The Development of Modern Medicine in Non-Western Countries

Historical perspectives

Edited by
Hormoz Ebrahimnejad

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The history of medicine in non-European countries has often been characterised by the study of their native 'traditional' medicine, such as (Galenico-)Islamic medicine, and Ayurvedic or Chinese medicine. Modern medicine in these countries, on the other hand, has usually been viewed as a Western corpus of knowledge and institution, juxtaposing or replacing the native medicine but without any organic relation with the local context.

By discarding categories like Islamic, Indian, or Chinese medicine as the myths invented by modern (Western) historiography in the aftermath of the colonial and post-colonial periods, the book proposes to bridge the gap between Western and 'non-Western' medicines, by opening a new perspective in medical historiography in which 'modern medicine' becomes an integral part of the history of medicine in non-European countries.

Through essays and case studies of medical modernisation, this volume particularly calls into question the categorisation of 'Western' and 'non-Western' medicine and challenges the idea that modern medicine could only be developed in its Western birthplace and then imported to and practised as such to the rest of the world. Against the concept of a 'project' of modernisation at the heart of the history of modern medicine in non-Western countries, the chapters of this book describe the 'processes' of medical development by highlighting the active involvement of local elements. The book's emphasis is thus on the 'modernisation' or 'construction' of modern medicine rather that on the diffusion of 'modern medicine' as an ontological entity beyond the West.

Hormoz Ebrahimnejad is the Wellcome Trust Lecturer in history at the School of Humanities, University of Southampton. His current research interests in the history of medicine cover issues such as impacts of institutions on scientific developments, the emergence of the medical profession and hospital institutions and their relation to medical knowledge in both medieval and modern periods. His publications include *Medicine, Public Health and the Qājār State: Patterns of Medical Modernization in Nineteenth-Century Iran.*

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with J. Collin and M. Otero, Ste Foy (Canada), 2006; and *Médecine et colonisation. L'aventure indochinoise*, 1999. She is currently involved in the co-edition of two collective volumes, one dealing with 'the Vietnamese traditional medicine', and the other with 'the history of Medicine in Southeast Asia'.

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Preface

The present volume, despite what one may infer from its title, does not presuppose, or aim to assert, the superiority of modern Western (or bio-) medicine over non-Western or 'alternative' medical practices. The purpose of the book is to provide accounts of how what we call 'modern medicine' developed within non-Western contexts through perspectives that tend to see beyond the Western – non-Western categorisation. Such a classification, inherited from the colonial period and often loaded with political connotation, seems now to have gained momentum due to the expansion of the medical market in which 'alternative' remedies of all kinds are considered as alternative to biomedicine in the sense that they can cure when biomedicine fails. Needless to say, however, that the increasing use of non-conventional, alternative or traditional medicine is a phenomenon of the consumption society and does not necessarily reflect their remedial effect. The point is not so much to deny any effectiveness of non-biomedicine as to warn against attempts of presenting products of the market as 'medical system'. By the same token it is wrong, as the present volume argues, to consider modern medicine as a 'system'. It is undeniable that modern technology, modern institutions, the changing social relationships, and globalisation affect any medical practice, and not least of which biomedicine. Accordingly, the term 'orthodox' attributed to the latter, as opposed to 'non-orthodox' for 'alternative' medicines is inaccurate. Modern medicine cannot be called orthodox on the grounds that it is widely accepted or sponsored by the state or that its practice is regulated, for any kind of medical practice can be subject to regulation, popularity and state control. Various forms of development of modern medicine and its adaptability to local contexts in different regions, as studied in the chapters of this volume, also indicate that it cannot be orthodox. Furthermore, if we agree that practice of medicine is subject to cultures, and social, economic and anthropological conditions, this principle holds also true for non-biomedical practices, which as a result can hardly turn into 'systems'.

The embryo of the project that has resulted in the present volume was conceived during my work on the process of medical modernisation in Iran when I was a Research Fellow at the Wellcome Trust Centre in London. In examining the Iranian case, I was always interested in differences and parallels

with modernisation experiences in other Islamic or neighbouring countries and occasionally I attempted comparative analyses. A more specialised undertaking, however, required expertise in the history of medicine of different countries and regions. I thus invited a number of leading scholars to address various cases and aspects of medical modernisation in non-Western countries in a workshop which took place on 18 June 2004 in London with the support of the Wellcome Trust Centre for the History of Medicine at UCL. The present volume comprises a selection of revised papers read and discussed at this workshop, as well as essays that were written later on by other scholars. I would like to thank all participants of the meeting who with their remarks and critiques enriched and broadened the debate. My particular thanks go to the contributors to this volume who answered to my call despite their busy timetable. I am indebted to the anonymous referees whose remarks and critics on an earlier draft of the manuscript helped me in the final organisation and conception of the volume, although I may have failed to follow all their advice. I would like to express here my gratitude to Anne Marie Moulin and Patrice Bourdelais who have always been ready to advise when I needed since I directed my research towards social history of medicine more than a decade ago. Last, but not least, the continuous and generous support of the Wellcome Trust has been instrumental in publishing the outcome of my research in the history of medicine, including what appears in the present volume.

Hormoz Ebrahimnejad
Southampton,
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1 Introduction

For a history of modern medicine in non-Western countries

Hormoz Ebrahimnejad

'Science does not belong to the West or the East; it belongs to whoever acquires it.'
Seyyed Jamâl al-Din Asadâbâdi (known as Afghâni), 1883

Modern medicine having emerged and developed principally in the Western world, its development beyond this region has not received due scholarship attention from historians. The history of medicine in non-Western countries has instead focused on indigenous traditions, such as Islamic, Indian or Chinese medicine,[1] and when it comes to modern medicine, it is viewed as a phenomenon external to the native 'systems' despite of its presence and influence in these countries for more than a century. Even the evolution of these non-Western medical 'systems' that has involved, at least to some extent, the assimilation of modern Western concepts or techniques, is conceived as aimed at strengthening their own ontological entity. For example, the assimilation of biomedicine by Ayurvedic and Unâni medicines in India, was, and still is, considered as a means of saving them from demise, or preserving their 'indianness'.[2] Even those recent studies that have underlined the plurality of biomedicine or alternative medicine still lay emphasis on the fundamental differences between the former and the latter in terms of worldview or perception of the body.[3]

The fact that modern science first developed mainly through exploration and European trade since the sixteenth century[4] and then through colonial domination, gave rise to the idea of the 'diffusion' of 'Western science' out of the West, implying that modern science is *by nature* and for ever Western.[5] George Basalla, for example, maintains that the diffusion occurred through three phases of, i) exploration and collection of data, ii) development of colonial science and, iii) the emergence of independent science.[6] In the second phase, colonial science may develop in a colonised or non-colonised country but it always depends on Western ideas and institutions. In the third phase, where an independent scientific tradition is formed outside of the West, Basalla insists that it is fundamentally associated (in content) with the West.[7] Challenging the centre-periphery diffusionist theory, emphasis is laid by some scholars on local sources, or resources, of the development of modern science in non-Western countries.[8] Nevertheless, most of the studies

developing the anti-diffusionist history of science are haunted by the 'identity' issue that lead them to focus on the divergence, nay antagonism, between modern (Western) and traditional (non-Western) medicines, at the cost of a history that would incorporate both in a historical narrative that would address change in the medical or scientific outlook no matter the origin of such evolution, foreign influence or internal dynamics, or a combination of both.

It has been assumed that the 'Western'–'non-Western' categorisation is a consequence of the colonisation movement in the nineteenth century, furthered by the discovery of the germ theory in the 1880s.[9] Most historiographical accounts that refer to these two factors in the history of medicine in non-Western countries lay stress on colonialism but tend to neglect the conceptual change resulted from the rise of biomedicine. This politically or culturally oriented medical historiography naturally relegates to the sidelines the study of theoretical or intellectual consequences of the encounter with biomedicine. Furthermore, unlike the medical history in the West that is written with an eye on the way it was 'shaped' by the society,[10] in non-Western countries modern medicine has scarcely been studied within the framework of the social history. The sociological or anthropological approach has rather been used for the study of local medicines in which illness and healing are often examined within a quasi-hermetic cultural or cosmological universe.[11]

The 'Western'–'non-Western' categorisation before the eighteenth century, if any, was not as clear-cut as in the modern period. It is significant that, for example, Jacob de Bondt's book was called *Medicine of the Indians* (1642) rather than 'Indian medicine' and the book by the Dutch physician Willem Piso, published in 1648, on 'Amerindian medicine' was titled *The Medicine of Brazil*.[12] Likewise, the term Islamic medicine was never used by Moslem physicians themselves before the early twentieth century; it was coined by modern Western historiography in the aftermath of the colonial period. Even when, in the early nineteenth century, physicians in the Islamic world began reading modern western medical texts and translating them, and realised their difference from their own system, it did not occur to them to distinguish and categorise their own medicine as Islamic, versus Western medicine; more commonly, they considered the latter as a new form of knowledge that at times they rejected as inappropriate and at other times recognised its usefulness and applied it.

Political factors played an important catalyzing role in the 'Western'–'non-Western' categorisation. Without the major political clashes occurring in forms of colonisation, for instance in India, or the authoritarian Westernisation, as in Iran and Turkey, no dissociation or division between the history of traditional and modern medicines appeared in medical literature. In Iran, even though a distinction between traditional Iranian and modern Western medicines has been made since the early nineteenth century it was not until the twentieth century, when the political shift under Reza Shah (1925–41) led to

quasi-systematic modernisation that the term *tebb-e sonnati* (traditional medicine) appeared in medical and historiographical literatures to designate a distinctive category of medicine. In the Russia of Catherine II and the Japan of the Shogunates, where Western medical knowledge and technology was adopted in the seventeenth century we do not witness the emergence of a Russian or a Japanese 'medical system' as opposed to Western medicine.[13] However, in Russia the effort to distinguish a 'Soviet' public health occurred with the Bolshevik Revolution by creating a new discipline termed 'social hygiene'.[14] In Japan too, it was after the restoration of the Meiji (1868–1912) that traditional and modern medicines were identified as belonging to before and after the Meiji.[15] Similarly, in Iran, the Western–Islamic dichotomy emerged after the Islamic Revolution in 1979 with the revival of traditional Islamic medicine, as an offshoot of the Revolution. A policy, similar to the one India adopted during the first part of the twentieth century, was then on the state agenda. Several state-funded institutions of traditional medicine were created in order to revive *tebb-e sonnati* by integrating it into the modern education system as well as by using the latest available scientific and laboratory medicine to substantiate statements of the ancient authors.

Modernisation can also be justified or normalised by referring to 'shared values' between the West and the East. For example, amongst the gamut of protagonists for political reforms in Iran today who believe in some kind of democracy and liberal economy, those who advocate what they call 'Islamic democracy' argue that democracy can be traced back to the early Islam as illustrated in some of the traditions and teaching of the Prophet and the Imams.[16] Likewise, other reformers who believe in democracy *tout court*, refusing that there could be a distinctive 'Islamic' one, maintain that democracy is not exclusively Western, but a human and universal value and that at some stage in sociopolitical development it becomes a necessary component of the society.[17] While this type of argument in the field of humanities and social science was put forward with reservations and conservatism since it involved religion, belief and cultural values, it was more boldly maintained with regard to science, which seemed either neutral or having an extremely tenuous connection with the belief system. In 1883, the Iranian reformist, Seyyed Jamâl al-Din Afghâni, underscored that 'science does not belong to the West or the East; it belongs to whoever acquires it,'[18] bearing in mind that for Seyyed Jamâl al-Din acquisition of knowledge is (also) its development. Such a view was also advocated by nationalist reformers in India and Sri Lanka during the first part of the twentieth century.[19]

On the other hand, while Western historiography hardly accepts the idea of a Chinese, Indian or Islamic democracy, it readily reconciles itself with, or even develops, the idea of a Chinese, Indian and Islamic medicine, which represents arbitrary images that can result in distorting the history of medicine outside Europe.[20] Such a historiographical view derives from an essentialist vision that puts both democracy and modern sciences in the box of the

Western cultural heritage that cannot be shared by the rest of the world.[21] The fact that some recent studies on the relationship between Western and non-Western medicines highlighted and analysed their antagonism while completely ignoring their meeting points bears testimony to their 'essentialist' vision.[22] We cannot, however, reject offhand the outcome of the essentialist outlook in Western historiography. On the one hand, it is true that before anything else non-Western medical 'categories' are representations made by Western historiography; but, on the other, 'representations' of the 'others' constitute one of the components of the history as they both affect, and are influenced by, relationships between nations, religions, cultures and civilisations. Therefore, in the construction of what we call 'modern Western' and 'traditional non-Western' medicines, the images and representations play a major role. In Joseph Alter's edited volume, for example, the system-based representation of medical knowledge reflects the emergence of nationalism in modern history.[23]

Challenging the systematisation of medicine, the authors of Alter's volume address the cross-cultural and transnational flow of medical theories between a number of modern 'centralized states' or 'nations'.[24] In another study of cross-cultural perspective, R. Bivins examines the encounter between biomedicine and 'alternative' medicines, where she underlines influence of the latter on 'modern' Western medicine. However, this study appears to be an apologia for 'alternative' medicines with a polemical tone against what the author calls 'orthodox' or 'authoritative' attitude of biomedicine that would relegates other 'medical systems' into 'complementary' or 'subordinate' status.[25] Accordingly, instead of 'a history' embodying Western and non-Western medicines, which one would expect from a cross-cultural perspective the conclusion of this study seems to assert cultural, political and ideological boundaries between different medical 'systems'.

It is worth noting that what is called today 'alternative' medicine,[26] in the countries of origin during the nineteenth and early twentieth centuries, constituted the main medical stream. 'Galenico-Islamic', 'Ayurvedic' or 'Chinese' medicines, for instance, were incorporated in the learning and constituted the dominant medical knowledge although in the society at large they may not have been practised as much as folk or magic healing. The 'alternative' healers were not integrated in the learning establishments, nor could they create their own institutional network in order to oppose the mainstream medical knowledge. For obvious reasons it was the 'learned' institutionalised medicine that first encountered biomedicine. It would be interesting to explore the internal dynamics of non-Western medicine in order to see how it could develop in isolation from foreign influence. The fact, nevertheless, is that from the nineteenth century onward the presence of modern Western medicine, backed by the political or military dominance of European powers, constituted part of the medical history in the countries under study. Within such a historical context, even if one attempts to study the history of local medical system, it is crucial to see how it was informed by colonialism and Western

supremacy without, however, presuming that modern Western medicine is scientific and that medicine elsewhere is unscientific.[27]

Challenging the concept of geographical boundaries of knowledge, the present volume calls into question the idea of the diffusion of knowledge whether from the West to the East, as nourished by colonialism or imperialism, or from the East to the West, as advocated by anti-imperialist historians, such as Joseph Needham.[28] Sometimes this theory has been questioned not so much in principle but because, or when, it supports the idea of the diffusion of knowledge from West to the rest of the world.[29] The present volume, on the other hand, advances the idea that modern medicine has been and is developing at various places and in different forms and for this reason it is far from being monolithic or orthodox. Furthermore, although a product, in the form of knowledge, methodology or practice, was initially transferred from the West to other countries, it was not understood, practised or developed in the same way as in the West. Whenever modern medicine in non-Western countries did not encounter opposition, it underwent reinterpretation, selection and adaptation to local conditions. The idea of knowledge diffusion should therefore be questioned insofar as what happened was in fact the '(re)construction' of modern medicine in non-Western countries. The chapters of this volume all expound this principle by placing emphasis on the fact that in the (re)construction of modern medicine, local knowledge, or medicine of the periphery, is fully involved.

This '(re)construction' in turn raises the issue of a theoretical and conceptual link or dialogue between Western and non-Western medicines. It is important to consider the extent to which the assimilation of, or encounter with, modern science involved theoretical undertaking or resulted in a change of worldview.[30] Although in most non-European countries, modern medicine was initially and predominantly introduced as an 'applied science',[31] the encounter could not be devoid of a long-lasting effect. In science, the creation of research institutes in Meiji Japan, for instance, represents an important change in the method of acquiring or developing science. In the political field, the secular form of government, the definition of territorial boundaries and the right of the sovereign state to protect them, provide other examples of conceptual change due to Western influence. These Western values were adopted by anti-colonial or nationalist rulers, such as Mohammad 'Ali in Egypt, Kemal Ataturk in Turkey and Reza Shah in Iran, to give only a few examples,[32] but these reforms under the Western influence did not lead to sharp breaks with the past or with the local customs and structures. The chapters of this volume by pointing to different strategies for integrating local intellectual traditions in the modernisation process, also bring to the fore the fact that none of the modernisation experiences represents a break with the existing local practice.[33] It is noteworthy that neither the 'paradigm shift' of Kuhn nor 'change of episteme' of Foucault – insofar as this echoes Bachelard's idea of scientific changes being made of 'sharp'

epistemological breaks[34] – do answer to the modernisation process in non-Western countries that involved many instances of overlap between tradition and modernity or accommodation between Western and local medicines at theoretical and institutional levels whether in colonial or non-colonial settings.[35] It is significant, on the other hand, that the Kuhnian concept of incommensurability has been easily used to develop the 'system'-minded medical historiography.[36]

This is not to deny epistemological leap or break in the history of science, but rather to avoid reducing the latter to a succession of sharp breaks. While in some cases the evolution of science operates with radical change, such as the shift from humoral- to bio-medicine, or from mechanic- to quantum-physics, in other cases elements of the past survive and overlap the new findings, for example common aspects between the classification of fevers by Galenic and Hippocratic physicians and Pinel's classification of fevers based on anatomical structure. Or again, the humoral principle of phlebotomy that survived in the physiology of Broussais despite the fact that the latter dismantled the idea of 'essential fevers' and introduced the ground-breaking concept of 'tissue lesion' as being responsible for fevers.[37] In both Pinel's and Broussais' cases, conceptual changes are at work without producing a definitive break with the past. As M. Harrison shows in Chapter 2, Helenus Scott and other colonial practioners in eighteenth-century India, such as Francis Balfour, found commensurability, nay analogy, between the Newtonian concept of gravitational pull and the Indian traditional notion of the influence of the moon on the body. They established such a link between the two as they could realize – probably because they were carrying out field research and were in close contact with local practice and opinion – that the faith-based indigenous knowledge was just a different way of understanding the same natural phenomenon.

In a general manner, the medical history of Europe in the seventeenth, eighteenth and nineteenth centuries was characterised by a permanently transforming coexistence of, or interrelationship, between old and new.[38] Likewise, between modern Western and traditional non-Western medicines there are areas where a break is noticed or deemed unavoidable by contemporary physicians. Dr Mirzâ 'Ali, for instance, noted in the 1880s that 'medical knowledge in Iran cannot be further improved if there is no divorce with the ancestral theory that did not recognise anatomy as integral part of medicine and that refused to practice dissection'. However, at the same time this author does not seem uncomfortable with referring to the ancestral humoral concepts in his pathology.[39] This means that 'modern medicine' as understood and practised by Dr Mirzâ 'Ali and his other modern-educated colleagues, was able to accommodate old and modern concepts, just as in the West. Only here we find an economy of tradition–modernity relationship or dialectic different from those experienced in contemporary Europe.

The conceptual transformation was underpinned, and/or paralleled, by contact between Western and non-Western physicians within institutional structures

set up either by the Europeans or the local authorities. An important number of scientific enquiries or discoveries were realised in non-Western countries, especially those under colonial administration. This could potentially contribute to the legitimacy of Western sciences in the host country. During the colonisation period and the development of professionalisation and institutionalisation, the legitimacy of modern sciences took on increasingly political as well as institutional dimensions. For this reason, the major problem or antagonism between European and non-European medicines came from a potential threat caused by the new class or group of professionals attached to these institutions. But at the same time, integration into the new institutions, such as modern hospitals or medical schools could offer new opportunities for the social and professional promotion of ambitious traditionalist physicians. The cohabitation of modern- and traditionally-educated physicians in modern or state-run institutions was largely experienced in most non-Western countries, such as Iran, Egypt, Turkey and India.

Furthermore, the adoption of modern science, particularly in countries under colonial domination, was often for the purpose of countering the Western political and military power. The stronger the presence or influence of European power, the more intense the enthusiasm for acquiring modern science. In India, it was in reaction to colonialism that the nationalist reformers established their own 'national board of science', such as the 'Indian Association for the Cultivation of Science' in 1876, in order to develop modern science.[40] The Napoleonic conquests in Egypt provoked another strong response in the form of vast modernisation projects undertaken by Mohammad 'Ali (r. 1805–49). In nineteenth-century Iran and Turkey, too, the introduction of modern science was encouraged by the government in an attempt to stymie Western powers' supremacy. In Japan, the adoption of modern science and technology was directly aimed at bringing Japan on a par with the European powers.[41] The introduction and development of modern medicine, along with other sciences, in both its theoretical and technical aspects, did not occur in a vacuum but within a context that could both favour and condition them. Political allegiance and diplomatic relationships sometimes proved fundamental in determining a specific course of medical development.[42] Sociologist Karl Mannheim has underlined the link between interest, whether political, economic, public or private, and intellectual activity or creativity and pointed to the social-situational roots of knowledge and dismissed any absoluteness of 'truth in itself'.[43] Although cultural values[44] or sometimes religious ethics might favour or retard the development of science, they can themselves be affected by social and historical contexts to the extent of producing opposite effects under different conditions,[45] a fact that once more goes against the idea of division between Western and non-Western medical 'systems' based on fundamentally different values or cultures.

There have been various studies on the encounter of modern Western medicine with local contexts in individual countries.[46] The history of

medicine in non-Western countries has also been studied, as in a volume edited by H. Selin.[47] But, as far as the latter is concerned, it does not examine the development of modern medicine in the countries under study. The present volume, on the other hand, provides a panoramic view to various cases of modernisation processes in different countries by examining how indigenous socio-political, institutional, and intellectual factors have informed the integration and development of modern medicine. From this angle, medical modernisation is embodied in the process of the development of the state, the army, education and the economy; a phenomenon quite similar to the one experienced in the West. The unification of surgery and medicine, as well as the medical professionalisation, for instance, have been considered amongst the specific features of modernisation in Europe.[48] Such measures were also considered and implemented in some non-Western countries in order to establish or reinforce the control of the state on medical education and practice, such as in nineteenth-century Iran. As to the differences in pace or level of development of modern science in the West and non-Western countries, they are due to the difference in the strength of these countries' economy and institutional organisation.

Rather than perceiving modernisation as a 'transplantation' of modern Western medicine out of Europe, chapters of this volume bring to light a more complex pattern by studying its occurrence on the periphery. Each chapter presents specific aspects or features of modernisation, some of which cover the questions discussed above but mainly they provide further examples of, or dimensions to, medical modernisation. Yet they all respond to the twofold purpose of this volume: first, to describe how medical modernisation could take different paths or forms in different regions, thereby discarding the monolithic character with which modern medicine has often been perceived; second, to bridge the gap in medical history between Western and non-Western, or between modern and traditional medicines, so that 'modern medicine' becomes an integral part of the history of medicine beyond the West. Therefore, while recognising the influence of the West in modernisation, the following studies show that medical modernisation in non-Western countries was an internal and built-in process, in both theoretical and institutional-political terms, within different cultural, socio-political and intellectual environments.

The study of different experiences or strategies of modernisation could correct our understanding of modern medicine and its development in general, leading to a reconsideration of the prevailing opinions. In the second chapter, drawing on the case history of the Bombay-based medical practitioner, Dr Helenus Scott, Mark Harrison not only points to the inaccuracy of the received idea that modern medicine was exported *to* colonised countries but he also shows that it is wrong to see Europe as the sole place where modern medicine was developed. The colonies offered, in some circumstances, better conditions for medical experimentation and research far from the institutional or theoretical bounding of the well-established networks or

university authorities.[49] The discovery of the remedial role of nitric acid for syphilis, for instance, was the result of the work of Helenus Scott through a combination of various factors. His knowledge of local experiences, ideas and *materia medica*, as well as his connection with a network of 'reformist' physicians such as Thomas Beddoes in Britain, provided him with the opportunity of testing and propagating a remedy for syphilis that was superior to the traditional mercury. Harrison also underlines the diversity of relationships between medical practitioners in the colonies and their counterparts in Britain. In parallel to the formal, centralised connections with official bodies and metropolitan patrons there were also horizontal connections between reform-minded practitioners in the metropolis and the colonies. It may have been that this 'horizontal' or informal network in the relationship between the 'centre' and the 'periphery' played a crucial role in the flow of 'modern' ideas from the colonies to the centre rather than the other way round. However, Harrison cautions that the strength of these networks was important in the success and commercialisation of a discovery and suggests the possibility that the failure of Scott and his colleague and friend Beddoes was due to the fact that Scott's discovery was not supported by stronger networks in Britain. The author states that for the medical profession in the metropolis, 'the authoritative trials of nitric acid, by John Pearson and by distinguished physicians such as Mathew Baillie – a royal physician respected for his work in morbid anatomy – [and others] ultimately counted for more than loud proclamations by Beddoes and the opinions of practitioners overseas'.

Observing local practices and scrutinising rather than rejecting indigenous ideas from a colonial stance, also characterised the long scientific career of Antoine Barthélémy Clot (1793–1868), the French physician who was commissioned in 1825 by the reformist ruler of Egypt, Mohamed 'Ali Pasha, to modernise medicine in the country. Just as Scott was sympathetic and receptive to indigenous sources of knowledge, Clot also found it necessary to refer to local medical practice and experience, and based his reform project on establishing an association between Western ideas and local and historical precedence. The development of both Scott's and Clot's medical experimentations and opinions took place within political or cultural contexts characterised by the gap between the Western/colonial vision of science and local knowledge. Of particular significance here is that despite this historical backdrop, both Harrison and Moulin, rather than pointing to the existence of different medical 'systems', highlight the efforts of Scott and Clot in associating Western and non-Western medicines and show how medicine of the periphery was involved in the modernisation process.

In Egypt, both European and local representatives contributed to this concretisation of modern-traditional and Western-Egyptian knowledge. With Clot's initiative, Arabic became the language of the transmission of modern medical knowledge. Reciprocally, the religious authorities of al-Azhar agreed to issue a fatwa authorising dissection. The relationship between modern

medicine and the local medical past was illustrated in the decoration of the amphitheatre where Clot operated, in which the names of the Islamic or Egyptian physicians from previous ages were inscribed in an attempt to show that the modern medicine taught by Clot was related to the Islamic classics.[50] Finally, what is remarkable in the case of Clot is his compromise with political conditions prevailing locally despite the fact that he represented the 'superior' power of the French 'empire'. Despite his anti-contagionist convictions, and his opposition to quarantine, Clot came to accept quarantine restrictions, illustrating an experience in which 'the construction of scientific knowledge took place through all kinds of political and social negotiations and compromises'.

This indicates that although Clot went to Egypt with a 'project' of modernisation, his project ended in becoming only an element in a modernisation 'process' dictated by local conditions as well as by international relationships. This feature was also at work in the reform of medical education in nineteenth-century Iran as examined by Hormoz Ebrahimnejad in chapter 4. Iran established its first 'modern' school, the *Dâr al-Fonun* ('Polytechnic College' or 'Academy of Applied Sciences'), in 1851, in which modern medicine was taught, but it also incorporated traditional Iranian medicine in the teaching programme.[51] The medical curriculum of this 'modern' school was thus far from being entirely modern. By bringing into focus the role of the *waqf* institution in the nineteenth-century Iranian educational system, the author argues that the integration of traditional education in modern schooling can better be appreciated by examining it within the context of the *waqf* institution that informed the educational infrastructure of the country. While the state lacked any financial and administrative device to develop modern education beyond the Dâr al-Fonun, traditional education in the *madrasa*s throughout the country was well funded by *waqf* donations.

The *madrasa* system controlled by the *ulama* generated the intellectual resources of the country. In the absence of a colonial administration that could provide or systematically train modern-educated physicians in Iran, this local intellectual resource could hardly be bypassed by the modernisation programme. The use of local traditional resources in the making of modern medicine was quite similar to the Egyptian experience.[52] However, unlike the Egypt of Mohammad 'Ali or the Ottoman Turkey, the central state in Qâjâr Iran was not strong enough to overcome the elements of resistance in the religious establishment that controlled education. By merging traditional and modern education in the 'modern' state school, the Qâjâr government attempted to simultaneously integrate the traditional education into the state and to legitimise the 'state education' that was bound to challenge the *madrasa* system. As a result, the 'modern' school became practically a meeting point and an arena of dialogue between tradition and modernity.

While the *waqf* institution in nineteenth-century Iran was widespread and affected the development of modern education, in the Ottoman Empire, the *waqf*, as an independent institution from the state, witnessed a sharp decline

after the eighteenth century. As Feza Günergun and Seref Etker indicate in chapter 5, although the *waqf*-endowed hospitals, *darüşşifa*s (or *dâr al-shafâ*s) that had developed in the Ottoman Empire since the Seljukids were more numerous than in any other Islamic country, the situation dramatically changed in the nineteenth-century Ottoman Turkey. Certainly, there were several *waqf*-endowed hospitals in Ottoman Turkey. However, referring to the extant sources, the authors maintain that most of these hospitals belonged to the state, in the sense that their *owqâf* were administered by the state, such as the *Gureba* hospital, or to the religious or ethnic minorities, such as the Armenian Surb Prgich hospital established in 1837. The Zeynep-Kamil hospital, built in 1876 by Zeynep, daughter of Mohammad 'Ali, ruler of Ottoman Egypt, and her husband Yusuf Kamil, the grand vizier to Sultan 'Abdulaziz, thus represented a revival of the traditional *waqf* hospitals. Even this hospital became derelict after the death of Zeynep in 1884 indicating, as Günergun and Etker conclude, the waning of the *waqf* system.

The brief revival of *waqf* for hospitals finds its full historical significance in the fact that it occurred at a period when the country was witnessing a shift in its modernisation policy that led to the recognition of the importance of traditional education. In order to confront the increasing power of the Europeans the Ottoman sovereigns undertook a rigorous adoption of Western institutions and technology, especially in the military, in the first part of the nineteenth century. Although Turkish was used from the outset in modern engineering and military schools, in medicine the language used was French and all the professors at the military medical school were Europeans.[53] This favoured both the non-Moslem elite and the French, at the expense of Moslem Ottomans and the Turkish in medical education.[54] This institutional strategy proved to be problematic as it confined modern medical education to a small elite who had mastered French. The assimilation of modern medicine appeared to be more feasible by breaking barriers between modern and traditional medicine through a number of institutional measures revising those implemented in the first part of the century: first, the medical regulations of 1863,[55] which led to the legalisation of practitioners of traditional medicine where and when necessary; second, the creation of the Civil Medical School (CMS) in 1867 in which modern medicine was also taught in Turkish; and finally, the introduction of Turkish into modern medical education in 1870.

The integration of traditional and modern institutions in Iran and Turkey, which were not under formal colonial rule, represents a curious parallel to the recognition of indigenous (Ayurvedic) medicine in Sri Lanka (Ceylon) as the official Ceylonese medicine, a recognition buttressed by the institutional and financial support of the colonial government even before the independence of the country in 1947. Taking up the idea of antagonism between Western medicine, as colonial or imperialist, and indigenous traditional medicine, put forward in the edited volume by Andrews and Cunningham, Margaret Jones in chapter 6 undertakes to highlight the major characteristics

of the encounter of modern Western medicine within the local context in twentieth-century Sri Lanka. She argues that Western medicine in Sri Lanka was seeking hegemony through the colonial government, and Ayurvedic medicine, under the aegis of the nationalist elite, fought this hegemony by adopting the institutional and scientific tools of modern Western medicine.

However, from the narrative of 'confrontations' between the opponents and supporters of Ayurvedic medicine in Sri Lanka one can also conclude that the institutionalisation and support of Ayurvedic medicine by a section of the elite in the colonial government as well as by the Western-educated nationalists, operated as a means for further integration of modern Western medicine by the Ayurvedic audience. This institutionalisation allowed dialogue between modern Western medicine and Ayurveda, and in this respect it was a strategy quite similar to those in Iran and Turkey, although in a different political context. This is clear from the policy of the inclusion of traditional medicine in the practice of Western-educated doctors as a tool to attract students from rural areas who were accustomed to local traditional practice.

The policy of taking local knowledge and expertise into account by the colonial administrators is also mirrored in another strategy that Laurence Monnais terms in chapter 7, as the 'indigenisation' of Western medicine in Vietnam. This is examined through a long, nuanced and complex account of the 'evolution of the modern health care system', illustrated by a change of focus on diseases. While in the second part of the nineteenth century attention was centred on epidemics of cholera, plague and tropical diseases – mainly in order to protect the white population – from the turn of the century onwards, the colonial government began tackling chronic and degenerative diseases afflicting the local population. What is of particular interest here is that the shift coincides with what Monnais calls the 'nativisation' of the health-care system by the colonial administration. In other words, as long as Western medicine remained a tool of domination geared to the protection of the white, there was no reason to recognise local medicine. But when it was a question of the implementation or application of modern medicine to the local population, it was necessary that 'colonial' medicine took into account the cultural and material realities and focused on what could be practised in the country.

This recognition involved the establishment of a medical school for training local physicians, the re-education of the midwives, and an increase in rural infirmaries and maternity wards. In this case, however, the nativisation was not the result of a voluntary decision by the colonial administrators, but was required by pathological, geographic, economic and socio-cultural realities, such as a pre-existing indigenous medical tradition, the insufficient number of modern-trained doctors and Western drugs, and the reluctance by the local population to be treated by white doctors. The 'nativisation' thus went through the complexity of medical production, provision and consumption that the colonisers had got to grips with. The author particularly underlines here what 'modern' medicine could realistically hope to impose

on a non-Western society that shared few common points of reference and had its own well-established medical traditions. Finally, medical pluralism, the necessity of which both the Vietnamese and French admitted, was both wanted and unwanted, and perhaps for this reason it was, as in the case of Sri Lanka, limited and 'bounded'.

As well as being a science, medicine is an institutional, social and political phenomenon. Its production and distribution operate through socio-political relationships marked by cultural characteristics. As John Manton underlines in chapter 8, although considered as a science in its function of dealing with disease ecology of West Africa, the particular significance of 'colonial' medicine lay in its institutional interfaces, such as the clinic, the hospital, the dispensary and the lepers' asylum. Examining the role of the Roman Catholic Mission's Ogoja Leprosy Scheme, established in 1945 in Nigeria by Joseph Barnes, the author shows that the management of institutional spaces for leprosy control generated a bureaucratic accommodation between the colonial government, the Mission and the local communities that differed from the administrative structure that had been in place earlier in the colonial history of Ogoja. Manton elaborates on the shaping of this 'accommodation' between different interested parties, by a minute examination of conflicts about taxation, labour, ownership, markets and the every day problems of negotiating and instituting sites for the leprosy villages. The Mission posited as an intermediary between the colonial government and the local communities and its success in creating leprosy villages in order to contain the spread of leprosy and to eradicate it hinged on both the assent of the latter and the resources of the former.

The accommodating schemes initiated by Barnes to deal with the local population consisted in their practicability and flexibility, allowing for instance that the patients could be cared for within their family rather than in leprosy villages if they contributed to the construction of these villages by labour or by money. Barnes' plan differed from that of the colonial government in that it was predicated on the development of the cultural and material environment within the traditional and existing framework rather than on the introduction of a new form of life style by a public health organisation. The case study of Ogoja provides another example where medical modernisation takes place through negotiation with, and adaptation to, local traditions, customs and the economy, a scheme which necessitates the full involvement of local communities and resources.

In the final chapter, Akihito Suzuki and Mika Suzuki discuss medical modernisation in Meiji Japan, and bring to the fore the role of the marketplace in the history of medicine. After a brief description of political changes in Japan with the advent of the Meiji, the Suzukis focus on the adoption of modern Western public health centred on state control. The initiator of this reform, Nagayo Sensai (1838–1902), claimed that this reform revolutionised medicine in Japan so that it created a break with the medical past. Indeed the state established various regulations and new medical provisions, hospitals or

sanitary councils to tackle cholera epidemics as well as other contagious diseases such as measles.

However, by pointing to continuities and values or practices that Shogunate and Meiji Japan shared, the authors refute that there was a sharp break with the past. In the state–populace relationships, for example, the authors note that resistance to hospitals and isolations coexisted with compromise and support for the state in establishing new hospitals. Furthermore, by providing a detailed analysis of the medical marketplace, the authors unearth elements of continuities from the feudal Tokugawa Shogunate to the modern and Westernised Meiji power. The Suzukis draw attention to the popular medical literature called *Yōjō* on the dietary regimen that was widely used by both the populace and the modern-minded elite to fight against cholera. They also describe the similarities between the *Kakuran*, a traditional Chinese medical concept, on the one hand, and cholera, as it was understood in the West, on the other. By establishing a link between continuity in medical literature and aetiology, on the one hand, and the marketplace, on the other, the Suzukis show how the latter, during the cholera epidemic, was an arena where tradition and modernity, traditionally and modern-educated physicians, as well as the populace and the elite merged. Finally, through a genuine formulation the authors argue that the marketplace, during the epidemic crisis and the ensuing fluctuation of price, contributes to the formation of citizenship, as a 'hygienic community', from which are excluded the poor in the rural areas and in the slums in the cities.[56] Also, by focusing on the food market during the cholera epidemic, the authors provide an insight into the role of the marketplace in determining the kind of medicine that was used against cholera.

Conclusion

The transmission of ideas occurs not only through their active reception but also through passive or even deliberate opposition and resistance, which in some cases relates to the domain of culture, economy and anthropological construction and in other cases responds to practical, intellectual or theoretical concerns. For example, when 'modern Western medicine' is rejected or opposed with reference to a non-Western medical knowledge, it does not necessarily mean that the two are in destructive antagonism. The opposition also offers an opportunity for negotiation and debate over a set of concrete problems, such as fighting against an epidemic or a local endemic disease, or their corresponding theoretical formulations. Even if we accept that 'modern medicine' was initially born of, or predicated on, a combination of a particular worldview and cultural or political structures and values belonging to a defined geographical area, its development beyond those geographical borders occurred through a medical discourse, administrative strategy, institution and power relationship that were different from those in the place of origin. Thus, instead of *modern medicine*, the chapters of this volume describe

a *modernisation* of medicine, in which the shifty and slippery form or identity of 'modern' medicine is brought to the fore.

The other significant dimension to the modernisation examined in the following chapters is the tension between the reform 'projects' formulated by the individuals, organisations or states, on the one hand, and the 'process' of modernisation operated by a combination of social, political, economic and cultural factors, on the other. A project of modernisation is an idea, while a modernisation process is a phenomenon. However more tangible (than a 'process') it might appear, a reform 'project' is unlikely to come to its full realisation because in the course of its implementation it has to embrace unforeseen facts or problems and cannot act unobstructed to its completion. A 'process' of modernisation, on the other hand, posits as a force resulting from the articulation or interaction of individual projects, strategies, politics, as well as cultural and economic factors. This is why, for instance, reform projects could never be implemented as they were planned by the colonial agents or the committed missionaries. This also holds true with regard to concepts and theories that are in most cases altered in the course of their assimilation or application. This principle goes together with the perspective of this volume that aims to bridge the historiographical gap between the West and beyond the West when treating the development of modern medicine. By substituting 'project' with 'process' as the object of study, the whole perspective of examining the history of medicine changes. While for the former the modernity–tradition dichotomy is requisite as method of analysis, in the latter the clear-cut dichotomy or opposition between modern and traditional or Western and non-Western medicines, become irrelevant due to their interaction, accommodation and co-ordination, although spasmodic and marked by instances of resistance and conflict, within the framework of the reconstruction of modern medicine.

The most prominent feature of medical development examined in the following chapters is the presence of pre-modern practice or ideas in the modernisation process, not merely in the form of the resistance of a surviving element, but as its active ingredient. In this introduction, I have tried to show that this was vital for the implementation of reform because medicine is not merely a theoretical knowledge or method of practice. It is a frame within which social, economic and political practices and relationships are articulated. Economic organisation through institutions such as *waqf* (chapters 4, 5), the educational system in which knowledge is transmitted (chapter 4), institutional practice and international relationships within which medical research is undertaken (chapters 2, 3, 6, 7, 8), the marketplace where food and drug is distributed (chapter 9), are all involved in the way medicine is developed. In such conditions, no modernisation scheme could bypass the existing system or practice.

There is nevertheless a theoretical dimension to the overlap or link between tradition and modernity, which has not been addressed in this volume and calls for further research. It concerns particularly the intellectual scheme(s) through

which concepts, terms and their meanings are transmitted or evolved. How could modern Western and 'traditional' non-Western concepts on disease, health, and healing work together within the framework of the 'reconstruction' of modern medicine? Does the articulation of these concepts and ideas and their subsequent change take place during, or within, the discursive formation to which, in Foucaultian sense, speaker or writer is subjected and which determines the move from one truth system to the other,[57] or does their relationship or link represent a kind of genealogical derivation? Is the persistence, or involvement, of tradition in the modernisation process a phenomenon aimed at securing the preservation of the society from disintegration or does it represent a form of development of knowledge that involves conceptual continuity, conceptual evolution or both? The latter dimension, however, is reflected in the present volume in the sense that while modernity has often been perceived as inherently associated with modern Western science and techniques, the following chapters highlight medical modernisation in relation to local dynamics. The association or combination of modern science and non-Western social and political systems characterised with traditional local cultures, such as in China of Mao or the Islamic regime in Iran, leads us to ask if we should not open new areas of research on trends in the history in which the tendency for social preservation would justify or stimulate scientific research. In this case, for example, the tradition–modernity opposition as an explanatory model becomes dysfunctional insofar as conceptual or technical innovation involved in a modernisation is not necessarily in disagreement with traditions, customs and social or political conservatism. If this is not a mere 'subjective' paradox from a 'Western' standpoint, it seems that it relates to the fact that the paradigm of modern science and technology, and in this case modern medicine, has also been embedded in traditional or conservative societies. The paradigm of modern science and, accordingly, modern medicine, belongs to a worldview that represents a 'being' or an 'existential' context, using Karl Mannheim's terms,[58] which informs or conditions both conservative and progressive attitudes towards the world. It is also on this record that establishing a borderline between medical 'systems' as a method of historiography does not do justice to what we can call history of modern medicine or, more accurately, 'modern history of medicine' in non-Western countries.

Notes

1 References on this subject are abundant. As an example, see: Charles Leslie & A. Young (eds), *Paths to Asian Medical Knowledge,* Berkeley, Los Angeles: Oxford: University of California Press, 1992.

2 This is illustrated in the projects and ideas of Hakim Ajmal-Khan in India in the early twentieth century. Cf. Zafar Ahmad Nizami, *Hakim Ajmal Khan,* New Delhi: Publications Division, 1988, p. 20–21. See also: S. Irfan Habib and Dhruv Raina, 'Reinventing Traditional Medicine: Method, Institutional Change, and the Manufacture of Drugs and Medication in Late Colonial India', in J. Alter (ed.),

Asian Medicine and Globalization, Philadelphia: University of Pennsylvania Press, 2005, pp. 67–77; K. N. Panikkar, 'Indigenous Medicine and Cultural Hegemony: A Study of the Revitalisation Movement in Keralum', *Studies in History* 1992, no. 2, pp. 283–308. This idea has, however, been questioned by other historians who emphasize the plurality and heterogeneity of Unâni or Ayurveda. See Waltraud Ernst (ed.), *Plural medicine, tradition and modernity, 1800–2000,* London, New York: Routledge, 2002. See for example, pp. 6–8.

3 Sarah Cant & Ursula Sharma, *A new medical pluralism?* Routledge, 2003, p. 5; Roberta Bivins, *Alternative Medicine? A History*, Oxford, New York: Oxford University Press, 2007.

4 For the importance of international trade in the rise of modern science see: Harold J. Cook, *Matters of Exchange: Commerce, Medicine and Science in the Dutch Golden Age,* New Haven and London: Yale University Press, 2007. For a concluding summary of this thesis, see chapter 11, pp. 410 ff.

5 This is clearly claimed by Joseph Ben David, *The scientist's role in society: A comparative study,* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971, p. 21. Although Ben David underlines the social and historical conditions, and not hereditary or racial factors, as important in the development or stagnation of science, he studies them for their role in determining the way Western science was 'diffused'. See: pp. 22 ff.

6 George Basalla, 'The Spread of Western Science', *Science,* New Series, vol. 156, May 5 1967: 611–22, pp. 611, 613.

7 Ibid, p. 618.

8 The role of the local resources in the development of modern medicine is examined in various studies of this volume. For other works addressing this question but within a different 'research project' see: B. Good, 'The Transformation of Health Care in Modern Iranian History', 1981. Roshdi Rashed, 'Science classique et science moderne à l'époque de l'expansion de la science européenne' in: P. Pettijean, C. Jami and A. M. Moulin (eds), *Science and Empire: Historical Studies about Scientific Development and European Expansion,* Dordrecht, Boston, London: Kluwer Academic Publishers, 1992, pp. 19–30, and V. V. Krishna, 'The Colonial Model and the Emergence of National Science in India: 1876–1920', in ibid., pp. 57–72. Krishna, in relation to the development of modern science outside Europe, points particularly to the distinction to be made between different local conditions or politics, such as in India and Australia and also between different groups, such as the 'committed missionaries' and the government scientists who merely executed the politics coming from above, pp. 57–58.

9 Mark Harrison, *Climates and Constitutions: Health, Race, Environment and British Imperialism in India 1600–1850*, New Delhi, Oxford, New York: Oxford University Press, 1999; D. Kumar, 'Nationalism, Transnationalism, and the Politics of 'traditional' Indian Medicine', in J. Alter, ed, *Asian Medicine and Globalization*, Philadelphia: University of Pennsylvania Press, 2005, 78–87.

10 See for example, Andrew Wear, ed, *Medicine in Society, Historical Essays,* Cambridge: Cambridge University Press, 1992; Joan Lane, *A Social History of Medicine: Health, healing and disease in England, 1750–1950,* London and New York: Routledge, 2001.

11 See for example: Anita Jacobson-Widding & David Westerlund, *Culture, Experience and Pluralism: Essays on African Ideas of Illness and Healing,* Stockholm: Almqvist & Wiksell International, 1989.

12 Cited in Peter Burke, *A Social History of Knowledge From Gutenberg to Diderot,* Cambridge, Malden: Polity Press, reprinted 2007, pp. 78–79.

13 For Japan see for example: John Z. Bowers, *Western Medical Pioneers in Feudal Japan,* Baltimore and London: The John Hopkins Press, 1970; Keiji Yamada, 'Modern science and technology in 18th and 19th century Japan' in: F. Günergun and S.

Kuriyama (eds), *The Introduction of Modern Science and Technology to Turkey and Japan,* October 7–11 1996, International Research Centre for Japanese Studies, pp. 1–16; Tadashi Yoshida, 'Educational system for the training of scientists and engineering in Meiji Japan', in F. Günergun and S. Kuriyama (eds), ibid, pp. 97–117.

14 Susan Gross Solomon, 'Social Hygiene and Soviet Public Health, 1921–30' in Gross Solomon and John F. Hutchinson (eds), *Health and Society in Revolutionary Russia,* Bloomington and Indianapolis: Indiana University Press, 1990, pp. 175–99. It should however be noted that in this work Gross Solomon lays emphasis not on the differentiation with Western medicine but on the role of the government in creating the field of 'learning'. Both the strength and weakness, or the emergence and demise of the 'social hygiene' were, according to the author, to be found in the government patronage. On the distinctiveness of Soviet 'social medicine' as well as its similarities with Western medicine see also: Mark B. Adams, 'Eugenics as Social Medicine in Revolutionary Russia: Prophets, Patrons, and the Dialectics of Discipline-Building', in Gross Solomon and Hutchinson (eds), ibid, pp. 200–223.

15 As underlined by the Suzukis in chapter 9.

16 Although such 'precursorism' is anachronistic since it ignores fundamental differences between the nature-based egalitarian custom in the Bedouin or the tribal structure of the early Islamic community, in which the *shawrâ* (often a council of elder tribesmen) usually regulated social relationships and the organisations to implement equal opportunities in modern Western democracies. A live example of such a tribal institution is the *jarga* (a Persian terms meaning council), in Afghanistan today which plays a considerable role in politics.

17 In the twentieth century in Iran this idea was particularly underlined by 'Ali Shari'ati, 1932–77). See his *majmu'eh-ye âsâr* (oeuvres), 5 vols, Tehran: Hoseyniyeh Ershâd Publishers, 1357/1978, vol. 4, pp. 289–90, and vol. 5, pp. 48, 92. For an English translation of some of Shari'ati's works, see: *Man and Islam,* translated by Fathollah Marjani, Houston: Free Islamic Literature, 1981; and *What Is to Be Done?* edited and translated by Farhang Rajaee, Houston, Institute for Research and Islamic Studies, 1986. On the dynamics of the reformation movement in modern Islam see: Michaelle Browers and Charles Kurzman, eds., *An Islamic Reformation?* London, Boulder, New York, Toronto and Oxford: Lexington Books, 2004. The fact that modernity was a challenge to be taken by Moslem intelligentsia was in contrast to the stereotyped image of the 'Orient' or Islam made by 'Islamic Orientialists', as described by Edward Said. Cf.: *Orientalism,* London: Penguin Books, 2003, see for example, pp. 259–63.

18 Cited in Homâ Nategh, *Kârnâmeh-ye farhangi-ye farangi dar Iran, Les Français en Perse,* Paris: Khâvarân Publishers, 1375/1996, p. 23. For the ideas of Jamâl al-Din, see Homa Pakdaman, *Djamal-ed-Din Assad Abadi, dit Afghani,* Paris, Maisonneuve et Larose, 1969.

19 See M. Jones, chapter six in this volume, and also S. Irfan Habib and Raina Dhruv, 'Reinventing Traditional Medicine: Method, Institutional Change, and the Manufacture of Drugs and Medication in Late Colonial India', in J. Alter (ed.), *Asian Medicine and Globalization*, Philadelphia: University of Pennsylvania Press, 2005, pp. 67–77.

20 Kim Taylor shows how the 'Chinese medicine' as conceived in the West informed a historiographical discourse on medicine in China that did not exactly correspond with what was practised in China. See her article, 'Divergent Interests and Cultivated Misunderstanding: The Influence of the West on Modern Chinese Medicine', *Social History of Medicine,* vol. 17, No. 1 (2004): 93–111. V. Scheid also underlines differences between the perception of traditional Chinese medicine and what is actually practised: Volker Scheid, *Contemporary Chinese Medicine: Synthesis and Plurality,* Durham, NC: Duke University Press, 2001.

21 Despite its dominance in Western historiography, this opinion is not, however, shared by all historiographical accounts in the West. On the relationships between Islam and Greek sciences, for instance, some scholars tend to underline their inherent and irreconcilable opposition, see for example E. Grant, *Science and Religion, 400 B.C. – A.D. 1550 From Aristotle to Copernicus, Westport*, Connecticut, London: Greenwood Press, 2004. Translated into a fundamental difference between Western and Islamic cultures, this opposition is sometimes attributed to the inherent antagonism between Christianity, on the one hand that allows the development of sciences and freethinking, and Islam, on the other, that prohibits rationalism and logic unless they can be used in the service of faith, (see Krzysctof Pomian, *Ibn Khaldun au prisme de l'Occident,* Paris: Gallimard, 2006). A similar line of arguement is developed in a recent book by Sylvain Gouguenheim, *Aristote au mont Saint-Michel: Les racines grecques de l'Europe Chrétienne*, Paris, Seuil, 2008. Others, such as George Makdisi, however, analyse the intellectual process through which Greek sciences were integrated in Islamic curricula. See: *Ibn 'Aqil: religion and culture in classical Islam,* Edinburgh: Edinburgh University Press, 1997. Charles Leslie acknowledges a certain fluidity, or conceptual link, between Western and Eastern 'great-traditions medicine', albeit that his study is mainly to delineate the different 'medical systems', see: Charles Leslie, ed, *Asian Medical Systems: A Comparative Study,* Berkeley & Los Angeles: University of California Press, 1976. Or Henry Corbin, who tried to explain and describe Shiite '*erfān*, theosophy, in its own terms by 'discovering the intentions of the Shiite consciousness in order to see what it has seen from its very origin', practically demonstrates intercultural communication and dialogue between Western and Eastern philosophies. This 'phenomenological' approach is pervasive in all Henry Corbin's works; see for example, *Histoire de la philosphie Islamic*, Paris: Gallimard, 1986, p. 109, where he points to it explicitly.

22 Andrew Cunningham & Bridie Andrews, eds., *Western medicine as a contested knowledge,* Manchester and New York: Manchester University Press, 1997.

23 Joseph S. Alter (ed.), *Asian Medicine and Globalization*, Philadelphia: University of Pennsylvania Press, 2005, see Introduction, pp. 3, 6.

24 David Westerlund also refutes the differentiation, on grounds of principle, between 'non-Western medical systems' and 'Western ones'. See: 'Pluralism and Change. A Comparative and Historical Approach to African Disease Etiologies', in Jacobson-Widding and Westerlund, *Culture, Experience and Pluralism: Essays on African Ideas of Illness and Healing*, Stockholm: Almqvist & Wiksell International, 1989, p. 178. However, this idea is based on his three-dimensional – namely: religious, social and natural – model of disease aetiology, which is shared by African medical system and modern Western medicine alike.

25 Roberta Bivins, *Alternative Medicine*, op. cit.

26 Alternative medicine is sometimes identified with medicines of non-Western origin (Christine A. Larson, *Alternative Medicine,* Westport, Connecticut and London: Greenwood Press, 2007, Preface) or with Hippocratic medicine in the age of bio-medicine (R. Bivins, op. cit., p. 9).

27 This is the debate on which is based the book edited by Charles Leslie, *Asian Medical Systems*, op. cit.

28 C. A. Bayly, *La naissance du monde moderne, 1780–1914,* translated by Michel Cordillot, Paris, Les Editions de l'Atelier, 2007, p. 521. This question is discussed in chapter 2 by M. Harrison.

29 Kapil Raj refutes the diffusion from centre (West) to periphery (India) but seems to adhere to the diffusionist idea when he tends to reverse the direction from periphery to centre. See: *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650–1900,* New York: Palgrave Macmillan, 2007. A similar approach can be seen in Dhruv Raina and Irfan Habib, *Domesticating*

Modern Science: A Social History of Science and Culture in Colonial India, New Delhi: Tulika Books, 2004.

30 Just as in Ancient Greece, for instance, the source of radical change in medicine away from Hippocrates and the importance of anatomy has been sought in the impact of Aristotle's philosophy, or in modern Europe, the sensualism of Cabanis, Lock and Condillac, and the romanticism of Kant, are deemed to have deeply influenced the emergence of eighteenth- and nineteenth-century modern medicine. For Greece see: Mario Vegetti, 'Entre le savoir et la pratique: la mèdecine hellénistique', in Mirko D. Grmek (ed.), *Histoire de la pensée médicale en Occident, vol. 1: Antiquité et Moyen Age,* Paris: Editions du Seuil, 1995, pp. 67–94. For modern Europe, see: Nelly Tsouyopoulos, 'La philosophie et la médecine romantiques', in Mirko D. Grmek (ed.), *Histoire de la pensée médicale en Occident, vol. 1: Antiquité et Moyen Age,* Paris: Editions du Seuil, 1999, pp. 7–27.

31 See essays of R. Rashed, op.cit., and Ekmeleddin Ihsanoglu, 'Ottoman and European science' in P. Pettijean *et al*. (eds), op. cit., pp. 37–48.

32 This is largely developed by Bayly, *La naissance du monde moderne,* op. cit., especially in chapter six.

33 This can also be seen in other cases not studied here, see for example, Rainer Brömer, 'L'Islam et les sciences dans les pays arabes à l'époque du colonialism européen', in *L'Europe et la Méditerranée,* Actes du colloque de Nancy-Malzéville 4, 5, 6 September 1997, sous la direction de Gilbert Meynier & Maurizio Russo, Paris: L'Harmattan, 1999; H. Ebrahimnejad, Epidémie, médecine et politique dans l'Iran du XIXe siècle', *Studia Iranica*, 30 (2001): 101–30.

34 Gaston Bachelard, *La novella esprit scientifique,* Paris: Puf, 1934. For a concise account of the intellectual 'filiation' between Bachalard and Foucault, see: Gary Gutting, *Michel Foucault's Archeology of Scientific Reason,* Cambridge and New York: Cambridge University Press, 1993, chapter 1.

35 Just as the Foucaultian model of the 'epistemic' leap fails to explain all instances of socio-political changes, for example in prison reform, in Western countries. See Jacques Léonard, 'L'historien et le philosophe. A propos de *Surveiller et punir; naissance de la prison*' in Michelle Perrot (ed.), *L'impossible prison,* Paris: Editions du Seuil, 1980, pp. 9–28. Foulcault himself appears to have nuanced his idea of the epistemic break in his later works. See Thomas Flynn, 'Foucault's mapping of history', in Gary Gutting (ed.), *The Cambridge Companion to Foucault,* Cambridge: Cambridge University Press, 1994, pp. 28–46, p. 33.

36 See for example, A.de Zoysa and C. D. Palitharatna, 'Models of European Scientific Expansion: A comparative description of Classical medical science at the time of introduction of European medical science to Sri Lanka, and subsequent development to present', in P. Pettijean *et al.*, op. cit., pp. 111–20.

37 Philip Pinel, *Nosographie philosophique ou La méthode de l'analyse appliquée à la médecin*e, Paris: J. A. Brosson, 6th edition, 1818, pp. xvi–xvii; For Broussais, see: Jean-François Braunstein, *Broussais et le materialisme: Médecine et philosophie au XIXe siècle,* Paris: Méridiens Klincksieck, 1986, pp. 27–29.

38 Examples of such history can be found in Roy Porter, *Flesh in the Age of Reason,* London: Penguin Books Ltd, 2003, see for example: pp. 55 ff, 350–51.

39 Dr Mirzâ 'Ali, *Javâher al-Tashrih* (Quintescence of Anatomy), Tehran, lithograph edition, 1306/1889, Introduction. See also his other book, *Javâher al-hekmah-ye Nâseri* (Quintessence of Christian Medicine), Tehran, lithograph edition, 1304/1887.

40 P. Chakrabarti, *Western Science in Modern India,* Delhi: Permanent Black, 2004, p. 12.

41 Chikara Sasaki, 'Science and the Japanese Empire 1868–1945: an overview', in P. Pettijean *et al*. (eds), op. cit., pp. 243–46.

42 The establishment or activities of Pasteur institutes in most non-Western countries, for example, were dictated by diplomatic relationships. See Anne Marie

Moulin, 'Patriarchal Science: The Network of the Overseas Pasteur Institutes', in P. Pettijean *et al*. (eds), op. cit., pp. 307–22, p. 315. See also Hormoz Ebrahimnejad, 'Les médecins français en Iran Qâjâr, un choix politique' in, N. Pourjavady and Ziva Vesel (eds), *Science dans le monde Iranian*, Tehran: Institut Français de Recherches en Iran and University of Tehran, 2004, pp. 265–87.

43 Karl Mannheim, *Essays on the sociology of knowledge* (edited by P. Kecskemeti), London: Routledge & Kegan Paul Ltd, 1972 (first published in 1952), p. 137. The idea is also developed in his *Ideology and Utopia: An Introduction to the Sociology of Knowledge*, London and New York: Routledge, 1991 (first published in 1936).

44 See for example, Arnold Thackray and Everett Mendelesohn (eds), *Science and Values Patterns of Tradition and Change*, New York: Humanities Press, 1974. Some essays in this volume study non-Western countries such as Japan, China and Madagascar but others treat Western societies. They all emphasise the cultural values as a determining factor in the development of modern science.

45 One might here compare the attitude of the extremist elements of the Shiite establishment in nineteenth-century Iran that not only did not favour the introduction of modern techniques or science, but also went so far as to consider the use of electricity as interference in divine creation, and the diametrically opposite stance of the present Islamic government, currently run by the extremists as well, that boasts to have 'mastered' animal cloning or uranium enrichment and aspires to conquer the space, no matter if such ambitions do not agree with the poor economic or social policy of the Islamic government.

46 See for example: Mary P. Sutphen and Bridie Andrews (eds), *Medicine and colonial identity*, London: Routledge, 2003; M. Harrison and B. Pati (eds), *Health, Medicine and Empire: Perspectives on Colonial India*, 2001; M. N. Pearson, 'The Thin End of the Wedge; Medical Relativities as a Paradigm of Early Modern Indian-European Relations', *Modern Asian Studies,* no. 29 (1996): 141–70; David Arnold (ed.), *Warm Climates and Western Medicine: The Emergence of Tropical Medicine, 1500–1900*, Amsterdam and Atlanta: Rodopi Press, 1996; Bridie Andrews, 'Tailoring tradition: the impact of modern medicine in traditional Chinese medicine, 1887–1937', From, *Mémoires de l'Institut des Hauts Études Chinoises. Vol.36. Notions et perceptions du changement en Chine*. Published by the Institut des Hautes Études Chinoises of the Collège de France in 1994.

47 Helain Selin (ed.), *Medicine Across Cultures. History and Practice of Medicine in Non-Western Cultures,* Dordrecht, Boston and London: Kluwar Academic Publishers, 2003.

