scientific and experiential quality of Frederick's legislation merely confirms the excellent judgment of Charles H. Haskins, made many years ago, that Frederick's conclusions were based « far less upon books, than upon observation and experience »⁵⁰. If that was true of his work, the *De arte venandi cum avibus*, it seems also true here.

Can this study of the public health legislation of *Liber Augustalis* tell us anything about the editor of the laws and the method

⁴⁸ CERVONIUS, p. 406.

⁴⁹ LA III, 48.

⁵⁰ HASKINS, *Mediaeval Science*, p. 320.

of editing? I have not been able to adduce significant new information that would answer these questions specifically. Yet, the multiple references to Salerno in the laws do suggest that there was consultation with the faculty of medicine regarding the examination and licensing of physicians. If that was the case, these discussions might also have included such topics as air pollution, water pollution, and the sale of diseased or contaminated meats or fish. On the question of Frederick's personal role in the framing of these laws, I can only suggest that they reflect attitudes that were almost certainly his, most notably when the author of the law on air pollution says that he has « learned for certain » the effects of soaking flax and hemp. This is a touch that seems so personal that it is hard to deny Frederick a direct role in the actual composition of the law.

What does this study tell us of the influences on Frederick's legislation? I have not been able to find evidence of direct Byzantine or Greek influence on the laws of Frederick, though further research may offer additional information on this point. It seems to me that the Norman period experienced much more direct Byzantine influence than that of Frederick. There has been considerable discussion of degree of the Greek and Arabic influence in Southern Italy and Sicily in this period. In particular, there has been a difference of view as to whether Greek culture in the South was declining in the period of Frederick II or continued to flourish into the later Middle Ages. The evidence presented here cannot provide any support to either of these views. However, it does provide striking evidence of the degree to which Frederick relied heavily on western educational experience and profitted from the intellectual revival of the twelfth century. I believe that Frederick, though an *avis rara* as layman and as a king, because of his strong interest in scientific matters, was not really different from his contemporaries in his thirst for knowledge and especially for a knowledge based upon experience. However, he was certainly ahead of his time in attempting to apply this knowledge in a legal code. It was this fact that drew both admiration and statements regarding the lack of observance of these laws from the commentators of the thirteenth and fourteenth centuries. Their admiration points to a receptivity in the intellectual community for the kind of measures that were promulgated in these laws. There was a climate of opinion that favored them. It is on this positive aspect that I would prefer to dwell rather than on the failure of enforcement. For in Frederick, I be-

lieve that the kingdom of Sicily had a ruler who was moving in that mainstream of scholastic learning that infused the universities and drew upon the great storehouse of Greek and Arabic writings, which were being translated into Latin. It is in this sense that Frederick represented the wave of the future.

The fourteenth century statutes concerning hygiene and health in Milan, edited by Francesco La Cava, illustrate the particular importance of Frederick's legislation in the history of public health. Chapter 24 of this collection contains a prohibition of soaking flax within a mile of the city of Milan⁵¹. A comparison of this statute with the language found in LA III, 48 suggests that it may be based upon the Frederician law. This view is strengthened by the similarities found in other chapters, which deal with the cleaning of hides of animals⁵², and the sale of fish and meat in ways that carry out Frederick's provisions in these matters in greater detail⁵³. Milan also regulated the licensing of physicians and established procedures for their examination⁵⁴. There are, of course, significant differences between this legislation and that of Frederick and it is clear that there is no direct dependence of these laws upon his, with the possible exceptions mentioned above. Yet, in a broad sense, I believe that those concerns which led to the formulation of the Milanese collection in the period following the Black Death (1396) are most certainly precluded in the laws of Frederick more than 100 years earlier. Perhaps in this way the legislation of Frederick II on public health foreshadows the development of ministries of health in the modern State. I know of no earlier Western European example which could lay a better claim to have influenced this development in such a significant way.

⁵¹ A. FRANCESCO LA CAVA, *Igiene e Sanità negli Statuti di Milano del sec. XIV* (Milano, 1946), p. 68.

⁵² *Ibid.*, p. 67.

⁵³ *Ibid.*, pp. 48-50 and references to appropriate chapters in the edition of the statutes.

⁵⁴ *Ibid.*, pp. 60-2, chaps. 3-8; p. 70, chap. 30; p. 71, chap. 32. The influence of the Fourth Lateran Council, canon 22, may be seen in chap. 34, p. 71, *Quod medici inducant egros ad penitentiam*. On examination of physicians, cf. p. 72, chap. 35. In these texts, there is, of course, the possibility of indirect influences of LA on the Milanese statutes, and it is on this that I base my conclusion regarding the importance of LA's code of public health for the development of modern medical programs by the State.

The search for a catalytic factor or group of factors that led to the inclusion of these laws in the Constitutions of Melfi has received a partial solution in this *relazione*. If Byzantium contributed important elements regarding state examination and licensing, and if Greco-Arabic influences were important in providing scientific knowledge as a basis for legislative enactments, the Latins seem to have provided an impetus toward the organization and systematization of medical education. This professionalization of medicine, especially within the universities, served to focus developments within medical science in such a way as to stimulate a dynamic interaction in which the findings of one physician were tested by others. This movement toward a truly scientific approach to medicine seems implicit already in the laws of Frederick II. Still, we must recognize that there was in the new knowledge gained by Westerners from the East a source of wonder and discovery, a cause of curiosity and a challenge to existing beliefs. Without the disturbing effects of this learning on the tranquillity of old knowledge, no amount of restructuring of curricula or establishment of new requirements would have created the new medical science of Western Europe in the thirteenth century.

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