48 Joseph Wachelder, 'Introducing the experimental method: The modernization of medicine as a part of a societal transformation', *Proceedings of the XXXIInd International Congress on the History of Medicine Antwerp, 3–7 September 1990,* Brussels: Societas Belgia Historiae Medicinae, 1991, pp. 639–51.

49 Social and political changes throughout the eighteenth and nineteenth century in Europe, created dissidents, among them physicians, who preferred, or were constrained, to work overseas far from the mainstream network in the metropole. This was the case for many European physicians who built up their career overseas. Barthélémy Clot, as Anne Marie Moulin mentions in chapter three, was one example. Joseph Désiré Tholozan in Iran was another case. It is significant that with his doctoral thesis in 1843, and another thesis for 'agrégation' that promoted him to 'professeur agrégé' of Val-de Grâce in 1852, and after serving in the Crimean wars in 1854–55, and returning to Val-de Grâce with the position of 'Médecin-Major de 1re classe' in 1857, Tholozan was degraded to a simple 'officier de santé' and 'Médecin-Aide Major' in a letter of the ministry of foreign affairs in January 1858, that gave Tholozan the mission of departing for Iran as 'Médecin du Shah de Perse'. See: Jean Théodoridès, 'Tholozan: médecin militaire à compétence étendue', *Histoire des sciences médicales,* tome XXXII, No. 3 (1998): 279–86.

50 Khaled Fahmy, 'Medicine and Power: Towards a Social History of Medicine in Nineteenth-Century Egypt', *Cairo Papers in Social Science*, v. 23, no. 2, summer 2000: 1–45, p. 6. See illustration no. 1, chapter 3, p. 54 in this volume.
51 On the educational system in Qâjâr Iran including the Dâr al-Fonun see, Monica Ringer, *Education, Religion, and the Discourse of Cultural Reform in Qajar Iran,* Costa Mesa, California: Mazda Publishers, 2001; see also: J. Gurney and N. Nabavi, DÂR AL FONÛN, *Encyclopaedia Iranica*, 1993; Qodratollâh Rowshani Za'ferânlu (ed.), *Amir Kabir va Dâr al-fonun,* Tehran: Tehran University Press, 1354/1975. Especially see chapters of M. Najmabadi, *'Tebb-e dâr alfonun va kotob-e darsi-ye ân'*, Medicine of Dâr al-fonun and its curriculum), pp. 202–37; and Mohammad Mohit-e Tabâtabâ'i, 'Dâr al-Fonun va Amir Kabir', pp. 186–94.
52 See: Roshdi Rashed, 'Science classique et science modern', op. cit. Anne Marie Moulin, 'Révolutions médicales et politiques en Egypte, 1865–1917)', *Revue de l'Occident musulman et de la Méditerranée*, 52, (1989): 111–23; Sylvia Chiffoleau, *Médecines et médecins en Egypte: Construction d'une identité professionnelle et projet médical,* Paris: L'Harmattan, Lyon: Maison de l'Orient méditerranéen, 1997.
53 Nuri Ergin, *Turkiye Maarif Tarihi,* Istanbul, 1977, pp. 336–40.
54 Even in the 1870s, most professors and graduates of the Military Medical School were non-Moslem. See Yasemin Öztuna Şirin, 'Osmanlı salnamelerinde 1908 tarihine kadar tıp eğitimi' (Medical education records in Ottoman yearbooks up to 1908), *Yeni Tip Tarihi AraŞtirmalari*, 5 (1999): 208–323.
55 Gazette Médicale d'Orient, 1863, no. 11.
56 For a different case of relationship between hygiene and citizenship see: Firuzeh Kashani-Sabet, 'Hallmarks of Humanism: Hygiene and Love of Homeland in Qajar Iran', *The American Historical Review,* vol. 105, no. 4, Oct. 2000.
57 On the 'discursive' formation underpinning medical change, see Michel Foucault, *Naissance de la clinique,* Paris: Cadrige, PUF, 1994. For a general discussion of this theory see his, *L'archéology du savoir*, Paris: Gallimard, 1969.
58 K. Mannheim, *Essays on the sociology of knowledge*, pp. 142–46.

2 Medical experimentation in British India

The case of Dr Helenus Scott

Mark Harrison

> Ye theorists (a powerful band!) who corrupt all true philosophy and genuine induction by not attending to the never erring operations of nature with sufficient accuracy; who mistake your own disordered notions for eternal truths; who jumble effects with efficients, and causes with their consequences; it is not for you gentlemen to judge of my production.
> Helenus Scott, *The Adventures of a Rupee* (London: J. Murray, 1783), pp.xi–xii.

I imagine that few, if any of you have ever heard of Dr Helenus Scott (1757?–1821).[1] I had never heard of him myself until I stumbled across a reference to him in an article in the journal *Asiatick Researches* by the physician, orientalist and spy, Dr Francis Balfour. Unlike Balfour and most of the other colonial practitioners who made an impact on British medicine, Scott published very little. Apart from one article and a short work of fiction, we know of Scott only through the writings of others. Yet his influence in British India and, indeed, throughout the empire was considerable. By means of correspondence with important figures in British natural philosophy, such as Joseph Banks and Thomas Beddoes, Scott's pioneering research in chemical therapeutics reached a wide audience and inspired similar studies in Britain and elsewhere. The cause of this excitement was Scott's controversial claim to have discovered a cure for venereal disease – in the form of nitric acid – that was supposedly safer and more efficacious than the conventional treatment with mercury. This aroused the interest of surgeons in the Army and Navy, whose work in peacetime was often dominated by the treatment of such complaints, and of figures like Beddoes and Humphry Davy, excited at what seemed to be a vindication of their claim that many diseases could be treated with gases.

In its own right, this episode might merit a footnote as a curious incident in the history of therapeutics. Despite continuing experiments using nitric acid in the treatment of some other complaints, enthusiasm for the therapy petered out after a few years following inconclusive and conflicting trials. Yet Scott's experiments and the great excitement they produced in the 1790s and early 1800s, does tell us something important about medicine as it developed in the tropical colonies and its relationship to medicine as practised in Britain.

First, it shows that the colonies were a fount of new ideas and practices that influenced British medicine. Scott is by no means an isolated example, but in many respects was typical of a medical establishment – the medical services of the East India Company (EIC) – that prided itself on its independence from metropolitan authority and its empirical, experimental approach to medicine. A number of therapies – botanical and chemical – which were pioneered in India came to be widely used throughout the empire and in Britain. Together, these examples should lead us to question the conventional view that modern medicine was something exported *to* the colonies. Rather, the colonies were important sites of innovation that had a profound effect upon the development of medicine in Europe. Therapeutics is just one dimension but one could add, for example, colonial research on the natural history of disease or in morbid anatomy – both of which contributed a good deal to the development of medicine in Europe.

Second, the manner in which Scott's work was disseminated shows that we need to revise our view of the connections between metropolitan and colonial practitioners. I have already mentioned the latter's great independence of mind, which meant that few were ready to defer to such bodies as the royal colleges of physicians or surgeons, or other eminent authorities in London or Edinburgh. This in itself should lead us to question the tendency of work on the history of science and medicine in the colonies to concentrate on centralised networks surrounding figures such as Sir Joseph Banks, founder of the botanical gardens at Kew and President of the Royal Society of London.[2] At first glance, Scott's case would seem to fit well with such accounts: like many other medical practitioners and natural philosophers in the colonies, Scott communicated his findings to Banks, eager to gain the patronage of this powerful figure in British science. But what happened subsequently reveals the existence of other, less centralised networks of scientific communication that bound the colonies to the imperial 'metropole' in a relationship of greater equality. Scott's work was eagerly taken up by Beddoes and other reformist practitioners, who saw pneumatic chemistry as a panacea for social and bodily ills. It was largely as a result of Beddoes's advocacy that Scott's remedy was subjected to trials at institutions throughout Britain.

If this were an isolated example one would be inclined to overlook it, but the connections between colonial practitioners (often dissenters in politics and religion as well as in medicine) and reformers in Britain are too numerous. A number of colonial physicians and surgeons were closely connected with Beddoes and with the Lunar Society, for example, and through them to other prominent dissenting figures in natural philosophy and medicine. At the same time, there existed what might be termed an international Protestant brotherhood that linked British practitioners in India to Danish and German missionaries, who communicated their research to northern Europe. These and other connections show that it might be useful to think of the scientific relationship between colony and metropole not only as a wheel, with figures

like Banks at the hub, but as what David Wade Chambers and Richard Gillespie have termed a 'polycentric communications network', in which colonial practitioners were linked on a more equal basis to individuals in Britain.[3]

Scott first came to my attention when I was writing an article on solar and lunar theories of disease during the eighteenth century. In this article I argued that a significant minority of practitioners based mostly – though not exclusively in the East and West Indies – continued to uphold the view that solar phenomena and the phases of the moon had a close relationship to the incidence of certain diseases such as intermittent fever. Such opinions became unfashionable in Britain during the eighteenth century and Richard Mead's *Of the Power and Influence of the Sun and Moon on Humane Bodies* (1712) was the last significant work on the subject, although some later writers, not least Erasmus Darwin were inspired by colonial writers to reintroduce it.[4] Colonial practitioners such as Francis Balfour and James Lind in India kept records of astronomical data, which they correlated with meteorological phenomena and clinical records, in the manner of Thomas Sydenham a century before; indeed, many continued to look to Sydenham for inspiration. Their explanations of the power that the moon appeared to exert upon terrestrial bodies were essentially Newtonian, referring to gravitational pull; however, practitioners in India also cited the opinions of Indian physicians for whom astrology was still a fundamental aspect of medical practice. Scott – who was based in the western port of Bombay – was one of these, and in a letter to the Calcutta physician Francis Balfour, he wrote that:

> The influence of the moon on the human body has been observed in this part of India by every medical practitioner. It is universally acknowledged by the doctors of all colours, of all casts, and of all countries. The people are taught to believe in it in their infancy; and as they grow up, they acknowledge it from experience. … We here universally think that the state of weakly and diseased bodies, is much influenced by the motions of the moon. Many people know the very day on which their intermittents will make their appearance.[5]

I have mentioned Scott's views on sol-lunar phenomena for two reasons. The first, is that the letter shows Scott's receptivity to indigenous sources of information, which is important to the story I am about to relate about chemical therapeutics, but also because his explanation of sol-lunar phenomena shows how his interest in chemistry affected all aspects of his medical practice. As already indicated, the most common explanation of why human bodies seemed to be influenced by lunar phenomena was Newton's theory of gravity, and Scott, like most other authors, drew an analogy between the effects of lunar gravity on the tides and what he believed to be its effects on the human body, with its high water component. But Scott enlarged on this, using insights from pneumatic chemistry (especially the

work of Lavoisier), to suggest that the moon could exert an attraction on the components of the atmosphere. Balfour echoed his sentiments:

> In the present imperfect state of our knowledge regarding the component parts of atmospheric air, and the mode of their combination, who will presume to limit or define its connection with sol-lunar influence? Who will be so hardy and regardless of his own reputation as to pronounce, without proof, that this influence has no power to produce any change whatever in this compound fluid … ?[6]

Scott and Balfour were by no means unique in drawing upon chemistry to inform medical theory and practice. For some years, in both India and the West Indies, there had been a programme of research that aimed to reveal the composition of the air and its relationship to climate and disease. Various eudiometrical experiments after the manner of Joseph Priestley were conducted in the colonies and their results communicated to such bodies as the Royal Society of London. Chemicals were also increasingly used in therapeutics and, from the middle of the eighteenth century, there occurred what some referred to as a 'therapeutic revolution' as mercury was used to treat a wide range of diseases. Until the 1740s, mercury was used largely to treat venereal complaints, much as it was in Britain, but surgeons working at the EIC's hospital in Madras began to use it to treat liver diseases, and then, later, in the treatment of dysentery and putrid fevers. The treatment caught on and – like nitric acid fifty years later – spread from India to the West Indies and Britain.

We must see Scott's experiments against this background; indeed, by the 1790s mercury was described as 'lord paramount' of all therapies in India, having largely displaced botanical remedies and bleeding in the treatment of hepatitis, dysentery and many forms of fever. It seems likely that the initial decision to use mercury to treat non-venereal complaints may have owed much to local knowledge and interaction with local practitioners. The Madras surgeons who popularised the remedy – James Wilson and Gilbert Pasley – had a contract to supply the hospital with local or 'country' medicines, purchased from Indian bazaars. They also employed Indian practitioners in their hospital as compounders of medicines and constructed a laboratory for this purpose. Although we cannot be sure, Wilson and Pasley may have learned of the use of mercury in the south-Indian Siddha medical tradition through these contacts. Chemical cures were a more pronounced feature of Siddha than the Ayurvedic medical tradition which dominated northern India. In southern India, chemicals were often used as antiobstructants, and it was in this way that they were first employed to treat the intractable liver complaints to be found among the EIC's employees in Madras.

Scott may have acquired knowledge of medicinal chemicals in the same way, although he had a long-standing interest in the subject. Scott, who was raised near Dundee, the son of a clergyman, took science courses at Aberdeen University after being educated in the classics at the Dundee Grammar

School. After that, he studied medicine in Edinburgh and appears to have taken a degree. His greatest inspiration at Edinburgh was the chemist, Joseph Black (1728–99), famous for his work on pneumatic chemistry and especially on what was then known as 'fixed air' (carbon dioxide). After finishing his studies, the Scott family's modest means were exhausted and Helenus was forced to earn a living. Although his initial impulse was to go to America to fight with George Washington (Scott was a professed lover of liberty) his more sober friends induced him to take up a position as a cadet in the service of the EIC. After two unsuccessful attempts to reach India, Scott arrived there in 1782, with his new wife, Anna. He was by this time probably 24 or 25 years of age.[7]

One of his first appointments in India appears to have been as an apothecary in the Company's hospital in Bombay; at least he is described as such in a letter to the Hospital Board of Bombay in October 1787. In this capacity, he would have had close contact with indigenous practitioners and traders; indeed, he argued that the Board had not taken sufficient advantage of materials available locally, from which most of the medicines normally sent from Europe could be made. He added that such medicines would be both superior to those sent from Europe – which were often damaged en route – and that they would be considerably cheaper.[8] A few years later he was writing to the Governor of Bombay with much the same purpose, describing various minerals and their use in the making of soap, glass, dyeing and bleaching, as well as in a number of unspecified local 'manufactures'. On a number of occasions, Scott urged the Governor to use his influence with the EIC's Court of Directors, so that they might consider exporting these minerals to Britain. Scott referred particularly to a mineral which he called the 'Bombay alkali,' which was to be found locally in deposits of 'remarkable purity and in very large quantities'. As well as being of use in the all the capacities described above, he added that it was 'the Bases [sic] of many of the neutral salts used in medicine and is indispensably necessary in a variety of the objects of Chemistry.' Writing of Britain's current state of dependence on other nations, such as Spain, for much of her alkali, Scott argued that 'An immense sum is annually lost to Great Britain for those supplies and in the time of War our Manufactures have been at stand from the want of it.'[9] He mentioned in passing that he had sent a sample of the mineral to Joseph Black at Edinburgh, who declared the specimen superior to its Spanish counterpart. The Governor dutifully passed the letter to the Court of Directors but nothing came of it.[10] In 1792, when Scott again wrote to the Hospital Board, he had not yet received any reply from the Directors.[11] This letter was also passed on to London but again did nothing to arouse the denizens of Leadenhall Street.

The failure of Scott's earnest representations may help to explain why he was so eager to enlist the help of Sir Joseph Banks, whom he may have thought sympathetic, on account of the latter's well known enthusiasm for science and statecraft. In January 1790 he wrote the first of several letters to

Banks, in which he described the various techniques used in cleaning and dyeing cotton cloths, and about various local antiquities such as the Elephanta Caves. He offered to send Banks further remarks on the sciences and manufactures of India, adding that 'I often think that their arts improved by the practice of so many years might afford matter of Enlightenment and Instruction to the most enlightened philosopher of Europe.'[12] Scott was evidently encouraged at finding a receptive ear and in a letter of March 1792 wrote: 'I had the favour of your letter of the 17 March 1791 by the Essex, the last ship that arrived here from Europe. I was greatly flattered to find that what I had done was acceptable to you and that gave me encouragement to prosecute the subject I proposed to you.' Scott began with an account of the state of Indian medicine and surgery, which, like even the most ardent orientalists, he assumed had degenerated under centuries of despotism and war. Yet like William Jones and other writers with orientalist leanings, he acknowledged that Indians were the equal of Europeans in certain areas of therapeutics, including surgical operations such as the removal of cataract and lithotomy. The letter went on to give further details about Indian dyeing techniques and the manufacture of goods using local minerals. He ended with a promise to send some objects of scientific interest to Banks and by expressing a desire to publish his findings in England.[13]

Most of the other letters from Scott to Banks convey similar information about vegetables and minerals useful in manufacturing and the sciences, continually stressing their utility to Britain at a time of war with France.[14] In 1796, however, the subject matter of the letters changes, and Scott begins to relate what he believed to be the extraordinary effects of nitric acid used therapeutically:

> I have just heard of a foreign vessel being about to set sail for Europe and I embrace the opportunity of sending you a short account that I have just published of the effects of Nitric Acid on the human body. I have long made use of this active Agent and in a great variety of Cases I am persuaded that I have not been deceiving myself. … The Acid that I now employ for internal use is procured from a Mixture of three parts of Alum and one of Nitre.

He added:

> I have no objection to my name being used on this subject for I really believe that such a remedy would be highly useful to mankind if judiciously employed, especially in Warm Climates where a tendency to Animalization gives a particular character to all our diseases.[15]

While Scott wished to be acknowledged for what he believed to be a new chemical treatment, his initial claims were modest. At this point, there is no indication that he expected the remedy to be taken up with gusto in Britain.

Nevertheless, Scott sent with his letter a copy of an article detailing his experiments with nitric acid, which appeared in the *Bombay Courier* in April 1796. The article, which was dedicated to his superior Dr James Anderson, the Physician-General of Madras, began with an account of Scott's laboratory experiments on bile, which was then widely thought to be the chief agent in many of India's most deadly diseases. For some years British practitioners in India had subscribed to the view that hot climates tended to stimulate the production of bile, to a degree where it could not be absorbed in the process of digestion. This 'surplus' bile began to putrefy and was the root cause of many diseases including hepatitis, dysentery and remitting fever. By the 1780s the so-called 'biliary theory' was well entrenched and, with it, the practice of treating such diseases with large doses of mercury – mostly administered internally in the form of calomel (mercurous chloride) – which was thought to work by purging and salivating corrupt matter from the body. For most practitioners in India, the efficacy of mercury was a matter of faith and experience but Scott appears to have been the first to test this assumption using laboratory analysis. He described his experiment thus:

> In August 1793, I employed myself for some time in making experiments on the bile, a secretion that is connected in a great degree with many of the diseases of this country. I wished to unite some of the calces of mercury with the resinous matter of that fluid; for I imagined that I might discover some chemical affinity between those substances, and be able to see by what means this metal is so singularly qualified for removing obstruction of the liver.
>
> I had collected … a quantity of the resinous base of the bile of a buffalo, which I had separated very carefully from its soda, and from the lymphatic matter with which it is united. I had put a dram or more of this substance into a vessel, to which I added about half of the same weight of the red calx of mercury, with ten or twelve ounces of water. On heating the whole together I was surprised to observe, that the base of the bile became remarkably more soluble in the water.[16]

These results led Scott to conclude that obstructions of the liver were normally caused by the deposition of bile resin, which could be rendered soluble by 'Pure Air' (oxygen) contained in calces of mercury. Mercurial preparations were generally acknowledged to contain pure air, but Scott believed that he was the first to have found definitive proof of this. The efficacy of mercury, therefore, lay not in the metal itself, but in the principle contained within it.

It was this conviction about the therapeutic power of oxygen that led Scott to experiment with what he described as 'nitric acid' – the therapy with which he was to become associated internationally. As Scott put it:

> The experiments, that I had made on the Base of the Bile inclined me … to take myself a quantity of Pure Air united to some substance, for

> which it has no great attraction. I reflected on the different ways that are employed by Chemists to Oxygenate inanimate matter; for I believed that the same chemical attractions would produce a similar effect in the living body. … The Nitric Acid as may be supposed, was one of the first substances that occurred to me as fit for my purpose, for it is known to contain about four parts of Vital Air, united to one of Azote [nitrogen], with a certain proportion of water. … I was led besides to give preference to the Nitric Acid from observing, that it dissolves very completely the resinous Base of the Bile.[17]

Before Scott embarked on his intended course of experimentation, he read as much as possible on nitric acid and determined that it had been seldom used in medicine, save occasionally in very small quantities as a diuretic. In view of this, Scott did not think it right to experiment on others in the first instance and resolved to take the acid himself. 'I was particularly qualified to determine its effects,' he wrote, 'as I had reason for a long time before to complain of my Liver'. He began to take the substance in September 1793, mixing about a dram of the strongest acid he could procure with a quantity of water. He observed that he was 'happy to find, that I could finish that quantity in the course of a few hours, without any disagreeable effects from it.' From that day, Scott kept a journal, briefly recording the effects of the acid on his own body:

> 11th September, 1st day. Took at different times about a dram of strong nitric acid, diluted with water. Soon after drinking it, I feel a sense of warmth in my stomach and chest; but I find no disagreeable sensation from it, nor any other material effect.
>
> 2d. I have taken to-day a considerable quantity of acid, diluted with water, as much as I could easily drink during the forenoon.
>
> 3d. I have continued the acid. I feel my gums affected from it, and they are somewhat red, and enlarged between the teeth. I slept ill; but could lie for a length of time on my left side, which, from some disease in my liver, had not been the case for many months before. I perceive a pain in the back of my head, resembling what I have commonly felt when taking mercury.
>
> 4th. My gums are a little tender. I continue the acid as before. I still find a pain in the head, and about my jaws, like what arises from mercury. I perceive no symptoms of my liver-complaint.
>
> 5th. I have taken the acid; and always feel an agreeable sense of heat after drinking it. I spit more than usual.
>
> 6th. I continue the acid. I observe my mouth sorer to-day, and spit more.
>
> 7th. I think I am now sufficiently oxygenated. I feel my mouth so troublesome that I shall take no more acid.
>
> From this time my mouth got gradually well, and I found my health considerably improved.

Scott now supposed that he had found a remedy for the chronic liver disease that afflicted hundreds of his countrymen in India and after their return to Britain as 'tropical invalids'. Moreover, it was a remedy that had fewer unpleasant side-effects than those of mercury; and it should be noted in this regard that Scott was probably using what we now know as nitrous acid (HNO2) rather than nitric acid proper (HNO3), which is far more corrosive: the terms seem to have been used interchangeably. Scott was now emboldened to try the acid on some of his patients who were suffering from hepatic disease: not all were cured but many improved markedly. He moved next to the treatment of those suffering from 'tedious intermittents,' a kind of fever often connected with disease of the liver or spleen. He claimed that those who had been given nitric acid had 'recovered their natural colour from a leaden or bilious hue' and that they had regained their strength after a 'long continued weakness'. Indeed, he concluded that the acid might be used instead of mercury, which had hitherto been regarded as a specific to cure bilious, putrid or nervous fevers.

Having perceived similar effects to those of mercury – though with less serious side-effects – Scott began to wonder if nitric acid could be used to remove the various symptoms of syphilis. In September 1793 he persuaded his friend Dr Anderson to administer nitric acid in the treatment of syphilis cases from the 77th Regiment in Bombay. The trial was encouraging and Scott had achieved similar success with some cases that he had treated himself. He concluded that nitric acid was at least as good as mercury in treating syphilis, and in some cases better. 'We appear to be able to carry the degree of oxygenation of the body to a greater length by means of the nitric acid,' he believed, 'and to continue it longer than we can do by mercury.' But Scott was still cautious about claiming too much for nitric acid. He was well aware that some medicines that had acquired a reputation as specific cures had turned out to be disappointing. He was aware, too, that results could vary depending on the strength of the acid and he relied on taste to determine its potency. His method of administering the acid was to fill half or three-quarters of a Madeira wine glass with the acid and to mix it with two pints of water; a quantity sufficient for one day, taking a Madeira glassful at one time. Using this method, he claimed that he had removed syphilitic symptoms within a fortnight and sometimes in as few as five days. He confessed that he had failed in some cases, but these also happened to be intractable cases that had not responded to mercury either.[18] Scott was therefore keen that nitric acid be judged on the basis of rigorous trials. He had little time for theory and speculation and satirised the tendency of physicians to produce elaborate systems in his picaresque novel, *The Adventures of a Rupee* (1782), which was published shortly after he arrived in India. The conceit of the novel is that the narrator is a coin – an Indian rupee – passed from one master to the next, including Haider Ali of Mysore, who was then an adversary of the British. The novel was no doubt conceived as a way of supplementing his income but it is also a vehicle for Scott's views on medicine and politics. The

narrative contrasts the liberty enjoyed by English men and women with the 'oriental despotism' of Mysore and Haider's seraglio. Scott's knowledge of seraglios probably owed more to Montesquieu's *Persian Letters* than to first-hand experience, yet he writes of the indignities and oppression endured by Haider's wives. His strictures on liberty are later complemented by an attack on medical authority. In one chapter the hero is a surgeon's mate who cures empirically where his masters ('Dr Hypothesis' and 'Dr Proportion') fail. These men, both physicians on board a British ship, represent the hubris of physicians whose book-learned precepts prove incompatible with reality.[19] It was with some modesty, then, that Scott offered his opinion to Banks; he could hardly have expected that his paper would excite so much controversy.

Until now Joseph Banks had been quietly encouraging of Scott's endeavours but he found the experiments with nitric acid sufficiently interesting to secure the publication of Scott's *Bombay Courier* article in the new London-based medical journal, *Annals of Medicine*. The article was published in full in the 'Medical News' section of the journal in 1796, with a copy of the forwarding letter to Banks and a short comment from the editor. The initial of Scott's first name was mistakenly printed as 'W' rather than 'H' but otherwise the letter and article are exact copies of those sent to Banks from Bombay. The journal was no doubt excited by the prospect of a new remedy for one of the most common diseases afflicting the British Army and the Royal Navy, and one which had few of the disadvantages of mercury. If Scott's claims were correct, the implications were tremendous.[20]

The reaction to the publication of Scott's letter and article were almost immediate. A number of practitioners began trials with nitric acid straight away, the most prominent of the early attempts being the trials begun at the Royal Naval Hospital at Plymouth, which regularly treated patients with syphilis. These trials were conducted by a Mr Hammick, surgeon at the hospital, under the inspection of his friend, Mr Geach, the senior surgeon. Hammick selected the worst cases of syphilis that had been admitted to the hospital and administered nitric acid in 50 cases, with what he claimed was great success. The acid appeared to cure the disease in a short period regardless of dietary regimen, and with none of the harmful side effects of mercury. He found no instances of it having affected the gums of his patients, nor of vomiting or diarrhoea, unless patients were given too much at any one time. Excited by these discoveries, Hammick wrote to Dr Thomas Beddoes, founder of the Pneumatic Institute in Bristol, which had been set up with the aim of furthering the cause of medical reform. The Institute was established in 1798 in the wake of the French Revolution and excitement over the discovery of oxygen. Beddoes and his supporters – which included James Watt and Humphry Davy – hoped that oxygen could be used therapeutically to treat a wide range of diseases and that it would revolutionise the practice of medicine.[21] Beddoes thus responded enthusiastically to Hammick's first letter of 22 July 1797, sending him numerous pamphlets on the subject and encouraging further trials. In return, Beddoes secured publication of Hammick's

letter together with details of twelve cases involved in the trials, as a *Report, principally concerning the Effects of the Nitrous Acid in the Venereal Disease, by the Surgeons of the Royal Hospital at Plymouth, and other practitioners*, which appeared in 1797.[22]

I tried in vain to find more details of these trials in the records of the naval hospital in Plymouth but I did manage to elicit some information which has a bearing on this episode. The records indicate that a Mr Stephen Hammick was listed in 1796 as the hospital's dispenser rather than as surgeon, which places him in much the same position as Scott, who developed his interest in chemical therapies while an apothecary at the Bombay hospital. Both would have been experienced in handling chemicals and would have been in a position to obtain them more readily than most practitioners. With this in mind, it is interesting to note that in October 1796 Hammick issued an order for the supply of concentrated vitriolic acid of nitre to be used on four naval vessels due for overseas service. It is likely that the ships were supplied with the acid to be used as a fumigant in the event of an outbreak of fever, but Hammick may have obtained sufficient acid from these supplies to conduct his own experiments. By January 1797 Hammick had been promoted to the post of surgeon at the hospital and was now in a position to conduct trials with the acid under the supervision of his superior, Francis Geach.[23]

Hammick and Geach later wrote to Beddoes expressing their gratitude, adding, in September 1797, that:

> Since we have had the Honor [sic] of writing to you, we have found it effectual in the Gonnorhoea, after the discharge began to thicken, and then we have successfully injected four times a day, the nitrous acid about five drops to eight ounces of water.[24]

Beddoes sent this letter and details of the experiments carried out in Bombay and Plymouth to some of his friends, including James Watt, in whose archive I discovered the letters. Beddoes forwarded the information to his long-standing acquaintance after Watt had expressed an interested in the application of pneumatic chemistry to medicine. Among the enclosures was a circular letter which Beddoes later published in a number of medical journals as an inducement to other practitioners to emulate the work of Scott and Hammick. He added that some other surgeons had already done so, and that there were now – by September 1797 – some 100 cases that had been cured 'beyond all reasonable doubt' by the cid. He went on: 'By the co-operation of practitioners, a thousand cases might soon be collected. And it is hoped that you will not refuse your assistance. If profits accrue they shall be divided among charitable establishments for venereal patients.' Beddoes requested that any such reports should be sent to his publisher, Mr Johnson, bookseller of St. Paul's, Bristol.[25]

In view of the large number of venereal patients treated in naval and military hospitals, it is not surprising that Army surgeons were quick to follow their counterparts in the Navy. One such was William Cruikshank,

who was both a chemist at the Royal Ordnance and a surgeon with the Royal Artillery. Cruikshank was eager to satisfy himself of the veracity of Scott's claims about nitric acid and the extent to which its therapeutic efficacy was due to its containing oxygen. He administered nitric acid to four patients suffering from syphilis, and other substances thought to contain large amounts of oxygen to two other groups of patients; one group of four being treated with oxygenated muriate of potash, the other group of three, with citric acid. The patients in all three groups were discharged as cured, leading Cruickshank to the conclusion that nitric acid and all other oxygenated substances might be usefully employed in cases of syphilis.[26]

But soon those who experimented with nitric acid began to report less uniformly favourably results; indeed, some practitioners denounced the practice. As the *Annals of Medicine* put in 1798,

> The use of nitric acid for the cure of the venereal complaints, has of late attracted more notice than any other new practice. While some men of distinguished eminence [i.e. Beddoes] are strenuous advocates in support of it, others, of no less high reputation, have no scruple in representing it as inefficacious, and even as pernicious.[27]

Some of the hostility came from practitioners – predominantly physicians – who had doubts about any new remedy touted as a 'specific', almost as a point of principle. Others came to doubt the efficacy of nitric acid after subjecting it to systematic trials. William Blair, surgeon of the Lock Hospital and Asylum at Finsbury in London had mixed results when he tried the acid on his syphilitic patients. Although some cases appeared to be cured by the acid, others were not, or relapsed after an initial disappearance of symptoms. He was led to conclude that nitric acid probably counteracted the venereal poison to some degree but that it was usually necessary to supplement its use with mercury. Indeed, in some cases, the acid seemed to have no effect at all.[28]

Less favourable still were the opinions of James Currie, FRS, an Edinburgh-trained physician of some standing, who had practised in the West Indies before taking up the post of Physician at the Liverpool Infirmary. Induced to try the nitric acid by the apparent success enjoyed by Helenus Scott, Currie concluded that the success of the remedy had been 'exaggerated by a warm imagination', as the *Annals of Medicine* put it in a review of Currie's 1797 work on fevers.[29] Unlike most other practitioners, who had used nitric acid in cases of syphilis, Currie administered it in cases of yellow fever, which was then commonly treated with mercury, by the British at least, the French still resorting to bleeding. Since nitric acid appeared to be a substitute for mercury in other diseases, Currie reasoned that it might also be efficacious in fevers, but was ultimately disappointed.[30] Scott appears to have been hurt by these criticisms. He wrote to Banks in 1799 saying that he had 'no great inclination to appear to the world in the light of a mistaken enthusiast and I still believe I shall be able for the benefit of mankind to establish what I have

asserted.' He continued, 'I think I can now assert from more experience in the nitric acid that the failures that have occurred in venereal cases have arisen from the remedy being administered in an insufficient quantity'. As an alternative, he recommended introducing the acid into the body via the skin, by means of a bath, which enabled the quantity of the acid to be increased above the dose that could be safely taken internally.[31] After this letter, Scott does not appear to have to written to Banks again on the subject of nitric acid, confining himself to other topics, such as his praise for Edward Jenner's vaccination, and his belief that the older practice of variolation had caused many deaths in India.[32]

Scott's treatment with nitric acid might have continued to inspire many more trials in Britain had it not been for what proved to be a decisive intervention by John Pearson, Senior Surgeon of the Lock Hospital and Asylum at the Public Dispensary in London. Pearson subjected a wide range of substances touted as cures for venereal disease to trials among his patients. Pearson began his trial of nitric acid at the Lock Hospital at the beginning of 1797, following the publication of Scott's letter to Banks. In 1800 he provided details of 15 cases treated with acid at his Lock Hospital and of trials conducted by Dr Mathew Baillie, Physician at St George's Hospital, by Dr Marcet, Physician at the London Dispensatory, and by a Dr Ramsbottam of Wakefield, Surrey. These trials led him to conclude that nitrous acid did not cure venereal disease permanently, even though it may have temporarily removed some its symptoms; nor did it assist the action of mercury. Its sole benefit, as far as he could see, was that it promoted the appetite and reduced salivation when mercury was administered.[33] Other critics, such as Blair, also acknowledged that the acid could offset some of the unpleasant side effects of mercury, including allaying salivation. On this basis, a number of practitioners, including Thomas Dancer of Jamaica, were induced to try it alongside mercury in the treatment of certain fevers.[34]

Pearson's *Observations on the Effects of various Articles of the Materia Medica, in the Cure of Lues Venerea* was well received in the medical press. A reviewer in *The Medical and Physical Journal* declared that:

> This work is extremely well calculated to calm the agitation in the minds of those, whose opinions have been unsettled on the treatment of the Venereal Disease, since the introduction of the new remedies. The situation the respectable author has long held, gives him full claim to the confidence of the public; and the work evidently shews [sic] that it is the production of a mind well adapted for careful observation and sound judgement.

the implication being that both had been lacking in many previous observations on the nitric acid and other modish therapies.

But Beddoes continued publicly to support Scott's contention that nitric acid was a cure for venereal disease: after all, the two had much in common: both had radical sympathies and had been pupils of Joseph Banks at

Edinburgh. In a letter to the *Medical and Physical Journal*, in May 1800, he stated that trials conducted at the Pneumatic Institution had proved nitric acid to be 'strikingly efficacious'.[35] As to the issue of relapses, Beddoes later admitted that these sometimes occurred, but less frequently than was the case with mercury.[36] By the late summer of 1801 Beddoes was evidently frustrated that the nitric acid cure upon which he had staked his reputation – and that of his Institute – was running out of steam. In another letter to *The Medical and Physical Journal* he bitterly attacked Pearson and declared that he was 'impatient that it should be known to the public, whether careless management, with foul play and an insufficient range of powers, occasioned the loss of many lives, and the destruction of many constitutions, which acids would have saved.'[37] He appended a plan for 'Public Scrutiny of certain Medicines, lately proposed as anti-venereal, at the Pneumatic Institution near Bristol'. Through this, he hoped to open trials of various acids to public scrutiny. 'It remains that the Inquiry be unexceptionably conducted,' he added, 'so that Europe may be no longer defrauded of that benefit from acids which India is unanimously attested to enjoy. All doubt as to the nature of the cases must be obviated'. Beddoes suggested that each case should be verified by no fewer than three physicians before the trials took place and that 'the public must be satisfied that the medicines alleged are administered, and no others' and that 'A person worthy of confidence, must … be engaged to superintend the treatment'.[38]

Beddoes appears to have received little support for the scheme, as I have been unable to find any more references to it in contemporary medical journals, and strangely, there is no mention of the entire episode in Roy Porter's life of Beddoes. Still, a few practitioners continued to speak up for nitric acid, though mostly with less enthusiasm than before. Dr T. Vage informed *The Medical and Physcial Journal* that:

> Among what are termed new discoveries, the nitric acid seems to claim the chief regard; for although it is not adequate to a perfect cure in confirmed cases, yet if given at proper intervals it very much prevents some of the ill effects of mercury, particularly upon the teeth and gums, and the debility of the digestive viscera.

He therefore concluded that nitric acid was best given alongside mercury, where it could be used to cure not only venereal complaints but cases of scrofula and cancer.[39] The most enthusiastic reports came from outside Britain. A correspondent from India claimed that Scott had recently cured one of his servants of venereal disease using a bath containing nitric acid. He had heard of two other such cases, in which Scott had apparently effected lasting cures on Indian servants. The fame of nitric acid had spread outside the British Empire, too. Professor Wurzer of Bonn claimed to have cured cases of venereal disease with nitric acid after mercury had failed. But another German physician, Professor Huseland, was more measured, claiming that it

proved effective only in treating the 'morbid remainders' of venereal disease, rather than the disease proper.[40] After 1802 the British medical press carried very few reports about nitric acid; or at least, I have yet to encounter them. The medical profession in Britain appears to have grown weary of such claims and, though nitric acid was never entirely discredited, the authoritative trials by Pearson and distinguished physicians such as Baillie – a royal physician respected for his work in morbid anatomy – ultimately counted for more than loud proclamations by Beddoes and the opinions of practitioners overseas.

Yet nitric acid was not ignored altogether. It remained popular with some practitioners in the tropics until at least the 1820s, who, like Colin Chisholm, claimed that:

> It is beyond all doubt that oxygenated medicines, particularly the oxymuriate of potass [sic] and the nitric acid, are possessed of much greater powers in hot than in cold climate – in the East and West Indies than in Great Britain. I can assign no satisfactory cause for this, but the fact is indubitable.

Indeed, Chisholm 'fully confirmed' the claims of Scott during trials conducted at the hospital under his charge in Martinico.[41] He had also begun to experiment with Scott's method of using a nitric acid bath to treat a range of disorders, although he had not yet sufficient evidence to extend an opinion of its worth.[42] Chisholm was no crank but one of the most respected members of the British Army's medical establishment, being Inspector-General of Ordnance Hospitals in the West Indies, a Fellow of the Royal Society, and an honorary member of learned societies in Switzerland and America. Nevertheless, nitric acid was now clearly a 'tropical' remedy, of use only in certain climates. Its brief fame as an alternative to mercury was at an end.

What, then, is its significance in the history of British medicine? As I indicated in the introduction, I believe that this episode – when taken alongside other such examples – should lead us to reconsider the role of the colonies in the development of British medicine. Nitric acid was probably the last of a long line of remedies that came to prominence in Britain due to the recommendations of practitioners working in the colonies. A few decades earlier, the growing popularity of mercury as a remedy for non-venereal afflictions owed a great deal to such contacts. The colonies were vitally important centres of innovation in their own right, and should be seen as central rather than peripheral to the development of British medicine, especially in the period up until 1820 or so. The colonies provided new challenges, freedom from intellectual and other constraints, and, above, an attitude of mind which prized empirical observation and independence from metropolitan authorities. Previously obscure practitioners such as Scott often played an important part in this process, reinforcing a point by Maehle in his study of eighteenth-century experimental pharmacology.[43]

Second, I should like to stress the importance of the informal, horizontal connections between colonial and metropolitan practitioners, in addition to the more hierarchical and centralised ones, operating through the offices of the EIC and the seemingly all-powerful figure of Joseph Banks. Together with these we must consider various overlapping networks of communication that tied colonial practitioners to others of a reformist cast of mind. In this paper I have spoken about the connections between Scott and Beddoes' circle, who were dedicated to reforming medicine through pneumatic chemistry. But I could have pointed to many other such links between colonial practitioners and various members of the Lunar Society, for instance, or with various medical and philosophical societies established throughout Britain and overseas. In a more limited way, too, I hope I have filled in a missing part of the history of Beddoes and his pneumatic institution. The demise of nitric acid was symbolic of Beddoes' failing influence in the years after the revolutionary Terror and the beginning of the war against Bonaparte. Radicals like Beddoes grew disillusioned and their influence waned; so too did enthusiasm for many of the practices associated with them. Scott's political radicalism is also interesting in this regard. An ardent champion of American independence, he advocated freedom from arbitrary authority and tradition in politics as well as in medicine. In this respect he was by no means alone and embodied one of the main paradoxes of that phase of British expansion in India: that the pursuit of liberty was seen as compatible with – and indeed promoted by – a new despotism in the form of Company rule.

Notes

1 Like many other surnames during this period, one encounters different spellings of Scott's surname, which is sometimes, as in the forward to his novel, spelt with a single 't'.
2 E.g. Lucille H. Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanical Gardens* (New Haven and London: Yale University Press, 1979); John Gascoigne, *Joseph Banks and the English Enlightenment: Useful Knowledge and Polite Culture* (Cambridge: Cambridge University Press, 1994);John Gascoigne, *Science in the Service of Empire: Joseph Banks, the British State, the British State and the Uses of Science in the Age of Revolution* (Cambridge: Cambridge University Press, 1998); Richard Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (New Haven and London: Yale University Press, 2000).
3 David Wade Chambers and Richard Gillespie, 'Locality in the History of Science: Colonial Science, Technoscience, and Indigenous Knowledge', in Roy Macleod (ed.), *Nature and Empire: Science and the Colonial Enterprise*. Osiris, 15, (2000), 221–40.
4 Mark Harrison, 'From Medical Astrology to Medical Astronomy: Sol-Lunar and Planetary Theories of Disease in British Medicine, *c.* 1700–1850', *British Journal for the History of Science*, 33 (2000), 25–48.
5 Scott to Balfour, 6 May 1801, cited in Francis Balfour, 'Observations respecting the remarkable Effects of Sol-Lunar Influence in the Fevers of India; with the

Scheme of an Astronomical Ephemeris for the Purposes of Medicine and Metereology,' *Asiatick Researches*, VIII (1808), pp.21–22.

6 Ibid., p.22

7 Biographical details from Helenus Scott, *The Adventures of a Rupee. Wherein are interspersed Various Anecdotes Asiatic and European. A new Edition to which is prefixed Memoirs of the Life of the Author and to which there are annexed, His Remarks concerning the Inhabitants of Africa* (London: J. Murray, 1783 [1782]), pp.i–x.

8 Letter from 'Helenus Scott, Apothecary' to the Hospital Board, 3 October 1787, Bombay, Hospital Board Diary, 1787–89, vol.289, pp.40–42, Maharashtra State Archive, Mumbai [hereafter MSA].

9 Scott to Governor of Bombay, 2 April 1790, Bombay, Public Department Diary 1790, no.96, Part II, pp.228–29, MSA.

10 Ibid, p.229, 233.

11 Scott to Hospital Board, 9 February 1792, Public Department Diary, 1792, no.100, Part II, pp.222–25, MSA.

12 Scott to Banks, 7 January 1790, Add MSS 33979, Banks Correspondence, 1765–1821, vol. III, ff. 1–13, British Library [hereafter BL].

13 Scott to Banks, 14 March 1792, ff.127–30, ibid.

14 E.g. Scott to Banks, 7 February 1792, f.135, 8 January 1794, ff.233–35.

15 Scott to Banks, 6 May 1796, Add MSS 33979, Banks Correspondence, vol.IV, ff.16–17.

16 Helenus Scott, 'Account of the Effects of the Nitrous Acid on the Human Body,' *Bombay Courier*, 30 April, 1796, enclosed in a letter to Banks, 6 May 1796, f. 18, ibid.

17 Ibid., ff.18–19.

18 Ibid. f.19.

19 Scott, *Adventures of a Rupee*, p.89.

20 *Annals of Medicine*, 1 (1796), 373–86.

21 Roy Porter, *Doctor of Society: Thomas Beddoes and the Sick Trade in Late-Enlightenment England* (London and New York: Routledge, 1992), p.17.

22 Thomas Beddoes (ed.), *Reports, principally concerning the Effects of the Nitrous Acid in the Venereal Disease, by Surgeons of the Royal Naval Hospital at Plymouth, and other practitioners* (Bristol: J. Johnson, 1797).

23 Private minutes and memoranda of Capt. Richard Creyke, Governor of the Royal Naval Hospital, Stonehouse, Plymouth, 1795–99: list of staff, 1796; entries of 6 October 1796 and 21 January 1797, Plymouth and West Devon Record Office.

24 Mr Hammick, Royal Naval Hospital, Plymouth, to Dr Beddoes, 29 September 1797, Papers of James Watt, JWP W/9 (reel 22), Birmingham City Archives [hereafter BCA].

25 Beddoes to Watt, February 1798, enclosing circular letter on nitric acid, 5 September 1797, JWP W/9 (reel 22), BCA.

26 William Cruickshank, *The Results of the Trials of various Acids, and some other Substances, in the Treatment of Lues Venerea* (London: C. Dilly, 1797).

27 *Annals of Medicine*, III (1798), p.91.

28 William Blair, *Essays on the Venereal Disease, and its Concomitant Affections. Illustrated by a variety of Cases. Essay I. Part I. On the Antivenereal Effects of the Nitric Acid, Oxygenated Muriate of Potash, and several analogous remedies, which have been lately proposed as substitutes for Mercury* (London: J. Johnson, 1798), chap.4.

29 *Annals of Medicine*, III (1798), p.3.

30 James Currie, *Medical Reports on the Effects of Water, cold and warm, as a remedy in Fever and Febrile Diseases, whether applied to the surface of the Body,*

or used a drink; with Observations on the nature of Fever, and on the Effects of Opium, Alcohol, and Inanition (London: Cadell and Davies, 1797).
31 Scott to Banks, 20 January 1799, ff.20–21.
32 Scott to Banks, 12 October 1800, f.22.
33 John Pearson, *Observation on the Effects of Various Articles of the Materia Medica in the Cure of Lues Venerea: Illustrated with Cases* (London: Callow, 1800), pp.154–83.
34 Thomas Dancer, *The Medical Assistant; Or Jamaica Practice of Physic: Designed Chiefly for the Use of Families and Plantations* (Kingston, Jamaica: Alexander Aikman, 1801), p.82.
35 Beddoes to Dr Bradley, editor of *The Medical and Physical Journal*, 'Medical Intelligence', 3 (May 1800), p.486.
36 Beddoes to editors of the *Medical and Physical Journal*, 12 December 1800, 4 (January 1801), pp.71–72.
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3 The construction of disease transmission in nineteenth-century Egypt and the dialectics of modernity

Anne Marie Moulin

The transmission of disease has remained an open debate in the Moslem world, in relation to Koranic and Hadith sources. Documented advice to military leaders (inspired by the Sunna) that they should avoid foreign countries plagued with epidemics, or refrain from leaving the infected places, are attested in the beginning of the Islamic expansion in the Middle East.[1] The mention of Bedouin shepherds segregating mangy camels is also frequent. On the other hand, those who die during epidemics can be assimilated to *shuhadâ* (martyrs),[2] submission to divine decrees is generally recommended, and this submission, dubbed fatalism, has been frequently addressed by Western travellers and orientalist studies.

In 1827, Antoine Barthélemy Clot, a French physician who sailed to Alexandria to organise the medical staff in Egypt[3] was not ready to adopt this interpretation of the Moslem attitude. He was ready to decipher it not as a testimony of archaic resignation but as a profound understanding, based on daily observations, of the true epidemiologic facts, which were still waiting for a rational coherent and global interpretation, undoubtedly the one that was contained in his personal books, that followed behind him, on a different ship.

In Egypt, in the first half of the nineteenth century, during Mohammad 'Ali's reign, there occurred a confrontation that challenges the currently received ideas on modernity and modernisation in the East. This confrontation was a meeting between the ruler of Egypt, the reformist pasha Mohammad 'Ali, and the French physician Antoine Barthélemy Clot who had been requested to come, to improve the sanitary situation of the army.

The debate involved the management of epidemics, and the most frightening of all, plague, 'to call it by its name' (La Fontaine). The answers to practical questions of quarantine and isolation measures in times of plague and cholera, given respectively by the pasha and Clot, differed profoundly, reflecting, in the latter case, scientific entrenched convictions on the nature of contagion and, in the former, pragmatic observations associated to a shrewd sense of the 'raison d'état'. This debate on the nature of plague and the means of prevention illustrates the complexity of the public health choices in the epidemiological context, and the difficulty of unravelling the pathways of the disease.

I will comment on the flexibility of the so-called epidemiological facts, that can accommodate different theories and on the 'construction of disease transmission' in the historical context of nineteenth-century Egypt. I will comment further on the polysemy of modernity and the variability of its significations. The definitions of modernisation and modernity continue to be agitated today in Islamic lands, where the adoption, appropriation and interpretation of scientific modernity[4] are important assets, mobilised by various social groups.

Plague in the East

At the beginning of the nineteenth century, Europe had remained free from plague for many years, after the last epidemics of Marseille (1720), although there were recurrent bouts of the disease in Denmark, Germany and Russia (there was a big epidemic in Moscow in 1771). This success was attributed by the authorities, both political and medical, to the organisation of a network of lazarettos on the shores and inside the land, and the observance of quarantine and segregation imposed in their harbours.[5] The occasional cases observed were considered as imported from the East of the Mediterranean.

Egypt, officially a part of the Ottoman Empire, was considered as one of the major seats of plague.[6] When the French invaded Egypt in 1798, they faced such a terrible epidemic,[7] that they tried to stop it by improving certifications of death and supervising burial procedures. But such intrusive measures from the invaders were resented by the population that fled massively from Cairo. The French rapidly lost all hope of avoiding panic and controlling the epidemic. The famous picture 'Stricken by the plague in Jaffa' by Géricault shows Napoléon Bonaparte, son of the Enlightenment, fearlessly touching the patients. Yet the plague challenged the conquerors and contributed to their military defeat.[8]

The Pasha of Egypt, Mohammad 'Ali, did not forget the political lesson of the French failure, when he came to power. Although not an expert in sanitary matters, Mohammad 'Ali had witnessed the extinction of plague in Western countries and heard about its alleged link with the quarantines in harbours and the erection of lazarettos. He was firmly determined to modernise his country, for which he fostered great ambitions of industrialisation and territorial expansion.

Consequently, not only did he call for foreign doctors to reorganise the military hospital of Abou Zabel, in the suburb of Cairo, and to create a medical school initially intended for his army,[9] in 1831, he ordered the building of a lazaretto in Alexandria,[10] located on the customs territory, where the ships came ashore, which he staffed with European officers. In 1832, during the epidemic of cholera, he had the warships and garrisons submitted to severe quarantines. He created a Sanitary Board (Conseil de santé), mainly composed of representatives of the European commercial interests and of foreign medical experts. In other words, he acknowledged the technical superiority of the West in sanitary matters, and the necessity of

organising the containment of plague in his country, on the coast and inside the land, on the European model, and made a compromise between the various interests at stake by letting the foreign consulates have a seat by the side of the medical experts.

Until the end of his reign in 1849, the pasha firmly stuck to the rule of quarantines, despite the personal opinions of the man he had appointed to the chief medical functions in his own country and who has remained a key medical figure of Egypt of the nineteenth century, through his monumental *Aperçu général de l'Egypte*,[11] that is still a source book on the history of the country.

The pasha is a great figure at the level of popularised history. He contributed himself to insure his fame in the future. The historian Khaled Fahmi has portrayed how Mohammad 'Ali literally dictated his memoirs to his Western visitors and encouraged them to propagate a view of his character as a bold and integral westerniser.[12] Despite the strategies displayed by Mohammad 'Ali to seduce his visitors, the texts of contemporary witnesses collected by Sarga Moussa[13] reflect the perplexities of the travellers in front of the pasha: 'barbarous or civilized?' (or both?) was the question that came forcibly to their minds: 'there was never a more grandiose show (than his reign), yet with the most bizarre features.'[14] Clot was certainly, not unlike the other travellers and expatriates in Egypt, fascinated by the character of his patron. Although he has probably exaggerated his familiarity with the pasha, in order to emphasise the importance of his own position, he came to know him fairly well. But he depended heavily on his protection and liberality and did not hesitate to request favours when he judged it necessary. The pasha had a special gift to discern in the people surrounding him, especially the foreign experts, 'a nervous papilla' which he did his best 'to discover and titillate'.[15]

Clot was not the first foreign physician appointed by the pasha, but he became the first director of the medical school at its creation in 1828. He organised the teaching, and had to invent textbooks for the students, so that they could study the fundamentals of medicine in their own language, Arabic. Arabic and not Turkish, an important decision, since Osmanli Turkish remained the language of higher administration and of the army for drilling practices. This introduction of Arabic as the language of training for upper functions meant the beginning of the arabisation of the elites, beyond the circle of religious and legal studies.

These books were translated or rather compiled from texts provided by Clot from his personal library brought from France. The translation was made by a small group, composed of scholars from Al Azhar, the famous religious university founded by the Fatimids to spread their faith, and polyglot interpreters, most of whom were 'zimmis' and belonged to so-called protected religious minorities. Relatively distant from Mohammad 'Ali's piercing gaze, but not to the point of forgetting his orders, we can imagine the scientific circle at work. Among the Azhari scholars, the most famous were Tahtawi, who, after being sent to Paris in 1828 wrote *The Gold of Paris* after his

return, and the Sheikh Al Attar, who issued the *fatwa* authorising dissection. They debated passionately on the choice of medical terminology: was it preferable to adopt or coin new words, to draw from terms used by Razi or Ibn Sina, or of more recent import, to transliterate from the Greek or other languages or adapt more freely appropriate metaphors?[16]

Clot, a son of the French Revolution

Clot was a genuine son of the French Revolution. Born in Grenoble, in 1790, he trained at Marseille in hospitals before joining the Faculty, and his initial education bore some striking analogies with the barbers who in the Renaissance had produced such men as Ambroise Paré.[17] After the traditional medical faculties were banned in 1791, at the beginning of the Revolution, the profession was dismantled, the teaching stopped being controlled, and it was a period of unfettered quackery and amateurism. This was followed by a reorganisation of the profession during the first years of the Empire. During this period Clot became a health officer, and then he defended his thesis at Marseille and became a qualified doctor. Perhaps either his rapid social rise or his character displeased some colleagues, anyway for various reasons, he was more than happy to accept the invitation from Jomard, the French representative in Egypt and sail to the land of the Pharaohs, where he spent more than thirty years.

Clot belonged to the romantic generation. He passionately believed in Reason and Progress. He was a romantic son of the Enlightenment philosophers. He shared with them a great confidence in the powers of reason and in scientific revolutions which would dismiss prejudices and ignorance.

Clot was a sanguine follower of the 'médecine physiologique' of François Broussais. Broussais, a strong Republican and a staunch opponent of the Restoration, had marked his generation by his conviction of having shaken the false foundations of medical knowledge and restored a scientific method. His medical ideas have been often cartooned and presented in a simplistic way. Broussais was a materialist and he wanted to extol the medical art to the dignity of a science.[18] He wanted to build up a system, based on postulates and composed of laws that framed pathological as well as physiological phenomena without any demarcating line (the so-called Broussais principle, later combated by Claude Bernard). He qualified excitability as being the fundamental property of living matter. According to him, all diseases were various forms of inflammation originating at the intestinal level and being cured by diet and bloodletting.

Idolised by his student, for both his scientific teaching and his political stance against the Restoration, Broussais has been relegated to oblivion by the following generations. Yet his doctrine needs to be revisited, and his emphasis on a physiological medicine, paying attention to the symptoms and trying to alleviate them rather than waiting for the minute of truth, the post-mortem dissection, deserves more than a contemptuous mention.

Clot was a follower of Broussais and his 'Médecine physiologique'. He contributed several papers from Egypt to his master's journal, *les Annales de médecine physiologique* from their beginning in 1824. He was convinced that with Broussais's system, he was bringing to Egypt a scientific revolution that would transform medical practice and would dramatically lower mortality figures in hospitals.

For many centuries, the word revolution had mainly referred to the cyclic changes in the celestial vault. The term had come recently to point to oriented directional changes in the sublunary sphere: political revolutions had assumed the new meaning of a sudden and profound transformation, hopefully for the better, illustrated, at least for its supporters, by the great episode of 1789. In 1804, Cabanis with his *Coup d'oeil sur les révolutions et la réforme de la médecine* (A glimpse on revolutions and the reform of medicine) offered a space for semantic contamination between political revolutions and scientific reforms.[19] The romantic generation, to which Broussais and his pupil Clot belonged, nurtured by the glorious epics of Revolution[20] and Empire, adhered to the empowerment of man by reason and to a subversion of tradition pursued in the domains of knowledge. Surgeons were very sanguine in this respect, perhaps because of their extensive experience in the field. Military surgeons had operated so actively that they had reached a high level of dexterity and anatomical knowledge, in a context of emergency operating on the bodies of young people, who were resistant to pain and infection. Even in Tory England, doctors not being suspect of sympathies for the French Revolution also called for a mental revolution that would shake received ideas and would facilitate innovation, as illustrated by the obstetrician James Blundell. In 1828, Blundell started advocating the use of transfusion for post-delivery haemorrhages[21] and pleaded the doctor's privilege of causing, for the sake of science, a few casualties, a low figure indeed compared to the sacrifices of the recent imperial wars.[22]

Not surprisingly, and the paradox is crucial for this chapter, in the textbooks produced for the new Medical School of Cairo, we hardly find any mention of a revolutionary scientific doctrine. The word medical revolution still bore the brunt of the political uprising that had inspired it. The director of the translators' group, Rifa'i Tahtawi when staying in Paris had personally watched the Revolution of 1830 in Paris and had come to know the new 'Citizen-King', Louis Philippe. He described the Parisian riots in his Memoirs. We can only speculate on the impact of the street fighting on the young Egyptian, when we see today that there is no equivalent for the word barricade[23] in the Egyptian vernacular.

In 1824, when Clot[24] set foot on the Egyptian soil in Alexandria, he was a devout follower of his master Broussais' revolutionary doctrine of 'médecine physiologique'. Now, coming to the particular point of contagion, what appeared as revolutionary in Broussais's doctrine?

In 1823, the coming cholera appearing in the East of Europe had shaken the confidence of doctors in the improvement of the sanitary status of populations. An epidemic of yellow fever in Gibraltar in 1828 had also reactivated the

fears of ancient plagues. Yet on the eve of 1832 cholera, it was usual to celebrate the great medical advances among the members of the profession.

The triumph of the defenders of civil freedom in overturning the reactionary King Charles X, who was believed to have acted against the social gains of the French Revolution, had some consequences in the domain of public health by giving the upper hand to those who contested the contagious character of some epidemic diseases, such as plague (but not smallpox), both for political and scientific reasons. Broussais embodied this tendency, which associated confidence in reason and freedom of speech and behaviour and minimised the role of direct human transmission in most epidemics. In the Academy of medicine, there was a majority in favour of the non-contagious character of most diseases falsely represented as such (among which plague figured prominently). In France, the *circulaire* of the 1st of May 1832, a few months before the epidemics of cholera, confirmed this tendency.

While Clot admitted that smallpox was highly contagious from man to man, he claimed that plague was not easily communicated in that way. During the epidemic that occurred in Cairo in 1835, he demonstrated his denial of contagion by having himself publicly inoculated with plague pus drawn from a bubo. It was not so much to investigate a preventive mode of inoculation, in the spirit of what had been in fashion for smallpox,[25] he offered himself to this experimentation, in order to impress those who surrounded him and the population by his cold determination to ignore contagion and oppose the panic created by the fear of epidemics. Clot advertised the fact that, although they did not protect themselves in any particular way, doctors in charge of the patients generally did not fall ill. (This was contrary to the current observation in Europe that the religious orders or the professionals in contact with the sick were usually subject to impressive losses.)

Clot's attitude was not only founded on his liberal doctrine of social life but also on genuine epidemiological observations, and the inability of the contagion theory to accommodate all data. In fact, since the fifteenth century, in a way illustrated by the *Compendium* analysed by Danièle Jacquart,[26] doctors had repeatedly emphasised the importance of the host's condition in the onset of the disease. But Clot's advice on diet and his emphasis on psychological balance as opposed to hysterical fears analogous to 'peurs bleues' generated by cholera,[27] predisposing the body to the disease before the beginning of the epidemic, were clearly an offshoot of the doctrine of 'physiological medicine'. His recommendation of bloodletting, as a prophylaxis, as a treatment and a consolidation of the cure, reflected the central tenet of Broussais's doctrine, his concern for plethora as the unique cause of most pathological disorders, variously named herpes, cancer or erysipelas.[28]

The work of Clot on plague

The treatise on Plague by Clot in French is an impressive work of more than 300 pages,[29] with chapters on aetiology, prophylaxis and treatment, which

includes a historical survey of plagues but mainly contains his observations related to the plague of 1835–36 in Egypt. According to his description, the 1835 epidemic was a bubonic plague, characterised by high fever and the presence of lymph nodes (buboes), in the groin or the armpit. This is important to note, since we acknowledge today[30] that bubonic plague is not directly transmitted from man to man, but requires the intervention of biting fleas, the rat fleas and the human fleas.[31]

Clot's description is remarkable for the precision of his clinical descriptions. Most patients registered were soldiers (the other patients were too frightened of dying in hospitals and having their bodies dissected there). They were hospitalised either at Abou Zabel in the suburb of Cairo or in the Esbekiyeh hospital in central Cairo. They were received in common wards, sometimes exceptionally under 'tents'. Doctors went in and out in normal dress, without any special precaution and moved from plague-stricken patients to other types of patients. The dissection room was contiguous to the wards, and after the patient's death, doctors rushed to the theatre to observe the pathological phenomena as quickly as possible. They performed numerous dissections without changing clothes, washing their hands or using any kind of disinfectant.

Clot was a contemporary of the famous Austro-Hungarian Ignaz Semmelweis, who favoured hand washing after dissection before examining living women, in order to avoid infecting them with puerperal fever. Certainly, Clot ignored his work, and anyway Semmelweis died without having convinced his colleagues, in a lunatic ward. He was rehabilitated only two generations later, with the rise of Listerian and Pastorian doctrines of antisepsis and asepsis. Clot's intrepidity or carelessness, whatever we may call it, is nonetheless amazing. He himself has told how he used to fondle his daughter when he came back home harassed after long nightmarish days and nights on duty, without even taking the time to change his clothes or wash himself. He displayed an uncommon zeal at his patients' bedsides. Such behaviour was not necessarily the rule. Clot levelled sharp criticisms to those colleagues (undoubtedly there were some), who deserted the field at the advent of plague.

Clot's account provides a glimpse of daily life in hospital wards. Medical activity there seemed to be similar to what happened in European hospitals at the same time. Drugs administered ranged from opium (laudanum) against diarrhoeas to herbal teas (camomile or valerian) and lemon juice, which was advertised at the time of cholera. Nothing in this pharmacopoeia, dating back to the Arabic tradition, differed conspicuously from the European remedies. Bloodletting and cupping with scarifications (*hagama be-s sart*) were currently practised. The main difference between European and Eastern hospitals lay in the development of anatomo-pathological knowledge, acquired on the basis of extensive dissections and also in human experimentation, conducted on the patients and staff, or occasionally, on condemned people.

The plague epidemic of 1835 was probably a predominating or exclusive form of bubonic plague, as buboes in various locations in the groin, armpit

and neck are repeatedly mentioned in the clinical description. The mortality rate was relatively low, which also suggests a bubonic form of plague, since we know that the pulmonary form of plague induces a fatality rate approaching 100 percent.

Notwithstanding his claim in favour of a sweeping change in medical ideas, Clot clearly registered the 'natural history' of the disease, within the descriptive Hippocratic frame. The disease originated and developed in a way reflecting the individual's constitution, and the doctor limited himself to observe the prodromes and the onset of the 'crisis', when the disease was 'judged' (the original meaning of the Greek word *krisis*): it means that symptoms reached a peak on a certain day, when the patient either died or survived. The Hippocratic crisis is still mentioned in our contemporary clinical books[32] but has usually been bypassed by antibiotic therapy, which shortens and deviates the spontaneous course of the disease. Clot emphasised the attention due to facilitating the doings of Nature and the importance of helping the cure by exempting the patients of hard work until complete recovery (it was certainly not obvious to obtain it with impoverished people or soldiers submitted to the military discipline).

The diagnosis of plague is fairly easy, in times of epidemics, when seeing a bubo in the groin, but Clot remarks appropriately that, out of the epidemic context, such a local sign would rather suggest the diagnosis of syphilis.

Clot laments the fact that the medics up to his time limited themselves to the management of symptoms and did not directly address the cause of the disease. He acknowledges that treatments in the severe forms of plague were probably ineffective (like in cholera), and that, conversely, in the (spontaneous) mild forms of the disease, it was difficult to assess the influence of the treatments. He comments that, in order to estimate the exact share of each intervening factor, a statistical computing of cases that had been treated differently would be very useful (that is what we call today clinical trials), but did not suggest that he should organise such an experimentation.[33]

Despite the limited range of available drugs, Clot went on, the doctor was not helpless at the bedside, he did his best to assist the doings of Nature and help the body's efforts, giving a chance to what we could call today natural immunity.[34] Clot was also concerned by the toxicity of some of the administered drugs, such as strychnine, advertised as a general stimulant, that provoked convulsions; or opium and hashish, used for diarrhoea and for their relaxing and sleep-inducing effects. He dismissed the practice of fomenting additional buboes, supposed to function as fixation abscesses and give vent to corrupt humours, and he limited surgery to the incision of buboes at their peak of maturation.

According to Clot and despite his regrets for it, the crucial time for judgement came ultimately in the dissection room, where autopsies were conducted with an amazing frequency. A famous *fatwa* had been obtained, authorising the dissection, which was almost systematically performed, but the main factor explaining this frequency is that it was performed mainly on

peasants who came from remote villages, without a family to claim their bodies. Dissection was also part of a scientific doctrine, and doctors did not hesitate to practice it on colleagues or relatives.[35] Suzanne Voilquin, a follower of Saint Simon's reformist programme, who trained local midwives, tells that Dr Dussap, a French doctor who had remained after Bonaparte left, agreed to the dissection of his wife's body for the sake of science and for that lack of respect was rejected by his own daughter.[36] Dissection was hurried, because doctors hoped to avoid the consequences of cadaverous decomposition and figure as exactly as possible the processes and seat of the terminal issue.

Dr Clot's dual position on preventive measures in times of plague

Clot expressed his ideas on the topic of plague via two paths: the medical works he composed in French and two textbooks in Arabic. Among the French works were the aforementioned volume, published in 1840, five years after the 1835 epidemic and numerous articles (he was a very prolific writer). During the same period, two Arabic textbooks based on Clot's ideas were also written.

The discourses on the transmission of the disease found in the two types of works display an interesting discrepancy.

In his books and articles in French, Clot spoke as a scholar defending his original theses in front of his peers, supported by clinical, epidemiological evidence and even pieces of experimental research, in a spirit of unrestrained freedom. In his books in Arabic intended for the students of the school of Abou Zabel and Qasr-al-Ayni, he composed his recommendations as an officer of public health, linked by the '*devoir de réserve*', entangled in his administrative duties and his allegiance to the patron state. This dual position led him, on the one hand, to praise the liberation of the scientific mind from useless fears, and free circulation of men and goods in times of plague; and on the other, to detail the strict enforcement of quarantine rules and the surveillance of suspected merchandises, a system considered by him in his '*for intérieur*' as outdated and unacceptable for both scientific and political reasons.

Clot's anticontagionist position was entrenched and well known through pamphlets, articles and interventions in various meetings. He strongly influenced the physicians of his generation. Some twenty years after, the German doctor Wilhelm Griesinger, who came during the reign of Abbas, successor to Mohammad 'Ali, to direct the Cairo medical school, confirmed that Clot's ideas, despite persisting bitter disputes, still tended to prevail in the medical community in this part of the Mediterranean.[37]

Which arguments did Clot put forth for denying the contagiousness of plague?

Clot argued that plague was not epidemic but endemic to Egypt, and that its outbursts were linked to a number of causes, some of which are of an unknown nature. Fifty years later, the theory of infectious diseases, based on

the evidence of germs, and supported by the microscopic discoveries of bacteriologists, bridged the opposing theories of infection and contagion. At the same time, this theory has obscured the meaning of the past debate about the mode of disease transmission, in which there were two alternative modes of understanding, namely infection versus contagion.

The terminology used by the authors of the prebacteriological era seems to us to be confusing because we now understand contagion in reference to a specific cause such as a microbe. While for Clot, the idea of contagion was an elusive subtle matter or a 'poison', transferable by physical contact from man to man or through goods, especially those of animal or vegetal origin, such as fleeces and hides, wool and cotton, corn and seeds. This poison was reminiscent of a metaphysical substance, abhorrent to positive minds. According to Clot and the supporters of the infection theory, the disease developed in a particular medium characterised by special physical and atmospheric conditions, including bad air, putrid emanations and meteorological conjunctions and circulated from man to man through this medium.[38] Clot certainly did not deny that if people were packed in a cramped space, in improvised unhealthy lodgings, or in a crowded lazaretto, as the distance between people became shorter, the epidemic 'focus' gained strength and the plague spread more easily among the people. According to the anticontagionists, the local conditions, along with the atmospheric events, although of a poorly defined nature, were the crucial factors for the creation of a focus or a 'nidus' for the disease, waiting for a 'spark' to kindle the epidemic fire.

On this basis, Clot developed socio-economical considerations on the populations at 'risk', in modern parlance. The French historian Chevalier, relying on extensive statistics based on archives, in a famous book entitled *Classes laborieuses, classes dangereuses*,[39] demonstrated that the 1832 cholera epidemic struck the poor more than the affluent. Why, mused Clot, are the poor so predominantly struck by the plague, for example in Jewish or Armenian cramped quarters, if not because the wealthy live in more spacious neighbourhoods and with more facilities, and can more easily segregate themselves? In short, one is more at risk of plague if one is poor, hard working, starving or simply chronically malnourished. Monks in their healthy convents at the top of the Sinai Mountain, officers isolated in the Cavalry school of Guizeh or in their military tents at Abou Simbel, in the desert, the students of the Ecole polytechnique at Boulaq, an industrious suburb, or the pasha retreated in his palace of Chubrah, were likely to be protected.

Clot did not deny that the rule of non-contagion suffered exceptions. He did not repudiate the fact that when ill people were lying together, the proximity of ailing bodies created a pathologic environment, but he denied the direct contagion from man to man, so that consequently he recommended hygienic measures such as cleaning the wards, avoiding crowded places, etc. His adversaries found it difficult to explain why some people who manipulated the patients' bodies, escaped from contagion.

If most physicians, such as himself, had successfully outlived the epidemics, even though they were manipulating sick bodies and corpses without protecting themselves and getting pus, blood, vomit and sanies on their garments, it is true that a handful of them perished, including a close friend and colleague of Clot. Conversely, Clot was not able to offering a coherent explanation for escaping from the plague other than nervous self-control and protection offered by the personal hygiene of his life.

Clot obeys the orders

Given Clot's strong stance against quarantines and the like, it should have been expected that no quarantine prevented sailors and travellers from disembarking in harbours and travelling freely on the Egyptian land, as he assumed his position in the medical school. But despite his clear anticontagionist position, as far as the army and the military hospital were concerned, and even the management of the civilian population, Clot mitigated his medical doctrines and even sacrificed them to considerations of policy, in short he obeyed the pasha's orders and accommodated his recommendations to the Egyptian medical students accordingly.

In 1842, Ida Pfeiffer, a female traveller later made famous by her tales of her travels in the East, arriving at Alexandria from Beirut, was informed that she would be quarantined because she was coming from a land, Syria, suspected of being stricken with plague.[40] She casually remarked that the Syrians thought that the Egyptian form of plague was more severe than theirs, and that, not surprisingly, in Egypt the Syrian plague was reputed to be more malignant. Anyway, she was transferred into the new lazaretto at Ras al tin, in Alexandria, which had been established at the eastern extremity of the harbour, in front of the old quarantine building. It was a courtyard surrounded by high walls. The building lacked elementary equipment. Contact with the outside was strictly prohibited, and the guardians stood at a distance. But quarantine was not only a place of prison-like segregation. Some kind of medical measures were implemented there. The quarantined passengers had to practise self-examination under supervision by doctors, which decided the end of the quarantine. Without taking off their clothes, the patients had to bump their thorax, to show that they did not suffer in doing it and to prove the absence of extremely painful buboes. Moreover, the premises were kept clean, and at intervals, big fires were kindled in the rooms with sulphur and odoriferous plants, to the point of making the poor prisoners suffocate. The duration of the quarantine was ten days, in conformity with the current knowledge on the time necessary after contamination for the onset of the first symptoms.

Clot's textbooks in Arabic couched his medical teaching in the terms of a tradition of control and funding of schools and hospitals by princely munificence.[41] They emphasised the bodily control of population, especially of soldiers, as planned and approved by the new master of Egypt. Modernisation

was thus a process earmarked by unambiguousness in its target and its strategies (registration and control of bodies), for the sake of a strong state and of a healthy army.[42]

This was not a confrontation on equal terms. Above Clot stood Mohammad 'Ali, the alleged father of Modern Egypt,[43] a tough man more concerned with distancing himself from his feudal lord than by dedicating himself to his homeland, an idea probably alien to him. The Arabic word *watan* had not yet been invested with the emotional overtones today currently associated with patriotism that put rulers and ruled people on the same level. The historian Khaled Fahmi depicts him hidden in the semidarkness of his palatial hall, observing his visitors closely before they discovered him, crouched in a corner on the floor in the traditional way, looking unobserved at his visitors and evaluating them, as he boasted to do, at a single glance.

The pasha ordered that the so-called European model should be followed and the quarantines reinforced. There was a Sanitary Board in Alexandria, associating the European consulates, Western doctors and Egyptian officials. In 1840, the pasha put it under the supervision of the local *Dabit* (Prefect of police) Tahir efendi, provoking the anger of the Europeans, who feared for their commercial interests.[44] As he did for the vaccine programme, Mohammad 'Ali applied some Western measures but made his best to frame them within his own administration.

In his Arabic text on plague, Clot details not only how quarantines function in harbours but also depicts how life is being organised in times of plague in the cities. Mohammad 'Ali had given the example himself in closing his palace of Chubrah. The town of Cairo is fragmented in isolated neighbourhoods, where the circulation of goods is carefully controlled. Where there is the suspicion that an area is infected with plague, the people are sequestered in their own houses, with provisions inside, and soldiers prevent any contact with the outside. Clot minutely detailed the way the streets were barred and the methods for examining the various things which could be introduced into

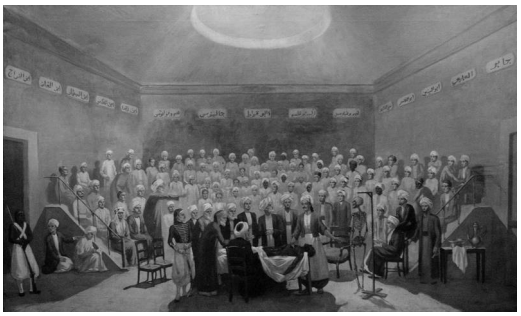

Figure 1 Clot dissecting in the presence of the ulama.

Source: Personal collection of Anne-Marie Moulin.
Note: Painted (ca. 1870) by Strekalovsky, reconstruction of a scene in 1829.

the houses. In his instructions to the students, Clot seemed to relapse to the contagionist faith when detailing how to manipulate and disinfect dangerous merchandises suspected of transmitting 'fomites' (the seeds of contagion).

When drafting his books for the students[45] and discussing with his translators, Clot clearly compromised and reconciled his theoretical stance on the non-contagiousness of plague with his obedience to Mohammad 'Ali's word. He issued a version of the prophylaxis and management of plague, not devoid of strong internal contradictions.[46]

A look from the contemporary period. Looking for modernity

Today it could appear that the questions related to the contagiousness of plague and the practical behaviour in case of epidemics are all solved. A recent example challenges these optimistic views and our overconfidence in modern science and rationality.

In 1994, as plague had for fifty years become a curable (by sulfonamides, then streptomycin and cyclins) and partly preventable disease (there is a vaccine, but of limited and temporary efficacy), the disease struck in Surat, India. The sequence of events demonstrated the persisting difficulties of managing an epidemic of plague. Instead of implementing a rational programme, the Indian government procrastinated and let the situation become explosive. The inhabitants of Surat, despite the restrictions, fled in all directions, and in particular took refuge in the overpopulated city of Bombay, where it was very difficult to keep track of them.

The situation caused an outburst of resentment of the poor, the exodus of the wealthy, the desertion of doctors, the explosion of ethnic hatreds and a shocking lack of concern among the more wealthy nations, in short a sequence marked by fear and panic taking us back to ancient times.

The 1994 epidemic ultimately resulted in only a few casualties, but it illustrated the failure of the corrupt and inexperienced Indian health administration in organising the struggle against the disease, the squeamishness or even cowardice of the WHO and other international institutions to give clear statements on the measures to be taken. As soon as the bacterial diagnosis was confirmed, foreign countries immediately adopted discriminatory measures that caused great damage to the Indian trade as the merchandise coming from any Indian harbour were rejected without compensation. The countries in the Persian Gulf sent back their immigrant workers. Indian passengers were treated as pariahs in airports and deported to improvised lazarettos in cold and inhospitable quarters, reminiscent of the gloomy descriptions of nineteenth-century travellers.[47] Most governments harshly criticised the Indian sanitary administration for a lack of transparency but were unable to exchange accurate information with them and agree on appropriate measures.

If we compare this short plague episode with the 1835 epidemic, it is worth rereading Clot's book in French on plague and the pages where he emphasises the necessity of avoiding panic and maintaining the social order. In his

stance against quarantines and his rejection of embargos, isolation and the like, and his emphasis on general hygiene, cleaning the streets and avoiding filthy, overpopulated lodgings, he does not lack consistency, even if he appears to be exaggeratedly optimistic in his expectation of the result of all these measures.

It is also noteworthy to see how Clot interprets the attitude of the Egyptian people, not as a testimony of their well-known archaic resignation and fatalism but as a profound understanding, based on daily observations. The disputed epidemiologic facts were still waiting for a unique, rational, coherent and global interpretation, based on scientific experimentation which Clot advocated for future doctors with an impressive conviction. In his own ambiguous way, torn between the complexity of the epidemiological phenomena and the imposition from above of a new order to the citizens' bodies, Clot undoubtedly detains a message for assessing the modernisation of Egypt and the unstable character of medical modernity. But finally, on which side did modernity stand?

According to the British traveller William Kinglake, who happened to enter Cairo at the onset of the epidemic in 1842, most Europeans opted for the contagious character of the plague and isolated themselves carefully from the mob.[48] He mockingly remarked that these precautions did not save them from contracting the disease. While living in Cairo he personally resorted to a kind of gamble between the contagionist and the non contagionist positions, visiting the city on a donkey, sometimes rushing in the middle of the crowd, sometimes avoiding any bodily contact, toying with his destiny. Either by chance or because of an alleged good constitution, he succeeded in spending three weeks in the afflicted city and leaving it safely at a time when the epidemic according to him, was causing more than one thousand victims a day (out of a population of allegedly two hundred thousand people). His agnostic position illustrated the impenetrability of the epidemic situation and the absence of a convincing doctrine.

What stood for the European model: the contagionist theory, adopted by the pasha, or Clot's model, which unexpectedly converged with the Moslem programme of self-respect and abandonment to the divine will? The scientific game remained a gamble, in the absence of clear foundations for conducting coherent actions. The analysis of Clot's theoretical works and practical behaviour provides a clear example of a construction of scientific knowledge earmarked with all kinds of political and social negotiations and compromises. It also suggests recurring ambiguities and contradictions in the public health agendas. Today, despite obvious advances in epidemiology and molecular biology, communicating on epidemics and decision-making remain far from clear, and there is a potential clash between the supporters of different trends of opinion between groups concerned by the spread of old and new plagues. Clot's remarks on the necessity of keeping morals and order and his emphasis on communicating knowledge on scientific issues deserve being revisited in our troubled times.

If the discourse of modernisation and reform was broadly shared by the various actors operating in the field of health in the times of Mohammad 'Ali, modernity remained politically and scientifically ambiguous. The lack of sweeping scientific evidence in favour of one or another theory permitted the adoption of different and even sometimes contradictory positions in public health as far as plague was concerned. Mohammad 'Ali and Clot represented two diverging clones of this modernity but it was the political idea of a social control favoured by the former that prevailed over the scientific laissez-faire of the latter.

Notes

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2 M. Melhaoui, *Peste, contagion et martyre*, Publisud, 2005.
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4 See for example P. Haenni, *L'Islam de marché,* Paris: Karthala, 2005.
5 D. Panzac, *Quarantaines et lazarets. L'Europe et la peste d'Orient*, Paris: Edisud, 1986. P-L. Laget, Les lazarets et l'émergence de nouvelles maladies pestilentielles au XIXe et au début du XXe siècles, *In Situ*, *Revue électronique du service de l'inventaire général*, 2, 2002, see pierre-louis laget@culture.gouv.fr
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7 Al Jabarti, *Chronicle, Napoleon in Egypt*, Princeton: Markus Wiener, 2006.
8 After the departure of the military, some of the scholars settled in Cairo and worked to a monumental Description de l'Egypte, considered by Egyptians as a document giving access to modern Egypt.
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14 0-J-J. Ampère, Bilan d'un long règne, in S. Moussa, p 806.
15 Eusèbe de Salle, Un manipulateur de l'opinion publique européenne, in S. Moussa, p 796.
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17 A. M. Moulin, Ambroise Paré, chirurgien de quatre rois*, L'Histoire*, 1984.
18 For a biography, see M. Valentin, *François Broussais, l'empereur de la médecine*, Association du musée du pays de Dinan, Dinan 1988. and J-F. Braunstein, *Broussais et le matérialisme, Médecins et philosophes au XIXe siècle*, Paris: Klincsieck, 1986.
19 P. G. Cabanis, *Coup d'oeil sur les révolutions et la réforme de la médecine*, Paris, 1804.

20 A. de Musset, *Confessions d'un Enfant du Siècle* (1836), Paris: Gallimard, 1973.
21 A. M. Moulin, *Le dernier langage de la médecine. Histoire de l'immunologie, de Pasteur au Sida*, Paris: PUF, 1991, chapter VIII on transfusion.
22 Napoleon's retreat from Russia in 1812 would have caused one million casualties.
23 See Victor Hugo's poem in La Légende des siècles, after the Bloody Week of the Paris 'Commune' (La Semaine sanglante):
'Sur une barricade, au milieu des pavés,
Souillés d'un sang coupable et d'un sang pur lavés'
24 A central street of Cairo facing the famous railway Ramses station (Bab al Hadid) still bears his name. Interestingly, this street was famed or rather ill-famed in the 19th century as it was lined with brothels.
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26 D. Jacquart, *La médecine médiévale dans le cadre parisien*, Paris: Fayard, 1998.
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28 These are all names that still survive in the vocabulary of today medicine but have now quite different meanings.
29 A-B. Clot, *La peste*, Paris: Masson, 1840.
30 R. Delort, *Les animaux ont une histoire*, Paris: Seuil, 1984.
31 J. Brossollet and H. Mollaret, *Pourquoi la peste ? Le rat, la puce, le bubon*, Paris: Gallimard, 1994.
32 The analogy of the crisis with an external judgement is obvious in some sanctuaries in Morocco, where a saint, not unlike the Greek God Asklepios in his Epidaurus sanctuary, was reputed to appear to the patient during his sleep and pronounce sentences related to his illnesses. In the same way, the saint invoked in Moroccan sanctuaries reveals to the suppliant the issue of the disease and the appropriate treatment in the form of a judgement, that will be interpreted by the people in charge of the sanctuary.
33 That is what Pierre-Charles Louis tried to do, to assess the therapeutic efficacy of bloodletting, 'Recherches sur les effets de la saignée dans plusieurs maladies inflammatoires', *Archives générales de médecine*, 1828, 18, 31–335.
34 In Aids, we are now attempting to interrupt antiretroviral therapy, in order to boost the immune system and reduce the negative consequences of the toxicity of the current treatment.
35 On dissection as crucial to the making of *esprit de corps* in the medical profession, see J-L. Valabrega, *La relation thérapeutique*, Flammarion, Paris 1962.
36 S. Voilquin, *Souvenirs d'une fille du peuple, ou la Saint-Simonienne en Egypte, 1834 à 1836*, Paris: Sauzet, 1866 and Maspero, 1978.
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38 F. Audoin-Rouzeau, *Les chemins de la peste. Le rat, la puce et l'homme*, Presses universitaires de Rennes, 2003
39 L. Chevalier, *Classes laborieuses, classes* d*angereuses à Paris pendant la première moitié du 19e siècle,* Paris 1958.
40 I. Pfeiffer, *Reiser einer Wienerin in das Hölige Land*, 1844, cité par S. Moussa, p 20–25.
41 A. M. Moulin, L'esprit et la lettre.
42 T. Mitchell, *Colonizing Egypt*, Cambridge University Press, 1988.
43 For a reappraisal of this view usually shared by contemporary Arab historians, see K. Fahmi, *All the Pasha's men*, and the collective *Mohamed Ali*, Bibliotheca Alexandrina, quoted in note 16 above.
44 N. Gallagher, 'Contagion and quarantine in Tunis and Cairo, 1800–870', *The Maghreb Review*, 1982, 7, pp. 108–11. L. Kuncke, *Lives at risk. Public Health in nineteenth-century Egyp*t, Berkeley: University of California Press, 1990.

45 See for example his treatise in Arabic, *Traité d'hygiène privée, publique, militaire et navale*, *compilé par les meilleur auteurs et appliqué spécialement à l'Egypte*, translated by Chaffy, two volumes, Boulaq, undated.
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48 W. Kinglake, *Eothen*, *Traces of travel brought home from the East*, London: Dutton, 1827, p 185–210.

4 The waqf, the state and medical education in nineteenth-century Iran

Hormoz Ebrahimnejad

The historiography of modern Iran tends to see the newly created schools like the Dâr al-Fonun (school of polytechnic) established in 1851, as representative of modern education as opposed to traditional education, provided in *madrasa*s or Islamic colleges.[1] A careful study of the history of 'modern' institutions in Qâjâr Iran reveals, however, that they contained a non-negligible amount of traditional elements in terms of both knowledge and organisation. In a similar vein, the general categorisation of social groups or classes as advocates or opponents of modernisation[2] does not take into account the conflicting views that members of the same social 'category' could have towards modern education. This question has been raised and examined from various aspects in my previous works.[3] The present essay explores the extent of the influence of the traditional schooling funded by *waqf* endowment on medical education, a question that has not been addressed so far in any of the studies on education in modern Iran.[4] It also examines modern medical education in the light of the establishment of the Qâjâr power. The Modernisation movement in nineteenth-century Iran was triggered by several humiliating military defeats by the Russians, from the advent of the Qâjârs, in 1798, to 1828 that resulted in the loss of territory. In addition to the foreign invasion, the Qâjârs were also facing the rebellion of local tribal khans, which continued at least until the middle of the century. These two major problems that concerned the political unity and territorial integrity of the country had long lasting effects on the reform movement in Iran.

Firstly, the Qâjârs became primarily concerned with military modernisation that consisted mainly of the founding of a modern military school, the creation of disciplined troops and the use of modern weapons.[5] Military modernisation informed the paradigm of modernity. In a telling statement, an Iranian physician, Mirzâ Nosrat-e Quchâni, writing in the second part of the nineteenth century, maintained that the relationship of traditional medicine to modern medicine was like the relationship of a 'matchlock gun to a needle gun'.[6] The trauma of military defeat and the shock the Qâjârs experienced in realising the superior technology of Europe led them to have a reductive concept of modern Western science by perceiving it in isolation from the social, economic and cultural contexts in Europe that underpinned

its development. Thus, the main function of modern schools in the second part of the century was to introduce applied sciences such as physics, chemistry and engineering for the use of the army.[7]

Secondly, the introduction of modern techniques and applied science for the use of the army was aimed at strengthening the state in its fight against foreign invasion and internal rebellions. It was within the framework of the centralisation of power that attempts were also made to secure control of the judiciary and education, traditionally under the remit of the *ulama*. There are therefore two facts that should be addressed when examining medical education in nineteenth-century Iran: on the one hand, the existing traditional network of the educational system explained below and, on the other, the modernisation attempts by some of the Qâjâr elite. In the following pages, I shall explore the extent to which these two factors both independently and in interaction informed 'modern' medical education. This will be developed along two lines of argument. First, that the Qâjârs, by creating modern schools, did not aim only to introduce modern science but also to create a state institution parallel to the traditional *madrasa*s that were under the jurisdiction of the *ulama* who increasingly became a threat to state power. Second, that due to their power deficiency, the Qâjârs were unable to incorporate the *owqâf*, that provided the major source of funding for the educational system, in the state. Deprived of such an economic potential, they were unable to expand their 'modern' state schools enough to provide a 'public' modern education.

Religion and the *madrasa*s (Islamic colleges)

Under the Qâjârs, as in previous centuries, the *madrasa*s (Islamic colleges) constituted the educational hub of the country. Although some modern schools were created in the second part of the nineteenth century, they had a limited effect and it was not until the founding of Tehran University in 1934 that the situation began to change radically.

Before the tenth century (or the third century of Hijrah), the *madrasa*, as an independent institution for secondary and higher education in Islamic countries, did not exist. Learning, usually about the *hadith* (traditions of the Prophet) or legal questions, took place in the circles at the mosque or at the house of the teacher.[8] It appears that, in Iran, the first *madrasa*(s) emerged under sultan Mahmud Ghaznavid (r. 998–1030) in Ghaznain (now in Afghanistan. The key step towards the creation of the *madrasa*s was, however, made in the eleventh century by Nezâm al-Molk, minister of Alp Arsalân (1063–83), the Seljuk sovereign, who created several *madrasa*s called *Nezâmiyeh* in Khorâsân, particularly in Neyshâbur (northeast Iran) in order to propagate the *ash'ari* doctrine.[9] The policy of establishing *madrasa* for proselytising purposes then began to be used in Baghdad by the Hanbalits.[10] Nezâm al-Molk was finally assassinated by one of the Ismâ'ilit *fedâyee*s,[11] but his *Nezâmiyeh* system greatly influenced the Islamic colleges that

expanded before the Mongol invasion in the thirteenth century.[12] According to George Makdisi, in their later development the *madrasa*s were to fight not only the Ismâ'ili Shi'a,[13] considered as heretic, but also the dogmatic theology of the Sunnite *mu'tazeli* and *ash'ari*. They were designed to establish a 'traditionalist outlook' represented by the *shâfe'i* school that consisted of a 'compromise position between the rationalism of the dogmatic theologians and fideism of the *hadith* scholars'.[14]

Despite political vicissitudes, the *madrasa*s continued to develop in the following centuries, mainly as proselytising tribune. In 907/1500, for example, a certain Mirzâ Habibollâ Sharifi Shirâzi preached Shiite doctrine in the *Jâme'* mosque of Shirāz while the Turkoman Aq-qoyunlus, of Sunnit rite, were still holding on to power. As a result, Habibollâh's home was plundered on the order of Sultan Morad Aq-qoyunlu. But when two years later the new ruler of Iran, Shâh Ismâ'il Safavid, of Shiite rite, arrived to Shirâz he restored Mirzâ Habibollâh's lost properties and appointed him as *motavalli* (administrator) of the mausoleum of Shâh Cherâq. Mirzâ Habibollâh then built a *madrasa* and established a *waqf*[15] to finance it and appointed his son as its *motavalli*.[16] Iran experienced a surge of new *madrasa*s after the Safavids took power and proclaimed *shi'a* as the religion of the state. The history of Shiism in Iran between the second half of the eighteenth century and the first decades of the nineteenth century was marked by debate and conflicts between two 'denominations': the *akhbâri*s, on the one hand, who believed in the principle of personal judgement and interpretation and thereby rendered theoretically redundant the function of the *mojtahed*s (the Shiite jurisprudents), and the *usuli mojtahed*s, on the other, who assigned to themselves the task of interpreting the Koran and the *hadith* for their followers.[17] From the early nineteenth century, when the *usuli mojtahed*s were victorious in this conflict, the number of *madrasa*s grew rapidly so that according to Nâser al-Molk, there were thousands of *madrasa*s in Iran in 1906.[18]

The *madrasa*s were established for pious or philanthropic purposes by noblemen who endowed them with *waqf*. With the exception of those called *nezâmiyeh*s under the Seljuks (eleventh to twelfth century), the *madrasa*s in Iran were private institutions both financially and administratively in the sense that they were not under the direct control of the state.[19] The *waqf* endowment for a *madrasa* became official with an Act sealed by a religious authority. In his *waqf-nâmeh* (or *waqf* deed) the founder of the *waqf* for a *madrasa* set up rules for the use of its income and even summarised the curriculum of the college that was usually based on the standard text-books in the traditional Islamic sciences. The *waqf-nâmeh* also indicated the requisite qualifications and duties of the teachers.

Traditional education and medicine

Thus, the creation of the *madrasa* was principally linked to the definition and elaboration of the legal *mazhab* (religion). More significant in this process is

that despite, or because of, the orthodoxy of the schools of Islamic law (the *mu'tazeli*, the *hanbali*, the *maliki*, the *shâfe'i* and the *ash'ari*), the scholars adopted and developed the non-, or pre-Islamic sciences (*'olum-e avâyel* = earlier sciences), especially philosophy and logic in order to avail themselves of the faculty of arguing against each other.[20] By dividing the madrasa scholarship into *avâyel* (earlier) or 'pre-Islamic', and *avâkher* (later) or 'Islamic', knowledge,[21] the former implicitly received the blessing of religion and was integrated into the curriculum of the Islamic college. As a result of this integration, students also studied and discussed other subjects alongside religious sciences, such as medicine, mathematics and music.[22] The statement attributed to the Prophet '*al-'elmo 'almân; 'elm al-abdân va 'elm al-adyân*' (sciences are twofold: the science of religion and the science of the body), has its roots in the universal division of soul and body[23] but it also aimed at legitimising a 'non-Islamic' medical knowledge. It was in this way that medicine based on Hippocratic theories contributed to the formation of Islamic cosmology.[24] A vast literature on the generic subject of 'the gist of sciences', which discussed medicine together with other Islamic and pre-Islamic sciences, such as the *hadith* (traditions of the Prophet), *feqh* (Islamic jurisprudence), history, physics and arithmetic, has constituted the main source of Islamic scholarship since the medieval period.[25] Such a thematic combination can also be found in other encyclopaedic religious treatises. In his *Helyat al-mottaqin* (Ornament of the Believers), widely in use in Iran since the seventeenth century and recommended by the religious establishment even today, Mohammad-Bâqer Majlesi, a great religious authority of the Safavid period, devoted three *bâbs* (chapters) out of the fourteen *bâbs* of the book to hygiene and one *bâb* to medicine, including bloodletting, materia medica and the treatment of diseases.[26]

Just as the curricula of the *madrasa*s were based on Islamic religion, the *madrasa*s themselves were an integral part of the mosques, physically and institutionally.[27] Sometimes a mosque was built as part of a *madrasa* so that the *madrasa*'s founder and his descendants could be buried there.[28] In the case of the large mosques, the *madrasa*s were built as part of them. The *jâme' al-Azhar* in Cairo, built in 970 and still active, is one such institution.[29] In the *jâme'* (literally: comprehensive, universal), there was a main college (*madrasa*) for the *tollâb* (students of religious sciences) who lived there as interns in *hojreh*s (cells) in groups of two or more, depending on the number of students and the extent of the *waqf* revenue assigned to the *madrasa*. All their fees, including their subsistence, were paid by the revenue of the *waqf*. Primary schools (*maktab*), which were also endowed by *waqf* were situated on the top floors of the *jâme'*.[30]

Although medicine was part of the curriculum in each *madrasa*, not all of them had a hospital or what was called a *dâr al-shafâ* (house of healing). The *dâr al-shafâ*s attached to *jâme'* mosques were medical facilities in the form of pharmacies called *bayt al-adviah* (literally drugstore) or in the form of outpatient dispensaries. Moreover, the *dâr al-shafâs* in Iran, from the medieval

period to the nineteenth century, were not always hospitals or even dispensaries; they were sometimes *madrasa*s, as was the *dâr al-shafâ* of Shirâz in the eighth/fourteenth century, for example, where Sharif al-Din 'Ali Jorjâni taught.[31] Medical education also took place outside of the *madrasa*s, with a private master, usually a secular chief physician. In this case, the student accompanied his master during medical visit.[32] As a result of medicine being part of the curriculum at *madrasa*s many clerics possessed medical knowledge at various degrees and some of them practised. According to Mohammad-Ja'far Astarâbâdi (1892), himself a mullah-doctor, reporting from the cholera outbreak in the 1280s (c. 1865–75), patients came to consult cleric-physicians in the mausoleum of Najaf in Iraq. From the description he gives of this event, it appears that there was a *dâr al-shafâ*, or pharmacy, attached to the Najaf mausoleum.[33] It should also be noted that acquiring some degree of medical knowledge was necessary for the religious authorities, or the *mojtahed*s, so that they could issue fatwa regarding various questions related to health in the everyday life of their Moslem followers.

Modern education

It was in such an intellectual and institutional environment that attempts were made to modernise medical education. Although contact with Western medicine had taken place during the Safavid period (1501–1722), it was not until the early nineteenth century that modern medical education can be said to have formally begun. The first move in this direction followed the idea that students could acquire Western scientific knowledge in Europe and then apply it in Iran. In 1811, two students were sent to England; one of them Mirzâ Bâbâ Afshâr, was to study medicine and the other painting. A second medical student, Mirzâ Ja'far, was sent in 1815, in a group of five, to England. The dispatch of students abroad was then interrupted until 1845, when another group of five students was sent to France, among whom was Mirzâ Yahyâ, commissioned to study medicine; but they returned after three years before completing their studies, following the death of Mohammad-Shah in 1848.[34] A host of political events are thought to have caused this interlude. But the more fundamental reason was that the Qâjârs lacked a defined and steady programme for the introduction of modern European science. The dispatch of the second group of students in 1815, for instance, was unplanned. As Colonel William Darcy, who had spent some years in Iran to drill troops for the newly created modern army, was returning to London, he persuaded the heir apparent, 'Abbâs Mirzâ, to send some students with him. This ad hoc approach to the expedition meant that once in England the students could not pursue their studies according to the standard programme, due to financial problems.[35] After two years of uncertainty, or, at best, irregular study of English with private teachers, an arrangement was made for Mirzâ Ja'far, the medical student, to live in the house of a

physician in London,[36] so that he could learn medicine with his landlord at home and at the hospital where he accompanied him.[37]

In the second stage of the modernisation, instead of acquiring knowledge of modern science abroad, it was deemed more efficient to establish modern schools based on a European model at home. In this way, modern education would be less affected by the political or diplomatic vicissitudes to which the Qâjâr state was constantly subject. In 1851, the first 'modern' school, the Dâr al-Fonun ('The Polytechnic College' or 'Academy of Applied Sciences'), in which modern medicine was taught alongside other sciences such as engineering, pharmacology, physics and chemistry, was established. A few years later, two other Dâr al-Fonun schools, of a much smaller size, were established in Tabriz and Espahan. The medical education at the Dâr al-Fonun was, however, exclusive to a small number of students. In 1882, 30 years after it was founded, only 42 people had graduated in medicine from this school.[38]

In the second part of the century, the employment of European instructors who were forbidden to conduct any other business than teaching, gave a new impetus to modern education. During the same period, students were sent to Europe more regularly. In 1859, a group of 42 graduates of the Dâr al-Fonun were sent to France to complete their studies, among them four in medicine and one in pharmacology. Other groups were sent in the following decades. With the second generation of modern-educated physicians, the translation of Western books increased and furthered knowledge of modern medicine. While at the beginning of the activity of the Dâr al-Fonun modern sciences were taught through translators, by the late nineteenth century the former students of this school who had completed their medical studies in Europe, could teach modern medicine directly in Persian.

Nevertheless, modern medicine at the school of Dâr al-Fonun was not as dominant as is generally presumed. The translation of modern medical literature was necessarily arbitrary or selective; firstly because it was made according to the educational background of the translators, which was usually imbued by humoral concepts. Secondly, because many modern anatomical pathological terms had no appropriate equivalent in Persian or Arabic and sometimes Avicennian terminologies were used to translate them. Furthermore, the Qâjârs did not only sponsor modern medicine but also traditional medicine as it can be seen in the continuous presence of the latter in the curriculum of the Dâr al-Fonun. In 1887, a new 'health council' (*majles-e sehhat*) was created at this school and was composed of a few Western doctors as well as sixteen Iranian physicians who taught both modern and traditional medicines.[39] That the Qâjârs sponsored traditional medicine alongside their modernisation programme, can also be seen in the fact that more than fifty percent of the medical books written and dedicated to the Qâjâr princes were on traditional medicine.[40]

The question now is that if modern education was considered by the Qâjâr elite to be a panacea for the backwardness of the country, why did traditional medicine persist within modern institutions such as the Dâr al-Fonun?

It has usually been assumed that the introduction of traditional education in the curricula of the Dâr al-Fonun was aimed at guarding against the accusation coming from the *ulama* that modern education was tantamount to irreligiousness.[41] This represented indeed a real problem and Malkam-Khân, for instance, in order to fight back, tried to argue in favour of modern education by drawing on religion and Islam.[42]

The fundamental cause of the inclusion of traditional education in modern schools, however, should be sought in the economic as well as intellectual contexts within which education in general was provided. The *madrasa* remained the main institution for education with the financial support of the *owqâf* (plural of *waqf*)[43] whereas there was no serious financial strategy for modern schools. Moreover, the Qâjâr state was in the grip of chronic financial shortcomings partly because it was unable to collect taxes from provincial governors who became virtually independent from the central government due to the land system.[44] Furthermore, even within its financial capability, the Qâjâr state, apart from the ad hoc patronage of some scholars, did not have any particular funding programme for education. In fact, with the increasing numbers of *madrasa*s since the eleventh century when the nascent schools of law were promoted, the number of endowments (*waqf*) also increased in order to secure salaries for the teachers and stipends for the students.

The study of *waqf* institution lies beyond the scope of this chapter. It is necessary, however, to point to aspects of this question in relation to the creation and administration of the *owqâf* that entailed constant tension between the 'religious establishment' and the 'state'.[45] A considerable number of private properties were converted into *waqf*, so that they were protected from possible usurpation.[46] With the increase in *waqf* properties, the *waqf* deeds needed to be legitimised or their accuracy confirmed by religious authorities regardless of whether different sources of authority could come to produce conflicting judgements.[47] As Lapidus observed, 'the *ulama*, through salaries and the administration of endowments, rose to the position of a *rentier* class.'[48] In nineteenth-century Iran, in addition to their extensive private properties, the high-ranking *ulama* also received large incomes from the *owqâf* and from religious taxes, such as *khums*, one-fifth of the wealth, and *zakât*.[49] The Qâjârs were unable to challenge them by undertaking substantial reforms such as taking over the control of the *waqf* properties,[50] or bringing the clerics under the state administration, as was to some extent the case under Mohammad 'Ali of Egypt or the Ottoman Sultans in the nineteenth century. Furthermore, the role of the *ulama* as trustees or administrators of the *waqf* endowments was standardised in the Qâjâr period to such an extent that even the Qâjâr shahs conferred to them the administration of some of their own endowments.[51]

It is within such a context that we should examine the foundation, in 1293/1876, of the *Madrasa-ye* Sepahsâlâr, which was entirely based on traditional education, by a statesman, Mirzâ Hoseyn Khân Sepahsâlâr, despite his criticism of traditional education for being incapable of facing the challenge of

the time and his advocacy of modern science.[52] The value of money or properties that Sepahsâlâr bequeathed for this *madrasa*-mosque was far more than the sum of money he had spent during his tenure as prime minister between 1871 and 1873 for a modern *maktab*, called *Moshiriyeh* after his earlier title (Moshir al-Dowleh).[53] A considerable amount of literature has been produced about Mirzâ Hoseyn Khân Sepahsâlâr and his modernisation projects, including the establishment of the *maktab-e moshiriyeh* and the *madrasa-ye nezâmiyeh* (military school).[54] But there is scant mention of the mosque-*madrasa-ye* Sepahsâlâr and still less about how such a large enterprise, aimed at traditional education, fitted the modernisation projects of this minister.[55] Guity Nashat, for instance, citing an article of Sepahsâlâr, dated May 1872, in which he criticised traditional *maktab* education, adds without any explanation that 'Mirzâ Hoseyn Khân also laid the groundwork for a school of religious sciences modelled after the al-Azhar in Cairo'.[56] In the following paragraph she concludes: 'If Mirzâ Hoseyn Khân's authority had not been challenged, he would certainly have been able to accomplish a good deal more in creating modern schools.'[57] Hardly can one believe that Mirzâ Hoseyn Khân, who in his project of educational reform was inspired by the Ottoman experience,[58] did not notice the fact that one of the major sources of state funding for modern schools in the Ottoman Empire came from the *waqf* revenues that had been incorporated into the state treasury.[59]

The Mosque-*madrasa-ye* Sepahsâlâr (Sepahsâlâr *madrasa*), which is still active, included a mosque, a *madrasa*, a *maktab* (primary school) and a hospital in the traditional model. In his *waqf-nâmeh* (*waqf* deed), Mirzâ Hoseyn-Khân-e Sepahsâlâr assigned a salary for teachers or masters (*modarres*) and their assistants: each *modarres* had an assistant (*nâyeb* or *tâli*). The *waqf-nâmeh* spelled out the curriculum of the college (*manqul* (traditional sciences, including the study of the *hadith* or customs of the Prophet), *ma'qul* (rational sciences, including logic and philosophy), mathematics and literature) and specified the number of masters and assistants, assigned to teach these subjects. One hundred and twenty students (*talabeh*) were allowed to be enrolled. Each master was required to have a specific skill and knowledge. For instance, the *manqul* lecturer should be able to teach books, including the *Ketâb-e riyâz* of Seyyed (…) *tâb thara* and the *Qavâ'ed* of 'Allâmah. If some of the students desired to study medicine, the chief physician (*hakim-bâshi*) should be able to teach them. The capacity of reading and teaching specific books was also specified for the assistant teachers. However, each master and his assistant should also be able to teach other subjects in addition to their own area of expertise. Four instructors were also to teach at the primary school (*maktab*) of his establishment.[60]

The creation of such an establishment might be explained by the religious belief of Mirzâ Hoseyn Khân or by his intention of creating a replica of the Royal *madrasa*-mosque Safavid in Ispahan. The timing of the construction of this mosque-*madrasa* complex suggests, however, that it was prompted by Sepahsâlâr's dismissal.[61] After his removal from the post of prime minister,

Sepahsâlâr was experiencing disgrace even though he retained some state positions such as minister of war. Apprehensive of the confiscation of his wealth by the Shah before or after his death, he had recourse to the system of wealth conveyance under the Islamic law and donated it for the mosque-*mardara* and, as a further pre-emptive measure, offered the administration of his *waqf* to Nâser al-Din-Shah.

Whatever the origin, the *waqf* became in time an institutional infrastructure for the transfer of property. It was used not only by the Moslems but also by other religious minorities such as the Christians and the Jews, throughout the Islamic world.[62] Some Christians used the *waqf* institution in a standard way as their Moslem compatriots.[63] Some others, for further security, converted to Islam before turning their wealth into *waqf*.[64] However, unlike the private property in which the owner is the beneficiary, in a *waqf* three parties are involved: the founder (*wâqef*), the beneficiary of the usufruct of the property, and the *waqf* institution that in most cases is represented by the administrator (*motavalli*), who in some cases is also the beneficiary of the usufruct.[65] Therefore, unlike what it has sometimes been assumed,[66] the link between the founder and the beneficiary is not direct but through the *waqf* institution, which in most Islamic countries in the pre-modern period was represented by the *ulama* and in modern period, or post-colonial period, by the ministry of *owqâf*. In this three-party relationship, the *waqf* institution exerted still more influence in endowed *madrasa*s. Although the curriculum of the *madrasa* was formulated by the founder, he or she prepared this according to the standard set up by the tradition, the guardians of which were the *ulama*. As George Makdisi noted, 'even when the founder [of the *waqf*] was a layman … , the content of education and its methods were left to the teaching profession itself.'[67] Makdisi traces back the limitation of the (*waqf*) founder's freedom of choice to the tenth and eleventh centuries when the process of the establishment of the *madrasa*s was characterised by the triumph of the traditionalism over rationalism.[68] To the extent that the mosque-*madrasa*s were almost exclusively funded by *waqf* donations,[69] the *waqf* institution framed the transmission of knowledge in most Islamic countries. It is the *waqf* status of his donation that explains why Sepahsâlâr went so far as assigning classical teaching materials for his *madrasa*. In the second part of the nineteenth century in Iran, the number of properties or real estates endowed as *waqf* for *maktab* or *madrasa* was so extensive that villages of no more than 50 families were provided with a *maktab*.[70]

Modern education and state control

As mentioned earlier, the introduction of modern science was linked to the process of state centralisation. Following such a strategy, the establishment of the Dâr al-Fonun by Amir Kabir, Nâser al-Din-Shah's Prime Minister (1848–51),[71] was destined to create and expand 'state education' in an attempt to curtail the exclusive control of the religious establishment on the

educational system. This policy did not end with the Amir Kabir's premiership. In order to consolidate the institutional base of state education, as opposed to the education controlled by the religious establishment, the ministry of science (or education) was created in 1272/1855 with 'Ali-Quli-Mirzâ E'tezâd al-Saltaneh as minister.[72] This however could not bring fundamental change as long as the government lacked a fiscal policy to finance the creation of state schools throughout the country. One major source of revenue to finance the state educational apparatus would have been to draw on the existing system of funding schools, namely, the revenue of the *owqâf*. Nevertheless, unlike what happened in Egypt, where Mohammad 'Ali cancelled the immunities on lands belonging to mosques and the *owqâf*,[73] the Qâjârs left the *waqf* properties to the control of the religious establishment. There were some attempts, such as the creation of the endowment ministry (the *vezârat-e vazâyef va owqâf*, or ministry of pensions and endowments) under Mirzâ Hoseyn Khân Sepahsâlâr (or Moshir al-Dowleh),[74] but this was rather a nominal ministry of endowment and could not tap into the *waqf* revenue.

One should also bear in mind that for the Qâjârs, state institutions in principle were not aimed at the interests of the public and the state schools were not to provide universal literacy. While a sort of 'public' education was offered in *maktabs* (primary schools) and *madrasa*s in the sense that they were far more available throughout society, being open to all Moslems who sought education,[75] the Dâr al-Fonun was reserved for the children of the nobility (*a'yân*) and aristocrats (*ashrâf*).[76] This trend dominated under Amir Kabir (1848–51), Mirzâ Âghâ Khân Nuri (1852–57), and Mirzâ Hoseyn Khân Sepahsâlâr (1871–73).

Towards the end of the nineteenth century, however, the situation changed and, instead of educating the notables' children, modern schooling was considered by the reformist elite to be universal, liberal and available to rich and poor alike. Prominent advocates of modern education, such as Mirzâ Yusof Khân Mostashâr al-Dowleh and Abu Tâleb Behbahâni, who wrote about it as early as the 1870s, were inspired by the Western system. The initiative to establish the first 'modern' privately created school was, however, that of Mirzâ Hasan, the son of a high ranking religious scholar in Tabriz. After studying in Beirut and visiting a school called *roshdiyeh* (growth) in the Ottoman Empire, he decided to establish a school with the new method of teaching in Iran. He founded a school of the same name in 1888 in Tabriz. But immediately the *ulama* rose against it and the school was closed. It was reopened and closed again and this occurred several times.[77] Nevertheless, between 1890 and 1906, about 23 modern schools were built in Tehran, 20 in Tabriz and at least 16 in other major cities.[78]

The term *melli* (literally signifying 'national'), used to designate these schools,[79] conveyed the idea of 'public' in the sense that it would respond to the universal right to education. It heralded the emergence of civil society, concerned with individual rights, as opposed to the Court (*dowlat*),

concerned with the interests of the nobility. This shift was reflected in the writings of Malkam-Khân, for example, who initially 'had viewed reform as the extension of the government control over the country, but at the end of the nineteenth century laid greater emphasis on the need for checks on government authority and on protecting the individual against the power of the state.'[80]

The establishment of private schools such as '*roshdiyeh*' (growth), '*kheiriyeh*' (charity), '*adab*' (education), and so on, began in 1897 and was funded by the elite and progressive statesmen. In 1898, Amin al-Dowleh, the reformist prime minister of Mozaffar al-Din-Shah, established the *madrasa* of *roshdiyeh* and, later that year, established the Council for education (*Anjoman-e ma'âref*) with the help of some other scholars and politics. By 1899, there were 11 schools called '*madâres-e melliyeh-ye mozaffariyeh*' (Mozaffariyeh national/public schools), named after Mozaffar al-Din-Shah. Some of them, like the '*kheiriyeh*' school founded by Montazam al-Dowleh, the minister of the *qurkhâneh* (arsenal), were well funded and provided the students with free education, food and clothing. Other schools received some help from private individuals and complemented their budget with registration fees from the students who, in addition, had to pay for their own subsistence. By visiting these schools and occasionally donating money, Mozaffar al-Din Shah encouraged their development. Apart from these rather irregular measures, no major strategy was devised by the government to finance education nationwide and systematically.

Financial resources and the curriculum

It has often been maintained that after the death of Mirzâ Taqi Khân Amir Kabir, the founder of the Dâr al-Fonun, this school did not receive due attention under the premiership of Mirzâ Âqâ Khân Nuri (1851–58) and declined further toward the end of the century, as a result of the disinterest or even hostility of Nâser al-Din-Shah,[81] especially after 1862, when some of the teachers and students of the Dâr al-Fonun were involved in a plot against him.[82] The Shah's 'personal convictions' are also named amongst the causes of the decline.[83] In contrast to such assertions, the Dâr al Fonun did not decline and in fact it was under Mirzâ Aqâ Khân Nuri that 'Ali-Qoli Mirzâ E'tezâd al-Saltaneh, appointed as minister of education, improved the school's conditions both financially and administratively. Financially at least the improvement was obvious. While the original allocation for this school in 1851 was 10,000 tomans, in the 1890s it quintupled to 50,000 tomans,[84] no matter if part of this money was embezzled, as a matter of course under the Qâjâr rule. We can, however, talk about the decline of the Dâr al-Fonun in the sense that it was not and could not be expanded, and that the co-called 'state education' remained within the confines of one school because the state, due to the endemic administrative and economic shortcomings was not able to build other schools of the kind in other parts of the country. About

1859, a state school, called *madreseh-ye dowlati-ye Tabriz*, similar to the Dâr al Fonun in Tehran, was established in Tabriz. But due to lack of suitable funding it never kept a regular activity and finally was completely abondoned at the turn of the century.[85] In 1907, the Anjoman (constitutionalist council) of Tabriz floated the idea of establishing a Dâr al Fonun. Promises of private funding were made by some notables but were never honored.[86] The persistence of this situation even after the Constitutional Revolution (1906–11), which was characterised by a passion for the founding of modern schools, was due to the fact that no financial system was devised to ensure a regular budget for state schools, apart from the assignment of the revenue of two districts (Malâyer and Toyserkân) for the Dâr al-Fonun.[87] The constitutionalists, indeed, attempted to fund modern schools by the revenue of the *owqâf* through the creation of the ministry of *ma'âref va owqâf* (ministry of education and endowments),[88] which, as the name indicates, was to merge the *owqâf* and the education. Needless to say, however, that this ministry remained so only in name and could never control the *owqâf* revenues.

Beyond the state, there were private initiatives by the reformist elite who were concerned with the modernisation of education by introducing a different curriculum and especially a different method of teaching. They could not rely on the *waqf* system, which was managed overall by the *ulama* who in the context of the nineteenth century did not allow other curriculum than the traditional Islamic one. Thus they needed to find another source of funding: Within the new schooling movement at the turn of the century, the founding of the 'Society for education' (*Anjoman-e ma'âref*) was particularly important for its role in creating institutional structures that could collect and manage donations.

The ideological or religious rationales against the creation of modern 'national schools' came to reinforce the economic motivations behind this opposition. If private donations for 'national schools' became widespread, it could seriously drain the *waqf* revenues, a large amount of which was traditionally endowed to *madrasa*s and administered by the *ulama*. Hence, as Afzal al-Molk observed, the opposition of the *ulama* was so great that those who were initially eager to found, or to fund, such schools withdrew.[89] This, however, does not mean that the *ulama* constituted a monolithic corps against modern education; some of them were in favour of modern schools and contributed to their funding, for example Yahyâ Dowlatâbâdi, Sheikh Hâdi Najmâbâdi and not least, Mirzâ Hasan Roshdiyeh, who was a pioneer in the creation of new schools.[90] Nevertheless, these individual initiatives were exceptions and far from representing any substantial change in the *waqf* institution or in the attitude of the religious establishment towards education.[91]

The inclusion of humoral medicine in the curriculum of the Dâr al-Fonun, despite what has usually been assumed[92] was not a deliberate policy to placate the critics of modern medicine; it was rather symptomatic of the theoretical pre-eminence of traditional medicine promoted in the *madrasa*s. Before being enrolled at the Dâr al-Fonun, the young students aged from

10 to 15 had already been trained in the traditional *maktab* and *madrasa*. Many traditional physicians of the army, either out of their personal interest or by the order of the government, also attended the courses of the Dâr al-Fonun, the only state institution of higher education.[93] Although traditional medicine was taught at the Dâr al-Fonun from its foundation, its persistence in the following decades despite the introduction of modern ideas led the government to formalise its teaching by creating a chair of traditional medicine held by Mirzâ Ahmad Hakim-Bâshi Kâshâni.[94] It was within such a background that, as David Menarshi pointed out, the Dâr al-Fonun inherited 'the traditional schooling such as the preference for learning texts by heart and quoting from the textbooks as opposed to analysis, theoretical discussion, or scientific experiment.'[95]

It is within the framework of this institutional, intellectual and financial link between the medical education and the *madrasa* system that some physicians in order to modernise medicine endeavoured to set up new medical schools by collecting private funding. Mirzâ Zeyn al-'Âbedin Khân *Loqmân al-Molk*, a graduate of the Dâr al-Fonun was sent to Paris to complete his medical studies. On his return to Iran in, or after, 1894, he established, with the help of other scholars such as Seyyed Hasan Taqi Zâdeh, Adib al-Mamâlek Farâhâni, Mohammad 'Ali Tarbiyat, Mirzâ Yusof Khân Mostashâr al-Dowleh, Monsieur Renard French, and his own brother, Dr Fattâh Khân *Fakhr al-Atebbâ*, a school called 'Loqmânieh', in which modern medicine, natural sciences and pharmacy were taught.[96] Likewise, in 1896, Mirzâ Mahmud-Khân 'Alâ' al-Molk, the shah's ambassador to St Petersburg and then to Istanbul, endeavoured to raise funds amongst the nobility and private individuals to create a school with two departments of medicine and arts, and industry.[97]

The creation of public elementary schools that had begun in the 1870s, accelerated after the Constitutional Revolution. The salient trend during this period was the allocation of a large part of the charitable funding to the elementary public schools, bound to provide a curriculum different from that of traditional *maktabs*. As a result, by 1910, there were 10,531 children enrolled in 113 elementary schools. In the northern province of Guilan there were, by 1925, a total of 37 private and public elementary schools with 4,383 pupils while, in the same year, in Guilan 188 traditional *maktabs* provided education for 2,950 pupils.[98]

But private funding and the new organisation, i.e. *anjoman-e ma'âref* (society for education), did not prove sufficient nor efficient enough for large-scale modern schooling. State intervention was felt necessary from an early stage: shortly after the creation of the the *Anjoman-e ma'âref* by Amin al-Dowleh in 1898, it was transformed into a state institution, to which the founders of other new schools became affiliated. In order to subsidise the institute, Mozaffar al-Din-Shah ordered a foundation to be set up that collected money from the shah's treasury, ministers, the nobility and some merchants.[99] Later, under the Constitutional Revolution this trend was

further reinforced. Article XIX of the Constitution entrusted the establishment of schools to the Ministry of Art and Science, and the expenses were to be borne by the government and the 'Nation'. In 1919, a tax of two per cent on the cash-duty and one *riyal* on every 330 kilograms of cereals produced from landed properties were levied in support of public schools. It was only in 1926, that is, 20 years after the Revolution, that the parliament, during the increasing centralisation of power under Reza Shah (1925–41), voted for one-fifth of the one per cent of the land revenue of the country to be collected for the founding of public primary schools.[100]

It was not until the new schools were founded through private and secular donations, and then until the *owqâf* as an institution and as providing financial resource for education were integrated into the state under Rezâ Shah, that a significant change in the curricula of the schools began, characterised by a substantial presence of modern sciences and modern methods of teaching.

Conclusion

The impact of the *waqf* institution on education and on its modernisation has not been fully appreciated by historians. Originally and principally for pious and charitable purposes, the *waqf,* in the course of its development, became a legal device for the transfer of ownership and inheritance in Islam, and with the expansion of the *madrasa* network, played a fundamental role in the making of the educational system.

Rather than establishing a direct causal relationship between the development of the *owqâf* and the *madrasa*s, on the one hand, and medical education in Qâjâr Iran, on the other, I have tried to suggest an angle of research in the history of medical modernisation, that consists of examining the nature of medical education and the process of its modernisation in nineteenth century Iran within the framework of an economic and institutional relationship between the *owqâf* and *madrasa*s. Through its close link with education, the *waqf* institution had for several centuries contributed to the construction of the medical knowledge while conferring social and professional status as well as ideological values to the learned medical profession that could not disappear by the creation of one Dâr al-Fonun. Within such a context, we can better appreciate why even those trained in modern medicine at the Dâr al-Fonun, such as Nasrollâh-Mirzâ Qâjâr, wrote a book, *Chahâr maqâleh-ye Nâseri*, imbued with traditional concepts.[101] What is more, Nasrollâh-Mirzâ Qâjâr's master, Dr Tholozan, who argued that only the sweeping replacement of traditional texts by modern medical literature could bring about the transformation of the health care system in Iran, wrote an approving preface/recommendation to the *Chahâr maqâleh-ye Nâseri*.[102] There was thus a gap between what Dr Polak or Dr Tholozan, the professors of medicine at the Dâr al-Fonun, wanted to teach and practise, and what they were practically able to do.[103] It was within this gap that power relationships

between European and Iranian medicines were operating. Such a gap also informed modern medical education leading to a hybrid medical knowledge and practice that persisted through into the first part of the twentieth century, where many modern-educated physicians still used their traditional knowledge alongside their expertise on modern medicine, alternatively or concurrently.[104] Nonetheless, since the 'modern' state institutions throughout the Qâjâr period incorporated Galenic medicine as part of the Qâjâr policy of the centralisation of power, traditional medicine gradually lost its *institutional* identity as the state further centralised and standardised medical education in line with modern medicine. This experience was in contrast to that in India and Sri Lanka, where Ayurvedic physicians tried to preserve their *institutional* identity despite assimilating modern medical concepts.[105]

Notes

1 See for example, M. Ringer, *Education, Religion, and the Discourse of Cultural Reform in Qajar Iran*, Costa Mesa, California, Mazda Publishers, 2001, p. 107. Apart from a few authors who have only touched upon the internal structure and curricula of the new institutions there is no thorough study of the content of courses taught at the school. See Mohammad Mohit-e Tabâtabâ'i, '*Dâr al-Fonun va Amir Kabir*', in Qodratollâh Rowshani Za'ferânlu (ed.) *Amir Kabir va Dâr al-fonun,* Tehran: Tehran University Press, 1354/1975, pp. 186–94, see particularly pp. 192–94; see also Mahmud Najmâbâdi, '*tebb-e Dâr al-Fonun va kotob-e darsi-ye ân* (Medicine at the Dâr al-Fonun and its text books), in ibid., pp. 202–37.

2 See for instance various works of Fereydun Adamiyat, including: *Andisheh'ha-ye Mirzâ Âqâ Khân-e Kermâni*, Tehran: Amir Kabir, 1967; *Andisheh'ha-ye Mirzâ Fath'Ali Akhundzâdah*, Tehran: Khârazmi, 1970; *Andisheh-ye Taraqqi va hokumat-e qânun, 'asr-e Sepahsâlâr,* Tehran: Khârazmi, 1972; David Menashri, *Education and the Making of Modern Iran,* Ithaca and London: Cornell University Press, 1992, pp. 19 ff.; Peter Avery, *Modern Iran,* London: Ernest Benn, 1967; Issa Khân Sadiq, *Modern Persia and Her Educational System,* Studies of the International Institute of Teachers College, Columbia University, 1931.

3 See for example: H. Ebrahimnejad, *Medicine, Public Health and the Qâjâr State,* Leiden, Boston: Brill, 2004, and 'Epidémies, médecine et politique dans l'Iran du XIXe siècle', *Studia Iranica*, 30 (2001), pp. 105–34.

4 A. Reza Arasteh, *Education and social awakening in Iran 1850–1968,* Leiden: E.J. Brill, 1969; David Menashri, *Education and the Making of Modern Iran* and Ringer, *Education,* which examines the reform of the educational system in Qâjâr period, mainly focusing on ideological factors of tensions between modernists and traditionalists, but never points to the economic roots of the opposition of the religious establishment to the creation of 'modern schools'. E. Naraghi, on the other hand, points to this question in one short sentence when he indicates that Reza Shah in his effort to centralise education, sought also to bring the *owqâf*, financial source of the *madrasa*s, under state control. See: Ehsan Naraghi, *Enseignement et changements sociaux en Iran du VIIe au XIXe siècle,* Paris: Editions de la Maison des sciences de l'homme, 1992, p. 155.

5 Mohammad Mohit-e Tabâtabâ'i, '*Dâr al-Fonun va Amir Kabir*', pp. 186–87.

6 *Ruznâmeh ye 'elmi,* no. 10, 19 March 1877, Library of Majles, Tehran. In 1288/1869, Mirzâ Mehdi Khan Shaqâqi Momtahen al-Dowleh, went on a mission to Belgium to purchase 40,000 rifles, half of which were needle guns that according

to Momtahen al-Dowleh were recently invented. See: Mirzâ Mehdi-Khân Momtahen al-Dowleh Shaqâqi, *Khâterât-e Momtahen al-Dowleh,* edited by Hoseynqoli Khânshaqâqi, Tehran: Amir Kabir, 1353/1974, p. 201.

7 Significantly, with the exception of two students who are known to have studied European law and political sciences during 1859–67 (see Monica Ringer, *Education,* p. 171, and Mirzâ Mehdi-Khân Momtahen al-Dowleh Shaqâqi, *Khâterât-e Momtahen al-Dowleh,* p. 84), no student was sent to Europe for the study of humanities. In Egypt a very similar trend characterised modernisation under Mohammad 'Ali. From a mission of 44 students sent by Mohammad 'Ali to Europe in 1821, two studied medicine and surgery, eleven studied military administration, and the rest studied agriculture, hydraulics, metallurgy, lithography and architecture. See: Naguib Bey Mahfouz, *The History of Medical Education in Egypt,* Cairo: Government Press, Bulâq, 1935, p. 24.

8 Sadiq, *Târikh-e farhang-e Iran az âghâz tâ 'asr-e hâzer,* p. 366; Christopher Melchert, 'The Etiquette of Learning in the Early Islamic Study Circle' in Joseph E. Lowry, D. Stewart & S. Toorawa (eds), *Law and Education in Medieval Islam; Studies in Memory of Professor George Makdisi,* Gibb Memorial Trust, 2004, pp. 33–44, see pp. 33–35.

9 During the first two centuries of Islam, various schools of law, namely the *mu'tazeli*, the *hanbali*, the *maliki*, the *shâfe'i* and the *ash'ari*, emerged and the subsequent disagreements and debates on legal and theological issues grew, revolving around two main methods of solving questions either by referring strictly to '*hadiths*' (traditions) or by relying on '*ra'y*' (personal opinion) and *qiyâs* (analogical reasoning).

10 George Makdisi, *Ibn 'Aqil et la résurgence de l'Islam traditionaliste au XIe siècle,* Damas: Institut Français de Damas, 1963, p. 381.

11 Literally devotees, the *fedâyees* were also called *dâ'yees* (those who challenge the existing sect or create a new one). They were the partisans of Hasan Sabbâh (from Qom in Iran), an enemy of Nezâm al-Molk (from Mashhad in Iran) and close to the Fatemid dynasty in Egypt, the founder of which was also an Ismâ'ili Shiite. The Ismâ'ili *fedâyees* were prepared to kill their enemies by suicide attacks.

12 Nurollâh Kasâ'yee, *Madâres-e nezâmiyeh,* Tehran: Amir Khabir, 1363/1984, pp. xi–xiv.

13 After the sixth Shiite Imam, Ja'far al-Sâdeq (who died in 765), the Shiite allegiance was divided between the followers of his two sons, Mosâ al-Kâzem and Ismâ'il. After the death of Ismâ'il, his followers believed that he was the last Imam and that he did not die but disappeared (or went on a long absence) from sight and would come again one day to restore justice. The Ismâ'ilits are also called the Seveners, as opposed to the other branch of shiism (the Twelvers, duodecimants) who believe in the *gheibat-e kobrâ* (an absence of long duration till now) of the twelfth Imam, Mahdi (died in, or 'disappeared since', 873), the descendant of Musâ al-Kâzem. The Shiites in Iran are the Twelvers.

14 Joseph E. Lowry, D. Stewart and S. Toorawa (eds), *Law and Education*, p. 2; G. Makdisi, *History and Politics in Eleventh Century Baghdad,* London: Variorum, 1991; and *Ibn 'Aqil: Religion and Culture in Classical Islam,* Edinburgh: Edinburgh University Press, 1997. See also: *Târikh-s Gozideh*, p. 401, cited in Mortezâ Râvandi, seyr-e farhang va t'alim va tarbiyat dar iran va Orupâ [History of culture and education in Iran and Europe], Tehran: Nashr-e gooya, 1364/1985, p. 39. I have adopted the thesis of Makdisi regarding the development of the Islamic college, for its coherence and in order to provide an outline of a question that is not the main purpose of this chapter. I am aware that the history of the *madrasa* and their development in relation to the rise of the above-mentioned schools of law (or *mazhabs*) is a complex one and that Makdisi's opinion although widely accepted, is not shared by all scholars.

15 There is no indication about the *waqf* (set apart for), or *habs* (confined) – the term used for *waqf* in North African countries – in the Koran. The *waqf* in Islam stems from the human or religious principle of charitable donation. There are many prophetic traditions on which are based the development of legal discourse on *waqf*. One *hadith* (lit. narration) quotes the Prophet as saying: 'When a man dies, three things [should] survive him: his perpetual alms (*sadaqa jâriya*), his science or knowledge that benefits others and a pious son who prays for him. The perpetual alms has been interpreted as *waqf* or endowment. In another *hadith,* 'Omar b. Khattâb, the military commander of the Prophet during the war of *khaibar* (in 693), and later the second Caliph (634–44 C.E.), sought advice from the Prophet about the conquered land. The Prophet ordered him to cordon it off, so that it cannot be sold or transferred by inheritance, and to allocate its usufruct to the poor.' See Peltier, *Le livre des testaments du Cahih d'Elbokhari,* Alger, 1909, p. 69, cited in Behaeddin Yediyildiz, *Institution du vaqf au XVIIIe siècle en Turquie: étude socio-historique,* Ankara: Editions Ministère de la Culture, 1990, p. 32.

16 Hâj Mirzâ Hasan Hoseyni-ye Fasâyee, *Fârsnâmeh-ye Nâseri,* edited by Mansur Rastegâr-e Fasâyee, 2 vols., Tehran: Amir Kabir, 1382/2003, vol. 2, p. 943.

17 For the differences between the *akhbâris* and the *usuli*, see: Abdolrafi' Haqiqat, *Târikh-e nehzathâ-ye fekri-ye irâniân dar dowreh-ye qâjâriyeh* (the history of intellectual movements in Iran under the Qâjârs), 3rd part, Tehran: sherkat-e mo'allefân va motarjemân-e Iran, 1368/1989, pp. 1266–67. See also: Nikki Keddie, *Modern Iran, Roots and Results of Revolution*, New Haven & London: Yale University Press, 2003, pp. 19–20; Said Amir Arjomand, *The Turban for the Crown. The Islamic Revolution in Iran,* New York, Oxford: Oxford University Press, 1988, pp. 13ff.

18 Cited by D. Menashri, p. 42.

19 E. Naraghi, *op.cit.* pp. 43–44. Private *madrasa*s existed already under the Seljuks. Ghazzâli (1058–1111), the rationalist theologian under the Seljuks left the Nezâmiyeh of Neyshâbur when he came under the attack of his opponents after Fakhr al-Molk, his protector at the government, was assassinated. He did not resume his teaching at the Nezâmiyeh despite repeated invitations from Soltân Sanjar and took up his teaching in his private *madrasa* and *khanqâh*. See: Nurollâh Kasâ'yee, *Madâres-e nezâmiyeh va ta'sirât-e 'elmi va ejtemâ'i-ye ân* (Nezâmiyeh colleges and their scientific and social effects), Tehran: Amir Kabir, 1363/1984, pp. 97–98. On the control of the Seljuk government on *madrasa*, see A. S. K. Lambton, 'The internal structure of the Seljuk Empire', *The Cambridge History of Iran,* vol. 5, Cambridge, Cambridge University Press, 1968, pp. 203–82, p. 276.

20 Jalâl al-Din Homâyee, *Ghazzâli-nâmeh,* Tehran: ketâbforushi forughi, 1342/1963, pp. 19–21.

21 Shams al-din Mohammad b. Mahmud Amoli, *Nafâyes al-fonûn fi 'arâyes al-'oyûn* (the precious branches of learning in the quintessential sources of knowledge), edited by Hâj Mîrzâ Abul-Hasan Sha'rânî, 3 volumes, Tehran: Library Eslâmiyeh, 1958, vol. 1, pp. 16–21.

22 Mortezâ Râvandi, *seyr-e farhang va t'alim va tarbiyat dar iran va Orupâ* [History of culture and education in Iran and Europe], Tehran: Nashr-e gooya, 1364/1985, pp. 39–40.

23 Such a division was also made in pre-Islamic Iran under the Sasanians. According to the Avesta, there was a medicine of the soul that belonged to the Mages (Zoroastrian priests) and a medicine of the body that was the domain of the physicians. See Arthur Christensen, *Iran dar zamân-e sâsâniân* (Persian translation of *Iran sous les Sassanides,* 2nd edition, Copenhagen: E. Munksgaard, 1944), pp. 442–43.

24 Byron Good and Mary-Jo Del Vecchio Good, 'The Comparative Study of Greco-Islamic Medicine: The Integration of Medical Knowledge to Local Symbolic

Contexts', in C. Leslie and A. Young (eds), *Paths to Asian Medical Knowledge,* Berkeley, Los Angeles, Oxford: University of California Press, 1992, pp. 257–71.

25 Such as, the anonymous, *Rashahât al-Fonun*, Persian MS, copy dated 1227/1812, St Petersburg, National Library, No. 529; Shams al-din Mohammad b. Mahmud Amoli, *Nafâyes al-Fonun*; Mohammad Kermâni, *Kholâsat al-'olum,* Persian MS, 13th/19th century, Tehran: National Library, MS 1621 F.

26 Majlesi also devoted a portion of his Behâr al Anvâr to medicine, including Galenic medicine and the medicine of the Imam (*tebb al-a'emmah*). A. Newman, 'Muhammad Baqir Majlisi', in *Encyclopaedia of Islam*, vol. VIII, p. 784, Leiden: Brill, 1987.

27 von Grunebaume rightly called madrasa 'mosque-school'. See: G. E. von Grunebaume, *Classical Islam: A History 600–1258,* translated by Katherine Watson, London: George Allen and Unwin Ltd, 1970, p. 137.

28 For example in the Mansuriyyeh *madrasa* in Shrâz, built in 893/ 1575. See Hoseyni-ye Fasâyee, *Fârsnâmeh-ye Nâseri*, p. 1040.

29 The Jâme' al-Azhar was originally a Shiite mosque and a *madrasa* connected with it was established in 988, for the teaching of Shiite law.

30 Mortezâ Râvandi, *Seyr-e farhang*, p. 120. In the Ottoman Empire the *külliye,* synonymous with as the *Jâme',* comprised a school, a mosque, a hospital, a bath and a public kitchen. See chapter 5 in this volume, footnote 14.

31 Khowandmir, *Târikh-e habib al-siyar fi akhbâr-e bashar,* 3 vols, Tehran: ketâbkhâneh-ye khayyâm Publishers, 1333/1954, vol. 3, pp. 546–47. About the *dâr al-shafâ* in its two versions of hospital and *madrasa*, see: H. Ebrahimnejad, 'The State Hospitals and Development of Medicine in Nineteenth-Century Iran', in: Mark Harrison, Margaret Jones and Helen Sweet (eds), *From Western Medicine to Global Medicine: The Hospital Beyond the West*, New Delhi: Orient Longman, 2008.

32 On this subject see: Lawrence I. Conrad, 'Arab-Islamic Medicine', in W. Bynum and R. Porter (eds), *Companion Encyclopaedia of the History of Medicine,* London: Routledge, 1993, vol. 1, pp. 676–727.

33 Astarâbâdi, 'Ali b. Mohammad Ja'far, '*Safineh-ye nuh'* (Noah's Ark), written in 1310/1892, Qom, Library of Ayatollâh Mar'ashi. For an abridged English translation of this source see H. Ebrahimnejad, 'Religion and medicine in Qâjâr Iran' in Robert Gleave (ed.), *Religion and Society in Qâjâr Iran*, London: Routledge-Curzon, 2005, pp. 401–28, p. 421.

34 Mirzâ Yahyâ, later called Moshir al-Dowleh, instead of serving in medicine was appointed minister of foreign affairs and governor of Yazd and Fars under Nâser al-Din-Shâh (1848–96). Hoseyn Mahbubi Ardakâni, *Târikh-e mo'assesât-e tamaddoni-ye jadid dar Iran,* 2 vols., Tehran: Tehran University Press, 1354/1975, vol. I, p. 191.

35 Mahbubi Ardakâni, vol. 1, pp. 130–59; Gholâm-Hoseyn Mirzâ Sâleh (ed.), *Majmu'eh ye safarnâmehâ-ye Mirzâ-Sâleh-e Shirâzi* [collection of the travelogues of Mirzâ Sâleh], Tehran: *Nashr-e târikh-e Iran*, 1364/1985, pp. 157 ff. passim.

36 This arrangement was made by Peter Worth, a parliament deputy who had met Mirzâ Ja'far accidentally in the street, probably because of his Persian attire. Mahbubi Ardakâni, vol. 1, p. 151.

37 The group was sent back to Iran in July 1819, but Mirzâ Ja'far remained one more year to complete his medical studies. Instead, Mirzâ Bâbâ who had completed his medical studies, returned with the group. Mahbubi Ardakâni, ibid, pp. 157–58.

38 The journal *Dânesh,* no. 2, 24 June 1882. It would be interesting to compare this number with the figures of the Imperial civil medical and pharmaceutical school established in 1867 by Sultan Abdul Aziz and then expanded under Sultan Abdul Hamid II in the Ottoman Empire. By 1900, 584 physicians and 442 pharmacists

had graduated from the school. See: *Gazette Madical d'Orient,* no. 13, 31 August 1900, pp. 217–18.

39 E. G. Browne, *A Year Among the Persians,* London: Adam & Charles Black, 1893, pp. 97–98, cited in M. Ringer, *Education*, pp. 151–52.

40 This rough estimation can easily be verified by simply referring to the lists of medical manuscripts in different libraries. The following books, for instance, were dedicated to Nâser al-Din-Shâh: Musâ b. 'Ali-Rezâ Sâveji, *Hefz al-sehheh,*; Mohamad b. Jalâl al-Hoseyni Tabrizi, *Ad'iyeh–ye haft-hezâr* … (prayers and verses to prevent injury caused by evil eye); Mirzâ Abol-Qâsem Shirâzi, *Tabâshir al-hekmat;* Seyyed 'Ali Hoseyni, *Hâfez al-Sehheh-ye nâseri,* 1282/1865.

41 Adamiyat and Nateq, *Afkâr-e ejtemâ'i va siyâsi va eqtesâdi dar âsâr-e montasher nashodeh-ye dowrân-e qâjâr* (social, political and economic thoughts in the unpublished sources of the Qājār period), Tehran: Agâh, 1356/1977, p. 78–79.

42 Mohammad Mohit-e Tabâtabâ'i (ed.), *Majmu'eh-ye âsâr-e Mirzâ Malkam-Khân* (collection of Mirzâ Malkam-Khân's writings), Tehran: *Ketâbkhâneh-ye dânesh*, 1327/1948.

43 As Issa Khân Saddiq writes, the Qâjâr state did not show any interest for education and had not established any school before 1851. See Issa Khân Sadiq, *Modern Persia*, p. 35.

44 According to Lambton, '… in the course of time the functions of the provincial governors, the tax collector, the tax farmer, and the man to whom the land assignment was made tended to be combined in one person. This led to the emergence of large landed properties virtually independent from the central government'. A. K. S. Lambton, 'Rural Development and Land Reform in Iran', in *Symposium on Rural Development*, Central Treaty Organisation, 1963, pp. 112–15, cited in: Charles Issawi (ed.), *The Economic History of Iran 1800–1914*, Chicago and London: The University of Chicago Press, 1971, p. 53.

45 It would be interesting to examine the constitution or the emergence of what we might call the 'religious establishment', '*ulama*' or 'clerical power' in Islam within the framework of the development of the *owqâf.*

46 This was the case in most Islamic countries. In Egypt, Algeria, Tunisia and Morocco, the number of the *habus* (the term signifying *waqf* in North African countries) increased in the eighteenth and nineteenth centuries before they were centralised either by the colonial governments or by the reformist states. See: Randi Deguilhem and Abdelhamid Hénia (eds), *Les fondations pieuses (waqf) en Méditerranée: enjeux de société, enjeux de pouvoir,* Koweit: Fondation Publique des *Awqaf* du Koweit, 2004. The increase in *waqf* properties has also been examined from a legal viewpoint. According to P. Hennigan, the conversion of private properties to *waqf*, was due to legal and Koranic obligation of *'ilm al-farâ'id,* (science of share): 'Although a dying person is entitled to make a bequest of one-third of his property, the remaining two-thirds is divided and distributed according to the Koranic 'forced-share' system.' Certainly, creating a *waqf* was considered as an act of piety; but at the same time, it 'justified circumventing the Koranic inheritance verses'. See: Peter C. Hennigan, *The Birth of Legal Institution. The Formation of the Waqf in Third Century A.H. Hanafi Legal Discourse,* Leiden, Boston: Brill, 2004, Introduction, pp. xv–xvii. See also 'Wakf', *Encyclopaedia of Islam, vol. IX*, Leiden: Brill, 2002, pp. 59–99.

47 See Christoph Werner, *An Iranian Town in Transition: A Social and Economic History of the Elites of Tabriz, 1747–1848,* Wiesbaden: Harassowitz Verlag, 2000, p. 146.

48 Ira M. Lapidus, *A History of Islamic Societies*, Cambridge and New York: Cambridge University Press, 1991, p. 165.

49 Christoph Werner, 'Pious Merchants Religious sentiments in wills and testaments' in Robert Gleave (ed.), *Religion and Society*, 211–26, p. 224. The *Zakât* is slaughtering, offering a sacrifice.

50 Nikki R. Keddie, *Qajar Iran and the Rise of Reza Khân 1796–1925*, California: Mazda Publishers, 1999, pp. 16, 40.
51 This was the case, for example, of a *qanât* (subterranean water irrigation), endowed by Nâser al-Din-Shah (r. 1848–96). In his *waqf* deed (undated), he divided the water supply in seven rotations corresponding to the seven days and nights of a week. The administration of five rotations (five 24-hour water supplies per week) to various mosques, *madrasa*, residential districts and *hammâm* (public bath) were conferred to five of the '*ulama*, and the administration of only two rotations to supply water for the inhabitants of the royal Arg, gardens and the state hospital, was preserved for the Shah himself and after him, his successors. See Lesân al-Molk Sepeher, *Nâsekh al-Tavârikh*, edited by Jamshid Kiyânfar, 3 volumes, Tehran: Asâtir Publishers, 1377/1998, vol. 3, pp. 1515–16.
52 Guity Nashat, *The Origins of Modern Reform in Iran, 1870–80,* Urbana and London: University of Illinois Press, c1981, pp. 29 ff, 137 passim; D. Menashri, pp. 30 and 35.
53 About the school Moshiriyeh Cf: D. Menashri, p. 60; Mahbubi Ardakâni, pp. 366–67; Nashat, *Origin,* p. 148; Ringer, *Education*, p. 148.
54 Not to be confused with the Nezâmiyeh *madrasa*s in Neyshâbur and Baghdad in the eleventh century.
55 See for example Guity Nashat, *The Origin*; D. Menashri, *Education*; Shaul Bakkhash, *Iran: monarchy, bureaucracy & reform under the Qajars 1858–1896*, London: Ithaca Press for the Middle East Centre, St Antony's College, 1978.
56 G. Nashat, *The Origin,* p. 148.
57 Ibid, p. 149.
58 Ringer, *Education,* pp. 208–13.
59 In the eighteenth-century Ottoman Empire, 14 per cent of the *waqf* revenue went to finance the primary schools (*maktab*) and 10.5 per cent was allocated to the *madrasa*s. This means that most of the *maktab*s and *madrasa*s in the Ottoman Empire depended on *waqf* endowments. See: B. Yediyildiz, *Institutions du vaqf*, pp. 171, 174 and 217. About the decline of the *owqâf* in the Ottoman Empire due mainly to the increasing state control during the *Tanzimat* (reforms) and the establishment of the ministry of *owqâf* under Sultan Mahmud II (1826–39), see: John Robert Barnes, *An Introduction to the religious foundations in the Ottoman Empire,* Leiden, New York, Kobenhavn, Köln: E. J. Brill, 1987, pp. 118 ff.
60 Mahbubi Ardakâni, vol. 2, pp. 16–17.
61 It was in 1874, within a year of his dismissal from the post of prime minister that Sepahsâlâr decided to construct his mosque-*madrasa*. See: Mehdi-Khân Momtahen al-Dowleh, *Khâterât-e Momtahen al-Dowleh*, p. 234.
62 R. Deguilhem, p. 397.
63 For the case of the Christian Armenian community in Iran see: Ali Foruhi and Faramarz Talebi, *Armaniyân-e Guilan* (The Armenians of Guilan), Guilan: Nashr-e Guilakân, 1377(1998), pp. 97-98. In the Ottoman Empire the Armenians also used the *waqf* system to endow hospitals. See chapter 5, p.92, footnote 66.
64 As in the case of Manuchehr-Khân-e Mo'tamed al-Dowleh, a Georgian eunuch who held the governorship of several provinces under Fath'Ali-Shah (r. 1798–1834) and Mohammad-Shah Qâjâr (r. 1834–48. See Nobuaki Kondo, 'The Vaqf and the Religious Patronage of Manûchihr Khân Mu'tamed al-Dawlah', in R. Gleave (ed.), *Religion and Society*, pp. 227–44. At the time of his death in 1847, Mo'tamed al-Dowleh's wealth amounted to 3.5 million tomans, nearly one-and-a-half times the revenue of the state. See Abbâs Eqbâl Ashtiyâni, *Mirzâ Taqi Khan Amir Kabir,* Tehran: Tus, 1355/1976, p. 195.
65 This is particularly true in private (or *ahli*) *waqf*. The other kind of *waqf* is called *khairi* (charitable, or public). In the former (*ahli*), the beneficiary is the member(s) of the family and in the latter (*khairi*), the beneficiary is the public. In the former, the *motavalli* (administrator) is a member of the family (beneficiary), while in the

latter a third person, who is usually a religious authority, is appointed as the *motavalli*.

66 Randi Deguilhem, 'On the Nature of Waqf. Pious Foundations in Contemporary Syria: A Break in the Transition', in R. Deguilhem & Abdelhamid Hénia (eds), *Les fondations pieuses (waqf) en Méditerranée: enjeux de société, enjeux de pouvoir*, Koweit: Fondation Publique des *Awqaf* du Koweit, 2004, pp. 395–430, p. 398.
67 G. Makdisi, *The Rise of Colleges,* p. 281.
68 Ibid, p. 283.
69 R. Deguilhem, p. 398.
70 Nashat, *The Origin*, p. 146.
71 Before its construction and being fully operational, the Dâr al-Fonun was called *Maktab-khâneh-ye padeshâhi* (or royal school). See Eqbâl Yaghmâ'i, 'banây-e dâr al-Fonun' (the foundation of the Dâr al-Fonun) in Qodratollâh Rowshani Za'ferânlu, (ed.), *Amir Kabir va Dâr al-fonun*, p. 69. This name was apparently taken from the Ottoman *Mekteb-e 'Ulum-e Harbiyeh* (the military school) opened in 1834 or *Mekteb-e Tibbiyeh-e Shâhâneh* (royal medical school) opened in 1839.
72 Râvandi, *Seyr-e farhang*, p. 105; Soheila Torabi Fârsâni (ed.), *asnâdi az madâres-e dokhtarân az mashruteh tâ Pahlavi* (some documents on schools for girls from constitutional movement to the Pahlavi era), Tehran: enteshârât-e sâzmân-e asnâd-e melli-ye Iran, 1378/1999, introduction, p. 13.
73 Khaled Fahmy, *All the Pasha's men: Mehmed Ali, his army and the making of modern Egypt,* Cambridge University Press, 1997, pp. 9–10. In the Ottoman Empire the religious establishment also had much less power than in Iran, a fact that undermined the attempts of land reforms under Reza Shah. In 1938, Reza Shah confided to an American diplomat that religious fanaticism in Iran was more powerful and more hostile to progress than that which existed in Turkey. (See Malcolm E. Yapp, *The Near East since the First World War,* London: Longman, 1996, p. 176).
74 Shaoul Bakhash, *Iran: Monarchy, Bureaucracy & Reform under the Qajars: 1858–1896,* London: Ithaca Press, 1978, p. 383.
75 George Makdisi, *The Rise of Colleges. Institutions of Learning in Islam and the West,* Edinburgh: Edinburgh University Press, 1981, p. 281.
76 F. Adamiyat, *Amir Kabir va Iran,* Tehran: *Khârazmi*, 4th edition, 1354/1975, p. 252; David Menashri, *Education and the Making of Modern Iran,* pp. 55–56.
77 A. Kasravi, *Târikh-e mashruteh*, p. 21.
78 Ringer, ibid, p. 178.
79 Mirzâ Hoseyn-Khân Afzal al-Molk, *Afzal al-Tavârikh,* edited by M. Ettehâdiyeh and S. Sa'dvandiyân (eds), Tehran: nashre târikh-e Iran: 1361/1982, p. 382.
80 Shaoul Bakhash, op. cit., p. 336.
81 Hoseyn Mahbubi Ardakâni, op. cit., vol. I, pp. 259, 308–16.
82 David Menarshi, op. cit., pp. 56–57; G. Nashat, *The Origins,* p. 67; Mohammad Mohit-e Tabâtabâ'î, op. cit., p. 191; Wilem Floor, *Public Health in Qajar Iran*, Washington DC: Mage Publishers, 2004, p. 187.
83 A. Amanat, *Pivot of the Universe. Nasir al-Din Shah and the Iranian Monarchy, 1831–1896,* London and New York: I. B. Tauris, 1997, pp. 415–16.
84 A. R. Arasteh, *Education and Social Awakening,* pp. 30–31.
85 S. Sardarinia, *Dâr al-Fonun-e Tabriz: dovvomin markaz-e âmuzesh-e 'âli-ye Iran,* pp. 13–17.
86 *Ruznâmeh-ye anjoman-e Tabriz*, 12, 15 Sha'bân 1325/ 20 and 23 September 1907 and 11 shavvâl 1325/ 17 November 1907; printed volume, see vol. 1: pp. 498, 508, 571, vol. 2, pp. 611–612.
87 Bâmdâd, *Sharh-e hâl-e rejâl-e Iran dar qarn-e 12, 13, 14 hejri* (Biography of Iranian elites in the 18th-19th- and 20th centuries), 6 vols., Tehran: Publishers Navâ'i, Zavvâr, 1347–55/1968–74, vol. 3, p. 301.

88 See various correspondences of this ministry with the ministry of interior (*vezârat-e dâkheleh*), exchanging views about hospitals and new schools established by private donations and the local societies (*anjoman-e eyâlati*), for example: Asnâd, 297018235, dated 21 Jamâdi II 1329/1/6/1911, and 26 Jamâd II 1329/6/6/1911, Archives of the National Library, Tehran.
89 Afzal al-Molk, op. cit., pp. 381–83; Ahmad Kasravi, *Târikh-e mashrutiyat-ye Iran*, Tehran: Amir Kabir, 1381/2002, p. 21.
90 Ringer, op. cit., p. 265.
91 See footnote 45.
92 See for example, Hoseyn Mahbubi Ardakâni, op. cit., vol. I, pp. 283–84.
93 See anonymous (untitled) 'On Diseases Commonly Affecting Soldiers in the Barracks', ca. 1857, Tehran, Library of Majles, MS 506, fols. 1–6.
94 *Vaqâye' ettefâqiyeh*, no. 456, 19 Jamâdi I 1276/14 Dec. 1859.
95 David Menarshi, *Education*, p. 58. This problem, however, was a general shortcoming of higher education in Iran through into the twentieth century at least in some universities.
96 See: Najmâbâdi, '*tebb-e Dâr al-Fonun va kotob-e darsi-ye ân*' (medicine at the Dâr al-Fonun and its text books), p. 229.
97 (Majalleh-ye) Râhnamâ-ye ketâb, mehr–âbân 1351, pp. 576ff.
98 A. Reza Arasteh, *Education and social awakening in Iran 1850–1968,* Leiden: E.J. Brill, 1962. pp. 73–75.
99 M. Râvandi, op. cit., p. 106; Kasravi, op. cit., pp. 21–22.
100 Isâ Seddiq, op. cit., p. 36.
101 Nasrollâh-Mirzâ Qâjâr, *Chahâr maqâleh-ye nâseri,* undated (second part of the nineteenth century), National Library, Tehran, Ms 478-f.
102 In another case, Tholozan encouraged Mirzâ Abolhasan Khân, one of his pupils to write a book on modern medicine that contains terminology and concepts of traditional medicine. Cf. Mirzâ 'Abolhasan Khân b. 'Abdolvahhâb-e Tafreshi, *Matla' al-tebb-e nâseri* (on pathology), lithograph edition: 1299/1882, Tehran, Majles Library, no. 18585.
103 Despite various similarities between Iran and India in the nineteenth century in the encounter between Western and indigenous medicines, the outstanding contrast is that Western medicine in Iran was far from being monopolistic or using coercive measures to outlaw traditional medical practice and education, unlike in colonial India. Cf.: David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India,* Berkeley, Los Angeles and London: University of California Press, 1993, p. 59.
104 An example is Dr Boqrât (d. 1965), a graduate of the Dâr al-Fonun. I possess a copy of the manuscript he wrote and visited his library that contained French medical sources. As his manuscript indicates, Dr Boqrât practised a mixture of modern and traditional medicine in Neyshâbur where he was the head of the sanitary council. Many books translated mostly from French contained an important amount of traditional medical concepts. See for example *Kholâsat al-Hekmat,* (gist of medicine), translated by Dr Valad Hâji Shokrollâh-Khân Qâjâr, with the assistance of Mirzâ Mohammad Darjazini Hamadâni, who was an expert in traditional medicine, (cf. p. 2 of the book), lithograph edition, 1901, Tehran.
105 On this, see for example chapter four in this book by M. Jones 'A Bounded Medical Pluralism: Ayurveda and Western medicine in Colonial and Independent Sri Lanka'; see also, Neshat Qaiser, 'Colonial Politics of Medicine and Popular Unani Resistance', *Indian Horizons,* April–June 2000, pp. 29–42; A. Mingana, 'The Early Spread of Christianity in India', *Bulletin of the John Rylands Library* 10 (1926), pp. 435–514.

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5 Waqf endowments and the emergence of modern charitable hospitals in the Ottoman Empire

The case of Zeynep-Kamil hospital in Istanbul

Feza Günergun and Şeref Etker

On the sixth of August 1876, in their mansion on the Bosphorus waterfront, the former Grand Vizier Yusuf Kamil Pasha (1808–76) and his wife Zeynep Hanım (Lady Zeynep) (1825–84), the youngest daughter of Mehmed Ali Pasha, Ottoman Governor of Egypt, endowed the hospital they newly created in Istanbul from their privy purse for the benefit of the poor Muslims, as worded in the following reference in the deed (*waqfiye*):[1]

> We endowed [the above mentioned properties and revenues], and we made the stipulations in a most suitable way, so that either men or women Muslims in need of health care in Üsküdar (Scutari) be accepted to the mentioned hospital, and be offered free treatment in separate rooms with greatest attention and respect, and be accompanied to their homes after their complete recovery.

The Zeynep-Kamil Hospital, as it came to be known, deserves special attention because its founders had recourse to the traditional establishment of *waqf* (pl. *ewqaf* [*owqâf*]) endowment, to create and secure a modern hospital for posterity, but also because it became the earliest Ottoman charitable hospital founded and funded by individuals other than the Ottoman sultans or members of the royal family. Such *waqf*s were generally called *ewqaf-i selatin,* whereas the *ewqaf-i 'amme* (lit. public *waqf*s) were instituted by individuals from the public.[2]

In the medieval Islamic world, social welfare was supported by individuals' voluntary donations of money and properties for specific purposes, especially through *waqf*s, or pious endowments. The usufruct from the endowed property was to be employed for the support of various social services and facilities, Sufi lodges, schools, public kitchens, hospices, hospitals, fountains and even bridges. From the early Islamic area, the *waqf* was a permanent endowment based on property, the income of which was to be used for charitable purposes. Muslim institutions of learning or health care were endowments made by individual Muslims, of their own free will. Even

when the founder was of nobility, a sultan or vizier, or other official, he or she endowed the foundation as a Muslim individual, instituting his or her own private property as *waqf* for the benefit of the public.[3]

Already in the thirteenth century, the wives, sisters or mothers of the Anatolian Seljukid sultans founded *darüşşifa*s (hospitals, lit. houses for health) providing free health care, and set conditions for the management of the endowed properties in written deeds.[4] Ottoman mother-sultans (*valide sultan*) who were given land and other property with substantial revenues from the state treasury followed the tradition through the fifteenth and sixteenth centuries. Wealthy ladies of the Ottoman house were also involved in creating pious foundations, as witnessed by the numerous public fountains, *imaret*s (public kitchens), *mekteb*s (primary schools), *medrese*s (colleges) and mosques. Philanthropic endowments were still favoured by wealthy women in the nineteenth century; Bezm-i Alem Valide Sultan, the mother of Sultan Abdülmecid II, endowed the hospital she created in 1845 to the *gureba-i müslimin*, the Muslim destitute. The hospital, which, in the early years of its foundation, was bound by the basic principles of the traditional *darüşşifa*, evolved into a modern hospital in the early twentieth century.[5] Zeynep Hanım doubtlessly pursued the noble tradition of the imperial ladies in founding and endowing charitable hospitals.

The first part of the present article surveys the *darüşşifa*, the traditional (charitable) hospitals of pre-Ottoman and Ottoman Turkey throughout the thirteenth to nineteenth centuries, and introduces other nineteenth-century Istanbul medical institutions of significance, for an understanding of the historical framework in which the Zeynep-Kamil emerged as a private, charitable hospital for the provision of health care for the people of Istanbul. The second part focuses on the foundation of the Zeynep-Kamil hospital, the changes it underwent through the decades after its establishment, and the varied functions it fulfilled until it was transformed into a maternity hospital in 1935. Finally, an analysis of the deed related to the hospital, which contributes to our understanding of its legal and financial fundaments, is presented.

I. *The Darüşşifa*s: Hospitals of the Anatolian Seljuks and Ottomans

From the twelfth century on, most of the strategically and commercially important Anatolian cities[6] possessed health care institutions called *darüşşifa*, *şifahane, darülsıhha*, *bimaristan* or *maristan*.[7] These hospitals were founded by the Seljukid rulers of Anatolia or by their family members. Soon after their foundation, they were endowed to provide free medical treatment to the poor. Formulated as pious foundations, they could remain functional for many centuries without becoming a financial burden to the state.[8] *Darüşşifa*s also served as medical schools, as physicians were trained at these same institutions where the ill and insane were cared for. Seljukid *darüşşifa*s were annexed to a mosque or a *medrese*, the two key institutions of Islamic religious and educational life, and occasionally to a public bath.

The *darüşşifa* founded by the Sultan Gıyaseddin Keyhüsrev in Kayseri, a central Anatolian city, is the earliest of the Seljukid *darüşşifa*s that has survived to the present date. It was completed between 1204 and 1206 after the will of Gevher Nesibe, Keyhüsrev's deceased sister. A decade later, in 1217, the largest of Seljukid *darüşşifa*s was created in Sivas by the Sultan Izzeddin Keykavus. According to the *waqfiye*, the administration of this 30-room *darüşşifa* covering 3400 square metres was entrusted to the treasurer of the Palace. The staff included a *tabib* (physician), a *cerrah* (surgeon), a *kehhal* (oculist), an *eczacı* (pharmacist) and servants. The hospital was in use during the Ottoman reign, until the eighteenth century when it was to be transformed into a *medrese*.

The deed dated 1 Muharrem 615 (30th March 1218) states that the income of the five villages, seven lots of land and 108 shops were bequeathed by Sultan Izzeddin Keykavus, and their revenues were to be spent on the maintenance and management of the *darüşşifa*. It is a *waqf-i müebbed-i şeri*, an Islamic canonical endowment that would last 'forever'. The endowed properties[9] cannot be sold until the day of the last judgement (*kıyamet*), nor leased (*icar*) or pledged (*rehin*). This deed cannot be cancelled for any reason. Whoever violates the principles of the deed will have committed a sin, and ultimately be punished by Allah in hell, to encounter the divine wrath. The treasurer of the Palace is nominated as the trustee and superintendent of the *waqf*, and is authorised to nominate and dismiss the staff, to decide on their remuneration and duties, and provide the medication. The income of the endowed properties will firstly, be spent on the maintenance and renewal of the *darüşşifa*'s premises, and secondly for the real estate providing the revenues, such as shops and farms. New properties will be bought with the remaining income and added to the possessions. In case of necessity, real properties can be leased, for a term not exceeding three years. If the *darüşşifa* is destroyed or extinguished or cannot be repaired and rehabilitated, the revenues will be donated to poor and homeless Muslims.[10]

The Ilkhans (the Mongol dynasty who ruled between 1256 and 1335 in the area covering Persia and central-eastern Asia Minor) founded a *darüşşifa* in Amasya in 1308.[11] With its seven large halls and two rooms surrounding a spacious arcaded rectangular courtyard, the hospital is architecturally identical to those built a century earlier in Sivas and Divriği.[12] The Amasya *darüşşifa* remained as an important medical centre during the early centuries of the Ottoman reign, and in the fifteenth and sixteenth centuries, physicians practising in the hospital compiled and translated medical books from Arabic into Turkish, including Abul Qasim al-Zahrawi's (c. 936–1013) book on surgery *al-Tasrif* (The Collection). The translator was Şerefeddin Sabuncuoğlu (d. after 1468) and his translation, presented to the Ottoman Emperor Mehmed II, renown as Fatih Sultan Mehmed Khan, was entitled *Cerrâhiyet'ül-Hâniyye* (Surgery for the Khans, 1465).[13] The Amasya *darüşşifa* functioned until the mid-nineteenth century when in 1873 a section was assigned to the insane.

Following the foundation of the Ottoman State at the turn of the fourteenth century in Western Asia Minor, the Ottomans expanded eastwards, and consequently took possession of the Seljukid *darüşşifa*s. New *darüşşifa*s, however, were created within *külliye*s[14] that Ottoman sultans established in the new capital cities of Bursa, Edirne and Istanbul. It is noteworthy that very few *darüşşifa*s were founded in Anatolian towns by the Ottomans, who preferred to use the existing Seljukid hospitals. Ottoman *darüşşifa*s owe much to the Seljukid hospitals in architecture, legal status and mode of administration. Both were *waqf* institutions and designed after *medrese*s, which basically consist of rooms lining a square or rectangular arcaded inner courtyard. The Seljukid *darüşşifa* is annexed to a *medrese* or mosque. It is a prominent building with an imposing and highly ornamental portal. On the contrary, the Ottoman *darüşşifa* is one of the many buildings of the *külliye* which is dominated by the centrally located mosque.[15] Whether Seljukid or Ottoman, the aim of the rulers in creating these pious institutions remained unaltered: to provide humane services for the populace with medical care for those who believe in receiving God's blessing, to 'immortalize' their name, and to rest in peace in the grounds of this charitable institution, which generally held the tombs of the *waqf* owners. Moreover, elements of competition, emulation and personal pride were intermingled with the material advantages, since the *waqf* was the only legitimate means of protecting inheritance from confiscation, of preserving property against inheritance laws, and at times of providing a tax shelter.[16]

The three major Ottoman *darüşşifa*s of the fifteenth century were founded in the three successive capital cities. The earliest was created in 1400 by Sultan Bayezid I in Bursa,[17] located in a *külliye* consisting of a mosque, a *medrese*, a public bath and a public kitchen or hospice. The hospital had 20 rooms and was built on an area covering 1590 square metres. The deed certifies the presence of a *sertabib* (head physician), two physicians, two *şerbetçi* (potion dispenser), two pharmacists and two cooks.[18]

The second was the one founded in Istanbul in 1470 by Mehmed II, the Conqueror. The staff included two physicians, a surgeon, an oculist, an *edviye-kûb* (pharmacist), a *hastabakıcı* (male nurse), a *vekilharç* (steward), a *sarf emini* (cashier/accountant), a *mahzen emini* (cellarist), two cooks, a gatekeeper and a servant.[19] This 23-room *darüşşifa* remained the sole charitable hospital of the city until the mid-sixteenth century.

The third opened in Edirne within the *külliye* built next to the Tunca river in 1488 by Bayezit II. More spacious than the *darüşşifa* in Istanbul, its staff of 21 people included a head physician, a physician, two surgeons, two oculists, a pharmacist, a servant, a *kâtip* (secretary), a *vekilharç* (steward), a *kilerdar*/*kilerci* (pantryman), two cooks, a washer of the dead and a gatekeeper.[20] The plan of the Edirne *darüşşifa* brought the individual patient quarters under a single dome covering an atrium surrounded by a gallery.

The Ottoman princes were usually appointed for many years as governors to an Anatolian *sanjak*[21] to learn statecraft and master the art of governing.

The sanjak of Manisa (Magnesia ad Sipylum) in western Anatolia, hosted several princes as provincial rulers. Ayşe Hafsa Sultan (d. 1534), the mother of the Suleiman, the Magnificent (or *Kanuni,* the Lawgiver), spent nine years there altogether, with her son acting as the governor of Manisa. Hafsa Sultan established a *külliye* in 1522, and her son Sultan Suleiman (r. 1520–66) completed her charity by adding a bath and a hospital to the *külliye* in the years 1538 and 1539, respectively, after her death. The staff of the hospital in 1575 numbered two physicians, an oculist, a surgeon, a steward and 25 servants.[22]

The remaining three charitable hospitals of the sixteenth century opened in Istanbul, as parts of *külliye*s which were to become the major urban projects for the capital. The number of their rooms and staff had increased in comparison with those founded in the earlier centuries. The *Haseki Darüşşifa* of Hürrem Sultan, the wife of Suleiman the Lawgiver, numbered 28 rooms.[23] Suleiman's *darüşşifa*, known as the *Süleymaniye* (1557) had 27 and the *Valide-i Atik Bimarhane* (1579) created by the Nurbanu Sultan, mother of Murad III, had 21 rooms. The *Haseki Darüşşifa* built by the master architect Sinan, used the architectural concept of the Edirne *Darüşşifa*, and expanded it into two large sections.[24] The composition of their staff was functional, and included: a physician-in-chief (seated at the *Süleymaniye Darüşşifa*), two physicians, two surgeons, two assistant pharmacists, a (male) nurse, a steward, a secretary, a cook, a pantryman, a *kâsekeş/kâseşuy* (food-bowl server/washer), a clerk for the drugstore, servants, a laundryman, a *bevvab* (gatekeeper), a *ferraş* (attendant, sweeper), *külhancı* (bath stoker), a *şişe bakıcısı* (keeper of glassware) and other servants. The *Süleymaniye Darüşşifa* was the prime medical training institution in the Ottoman Empire, and is particular for its separation of the medical school, and the hospital buildings.[25]

Presumably, the *darüşşifa* of the Sultan Ahmed I *külliye* created at the beginning of the seventeenth century was the last traditional hospital built in Istanbul. It is especially interesting that, *külliye*s built throughout the seventeenth and eighteenth centuries did not include *darüşşifa*s. The five existing *darüşşifa*s dating back to the fifteenth and sixteenth centuries seem to have met the needs of the native population to the extent of present day treatment. In the nineteenth century, the 'modern' hospitals, either founded by the Ottoman state or endowed by individuals were not essentially part of *külliye*s created to encompass the religious, social and educational activities, but stood as distinct health care institutions.

Almost all of the Ottoman traditional *darüşşifa*s lost their popularity as the *hastahane*s, i.e. 'modern' hospitals were built with the lead of the state during the nineteenth century. Hospitals were still pious foundations at the time, and treasury did not provide financial support for their improvement. Mismanagement, abuse and neglect of the endowments after the death of the founders, and the economic inflation gradually reduced their designated incomes. As they failed in providing health care services, the insane, the

homeless, and the sick who could not be looked after in their domicile, were interned at the *darüşşifa*s. As a consequence of this decadence the Ottoman *darüşşifa*s became *tımarhane*s, or asylums for the insane,[26] experiencing a fate similar to other medieval Islamic hospitals.[27]

II. Istanbul – Old and new health institutions in the nineteenth century

The *Tıphane-i amire* and the *Cerrahhane-i mamure* established in 1827 were the medical and surgical schools within the military training system for the provision of modern health services particularly for the army. These schools were brought under the supervision of European physicians, and a new Military Medical School was inaugurated in 1839, leading to a phenomenal development of health services for the Ottoman military. This date coincides with that of the *Tanzimat* (1839) declaration on political and administrative reforms in Turkey. Between 1825 and 1835, five military hospitals were founded in different quarters of the Ottoman capital. Two new barrack-hospitals opened in Üsküdar (Scutari) in 1845, with the largest number of beds: the Kuleli Military Hospital with 300, and the Haydarpaşa Military Hospital with about 600 hospital beds.[28]

In the service of Mahmud II's new army: The Maltepe Military Hospital

Following the abolishment of the 'Janissary order' in the Ottoman army, in 1827, the head court physician, Mustafa Behçet Efendi (1774–1834), proposed the building of a hospital in the Topkapı district,[29] close to the barracks of the new armed forces formed by Sultan Mahmud II (r. 1808–39).[30] The hospital also known as the 'Topkapı Hospital', was planned to hold some 600 beds.[31] The building was designed as a hospital from its inception, and Krikor Amira Balyan (1764–1831), the architect of major public buildings was commissioned for the construction. The large rectangular structure surrounds an inner courtyard; the wards on two storeys open to a corridor facing the court. The staff of the Maltepe Hospital consisted of a senior physician, a second and third physician, a chief surgeon, (second) surgeon, pharmacist, water dispenser, guardian, laundryman, servants and porters.[32] The staff was larger than a *darüşşifa* owing to the number of beds. The structure of this hospital can be conceived as incorporating the basic elements of the classical Seljukid-Ottoman tradition and the military hospital architecture of the century.[33]

The building of the Maltepe Hospital followed the advice of the Mustafa Behçet Efendi, and instigated a new understanding for the hospital institution. The hospital was designed to meet the operational necessities of both the reformed army and modern medicine. This hospital concept also found its way into the planning of the *Bezm-i Alem Gureba-i Müslimin.* The Zeynep-Kamil Hospital may be conceived as a product of the same progressive

perspective. Symbolically, the epigraph at the entrance of Maltepe Military Hospital: '*fihi şifaun li'n-nas*' (wherein there is health for the people)[34] has been used to crown the Zeynep-Kamil Hospital, as well.

The last imperial waqf hospital: Bezm-i Alem Gureba-i Müslimin

The developments in the military health services were not paralleled by the civilian hospitals or the charitable institutions. The *darüşşifa*s and charities serving the populace were few and dated back to the sixteenth century.[35] In the nineteenth century, health services that could be offered were far from being sufficient. The building of the *Fatih Darüşşifa* (1470) was dilapidated, and the *Haseki Darüşşifa* (1550) had become a detention for women in 1843.[36] The *Atik Valide Bimarhane* in Üsküdar (Scutari) was employed as barracks for the cavalry.[37] The *Süleymaniye Darüşşifa* (1555) was in use, but no longer as a general hospital.

As a series of military hospitals were being established, the 'Sublime Porte' also undertook initiatives to promote health services for its civilian subjects. A stone building close to the Yedikule (Seven Towers, *Heptapyrgon*), a fortification within the historical city walls, was designated by the *Hekimbaşı* as a hospital for the *gureba*. Plans to purchase this site, however, had to be altered in 1836 in favour of the renovation of a sixteenth-century *medrese*[38] at *Edirnekapı*, with 20 cells for a 'hospital for the alienated and poor'. This *medrese*-turned-hospital was in operation from 1837 until the opening of the *Bezm-i Alem Gureba* hospital on the 4th of April 1845.[39] Apparently, the *Edirnekapı Gureba* hospital had a small and temporary staff with few beds; the salaries and other expenses were paid by the state treasury. A document dated 1843 ordering the transfer of the prostitutes interned at the *Haseki Darüşşifa* to this hospital may be interpreted as an indicator of the level of services in this hospital.[40] It was the only civilian hospital in Istanbul at this time.[41]

By the nineteenth century, as the *darüşşifa*s could no longer meet the needs of the population in the capital, the ill were generally treated at home. The inefficiency of the civilian hospitals led to the founding of the *Bezm-i Alem Gureba-i Müslimin* hospital, known today as the *Vakıf Gureba* or simply *Gureba.*[42] The founder of this hospital Bezm-i Alem Valide Sultan (d. 1851) was the wife of the reformist Sultan Mahmud II, and the mother of the reigning Abdülmecid II (r. 1839–61), who succeeded him. Two years following its inauguration, a *waqf* endowment for the 'free health care of the alienated and the destitute' came into effect. The revenue was directed to the relief and treatment especially of the Muslim destitute.

Valide Sultan bequeathed a considerable number of properties for the purpose of securing revenues for the staff of the mosque and the hospital: a garden and nine shops in Istanbul; 25,240 olive trees and 63 olive oil factories in Edremit and Kemer-Edremit (Burhaniye); a land called 'Avcı Koru' in the *sanjak* of Kocaeli; a pasture called 'Alacık'; a lake; a grocery; a lot

called 'Balaban Burnu' in the *kaza* (township) of Terkos; a meadow called 'Silahdar' and a few fields; four inns and seven shops in Istanbul; 37 shares in 'Ağa han',[43] and a lot in Istanbul; an island called 'Hurşidler' near Rhodes; a farm in Varna; four mulberry orchards; a watermill in Gemlik; a meadow, two farms and 43 fields in Istanbul; the Katip Efendi farm in Istanbul; an inn, four shops, six *dönüm*s[44] of vineyards and a half share in a lot in Istanbul; a field measuring 27,5 *dönüm*s, five vineyards and half a share in a lot in Istanbul; a coal cellar in Istanbul.[45]

The hospital construction, including purchase of the lot, was funded by the revenue of the listed property, and the establishment and works were supervised by various officers (Minister for the Imperial Mint, the Minister for the *Waqf*s, and the Construction Authority for the *Waqf*s). The *waqf* of this hospital belonged to the *ewqaf-i mazbuta*,[46] a *waqf* administered by the *Ewqaf* Ministry. In later years the hospital was administered by a director *(müdir-i hastahane*) responsible to the same ministry. Therefore, the salaries and various other expenses (supplies, maintenance, etc.) were paid by the *Ewqaf* administration from the collected revenues. This system allowed for the regular payment of salaries, and maintenance costs reaching substantial amounts.[47]

A regulation was also formulated under the supervision of the head physician to the court (9th February 1847/ 22 Safar 1263).[48] It was this regulation that determined the level and quality of the health services at the *Gureba.* During the first decade of its service, the medical administration of the hospital was under the direct responsibility of the head physician (*hekimbaşı*)**,** who approved of the provision of medical supplies, and decided the appointment of physicians. He was also authorised to dismiss the staff. After this period the administration was transferred to the Council of the Imperial Civilian Medical Faculty (*Mekteb-i Mülkiye-i Tıbbiye-i Şahane Meclisi*), and the appointment and dismissal of staff was decided by the Council on the proposal of the hospital deputy.[49]

The *Vakıf Gureba* hospital has been recognised as the first modern *waqf* hospital in Turkey. The building itself, represents a synthesis of the classical *darüşşifa* and the modern 'European' hospital complete with a neo-classical façade.[50] The architectural characteristics of the structure, the original staff, and the absence of specialised departments are indicative of the epoch. The hospital resembles a *darüşşifa* with a typical *medrese* layout (with cells lining a central space).[51] Altogether there were 22 wards lined on corridors overlooking a rectangular courtyard (58 × 94 m.), which covered half of the area of the building.[52] This arrangement represented an architectural and functional synthesis of the *darüşşifa* with nineteenth-century hospital buildings.[53] The hospital differed from the *darüşşifa* in that it was not a part of a *külliye* where the primary element is a mosque. The dimensions of the wards and the height of the ceilings were other distinguishing features. The *Vakıf Gureba* had a total of 200 hospital beds,[54] and became the first civilian hospital to be called a *hastahane*.[55] This may be interpreted as the founders' conception of a new institution, apart from the traditional *darüşşifa* or

bimarhane. The employment of the name *hastahane* may be deliberate to distance this institution from the traditional health establishment, emphasising health care beyond traditional treatment.

The staff of the *Gureba* hospital, however, has certain similarities to the *darüşşifa.* It included a *müdir* (director), *tabib*s (physicians) whose numbers and qualifications are stipulated in the hospital regulations, a *cerrah* (surgeon), an *eczacı* (pharmacist), a *havancı* (person in charge of pounding drugs in a mortar), a *vekilharç* (steward), a *elbise yamağı* (valet), a *ser hademe* (chief servant), 24 *hademe*s (servants), six *meydancı*s (guardians), five *aşçı*s (cooks), a *berber* (barber) and two *kapıcı*s (gatekeepers).[56] The physicians who were appointed to the *Gureba* were not those trained at the old *Süleymaniye Darüşşifa*, but graduates of the Military Medical Faculty adapted to the European model. Surgeons and pharmacists, however, were still trained as apprentices in the *darüşşifa*.[57] The appointment of graduates of the Civilian Medical Faculty (1867) further enhanced the development of the services.

The initial staff of the *Gureba* served for almost twenty years. The first additional appointment was that of a military physician ten years after the opening of the hospital. By the 1890s there were about ten physicians in the staff. Medical departments were not defined in these years; each physician was designated a ward. The outpatients was supervised by the head physician himself, as was customary in the traditional hospitals. The *Sertabib* (or *tabib-i evvel*) received the patients at certain times, examined them, and prescribed medication. Cautery was still being employed at the outpatient clinic of the *Gureba.*

In 1892, an ophthalmologist from the medical division of the military general staff, and a surgeon from the Medical Faculty were appointed to the *Vakıf Gureba*, and the division into specialities began. Physical therapy was separated in 1900, otorhinolaryngology in 1905, the clinical laboratory opened in 1905, and the clinics for dermatology and venereology started in the same year. In 1913, the departments for child health and radiology were established; orthopaedics became an independent surgical branch in 1913, followed by urology in 1915. The expansion of the services mandated new facilities, and it was decided to rebuild. After 1908, the state supported the building of new pavilions for the hospital, in the model of the Rixdorfer (Neukölln) Hospital in Berlin. The construction began in 1910 and could only be completed in 1925, after which the new quarters were reassigned to the state Rabies Institute. A new regulation for the hospital came into effect in 1913.

The evolution of a traditional health institution: The Toptaşı Darüşşifa

The *darüşşifa* at Toptaşı in Üsküdar (Scutari) was within a *külliye* built in the name of Nurbanu Sultan (1525–83), mother to Sultan Murad III. The construction was undertaken by the architect Sinan between 1570 and 1579. The *darüşşifa* was still in service in the first quarter of the twentieth century. However, during the reign of Sultan Selim III (r. 1789–1807) when the army was re-organised (*Nizam-i Cedid*) to European standards, the *külliye* was

given to the cavalry as barracks. During the Janissary revolt that culminated in the assassination of Sultan Selim III, the *külliye* was abandoned for a brief period, again to become the barracks of the *Sekban-i Cihaniye* forces of Vizier Alemdar Mustafa Pasha. After the Janissary order was disbanded by Mahmud II in 1827, the facilities were renovated, and a second floor was added to the *darüşşifa* and *darülhadis* (centre for the study and teaching of prophetic sayings) parts of the compound. It was used by the cavalry of the elite *Asakir-i Mansure-i Muhammediye* troops, and also served the imperial guard regiments as the *Asakir-i Hassa* military hospital until 1845.[58] In 1873, the 'aliens' of *Süleymaniye Darüşşifa* were moved to the *Toptaşı Darüşşifa*. The old hospital was an asylum for the insane until 1927,[59] and the Zeynep-Kamil Hospital located close by became a part of the *Toptaşı Bimarhane* in the years 1920–27.

The *darüşşifa* sections of the *Toptaşı* or *Valide-i Atik Külliye* resembled medieval Islamic hospitals:[60] it was a rectangular building with cells opening to a portico facing a spacious courtyard. In the *waqf* document of 1582, the *darüşşifa* staff was listed as two physicians, two oculists, two surgeons, two pharmacists, two assistant chemists (lit. *havanzen*, mortar-users), four ward assistants, one secretary, one steward, two cooks, two laundrymen, a sweeper, a stoker, a food-bowl server, two glassware keepers, one pantryman, one imam and one *müezzin*. Their respective salaries were also given.[61] The various expenses were to be funded by the revenues from land granted to Nurbanu Sultan as *başmaklık* (lit. slipper money) to cover her personal needs, and her stipend.[62] There were renewed attempts to improve the conditions of the institution, and the health services were formulated through a regulation in 1913.[63]

From monastery to hospital: The Balıklı Greek Orthodox Hospital

There were numerous charity institutions formed by the non-Muslim subjects of the Ottoman Empire. The Greek Orthodox Hospital was established in the *Balıklı* monastery (*Valoukli* in local Greek rendition) located in the Yedikule district. Following a pandemic in 1836, a hospital known as the *Panoliko* was built on the same premises. Its staff consisted of two physicians, a surgeon, a pharmacist and aides. The hospital expanded with the addition of surgical and psychiatric buildings in 1877 and 1882, respectively. With the construction of a fourth pavilion, the hospital became a well-developed institution. The *Panoliko* was a two-storey building with an open, U-shaped plan facing a garden. The two wings were joined by a church and a central clock tower. In this respect, the hospital was structurally different from the *darüşşifa* or barrack-type hospital buildings. The various annexes were located in a smaller back yard.[64]

The construction of the *Balıklı* Hospital was initially financed through the donations of the Greek community. Subsequently, a public fund was created on the incentive of the Greek Orthodox Patriarch in Fener (*Phanarion*) to support

the three hospitals of the community in Istanbul. The fund was reorganised into the National [Ottoman-Greek] Charity Institution, and individual donations to the hospital were accepted through the charity. Properties were also endowed to *Balıklı* for their revenue. The first two surgeons of the Zeynep-Kamil Hospital were consultants to the *Balıklı* Hospital, indicating that there were connections at various levels between the health establishments within the city.

Hospitals for the Austro-Hungarian, British, French and Sardinian communities were operative prior to the Crimean War (1853–56).[65] The Armenian community had several hospitals: The *Surp Prgich* Armenian hospital (1832) at Kazlıçeşme also had a formal *waqfiye*.[66] During the Crimean War, many field hospitals were established in Turkey, including the British military hospital in Scutari.[67] The Société Impériale de Médecine or *Cemiyet-i Tıbbiye-i Şahane* in Istanbul was formed in 1856, in the days after the war. The Society had a regulative influence on the medical profession in the Empire, and current medical issues were discussed at its meetings.

III. The charitable hospital of Zeynep Hanım and Kamil Pasha

In early 1860s, Yusuf Kamil Pasha and Zeyneb Hanım bought a large lot of land on the hilltop above Üsküdar (Scutari), the municipal centre of the Ottoman capital on the Asiatic coast of the Bosphorus. The *Nuh Kuyusu* (Noah's well) area overlooking Üsküdar was highly esteemed for its fine climate. This, however, was not the primary motive for their decision. Zeynep Hanım had a personal devotion to the location: her mother Şeminur Hanım (d.1863) was entombed in the cemetery of the mosque of *Fenaî Tekkesi* (the lodge of the Ali Fenai order of dervishes) in the vicinity. Furthermore, the graves of the founders of the *Celvetî* order,[68] to which the *Fenaî* were subordinated, were also in Üsküdar. The choice reflects the founders' wish of being laid to rest in an environment close to their religious and spiritual convictions. This complied with the Ottoman tradition of founding charities in proximity to a favourite *tekke*.[69] Kamil Pasha and Zeynep Hanım's tombs remain in a modest mausoleum in the front garden of their hospital.

The lack of a regional charitable or civilian hospital in Üsküdar – at the time when the old *Toptaşı Darüşşifa* was still allocated to the military – and their desire to assist the destitute Muslim populace seems to have inspired Zeynep Hanım to undertake the construction of a hospital. Doubtlessly, Zeynep Hanım, whose wealth was legendary,[70] was well aware of the age-old tradition of establishing and endowing hospitals that mother sultans had followed for centuries. The *Gureba* Hospital of Bezm-i Alem Sultan could have served as an example of such an endowed health care institution for herself. According to the historian Ibnülemin Mahmud Kemal Inal, Kamil Pasha decided to embark on the hospital project in the face of criticism of Namık Kemal (1840–88), the nationalist writer of nineteenth century Turkish Enlightenment. Namık Kemal challenged Kamil Pasha, as the head of the State Council, and argued that he should have done more than issue a regulation for public

instruction, and spare a very small portion of his personal fortune to build five or six primary schools and a few secondary schools in Istanbul.[71] Kamil Pasha and Zeynep Hanım were urged to create a private *darülhayr* (lit. house of charity), which they accepted and assumed to be a hospital.

The initiative for the construction of the hospital seems to have started in 1875 when Kamil Pasha and Zeynep Hanım purchased the bonds to cover the expenses for the construction of the hospital and its equipment. The same year a petition was submitted to Sultan Abdülaziz (r. 1861–76), asking for authorisation to build a hospital. It was granted immediately, and the foundation stone was laid a day before of the fifteenth anniversary of the Sultan's accession to the throne on 20 Cemaziyülevvel 1292 (12th June 1875).[72] The construction was commissioned to two architects Bernasconi and Duca, who are likely to have been of Italian origin.[73] (Figure 2) The demise of Kamil Pasha in 1876, only months after the suspicious death of Abdülaziz,[74] and the Ottoman-Russian Wars of 1877–78 hindered the completion of the hospital building, which was finally inaugurated on 11 Rebiülahir 1299 (2nd March 1882). The announcement in the daily newspaper *La Turquie* reads:[75]

> Avant-hier, Jeudi 2 Mars a eu lieu à Scutari l'inauguration de l'hôpital des femmes fondé par S.A. Zeineb Hanoum, femme du feu Kiamil Pacha et fille du grand Mehmet Ali, Pacha d'Egypte. La princesse avec sa nombreuse suite, ainsi qu'une immense foule composée de personnes appartenant à toutes les classes de la population assistaient à cette imposante cérémonie.

Initially, the hospital may have provided health care services for women exclusively, and was first called *Nuh Kuyusu Hastanesi* (Hospital at Nuh Kuyusu), after the name of the district, and *Gureba-i Inas Hastanesi* (Hospital for poor women) or *Üsküdar Nisa Hastanesi* (Üsküdar hospital for women). The deed, however, prescribes the treatment of both male and female patients in need. The hospital was successively called *Gureba Hastanesi*, and later *Zeynep Hanım Hastanesi* or *Kamil Paşa Hastanesi.* After the passing of its founders, the hospital was called the *Zeynep-Kamil Hastanesi* (Zeynep and Kamil Hospital).

The hospital was originally planned to have one hundred beds, but it opened with only forty beds in wards on two storeys. One wing of the hospital was reserved for men and the other for women. The surgical wards were on the second floor. (Figure 3). At the beginning, the staff included about 20 woman-servants; the medical staff included Dr. Zibciyan (Zepdjian), a retired army physician from Üsküdar, and the renowned surgeon Dr. Kanburoglu Alexandre Pasha (1852–1913).[76] In 1884 D. Efthyvoulis (Euthyboulé), surgeon to the *Balıklı* and the French Gérémie hospitals took his position. The hospital pharmacist was Theagénes Akestorides, chemist and owner of the 'Pharmacie Anglaise' at Üsküdar. The Zeynep-Kamil hospital had a director

Figure 2 Zeynep-Kamil Hospital in Üsküdar Istanbul
Source: *Servet-i Fünun*, vol. XVII, no.423, 8 Nisan 1315 [20 April 1899], p.104.

by the name of Ali Bey, and the manager (*mütevelli*) of the trust was Hüseyin Haki Efendi (1825–96), who was Zeynep Hanım's steward (*kethüda*) and the director of the Ferry Company (*Şirket-i Hayriye*) at the same time.[77]

A note from the *muhtar* (district headman) was required to receive free health care services in the hospital. The publication of a regulation on the organisation and the functioning of the hospital with an appendix defining the conditions for admission was projected. However, no such regulation was issued. In Üsküdar, physicians were predominantly working in the military hospitals and there were only a few civilian physicians. Priority was given to staff the private hospital, before issuing a regulation. Therefore, the first physicians to practise at the Zeynep-Kamil Hospital were non-Muslims, and the condition on religion was practically disregarded from the start.

The waqfiye of the Zeynep-Kamil Hospital

Following the established Muslim tradition, in 1876 Zeynep Hanım and Kamil Pasha prepared a trust deed (*waqfiye*) to endow the hospital to the Muslim poor, and to assure its subsistence. The *waqfiye* was in fact the second codicil/appendix to Zeynep Hanım's all-inclusive *waqfiye* or testament.[78] It was drawn up on 15 Receb 1293 (6th August 1876), two months before Yusuf Kamil Pasha's death in Istanbul. The deed of the hospital was thus a part of the comprehensive act.

A third codicil/appendix to Zeynep Hanım's testament, dated the 25th of October 1883, reads the same as the articles of the 1876 appendix concerning the hospital. In brief, the founders have clearly exposed in the deed the financial sources necessary for the hospital's construction, equipment and

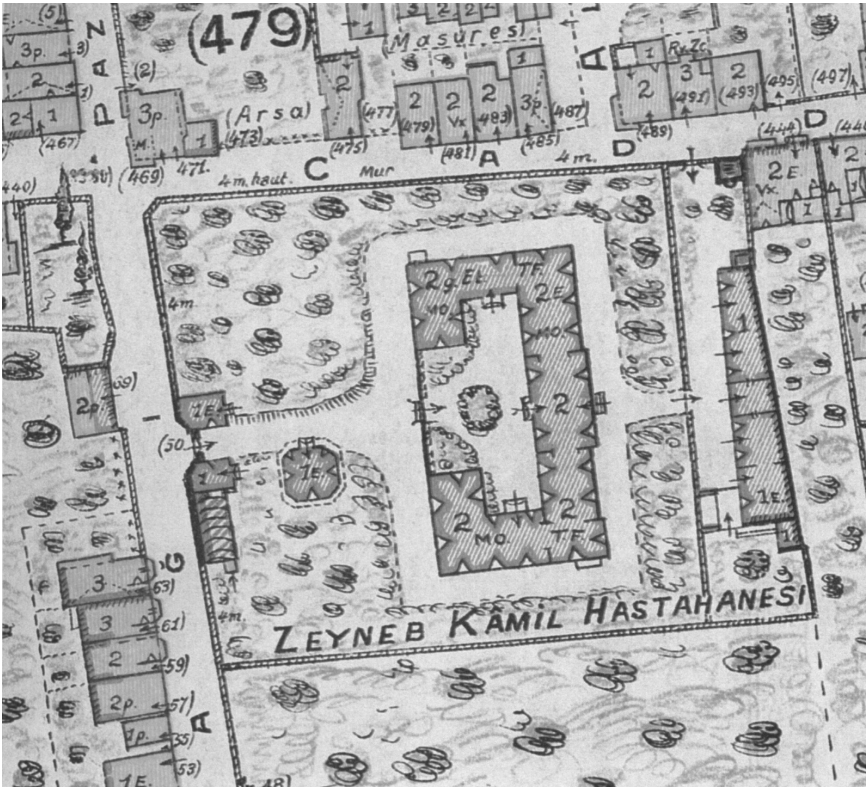

Figure 3 The plan of the Zeynep-Kamil Hospital (1:1000)
Source: Jacques Pervititch, *Plan d'Assurances edité en 1935 par le Bureau Central des Assureurs de Turquie*. Section from pl. no.55 (Üsküdar-Nuh Kuyusu-Toptaşı)

staff, and bequeathed that the subvention to the hospital should continue after their death. These two documents prove that the financial support given to the hospital by the heirs of Zeynep Hanım was already stipulated by the same deed. It was not due to their heirs' benevolence, as proposed later.[79]

Properties and revenue endowed to the Hospital

Zeynep Hanım bequeathed all her possessions in Egypt to her family and to the *ulema*, the Muslim theologians at the al-Azhar *medrese* in Cairo. The estates she jointly endowed with Kamil Pasha were in Istanbul and Izmit, a town located 90 kilometres to the east of Istanbul. The endowed possessions were the following:

- the hospital and its out-houses lying in an estate of 6250 square metres in Üsküdar;

- a pavilion including 10 rooms, a kitchen and out-houses annexed to the lodges of the *Fenaî* Order in Üsküdar;
- a summer palace (*sahilhane*) on the Bosphorus with several out-houses, and a garden comprising vineyards, orchards, buildings and kiosks;
- a private two-storeyed pavilion on the Bosphorus with 16 rooms, a hall, other spaces (*mahaller*) and a boat house;
- seashore buildings in Izmit with out-houses used as a custom-house;
- an inn with three rooms in Izmit, a coffee house, a straw-house and a stable.

The deed stipulates the lease of the splendid waterfront residence,[80] its garden and the private pavilion on the Bosphorus, and the custom-house and the inn after the deaths of Zeynep Hanım and Kamil Pasha. The income will be added to the interests paid by the Imperial Treasury twice a year for the 100,000 bonds that the founders had purchased in 1875 with the aim of meeting the needs of the hospital. If the bonds are converted into another productive instrument, the accruing profits and interests will be added to all the other revenues. The income will be used for the completion of the hospital's building, its furnishing, upkeep and the salaries of doctors, nurses, servants and other staff.

The income and expenditure of the trust will be reviewed annually at the Imperial Treasury by the trustees and the managers of the hospital. The profits, if realised, will be deposited at the Banque Impériale Ottomane, and used for the care and needs of the trust. If ever, the income of the trust diminishes, and the terms of the deed cannot be effected, the income of the trust will be spent for the benefit of the poor in the holy city of Medina. It is not known to what extent the sentences of the trust have been respected after the death of the founders. It is also unknown if the letting of the premises and the yield of the securities have been sufficient to cater for the maintenance of the hospital, or if they have been spent exclusively for the hospital. On the other hand, the founders had designated the Minister of Finance as the legal representative of the trust after their deaths, and gave the Minister the authorisation of supervising the management of the hospital and the observation of the rules set by the deed. After Zeynep Hanım, her obligations were to be fulfilled by her brother [Abdül] Halim Pasha, the Senior (1830–90), and later by his son Said Halim Pasha (1863–1921).[81]

The Zeynep-Kamil Hospital faced financial problems after the passing of its founders, and gradually became derelict. Zeynep Hanım and Kamil Pasha did not have heirs to follow the deed's statement, and their closest kin were not interested in supporting the charitable institution. Actually, they attempted to reverse the stipulations of the *waqf*.[82] After the death of *mütevelli* Hüseyin Haki Efendi, an acknowledged skilled manager, in 1896, Said Halim Pasha handed over the hospital to Dr. Topuzluoğlu Cemil Pasha, a Paris-trained court surgeon. Cemil Pasha undertook the repair of

the building, furnished it with central heating, renovated the medical equipment and recruited Austrian nurses. The hospital now had six wards with six beds each, eight rooms with two beds, a separate wound-dressing room, and a complete operating theatre, facing a *hamam*. Cemil Pasha used the hospital as his private clinic until his election as *Şehir Emini* (Lord Mayor) of Istanbul in 1912.[83] In the cholera outbreaks during the Balkan Wars (1912–13) the hospital was supported by the Austro-German Red Cross. The *Deutsch-Ottomanische Sanitätsmission* headed by Dr. Baron von Trützschler served at the Zeynep-Kamil in the First World War.[84] The medical students from the Military Medical Faculty, which had moved to its new buildings at Haydarpaşa in 1903,[85] came to their assistance.

When the French 'La Paix' Hospital for Mental Diseases and Neurology in Istanbul was reclaimed by French forces in the Armistice (1918–22) following the First World War, its patients were transferred to the *Toptaşı*, which had become a so-called *tımarhane* (insane asylum). In 1920, the Zeynep-Kamil Hospital, which was largely vacated after the war, was annexed to *Toptaşı*, and became a neuro-psychiatry clinic where chronic psychoses and neurological diseases were treated. Some of the earliest documented neurosurgical operations in Turkey were performed at the Zeynep-Kamil Hospital in this period.[86] The hospital was a boarding school for midwives when it was taken over by the Municipality of Istanbul in 1935, and given to the Ministry of Health to be reinstated as a maternity hospital.

Conclusion

The *waqf* was a well-established instrument of securing the perpetuation of charities in the Islamic world. In theory, beneficence could be directed at any service or object of use to the people, and hospitals were among the primary institutions to be supported by *waqf*s. Women played a prominent role in the founding of *waqf*s.[87] The surviving Seljuk and Ottoman *waqf* hospitals are honoured with the names of their women founders: *Gevher Nesibe* and *Bezm-i Alem*. The *waqf* format remained largely unchanged over time and location;[88] the *waqfiye* of Zeynep Hanım both in Egypt and Turkey were principally the same.

The *Gureba* Hospital in Istanbul was the last *waqf* hospital to be supported by a member of the Ottoman dynasty. Health institutions built after 1845 were either military or civilian (municipal) hospitals funded by the state.[89] Many of these hospitals were completed during the reign of Abdulhamid II (r. 1876–1909), and were named 'Hamidiye' after the Sultan. The Zeynep-Kamil Hospital differs in its funding and status as a private charity institution created outside the Ottoman House, though it used the traditional *waqf* format to provide health care to the public.

The status of the Zeynep-Kamil Hospital as a private *waqf* hospital, was what determined its prospects: after its founders passed away, owing to its private endowment the hospital was not brought under the administration of

the Ministry of *Ewqaf* – such as the *Vakıf Gureba* – nor did it become one of the public health charitable institution (*Müessesât-i Hayriye-i Sıhhiye*), like the *Toptaşı*, after 1910. One of the main liabilities of the *waqf* system, however, was interventions by the authority through the judicial system.[90] Said Halim Pasha, who was entrusted with the conduct of the *waqf*, attempted to revoke the deed for the Zeynep-Kamil Hospital for personal reasons. Although, the staff received remuneration from the revenue of the *waqf*, the objectives of the trust with respect to the hospital could hardly be met after 1896.[91] Consequently, the hospital was deserted at some times, and could also be used as a private hospital, where the patients were obliged to pay for their treatment, at others, despite the clear stipulations of the *waqfiye.* Zeynep Hanım's famous residence (*konak*) in Bayezid was to be transformed into an imperial orphanage (*Darülhayr-i Alî*) by Abdülhamid II, after her death. The *konak* later housed the Istanbul University until 1942.

The trust deed referring to the Zeynep-Kamil hospital had distinct features: (i) the medical formation of the hospital was not strictly stipulated; that is, the staff and their respective salaries were not specified; and (ii) the revenues directed to the hospital budget were derived from rents, duties collected at a custom-house, and the interest from bonds, which were convertible to other financial instruments. This allowed the trustees (*mütevelli*) a certain liberty to work with a core team of specialists, and as many aides as deemed necessary. Therefore, the Zeynep-Kamil Hospital represented an efficiently manageable establishment, with the incentive of the trustees. The auditing of the *waqf* was to be conducted under the supervision of the Imperial Treasury, but the account documents of the trust for the Zeynep-Kamil hospital from its opening to its 'lease' to Cemil Pasha, have been lost. The very nature of the health care provided during this period attracted more patients, further increasing the burden of the enterprise.

'Princess' Zeynep Hanım, was from the *Khedive* family of Egypt whose governor had a privileged position in the Ottoman establishment. Yusuf Kamil Pasha and Zeynep Hanım were married in Cairo, and Zeynep Hanım came to Istanbul only in 1849.[92] Undoubtedly, Princess Zeynep had witnessed the services provided by institutions of beneficence and small regional hospitals in Egypt.[93] She had inherited part of the Azbakiyyah gardens, which also included a civilian hospital, originally built by the French as a military hospital.

The Zeynep-Kamil building was designed specifically as a hospital. It was different from the *darüşşifa*s which could function as an asylum or be converted into army barracks in times of need. While the religious aspect was prominent in the classical *darüşşifa*s, the Zeynep-Kamil Hospital did not have a mosque or masjid on its premises, but only the tomb of its founders. There were numerous other mosques and *tekke*s in the district, including the *Fenaî tekke*, and the *Karaca Ahmed dergah*. The Zeynep-Kamil was conceptually closer to the contemporary European hospitals consisting of pavilions. The original building could have easily been expanded with the

addition of other pavilions, such as surgical and laboratory buildings. The *Hamidiye Etfal Hastahane-i Alisi* (Royal Hamidié Hospital for Children, 1899) had spread out over large gardens in this form.[94] A plan for the new Haseki Hospital drawn in 1890 also includes buildings in line with the same concept.[95] The infrastructure of the Zeynep-Kamil Hospital was sufficiently versatile for Dr. Cemil Pasha (Topuzlu, 1866–1958) to set up his modern surgical practice here. The main building of the *Balıklı* Greek Hospital (1839) may be seen as a local model for the Zeynep-Kamil Hospital, but there may have been other examples known to the founders and/or the architect(s). The central pavilion of the 'decentralised' *Hamidiye Etfal* Hospital, built after the model of the Kaiser-u. Kaiserin-Friedrich-Kinderkrankenhaus (1890) in Berlin, resembles the Zeynep-Kamil Hospital.

As to the kind of medicine practised throughout the early years of the Zeynep-Kamil hospital, there are no substantial data. One can only presume that there were some elements of modern medicine from the outset, because there was a chemist attached to the hospital, and asepsis was introduced by Dr. Kanburoglu Alexandre Pasha, who had been trained in Europe in the 1870s. For the later period, however, there is certainty about the practice of modern general medicine.

As an institution, the Zeynep-Kamil Hospital offers a key to our understanding of the development of hospitals in the Ottoman capital during the nineteenth century. The hospital holds elements that can lead to a comparative historical study of the various health institutions founded in Istanbul.[96] Zeynep-Kamil is, in a sense, a unique experiment demonstrating the feasibility of and limitations to the founding of private, charitable hospitals in the Ottoman capital. That this hospital could function only briefly after its inauguration in 1882 in its original design supported by the endowment of its founders, may be seen as symptomatic of the decline of the *waqf* system of hospitals, and the deficiencies in dependence on land and lease as income, foreseen by the *waqfiye* and codicil, for the provision of modern health care.

Notes

1 For historical notes on the foundation of the Zeynep-Kamil Hospital, the facsimile and transliteration of the deed of trust, see, S. Etker, F. Günergun and A. Köşe, 'Zeynep-Kamil Hastanesi'nin kuruluşu ve vakfiyesi', *Osmanlı Bilimi Araştırmaları*, V, 2 (2004): 1–37.

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4 E. M. Atabek, 'Osmanlı hastaneleri ve kadınlarımız', in B. N. Şehsuvaroğlu (ed.), *Zeyneb-Kâmil Hastahanesi, 1860–1960*, Istanbul: Kaptanoglu Matbaasi, 1960, p. 11; M. Cunbur, 'Selçuklu ve Osmanlı devirlerinde kadınların kurdukları şifahaneler', *Erdem*, v. III, 8 (1987): 344–48; G. Cantay, 'Kadın baniler ve darüşşifaları', in N. Yıldırım (ed.), *Sağlık Alanında Türk Kadını*, Istanbul: Novartis, 1998, pp. 466–72; M. Shefer, 'Charity and hospitality: Hospitals in the Ottoman Empire in the early modern period' in M. Bonner, M. Ener and A. Singer (eds), *Poverty and Charity in Middle Eastern Contexts*, Albany, NY: SUNY Press, 2003, pp. 121–43.

5 The hospitals called *gureba* which were set up towards the end of the nineteenth century in various Ottoman towns were not *waqf* institutions, but public hospitals founded and financed by the state to provide free medical health care to the populace of the region. By 1826, *waqf* institutions had already been brought under the Ministry for *Ewqaf*. F. Bilici, 'Élargissement des compétences de l'État, diminution de l'action des fondations (waqfs) au XIXe siècle dans l'Empire ottoman : l'exemple d'un quartier d'Istanbul', in R. Deguilhem and A. Hénia (eds), *Les fondations pieuses (waqf) en Méditerranée : enjeux de société, enjeux de pouvoir*, Koweït: Fondation publique des Awqaf du Koweït, 2004, pp. 253–78.

6 The cities of Konya, Aksaray, Kayseri, Çankırı, Divriği, Sivas, Kastamonu, Tokat, Mardin, Akşehir, Amasya, Erzurum and Erzincan were each endowed with a *darüşşifa*. Those in Amasya, Divriği, Kayseri, Sivas, Kastamonu and Tokat survive to date, but others are presently in ruins or only mentioned in archival documents, see G. Cantay, *Anadolu Selçuklu ve Osmanlı Darüşşifaları*, Ankara: Türk Tarih Kurumu, 1992.

7 These names are used for the traditional hospital. *Bimarhane* denotes a house (*hane*) for the ill (*bimar*) in Persian; *Darüşşifa* describes a house (*dar*) for health (*şifa*) in Arabic, etc.

8 A.Süheyl [Ünver], 'Sur l'histoire des hôpitaux en Turquie du moyen âge jusqu'au XVIIe siècle', *Darülfünun Tıp Fak. Mecm.*, XIV (Eylül-Teşrinevvel 1932): 344–48; A. S. Ünver, 'Sur l'histoire des hôpitaux Turcs', [estratto do] *Atti del Primo Congresso Europeo di Storia Ospitaliera. Reggio Emilia, 6–12 guigno 1960*, Centro Italiano di Storia Ospitaliera (Roma), 1962, pp. 1240–56; A. S. Ünver, *Selçuk Tababeti (XI-XIVüncü asırlar)*, Ankara: Türk Tarih Kurumu, 1940, pp. 3–111; A. H. Bayat, 'Turkish medical history of the Seljuk era' in N. Sarı (ed.), O. Kaytan *et al* (trans.), *History of Medicine, Pharmacology, Veterinary Medicine in Anatolia and Turkic Cultures*, Istanbul: Nobel Yayıncılık, 2002, pp. 69–81; A. H. Bayat, 'Anadolu Selçuklu dönemi darüşşifaları üzerine toplu değerlendirme', in H. Karpuz, *et al.* (eds), *I. Uluslararası Selçuklu Kültür ve Medeniyeti Kongresi, Bildiriler*, vol. I, Konya: Selçuklu Araştırmaları Merkezi, 2001, pp. 121–48.

9 This *waqf* dedicated to charitable causes, endows the following properties whose borders are described in the deed: 5 villages [with its] 108 shops, 7 vegetable gardens, mills, stock farms, stables, with all its lines, stores, seed works, lands, buildings [and its] ruins, the upper and the lower parts, houses and mansions, barns, meadows, pastures, dwellings, trees, orchards/vineyards, arable fields, vegetable gardens, rented properties, timber stores, woodsheds, rivers, irrigation canals, wells, gardens, forests, small lakes, ponds, springs, fountains, plains, hills, mountains, given water rights, refuse sites, cultivated and non cultivated areas, were fully endowed by her with all the rights in her possession. A. H. Bayat, 'Anadolu Selçuklu hastane vakfiyelerinin tek örnegi olarak Sivas Darüşşifası vakfiyesi', *Türk Kültürü*, XXIX, 333 (1991): 5–19.

10 M. Cevdet (Inançalp), 'Sivas Darüşşifası vakfiyesi ve tercümesi', *Vakıflar Dergisi*, I (1938): 36–38; A. H. Bayat, 'Anadolu Selçuklu sağlık müesseselerinden Sivas

Darüşşifası (Sivas Hospital and its deed of trust as an example of Anatolian Seljukid health organizations)', *I. Uluslararası Türk-Islam Bilim ve Teknoloji Tarihi Kongresi, 14–18 Eylül 1981 [Istanbul], Bildiriler / Ist International Congress on the History of Turkish-Islamic Science and Technology, 14–18 September1981 [Istanbul], Proceedings.* vol. II, Istanbul: Istanbul Technical University, 1981, pp. 23–35.

11 The epitaph bears the name of its founder: Anber bin Abdullah. The deed is dated 1312. The area of the hospital is 823 square metres. For a plan see, Gabriel, A., *Monuments Turcs d'Anatolie*, Tome II: *Amasya – Tokat – Sivas,* Paris : E. De Boccard, 1934, pp. 45–50; A. S. Ünver, *Selçuk Tababeti*, Ankara: Türk Tarih Kurumu, 1940, pp. 159–64.

12 S. Çetintaş, *Sivas Darüşşifası*, *[H.]614–1217*, Istanbul Üniv. Tib Tarihi Enst. no. 48, Istanbul: Ibrahim Horoz Basımevi, 1953; H. S. Erkman, 'XIII. Yüzyıl sağlık yapısı olarak Divriği Darüşşifası'nın mimari tasarımını belirleyen ögeler' in N. Sarı and A. D. Erdemir (eds), *VIII. Türk Tıp Tarihi Kongresi, 16–18 Haziran 2004, Sivas-Divriği. Kongreye Sunulan Bildiriler*, Istanbul: Türk Tıp Tarihi Kurumu, 2006, pp. 143–62.

13 Şerefeddin Sabuncuoğlu, *Cerrahiyei Ilhaniye Paris Nüshası Resimleri / Album des dessins de Cerrahiyei Ilhaniye* [du Ms conservé à Paris à La Bibliothèque Nationale de France], S. Ünver (ed.), Istanbul Üniv. Tıb Tarihi Enst., no.12, Istanbul: Kenan Basimevi, 1939; P.-A. Huard and M. K. Grmek, *[Le] Premier manuscrit chirurgical turc rédigé par Charaf ed-Din (1465)*, Paris: R. Dacosta, 1960; I. Uzel, *Şerefeddin Sabuncuoğlu: Cerrâhiyyetü'l-Hâniyye*, vol. I (text), vol. II (facs.), Ankara**:** Türk Tarih Kurumu, 1992.

14 A compound or ensemble of buildings usually composed of a school, a mosque, a hospital or an insane asylum, a bath and a public kitchen for the poor. For a conceptual interpretation of the *külliye* see B. Ipekoğlu, 'Terminology relating to 'buildings that have combined functions' in Anatolian Seljuk Architecture', *ODTÜ Mimarlık Fakültesi Dergisi / METU J. Faculty of Architecture*, XIII, 1–2 (1993): 53–65.

15 O. Bolak, *Hastanelerimiz: Eski Zamanlardan Bugüne Kadar Yapılan Hastanelerimizin Tarihî ve Mimarî Etüdü*, (Thesis submitted to the Istanbul Technical University Faculty of Architecture in 1947). Istanbul 1950, p. 41.

16 M. W.Dols, op. cit., pp. 468–72.

17 S. Çetintaş, *Bursa Darüşşifası*, Istanbul Üniv. Tıp Fak. Tıp Tarihi Enst. no. 46, Istanbul: Milli Eğitim Basımevi, 1952; O. Çetin, *Ilk Osmanlı Hastanesi Bursa Yıldırım Dârüşşifası – Bursa Mahkeme Sicillerine Göre*, Bursa: Göz Nurunu Koruma Vakfi, 2006, pp. 56–113.

18 An oculist, a surgeon, a secretary, a butler and a steward joined the staff. The building hosted the insane from the nineteenth century on.

19 The *külliye* built on 120 000 square metres included a mosque, 16 *medreses*, a primary school (*sıbyan mektebi*), a library, a hospice (*tabhane*), a public kitchen (*imaret*), a caravanserai and a hospital (*darüşşifa*). F. Unan, *Kuruluşundan Günümüze Fâtih Külliyesi*, Ankara: Türk Tarih Kurumu, 2003, '*Darüşşifa*', pp. 76–83, 284–90. Table 14 lists the staff of the *Darüşşifa* and their respective salaries up to the mid-nineteenth century.

20 R. Kazancıgil, *Edirne Sultan II. Bayezid Külliyesi*, Edirne: Trakya Üniv. Rektörlüğü, 1997, pp. 20–25, 40–53; B. N. Şehsuvaroğlu, 'Edirne II. Bayezid Darüşşifası', in *Edirne: Edirne'nin 600. Fethi Yıldönümü Armağan Kitabı*, Ankara: Türk Tarih Kurumu, 1993, pp. 257–64.

21 A subdivision of a province or *vilayet.*

22 N. Yörükoğlu, *Hafsa Sultan ve Külliyesi*, Ankara: Sevinç Matbaasi, 1993, pp. 109–21; N. Yörükoğlu, *Manisa Bimarhanesi*, Istanbul: Istanbul Üniv. Tıb Tarihi Enst., 1948; S. Ünver, *Manisa'da Dört Asirlik Hafsa Sultan Hastahanesi Hakkında*, Istanbul: Gün Basımevi, 1953 (Ayrıbası, *Yeni Tıp Alemi*, V, 26, Aralık 1953).

23 For the other deeds of the Haseki, see O. Peri, 'Waqf and Ottoman welfare policy, The poor kitchen of Hasseki Sultan in eighteenth-Century Jerusalem', *J. Econ. Soc. Hist. Orient*, XXXV (1992): 167–86; A. Singer, *Constructing Ottoman Beneficence: An Imperial Soup Kitchen in Jerusalem*, Albany: SUNY Press, 2002 [*Osmanlı'da Hayırseverlik: Kudüs'te bir Haseki Sultan Imareti*, (trans.) D. Şendil, Istanbul: Tarih Vakfi, 2004].

24 O. S. Uludağ, *Haseki Darüşşifasınıń*, Istanbul: Kader Matbaası, 1938; O. S. Uludağ, 'Haseki Darüşşifasinin tarihçesi', *Poliklinik*, XV, 179 (Mayis 1948): 247–48.

25 O. S. Uludağ, 'Osmanlılar devrindeki Istanbul Hastaneleri', *Poliklinik*, VIII, 93 (Mart 1941): 308–11

26 S. P. Bengiserp, 'Beyoğlu Hastanesi tarihçesi', *Dirim*, LXVI, 3–4 (Mart-Nisan 1991): 151–56; N. Gökçe, '19. yüzyıl sonlarında Edirne Sultan Bayezid darüşşifasının durumu', *T. Klin. Tıp Etiği-Hukuku-Tarihi*, X, 1 (2002): 26–33.

27 Ahmed Issa Bey, *Histoire des Bimaristans (Hôpitaux) à l'Epoque Islamique*. Le Caire: Imprimerie Paul Barbey, 1928, pp. 1–2; Y. Tabbaa, 'The functional aspects of medieval Islamic hospitals' in M. Bonner, M. Ener and A. Singer (eds), *Poverty and Charity in Middle Eastern Contexts*, Albany NY: SUNY Press, 2003, pp. 95–119.

28 K. Özbay, *Türk Asker Hekimliği Tarihi ve Asker Hastaneleri*, Istanbul 1981, vol. III, pt. II, p. 102 and vol. III, pt. I, pp. 487–559; G. B. Göker, *Haydarpaşa Askeri Hastanesi 111 inci Yıldönümü, 1845–1956*, Istanbul: Suluoğlu Matbaası, 1956. For an early review of Turkish medicine, see Abdul-Hakim Hikmet, 'La médicine en Turquie', *Revue du Monde Musulman*, III (1907): 38–72.

29 F. N. Uzluk, *Hekimbaşı Mustafa Behçet: Zâti, Eserleri Üstüne Bir Araştırma*, Ankara: Ank. Üniv. Tıp Fak. 1954, p. 45.

30 K.Özbay, op. cit., vol.III, pt. II, pp.109–20.

31 S. Ünver, 'Osmanlı tababeti ve Tanzimat hakkında yeni notlar', *Tanzimat I*, Istanbul: Maarif Matbaası, 1940, p. 952.

32 I. Başağaoğlu, 'Maltepe Asker Hastanesi', *IV. Türk Tıp Tarihi Kongresi. Kongreye Sunulan Bildiriler, Istanbul, 18–20 Eylül 1996,* Ankara: Türk Tarih Kurumu Basımevi, 2003, pp. 213–36 (+ 6 pl.); I. Başağaoğlu and D. Üvey, 'Istanbul Maltepe Military Hospital's Pharmacy', *J. Int. Soc. Hist. Islamic Med.*, III, 5 (2004): 14–19.

33 G.Akdeniz and I.Başağaoğlu, 'Maltepe Asker Hastanesi'nin mimari yapısı ve tarihi gelişimi', *IV. Türk Tıp Tarihi Kongresi. Kongreye Sunulan Bildiriler, Istanbul, 18–20 Eylül 1996,* Ankara: Türk Tarih Kurumu Basımevi, 2003, pp. 203–12 (+22 pl.); P. Tuğlacı, *The Role of the Balian Family in Ottoman Architecture*, Istanbul: Yeni Çığır Kitabevi, 1990, p. 46.

34 *Qur'an*, an-Nahl 16:69.

35 The sick of the cities largely resorted to traditional healers and empirics. Thus orthopedic conditions were treated by bone-setters (*sınıkçı*), ophthalmic diseases by *kehhal*, i.e. oculists, hernias were managed by the so-called *kaşıkçı* or *fıtıkçı*, intrascrotal pathologies by the *taşakçı*, etc. The *berber cerrah* or barber-surgeon would perform cupping and scarification, apply leeches, cautery (vesicatoires, sinapism) and poultices. They also dealt with nail problems. Neuralgia and rheumatic pains were treated by carpenters, erysipelas by the 'green-turban wearing clergy'; fevers, scrofula, angina, tumours, gout, rickets and skin diseases by their relative healers. Pharmacists 'cured' syphilis. The mentioned empirics could be Muslim, Jewish or *Frenk* (European). F. Günergun, 'The Turkish response to western medicine and Turkish medical historiography', *The 23rd International Symposium on the Comparative History of Medicine – East and West, 5–11 July 1998, Seoul University, Seoul, Korea* [unpublished presentation].

36 N. Taşkıran, *Hasekinin Kitabı: Istanbul Haseki Külliyesi, Cami-Medrese-Imaret-Sübyan Mektebi-Darüşşifa ve Yeni Haseki Hastanesi*, Istanbul: Haseki Hastanesini Kalkındırma Derneği, 1972, pp. 160–257.

37 A. Kuran, 'Atik Valide Külliyesinin yerleşme düzeni ve yapım tarihi üzerine', *Suut Kemal Yetkin'e Armağan*, Ankara: Hacettepe Üniversitesi, 1984, pp.231–48; B. Tanman, 'Atik Valide Külliyesi', *Sanat Tarihi Araştırmaları Dergisi*, I, 2 (1988): 3–19; J. Güray, *Dar-üş-şifa Mimarisinin Gelişimi ve Üsküdar Atik Valide Dar-üş-şifası Üzerine Bir Çalışma*, Y. Lisans Tezi (Yayımlanmamış), Istanbul, ITU Fen Bil. Enst. 1990.

38 The *medrese* in the compound or ensemble of buildings (*külliye*) established by Mihrimah Sultan (1522–78), the daughter of Suleiman the Magnificient.

39 *Takvim-i Vekayi*, 3 Rebiülahir1261, cited in I. Ateş, S. Bayram and K. Erdoğan (eds), *Vakıflar ve Vakıf Hizmetlerimiz*, Ankara: Vakıflar Gn.Md., 1978, p.163.

40 S. Ünver, 'Edirnekapısı'ndaki ilk Gureba Hastanesi 1252–61 (1836–45)', *Dirim*, XXV, 1 (1950): 36–42.

41 L. Rigler, *Die Türkei und deren Bewohner in ihren naturhistorischen, physiologischen und pathologischen Verhältnissen vom Standpunkte Constantinopel's*, Bd. I, Wien: Verlag von Carl Gerold, 1852, pp.381–82.

42 Kazım Ismail [Gürkan], *Istanbul Gureba Hastanesi Tarihçesi,* [1.bs.] Istanbul: Ilhami-Fevzi Matbaası, 1928; *Gureba Hastanesi Tarihçesi*, 3.bs. Istanbul: Özışık Matbaası, 1967.

43 *Han*: a construction housing merchant's entrepôts and craftmen's shops, usually grouped around a courtyard. For a historical review of the *han*, see (K. Branning) http://www.turkishhan.org

44 *Dönüm*: a measure of land of 940 square metres.

45 'The *waqfiye*'s 11th codicil in the register (*defter*) dated 3 July 1846' in *Tarihimizde Vakıf Kuran Kadınlar: Hanım Sultan Vakfiyeleri / Deeds of Trust of the Sultans' Womenfolk / Actes de Fondation de Sultane Hanım.* F. Kayalı and V. Çabuk (eds), R. Bragner (trans.), Istanbul: Tarih Araştırmaları ve Dokümantasyon Merkezleri Kurma ve Geliştirme Vakfi, 1990, pp. 529–41.

46 The *Ewqaf-i mazbuta* included (i) the imperial *waqf*s administered by the Minister of the *Ewqaf* on behalf of the Sultan, (ii) *waqf*s whose trustees had perished, and (iii) *waqf*s administered by state *ewqaf* functionaries in place of the trustees. Whereas the *ewqaf-i gayr-i mazbuta* consisted of *waqf*s administered by the individuals defined as trustees in the deed. The ministry was authorised to intervene only in the case of mismanagement.

47 The repair of the hospital after the damage caused by the earthquake in 1894 was completed in four months. The maintenance expenses for the year 1877, when the Empire was engaged in a military campaign, however, could not be met, so the populace and physicians payed for the costs themselves.

48 A transcript of the regulation: *Hastahane-i mezkurun nizamatını mübeyyin bend bend layihası*, is given in I. Ateş, S. Bayram and K. Erdoğan (eds), *Vakıflar ve Vakıf Hizmetlerimiz*, Ankara: Vakıflar Gn.Md., 1978, pp.169–71. Addenda to the regulation are given in, S. Bayram, 'Sağlik hizmetlerimiz ve Vakıf Gureba Hastahanesi', *Vakıflar Dergisi*, no. 14 (1982): 103–17.

49 M. Shefer, 'Old patterns, new meaning: the 1845 Hospital of Bezm-i 'Alem in Istanbul', *Dynamis*, 25 (2005): 329–50

50 Y. Yavuz, 'Batılılaşma döneminde Osmanlı sağlık kuruluşları (Ottoman health institutions during the westernization period)', *ODTÜ Mimarlik Fakültesi Dergisi / METU J. Faculty of Architecture*, VIII, 2 (1988): 123–42.

51 O. Bolak, op. cit., p. 57. It has been suggested that the corridors of the *Gureba* Hospital were adapted from the Münchner Allgemeine Krankenhaus (1813), see A. Terzioğlu, 'Deutsche Einflüsse auf die osmanischen Krankenhäuser im 19. und beginnenden 20. Jahrhundert', in H. Goerke and A.Terzioglu (eds), *Die medizinischen Beziehungen zwischen Deutschland und der Türkei. Verhandlungen des 18. und 19. Oktober 1976 in Istanbul abgehaltenen Symposiums*, München: Münchener Vereinigung für Geschichte der Medizin e.V., 1978, pp. 35–64, ill. 1–2.

52 'Gureba-i Müslimin Hastahanesi (Hôpital des musulmans pauvres 'Validé Sultane'), in Besim Ömer [Akalın] (ed.), *Nevsal-i Afiyet*, vol.I, Istanbul: Alem Matbaası, 1315/1898, pp. 93–96.

53 Y. Yavuz, op. cit. pp.123–42. S. Ünver, however, argues that the *Gureba* is essentially a barrack-type ('Kışla tipi') building, S. Ünver, 'Osmanlı tababeti ve Tanzimat hakkında yeni notlar', *Tanzimat I*, Istanbul: Maarif Matbaası, 1940, p. 952.

54 An eye-witness account states that the hospital held 700 beds, L. Rigler, op. cit., p.382. This may be a misprint, but the number of beds could be increased substantially whenever necessary.

55 Semantically *hastahane, bimarhane*, and *darüşşifa* are equivalent (cf.6). F.N. Uzluk is of the opinion that *hastahane* (lit. house for the sick) is a translation of *maristan* [*bimaristan*], F. N. Uzluk, 'Türklerde hastaneler' (abs.), *Ank. Üniv. Tıp Fak. Mecm.*, III, 3 (1949): 157. Hastahane has been contracted to *hastane* in modern Turkish, see also A. H. Bayat, 'Osmanlı dönemi darüşşifaları, saray hastaneleri ve 19. yüzyıl hastaneleri üzerine bibliyografya denemesi', *Yeni Tıp Tarihi Araştırmaları*, no. 7 (2001): 77–103.

56 See the *waqfiye*'s 11th codicil in the register (*defter*) dated 3 July 1846 in F. Kayalı and V. Çabuk (eds), R. Bragner (trans.), *Tarihimizde Vakıf Kuran Kadınlar: Hanım Sultan Vakfiyeleri / Deeds of Trust of the Sultans' Womenfolk / Actes de Fondation de Sultane Hanım*, Istanbul: Tarih Araştırmaları ve Dokümantasyon Merkezleri Kurma ve Geliştirme Vakfi, 1990, pp. 529–41.

57 These surgeons were invited to qualify in the examinations held at the Medical Faculty. Eventually surgeons graduating from the Medical Faculty replaced the old cadres.

58 S. Ünver, 'XV.ci asırdan XIX.cu asıra kadar ve XIX.cu asırda Istanbul sivil ve asker hastaneleri', *Dirim*, XI, 1 (Sonkanun 1936): 19–21; S. Kumbaracılar, 'Istanbul'da askeri hastanelerin kuruluşu', *Dirim*, XXVI, 5–6 (Mayıs–Haziran 1951): 103–4 (Toptaşı Hastanesi).

59 [O. N. Ergin], *Müessesât-i Hayriye-i Sıhhiye Müdiriyeti / Direction Générale de l'Assistance Publique de Constantinople,* [Risale-i seneviyye, 1326] Istanbul: Imp. Archak Garoyan, 1327/1911, pp. 44–50.

60 A. Kuran, op. cit., pp. 231–48; B. Tanman, op. cit., pp. 3–19; G. Cantay, 'Sinan külliyelerinde darüşşifa planlaması', *Mimar Sinan Dönemi Türk Mimarlığı ve Sanatı*, Istanbul: Türkiye Iş Bankası, 1988, pp. 45–57. A. Ataman, *Bir Göz Yapıdan Külliyeye: Osmanlı Külliyelerinde Kamusal Mekân Mantığı*, Istanbul: Mimarlar Tasarım, 2000, pp. 146–50.

61 The respective salaries of the staff were 25 *dirhem*s (drachms or silver coins) for the first physician, 15 *dirhem*s for the second physician, 5 *dirhem*s for one of the oculists and 4 for the second, 5 *dirhem*s one of the surgeons and 4 for the second. The pharmacist, ward assistant, cook and laundrymen were to receive 3 *dirhem*s. The assistant chemist and stoker were to receive 2 *dirhem*s; the sweeper, the bowl collector and the light keeper 1 *dirhem*; the pantryman was to receive 4 *dirhem*s, and the *imam* and the *muezzin* would receive 2 *dirhem*s each.
N. Sarı, 'Toptaşı Nurbanu Valide Sultan Darüşşifası', *I. Türk Tıp Tarihi Kongresi. Kongreye Sunulan Bildiriler, Istanbul 17–19 Subat 1988*, Ankara: Türk Tarih Kurumu Basımevi, 1992, pp. 169–81 (pl. 39–43, pp. 174–75); P. Kayaalp-Aktan, 'The endowment deed of the Atik Valide mosque complex: a textual analysis', in N. Ergin, C. Neumann and A. Singer (eds), *Feeding People, Feeding Power: Imarets in the Ottoman Empire*, Istanbul: Eren Yayınevi, 2007, pp. 261–73.

62 G. Necipoğlu, *The Age of Sinan: Architectural Culture in the Ottoman Empire*, London: Reaktion Books, 2005, pp. 280–92; P. Kayaalp-Aktan, *The Atik Valide Mosque Complex: a testament of Nurbanu's prestige, power and piety,* (Unpublished Ph.D. Thesis, Center for Middle Eastern Studies, Harvard University, 2005).

63 *Şehremaneti Sıhhiye Müdiriyeti, Toptaşı Bimarhanesi ile Mecanin Müşahedehanesi Nizamnamesidir*, Dersaadet: Ahmed Ihsan ve Şürekkası Matbaacılık Osmanlı Şirketi, 1329/1913 is a very detailed document (58 pp. tabels etc.) regulating day-to-day patient care.

64 Φ. Σιδηρόπουλος, Τα Εθνικά Φιλανθρωπικά Καταστήματα στην Κωνσταντινούπολη - Νοσοκομείο Βαλουκλή, Αθήνα: Ίδρυμα Μείζονος Ελληνισμού, 1999; C. Trompoukis and S. Marketos, 'The Greek Orthodox Hospital of Yedikule (Balıklı) in Istanbul: A medical history during the Ottoman Empire', *Yeni Tıp Tarihi Araştırmaları,* no.5 (Istanbul, 1999): 113–26; N. Yıldırım, 'Panoliko'dan Balıklı Rum Hastanesi'ne', *Toplumsal Tarih*, no. 153 (Eylül, 2006): 50–57; N. Yıldırım, 'Yedikule haricindeki Rum milleti ispitalyasi – Balıklı Rum Vakfi Hastanesi', *Surların Öte Yanı Zeytinburnu*, Istanbul: Zeytinburnu Belediyesi, 2003, pp. 156–70; *Balıklı Rum Hastanesi Vakfi 1753–2003*, (Istanbul, Balıklı Rum Hastanesi Vakfi, 2005), pp. 87–122; A.K. Σταυρόπουλος, Τα νοσοκομεία και η νοσηλευτική πολιτική της ελληνικής εθνότητας στην Κωνσταντινούπολη (1453–1838), Αθήνα: Αργυρόπουλος, 1984, pp.170–71, fig. 20.

65 L. Rigler, op. cit., p. 381.

66 V. Köseyan, *Hushamadian 160-Amya Surp Prgich Hayots Hivandanotsi*, Istanbul: Murad Ofset, 1994; A. Yarman, *Osmanlı Sağlık Hizmetlerinde Ermeniler ve Surp Pirgiç Ermeni Hastanesi Tarihi*, Istanbul: Surp Pirgiç Ermeni Hastanesi Vakfı, 2001: a transliteration of the Surp Pirgiç Hospital *waqfiye* dated 24th May 1834 (H. 15 Muharrem 1250) is given in pp. 655–94 (trans.) E.N. Işli.

67 J. Shepherd, *The Crimean Doctors: A History of the British Medical Services in the Crimean War*, vol.II, Liverpool University Press, 1991, p. 517.

68 A. Gölpınarlı, 'Djilwatiyya' (Djelwetiyye), *EI*^{2} [Eng., 1965], pp. 542–43; F. Bilici, 'Aziz Mahmud Hüdâi et le tekke celveti à Üsküdar à travers ses *waqfs* au XVIIe siècle', *Observatoire Urbain d'Istanbul (IFEA)*, no. 9 (mai 1996): 2–9.

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6 A bounded medical pluralism

Ayurveda and Western medicine in colonial and independent Sri Lanka[1]

Margaret Jones

The encounter between indigenous medical systems and Western medicine forms a focal point of the current debate over the nature and extent of the cultural hegemony that accompanied Western imperialism.[2] The contest between these forms of medicine was, it is claimed, an unequal one from the start. For instance, as Bridie Andrews and Andrew Cunningham have argued, Western medicine was 'both metaphorically and literally imperialist as a form of knowledge and as a practice'.[3] This chapter explores this contention in relation to the historical development and current availability of healthcare services in Sri Lanka.

Today the health care system of Sri Lanka is recognised as 'a highly diversified pluralistic one'.[4] Western medicine is available free in government run hospitals and clinics. According to Indrani Pieris a Western medical facility is available within 3 miles of every home. At the same time there is an indigenous facility of some sort within 0.8 miles.[5] The latter includes state funded Ayurvedic clinics and hospitals staffed by professionally trained practitioners at the government colleges at which treatment is free. The other forms of indigenous medical services defined by Carolyn Nordstrom as *Sinhala* medicine (to distinguish them from the officially sponsored Ayurveda) are not provided free. They include *vederalas* who offer a general medical service with traditional treatments. These *vederalas* can be professionally trained at, for example, the Ayurvedic College, Gampaha Siddhayuruveda Vidyalaya (affiliated to Kelaniya University in 1995), or through a traditional and often family-based apprenticeship system. There are also healers who specialise in such things as snakebites, fracture and sinusitis. In addition, medical care services based on astrology and religious ritual, such as exorcists are available.[6]

Sri Lanka therefore has a combination of medical systems which encompass all of Fred Dunn's definitions: folk, local, regional and cosmopolitan medical systems are all available.[7] However, two of these systems are privileged in Sri Lanka. Both Western medicine and Ayurveda are tax funded, officially recognised and professionalised in the accepted Western mode. This obviously sets them apart from the rest.

It is these two privileged systems which form the main focus of this discussion. Two particular issues are explored. First, Ayurveda acquired this

formal equality with Western medicine seven years before independence in 1941. How was this achieved and why was colonial Sri Lanka exceptional? Secondly, the evolving relationship between Ayurveda and Western medicine is analysed. How did the gaining of formal equality affect the nature and practice of Ayurveda? Equally, how did it affect the nature and practice of Western medicine? In short, what insights can be derived from the Sri Lankan experience about the ways and means by which the essential hegemony of Western medicine was constructed and maintained?

This is not a discussion from the point of view of the user – it is an overview of the political and institutional development of Ayurveda in Sri Lanka. The historical section is based on the official records of the Colonial Office held at The National Archives, and the debates of the Legislative and State Councils of the colonial and independent government.

The establishment of formal equality for Ayurveda

It should be noted at the outset that the demand for the official recognition of the indigenous medical system was not simply to ensure its equality with Western medicine rather it was part of what David Arnold has described as a 'war on two fronts'. The supporters of a professionalised Ayurveda were 'pursuing their own quest for cultural hegemony'.[8] They were therefore competing not only with Western medicine but also with other forms of indigenous medicine. It was just one group of traditional practitioners who wanted to go along that road and reap the benefit of government patronage. In a similar process as that shown by Jean Langford to have occurred in India, they 'turned their very marginalisation and their struggle against [Western medicine] into an opportunity to reinvent Ayurveda'. What emerged from this struggle was a particular form of indigenous medicine. It was a 'reinterpreting and reshaping' of Ayurveda 'for the modern era'.[9]

The exceptional nature of Ceylon?

At the end of the colonial period indigenous medicine in Ceylon had acquired a formal equality with Western medicine.[10] In 1941 the government of Ceylon passed the Indigenous Medicine Ordinance. By this law, the training college and the hospital for indigenous medicine established in 1929 were taken over and funded completely by the government and the registration of the practitioners of indigenous medicine on identical professional lines as that for Western medical practitioners was implemented.[11] An indigenous medical system of Ceylon were thus officially recognised, professionalised and subsidised seven years before Ceylon acquired independence.

Certainly in comparison with other British colonies in the East, Ceylon was unusual. The situation in India was the closest to Ceylon, and the model of India was very much in the mind of the Ceylonese nationalist politicians who supported Ayurveda. For example, the Bombay Government passed an

act to register indigenous practitioners in 1938, which according to Roger Jeffery was well ahead of other governments in India. However, this act was substantially weakened in 1947 and a central medical council for Ayurveda for the whole of India was not set up until 1970.[12] Another near comparison was Hong Kong. It was cited by the 1927 Ceylonese government committee on indigenous medicine as an example for Ceylon. There the colonial government had indeed been a major contributor of funding to Chinese medical institutions, in particular the Tung Wah Hospital, from the end of the nineteenth century.[13] Government financial support was a recognition of the necessity for Chinese medicine in the colony and in line with a long held official policy of supporting Chinese initiatives in health and social policy rather than replacing them with government schemes. However, this did not imply any official recognition of the equal status of Chinese medicine. There were no accompanying moves to professionalise it until the 1970s. William Peel's observation as Governor (1930–35) that the Chinese hospitals had done 'immense good' but that Chinese medicine was based on 'superstition' most aptly summed up the official position.[14] Colonial Ceylon thus appears exceptional in the formal government recognition and support of indigenous medicine. There are two principal factors which contributed towards this development: the political and constitutional context and the popular strength of Ayurveda.

The political and constitutional context

Ceylon was always something of a path breaker in constitutional development, first, by setting a pattern for British crown colony governance and second, by establishing a pattern for the process of decolonisation. It was the prototype of a crown colony system of government at the beginning of the nineteenth century and it was the first British crown colony to achieve independence in 1948. Buddhist revivalism and a growing resistance to British rule developed concurrently in the early decades of the twentieth century. This nationalist challenge, fostered by the example of Indian nationalism resulted in Ceylon's gradual acquisition of self-government. Constitutional changes came in the 1920s culminating in virtual self-government in 1931 under the Donoughmore Constitution. This introduced a dyarchal system of government whereby internal affairs were run by an elected State Council with a Board of Ministers. The truly innovative part of this constitution was that the State Council was elected by all men and women over the age of twenty-one. Colonial Ceylon thus became the first country in Asia to have full universal suffrage, and this, only three years behind Britain.[15]

In this constitution Ceylon created a precedent. It was a system of government in which the elected politicians held considerable powers in the internal management of the country. The power of the Board of Ministers grew as they became a more cohesive body and the civil servants treated ministerial decisions as binding. There seems to be general agreement amongst

administrators at the time and historians since that under the Donoughmore Constitution much more attention was paid to matters of social welfare as universal suffrage made politicians answerable to their constituents.[16] In 1943 the British Government issued a Declaration of Policy, that at the end of the war, reforms would be instigated to grant Ceylon full responsible government within the British Empire. Ceylon received its independence in February 1948. The formal equality for Ayurveda was achieved as an integral part of the nationalist challenge to imperial rule.

The Popular Strength of Ayurveda

Alongside these political developments was the continuing strength of and popular support for Ayurveda. According to Chris Uragoda, Ayurvedic medicine flourished under the Portuguese and the Dutch (the first European colonisers of Ceylon). Western medicine in this period was rudimentary and Ayurvedic healers were respected for their knowledge. They also had the patronage of the Sinhala kings.[17] The advent of the British ended this peaceful co-existence, leading to a decline in the status of Ayurveda throughout the nineteenth century. However, it survived as the medicine of the majority, especially the rural population. Every village had at least one and often more than one *vederala*.[18] Despite the establishment of an extensive Western medical system in Ceylon, Ayurveda remained the popular choice.

Furthermore, it was impossible, for two major reasons, to prevent the indigenous population from using their own health systems. First, administrators were reluctant to provoke civil unrest through a too-intrusive medical intervention – although this caution was abandoned when the health threat was felt to outweigh the dictates of political expediency.[19] Secondly and perhaps more importantly, the establishment of an all-embracing health system which covered the needs of the entire population was beyond the resources of colonial governments and, moreover, would have entailed undesired commitments. It was therefore far more expedient to allow the majority of the population to rely on traditional practitioners.

These issues are encapsulated in the two reports (a Majority and a Minority Report) of a 1925 Government Committee on the Indigenous Systems of Medicine. This Committee was composed of the Municipal Bacteriologist, the Government Analyst and the Assistant Director of Medical and Sanitary Services, Dr S. T. Gunasekera (a Sinhalese), plus eight unofficial members of the Legislative Council (all Ceylonese).[20] Witnesses to he committee included Western trained doctors both Ceylonese and European, and a number of the senior practitioners of Ayurvedic medicine in Ceylon.

According to the Majority Report, the first question raised at the outset was whether the indigenous systems of medicine were 'scientific or mere quackery'. This was an attempt by the professional members of the committee, not least among them Dr Gunasekara, to pre-empt the outcome of the enquiry by undermining from the beginning the validity of the indigenous

systems. This question was not accepted by the committee which rejected the 'exclusive appropriation' of the term 'scientific medicine' for a definition of 'Western medicine'. Western medicine, the Majority Report authors argued, was not entirely scientific and furthermore the 'established discoveries' of science were subject to challenge and change.[21] The term 'scientific medicine' to describe the medical system of the West was the one commonly used hitherto in official reports.[22] The rejection of this usage in this report indicated an understanding of the significance of terminology but more importantly, it implied an acceptance of Western epistemology. In order for Ayurveda to be recognised, it had to conform to Western 'science', and therefore the term could not be applied synonymously for Western medicine. This initial debate reflected a basic fault line in the committee between the lay and the professional members, the politicians (the majority) and the doctors hence the two reports.

The majority report, signed by all the lay members, drew considerably upon the evidence of a similar Committee of the Madras Government in 1921 and indeed reflected the views expressed in that report. It cited in its support the sympathetic views of Sir Pardy Lukis, Director General of the IMS (1910–17) in support of Ayurveda. It quoted his statement that 'if I were ill … I would prefer to be treated by a good Vaid or Hakim than a bad doctor'. Furthermore, it repeated his condemnation of 'that spirit of Medical Trades Union which leads many modern doctors to stigmatise all Vaids and Hakims as quacks and charlatans'.[23] The report, again echoing the recommendations of the Madras committee, proposed that a Board of Indigenous Medicine should be set up to regulate the indigenous medical systems. It should be chaired by the Controller of Revenue and be composed of ten government nominated members, six of them members of the Legislative Council, and five Ayurvedic practitioners nominated by those ten. This board would then be responsible for the training and licensing of practitioners. A training college, research institute, hospital and dispensary should also be established.[24]

These recommendations were justified on the grounds that at least 75 per cent of cases of illness were treated by Ayurvedic practitioners. It was argued that the majority of people seeking medical treatment in government hospitals and dispensaries were suffering from malaria for which it was 'generally recognised even by ignorant villagers that quinine [was] the sovereign remedy'.[25] The implication was that most still went to indigenous practitioners for other illnesses. Ayurvedic medicine was not, therefore, going to die out as the medical establishment hoped. Thus, it was the duty of the government to ensure only qualified persons should practise. As the authors of the majority report argued, 'quackery is the pretentious ignorance of the system professed and not the practice of any particular system itself'. Just as the government had tried to eliminate quacks from the practice of Western medicine itself, public interest dictated it should do the same for indigenous medicine.[26]

This majority committee report compiled by Celyonese politicians illustrates both the importance of nationalist support for Ayurveda and its continuing popularity. Its recommendations proved to be a turning point in official policy towards Ayurveda. A second Committee of Inquiry set up by the new Ceylonese government in 1936 recommended that the college and hospital be taken over as government institutions and this was implemented in the 1941 legislation.

Whilst this official recognition of Ayurveda followed on from the increasing Ceylonisation of government it was more complex than a case of colonised against the colonisers. This becomes plain when the attitudes of those involved are more finely delineated.

The opponents and supporters of formal equality: Ceylonese and British

Opponents – The western medical establishment

In the crucial period of the 1920s and 1930s the Western medical establishment in Ceylon was unrelentingly hostile to the granting of any formal recognition to Ayurveda or the other indigenous medical systems. A prime example of this was the minority report issued by the professional members of the 1925 Committee. They were unequivocal in their rejection of indigenous systems as having any scientific validity. Their 'pathology is unsound, their diagnostic methods out of date, their surgery and midwifery crude and dangerous'. Any success practitioners had was purely by chance and based on empiricism not science. Eliminating quackery, the report argued, could not be done by putting trust in 'exploded dogmas, sanctified by a 2,000 year tradition', in other words 'formulae whose very meaning now lies buried in the past, a dead creed in place of a living art'.[27] They were vehemently against any recognition of Ayurvedic practitioners because it would 'encourage them to interfere with the development of scientific medicine and frustrate the enforcement of health regulations'.[28] Furthermore, the minority report pointed out, Ceylon intended to go much further than any Indian government in proposing to set up a register of practitioners of indigenous medicine with a view to licensing them. This was being proposed despite it being, in the authors' opinion, far less necessary in Ceylon with its well-developed Western medical service than in India where there was greater justification for such a move.[29]

The views of the Western medical establishment were expressed even more forcefully in the pages of their professional journal. The second issue of the Ceylon Branch of the BMA journal in 1926 devoted its editorial to a condemnation of the government's policy. The development of the Western medical services in Ceylon, it asserted, was so advanced that there was no need to support Ayurveda and thus create a 'hybrid of medical relief of doubtful practical value'. Moreover, creating this dual system was positively

dangerous to the public health of the island. 'No sensible man will own that there is a definite science and system called Ayurveda', its practitioners 'have no means of diagnosis, which can reasonably be relied on', and 'their conception of the nature of disease is crude in the extreme'. Recognising Ayurveda would mean that it would be impossible to run a sanitary service; vaccination for smallpox would cease, as would immunisation against tetanus and diphtheria; other infectious diseases, like the plague, would run unchecked and there would be no collection of statistics. The one concession that could be made was for Ayurvedic remedies to be tested for their efficacy so that 'in justice to humanity and science' no 'valuable clinical or therapeutical facts, which may yet enrich scientific medicine' would be lost.[30] Opposition on these lines from the Western medical establishment was evident every time a further move to support Ayurveda was proposed. In 1940 S. W. R. D. Bandaranaike, then Minister for Local Administration and Chairman of the Board of Indigenous Medicine, dismissed it as based on nothing more than fear of competition; as he graphically described it – '*humbas baya* – the fear that some poisonous serpent might emerge from the ant-heap'.[31]

This opposition from those who were representatives of the colonial state and whose status and livelihood were in danger of being undermined is to be expected. The most interesting fact however, is that the Western medical establishment was not British. Ceylon's medical services were almost entirely staffed by locally appointed officers. Ceylon had its own medical college established in 1870 and a medical registration ordinance was passed in 1905. The Ceylonisation of the medical services had begun in the nineteenth century. This pattern was confirmed and accelerated in the 1920s through a deliberate government policy of staffing the medical department with Ceylonese, following the 1920 Government Committee on the Ceylonisation of the public services. In 1936, even the most senior medical post in the colony conformed to this trend when Dr Gunasekera was appointed as the Medical Director.

A further argument, touched upon in those editorial notes above, was that what lay behind the demand for the government support of Ayurveda was the cynical vote catching machinations of the politicians. This point was brought home in a satirical account in the next issue of the journal of a speech given to the annual dinner of the BMA by the nationalist politician D. B. Jayatilaka. The author of the account wryly expressed a hope that the 'metamorphosis of the so-called Western medical practice to that of the indigenous system' should not be completed as his and other doctors' experience showed that 'a fairly lucrative practice still exists among the very members of the Legislative Council, who clamour for the recognition of the indigenous system of medicine'.[32] Similar claims were made in India about the motivation of those who campaigned for the recognition of Ayurveda and the genuineness of their support for it.[33] This then is a case of one section of the Ceylonese elites opposing another. Nationalist politicians and the medical

practitioners were both highly Westernised and subject to similar hegemonic colonising influences. It is therefore necessary to examine particular contingent and contextual factors to explain their positions. This is further supported when the attitudes of some of the colonisers are examined.

Supporters – The British colonists

There are examples throughout the whole period when support for indigenous medicine came from members of the British establishment. This was not only on the grounds of political expediency. In 1905 the Governor Sir Henry Blake won much support from the local elites for his claim in an address to the Ceylon Branch of the Royal Asiatic Society that the recent discoveries about malaria were only rediscoveries of knowledge that could be found in the works of ancient Sinhalese writers such as the *Susruhta*.[34]

In 1910 in connection with the control of opium, the question of the registration of *vederalas* was investigated by a government committee. Dr A. J. Chalmers, the Registrar of the Ceylon Medical School, was on that committee. The notes of the proceedings of the commission show that whilst the other commission members were intent on ascertaining the extent of opium use by the *vederalas*, Dr Chalmers focused his questions on their training, what form it took, how long it lasted and from whom they learnt their skills.[35] His conclusion was that, although there were some quacks among traditional healers, many were 'really skilled practitioners along their own lines' and that a system of registration would distinguish the properly trained 'who were a good class of men' from the quacks.[36] The Commission, itself, decided that it was possible to distinguish between 'genuine *vederalas* and ignorant pretenders'. Genuine ones served an apprenticeship under a recognised man and these were 'easily distinguished by the native from the untrained quack'.[37] Registration was thus a feasible option. Dr Chalmers was an important member of the Western medical establishment. His tolerant and supportive attitude for indigenous practitioners contrasts with the later intolerance evinced by Ceylonese Western practitioners in the mid-1920s as seen above.[38]

A further example of support from the colonisers can be seen in the support given by members of the colonial administration to the proposal to set up the Board of Indigenous Medicine in 1926. Colonial Office officials supported the move on the grounds of political expediency only. For instance H. R. Cowell, in the Ceylon department, argued the question was a political one and to oppose it would 'lead to opposition out of all proportion to the economy effected'. The colonial government, however, took a more positive stance.[39] In his speech to the Legislative Council in June 1927, the Colonial Secretary, A. G. M. Fletcher, asserted that empiricism continued to play its part in therapeutics and that there was no justification for 'asserting that the path of discovery lies only along western lines'. Furthermore, he went on, it must be remembered that indigenous medicine had been practiced 'from

time immemorial in all parts of the world, and today, a large majority of the human race, including a big proportion of the population of Ceylon, depends upon it'. Whilst the government still intended to encourage a belief in the greater efficacy of Western methods, given the popularity of Ayurveda, the colonial secretary concurred with the views of the majority report that, in the public interest, it should be regulated and its standards monitored.[40]

So whilst some Ceylonese opposed any official recognition of Ayurveda on the grounds of its lack of scientific validity, some British colonisers supported it on the grounds that it had much to contribute towards the health of the Ceylonese population.

Ayurveda – a hybrid system with inferior status?

However, was the Ayurvedic medicine which emerged from this official support and which was fully professionalised in 1941 a new and different form of indigenous medicine in Sri Lanka? To accept that Ayurveda acquired formal equality in Ceylon does not necessarily rebut the argument that Western medicine was essentially hegemonic. It may rather lend support to that argument. It could be argued, for instance, that to survive in Ceylon, official Ayurveda was compelled to establish itself on the same grounds as Western medicine. It had to set up training institutions, establish a canon of knowledge and limit practice to certified practitioners only. Such an argument is substantiated by some aspects of the 1927 Majority Report. A whole section of the report was devoted to an explication of the scientific validity of Ayurveda which included a defence of its pathology, surgery, anatomy and *materia medica*. This last, for example, was the equivalent of drug therapies and the '*Tri-Dhosa* theory' itself was 'not opposed to the germ theory but includes it'. Furthermore, it was argued that even if there were inaccuracies in Ayurveda's analysis of disease causation, it would be folly to ignore the centuries of empirical experiences in treatment of disease. Again, Sir Pardy Lukis was quoted extensively in support. He had reportedly argued that 'many of the empirical methods of treatment adopted by the Vaids and Hakims are of the greatest value, and there is no doubt whatever that their ancestors knew ages ago many things which are nowadays being brought forward as new discoveries'.[41] In other words, the Report claimed, the early theorists of Ayurveda were scientists.[42]

However, on the question of research into Ayurvedic treatments, the 1927 Report rejected the Western model of testing them for effectiveness in a laboratory. Traditional remedies could not be tested in isolation from the other aspects of treatment such as diet. Ayurveda was a holistic treatment and remedies were a particular compilation of substances; the testing of individual drugs would therefore be pointless. It proposed instead that a 'research student who knows both systems' should test treatments through patients' responses.[43] This suggests a less than total acceptance of the canons of Western medicine.

Nevertheless, the questions remained as Ayurveda continued to develop as an officially supported medical system. First, was it possible for it to be professionalised on Western lines and remain true to its nature? Secondly, was it possible for traditional and Western systems to run alongside each other with each having equal status?[44] In India, Langford has argued, 'widespread corruption and other slippages between form and function resulted in part from the introduction of European institutional models into the Ayurvedic practice', for 'modern Ayurvedic institutions were established not so much to better transmit Ayurvedic knowledge as to balance the scales with European medicine'.[45] Was this also the case in Ceylon?

Those involved in legislating on these issues certainly expressed doubts as to whether the Ayurveda which was emerging in this environment was a valid one. The inclusion of the Western 'scientific' subjects of biology, chemistry, pathology and so on into the curriculum of the College could be taken as evidence of the domination of 'scientific' medicine and the corruption of the indigenous system. In 1927 Western practitioners had condemned this inclusion asserting that the two systems were basically incompatible and could not be combined in this way. In 1940 some Ceylonese, having seen the way it had worked over ten years, concurred with this view. D. S. Senanayake (the first Prime Minister of independent Ceylon) argued in 1940 in the debate on the 1941 Ordinance that the original purpose of setting up a board and a college of indigenous medicine – to preserve the knowledge and treatments – had been subverted. The college was being used not to learn about the indigenous systems but 'to get an opportunity of learning … the Western system of medicine'.[46] Sir D. B. Jayatilaka who argued that the college was producing what he termed 'Anglo-Vernacular Doctors' supported him. If it was taken over as a government institution, he said, then only indigenous medicine should be taught and it should not give a 'smattering of the Western system of medicine'.[47] Both these men were apparently supporters of their country's traditional medical system. Two years later Dr M. C. Kaleel (member for Colombo South and a Western-trained doctor) summed up the situation as he saw it. There was Western medicine, he claimed, there was Ayurvedic medicine and there was the 'hybrid between the two' which was taught by the Ayurvedic hospital and college.[48]

These concerns over the detrimental effect that the interaction between the two systems was having on Ayurveda came to fruition in 1947 with the report of yet another government commission of enquiry. It was highly critical of the teaching at the College of Indigenous Medicine and the standard of entrants. Students were taught both the necessary basics of Western medicine – anatomy, physiology, chemistry, physics and biology – and the fundamental principles of Ayurveda by lecturers qualified in either or both Western or indigenous medicine. But it was felt that many of these lecturers were insufficiently qualified. The teaching of indigenous medicine was in the vernacular but the teaching of the Western part of the syllabus was in English, principally because of a lack of textbooks for this in the vernacular.

Altogether, between 1941 and 1946 113 students had graduated from the college.[49]

The hospital too was heavily criticised. It had beds for 97 patients, 63 for non-paying patients but was frequently overcrowded with patients on the floor. Its patients were mainly suffering from chronic illnesses, the most common being paralysis and nervous diseases, and rheumatism and diseases of the joints. There were five wards but no separate wards for medical and surgical cases or for diseases requiring isolation. The maternity ward was attached to the general female ward, the hospital had no drainage or proper sanitary facilities and the outpatients department flooded during the rainy season. No proper case histories were kept of patients or records of diagnosis. Furthermore, the hospital was not up to the required standard to provide proper clinical training for the students of the college.[50] The picture presented here is of institutions attempting to provide services in line with their Western counterparts and being judged on the same criteria. However, they were operating with vastly less financial support from the government. As the Report noted, the total government expenditure on Western medicine in the year 1946–47 was Rs 32,855,138; for Ayurvedic medicine it was a mere Rs 451,878.[51]

The influence of Western medicine on the indigenous medicine taught at the college and thus its graduates was exemplified by the fact that in the paying wards of the hospital Western drugs were prescribed, presumably because the patients could pay for them. Moreover, in the maternity ward 'treatment is carried out entirely according to Western methods'.[52] On the other hand, the report's authors concluded that this mixing was not necessarily bad. They rejected the concern that this 'hybridisation' would in due course lead to the extinction of Ayurveda: 'we feel that the proper course to follow is to steer clear of the Scylla of extensive westernisation and the Charybdis of existing stagnation'.[53]

Despite this confident assertion, however, it could be argued that on the eve of independence the attempt to 'modernise' Ayurveda risked it losing its essential nature. As Kamalika Peiris has argued, 'the distinguishing characteristic of indigenous medicine was its classical theories and traditional techniques' and these could not be discarded'.[54] But by adopting some of the learning and accoutrements of Western medicine, Ayurveda had indeed laid itself open to the charge of becoming a hybrid and inferior system.

A 'Bounded Pluralism': formal but not real equality?

The progress of Ayurveda since independence

In 1944 G. E. de Silva the Minister of Health whose own father was an Ayurvedic practitioner had argued that the 'borrowing', as he put it, from Western medicine 'was progress and cannot be stopped'.[55] The government policy, he said, was formulated in order 'to produce the best Ayurvedic men we

can' and would ultimately ensure that 'Ayurveda will play an equally important part in the conservation of the health of the people of this country'.[56] This was his hope.

Government support of Ayurveda has continued but its institutional and theoretical development since independence lends some support to those concerns expressed in the 1940s. The reports of the Department of Indigenous Medicine in the 1950s reveal that it remained an under resourced element of the Sri Lankan health care system. The hospital remained overcrowded; in 1950 it had only 134 beds but had treated 3,197 patients in the year which meant many patients had to be accommodated on the floor. An additional hospital building was planned to provide 80 more beds but by 1955 a new building programme was still only at the planning stage.[57] The outpatients' dispensary was even more over-stretched. In 1950 there was a daily average attendance of 1,000, many patients were therefore forced to wait outside the building for treatment.[58] In 1960 the daily average was still 900–1300 patients.[59] This dispensary was, in fact, the only fully government funded Ayurvedic Dispensary, in contrast to a widespread system of government funded Western dispensaries dating back to the mid-nineteenth century. It had been left up to voluntary bodies and local authorities to establish Ayurvedic dispensaries to which the government then awarded grants, if they conformed to the standards laid down by the Minister of Health. In 1960, Rs 12,225 and Rs 87,625 were given in government grants to privately run and local authority dispensaries respectively.[60]

The curriculum of the college continued to be heavily influenced by Western medicine. On October 13, 1955, the foundation stone was laid by the Minister of Health, E. A. Nugawela, for a new three-storeyed college building which was to house the classrooms, laboratories, and a museum for chemistry, physics, biology, anatomy, physiology and pathology. The building was to be equipped with modern apparatus. Provision was also made for the appointments of specialists with high qualifications to give instruction in anatomy, physiology, pathology, midwifery and gynaecology, paediatrics and modern surgery. Scientific equipment was obviously considered essential as the report stated that all savings from the scholarships and bursaries of students suspended for three months as a disciplinary measure were used to buy 15 microscopes for the college.[61]

Attempts were made subsequently to improve the status and standards of Ayurveda. The Ayurveda Act of 1961 established the Department of Ayurveda, the registration of Ayurvedic hospitals, pharmacies, dispensaries and stores, and set up an Ayurvedic Medical Council to register practitioners, pharmacists and nurses. It also established an Ayurveda Research Committee to carry out research into Ayurvedic doctrine, clinical treatment and pharmacology.[62] The Ayurveda College was affiliated to the University of Sri Lanka in 1972 and the Ministry of Indigenous Medicine was set up in 1980. However, Kamalika Pieris has argued that this 'bureaucratisation of indigenous medicine did not improve matters'. For one thing, the Ministry

for Indigenous medicine created in 1980 still came under the Ministry of Health 'with its clear bias towards western medicine'.[63]

Contrary to what the authors of the 1927 Majority Report had argued about the incompatibility of testing Ayurvedic remedies in laboratories this kind of research was conducted at the hospital and college. For example, in 1955 research on Ayurvedic drugs was carried out at the hospital, with the assistance of the pharmacological department of the University of Ceylon and the Medical Research Institute. These included research into anti-diabetic drugs – '*Kotala-Himbutu* (Salacia Reticulata Wight), *Ranavara* (Cassia Auriculata-Linn)'; drugs affecting the heart – '*Kumbuk*'; and anti-rheumatic drugs – '*Detta Ala*'. An 'active principle' had been extracted from *Kumbuk* and experiments in this connection including animal experiments and clinical trials were awaited.[64] In 1960 research was conducted similarly into diabetes.

This highlights the continuing tension in the relationship of Ayurveda to Western medicine. On the one hand, W. J. Fernando (Commissioner for the Development of Indigenous Medicine) claimed it was based on the 'fundamental principles of Ayurveda, namely the pathological changes brought about by vitiation of the three Doshes'. On the other hand, the services of a Western qualified physician was required to help 'the Ayurvedic team to probe into the pathological aspects'.[65] The Bandaranaike Memorial Ayurveda Research Institute (BMARI) established in 1962 has maintained this mixed methodology. According to Kamalika Pieris its research journal – *Ayurveda Pradeepika* – 'clearly reflected the influence of western scientific method in the research designs adopted and the terminology used'.[66]

The current situation

In Sri Lanka at the end of the twentieth century there were 42 Ayurvedic hospitals with a total bed strength of 2210, 114 central dispensaries and 230 free dispensaries, with 725 Ayurvedic graduates and diploma holders attached to these government Ayurvedic hospitals and dispensaries. However, a comparison of these numbers with the 50,091 hospitals beds in Western hospitals (2,658 in the National (General) Hospital in Colombo alone) point to a fundamental inequality of provision.[67] Moreover, it was only in 1996 that the salaries of government employed Ayurvedic practitioners were put on a par with their Western counterparts.[68] Western medicine continues to be financed far more generously than the indigenous health care services. One estimate is that Western medicine still commands 98 per cent of government expenditure on health care.[69]

The training of indigenous medical practitioners includes elements of Western medicine, to such an extent that Nordstrom has argued that to the average Sri Lankan the mere term 'Ayurveda' has 'come to imply a practice that incorporates cosmopolitan practices'.[70] To the purist of indigenous medicine there exists a doubt as to whether this system can be regarded as a valid indigenous system. However, apart from a few very tentative initiatives,

there has been no move towards including elements of Ayurveda in the professional training of Western practitioners.[71] The case for hegemony appears to have been proved.

Nevertheless, in terms of the health behaviour of Sri Lankans, both as practitioners and users, the argument appears to be far less clear-cut. Nancy Waxler-Morris has argued that in Sri Lanka 'all types of medicine including western medicine reflect the common culture'.[72] Formally trained and registered Ayurvedic practitioners use Western medicines. At the same time, despite the aversion to this in their training, Western trained bio-medical doctors do in practice accept and use traditional remedies and therapies to some degree.[73] One recent impetus to this inclusion of traditional medicine in the practice of Western doctors, as suggested by Dr Upali Pilapiyiya, is that with the expansion of medical education over the past three decades the complexion of medical students has changed. They are now drawn less exclusively from the Westernised elites. Greater numbers come from rural areas and are more likely, growing up as they did with local traditional therapies, to reflect the common culture in their practice.[74] A second factor may be the failure of the 'magic bullet' in Western medicine itself. Western medicine as practised in advanced industrial countries is increasingly pluralistic for this reason.

As far as those seeking treatment are concerned, Indrani Pieris has claimed that the 'simultaneous acceptance of different health systems is the most marked feature of Sri Lankans' health behaviour'.[75] It seems that Sri Lankans use all systems, both official and non-official, interchangeably and also in tandem. Official Ayurveda, as Paul Isenman argued has served to 'complement and help take the strain off government western health facilities' (the fulfilment of the hope of the Minister of Health in 1944).[76] However, Gannath Obeyeskere has asserted that, the use of Western medicine does not imply an acceptance of its superiority; 'while people may have accepted Western medicine as a system of cure, they have not accepted Western theories or interpretations of disease'.[77] There are many factors which determine the users' choices. One obvious one is the perceived efficacy of any treatment. Nevertheless, as Nordstrom has shown, the choices made by those seeking treatment could be dictated not just by this but also by a combination of 'physical, socio-medical and purely social concerns'. The two government funded systems of allopathy and Ayurveda have one advantage over other options in that they both offer free treatment but the other therapies on offer satisfied other criteria, such as the informality of the advice offered, the easy access and familiarity of the healer and their adaptability to patients' needs.[78] A further factor is that these non-official forms of traditional medicine, as opposed to official Ayurveda and Western medicine, can and do advertise extensively in the vernacular press and other forms of mass media. Hence, they can play upon people's fears and even superstitions and draw upon the wider culture of which the traditional medical systems form just a part.[79] So, as Ivan Wolffers has argued, pluralistic systems such as Sri Lanka's

can offer an advantage to patients as they make them 'independent of one single supplier'.[80]

Conclusion

It could be argued that the space which was officially created for Ayurveda in Sri Lanka's health care system from the colonial period onwards facilitated and ultimately strengthened the capacity of all the indigenous healing systems to survive and continue in what was essentially a hostile official environment. The Sri Lankan health care system is undoubtedly pluralistic and from the point of view of the user the many forms of health care available provides a continuum of options which can be negotiated. S. N. Arseculeratne has termed this a 'cultural mosaic … rather than a cultural melting pot'.[81] In the latter decades of imperial rule a form of traditional medicine emerged which had government patronage. In this colonial Sri Lanka provides a uniquely interesting case study. After independence, this form of Ayurveda continued to command government resources and was in a similarly privileged formal position as Western medicine. However, this privileged position was contingent on its adopting many of the forms and even the practices of its Western counterpart. This it could be argued makes it a hybrid system which has distorted the 'true' nature of Ayurveda, a situation which has periodically provoked heated debate amongst legislators and practitioners (both Western and traditional). Furthermore, it has never been given, and still does not command, equal levels of government resources. The formal equality acquired by this official Ayurveda before independence was never translated into a real equality and it exists as one of many healing systems on offer. It operates, as do the unofficial traditional healing therapies, under the looming presence of Western medicine. Therefore, this singularity only resulted in what could be called a 'bounded pluralism' not a true pluralism. Western medicine is more equal than any of the traditional systems including the officially sponsored Ayurveda.

Notes

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2 There is of course a significant debate on definitions and terminology which for reasons of space cannot be explored here. My use of the term 'Western medicine' indicates no firm conclusions about this. It is used for the sake of consistency and simplicity, as this was the term used in the colonial period.

3 B. Andrews and A. Cunningham, 'Introduction', in *Western Medicine as Contested Knowledge,* Manchester: Manchester University Press, 1997, pp. 1, 5–16.

4 C. Nordstrom, 'Exploring Pluralism – the Many Faces of Ayurveda', *Social Science and Medicine,* 1988, vol. 27:5, pp. 479–89, 480.
5 I. Pieris, *Disease, Treatment and Health Behaviour in Sri Lanka,* New Delhi: Oxford University Press, 1999, p. 32.
6 Nordstrom, 'Exploring Pluralism – the Many Faces of Ayurveda', pp. 480–81.
7 Fred. L. Dunn, 'Traditional Asian Medicine and Cosmopolitan Medicine as Adaptive Systems', in C. Leslie, (ed.) *Asian Medical Systems Comparative Study*, London: University of California, 1976, pp. 135–36.
8 David Arnold, *The New Cambridge History of Medicine: III,* Cambridge: Cambridge University Press, 2000, pp. 199–221.
9 Jean Langford, *Fluent Bodies. Ayurvedic Remedies for Post-Colonial Imbalance,* Durham and London: Duke University Press, 2002, p. 2.
10 When discussing Sri Lanka in the colonial period Ceylon will be used not Sri Lanka.
11 The National Archive, Public Record Office, Kew, (hereafter TNA: PRO), CO 56/22, Ordinance No. 17, 1941, *Ordinance to Establish a Board of Indigenous Medicine.*
12 Roger Jeffery, 'Policies Towards Indigenous Healers in Independent India', *Social Science and Medicine*, 1982, vol. 16, pp. 1835–41, 1836; Roy Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity From Antiquity to the Present,* London: Fontana, 1999, p. 146; Langford, *Fluent Bodies*, p.115.
13 Elisabeth Sinn, *Power and Charity: The Early History of the Tung Wah Hospital*, Hong Kong: Oxford University Press, 1989, p. 3.
14 Rhodes House Collection, MSS, BRIT EMP, S208, Sir William Peel, 'Colonial Service Notes 1897–1935'.
15 For accounts of the Donoughmore Constitution see K. M. De Silva, *A History of Sri Lanka,* London: Oxford University Press, 1981, p. 422; E. F. C. Ludowyk, *The Modern History of Ceylon,* London: Oxford University Press, 1966, p.160; C. Jeffries, *Ceylon-The Path to Independence,* London: Pall Mall Press, 1962, pp. 47–57; and TNA: PRO CO 1041/8, *Ceylon Report of the Special Commission on the Constitution,* Cmd. 3131. In the first election nearly 59% of the total electorate voted and this in spite of a boycott in the Tamil area of Jaffna. Jeffries, *Ceylon,* p. 67.
16 C. R. De Silva, *Sri Lanka: A History,* New Delhi: Vikas, 1987, p. 196; Jeffries, *Ceylon,* p. 71; K. M. De Silva, *A History of Sri Lanka,* p. 436.
17 C. G. Uragoda, *A History of Medicine in Sri Lanka – From the Earliest Times to 1948,* Colombo: Sri Lanka Medical Association, 1987, p. 13.
18 TNA: PRO, CO 54/724, Correspondence between the Governor and the CO, 1909.
19 This was so, for example, in the case of smallpox vaccination and measures against the plague. See David Arnold, 'Smallpox and Colonial Medicine in Nineteenth Century India' in D. Arnold (ed.), *Imperial Medicine and Indigenous Societies,* Manchester: Manchester University Press, 1988, pp. 45–65*;* Sinn, *Power and Charity*, Chapter 7; Mark Harrison, *Public Health in British India: Anglo-Indian Preventive Medicine 1859–1914,* Cambridge: Cambridge University Press, 1994, pp. 183–88, 230–31.
20 TNA: PRO, CO 54/891/5, Letter from Stanley (Governor) to the Secretary of State, 29 March 1928. The unofficial members of the LC sitting on the Committee were K. Balasingham (Chair), E. R. Tambimuttu, C. W. W. Kannangara, T. B. Jayah, F. A. Obeyeseke, S. Rajaratnam, W. A. De Silva and P. M. Rambukwelle, TNA: PRO, CO 54/891/5, *Report of the Committee on the Indigenous Systems of Medicine, Sessional Paper 1, 1927,* p.10.
21 *Report on Indigenous Systems of Medicine,1927,* pp. 4–5.
22 I am grateful to Mark Harrison for alerting me to this point.

23 *Report on Indigenous Systems of Medicine,1927,* p. 5.
24 Ibid., pp. 8–9.
25 Ibid., p. 6. It was also pointed out that by the Opium Ordinance of 1905 Ayurvedic practitioners were not allowed to prescribe quinine so they had to send patients to Western doctors for that remedy.
26 Ibid., p. 7.
27 Ibid., pp. 14, 15.
28 Ibid., p. 17.
29 Ibid., pp. 12, 17.
30 Editorial Notes, *Journal of the Ceylon Branch of the BMA,* 1926, vol. 23, no. 2, pp. 92–104.
31 Sri Lanka National Archives (hereafter SLNA) Library, State Council Debates, 25 June 1940, p. 1228.
32 Journal of the Ceylon Branch of the BMA, 1926, vol. 23, no. 3, pp. 183–86, 185.
33 Langford, *Fluent Bodies,* p.109. An even more hostile opinion of their motives was harboured amongst British officialdom. In 1931 H. R. Cowell at the CO expressed his suspicions that the 'indigenous system of medicine in Ceylon is linked more or less closely with the illicit distribution of drugs' and since they at the CO had been 'credibly informed that some members of the State Council are themselves involved in the illicit drug traffic, this would account for their enthusiasm in support of this very curious system of medicine'. TNA: PRO, CO 54/908/14, Minute, H. R. Cowell, 23 December 1931.
34 Uragoda, *A History of Medicine in Sri Lanka,* p. 221.
35 SLNA, PF 2643B, Notes of Proceedings of the Opium Commission,
36 TNA: PRO, CO 54/721, Report of discussions with Dr Chalmers by Francis Hopwood, 5 March 1909.
37 SLNA, PF 2643B, Report of the Opium Commission 18 September, 1909.
38 Dr Chalmers applied for the post of PCMO on Dr Perry's retirement but was passed over it was suggested, because 'the government was not prepared to appoint someone whose outlook was so broad and whose persuasive powers were difficult to resist'. S. C. Paul, 'In a Reminiscent Mood', *Journal of the Ceylon Branch of the BMA*, 1937, vol. 34, no. 3, pp. 111–32, 128. Dr Paul thought that Dr Chalmers had also antagonised the government with his public declaration that Ceylon medical men were poorly paid and should receive more adequate salaries.
39 TNA: PRO, CO 54/891/5, Cowell, Minute, 2 May 1928. The full extent of Cowell's inherent prejudice against the indigenous system and its supporters is apparent in the comment made in 1931. See footnote 33.
40 TNA: PRO, CO 54/891/5, Extract from the speech of A. G. M. Fletcher (Colonial Secretary) to the Legislative Council, June 16 1927.
41 *Report on Indigenous Systems of Medicine, 1927,* p. 5.
42 Ibid., p. 5.
43 Ibid., p. 10.
44 Similar debates arose in India around these issues. See, for example, Jeffery, 'Policies Towards Indigenous Healers in Independent India', pp. 1836–37; N. Quaiser, 'Politics, Culture and Colonialism: Unani's Debate with Doctory' in B. Pati and M. Harrison (eds), *Health, Medicine, and Empire: Perspectives on Colonial India,* New Delhi: Longman Orient, 2001, pp.317–55: Arnold, *The New Cambridge History of India,* pp. 184–85.
45 Langford, *Fluent Bodies,* p. 99.
46 SLNA Library, State Council Debates, 25 June 1940, p. 1224.
47 Ibid., 25 June 1940, p. 1236.
48 Ibid., 5 August 1942, p. 1425.
49 Ibid., *Sessional Paper XXIV,1947, Report of the Commission on Indigenous Medicine,* Chapter II, pp. 9–20.

50 Ibid., Chapter III, pp. 21–32.
51 Ibid., Chapter III, p. 32.
52 Ibid., Chapter III, p. 25.
53 Ibid., Chapter III, p. 31.
54 Peiris, *The Medical Profession,* p. 85.
55 SLNA Library, State Council Debate, 27 August 1942, p. 1948.
56 Ibid., 30 August 1944, p. 1817.
57 TNA: PRO DO 109/12 and DO 109/29 *Administration Reports for the Department of Indigenous Medicine*, 1950, paragraph 4 and 1955, paragraph 30.
58 TNA: PRO DO 109/12, *Administration Report for the Department of Indigenous Medicine*, 1950, paragraph 5.
59 TNA: PRO DO 109/ 71, *Administration Report for the Department of Indigenous Medicine*, 1960, paragraph 20.
60 Ibid., paragraph 22.
61 TNA: PRO DO 109/29, *Administration Report for the Department of Indigenous Medicine,* 1955, paragraphs, 7, 9, 15, 16. In 1955 the college was reorganised following a government committee of inquiry in 1955. Its graduates in 1960 emerged with a Diploma in Indigenous Medicine and Surgery.
62 SLNA Library, Acts of Sri Lanka, Act No. 31 of 1961.
63 K. Pieris, *The Medical Profession in Sri Lanka, 1843–1980,* Colombo: Visidunu Publications, 2001, p. 82.
64 TNA: PRO DO 109/29, *Administration Report for the Department of Indigenous Medicine,* 1955, paragraph 12.
65 TNA: PRO DO 109/71, *Administration Report for the Department of Indigenous Medicine,* 1960, paragraph 19.
66 Pieris, *The Medical Profession in Sri Lanka,* p. 86.
67 L. Ranasinghe, 'Health Services', in T. Somasekaram, M. P. Perera and H. Godellawatta (eds), *Atlas of Sri Lanka,* Dehiwala, Sri Lanka: Arjuna Consulting Co Ltd, 1997, pp. 59–63, 62.
68 U. Pilapitiya, 'Ayurveda', in *Atlas of Sri Lanka,* 1997, pp. 64–66, 66.
69 Dr Malinga Fernando, ex-Director General of Health, Sri Lanka. Private conversation 29 August 2003.
70 Nordstrom, 'Exploring Pluralism – the Many Faces of Ayurveda', p. 480.
71 In 1957 Dr. S. A. Wickremesinghe castigated the medical establishment for ignoring their cultural heritage. Co-operating with indigenous practitioners and using the trust placed in them by the population would, he argued, enrich the whole health-care system. He cited China, where all students of Western medicine were given a good training also in the indigenous system, as the example to be emulated. There was one experiment to do this at the private medical college at Ragama when the students were given an 'orientation' course in Ayuevdic medicine. S. A. Wickremesinghe, 'Perspective on Public Health', *The Ceylon Medical Journal,* 1957, vol.4. no. 1, pp. 1–12, 10–11: Conversation with Dr Upali Pilapitiya, 29 September 2003.
72 Nancy Waxler-Morrison, 'Plural Medicine in Sri Lanka: Do Ayurvedic and Western Practices Differ?', *Social Science and Medicine,* 1988, vol. 27, pp. 531–44, 543.
73 Waxler-Morrison, 'Plural Medicine in Sri Lanka', pp. 542–43.
74 Conversation with Dr Upali Pilapitiya, 29 September 2003.
75 Pieris, *Disease, Treatment and Health Behaviour in Sri Lanka,* p. 49.
76 P. Isenman, 'Basic Needs: the Case of Sri Lanka', *World Development*, 1980, vol. 8, pp. 237–58, 240.
77 G. Obeyeskere, 'The Cultural Background of Sinhalese Medicine', *Journal of Indian Anthropological Society,* 1969, vol. 4, pp. 117–139, 139, quoted in Pieris, *Disease, Treatment and Health Behaviour in Sri Lanka,* p.51.
78 Nordstrom, 'Exploring Pluralism – the Many Faces of Ayurveda', p. 487.

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7 'Modern Medicine' in French Colonial Vietnam

From the importation of a model to its nativisation

Laurence Monnais

The history of health care during the period of the French colonisation of Vietnam[1] has long focused on the glorious battles against the major epidemic and contagious diseases of the region, battles waged through the construction of an extensive hospital network and through massive vaccination campaigns against smallpox. And indeed, such successes merit our attention: during a period of medical revolution, the French colonisers of Indochina were among the first to carry out wide-scale exportation of new Western health-care theories and practices which were to play a major role in redrawing the 'morbidity map' of Indochina, and in redefining the relationship of the Indochinese, individually and collectively, to health care, to disease, to disease-prevention, even to the state and to the West. There is no doubt that these successes played an important role in the global process of the medicalisation of indigenous societies.

At the same time, these highly visible successes were only the tip of the iceberg. A closer examination of the entire range of measures proposed and/or undertaken in the health-care field reveals how they evolved over the course of the colonial period, adapting themselves in the process to indigenous pathological, geographic, economic and socio-cultural realities. This adaptation, which we might term a 'nativisation' is particularly apparent in the interwar period, and much of this essay will be given over to an examination of some of the more important achievements and shortcomings of this incomplete and ambiguous process. Such an approach will hopefully allow us to go beyond simply noting the gaps between health-care 'theory' and 'practice,' or between 'colonial intentions' and the 'reactions of the colonised'. Our goal, in other words, is to understand what 'modern' medicine could realistically hope to impose on a non-Western society sharing few common points of reference and having its own well-established medical traditions.

'What is colonial about colonial medicine?'

This article addresses the field of the history of colonial medicine, or, better still, the colonial history of modern medicine.[2] Following in the line of such

historians as D. Arnold, M. Harrison and L. Manderson,[3] I am more interested in the achievements and implications of health-care policy – in the social history of colonial medicine, in other words – than in how such policies meshed with the selfishness, coercion and social control often identified as being at the heart of imperialism.[4] In full recognition of my debt to the social sciences, I have chosen to examine a health-care *system* in its multiple manifestations.[5] I will thus neither denounce nor applaud specific health-care initiatives, but will rather attempt to characterise and evaluate the exchanges, interactions and negotiations (as a sociologist would put it) to which these initiatives gave rise, and to measure their impact on an entire cast of characters: colonisers and colonised, colonial administrators and doctors serving in hospitals and clinics, health-care professionals and the public they served. Consequently, this article will devote little attention to certain themes, such as the role of the Indochinese experience in the evolution of biomedicine (including, among other things, its role in the emergence of tropical medicine as a recognised discipline), or the scientific exchanges to which the French medical presence in Indochina gave rise, even if such themes clearly relate to the colonial history of medicine in French Indochina.

My ultimate goal is to come to a new appreciation of the impact of the imposition of Western medicine in a colonial context.[6] If in so doing, I unsettle some of the myths surrounding colonialism, imperialism and biomedicine and its supposed omnipotence, so much the better. I might add at this juncture that because medicine by its very nature demands an encounter with 'the native subject' – for what is medicine without the patient? – and because medicine is an art, we cannot group it together with other 'colonial sciences'. Its history requires its own space. The regrouping of colonial medicine together with other colonial sciences is no doubt responsible for the neglect of the social history of colonial medicine, and for the insistence that colonial medicine be seen as part of a seamless scientific, technical, even cultural, imperialism.

I hope to go beyond a simple cataloguing of the achievements of health care and their evolution over the course of the colonial period and to focus on the distance between colonial intentions and 'Indochinese' reactions, on the confrontations of colonial policies with local realities. Such encounters – and the adaptations resulting there from – gave rise to a *nativisation* which accompanied the process of *medicalisation,*[7] both of which being particularly noticeable in the interwar period. This article will examine the reasons for and the limitations of this nativisation, and will leave to a future occasion a finer-grained examination of the question of the indigenous reception of the results of these processes.

One might also comment briefly on the case of Indochina and the relationship of this particular case to the more general field of research I am addressing – above and beyond the fact that little historical work has been done on this aspect of Indochinese history. Any discussion of the medicalisation of Indochina requires prior discussion of three closely interwoven

contexts. First, the medicalisation of Indochina could not have occurred in the absence of domination, a domination resulting from the conquest of Indochina and the imposition of French colonial power throughout the peninsula. Second, the medicalisation of Indochina took place in the context of a disease environment which was tropical, complex and hostile to natives and conquerors alike. Third, this episode in the history of medicalisation occurred simultaneously with a period of important scientific breakthroughs which, from the second half of the nineteenth century forward, shook the countries of Europe.

I would like to draw particular attention to this final point, for there is no doubt that the rapid advances in European medicine lent a particular flavour to the 'civilising' imposition of the benefits of modern science to a non-Western country (even if the very newness of biomedicine helps to explain some of the difficulties encountered). And I might add that in this particular context, Indochina serves as an excellent case study. For example, regardless of the many similarities between the medicalisation of Indochina and that of British India, the Indochinese case remains unique because the colonisation of India occurred much earlier, and did not coincide with the rise of biomedicine. In addition, French colonisation and the French *mission civilisatrice* accorded roles to medicine and to doctors which the British did not. Moreover, should we wish to compare the colonisation of Indochina with that of other French colonies, we should need to consider the importance, in the process of medicalisation, of the different opinions the French had of different peoples: the Vietnamese, for example, were viewed as endowed with a greater than average intelligence and as possessing a civilisation which the peoples of Madagascar or Algeria did not. Thus the founding of the Medical School of Hanoi in 1902, to be discussed below, was not only the product of the simultaneity of colonial expansion and the rise of biomedicine, but illustrates as well that the French colonisers intended to train indigenous doctors capable of carrying forward the torch of Western medicine. The opening of the Saigon Pasteur Institute in 1890 – the first in a long series – should be understood in a similar manner. Exchanges in recent years with historians of medicine working on other colonies have convinced me of the unique character of Indochina and particularly of Vietnam in this respect.

With this background in mind, we can proceed to construct a chronology which permits us to divide the history of health care in Indochina into three fairly distinct episodes: 1861–1905, 1905–14, and 1914–39. Each episode reveals a close collaboration between administrative and technical (i.e. medical) personnel, who worked under budgetary conditions which were notoriously insufficient and which rarely considered local needs. Each episode is linked yet again to the parallel advances of colonisation and (bio)medicalisation. And all three episodes belong to the mission of colonial medicine: a 'humanitarian' and scientific mission, a mission devoted to proving the effectiveness of Western medicine (and of French health-care policy) – but a mission which was above all at the service of the goals of domination and

exploitation. If we wish to argue that a nativisation of this process of medicalisation occurred in the period following World War I, this development, as well as its limitations, were also affected by these factors.

Focusing on the history of Vietnamese rather than Indochinese medicalisation is another way to attempt to come to terms with the broad outlines of this complex history. Indeed, we have little choice but to focus on Vietnam, given that Cambodia and especially Laos were largely neglected in the process of medicalisation, if only because of the more modest colonial ambitions toward these two protectorates, particularly on the economic front. In any event, Cambodia and Laos were difficult regions, whether viewed in terms of geography, disease or the settlement patterns of the population. In short, medicalisation was not worth the effort. In any event, since my goal is to examine the limitations of the nativisation of medicalisation in some detail, taking into consideration the variety of medical efforts from North to South, from city to countryside, there would have been no way to cover everything.[8]

From a history of colonial medicine in Indochina to the identification of the defining features of a health-care policy for Vietnam

As already noted, a distance often separates goals and accomplishments, theory and reality, abstract ideas and the form these ideas embody on the ground. An evaluation of this distance in the specific case of the colonial history of medicine in Vietnam requires as a first step a detailed examination of the health-care policy crafted specifically for the region. In so doing, we should take care to distinguish between decisions made in France by planners who imagined a 'direct transfer' of their visions to Vietnam, and decisions made by the Governor-General in Hanoi, especially in light of the increased autonomy granted to the colonial government of Vietnam from the beginning of the twentieth century.

Phase one: Trial and error (1861–1905)

The city of Saigon fell to the French in 1861, a victory which set the stage for the eventual creation of Indochina, although the Indochinese Union did not achieve its final colonial form until more than thirty years later. The difficulties inherent in military conquest account for part of this delay; the rest might be attributed to the fact that the authorities in France often changed their minds about their ultimate intentions in Indochina.[9] In any event, the 1860s saw the beginnings of anti-smallpox campaigns and the construction of the first civilian hospitals serving the indigenous population, such as the hospital of Choquan (Cholon) which opened its doors in 1864. Until this point, the European medical establishment in Vietnam had been limited to charitable missionary works and the endeavours of private individuals, most of which was already in existence at the end of the eighteenth

century. A vaccination committee was set up in the city of Saigon in 1867 (the same year that Cochin China became an official colony); anti-smallpox vaccines became compulsory in Cochin China in 1871 (which would not be the case in France until 1902), while the first efforts in urban sanitation date from 1870.[10] Still, the thrust of these early efforts was to erect an effective *cordon sanitaire* which would serve to protect the 'white man' in the course of his 'pacifying mission'. The early attention to measures of quarantine, the construction of isolation wards in peripheral areas of the city, and the passing of sanitation laws to be enforced by the border police all attest to this.[11] Indeed, it was not until several colonial and medical factors came together that we can begin to talk about a genuine health-care policy for Cochin China, and, eventually, for Indochina.

From the very moment of its founding in 1871, the French Third Republic linked health-care policy to a community of hygienists committed to the institutionalisation of public health. The hygienists sought to rally the medical profession to their cause, but doctors remained poorly organised, at least until the law of November 30, 1892. This law made it mandatory for all who wished to practice as doctors to possess a doctorate in medicine, thus bringing together medical theory with the teaching of medical practice, and establishing the foundation for the professionalisation of the field. In fact, resistance to this institutionalisation came from any number of sources, some professional, some not. Nonetheless, public authorities persisted: the law of July 15, 1893 marked the initial creation of the principle of free medical care in France;[12] the law of February 15, 1902, began the organisation of public health-care efforts throughout the country, mandating, among other things, that anyone identified as afflicted with any of a long list of contagious diseases be reported to public health authorities. In the space of ten years, France provided itself with an imposing set of regulations which it set out to apply to a pathological universe now understood in a new way: the hard-fought victory of the 'contagionists' was soon reinforced by the establishment of bacteriology and by the Pastorian discoveries, all of which underscored the indispensability of preventive measures and the necessity of a rational public health policy which would be empowered to intervene in the private sphere to ensure compliance.[13]

It was logical that the colonies should benefit as well from this enthusiasm for hygiene, and 'vaccination, reporting [of diseases to the public health authorities], and disinfection' became the watchwords of the authorities who were soon to build the institutions of colonial health care. The first signs of this construction can be seen in a series of laws passed in France: in 1890 we note the establishment of a *Corps de santé colonial* (Colonial medical Corps), of a *Conseil Supérieur de santé des colonies* (Superior Council of Colonial Health Care, soon transformed into the *Inspection générale des services de santé* or General Inspectorate of Health Care Services), which was made responsible for the technical direction of health care and hygiene overseas with the creation of an independent Ministry of Colonies in 1894, and the

initial steps towards the construction of a system of colonial hospitals which, from 1895 forward, were at the service of the whole population, even if these services were not provided free of charge.

Turning specifically to Indochina, a 'developed' colony for which the French had high hopes (both in terms of their *mission civilisatrice* and in terms of economic exploitation), the network of civilian hospitals was already taking form in the latter years of the nineteenth century, often expanding on military structures which had slowly but surely adapted their application to civilian needs.[14] Vaccination campaigns against smallpox became more numerous as well. Still, the long and hard battle for military pacification, together with the French indecision as to the proper way to subjugate the colony, served to slow the formulation of a comprehensive health-care plan. One might add that colonial health-care authorities were hoping to reproduce in Indochina – an unknown and particularly aggressive pathological environment – a health-care system still in its infancy in France. As they grappled with this environment and its geographic diversity,[15] we can easily understand the frustrations experienced by the first generations of military doctors assigned to the troops moving about the region. In the face of constant epidemics of smallpox, cholera and plague, in addition to the more insidious ravages of malaria, syphilis, tuberculosis and dysentery, colonial doctors and administrators rapidly concluded that the amelioration of the poor state of health of the indigenous population was the key to health care success in general. The establishment of the Saigon Pasteur Institute (1890), under the supervision of none other than Albert Calmette himself, attested not only to the central role accorded to vaccination, the symbol *par excellence* of modern preventive medicine (the use of the native water buffalo calf to produce locally the Jennarian pulp was part and parcel of this embrace of biomedicine), but also symbolised the dawning of a new era in the administration of health care in the region.

Indeed, it was between 1897 and 1902 that a health-care policy for Indochina began to emerge, even if many elements of this policy remained rudimentary. These dates coincide with the mandate of the Governor-General Paul Doumer, considered the main architect of the centralised administrative structure facilitating a direct management of the colony, a structure which was to endure with little modification until World War II.[16] In 1897, France for the first time created a single budget for the colony of Indochina, instead of funding particular projects via sums which were routed through a variety of military and civilian channels; the new budget was administered by the Governor-General, thus granting him an important degree of independence. The same year saw the official establishment of the initial elements of a health-care policy in Indochina, which entailed the creation of the position of *directeur de la santé* (health-care director) in each of the five administrative territories of Indochina, once again illustrating the relative autonomy of the Indochinese administration.[17] In 1898, authorities in Cochin China began to enforce the French law of November 1892. In

1900, the colonial administration of Cochin China organised the first committee concerned specifically with hygiene. In 1902, the *Ecole de Médecine de Hanoi* (Hanoi School of Medicine) opened its doors, the first institution of its kind overseas. The school's mission was to train competent indigenous 'auxiliary doctors', as well as to enforce – immediately and literally – the French laws on public health mentioned above. Finally, the position of *Directeur général de la santé* (Director-General of Health Services) was created in 1904; the holder of this post was responsible solely to the Governor-General, and supervised the activities of the local directors of public health. Consistent with the terms of the law of 1902, hygiene committees in each of the five administrative territories came under the authority of the *Directeur général*, and were empowered to participate in any project relating to questions of sanitation, preventive medicine and medical care.

In 1905, Governor-General Paul Beau announced the official establishment of the Assistance Médicale Indigène (Indigenous Medical Assistance), or AMI. According to its *Directeur général*, Charles Grall, the goals of the AMI were:

- to provide medical care to government personnel and their families, and 'to the degree of possible' to the entirety of the European and native populations;
- to manage the various hospital establishments, regardless of their source of financing;
- to direct the services of the corps of health-care inspectors; and
- to design and implement a programme of hygiene and public health throughout the colony.

Grall further noted that the joint efforts of medical and colonial authorities would be required to educate the native population in the basics of science and hygiene, and to enforce measures of individual and group hygiene against various forms of contagious disease. The AMI's basic mission combined curative and preventive medicine, and above all an increased emphasis on public and private hygiene. The ambitious programme of 1905 also envisioned the employment of qualified personnel who would serve only Indochinese health-care authorities; in any event, this seems to be the intention of the decree of June 30, establishing a Medical Corps of the AMI, in theory separate from the Colonial Health Corps, and which was to be quickly staffed by increasing numbers of civilian French doctors.

In summary, the key factors to consider in attempting to evaluate this initial phase in the construction of a health-care policy for Indochina include: the newness of the concern for public health evinced by the leaders of the Third Republic; the export of this concern overseas as an important element in the success (both economic and humanitarian) of French colonial endeavours; and finally the difficulties inherent in attempting such endeavours in tropical Indochina. If public health in Indochina had hardly achieved its ambitious

goals by 1905, the closing date of this initial period, certain basic conditions had been met: French colonial power was firmly established in Hanoi, and preliminary studies of health care needs pointed the way toward the development of a more comprehensive system.

Phase two: The organisation of the health-care system (1905–14)

In the years leading up to World War I, the *Direction générale des services de santé*, (which was to become in 1909 the *Inspection Générale de l'Hygiène et de la Santé publique*, or IGHSP) sought to establish its basic policies at the same time as it rapidly enlarged its sphere of activities. Such efforts involved the densification of the hospital network, the very foundation of the health-care system, and a multivalent policy of prevention, which was to be carried out through large-scale diffusion, via educational efforts, of basic notions of hygiene, and through the prevention of the principal endemic and epidemic diseases.

The AMI had no choice but to diversify its activities through a variety of structures and means to meet these goals. The most common structure was that of 'general'[18] hospitals in urban centres (both large urban areas and administrative capitals), offering their services to European and native patients from all walks of life (even if Europeans and natives were physically separated within the hospitals). Such hospitals often had a wing for the treatment of those infected by contagious diseases, usually at some distance from the principal hospital structures, as well as a maternity ward. Other, smaller structures emerged as well, often in the form of dispensaries or clinics, soon to be favoured in rural or less populated areas, and offering out-patient services (including the distribution of medications). Such smaller structures turned to the closest urban hospital in the event of an emergency or if hospitalisation was necessary. As for the densification of the hospital network, a wave of construction in 1906–7 finally extended such services to the whole of Vietnam,[19] going beyond the major urban areas, and adding to the fifty or so civilian hospitals already in operation in Cochin China in 1905. Between 1904 and 1908, Tonkin increased its basic medical infrastructure by a factor of 2.5, with 23 hospitals and 16 infirmaries/dispensaries in place by the end of this period.

Beau's instructions of January 1907 put considerable emphasis on the health-care education necessary to prepare native populations to reap the benefits of colonial health-care, education which was to guarantee that Indochinese would rapidly come to accept Western rules of hygiene and public health.[20] To this end, authorities enjoined the colonial doctor and, even more so, his native auxiliary (the first graduates of the Hanoi Medical school received their diplomas in 1907) to add public lectures on hygiene in the villages (on market days, in the temples, and in the schools, where hygiene education was already mandatory as per the orders issued in 1905–6) to his usual routine of vaccinations, examinations and distribution of

medicines.[21] Tracts, brochures and even films on 'How we get sick' or 'Take care of your teeth',[22] as well as magazines treating health-care issues in layman's terms and written in *quoc ngu*[23] constituted additional weapons in this arsenal. The attention afforded to the medicalisation of childbirth grew out of these same hygienic concerns, particularly as colonial doctors had noted with horror the ravages of umbilical tetanus,[24] findings which were echoed by statistics produced by the earliest offices of the Civil Registry in Saigon and Hanoi. The prompt training of midwives and the surveillance of these midwives by health-care authorities in the principal urban centres from the very beginning of the twentieth century[25] grew out of identical concerns, as we will discuss in greater detail below.

The establishment of a *Service de Quinine d'Etat* (State Quinine Service) in 1909, marked an important turning point in the strategy employed to prevent endemic disease and to protect the labour force necessary for the exploitation of the colony. The Quinine Service organised the free distribution of preventive quinine through dispensaries set up in the regions most afflicted by malaria. The service was administered by whatever official personnel might be available (doctors, nurses, teachers, employees of the postal service or of the customs service, local elites), and in particular in areas where coolies, employed either by the colonial state or by private firms, were frequent victims of the disease. A parallel system, known as *Quinine d'Assistance* (AMI quinine) continued to exist, facilitating the distribution, at a minimal cost, of quinine sulphate tablets by all health-care institutions, both to prevent malaria and to cure it, in the event that someone already showed signs of the fever. This illustrates that the authorities had already mapped out fairly thoroughly the incidence of malaria in the colony, and that collective prevention and immunisation constituted important budgetary priorities. The State Quinine Service soon turned its attention as well to a fight against the mosquitoes responsible for the disease (an anti-larvae campaign directed by the Pastorians), and to the education of those 'at risk', diffusing information about personal hygiene and the preventive measures to be employed in private homes (the use of mosquito netting, for example).

At the same time, public health authorities intensified mass vaccination efforts, and increased preventive initiatives against the principal epidemic diseases in order to illustrate the crucial importance of prophylactic measures. We might note that while the anti-smallpox vaccination had clearly demonstrated its effectiveness from the beginning of the twentieth century,[26] the anti-cholera vaccination remained far from perfect: its effectiveness was limited, in part because it was unclear just how much immunisation the vaccination afforded, and it also proved difficult to carry out the vaccinations properly (two injections eight days apart). The anti-cholera vaccination was of course used – 1,980,000 were administered in the single year of 1926, as an epidemic raged – but alongside other measures, many of which were associated with education (the diffusion of information on hygiene, for example). Authorities also afforded considerable attention to sanitation and

to the provision of safe drinking water. The plague was a target as well, a much-feared disease even if its effects were less frequent and less widespread, and which the Yersin vaccine, used experimentally in Nha Trang (Annam), had not succeeded in containing.[27] Once again, the health-care authorities imposed systematic measures of public and private hygiene, as well as anti-rodent campaigns in regions at risk (those located close to the principal routes of communication or important markets). In addition, authorities also intervened in moments of epidemic, building temporary quarantines, halting immigration (from China), disseminating information to the public on the disease in question, isolating those known to have been infected by the disease, disinfecting their possessions, and keeping their friends and family under surveillance.[28]

The third and final phase: The end of medicalisation à la française

The arrival in Indochina in 1911, for two terms, of Governor-General Albert Sarraut, champion of a policy of *collaboration franco-annamite* ('French-Vietnamese collaboration')[29], marked a clearer separation between France and its colony, as well as a personal engagement on Sarraut's part to work toward the general development (*mise en valeur*[30]) of the region. This development demanded an increased commitment to public health and education, both of which would be better funded to 'improve the general living conditions of the residents'. Agreeing with his *Inspecteurs généraux de l'Hygiène et de la Santé publique*, Dr Albert Clarac (1912–14) and Dr Paul-Louis Simond (1914–16), Sarraut argued that 'in our efforts to improve hygienic and preventive conditions, we have relied too heavily on the extension and organisation of our network of hospitals.'[31] This over-reliance was to be corrected through the development of other health-care structures which were to be systematically provided with isolation wards to contain contagion, and with maternity wards. Sarraut also believed that the health-care authorities had to acknowledge the lukewarm welcome accorded by the Vietnamese to the AMI, especially given the huge amounts of money invested in the programme.[32] Out of such concerns emerged his 1911 proposition that five-year plans be drawn up, requiring that health-care performance and priorities be evaluated on a regular basis. These evaluations would also serve to test the usefulness of the division of the Indochinese peninsula into health-care territories defined by density of population and specific health care needs, to arrive at a rational use of the available resources.

As for the improved financing Sarraut sought, the First World War played a paradoxical role in the evolution of the Indochinese health-care system, cruelly demonstrating certain human and financial shortages. Indeed, in the context of a global conflict which demanded that even the overseas colonies tighten their purse strings, the Governor-General soon found that he could hardly afford such measures as the free health care dispensed to indigents[33] (financed by local budgets which varied considerably in terms of local

abilities to pay), or the widespread – and inevitably state-financed – campaigns of prevention (village lectures on hygiene and sanitation, the provision of safe drinking water, vaccinations against epidemic disease).[34] In addition, many French doctors were recalled to France to serve in the conflict, leaving the relatively few native auxiliary doctors in charge of health care in Indochina: in 1914, there were 93 military and civilian doctors serving in the AMI in all of Indochina; in 1916, there were only 70, who were assisted by 53 auxiliary doctors.[35] Quite often, there was only one doctor for several provinces, who became forcibly a jack-of-all-trades: vaccinator, general practitioner receiving patients for office consultations, doctor on call at the hospital, and supervisor of sanitation efforts and hygiene lectures among other things. These realities came clearly into focus from the very first years of World War I and demanded a sober reflection on the future of the AMI and the reorientations which might be required.

Some of these reorientations bear witness to the increased understanding of local conditions which the French had acquired over the course of time. For example, while smallpox had been successfully fought since the 1860s exclusively through vaccination, the battles against cholera or malaria had been less conclusive. Rather than insisting on the superiority of vaccination, the authorities under Sarraut demonstrated an openness to any measure which might help to limit the ravages of these diseases. As such, in the face of the continuing threat of epidemics, local authorities felt freer both to introduce new measures on their own initiative, and to make 'necessary adjustments' to the measures imposed by their superiors. Indeed, such adjustments were defended by many doctors in their monthly and annual reports.[36] In this context of slow acclimatisation, the health-care system abandoned, over the course of the 1920s, its initial inclination to wage a comprehensive battle against all epidemic diseases and began to discover the Indochinese patient as an individual, and to turn attention to his most private diseases.

The growing attention to 'social diseases', together with a new emphasis on the availability of doctors and medical services in rural areas, illustrate most clearly the nature of the reorientation engineered by Sarraut. The idea of social disease came to Indochina in the aftermath of World War I in the context of the 'new' colonialism of Sarraut and his *collaboration franco-annamite*. Doctors began to pay attention to venereal disease, tuberculosis and other pulmonary diseases, eye infections, leprosy, cancer and problems of malnutrition illustrated by the prevalence of beriberi – and the health-care authorities began to listen. As a result, centres specialising in the care and prevention of such diseases multiplied, first in urban areas where the causes of such diseases (lack of hygiene, overcrowded living conditions, poverty) came together in particularly striking ways.[37] The fight against tuberculosis is a good illustration of this new posture and of the impact of the collaboration between the administration and medical doctors in their joint effort, beginning in 1924, to enhance detection measures in the schools and to introduce a vaccine still in the experimental stage in France.[38] Anti-leprosy

measures sought to render less inhumane the isolation of lepers, which had been compulsory – though far from being systematic – since the beginning of the twentieth century. The evolution of the discourse on the isolation of lepers over the course of the 1920s is marked by a desire to reduce the resistance to internment, and to see internment, which would eventually be voluntary, as the starting point for a more dynamic treatment of the disease, which would combine up-to-date treatment with acceptable living conditions.

In measures adopted against venereal diseases, we note once again the emergence of larger perspectives: those suffering from such social diseases were no longer simply the objects of surveillance by the health-care authorities, and the former denunciation of 'deviant' social practices gave way to successful efforts at early detection and treatment (use of synthetic chemicals such as arsenobenzols) through, once again, specialised consultations.[39] In 1929, the IGHSP established an office of social assistance (an office of demography and social welfare had been set up in 1925), confirming the social orientation of a health-care policy which now turned its attention to the provision of health care for children (visits to children outside of doctor's offices and hospitals, in schools and in homes), to the establishment of sites dedicated to paediatric care (*gouttes de lait*, nurseries), and the development of educational efforts targeting (future) mothers.

Children had always been a priority in colonial health-care theory and practice, in light of the ravages they had assuredly suffered (one need only think of the damage caused by umbilical tetanus or by smallpox), and for some economic and political reasons easily understandable. The numerical increase and strengthening of the labour force were necessary goals of colonial exploitation. According to the colonial administration, the healthy younger generations would necessarily be thankful to France. But from the 1920s onward, what stands out – above and beyond the increased number of specialised services offered – is the attention accorded to women in general and to the status of children in particular.[40] The conclusions of the report on 'Mortinatality and Infant Mortality in the French Colonies' (1922) based, among other sources, on extensive surveys of the most important maternity wards in Vietnam,[41] underscore the importance of in-hospital births, and direct attention to the diseases which put parents and particularly mothers at risk: issues of abortion or of the difficulty of the work environments of the mother, and the effects of certain diseases (syphilis, malaria) on the health of the foetus were much discussed. As a result, the authors of the report argued that maternity wards in both urban and rural areas should organise prenatal and postnatal consultations, and even consultations in the event of sterility, all of which would serve to educate Vietnamese mothers.[42] The idea of 're-educating' the traditional Vietnamese midwives beginning in the 1920s was part of the same idea, as we will illustrate below. In 1934, the *Congrès de l'Enfance* (Conference on Childhood), held in Saigon, emphasised the rights of children to good health and to education, rights which should be extended to mixed-race children as well. In 1938, a survey of the

'Indochinese child' called attention to the problems of poverty which affected more than a third of the child population of Hanoi, and which endangered the normal development of such children.[43]

The fight against trachoma, a curable eye disease which leads to blindness if untreated and which was particularly widespread in the Vietnamese countryside, took on a similar direction, at the same time emphasising a greater mobility of medical personnel – ophthalmological brigades were set up in the 1920s – and a 'rural profile' for the AMI. As early as 1911, Sarraut insisted on the importance of an increased health-care presence in the countryside, serving the same curative and preventive functions as in urban areas. There was also an astonishing increase in the number of rural infirmaries in the constitution of the health-care network in 1930: officially, there were 432 such rural infirmaries across Indochina, against only 594 medical establishments of any kind associated with the AMI. The division of the country by medical territories persisted, but rural units saw an increase in provincial infirmaries and maternity wards staffed in most instances by Vietnamese midwives and nurses originally from the villages where they served. The case of Annam in the 1930s, under the medical direction of Dr. Terrisse, is particularly illuminating in this regard.[44]

The health-care plan put forward by Dr. Pierre Hermant, *Inspecteur général de l'Hygiène et de la Santé Publique* from 1931 to 1937, clearly illustrates the principal reorientations and renewed ambitions of colonial health-care policy. Thus in 1937, in the context of the *Front Populaire* in France[45] and in the face of mounting nationalistic pressure resulting from the increasing poverty of the Vietnamese deltas, Hermant continued to insist on the decentralisation of health-care services and on their increasing presence in rural areas and on the protection against contagious diseases both through the systematic application of proper hygiene and through improvements in the diet and living conditions of the poor. Above all, Hermant's vision was that of a modest health-care system providing basic health-care needs to everyone.[46] Of course, the coming of World War II robbed the authorities of the opportunity to put such a plan into operation. Thus even if the French colonial authorities had abandoned their vision of a simple imposition of a French model in Vietnam, they were still at some distance from the construction of a genuinely 'Vietnamese' system.

The emergence of a Vietnamised health-care system? Yes, but …

It is relatively simple to write the history of a health-care system in terms of its official programmes and policies. It is much harder to write the history of a health-care system in terms of its genuine functioning on the ground, and thus to measure not only its 'adaptability' but also its true degree of adaptation. The following analysis is hardly comprehensive – I examine certain measures of the nativisation of the health-care system which seem particularly striking – and my goal is not restore the good name of colonisation and

its social 'achievements'. Indeed, my objective is to bring out the complex factors of this process of nativisation as well as some of the most obvious limitations of the process. Subsequently, I turn my attention to the vast question of indigenous reactions to the health-care system and to an evaluation of the degree of medicalisation of Indochinese society, however difficult it may be to identify the indicators of such medicalisation. In any event, we can hardly claim to write the 'social history of medicine' if we ignore the point of view of the patient or if we silence the multiple subaltern voices of the colonised and the sick.[47]

The Vietnamisation of medical personnel[48]

The first clear proof of the nativisation of the Indochinese health-care system is the progressive *indigenisation* of health-care personnel, or more accurately, a *vietnamisation*[49] which came to fruition during the interwar period and which affected the whole of the health-care system, as already suggested above.

The creation of the *Corps de santé colonial* in 1890, renamed the *Troupes Coloniales* in 1900, set the standards for an overseas medical establishment. The creation of an AMI medical corps in 1905, in theory a civilian structure, indicates the intention to build a health-care service adapted specifically to the needs of Indochina. Quite soon, however, the programme ran into problems. The medical system in Indochina, like all overseas medical establishments, suffered two chronic difficulties: the lack of civilian personnel, which meant that they were forced to rely on military personnel who were devoted to the colonial cause but not necessarily prepared to work in the Far East; and the difficulties of tropical medical practice, which made the tours of duty – except perhaps for those serving in the major hospitals in the large cities – quite onerous, giving rise to problems of recruitment, problems solved by offering high salaries which in turn drained the funds necessary to the larger health-care budget. The numbers are clear on this point: in 1907, only 111 doctors (including nine civilian doctors) applied for service in the AMI; in 1939, there were only 146 (including a dozen civilian doctors). In other words, this was a basic, long-term problem, which could only be solved through the recruitment of health-care professionals in Indochina. Such recruitment demanded, in turn, that attention be paid to the training and certification of such personnel.

We find reference to the use of native doctors from the very beginning of the colonisation of Indochina. In addition to the advantages such an approach offered compared to enlisting medical personnel in France, and in addition to the financial savings, it was believed that the use of indigenous health-care personnel could serve to facilitate dialogue between Western medicine and the colonised patient. The creation of the Medical School of Hanoi represented one concrete step toward the achievement of the indigenous strategy, but indigenisation went beyond the training of doctors and

affected other health-care professionals, as already illustrated in our discussion of the evolution of health-care policy in the interwar period, when a lack of resources and attention to rural problems moved administrators to enlist even more Indochinese in health-care efforts, eventually bringing the advantages of Western medicine to the entirety of the territory.

The Medical School of Hanoi opened its doors in 1902 after years of discussion and hesitation. A three-year programme, extended to four years shortly thereafter, was to offer to some thirty students a course modelled after the French system, even though the French programme required six years at the time.[50] By the end of World War I, the excellence of the school, the increased number and range of courses offered, the rigorous standards of admission, and the attention afforded to clinical and scientific training (in bacteriology, parasitology, etc.) in the up-to-date institutions found in the colonial capital, meant that the Hanoi Medical School was capable of training qualified doctors. However, the mission assigned to the graduates of this school remained that of a practitioner in the strict sense of the term, a technician. These 'auxiliary doctors' (*médecins auxiliaires*) offered a limited range of medical services – much like the former French *officier de santé*[51] – and could not practise forensic medicine or carry out many surgical operations. Their basic role, and in this they were similar to 'true' assistants, was that of propagating modern hygiene; they were a 'transmission belt' between Western medicine and colonised patients. Indeed, the enforcement of the 1892 law requiring a doctorate for the practice of medicine prevented the *médecin auxiliaire* from being free and independent in his medical activities, even if he was legally responsible for them. Furthermore, his cares were dispensed solely to the indigenous population, an obligation (not a right) which required that he share his field of intervention with a confusing array of traditional practitioners.[52] The addition of a corps of these auxiliary doctors to the AMI (*Corps des médecins auxiliaires de l'AMI*) in 1913 re-endorsed these same principles, underlining the dependence of these native doctors on French doctors and the colonial administration.

The requirement of a *baccalauréat* (marking the completion of secondary school, as in France) to enter the Hanoi Medical School, and more importantly the creation of a five-year doctoral programme in 1917 (even as a three-year programme for *médecins auxiliaires* continued to exist), followed by the granting of the right to private practice (1920) and thus to treat European patients, and the subsequent right to do one's thesis in a French university (1921), meant that a minority of Indochinese medical doctors were henceforth eligible to submit their candidacies to the 'true' AMI medical Corps (i.e. the corps in which the French doctors served). The promotion of the Hanoi Medical School to the rank of a comprehensive school *(école de plein exercice)* in 1922, and its continued evolution to the point where, ten years later (in 1933) it offered the degree of *doctorat d'État* (the degree medical doctors received in France and which allowed them to practise medicine) and a system of internship in all points equivalent to those offered

by French institutions, mark important if ambivalent advances. 'Indochinese doctors' (now referred to as *médecins indochinois* and no longer as *médecins auxiliaires*) who followed the shorter programme constituted the most numerous indigenous practitioners, and an Indochinese doctor of medicine could still in no way claim equal status with his French counterpart. This ambivalence was driven home by the establishment of the native wing of the AMI medical corps in 1922, which grouped together 'Indochinese doctors' and those possessing a doctorate in medicine on the sole basis of their common Indochinese ethnicity. Much decried, this initiative fell by the wayside rapidly – in 1932, for want of candidates, the section of Indochinese doctors disappeared – but it was not until 1939 that the AMI medical corps was considered as a single unit, its doctors being paid according to their rank and not their ethnic origins. Although such a measure was probably inevitable, it was the threat of World War II and the spectre of a severe lack of personnel which drove a desperate Governor-General Jules Brévié to enact it.

It is in any event clear that doctors (medical doctors and auxiliary doctors) trained in Hanoi established their own authority through their formal training and especially through their medical practice. As early as 1908, three promising students were sent to the Faculty of Medicine in Paris to complete their education, thus creating the possibility for the 'best' to overcome the restrictive regulations governing them in Indochina and, more importantly, to escape from the confines of the role of technician which had been assigned to them.[53] Over the years, a good number of candidates for this well earned 'emancipation' carried out specialised studies in Paris, Montpellier and Bordeaux. This tendency became more marked in the 1920s as a result of a system of merit-based scholarships offered by the colonial government and the new doctoral programme at the Hanoi School of Medicine also helped to prepare potential candidates. One must also understand that it was through their daily medical practice that these Hanoi-educated doctors acquired (individually more than collectively) their *lettres de noblesse*, even if there had existed, since the 1910s, associations defending the rights of Indochinese medical doctors.

In any event, recognition of Indochinese doctors slowly emerged as a result of the following factors: the general lack of personnel, together with increased training of genuine assistants (nurses, midwives, vaccinators); the reluctance of the local population to be treated by a 'white person', and the efforts to medicalise the countryside undertaken by a number of these doctors.[54] In addition, the early appearance of a good number of Vietnamese doctors and the roles they played in the local scientific and medical *milieux* illustrate their multiple talents as well as justifying the recognition and the promotions they received.[55] In 1937, 41 doctors of medicine who had graduated from the Hanoi Faculty of Medicine were serving as chief medical doctor at the provincial level.

Ideas concerning the training and use of genuine native medical assistants had also evolved since the beginnings of colonisation. Some took form only

intermittently (the use of Cochinchinese vaccinators in the 1870s was a failure, for example), and others came to fruition together with the larger movement toward indigenisation already discussed. The *École pratique de médecine indigène* opened its doors in Choquan (Saigon) in 1903, and undertook the training of 'nurse-vaccinators' who would be able to provide first aid and basic care, to teach basic principles of hygiene and to warn the proper authorities in the event of the threat of epidemic disease. We have little information on the history of these nurses, but among the various assistants under discussion here, midwives stand out particularly during this same period. In the context of early efforts to apply Western medicine to childbirth, the colonial authorities afforded particular attention to the training of native midwives, given that French metropolitan intentions in this regard were ever-shifting and that the feminisation of the personnel of the AMI was unlikely to become a priority.

At the beginning of the twentieth century, isolated efforts on this front, often the work of doctors serving in the maternity wards of the large cities (such as Dr. Drouhet in Cholon, Drs. Montel and Déjean de la Bâtie in Saigon, and Dr. Le Roy des Barres in Hanoi),[56] went in two different directions: the training of midwives along Western lines, and the 're-education' of the traditional Vietnamese midwives known as *Ba mu* (lit. matron lady). The *Ba mu* would continue their training via an apprenticeship and according to the whims of the different directors of maternity wards and the local Health Care Directors.[57] Western-trained midwives benefited from more formal training, that was institutionalised in 1904 in the creation of two professional schools at each end of the peninsula: at the *Ecole de médecine de Hanoi* in the north, and at the 'Cholon section' of the *École pratique de médecine indigène* in the south.[58] In their first year of training, aspiring midwives learned the physiology of genital organs, basic hygiene, elementary vaccination procedures and practices. In their second year, they learned the practice of normal births, the basic principles of postpartum pathology, the hygienic care of the pregnant woman and the woman in labour, and the hygienic care of the newborn and the child. An obstetrical internship followed the formal training. Of special interest are the diversity of the courses offered and the variety of lessons learned, which suggest that a graduate of this programme would be valuable for considerably more than for her presence at the moment of birth. In Cholon, successful graduates received the diploma and title of 'midwife-nurse'.

Before long, however, we note a clear – and somewhat paradoxical – separation in the roles played by the two categories of midwives: those trained in Hanoi or Cholon, who came to represent the elite of the profession, came to serve mostly in urban maternity wards – indeed, the professional demands of those who had received such training practically guaranteed that such would be the case;[59] and the 're-educated' *Ba mu* served the rural areas. Indeed, the creation of organised corps of *Ba mu* – which began in Tonkin in 1927 before spreading to other protectorates – was

the result of a conscious decision to provide rural areas with native health-care professionals who would be mobile and inexpensive, thus responding to the lack of human and financial resources, as well as to the desires of the rural population (authorities were particularly insistent that the re-educated midwife return to her native village where she would presumably gain the confidence of other women). In 1930, some 489 *Ba mu* (including 459 in Tonkin) were performing such functions for the AMI. Nonetheless, it remains clear that a few months of training – regardless of all the precautions and surveillance of their activities such as the requirement of a renewed internship every year or every two years, depending on the region, in the maternity ward of the closest provincial centre, or the verification of their activities by the AMI doctor when he passed through the area – would hardly be sufficient in the face of the immensity of the tasks at hand, which often went well beyond those of assisting in the birth and accompanying the mother-to-be. Nor should we forget that their salary was often left to the villagers and that the midwives were not formally incorporated into the AMI, and thus had no choice but to rely on the capricious good will and financial reserves at the village level, or on the generous colonial resident who wished to support their efforts.

Assistant native medical personnel in 1930 and 1939[60]

In 1938, there were no more than 45 European nurses and midwives (taking the two together) in the service of the AMI. We need no further statistical proof of the indigenisation of the assistant medical personnel, but our evaluation of the role of the native medical doctor, who had only just been recognised as the equal of his European colleague, must remain more guarded. We should note as well that this new native medical establishment, because of its youth, because of internal divisions and the conflicts and bitterness resulting naturally from such divisions, and because of the immensity

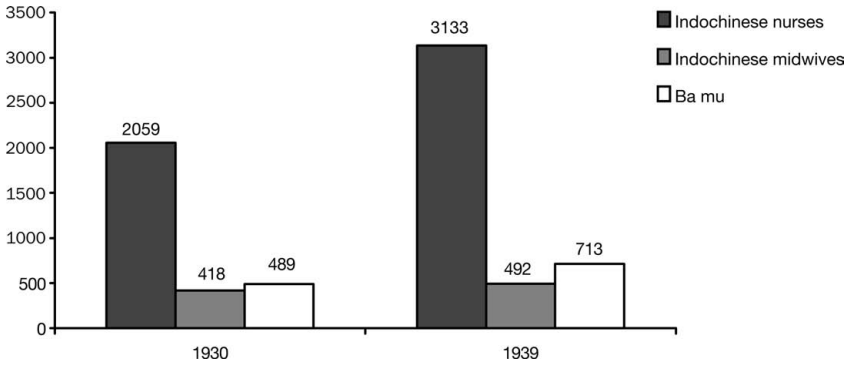

Figure 4 Assistant native medical personnel in 1930s.

of the tasks at hand and those to come, could hardly stand alone or demand a status independent of that of the AMI even if a movement in that direction was to take form abruptly in the 1940s.

The ambiguous evolution of attitudes toward traditional medicine and traditional medical practices

Even a very rough sketch of the Vietnamisation of the medical personnel should include the 'forgotten' of the system: traditional practitioners and, of course their practices. Indeed, while the idea of employing re-educated *Ba mu* probes directly the question of colonial attitudes toward traditional medical practices, we should note that *only* labour and birthing practices were called into question. The fact that only a fairly limited set of practices were deemed necessary of 're-education' strikes us as important, although we should hasten to add that one must be extremely careful in analysing colonial opinions of traditional medicine and traditional medical practices in general, as such opinions were anything but uniform and static.[61]

In the context of a study presently underway on the history of the cycle (production, distribution and consumption) of Western pharmaceuticals in Vietnam during the colonial period,[62] we have identified two distinct – if not necessarily parallel – tendencies in the evolution of attitudes towards traditional medicine and traditional medical practices. The first tendency is related to what we might call the 'scientific recuperation' of Indochinese traditional medicine, an interest focused on the tempting potential of local vegetation – the astounding biodiversity of the peninsula had been known from many centuries, as several catalogues attest – in the context of European pharmaceutical and chemical industries, as well as in the context of local needs. The cultivation and export of Chinese anise and camphor, for example, responded to European needs. On the other hand, the development of the cultivation of quinquina or the efforts to extend to other regions the cultivation of *Hydnocarpus Anthelmintica* were efforts to respond to specific local problems – the prevention and treatment of malaria and the treatment of leprosy – by reducing reliance on expensive imports. The Dutch monopoly on the production of quinquina on its Indonesian plantations, for example, weighed heavily on the health-care budget of the French colony.[63]

The second tendency is more directly related to the continued use of traditional medicine by the colonised population, and to the necessity that the Western doctor accepts this recourse to traditional medical practices and treatments. This acceptance occurred more readily under conditions of shortage (of Western drugs, for instance), as Western doctors risked loss of their credibility if they refused to treat patients who were well aware of the existence of Sino-Vietnamese alternatives. Given the larger problems afflicting the colonial health-care system (under-financing, wars, difficulties in reaching the more isolated regions and in staffing these regions with personnel trained in biomedicine and convinced of its benefits), beginning in the

1920s and particularly in the 1930s, there are indications not only that the Western doctor accepted that his local patients continued to use 'their' medicines – under his surveillance, of course – but also that the Western doctor began to manifest a certain interest in re-appropriating certain treatments which would put him in the good graces of his patients and fill certain holes in his pharmaceutical stocks.

These two tendencies, taken together, suggest an increasing understanding of traditional medicine and traditional medical practices. This is borne out by the actions of the IGHSP and of the colonial government in their exploration of local pharmacopoeia in the 1930s.[64] An analysis of the legislation concerning traditional Sino-Vietnamese medicine during this period sheds a certain light on the more subtle, if also perhaps more devious, attitudes of the French authorities. We see for example both a refusal to regulate traditional health-care practitioners (healers, druggists, herbal therapists) on the grounds that to do so would be to limit the freedom of choice of the indigenous population, and a repeated effort – repeated because it was difficult to enforce – to control the distribution and the sale of traditional remedies. In this instance the colonial administration argued (on questionable grounds)[65] that the public had to be protected from substances labelled as dangerous, toxic and even deadly.[66] Laws regulating the use of 'poisonous substances' as defined in France, and drawing on European legislation of pharmaceutical practices which had recently grown more strict,[67] sought indirectly to marginalise these practices and their practitioners and to transform traditional medicine to the equivalent of modern homeopathy, limited to cases of minor health problems. In particular, these laws sought to prevent non-pharmacists (i.e. those not holding a diploma from a French university or from the Hanoi School of Medicine) from selling a vast array of substances often found in many of the most common Sino-Vietnamese medications: arsenic, aconite, *datura stramonium* and lead oxide for instance.

A series of more comprehensive decrees on the 'traffic in Sino-Vietnamese medications' were either delayed or suspended in their application in the period between 1916 and 1938, but the goal of confining traditional medicine to a secondary position remained clear. The following passage from a 1939 decree attempting a 'modified' and 'realistic' definition of the Sino-Vietnamese pharmacopoeia gives the flavour of such efforts:

> Article 2. We take the traditional Sino-Indochinese or Sino-Vietnamese pharmacopoeia to be the corpus of mineral, vegetable, or animal products, used either in their natural form or prepared or otherwise transformed according to traditional practices, to be used in treatment of human beings in conformity with Sino-Vietnamese traditions. Excluded from the Sino-Vietnamese pharmacopoeia are: pharmaceuticals, or chemical or synthetic products, or products whose preparation requires industrial techniques; mineral waters; vaccinations and serums against toxins or viruses; medicines which take the following forms: tablets, pills,

> capsules [and the like] … liquid solutions in ampoules for usage with hypodermic needles, medicated pencils, granules, glycerated pills, suppositories, grape wines, or any pills, drops. … prepared industrially.
>
> Article 3. We take Sino-Indochinese or Sino-Vietnamese therapeutics to mean traditional therapeutic practices based on the pharmacopoeia defined above. Sino-Vietnamese medicine employs special traditional methods, such as moxibustion, acupuncture, suction therapy, and scarifications, but does not employ any surgical act … or any obstetrical intervention, any medical procedure using the methods or instruments of Western diagnosis or therapy.[68]

Hermant's 1937 programme revealed, if again indirectly, similar attitudes in its insistence on the propriety, even the necessity of employing traditional medicine in rural areas and for lesser medical problems. One might note that even if traditional practitioners remained in general free to practise their craft (setting aside certain specific and temporary quotas limiting the number of such practitioners[69]) there was never any question of including them in the official system of colonial health care. This did not necessarily mean that at the local level, certain doctors affiliated with the official system did not allow local practitioners to offer their services in the same space. True, the French indigenised the medical personnel of the colony by educating it in Western medical practices, or by re-educating 'local institutions' such as the *Ba mu*, but they in no way questioned the superiority of modern medicine, even if they lacked the means to assure its exclusive domination in Indochina.

The determining factors of a partial nativisation: Reflections to date

Of the numerous, often overlapping, factors affecting the degree of nativisation of the Indochinese health-care system, let us concentrate particularly on the following: the recurrent budgetary problems, the related difficulty of medical recruitment, and the role of the colonisers' (be it the Governor-General, a local director of health care, or a doctor in service) visions of modern medicine and how modern medicine should be implanted on colonial soil. Finally we should recall the necessary – slow but real – adaptation to what I have dubbed, on numerous occasions, 'local realities'.

Without examining each of these factors in detail, we might add a certain details on the relationship between financial problems and the colonisers' visions of population health. We have emphasised, for example, the aims of Sarraut in the medicalisation of Indochina, the role played by certain in-hospital doctors in the decision to 're-educate' the *Ba mu* early in the twentieth century, and the enlightened initiatives of certain local directors of health such as Dr. Terrisse in Annam. We could just have easily have composed a long list of those *opposed* to such efforts. Among those who simply refused to see AMI policy as important to the exploitation of the region, and

thus, refused to finance it adequately, stands Governor-General Antony Klobukowski, who preceded Sarraut in the position of Governor-General (1908–11). A close reading of the monthly health-care reports during this period also reveals varying degrees of enthusiasm exhibited by the doctors affiliated with the system. These fluctuations reflect their personal visualisation of their colonial and medical mission. Some doctors did not hesitate to acknowledge that they had tried traditional medications or to state with pride that they had travelled for weeks in hard-to-reach regions in order to distribute personally anti-trachoma medications and to explain to the natives what to do to avoid such diseases.[70] Others, by contrast, limited themselves to a laconic 'nothing to report', which is equally revealing, if in different ways.

We might also add further details on our point relating to the adaptation of the health-care system to the realities of the pathological environment in Vietnam. As we have seen, health-care policy in Indochina through to the end of the nineteenth century was characterised by a collective, approximative and essentially prophylactic posture defined by the recourse to mass vaccination. This was a posture defined by the fear of epidemic disease. Subsequently, the focus shifted to increased attention to individual cases, and a willingness to observe a patient for what could be learned about new diseases (this in addition to the willingness to carry out experimental treatments on native guinea pigs). In short, we observe a process by which the patient came to be 'individualised', so that by the 1920s the health-care system was better able to distinguish individual bodies from their collective pathological, geographic, ethnic or socioeconomic characteristics.[71] The requirement, instituted in 1907, for health-care reports to be submitted, and the familiarisation, over the course of the years, with hospitals and medical treatments that were different in important ways from what the colonial doctors had known in France, played important roles in this process. In addition, the doctor's increasing duty to 'go to the patient' and to conceive of medical care as mobile; the fact that Indochina very early on became an important site of experimentation, discovery and scientific exchange, of which the Pastorian presence was the symbol (four Vietnamese institutes and three affiliated laboratories in the 1930s); and the existence of journals such as the *Bulletin de la Société Médico-chirurgicale de l'Indochine* (1910–38), all of these factors came together to prompt the discovery of unknown diseases (*Bouffissure d'Annam*, Hué bacterial dysentery) and poorly understood conditions (recurrent fever, Dengue fever). Doctors naturally increased their understanding of the ways in which these diseases manifested themselves. They then developed programmes to treat such diseases in light of anatomical, physiological and anthropometrical data already collected,[72] all the while taking into consideration such factors as the tropical climate, the great demographic diversity of the region, the type of work the patient engaged in, and hereditary factors governing the individual patient's reaction to a particular disease.

In any event, one should be able to discuss the determinants and limitations of the nativisation of the medicalisation process in Vietnam in a way which affords attention to nuance (rather than the overall picture) and which will allow us to consider the reactions and responses of health-care recipients. In other words, we need to examine Vietnamese responses and expectations – or more precisely those of the Vietnamese patient – to gauge their receptivity to the process of medicalisation. At this stage of research, I can only identify very general tendencies, based on partial statistical data. I should state clearly that I am less concerned with the 'effectiveness' of medicalisation than with the degree of its acceptance by the colonised population. And even there, the few sources at our disposition, and their limited representativeness, counsel prudence and humility. What emerges is that it is extremely difficult, if not impossible, to distinguish between what authorities *intended to do* and what conditions *required that they do*; and between what was not done or what did not work. It is equally difficult, if not impossible, to state with conviction that the reason behind this or that 'failure', is of a colonial or medical nature. In the same manner, determining and limiting factors overlap on occasion: the chronic shortage of human and financial resources, for example, was both an obstacle to the adaptation to local realities as well as a force driving the system forward. One need only think of the Vietnamisation of the medical personnel which, by 1939, extended to 65 per cent of doctors and 98 per cent of auxiliary and paramedical personnel.

It is equally clear that it is difficult to be completely sure about these limitations and what they meant, or rather what weight to accord them. Even the commonly accepted idea – which we do not dismiss in the context of the coincidence between Indochinese colonisation and the rise of biomedicine discussed in the first part of this essay – that the overweening confidence of modern Western medicine slowed or even prevented certain adaptations to local needs and the realities of the colonised population, needs to be re-examined. Might we not argue that this very arrogance pushed the authorities to make the adaptations necessary to succeed in implanting in Indochina at least the rudiments of modern health-care? Surely, this is what is suggested by the willingness of certain colonial doctors in service to open the health-care system to Vietnamese doctors, and eventually to traditional practitioners, in order to diffuse Western values as widely as possible. Nor should we over interpret the responsibility of health-care administrators and professionals for certain errors of judgement. The administrative efforts to regulate the recourse to Sino-Vietnamese medicine and Sino-Vietnamese therapists flew in the face of common medical needs. These efforts are among the examples which readily illustrate this 'limitation' even as they bring into focus other actors and interests which go beyond the boundaries of the health-care system or even the colonial system, as in the case of the pharmaceutical industry. An eloquent example of the difficulty of interpreting these limitations is the interpretation we arrive at of the two-tiered health-care system – one for the cities and one for the countryside – from the 1920s

onward. Should we see this as the establishment of a health-care system 'at two speeds', and hence by definition unbalanced and unequal? Or rather should we see it as the extension of a system which, whatever its flaws, achieved nonetheless a nuanced medicalisation, one attuned to the needs of an urbanite from Hanoi as well as to those of a villager from the Annamese hinterland?

The Vietnamese reception of Western medicine varied in time and space. It was conditioned by long-standing, pre-existing indigenous medical traditions and by social representations – of disease, of medications, of hygiene, or prevention, of the body, of the health-care professional, of death[73] – which often failed to mesh with colonial expectations, giving rise to untoward indigenous reactions to the intrusive nature of state-administered, coercive medicine. Certain common Indochinese health-care practices worked directly against the objectives of Western medicalisation: the deeply rooted propensity toward auto-medication, or more generally, the fact that recourse to a recognised medical practitioner was viewed as an option and not a necessity in the event of illness; the fact that free medical care was seen as ineffective, or at best was viewed with a great deal of scepticism; or the fact that the management of health problems was considered a family matter, which posed a natural resistance to hospitalisation.

To this point, my conclusions more or less echo the findings of those who argue that the history of colonial medicine was a history of relative failure. But it seems to me that we can go further. My sense is that the Vietnamese patient became increasingly receptive to Western medicine and placed increasing trust in the care dispensed by the colonial health-care system – this is particularly true in the case of the medicines distributed by the system, but is also seen in increasing numbers of consultations and even hospitalisations. The evolution in the number of office visits is a particularly significant indicator, given that the decision to seek out a doctor is made by the sick person, and is not the result of pressure or obligation. Moreover, we have figures on the numbers of office visits in the big cities and in the countryside.[74] Between 1911 and 1936, the total number of patients seeking medical help through an office visit increased by a factor of 21.7; the number of office visits increased by a factor of 15; most patients saw a doctor between two and three times a year. This did not mean that the Vietnamese patient abandoned his deeply rooted and socially accepted practice of medical pluralism in his search for treatment; colonial doctors must surely have looked askance at such practices, neither understanding nor accepting what to them was an affront to science and to Western superiority.[75] In addition, the Vietnamese patient seems to have been less receptive to preventive measures, whose medical authoritarianism perhaps smacked of the authoritarianism of colonialism itself. The widespread popular demonstrations, in Hanoi in 1903, 1906 and 1908, against measures taken to prevent the recurrence of the plague surely attests to this.[76]

This distinction might also support the idea that Western medicine established itself more readily in rural areas, through primary care and the

distribution of basic medicines, than in urban areas where the priorities of public health often came into conflict with the protection of individual freedom. But in that case, can we really talk about a 'modern' medicalisation of Indochina? A difficult question to answer, even if the increasing medicalisation of pregnancy, childbirth and neonatology is an undisputed fact and constituted a clear 'modernisation' of city and countryside alike. According to a French medical doctor visiting Indochina and evaluating its health-care system, in 1936, the 828 *Ba mu* and the 296 certified Vietnamese midwives in service have assisted at 88,737 births (including 75,035 deliveries in maternity wards), an average of 79 births per midwife.[77] Another indicator is the striking increase in the use of anti-smallpox vaccines – officials estimated that, in 1936, a third of the Indochinese population had been properly vaccinated – which, given the falling morbidity and mortality rates associated with the success of the vaccine, must surely have won the acceptance of part of the population.

The changing and varied Vietnamese responses to the imposition of Western health care were also conditioned by circumstances beyond the strict context of socio-cultural realities already suggested. We might mention here the limitations of infrastructure in certain regions, shortages of medicines and personnel, and problems of accessibility at different levels. In 1891, Dr. Gouzien wrote about the competition between his colleague serving in Nam Dinh (Tonkin) and a Chinese practitioner to provide anti-smallpox immunisation. The victor was the Chinese practitioner, who had managed to get his hands on vaccines from Hong Kong, while the colonial doctor in Nam Dinh had none.[78] In the 1930s, as already noted, the demands of Sino-Annamese medical practitioners and druggists, who had banded together in associations to defend their rights and prerogatives against regulations which threatened to reduce their field of activity, became increasingly virulent. They cited in particular the needs of the native population; the idea that the non-recourse to Western medicine was often less a refusal by *conviction* than by *necessity*; and that what many colonial doctors denounced as a tendency to consult their doctors as a 'last resort' was in fact the result of a problem of accessibility to the services the colonial doctors were offering.[79] Indeed, similar incidents occurred throughout the colonial period, and we could readily give any number of such examples. In any event, this was yet another factor which guaranteed that the relationship between the Western/Westernised doctor and the Vietnamese patient was to remain fragile.

Conclusion

The medicalisation of Vietnam under French colonial domination produced a health-care system which was forcibly plural and pluralistic in its aims as well as its achievements, a description which also applies to decision-makers, administrators and health-care consumers. Modern medicine had surely not foreseen such a plurality, but had no choice but to come to grips with it if the

benefits of modern medicine were to be extended to the greatest possible number.

Modern medicine, emerging simultaneously with the great waves of colonialism in the nineteenth century, learned humility through its Vietnamese adventure. This specific adventure led the Western medical establishment to reflect on its pretensions to universality in terms of Western medicine's rules of prevention and of its 'scientifically proven' treatments, as it grappled overseas with other medical systems which had already been reduced to marginal status in Europe.

The 'Russian doll' approach adopted in this essay (following a health-care policy through its initial articulation, its implantation on the ground, and evaluating what this implantation entailed for decision-makers, administrators and consumers) has allowed us to present a nuanced portrait of Vietnamese medicalisation under French colonial domination which proves at different levels the reality of a nativisation, an indigenisation, not only of the structure of decision-making but more broadly of the health-care system as a whole. We have identified a process which, regardless of its aims and how we might evaluate them, regardless of its limitations and failures, illustrates nonetheless the adaptive capacity of modern medicine, the possibility that modern medicine can share its field of activity to achieve desirable goals. At the same time, the same process served as a dynamic force behind numerous social and cultural changes, and above all, a source of exchanges and interactions which form the framework not only for what we call medical pluralism but also a pluralistic health-care system.

Vietnam is a shining example of such processes, even if it is neither a model nor an exception. Indeed, as is made clear by the earliest statements of the independent Republic of North Vietnam in 1945, as well as by the health-care system established throughout the country since 1975, the Vietnamese themselves have demanded this double plurality. For reasons at once political, nationalistic and practical they have given rise to a medicalisation which cannot deny its colonial roots even if it is still hard for them to proudly wave the flag of its *métissage*.

Notes

1 Or more accurately, of French Indochina, made up, from 1887 through to decolonisation in the 1950s, of the five administrative units (one colony and four protectorates) now comprising the countries of Vietnam, Cambodia and Laos. Colonial Vietnam was divided into one colony (Cochin China in the south), and two protectorates (Annam in the centre and Tonkin in the north).

2 Why 'colonial history of modern medicine'? First, because the term 'colonial medicine' is outdated and affords little or no attention to the role played by the colonised in the development of biomedicine overseas. 'Colonial medicine' suggests moreover that the exportation of Western medicine to various colonies in the nineteenth century took on forms specific to the particular context of domination, and as such interprets the export of Western medicine as a simple 'tool of imperialism'. This approach ignores the fact that many features of modern health

care (such as the authoritarianism which was part and parcel of the institutionalisation of the field of public health and hygienics in Europe and North America) appear to be universal, or in any case are hardly the product of imperialism. See D. Headrick, *Tools of Empire. Technology and European Imperialism in the Nineteenth Century*, New York: Oxford University Press, 1981.

3 Much of the scholarship from which I draw inspiration – notably that of D. Arnold and M. Harrison – concerns British India. Indeed, the literature on the colonial history of modern medicine in British India has proven to be the most prolific, the most critical, as well as the most 'social' in its approach.

4 See P. Conrad, 'Medicalisation and Social Control', *Annual Review of Sociology* 18, 1992, pp. 209–32, for an excellent state of the field article on the relationship between medicalisation and social control. On the definition of the social history of medicine, see O. Faure, 'Introduction: les voies multiples de la médicalisation', in 'Médicalisation et professions de santé, XVIe-XXe siècles', *Revue Française d'Histoire Moderne et Contemporaine* 43 (3), 1996, pp. 571–77. On the social aspects of the history of colonial medicine, see S. Marks, 'What is Colonial about Colonial Medicine? And What has Happened to Imperialism and Health?', *Social History of Medicine* 10 (2), 1997, pp. 205–19, which also contains a critical look at the state of research in that field.

5 The analysis of health care systems (a favourite approach of sociologists) emphasises health care policies, and examines those who conceive such policies, those who administer them, and those who receive or 'consume' them. The analysis of medical systems (a favourite approach of anthropologists) focuses instead on the interconnections between different types of medicine and different medical traditions functioning within a single health care system, which is exploited variably by groups and individuals according to their specific needs (G. Albrecht, R. Fitzpatrick and S. Scrimshaw (eds), *The Handbook of Social Studies in Health and Medicine,* Thousand Oaks: Sage Publications Ltd., 1999).

6 On this subject, see M. Harrison and B. Pati (eds), *Health, Medicine and Empire*, Hyderabad: Orient Longman, 2001; B. Andrews and A. Cunningham (eds), *Western Medicine as Contested Knowledge,* New York: Manchester University Press, 1997.

7 I use the term here in its historical sense to describe a process by which medicine becomes part of popular customs, everyday life, the management of illness, and certain social problems, largely through the activities of health care decision-makers and promoters – including health-care administrators and health-care professionals, the most important of which are doctors – who bring the system into contact with its target groups, who also play a crucial role in the process (P. Aïach and D. Delanoë (eds), *L'ère de la médicalisation. Ecce Homo Sanitas*, Paris: Anthropos/ Economica, 1998).

8 Indeed, this comprehensive approach was the one adopted in my more general work (L. Monnais-Rousselot, *Médecine et colonisation. L'aventure indochinoise, 1860–1939*, Paris: CNRS Editions, 1999), which, whatever its successes and failures, suggests the limits of a more global undertaking. Given that 'French Indochina' was an entity imposed from outside without dissolving the ethnic, sociocultural and other variations within 'Indochinese' borders, it is clearly unrealistic to hope to describe in detail the local results of a health care policy which aspired to universality but which inevitably moulded itself to particular local surroundings.

9 On the general history of French Indochina, see P. Brocheux and D. Hémery, *Indochine, la colonisation ambiguë (1858–1954),* Paris: La Découverte, 2002, 2nd edn.

10 Tran Nguyên Chan, *Recueil des textes concernant l'hygiène et la santé publique à Saigon*, Saigon: Nguyên Van Cua, 1929.

11 On the surface, such efforts seem to support the opinion of those who see colonial medicine as a 'tool of imperialism'. At the same time, the early campaigns of anti-

smallpox vaccination illustrate that the earliest health-care services established in Cochin China in the 1860s already aimed to help the indigenous population, as few French colonisers were affected by the disease. Certain 'native enclaves', to use the term employed by D. Arnold (*Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India*, Berkeley: University of California Press, 1993), such as prisons, the Native Guard or the earliest schools, can also be seen as experiments in the search for methods to fight against diseases specific to the region, and which would later be of assistance in pioneering efforts directed at the native population at large.

12 The predecessor of social insurance, free medical assistance, was offered to the poor as defined by strict criteria verified by departmental authorities throughout the country.

13 For more details on this complex period in the history of health care, see the following indispensable references: On hygienics, P. Bourdelais (ed.), *Les hygiénistes. Enjeux, modèles et pratiques*, Paris: Belin, 2001; on the connection between public health and the Third Republic, L. Murard and P. Zylberman, *L'Hygiène dans la République. La santé publique en France ou l'utopie contrariée, 1870–1918*, Paris: Fayard, 1996; on the social history of medicine in France in the nineteenth and twentieth centuries, O. Faure, *Histoire sociale de la médecine*, Paris: Anthropos, 1994; on the professionalisation of French medicine, J. Léonard, *La médecine entre les savoirs et les pouvoirs. Histoire intellectuelle et politique de la médecine française au XIXe siècle*, Paris: Aubier/Montaigne, 1981.

14 See for example the case of the transformation of what were called the *infirmaries-ambulances* ('mobile clinics') which followed the colonisers in their military campaigns throughout Annam and Tonkin. Most were transformed into dispensaries serving the indigenous civilian population in the 1890s (Centre des Archives d'Outre-mer (CAOM), Ancien Fonds Indochine, carton 323, Y01 (6)).

15 For a portrait of this environment, see L. Monnais-Rousselot, op. cit., pp. 40–56.

16 The success of this centralisation leads us to minimise the importance of the differences between the colony of Cochin China and the protectorates which constituted the colony of Indochina. In any event, these differences paled before the firm conviction that no part of Indochina should be a financial burden to France, that its 'development' should turn a profit. The achievement of this ambition demanded a sustained intervention on the part of the colonial state, as well as the establishment of the priorities in the management of the colony societies as it developed toward 'civilisation'.

17 The Governor-General, as the representative of the Republic of Indochina, enjoyed extensive power and considerable independence from the 1890s onward. French laws could not be enacted locally without his approval, for example.

18 In other words, hospitals which were not specialised and which were open to both Europeans and Indochinese.

19 Vietnam, Cambodia and Laos differed considerably in terms of the construction of the basic infrastructure. In 1930, for example, there were 56 medical establishments in Cambodia (including 40 rural infirmaries), and 68 in Laos (including 52 rural infirmaries). Tonkin alone had almost 300 such establishments. We might explain this concentration by differences in population levels (some seven million for Tonkin, two million and a half for Cambodia, less than one million for Laos), but at the same time, the size of Khmer and Lao territories, together with the scattered settlement patterns of the Khmer and Lao peoples, lead us to believe that the numbers of medical establishments were insufficient.

20 It was also in 1907 that a specific health-care budget for Indochina was created, the monies being taken both from the general budget and from local budgets which imposed taxes essentially on the colonised population.

21 Moreover, from 1913 on, each doctor serving in the AMI was required to submit a programme of public lectures to his local superior, to be delivered in specified

localities on subjects which were to be both simple and varied, and above all adapted to the 'problems' (pathological, sociological, economic) of the region where he practised. (National Archives of Vietnam (ANVN), Centre 1 (Hanoi), Fonds de la Direction locale de la santé du Tonkin, dossier 476).

22 CAOM, Agence de la France d'Outre-Mer, carton 238, dossier 299.

23 The Romanised form of Vietnamese formalised by Alexandre de Rhodes in the seventeenth century and imposed at the end of the nineteenth century as the sole form of the written language to be used in exchanges between colonial authorities and the native population (in administration, the educational system, etc.).

24 According to Vietnamese customs, childbirth was carried out in the absence of any masculine or medical presence. In general, only a midwife assisted at the birth of a child, and her role was essentially that of cutting the umbilical cord, which she accomplished with the aid of a sharp object – the shard of a broken bottle or a piece of bamboo, often picked up off the ground – with no disinfectant or sterilisation, all of which led to easy infection by the Nicolaier bacteria. In 1900, the rate of infantile mortality due to tetanus was measured at 40 per cent of all births in Saigon by some doctors. M. L. R. Montel, 'La surveillance de la natalité indigène, de la prophylaxie du tétanos ombilical à Saigon, 1905–7', *Annales d'Hygiène et de Médecine Coloniale* 9, 1908, 72–85). Given the anti-Malthusian worries of the Third Republic, French doctors could not but be shocked by such figures.

25 ANVN, Centre 1, Fonds de la direction locale de la santé du Tonkin, dossier 442; M. L. R. Montel, 'Notes d'hygiène et de démographie. Pourquoi doit-on faire de l'Assistance médicale en Indochine?', *Bulletin de la Société des Etudes Indochinoises* 60, 1911, 10.

26 Such vaccinations were extended to the whole of Indochina in 1908, and the insistence that everyone be vaccinated three times over the course of his life speaks of the firm commitment to prevent this most dreaded epidemic disease or at least to limit the damage it caused.

27 Here we note once again the leading role played by the Pastorians in Indochina: indeed, it was in Vietnam that Alexandre Yersin, the discoverer of the plague bacterium (in 1894), completed his work, developing an anti-plague vaccine and serum. He remained in Vietnam until his death in 1943, continuing his efforts to bring modern health care to the region.

28 Archives of the Institut Pasteur de Paris (AIP), Fonds d'archives Paul-Louis Simond, carton SIM 16.

29 A collaboration which illustrates the abandonment of a posture of forced assimilation in favour of a policy of co-operation. Such are the two choices available to a coloniser: either he demands an assimilation of the native population, or he respects indigenous realities and 'collaborates' with the natives to exploit and develop them.

30 A. Sarraut, *La mise en valeur des colonies françaises,* Paris: Payot, 1923. On the concept of 'mise en valeur' applied to French colonies at the time see: A. Conklin, *A Mission to Civilize: the Republican Idea of Empire in France and West Africa, 1895–1930*, Stanford: Stanford University Press, 1997.

31 ANVN, Centre 1, Fonds de la Résidence Supérieure du Tonkin (RST), dossier 10999.

32 It was for this reason, for example, that Sarraut insisted from the outset on the need to develop for-fee services; wealthier and better-educated Vietnamese often baulked at the idea of being treated together with 'the masses'. Such for-fee services would also help to solve the AMI's budgetary problems.

33 Free health care and free medicines were provided by hospitals and by health care services associated with the AMI to patients possessing the proper documentation issued by the colonial administration (colonial servants, and the poor); the well-off, be they French or Indochinese, were expected to pay for their own health care.

34 A few remarks on the evolution of the financing of health care in Indochina can be helpful here: in 1880, the first colonial counsel of Cochin China allocated 100,000 F for health-care expenses (0.5 per cent of the total budget). Funds devoted to health care reached 3,120,000 F in 1914, 8,293,000 F in 1930 and 11,325,000 F in 1939, even though these monies were dispensed by local budgets rather than through the central colonial administration. Such sums represent on average less than one percent of the general total budget, but 10 to 12 per cent of local budgets, i.e. the budgets of the protectorates and of the colony.

35 There were fifteen new native graduates of the Hanoi Medical School in 1916, against nine in 1915 and only three in 1914. The reason for this increase is obvious. It is equally obvious that these numbers were too small to respond effectively to the medical needs of the colony.

36 Such reports were to be submitted to their superiors (the local health-care director) beginning from 1907. The modifications of the health-care system advocated by Sarraut were based largely on such data – the collection of which he had made obligatory – as well as the ideas of local health-care directors, who had been much consulted, particularly in 1913.

37 The Saigon–Cholon metropolitan area, seen as the breeding ground *par excellence* of social diseases, was the object of the first rigorous initiatives along these lines, including the establishment of a number of specialised institutions: an anti-tubercular institute, a bureau of cancer prevention, an ophthalmology clinic, an ear-nose-and-throat clinic, as well as an insane asylum (1919) and a paediatric institute (1927).

38 AIP, Instituts Pasteur Outre-Mer (IPOM), Instituts Pasteur d'Indochine (IPI) Correspondance Calmette-Bernard, carton IND.D2.

39 Such consultations were available particularly at the *Hôpital indigène du Protectorat* in Hanoi (1925), in Hué (at the Brieux dispensary, 1928), and in Saigon (at the Institute of Anti-venereal diseases, 1929). An important study of the prevalence of syphilis and the damage caused thereby was undertaken throughout Annam in 1932 (ANVN, Centre 2 (Hô Chi Minh city), Fonds de la Résidence Supérieure d'Annam (RSA), dossier 3783).

40 See L. Monnais-Rousselot, 'La médicalisation de la mère et de son enfant: l'exemple du Vietnam sous domination française, 1860–1939', *Canadian Bulletin for the History of Medicine/ Bulletin Canadien d'Histoire de la Médecine* 19, 2002, 47–94.

41 ANVN, Centre 1, RST, dossier 447.

42 In 1936, there were 69 'independent' maternity wards (i.e. functioning independently of the more important aspects of health care as administered in a hospital), and 115 rural maternity wards in Vietnam.

43 ANVN, Centre 2, RSA, dossier 3909.

44 Terrisse directed efforts to build rural infirmaries, providing several villages with detection services (especially for the detection of trachoma) and with basic medical care (such as the distribution of medicines). Signs indicating the location of these infirmaries were found on the main highways; attention to the health-care needs and expectations of minority ethnic groups in the region (through the training of nurses and midwives who were themselves members of these minority groups and who returned to their home villages once their training was completed); use of traditional medicine to treat minor afflictions; and the regrouping of medical territories into 'sectors of rural assistance' (22 in all) so as to optimise mobile medical services (ANVN, Centre 2, RSA, dossiers 3362/ 3363/ 3704/ 3878).

45 Among other things, the Front populaire resulted in an important inquiry (carried out by the Guernut Commission) the goal of which was to obtain information on the feelings – and demands – of the Vietnamese people concerning their

socioeconomic situation. The 'grievances' revealed through this study were communicated to the Governor-General in early 1937.

46 Hermant's plan can be read in its entirety in: CAOM, Fonds de la Commission Guernut, carton 22, Bb.

47 M. Harrison and B. Pati (eds) op. cit., p. 9–11.

48 On the 'Indochinese doctor', see L. Monnais-Rousselot, 'La professionnalisation du 'médecin indochinois' au XXe siècle: Des paradoxes d'une médicalisation coloniale', *Actes de la Recherche en Sciences Sociales* 143, 2002, 36–43; on Vietnamese midwives, see 'Les premiers pas inédits d'une professionnelle de santé insolite: la sage-femme vietnamienne dans les années 1900–940', in G. Bousquet and N. Taylor (eds), *Le Vietnam au féminin*, Paris: Les Indes Savantes, 2005, pp. 67–105.

49 Trained medical doctors from Cambodia and Laos (not including those from minority ethnic groups) could be counted on the fingers of one hand in the 1930s, illustrating why *vietnamisation* is a more accurate term than *indigenisation*. This in turn constitutes one of the limitations of the process of medicalisation which should be signalled from the outset: there are many reports by Vietnamese doctors serving in Khmer or Lao regions which speak of the difficulties experienced by such doctors in gaining the acceptance of the local population, which tended to view them more as agents of Western medicine than as 'local' practitioners.

50 The Hanoi School of Medicine also trained pharmacists and veterinarians.

51 The 'health care officer' was a second-tier doctor who received an essentially practical education (often at the hands of an older doctor or in an ad hoc professional school) and who generally worked in rural areas among the least favoured parts of the population. The law of 1892 abolished this status in favour of making the medical profession uniform, by requiring a doctorate of medicine degree.

52 CAOM, Fonds du Gouvernement général (Gougal), dossier 6719. I discuss below the evolution in attitudes toward traditional medicine and traditional medical practices.

53 CAOM, Gougal, dossier 6719.

54 There are many reports written by their colonial superiors attesting to the effectiveness of Indochinese doctors from the 1910s on.

55 For example, the *Bulletin de la Société Médico-chirurgicale de l'Indochine* (1910–38), the most important medical journal in Indochina in terms of its circulation and reputation, published communications from Vietnamese doctors from the very beginning, whether they wrote alone (as was the case of Nguyên Xuan Mai, serving at the *Hôpital indigène du Protectorat* from 1912) or together with French doctors.

56 ANVN, Centre 2, Fonds du Gouvernement de la Cochinchine (Goucoch), dossiers IA.7/286 (1)/ IA.8/042 (2); Centre 1, Fonds de la Direction locale de la santé du Tonkin, dossier 442.

57 In Tonkin, for example, the local Health Care Director decided in 1907 to provide all Vietnamese midwives who had completed an internship in hospital, with a surgical-medical kit enabling her to provide essential care (ANVN, Centre 1, RST, dossier 6576).

58 The 'Cholon section' was called after the maternity wards in Cholon, the Chinese twin city of Saigon where most of the training was carried out.

59 The careers of these midwives were much affected by the proposition of 1908 that they manage private maternity wards: it is clear that this is an idea which would have mainly urban applications, as only in the cities would people have the means to pay for such services. In 1930, Hanoi city alone counted 17 private maternity wards, of which 13 were run by certified midwives.

60 According to the incomplete statistics found in the *Annuaires Statistiques de l'Indochine* published by the colonial government of Indochina, Hanoi, Imprimerie d'Extrême-Orient, 1923–42.

61 In fact, very little research has been done in this area, probably due to the scattered and difficult nature of the sources involved. In any event, the idea that biomedicine had sought to completely relegate traditional practices to the margins deserves serious study.
62 This project is financed by the Social Sciences and Humanities Research Council of Canada (SSHRC 2002–6).
63 AIP, IPOM, IPI, carton Plantations IND.H1–6.
64 Two commissions established by the Governor-General, in 1933 and 1938, undertook a systematic study of the Sino-Vietnamese pharmacopoeia (CAOM, Gougal, dossier 44461). The results of the work of these commissions remain unknown.
65 Questionable because it is particularly unclear in what way the recourse to traditional medicine constituted a genuine danger to public health. To what degree was this attempt to restrain the field of activity of Vietnamese practitioners linked to pressure brought to bear by the French pharmaceutical industry and its local agents? This is one of the questions I intend to answer soon.
66 Cases of intoxication, supposed or real, resulting from the consumption of traditional remedies are mentioned frequently in the columns of the *Bulletin de la Société médico-chirurgicale de l'Indochine* in the 1910s. See L. Monnais-Rousselot, 'Des poisons qui en disent long: les fonctions de l'arsenal thérapeutique traditionnel du Vietnam colonisé', *Frontières* 16 (1), 2003, 12–19.
67 O. Faure, 'Les officines pharmaceutiques françaises: de la réalité au mythe, fin XIXe–début XXe siècle', *Revue d'Histoire Moderne et Contemporaine* 43, 1996, 672–85.
68 CAOM, Gougal, Service Economique, dossier 213.
69 Several sources confirm that the colonial administration backed down on several occasions, in particular during the 1930s, in the face of the opposition of traditional practitioners who had grouped together in powerful associations, especially in Cochin China and in Tonkin. This period, one should recall, was one of a virulent Indochinese nationalism which obliged colonial authorities to limit efforts to repress local initiatives.
70 CAOM, RST Nouveau Fonds, dossier 4003.
71 In this context, it seems instructive to imagine that Vietnamese doctors must have played an important role in expanding the minds and powers of observation of those French doctors with whom they worked, in particular in the detection and treatment of certain unknown tropical diseases or of certain complex social diseases.
72 An approach associated most particularly with the *Institut Indochinois pour l'Étude de l'Homme*, created in Hanoi in 1938.
73 A particularly revealing example of such social representations is the following case: a doctor serving in the province of Cao Bang (Tonkin) in 1915 explained that the lukewarm reception of the local population – revealed by several years of depressing hospital statistics – to a Western medicine whose methods of treatment were well received was due to the physical location of the hospital. This hospital was not only a long way from the provincial capital, but was also close to a cemetery, 'a favourite place for Annamese ghosts', which discouraged even the most gravely ill – pardon the pun – from visiting the hospital (CAOM, RST Nouveau fonds, dossier 4003).
74 Of course the accuracy of some of these sources may be questionable (surely some dispensaries were lax in their record-keeping; others may have fudged the numbers to gain their superior's approval). Still, the data allow us to perceive general trends.
75 On the subject of medical pluralism see, among others, W. Ernst (ed.), *Plural Medicine. Tradition and Modernity*, London and New York: Routledge, 2002; J. Benoist, *Soigner au pluriel. Essai sur le pluralisme médical*, Paris: Karthala, 1996;

C. Leslie, *Asian Medical Systems. A Comparative Study,* Berkeley: University of California Press, 1976. It is interesting to compare the reactions of these doctors with the similar reactions of today's doctors to widespread popular enthusiasm for popular or alternative medicines. While a minority of doctors applauds an 'enlightened pluralism', most seem to fear the dangers of such mixing, when they set aside their worries concerning their professional prerogatives.

76 CAOM, Gougal, dossiers 6738/ 6739/ 23867.

77 Dr. Brindeaux, 'A propos d'un voyage en Indochine, 1937', *Paris Médical* 2 juillet-1e[r] octobre-3 décembre 1937.

78 P. Gouzien, 'Les vaccinations au Tonkin', *Annales d'Hygiène et de Médecine Coloniale* 55, 1891, 153.

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8 Making modernity with medicine

Mission, state and community in leprosy control, Ogoja, Nigeria, 1945–50

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Colonial rule in Nigeria was characterised by a vast array of interventions in law, land, labour, production and welfare. The cultural, demographic and political complexity of the colonial entity which emerged from various amalgamations and incorporations in the first quarter of the twentieth century; exaggerated cycles of economic expansion and contraction over the whole of the colonial period; and geographical variations in the imposition of and reaction to development agendas in the late colonial period, all interrupt a continuity of narrative on colonial policy and enterprise. In the case of the development of modern medicine, its roots in the only latterly convergent domains of missionary and government hospital-based medicine, and in sanitation, public health and epidemic control, pose further problems of interpretation. The story of how these domains articulate and interpenetrate, telescoped into a short period around the turn of the twentieth century, and how they develop into something approximating a medical system over the remainder of the colonial period and beyond, encompasses a dizzying range of medical and welfare narratives.

Clinical medicine was just one of a range of sciences deployed in the interests of colonial administration, welfare and development.[1] While it took its place among ecological, entomological and laboratory sciences in the analysis of the West African disease ecology, its peculiar significance in the context of colonial rule lay in its institutional interfaces – the clinic, the hospital, the dispensary and institutions of segregation such as the asylum and the leprosarium. An understanding of how modern medicine evolved in Nigeria, in contrast to its contemporary development in Europe and North America, hinges on an appreciation of the institutional context of medical practice under colonial rule.

Indeed, the insertion of ostensibly Western medical institutional forms into settings in which they are perceived as both novel and alien has exemplified the development of modern medicine beyond Europe and North America. Further, the reach and perceived fit of modern state structures, in colonial and national politics across much of the globe, is in many respects commensurate with the sustaining of institutions for medical intervention. The ability of the state to discharge its responsibilities to a citizenry is often

envisaged with regard to health indicators, and the concomitant penetration of a responsive health sector based on biomedical intervention. The shortcomings and derelictions of the post-colonial state, often as much spatial as fiscal, demand of us an articulation of the local and provincial as a facet of the national, imperial and global.

The outlines of this implicit correlation between the development of modern medical institutions and the imposition of state authority in colonial territories can be difficult to disentangle in the history of a particular administration or institution. While the hospital seems to epitomise the modern, and to give it a determinedly local instance, the mechanisms of the articulation of medicine, locality and governance too often remain opaque and subject to speculation. This chapter considers the case of the Roman Catholic Mission (RCM) Ogoja Leprosy Scheme, founded in 1945 by Dr. Joseph Barnes in co-operation with two Irish missionary orders, the St. Patrick's Missionary Society, and the Medical Missionaries of Mary (MMM). In this case, a resource and development politics with ramifications beyond the purely medical was grounded on government scrutiny and ratification of organisational practices which had evolved by way of careful and often fraught negotiation between medical missionaries and African community interests.

In this chapter, then, I examine the way in which the systematic creation and management of institutional spaces for leprosy control in Ogoja Province generated a bureaucratic accommodation between the government, mission and local communities which differed, both by degree, and absolutely, from any administrative machinery that had been in place earlier in the colonial history of Ogoja. The development of the RCM Ogoja Leprosy Scheme in the decade after 1945 resulted in a set of ordered interventions into the organisation of resources and of political recourse within the hinterland covered by the scheme.

The land-extensive nature of early leprosy settlements and villages gave the missionary Catholic Church an important stake in the delineation and policing of strategic and contested borders between ethnic groups, and in so doing, helped to constitute ethnicity in an absolute relation with the concepts of territory and ownership. The discursive labours involved in establishing the competencies and spheres of influence of the church, the colonial administration and political actors within local communities are clearly reflected in the record of conflict over taxation, payment, markets and resource rights, while the uneasy distinction between such fiduciary categories provides a strong index of the nature and course of changes wrought by such a large-scale intervention as a leprosy control scheme.

The political techniques which evolved from the context of leprosy control in Ogoja had a decisive impact on the framing and execution of development, welfare and infrastructural projects during the colonial period, as well as on the course of medical innovation in leprosy, and more broadly, throughout the province. The refiguring of the leprosy patient as a strategic resource, resulting from a sense of 'clan' ownership of and responsibility for

leprosy sufferers among its people, helped to normalise and provide a basis for new interpretations of political relations and power structures in the territory at large. The coalescing languages of entitlement and development[2] gave rise to novel strategies for bargaining, discriminating and petitioning, amid rapid change in the political economy of late colonial Ogoja.

I begin this chapter by examining the confrontation in practice between the aspirational language of leprosy control elaborated by Dr. Joseph Barnes in his original proposals for leprosy control in Ogoja, and the unexpected everyday problems of negotiating and instituting sites and structures for the leprosy villages as the planned extension of these proposals. This material offers an introduction to how contentious issues regarding land, labour, duty and taxation were broached and managed in the context of an early extension of colonial development policy in a locality hitherto peripheral to imperial infrastructural concerns.

The rather haphazard methods employed in response to obstacles in implementing the RCM Ogoja Leprosy Scheme rapidly invited official scrutiny by a raft of colonial administrative bodies. Subject to an array of inspections, supervisions and investigations, the mission was effectively forced to evolve a defensive strategy in order to anchor and safeguard its material and professional investments. This process would enable the mission to formulate policies on Catholic health-care in the face of increasingly secular and global tendencies in the administration of public health and disease control.

Here, I examine the material correlatives of this broader intellectual process, at the level of local politics, thus providing texture to the accounts of the relation between the mission and the ostensibly secular late- and post-colonial development agendas and policies.[3] I show how the RCM Ogoja Leprosy Scheme mediated local expression and reception of global initiatives, how it imbued the rhetoric of development with quasi-spiritual dimensions, and how it helped organise access to strategic resources, creating in the process a Catholic language of entitlement and underpinning an iteration of modernity as much political as medical.

Forging leprosy control – missionaries and Africans

From the outset, the RCM Ogoja leprosy scheme relied for its success on the assent of local groups and the ability to call on the resources of the colonial administration and its extant networks. Joseph Barnes' plans for propaganda among the people of Ogoja depended on district officers as intermediaries in suasion and coercion, as well as supports in raising revenue and channelling government and British Empire Leprosy Relief Association (BELRA) grants. Having agreed sites, and with five leprosy villages under construction by the end of January 1945,[4] Barnes called on the notably helpful District Officer for Ogoja to persuade local chiefs to send in all leprosy sufferers to the villages where housing was being built. The importance of sending in early cases was especially stressed, as these were seen as more readily curable.[5]

Some idea of how Barnes' scheme[6] was implemented on the ground is given in a series of handwritten and typed notes collated in 1945,[7] which describe the earliest visits made by the leprologist to some of the areas in which it was proposed to set up clinics and segregation villages. In siting the proposed segregation village, issues such as access to water, separation from concentrations of European and African population, and the local disease ecology were all taken into account. From the brief notes available, it is apparent that the sites to be cleared were generally between 200 yards and half a mile from the nearest road, and around 300 yards from a water source (a stream or a river). The rationale for at least some of the siting decisions is given in an extended note on the site of the proposed village near Ukpe, Obudu. The Obudu area was known to have a relatively high incidence of trypanosomiasis or sleeping sickness.[8] In the light of this knowledge, Barnes mentions that the proposed site, some 2–300 yards from the river, 'is theoretically outside the feeding range of the tsetse, which according to Manson-Bahr is 60 yds'.[9] While he concedes that the need to approach the stream for water would expose patients to the tsetse fly in any case, he mentions that the flies are numerous in the area in places up to 400 yards from the water, and that bush clearing close to streams, traps and chemical prophylaxis which may be provided by Government should be considered.

Since the environmental interventions (such as site clearing, concentration of population and on-site medical provision) proposed by Barnes' scheme of leprosy control were to be implemented on a clan basis, and therefore on a local village-by-village basis it was important that trained staff knew how to recognise early treatable symptoms of diseases other than leprosy. The standard layout mooted for the villages was referred to variously as 'Celtic cross',[10] 'St. Brigid's Cross',[11] 'the circular plan'[12] and 'the diamond plan'.[13] It consisted of a central square or diamond, with four arms running perpendicularly from this central area. At least some attention was paid to the extent to which this plan would 'harmonise' with the immediate physical surroundings, Barnes writing of the proposed village at Bendi that 'from the top of one of these [surrounding peaks] it should make a very pretty sight lying down below in the valley'.[14] Generally, a local house judged to be well constructed was taken as a template for the sort of dwelling to be constructed in the village.

The most revealing material from the earlier notes compiled by Barnes on his village visits comes under the heading of 'Co-operation'. At times it seems that this was as much an intelligence-gathering exercise on the part of RCM-related staff as the intelligence reports of the Nigerian colonial administration some 15 years earlier. Barnes notes whom he should be speaking to and what parties might prove profitable alliances in the effort to mobilise interest, finance and labour for local leprosy control measures. In Obudu, he reports that

> the chiefs failed to turn up in any strength, and only a couple of lepers. Fr. D. says they are a lazy crowd. They too fear the Munchis [Tivi from

> what is now Benue State] which is the reason they do not want the settlement to the north of the town.[15]

The same note draws attention to tension in the siting of the village, which was to be in nearby Kakum rather than in Obudu itself. Barnes writes that he placated them with the assurance that the leprosy asylum would be in Obudu in two years time. The question of subscription also arises – at this time, Barnes did not ask the people of Obudu to subscribe for the construction of a village.

However, a couple of days later in Otukwang he notes that 1s. 2d. per man was promised, totalling £73.15/0, this despite a proclaimed lack of enthusiasm among a population which 'do not appreciate infectivity of disease'.[16] The people of Ukpe promised 2s. per man (which was noted as 'not given') and 'like all the clans in this area they made no palaver about the land',[17] despite the chief being discommoded by not seeing Barnes on his arrival in the village. In Kakum, it was agreed that money already being collected for a general hospital could be 'devoted to the leper village and the remainder to a hospital developed in connection with a leper asylum'. Here Barnes also notes that 'leper settlements are always pestered by clean patients and 'tis necessary to have a clean ward for them'.[18] At Bateriko, Barnes 'was promised everything … but the carriers had to be dragged to work. They have a reputation for laziness which seems well deserved.'[19]

On a later tour of preliminary visits nearer to Ogoja town, the perceived link between the subscription for the leprosy village and Native Administration taxation was raised by some among the Akaju [sic] clan near Bansara, who 'maintained that as their tax had to be raised to 6s. 6d. per man the N.A. ought to build the houses'.[20] One local group refused to come in as a subclan, despite being too small for a separate village – it was arranged that this group would build a house for any individual leprosy sufferers from among them. At Kackwagum [sic], a smallpox epidemic led to low turnout among the chiefs. Those who did turn out agreed to put the matter to the others.[21] However, Barnes was not impressed by the response of the Nkim Clan. He wrote:

> The people have a poor reputation for work – they hire Munchis to do it for them. The King who is said to have real power would promise you the eye out of his head but wouldn't give you the clippings of his nails. He is an ex-steward … and wily as they make them.[22]

The search at each location for a suitable candidate to nurse at the leprosy village gives some indication of the social and educational services already existing in the area as well as of the seeming indiscriminateness of leprosy infection. Although there has been some correlation between infection with leprosy and poverty in the Ogoja area, the high incidence in parts, and the varying level of stigma associated with the disease meant that leprosy patients, from among whom the nurse would be drawn, originated at all levels of local society. A note on the Yakoka Clan at Abuochichi reports, for instance, that the

first clinic held there was 'not very satisfactory. Chiefs who are lepers themselves do not want to attend for injections'. Therefore, though one has to be cautious about using evidence on the availability of leprosy nurses suited to Barnes' purposes as an index of the penetration of colonial social services, the shortage of such services in Ogoja Province is further indicated by the difficulty in finding literate or trained staff in the early years of the Ogoja Leprosy Scheme.

At Otukwang, Enyom Ebe, a young leprosy patient, was noted as having 'very little English – no book – not so good'. Yet he is the only candidate listed under the heading 'Nurse'. At Ukpe, Utu, son of Addia of Ugbong, had good English but was illiterate. It seems that he may have had some nursing training, and he is referred to as 'excellent material'. At Kakum, there was a trader with a little English and no schooling, and a 'fine young Catholic' who was crippled in both hands. Barnes suggested the latter as potentially an 'excellent catechist'. For some locations, the 'Nurse' section is left blank, and there were very few trained nurses, not many literate candidates, and some areas for which no one could be found with the requisite English to communicate both locally and with the doctor.

The notes made between April and August 1945 consist of supervisory reports on work in progress at sites where the construction of a leprosy village had already been agreed and arranged. The major problems identified by Barnes were with the quality of the individual buildings and the willingness of locals to work on the construction of the villages. Thus concerned with the marshalling of labour and its efficacy, Barnes attempted to negotiate exactly who should be providing what labour input at various stages of construction, and what could be expected of clan members and leprosy patients from the point of view of construction and financing.

At Okuku, the first clinic was held on 9th April 1945, where a temporary shelter had been erected. Ninety patients were treated, from an estimated population of 500 leprosy sufferers, and the report notes 'great co-operation'. A visit on 3rd May, with the District Officer Mr. Clarke, led to the conclusion that the village was 'rather near the [Government] rest house', but it was agreed that the site was suitable as long as extension was in the direction away from the rest house.[23] While building carried on, as marked out, on two of the streets leading away from the rest house throughout May, the entry of 17th May notes that:

> The best thing that could have happened to this clinic, did happen, it fell. The carpenter has been fired and the whole shooting gallery moved over to below John Holt's. The lepers will have their water supply from the lower of the two springs, John Holt and the neighbouring village drawing their water from the upper.[24]

It seems then that the admittedly small amount of work that had been carried out at the existing site was ceased, while plans were made to start another village on a new site.

However, plans ran into difficulty almost straightaway. The chief on whose land the new site was located told the propagandist sent by the leprologist that he had been absent when the other chiefs showed the spot to the leprologist. He wanted to appoint a new site near the crossroad,[25] and was told to seek a decision on this with all the chiefs. Barnes had felt that the original site was the most suitable, and sent out two leprosy officers to see if the chief would change his mind. He refused to do so. The following passage is then entered in the report:

> When this came to the realization of the L. Officers, and having learnt that he would hardly change his opinion; and seeing that only [one] man in the whole town was [arguing], the site was meant to be taken by force. When the chief understood that however, he immediately changed and gave the site. On explaining his anger, he said that he was neglected by the other chiefs and none informed him that such a place was given to the Leprologist and as such he meant to show that he has also voice in the matter like the other chiefs. He was then congratulated.[26]

It was also pointed out that the leprosy patients would not interfere with his water supply. While site clearing began soon afterwards, it is not clear from the reports the extent to which the chief in question was to be responsible for this labour.

The next dispute at Okuku dragged on through most of June and July, and concerned building materials and labour. As well as clearing the site for the village, a carpenter needed to be engaged and paid, the materials used in the fallen clinic needed to be transported to the new site, and guarantees of money and labour for building had to be secured. The presence of Mgr. McGettrick, the head of the RCM and later Bishop of Ogoja, on 11th June seemed to galvanise a certain amount of support for the rapid construction of the village. The report states:

> Clearing the stumps & grass and levelling in progress. The old fallen [clinic] loosed and kept ready to be carried to the new site tomorrow. The sum of £12 pounds [sic] was promised by the town and be sending [sic] ten labourers daily till the work is completed. Grass is also to be supplied by the town.[27]

It emerged the next day that this agreement had been reneged upon the moment the Monsignor left. The carpenters arrived and had no means of beginning work, whereupon they reported the matter. On being confronted, the chiefs claimed that they could not afford to provide labour on top of the £12 promised. They agreed instead to pay £20 so that labourers could be hired.

Over the next couple of weeks, it appeared that there had been some misunderstanding as to the role of the labourers. They had been instructed to

assist the carpenter in constructing the clinic, for which six of them were paid at the rate of 9d a day. From the village, it was reported that:

> The patients refused to build their houses saying that the chiefs ordered that hence [sic] they have paid the sum mentioned above [£18 of the £20, with the remaining £2 to follow], no one should worry any more for any work in the site. The senior L. Officer with one other L. Officer were sent to the King and chiefs to witness how far that was true. The King & chiefs denied of having … heard of such a thing. They were then advised to pass order to the patients under their charge to go and build their houses.[28]

One week later, the patients were reported to be 'not yet building their houses'.

Furthermore, a dispute had emerged over the ownership of the grass collected for roofing. It was maintained that this had been intended for the District Officer rather than for the leprosy village. When the District Officer claimed that it was of the wrong type, a payment of 1½d. per bundle, for 200 bundles, was demanded if the grass were needed for the clinic. It is unclear whether this was paid, but by the following weekend, it is noted that:

> Tying the clinic roof with palm ribs by the six workers goes on. They have done half-way but all loosed for the fact that the ribs were tied too far apart. [Measurements] given before are to be insisted upon (4½" apart from rib-line to another).[29]

Work on the clinic roof continued to be periodically inspected, but the first reports of patients actually beginning to build their houses didn't come until mid-July. By late July, twelve houses had been started, of which five were judged to be good. More patients were reported to be clearing places.

The decisive moment, both in terms of turning around patient co-operation, and in terms of how the lack of co-operation can be understood and interpreted, came when the receipt of injections was linked to patients 'making strong efforts about building their houses'.[30] This led to appeals for more time so that crops could be reaped. While the reports for Okuku preserved in this form end at this time, the combined pressures of labour value and needs, competing demands and expectations regarding responsibility and ownership of materials and products, and the variety of levels of power between colonial, medical and local structures are all intriguingly reflected in this set of notes.

In Mbube, each of twenty towns in the clan area was to build six houses by late May. To ensure that this task was carried out, seven rules were to be put before the Native Council, as follows:

1. Healthy men are to build the house.
2. The lepers if they are strong enough must also help.
3. Those lepers who are not strong enough must see that their townsmen build the houses.

4 No new lepers will get injections unless they have a house.
5 Lepers who are already getting injections must have a house in one month.
6 C.C. [Court Clerk] to call elders and give them list and read out the rules.
7 Any healthy man who refuses to work should be fined by the company but not in court.[31]

The work continued very slowly through June and July, this despite the naming of villages seen to be lukewarm in their contributions to the work, and repeated demonstrations of the cure of leprosy – an injection shed was built, which was infested with ticks, but non-patients seemed loath to work on patient houses, a matter which was referred to Riley later in 1945.

There were difficulties of a more serious degree entirely to be confronted in Abakaliki Division, where demographic instability and political insecurity had forestalled European attempts to establish a strong presence,[32] and undermined Barnes' ambitions to centre the RCM Leprosy Scheme at Abakaliki.[33] The resistance to colonial regulation at this frontier of Igbo migration was manifested in a strong distrust of welfare measures proceeding under a European umbrella, as confirmed in an uncharacteristically irritable outburst from Riley, writing to the District Officer at Abakaliki:

> My view is that since the [RCM] and [Church of Scotland Mission] are doing their best so far without Government assistance to fight leprosy for the benefit of lepers and non-lepers alike and have gone to no little expense to date in so doing, the very least the Native authorities and people can do is to turn out a little volunteer labour. The Ezzas are deemed the most virile and progressive clan in Abakaliki, their attitude however reveals them as the most uncooperative, ignorant of the bush wa-was, undeserving of any medical attention whatever. Please tell them this.[34]

Barnes resorted to a variety of tactics to overcome the mix of seemingly recalcitrant workers and uncooperative chiefs; to mediate on issues of ownership, property and access to resources; and to explicate the necessity of addressing infection with leprosy. These tactics included threats of official sanction, withdrawal of services, naming and shaming villages and using the authority of mission and government figures to exact compliance. The variation in responses to these beginnings of leprosy control indicate just some of the social complexity of the area in terms of labour rights and regulations, thought about leprosy, and land resource issues, which was eventually sidelined under the rubric of addressing leprosy and instituting a healthy respect or fear of the disease.

Over the next couple of years, difficulties were reported regarding the attendance of leprosy patients at so-called 'clean' markets, with objections

coming variously from district officers, clan councils where these existed and medical mission staff themselves. The nature of the complaints varied, with the sale of food prepared by leprosy patients at local markets, the visiting of these markets by patients and the rights of patients to set up their own market, all causing concern. Objections were also made at a 1946 inspection to the injection procedures followed at some of the leprosy settlements run by the RCM Ogoja leprosy scheme. These procedures were seen to be in breach of correct practice, and resulted in bleeding, faulty sterilisation, and the incorrect and wasteful handling of oil.[35] The hygiene and sanitation at some of the outlying segregation villages was seen to be lax, despite some of them being in existence since the early days of the scheme. The inspector communicated his impression that the quantity of patients treated had been substituted for quality of treatment at this early and ambitious stage in proceedings.

In 1948, difficulties were reported with the schools – no schemes of work were in place, and the apparatus for teaching was incomplete. Fines were imposed on the staff for their failure to meet requirements.[36] This was a matter of some embarrassment to the mission, which had made much play for propaganda purposes of the success of the leprosy settlement schools. The teething problems continued with a long-running contention on the issue of payment for medical services. While treatment for leprosy was in principle free of charge, the structure of the medical services evolving around leprosy control, encompassing clean clinics and maternity care, and the weakness of record-keeping, made fee structures opaque and left the scheme open to charges of exacting payment for leprosy services. The incomplete distinction between taxation, wage earning, and payment for services and housing made resolution of this issue more difficult still, and it remained largely unresolved while Barnes' structure was in place.

Policing principle and practice – missionaries and the State

Queries regarding the issue of payment for leprosy services were made of Barnes by H. J. S. Clark, the District Officer, Ogoja Division in October 1945, following scrutiny of the Osokam [sic] Clan Council minutes, which mention the institution of a new payment regimen for treatment originally assumed to be free, and the practice of allowing patients to remain at their homes upon payment of a £5 fee, which seemed to Clark to contravene proper isolation principles.[37] McGettrick, replying on behalf of Barnes, noted that this fee, payable by wealthy, non-infectious patients wishing to remain at home, was directed to feeding 'the helpless and starving lepers', adding that the Mission would give up this practice 'if Government and local bodies assume a responsibility which really is theirs'. In an annotation to this letter, Clark communicated his impression that the conditions laid down while camps were originally planned placed the responsibility for feeding patients on their families until patients could make their own farms, adding that the scheme would fail if the families could shirk this responsibility.[38]

The importance of this principle was reiterated by P. M. Riley, the Resident, Ogoja Province, who commented that it had been agreed that local support of the settlements, which included maintenance of patients until self-sufficiency had been achieved, was a mainstay of the planned scheme, and that the agreed principle of maintenance was in accord with 'recognised Native Custom', and supported by the Criminal Code as a responsibility of heads of families.[39] McGettrick and Barnes, in separate replies to the letters of Clark and Riley, highlighted certain deficiencies emerging from the strict application of principle. Barnes noted firstly that free treatment extended only to Government-supplied chaulmoogra oil, and not to private treatment using privately purchased drugs, offered on request to 'certain well-to-do lepers', and secondly, that the monies collected were due to the poor 'to whom both Church and State owe their very first duty', but for the support of whom no grant application had been made by the Provincial Leprosy Board.[40]

McGettrick, for his part, pointed out the practical consequences of this lacuna in provision: that while the Government should, in theory, be held responsible for the 5 per cent of patients who were destitute and had no one to take care of them, the much larger group who were destitute as a result of family dereliction would nonetheless starve if the legal route to enforcing duty of support, subject to the 'law's delays', were to be taken by the Mission. Legal recourse might also have the further unintended consequence of encouraging relatives of leprosy sufferers to 'hide [them] at home, and starve them there as they are doing in most cases'. McGettrick proposed that Government force relatives to do their duty, or else support the patients itself, adding that the Mission would periodically send a list of patients abandoned by their relatives.[41]

That colonial officials gave weight to their responsibilities in this matter, in spite of legal and financial difficulties, can be seen from the endorsements to McGettrick's letter, and from a previous letter from Riley to the Mbube Native Authorities, concerning shortcomings in provision for leprosy control. Both Riley and Clark hoped that the outlines of a method could be evolved to bridge the desirability of maintaining leprosy patients at Mission settlements (in the absence of any legal means to compel patients to stay there) and the onus on families to care for leprosy sufferers, whether at home or in institutions, and that this method could avoid recourse to prosecution.[42] Clark expressed the wish that the RCM would advise him of its difficulties in order to avail themselves of his assistance at the earliest opportunity. This wish was highlighted by difficulties at Mbube, where Riley had written to chastise the Native Authorities over their failure to provide labour for work on the construction of the leprosy settlement 'which the Roman Catholic Mission [were] trying to build', and over objections to the type of house being built. Riley had recommend that the RCM refuse to receive or treat patients from Mbube while assistance with the work was not forthcoming, writing that.

> You and your people should be most grateful to the Roman Catholic Mission for what they are doing to stamp out leprosy and you cannot expect the District Officer or myself to help you in other matters while you show by your behaviour that you are not worth helping.[43]

Notwithstanding the implicit threat contained in this passage, and its explicit delineation of power and patronage relations, the negotiation of difficulties regarding the institution of leprosy control was not directed solely by colonial officials and missionaries. Consultation between Riley and the Secretary, Eastern Provinces, demonstrates that Native Authorities also sought clarification on their legal position with regard to leprosy sufferers in their communities, especially in the light of the new RCM leprosy campaign. In response to Native Authority requests for powers to send sufferers to Itu or to local clan settlements, and seeking advice from his superior, Riley suggested a number of solutions under the existing Public Health Ordinance, and other legal instruments, while remaining mindful of the problems posed by legislating for compulsion.[44] The reply indicated that experiences in Owerri and Onitsha Provinces, both under the new Nigeria Leprosy Service and prior to 1945, suggested that if co-operation was not forthcoming, it would be better to wait for the emergence of local desire to co-operate, rather than applying or sanctioning compulsion.[45]

The relation between indigence, payment and discipline, as conceived by colonial officials and missionaries with regard to leprosy patients, was raised again in early 1947, when the medical superintendent for Ogoja Leper Settlement wrote to the Senior Leprosy Officer seeking permission to charge 'a small nominal sum of 3d' for medical treatment other than chaulmoogra oil. The purpose of this charge was to discourage the feigning of illness to obtain medicine to sell at market, a practice which seemed to persist though the superintendent had 'pleaded and reasoned with [patients]'. It was emphasised that the money would pay for the support of 'indigent patients'.[46]

Though no reply to this enquiry is on record, the difference on point of principle it exposes is taken up at a later date, with a letter which, while complimenting the interest shown by the Resident in issues of support for 'poor', 'weak' or 'indigent' patients, highlights the philosophy underpinning the Mission's interpretation of the obligations of the State and of the Mission. Adopting arguments drawn from Catholic teachings on the state and social justice, the correspondent writes:

> It is sometimes argued that the support of the poor is the special province and obligation of the Mission. The truth as we see it is that there is an obligation on us in charity and an obligation on the State in justice, and surely the former, at least in the natural order, is more binding.[47]

It continues 'recognition of present obligations should come before development', and adds that the poor should receive funds before those rewarded under cost-of-living allowances.

Within the confines of the RCM itself, the principle of payment arose repeatedly in the broader context of ensuring the continuation and consolidation of the scheme. Though it was conceded that there was theoretically a charge, usually unpaid, for outpatient treatment, it was felt that this should not interfere with the treatment of early cases, who would still receive treatment even if they were unable to pay anything.[48] At the same time it was hoped that money made from the 'skin clinics' would provide for the building of a new hospital at Kakwagom, since no mission grant was yet forthcoming.[49]

The relations of trust which had developed between Clark, Riley and Barnes, involving the longstanding support of Clark in ordering and building segregation villages, and Riley's continual assent to and support for the expansion plans espoused by the Mission, did not persist into 1948. Along with a new complement of officials at the Residency and the District Office, and of staff at the RCM Ogoja leprosy scheme, dissatisfaction with the original site and the conduct of leprosy control at one of the most important outlying segregation villages run by the RCM emerged as a crucial cause of conflict throughout the course of the year. Barnes returned to Ireland early in 1948, leaving the leprosy work in the hands of Sr. Dr. Visitation Chambers, a recently qualified MMM doctor,[50] while an acting Resident and assistant District Officer for Ogoja took over from Riley and Clark later in the year.

The complaint raised by the Okundi Clan Council[51] centred on the return to their home villages of patients who had been resident in the segregation village, and were still receiving treatment. The patients had informed the council that they had paid amounts of between thirty shillings and five pounds to be allowed to live at home while under treatment. The council provided a list of names of such patients and countered that patients should not be returned until they were fully cured.[52] The letter communicating this complaint to the RCM added a complaint by patients resident in the segregation village that many had not received injections for three months, as a result of non-payment of a sum of £2:10s. that was required to construct houses on the proposed new site for the village. On this matter, Clark commented that he had made a recommendation to Barnes against moving the site on the grounds that 'he would experience great difficulty in getting the Osokums to turn out and build a second camp', counsel which seemed vindicated by the objections of the patients, many of whom had paid a similar amount for the construction of their current houses. A further difficulty arose from the inability of the Native Administration to finance the building of a road to the new site.

Chambers' reply mitigated the severity of the complaints somewhat, offering a series of interpretations of why and how the issues of contention may have arisen. Again, contending principles of discipline and of concern for the medical interests of patients determined the courses of action taken by the RCM, while the interests of local councils were of less interest to the Mission leprosy staff. Regarding the outpatient treatment of private patients,

Chambers referred to the previous agreement between Government and the Mission, which permitted charging for such treatment provided a register was kept.[53] Following Barnes' practice, Chambers reserved for herself the right to decide on the suitability of patients for such treatment, noting that this was not a matter for the Okundi Clan Council.[54]

The rationale for changing site was predicated on the unsuitability of the original site, on an elevated area surrounded by hollows, which limited the scope for house construction by the growing population of the segregation village. The impossibility of determining the comparative effects of chaulmoogra oil and of improved hygiene conditions in attenuating the symptoms of leprosy was offered as a further rationale for developing a site more suitable for the housing of an increased number of patients in prevailing medical and therapeutic circumstances. Chambers chose to present the issues raised by patients refused treatment in the light of these considerations. Noting that the houses built on the original site in 1945 were poorly constructed and would have to be torn down in any case, she wrote that patients capable of building houses were allowed and encouraged to do so. With many patients choosing either to pay for the construction of houses, or to provide materials and employ masons and thatchers from Ogoja (where the standard of craft was held to be superior), rather than build their own, the stopping of treatment was to be interpreted as 'a necessary disciplinary measure … in the case of patients who were physically fit to build their houses but made no attempt to do so'.[55]

Replying to a query from Anthony Saville, the new Assistant District Officer for Ogoja Division, in July 1948, which noted 'no further trouble about the new village' in Kakwagom, Chambers detailed the process of registering private patients, both literate and (more usually) illiterate, noting that as well as the registers kept in each village, stating patients' names and addresses, the stage and duration of the disease, the dosage and amount paid, a centrally held register was kept in Ogoja.[56] She noted that the fees of £3 per adult and 30s. per child (payable in 5s. and 2s. 6d. instalments) were spent on village buildings such as injection and examination rooms, dressing rooms, wards, offices and nurses' housing, for which no grant was available. The fees of the 88 patients thus treated (in comparison to the 1770 inpatients[57]) were not enough to cover these costs.

Saville's suspicion that the RCM may have never actually sought Government permission to charge under the cited section of the agreement between Mission and Government[58] was increased following a November 1948 tour taking him to Okundi, where he heard the renewed complaints of the clan council and the leprosy patients. Patients complained that the Sisters had not visited either the new or the old villages in the previous few months, and that patients who had not paid the sum for house construction were not allowed to build their own houses, even in conformity to prescribed house plans. It was felt that private patients received preferential treatment, even as the Clan Council objected to the dilution of segregation principles implied

by outpatient practices. Given the attentiveness of the RCM Fathers and catechists to their spiritual needs, in contrast to the medical attention received, patients felt that 'they [were] assembled rather for conversion to Roman Catholicism than for the treatment of their leprosy … Their souls apparently are to be saved, though their bodies may rot.'[59]

The existence of a private dispensary at Emanduk, to which the Sisters travelled through the Kakwagom village, proved another point of contention. The RCM were said to be using a Government Rest House without permission as a dispensary, where injections for gonorrhoea, yaws and other skin-related conditions were sold, along with bandages and dressings, to patients drawn from Ogoja, Obubra and Ikom Divisions. It was charged that no records were kept or diagnoses attempted at this clinic, and that dissatisfaction at 'inflated payment' for RCM leprosy work, education and proselytisation was widespread across Ogoja Division, a situation exacerbated by the fact that 'no one has ever yet been able to see a balance sheet produced by the Mission'.[60]

Though a note was made that these charges against the RCM were being investigated by both the Resident and the Senior Leprosy Officer,[61] the most serious charges, that the RCM profiteered from private practice at the expense of segregated leprosy patients, and that evangelism was either forced or conducted in preference to leprosy work, seem never to have been substantiated. Saville, in a subsequent posting to Obudu, seemed amenable to working with the RCM in the area,[62] while the only specific complaint directed to the RCM Leprosy Scheme dealt with the unauthorised use of Government buildings, and received the reply that explicit consent would be sought in the future, and that the verbal permissions applying to a small number of such buildings would no longer be assumed by the Mission to cover all Government buildings by extrapolation.[63] The existence of the dispensary clinics would later be explained by McGettrick as 'part and parcel of the leprosy campaign … instituted to discover early cases',[64] but the fact remained that until 1949 the accounts and statistics kept by the RCM Ogoja leprosy scheme were scant and largely unspecific as to the sources of income.

From the perspective of funding, the question of finance also preoccupied the administrators of leprosy control in Ogoja. While BELRA, for their part, were originally loath to grant money to the planned RCM Ogoja Leprosy Scheme,[65] the accounts of the Scheme for 1946–47 show a grant of £1,020 from BELRA for equipment for a laboratory, a hospital and clinics, as well as for a kit-car for transport, in spite of Barnes' unwillingness to carry out the leprosy survey which had originally been a condition of assistance. The softening of BELRA's position on this matter correlates with its perceived position with regard to evolving British imperial policy on Colonial Development and Welfare. Following the recommendation of the International Leprosy Congress in 1938 that leprosaria should pass from voluntary agencies into government hands, BELRA was concerned that its resources should not be exploited as an excuse to limit government funding

of leprosy control. As a result, BELRA indicated its intention to focus primarily on what it referred to as pioneer efforts, an aim attested to in a memorandum reproduced in its Annual Report of 1945. This complemented an accompanying assertion that:

> the relief of leprosy is only partly a medical matter; the environmental influences, social, educational and spiritual, are no less important, and for these BELRA and the missions will still furnish staff and equipment.[66]

This would be coupled with the opening of a BELRA Nigeria Committee, mooted for 1947,[67] the development of its research capacity in Uzuakoli, and its central position in the development of the national Leprosy Control Board.

The scope of the BELRA Child Adoption Scheme, begun in a small way just prior to World War II, became at once more ambitious and more highly organised from 1947. It was noted that:

> The claim of children to priority of consideration in treatment is unchallenged no less because they offer the best point from the medical angle of attacking the disease than because of the natural desire to give the rising generation a fairer chance in life.[68]

The centralisation of this programme after 1947 allowed the payment of block grants to Leprosy Settlements, placing less of an administrative onus on the settlements themselves. This was extended to Ogoja for the first time in 1949, in the wake of a successful campaign for more sponsors which involved the British Royal Family. BELRA also controversially provided sulphetrone to Ogoja in addition to the Nigerian Government supplies of dapsone.[69] By 1955, 389 of BELRA's 2134 adoptees in Africa were in the RCM's northern Ogoja settlements, a proportion which grew throughout the 1950s to reach 789 of 2799 adoptees by 1961.[70] This gave the RCM Ogoja Leprosy Scheme a measure of the security it had so dearly sought in its early years.

It would not, however, dissolve the variety of political disputes over land and land holding to which the RCM found itself party. Running concurrently with disputes over issues of charging, financing and fees were a series of questions over boundaries of leprosy villages and adjoining lands, and the development of market facilities for the villages. The concerns of the Okundi Clan Council over the incomplete segregation of patients at Kakwagom, and the preferential treatment accorded to private leprosy patients is echoed in the attention given to the issue of access to markets for leprosy patients. The Sanitary Overseer and the Medical Officer for Ogoja wished it to be communicated to the RCM leprologist that the 'undesirable practice' of leprosy patients preparing yam fou-fou and sending their children to market with it should be prohibited.[71] In Obudu, a deputation from Clan councils at Abakpa, Obudu and Obanliku complained that:

> about 50 lepers attend the Obudu market and mix freely with the clean people. They pick up meat and they do not buy it, thus spreading disease … Obudu people are in complete ignorance of the cause of the disease, and the healthy and unhealthy live, eat and sleep together, thus spreading the disease further.[72]

This deputation called for the enforcement of segregation by chiefs in special compounds, the opening of special villages and a special market for leprosy sufferers, and the ending of access to Obudu market by leprosy sufferers.

The Senior District Officer for Ogoja Division suggested the opening of a small market near the main Ogoja Leprosy Settlement as a subsidiary to the main Ishibori market in Ogoja as a means of ending 'the habit [of leprosy patients] of frequenting the Ishibori market in large numbers',[73] a question which Barnes had been anxious to discuss with the colonial administration,[74] especially in the light of the illicit sale of medicines by leprosy patients at the market.[75] In response to renewed criticism of the conduct and sanitation of Ishibori market in early 1948, the responsibility for the majority of breaches was laid at the door of leprosy sufferers who were assumed to be patients at the RCM Ogoja Leprosy Settlement, the Mission outlined its longstanding arrangements for a market to be held in the Settlement, pointing out that this arrangement had at first caused conflict with the marketers in Ishibori, and that the Mission was doing all in its power to prevent patients leaving the segregation villages to attend markets.[76]

The specific nature of the problems with market attendance and reorganisation were aired later in the year, when the complaint of the medical superintendent for the RCM Ogoja leprosy scheme was raised, that

> the local chiefs will not let anyone sell [at the special market for the lepers] unless they are suitably and regularly rewarded [and] if she tries to arrange for one or two persons to make purchases for the lepers, they insist upon getting a commission which the lepers are not prepared to pay.[77]

As with much in the early days of the RCM Ogoja Leprosy Scheme, the physical boundaries of the individual leprosy settlement remained undefined. Barnes explained to the dissatisfied Senior Leprosy Officer that he

> considered it a mistaken policy to [ultimately define colony boundaries] at the very beginning before we had accurate information as to the number of lepers in each clan and the number of acres required for the maintenance of each individual.[78]

By mid-1947, the 'problem of boundaries' could no longer be ignored, and had become pressing in Okuku, the nearest subsidiary settlement to the central one in Ogoja,[79] prompting Barnes to canvas opinion on the ideal maximum isolation village size and the required acreage.

From Ossiomo in Benin Province, K. S. Seal wrote a considered response balancing the proportion of able-bodied patients with the farming requirements, taking into account local crops and land type, stressing the reliance on properly trained local nurses for ensuring the success of a village, and concluding that no more than around 250 people should be housed in any one village. He noted that at Ossiomo, each patient was granted a 3.5-acre plot, farmed in rotation over 7 years, but that ultimately, the extent of a settlement was determined in co-operation with local chiefs.[80] McKelvie, at Oji River, was similarly cautious in hedging the advice that 150–200 was an optimum population size, noting that their practice was to provide plots of two-thirds of an acre on a 4-year rotation.[81] T. F. Davey, writing from Uzuakoli, confused the issue by specifying 3 acres per person, but giving area-population figures which corresponded to 1 acre per person, an oversight wryly annotated by Barnes.[82] A further reply from Oji River contended that

> the number of patients is controlled by the ability to maintain discipline. All the patients in the clan should be in the Segregation Village. If clan discipline is lax, it will be necessary to augment it with European supervision. If this European supervision is thorough, the segregation village ceases to be worthy of the prefix 'clan' and becomes virtually a daughter settlement.[83]

From the original sequence of village visits and attempts to ascertain the likely success, staffing resources, and local compliance the mission would meet in a given community, to the decision to assign a regimented and bordered space within community lands to leprosy patients, the RCM Ogoja Leprosy Scheme was implicated in local discourse about land, borders and entitlement. The explicit linking of compliance – read as the desire to address and commit local resources to leprosy issues – to the extension of mission welfare input is epitomised in the reflections on 'clan' discipline outlined above. This gave the mission a potent role as arbiter in a variety of land and resource disputes, and encouraged and fostered new ways of thinking about the fixity and legal status of land use throughout the colonial province.

Leprosy, development and a mission for modern medicine

Within the especially narrow horizons of the colonial administration in Ogoja as a beacon of development planning, the interventions of the RCM Ogoja Leprosy Scheme loomed large, as was demonstrated in 1950, when V. K. Johnson, the Resident for Ogoja Province, commended the rural development efforts being made by Barnes in the various villages attached to the leprosy scheme. Following the First Provincial Staff Conference, held at Abakaliki in August of 1950 to consider the Community Development

Programme for the Province, Johnson wrote to Barnes to inform him of the progress of the meeting, and to secure his assistance in propagandising for a Community Development 'movement', stating that

> nowhere in Nigeria is there such a remarkable opportunity open to us to get such a movement started, as in [Ogoja] … There is, in fact, no field of human activity which could not be improved by community development, or in simpler terms, by the spirit of self-help.[84]

Appended to what was effectively a circular to the Europeans working in Ogoja, calling on them to encourage community and co-operative effort, was a handwritten message to Barnes, noting:

> You are, of course, already doing commu[nity] development work in a big way, but I wanted to keep you and your wife in the [know,] so have addressed this letter to you which is the sam[e as] to others.[85]

Barnes was pleased at the recognition accorded his leprosy-related development work, detailing a number of initiatives than might accord with and inform official policy:

> Apart from village planning and sanitation, which I trust are taken for granted, we also conduct evening classes at our Centre here in Ogoja and at Kakwagom Leper Village, stage Concerts on big occasions, encourage football for the school children, and attempt brick making.[86]

He had long nurtured the notion that leprosy control might provide a spearhead for the inculcation of development ideals in an area with such a high notional prevalence of the illness, as outlined in a 1947 position paper he had presented to Johnson's predecessor, P. M. Riley. In a telling meditation on the spatial re-organisation occasioned by the building of a leprosy village, and on the potential ramifications of this process for the society at large, Barnes outlined his core principles regarding leprosy and its control:

> The leper community has been uprooted from its traditional milieu and expects a new mode of life, and is prepared in the hope of cure to adapt itself. None the less, the policy should be one of development rather than change, a growth based on traditional customs and native industries. This flexibility I should think compares very favourably with the resistance and conservation [sic] of the general community. Habits once acquired in the colony are deeply ingrained especially when they pay well.[87]

He contrasted the leprosy colony with bureaucratic government development schemes, which were held to reward the well-trained and able-bodied and to create civil servants. He also pointed out that government support of the

colonies envisaged by Barnes would save money, inculcate practices of hygiene, and help those among the most impoverished in any community,[88] endowing them with technical abilities which could be exercised to commercial ends upon discharge from the colony.

While the practical effect of the 1950 Community Development moves was to stream additional money towards the development of feeder roads into leprosy villages, and to underwrite some of the capital costs which had been omitted under the headings of the 1940 Colonial Development and Welfare Act,[89] the understandings of development planning in the context of the RCM Ogoja Leprosy Scheme had distinctly charitable and communitarian overtones. Commending local principles of land tenure,[90] and vaunting craft and technique, Barnes sought to universalise the experience of leprosy patients, and to abstract from it a set of developmental principles which would commend colonial government to the population for which it was held to be responsible.

Though this conception of the role of leprosy control rather overstates its ideological significance, medical and social interventions surrounding the RCM Ogoja leprosy scheme resulted in the framing and clarification of issues regarding taxation, boundaries, trade and the meanings vested in 'clan' and ethnicity. The proactive role of the RCM in community intervention, employment and land use policy endowed it with a strategic role in the extension of the colonial administrative remit in Ogoja. The notions of co-operation and compliance implied in self-help principles encouraged local recourse to the mission in the courting and seeding of development projects, and inventive responses to disputes between neighbouring groups. In the end, the strategic role of leprosy control in Ogoja in formulating and managing the relations between missionaries, the state, and Africans epitomise a creative function of modern medicine with regard to the production of local and national identities and allegiances. The mechanisms revealed in the analysis of this particular modern medical enterprise denote the scope and limitations of the colonial state, and remind us that the 'modern' in medicine reaches beyond the realms of the technical or the narrowly institutional, into the construction of space, ethnicity and governance.

Notes

1 C. Bonneuil, 'Development as experiment: science and state building in late colonial and postcolonial Africa, 1930–70', *Osiris* 15 (2001), pp. 258–81.
2 Dan Brockington, 'Politics and ethnography of Third World environmentalisms—notes from Tanzania', African Studies Seminar, University of Oxford, 5th June, 2003, modelled the appropriation of development rhetoric as a means of argument about resource entitlement in the context of land use in southern Tanzania.
3 T. Falola, *Development Planning and Decolonisation in Nigeria*, Gainesville: University of Florida Press, 1996.
4 MMM archives (Drogheda) – 1/Dio/8/16. Letter from McGettrick to Miss J. Powell, Dublin, dated 26th January 1945.

5 Ogoja Convent Files. Copy of letter from the Leprologist, Ogoja Leper Settlement, to the District Officer, Ogoja, dated 29th January 1945.
6 J. Manton, 'The Roman Catholic Mission and leprosy control in Ogoja Province, Nigeria, 1936–60', unpublished PhD, Oxford, 2004, ch. 3.
7 These papers are in the Ogoja Convent Files, and are dated individually at the time of writing. The dates span the period from January 5th to August 27th, 1945. Where handwritten, the handwriting is Barnes' own. The material from April to August 1945 is mostly typed, and consists of reports which may be by either Barnes or one of the three MMM Sisters who arrived in Ogoja at the end of March 1945. This material will subsequently be referred to as Village notes – 1945.
8 A survey on the incidence of sleeping sickness in Obudu had been carried out by government doctors, and some notes on the incidence of both sleeping sickness and goitre had been sent to Barnes at his own request.
9 Village notes – 1945. Ukpe, 10th January.
10 Village notes – 1945. Otukwang, 7th January.
11 Village notes – 1945. Ukpe, 10th January.
12 Village notes – 1945. Kakum, 12th January.
13 Village notes – 1945. Bendi, 14th January.
14 Ibid.
15 Village notes – 1945. Obudu, 5th January.
16 Village notes – 1945. Otukwang, 7th January.
17 Village notes – 1945. Ukpe, 10th January.
18 Village notes – 1945. Kakum, 12th January.
19 Village notes – 1945. Bateriko, 17th January.
20 Village notes – 1945. Akaju Clan, 1st March.
21 Village notes – 1945. Kackwagum, 10th March.
22 Village notes – 1945. Nkim Clan, 17th March.
23 Village notes – 1945. Okuku. 9th April and 3rd May.
24 Ibid., 17th May. John Holt's refers to one of a network of trading outlets throughout Nigeria – the company has been trading in Nigeria since the nineteenth century.
25 Ibid. The crossroad referred to would seem, from a sketch map with the notes, to be that between the Enugu–Obudu road which passed close to Ogoja, and the Ogoja–Okuku road.
26 Ibid. 19th May.
27 Ibid. 11th June.
28 Ibid. 18th June.
29 Ibid. 30th June.
30 Ibid. 30th July. The entry marked 7th August also mentions a similar tactic, and cites harvest as a complicating factor regarding the release of labour for house building.
31 Village notes, 1945. Mbube. Before 16th May to 27th July. The quoted passage is at the beginning of the group of notes, but is undated. It precedes an entry for 16th May, and mentions a deadline of 27th May for house building.
32 Y. Karmon, *A geography of settlement in Eastern Nigeria*, Jerusalem: Magnes Press and Hebrew University, 1966, pp. 76–77.
33 Ogoja Convent Files. J. Barnes, 'Leprosy in Ogoja Province'.
34 Nigerian National Archives, Enugu (NAE), OGPROF 2/1/2861, p. 15. Letter from P. M. Riley, Resident, Ogoja, to the District Officer, Abakaliki, dated 9th April, 1945, and copied to McGettrick.
35 Ogoja Convent Files – Inspection notes: Ogoja Province: Roman Catholic Mission leprosy scheme, 3rd-6th June, 1946. Report by T. D. Money, Appendix: 'Administration of hydnocarpus oil: technical errors'.

36 Ogoja Convent Files – Ogoja Leper Village School. Supervisor's Report. Inspection dated 19th October 1948.
37 NAE, OGPROF 2/1/2861, p. 50. Copy of letter from H. J. S. Clark, District Officer, Ogoja Division, to J. Barnes, RCM Ogoja, dated 1st October 1945.
38 NAE, OGPROF 2/1/2861, p. 53. Letter from McGettrick to H. J. S. Clark, District Officer, Ogoja Division, dated 16th October 1945, and annotation from Clark to the Resident, Ogoja Province, dated 22nd October 1945.
39 NAE, OGPROF 2/1/2861, p. 55. Letter from P. M. Riley, the Resident, Ogoja Province, to McGettrick, dated 26th October 1945.
40 NAE, OGPROF 2/1/2861, p. 54. Letter from Barnes to H. J. S. Clark, District Officer, Ogoja Division, dated 20th October 1945.
41 NAE, OGPROF 2/1/2861, p. 57–58. Letter from McGettrick to P. M. Riley, the Resident, Ogoja Province, dated 3rd November 1945, endorsed overleaf by Riley to Clark, and by Clark in reply.
42 Ibid.
43 NAE, OGPROF 2/1/2861, p. 55. Letter from P. M. Riley, Resident, Ogoja Province, to the Native Authorities, Mbube, c/o the District Officer, Ogoja Division, dated 30th October 1945.
44 NAE, OGPROF 2/1/1790, p. 531. Letter from P. M. Riley, Resident, Ogoja Province, to the Secretary, Eastern Provinces, dated 7th December 1945.
45 NAE, OGPROF 2/1/1790, p. 548. Letter from the Acting Secretary, Eastern Provinces, to the Resident, Ogoja Province, dated 25th January 1946.
46 Ogoja Convent Files. Copy of letter from the Medical Superintendent, Ogoja Leper Settlement, to the Senior Leprosy Officer, Oji River, dated 15th April 1947.
47 Ogoja Convent Files. Copy of letter from the Medical Superintendent, Ogoja Leper Settlement, to the Resident, Ogoja Province, dated 30th April 1947.
48 Ogoja Convent Files. Minutes of meeting of European staff, Ogoja L. S., 5th July, 1947.
49 Ogoja Convent Files. Minutes of meeting of European staff, Ogoja L. S., 24th August, 1947.
50 MMM archives – 1/MMM/1/10. Letter from Martin to McGettrick dated 28th February 1948 notes the 'great pity [Barnes] would not return to Ogoja or Abakaliki and really consolidate the work', and comments on the difficulty of finding a lay male doctor willing to replace him and assist Chambers.
51 This clan council, which represented the Osokum clan, were responsible for the area where the Kakwagom (also referred to in some documentation as the Boki) leprosy segregation village was sited. The council had been referred to by Clark in October 1945 as highlighting the practice of charging for outpatient treatment. The variety of names and titles by which this group were referred to in correspondence, while not in itself a source of confusion to the correspondents, demonstrate the administrative shortcomings arising from historic understaffing of the colonial government apparatus in Ogoja Province in the 1940s.
52 Ogoja Convent Files. Letter from H. J. S. Clark, Senior District Officer, Ogoja Division, to the Leprologist, RCM Ogoja, dated 17th May 1948.
53 MMM archives – 1/Fou/4(n)/2. Copy of letter from the Department of Medical Services, Lagos, to the Secretary, Eastern Provinces, Enugu, dated 22nd February 1946, encloses a copy of a draft of this agreement, entitled *Memorandum of Agreement between Government and the Roman Catholic Mission on the development and execution of anti-leprosy work in the Ogoja Province.*
54 Ogoja Convent Files. Letter from Sr. Dr. M. V. Chambers to the Senior District Officer, Ogoja Division, dated 2nd June 1948.
55 Ibid.
56 Ogoja Convent Files. Letter from Anthony G. Saville, Assistant District Officer, Ogoja Division, to the Medical Superintendent, Ogoja Leper Settlement, dated

26th July 1948. NAE, OGPROF 2/1/2861, p. 170. Letter from M. Chambers, Medical Superintendent, Ogoja Leper Settlement, to the District Officer, Ogoja Division, dated 10th August 1948. Chambers reply draws a distinction between the contaminated registers held at the villages, and the copy held centrally in Ogoja.

57 Ogoja Convent Files. Letter from Sr. M. Anna[?], Ogoja Leper Settlement, to Fr. McManus, RCM Afikpo, dated 11th August 1948, lists a total of 1770 inpatients in the villages of Ogoja, Okuku, Abuochichi, Mbube Irruan, Kakwagom and Obudu, on 1st July 1948, compared with 1116 (1613 including Abakaliki and Ngbo) on 1st January 1948. Her letter expands on the thesis of contaminated registers, noting that compilations of admissions, discharges and deaths could only be compiled when tours to all the villages had been completed, implying that the registers could not be brought to the office in Ogoja.

58 NAE, OGPROF 2/1/2861, p. 169. Letter from A. G. Saville, District Office, Ogoja, to the Resident, Ogoja Province, dated 12th August 1948.

59 NAE, OGPROF 2/1/2861, pp. 175–76. Letter from the District Office, Ogoja, to the Resident, Ogoja Province, dated 15th November 1948.

60 Ibid.

61 Ibid. A number of handwritten notes to this effect were appended at the base of the letter.

62 NAE, OGPROF 2/1/1790, p. 677(b). Letter from A. G. Saville, Assistant District Officer, Obudu District, to the Resident, Ogoja Province, dated 29th December 1948. This correspondence deals with the construction of feeder roads to leprosy villages, and makes no adverse comments about the expansion of RCM leprosy work in the area.

63 Ogoja Convent Files. Letter from H. West-Pierce, District Officer, Ogoja, to Dr. Chambers, Leprosy Supt., RCM Ogoja, dated 1st December 1948, and letter from Chambers to West-Pierce dated 10th December 1948.

64 Ogoja Convent Files. Letter from McGettrick to Senior Leprosy Officer, Oji River, dated 4th May 1949.

65 NAE, OGPROF 2/1/1788, p. 148. Memorandum from the Director of Medical Services, Lagos to the Senior Health Officer, Eastern Provinces, Enugu, dated 19th March 1940, endorsed to the Resident, Ogoja on the 25th March, 1940. The endorsement asked that McGettrick be informed of the decision of the Nigeria branch of BELRA, meeting on 9th March 1940, not to approve a grant to the Ogoja Provincial Leprosy Board. This decision was reached on the grounds that a detailed plan of work had not been submitted.

66 *British Empire Leprosy Relief Association. Annual Report*, (1945), pp. 4–6.

67 *British Empire Leprosy Relief Association. Annual Report*, (1946), p. 7.

68 *British Empire Leprosy Relief Association. Annual Report*, (1946), p. 8.

69 Manton, 2004, ch. 6.

70 *British Empire Leprosy Relief Association. Annual Report*, (1956), p. 8, and (1961), pp. 10–11.

71 Ogoja Convent Files. Letter from A.W. Colin, Assistant District Officer, Ogoja Division to the Leprologist, RCM Ogoja dated 11th November 1946.

72 Ogoja Convent Files. Letter from the Assistant District Officer, Obudu, to the Doctor-in-Charge, RCM Ogoja, dated 11th February 1947. The charge of ignorance is quoted from the deputation, rather than concluded by the correspondent, while the charge of attendance at the market by leprosy sufferers is said to be corroborated by Police Intelligence Reports.

73 Ogoja Convent Files. Letter from the Senior District Officer, Ogoja Division, to Dr. Barnes, Ogoja Leper Settlement, dated 3rd April 1947.

74 Ogoja Convent Files. Letter from Ogoja Leper Settlement to the Senior District Officer, dated 14th April 1947.

75 Ogoja Convent Files. Letter from the Medical Superintendent, Ogoja Leper Settlement, to the Senior Leprosy Officer, Oji River, dated 15th April 1947.
76 Ogoja Convent Files. Letter from Ogoja Leprosy Settlement to the Senior Leprosy Officer, Oji River, dated 13th January 1948.
77 NAE, OGPROF 2/1/2861, p. 169. Letter from A. G. Saville, Assistant District Officer, Ogoja Division, to the Resident, Ogoja Province, dated 12th August 1948.
78 Ogoja Convent Files. Letter from J. Barnes to the Senior Leprosy Officer, Udi, via Enugu, dated 29th August, 1947.
79 Ibid.
80 Ogoja Convent Files. Letter from K. S. Seal, Nigeria Leprosy Service, Ossiomo Settlement, to J. Barnes, dated 22nd September, 1947.
81 Ogoja Convent Files. Letter from A. McKelvie, Oji River, to J. Barnes, dated 6th September, 1947.
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83 Ogoja Convent Files. Letter from Central Leprosy Unit, Oji River, to J. Barnes, dated 9th October, 1947.
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85 Ibid. The corner of this page is not legible, but the remainder preserves the sense of the message.
86 Ogoja Convent Files. Copy of letter from J. Barnes to the Resident, Ogoja, dated 27th September, 1950.
87 Ogoja Convent Files. Letter from J. Barnes to the Resident, Ogoja, dated 26th July, 1947, enclosing a paper entitled 'Farming Industrial Leper Colonies'.
88 Ibid. Barnes notes that 'the lepers, after the insane, are the most neglected element in this society.'
89 Falola, 1996, ch. 3.
90 Barnes, 'Farming Industrial Leper Colonies', noted that the Ogoja land tenure system 'seems to strike the happy but difficult balance between private and public enterprise which avoids mistakes of extreme right and left, America or Russia'.

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9 Cholera, consumer and citizenship

Modernisations of medicine in Japan

Akihito Suzuki and Mika Suzuki

Introduction

Medical modernisation in Japan had its foundational moment in 1871–72. The dawn of modernity came upon Nagayo Sensai (1838–1902), who visited the USA and eleven countries in Europe for two years from 1871 as one of the team of government officials led by Lord Iwakura Tomomi.[1] The team had a mission to learn about Western civilisation and state policies in order to modernise Japan, which had just gone through the Meiji Restoration. The Tokugawa Shogunate, after ruling the country for 250 years, was brought down and the Emperor was restored as a powerful monarch who would lead Japan into a modernised power. The revolutionary activists, many of whom were lower *samurai* or members of the ruler-warrior class, quickly transformed themselves into politicians and bureaucrats of the central government.[2] Nagayo was typical of the revolutionary-turned-bureaucrat: he was born into a medical family who served the small Ōmura Domain in the South-Western part of Japan and from this relatively obscure background, he eventually became the Director of the Sanitary Bureau of the Home Ministry and laid the foundation of modern Japanese medical policies.

While this future 'father of public health in Japan' was immersing himself in Western medical policies, Nagayo had a moment of epiphany. He wrote that he had often heard English and German words such as 'sanitary', 'health' and 'Gesundheitplaege' but had not examined their meanings carefully. He started to suspect, however, that these words were far from simple and that he had missed their deeper implications. Eventually, he recognised that in Western countries the state was responsible for the protection of the health of the people; there was a state administrative office which planned and executed various medical policies based on science; Japan needed such an office in order to become a modernised state.[3] Nagayo 'discovered' the basic principle which helped him to conceptualise the relationship between the state, the individual and the society. Nagayo implied that in Europe he encountered and discovered the principle of Western medical policy and public health; he introduced the concept to Japan as the Director of the Sanitary Bureau, and he modernised the medical polity of Meiji Japan.

In his story, his experience in Western countries provided a key to the state-initiated sharp break 'before' and 'after' the Meiji Restoration. Nagayo's tale thus symbolised the trinity of modernisation, the state and Western medicine. It has been retold many times since, now occupying an almost legendary status in the modern medical history of Japan.[4]

It should be noted, however, that, like all myths and legends, Nagayo's tale hides as much as it reveals. Nagayo certainly exaggerated the discontinuities before and after the Meiji Restoration. In many key areas, such as medical education and vaccination, the introduction of Western medicine was well under way from the late eighteenth century and the early nineteenth century.[5] Most importantly, Nagayo laid one-sided emphasis on the role of the state in the medical modernisation of Japan. According to Nagayo's view, Japanese society and its people were something to be moulded into modernity through the action of the Meiji government; active and innovative roles were monopolised by the government and the elite. The society and the masses, on the other hand, were assigned passive roles: at best they were co-operative, at worst they held on to tradition and resisted change. This Director of the Sanitary Bureau related a classic history 'from above'. It is, however, somewhat surprising to find that many historians have implicitly agreed with Nagayo's view. Countless works of various historiographical or ideological convictions have agreed that the Meiji government and its medical officials, many of whom studied medicine in the West, started a new programme and led Japanese society into modernity. Whiggish histories hailed this process as the triumph of rational and scientific policy; Marxist historians exposed the militaristic and imperialistic motives of the medical and public health policies of modern Japan; more recent Foucault-inspired historians condemn the entire process of modernisation as an extension of disciplinary power over people's everyday life.[6] Despite ideological differences, all of them agree on two basic points: the Meiji Restoration represented a sharp break, and medical modernisation was the product of the initiative of the state, which acted upon an inert society. In other words, they lack the social-historical perspectives of the dynamics of the behaviour of common people.

The dichotomy between the elite/modernisation and the masses/tradition has truth in it, as I will briefly mention below. Closer examination of the situation, however, suggests that the policy of the elite and the common people's health-seeking behaviour had considerable overlaps. The boundary between the modern and the traditional was also much fuzzier. One needs a much more sensitive and nuanced framework than the present historiographies suggest.

This paper will argue that the significant locus of the merging of the traditional and the modern in the Japanese context was the marketplace, in which both the masses and the elite participated. This marketplace of health, so to speak, was the social space where continuity rather than discontinuity was obvious and the presence of both the elite and the masses was evident.

The present paper thus attempts to examine the medical history of modern Japan from the viewpoint of the social history of the 'health for sale', conceived by the late Roy Porter.[7]

To do so, this paper will focus on one topic: the response of the common people to the epidemic of cholera during the nineteenth century. This is a particularly rich field to observe the modernisation of Japanese medicine, because the Meiji government forged its modern state medicine and public health policies largely through its response to cholera from the 1870s to the 1890s. Epidemics of cholera, as in many other countries, were a crucible for the modernisation of medicine in general and public health in particular.

The first section below will provide a summary of the Meiji government's policies against cholera and people's reaction against them. The second section will discuss the continuity between traditional Japanese–Chinese medicine and Western medicine over the aetiology of and regimen for cholera. This culture of regimen was also practised across diverse social classes. The third section will show that people practised the regimen for cholera through the marketplace or choice of food to purchase, and explore the implications of this.

The state measures against cholera: policies, resistance and acceptance

Cholera first appeared in Japan in 1822, during its first pandemic which started in Bengal in 1817.[8] This early appearance is hardly surprising: Japan was one of the nodes of the flourishing trading sphere which included India, Southeast Asia and China, with an increasingly larger role being played by the United Kingdom and other European powers in the nineteenth century. Although Japan at that time strictly regulated foreign trade, its link with the trading zone of China, Korea and the Eastern half of the Indian Ocean was nevertheless strong enough.[9] Naturally, the disease entered the country from either Tsushima or Nagasaki, both officially approved ports for foreign trade. The outbreak was relatively small and geographically limited to the southwestern part of Japan. Although Osaka, the second largest city in Japan at that time, was hit, Edo, the capital and the largest city with a population of about one million, was spared from the disease.

The second occurrence of cholera to Japan was in 1858, the year when the Tokugawa bakufu signed a humiliating unequal treaty with the US and subsequently with four European powers.[10] In July, the US Navy's *Mississippi* brought the disease from the coastal cities of China to Nagasaki. In the port city, more than 800 people perished. Cholera quickly moved eastward along the major highway. The disease was rampant in Osaka in September and October, reputedly occasioning more than 10,000 deaths. Edo was ravaged around the same time, resulting in around 30,000 deaths in about two months. The disease waned in Edo in late October, only to be rekindled in the next year in several cities. Although people reacted with

horror, there were no signs of mass flight from Edo and other cities, which represents a sharp contrast with the mass flight observed in European and American cities hit by epidemics during the early modern period.[11]

The two epidemics of cholera in the Tokugawa period were characterised by the limited involvement of the Shogunate or the feudal lordships of domains, apart from distributing medicines or issuing pamphlets on the cure and prevention of the disease. Local studies reveal that each village was left to devise their own ways to fight against the epidemic: village officials often collected information and travelled widely in search of effective magical–religious talismans.[12]

The cholera returned to Japan for the third time in 1877, when the new Meiji government faced the Satsuma rebellion, the largest insurrection of former Samurai. For the next couple of decades, cholera was almost semi-endemic in Japan, with large numbers of deaths in 1879 and 1886, each exceeding 100,000 deaths.[13] The new Meiji state played a much more extensive role in fighting these epidemics than the shogunate of the Tokugawa era: medicine and public health fell in the realm of the responsibility of the state, as is evinced by the quote from Nagayo mentioned at the beginning of this paper. Nagayo was thus quite right in claiming a radical break from the ways in which epidemics were fought in the Tokugawa era.

In 1877, the Home Ministry (where the Sanitary Bureau belonged) drafted a set of rules, *Guides to the Prevention of Cholera*, the first national law on the prevention of infectious diseases. Facing the fierce epidemic in 1879, the Ministry established the *Provisional Rules for the Prevention of Cholera*. Next year, this was enlarged into the *Rules for the Prevention of Infectious Diseases*, which stated fairly detailed rules to fight cholera and five other infectious diseases (typhoid, dysentery, diphtheria, typhus and smallpox). Subsequently, numerous amendments and additions were made to the practical rules for the enforcement of the Rules of 1880. Finally, in 1897, the *Law for the Prevention of Infectious Diseases* codified public health measures against infectious diseases.[14] During the two decades between 1877 and 1897, cholera repeatedly ravaged the country, and the new Meiji government struggled to create a framework of public health measures and to establish the national and local organisations required for that purpose.[15]

In their attempts to create an effective public health framework, the government was eager to learn from the West how to combat this disease, and quickly incorporated measures based upon Western medical science.[16] In the 1870s and early 80s, the Sanitary Bureau utilised the service of foreign doctors who were employed by the government, as well as Japanese doctors who had a smattering of Western medicine. Erwin von Baeltz, who had studied under Wunderlich and became a professor of medicine at University of Tokyo, was among the most prominent of the former. Their advice was largely in line with the miasmatic theory, and strong emphasis was laid on cleaning smelly dirt. At the same time, quarantine and the isolation of patients were vigorously pursued. In 1888, the government sent Ishiguro

Tadanori, the surgeon-general of the army, to see Robert Koch in Berlin to ask the bacteriologist how to combat cholera in Japan.[17] Later, those who had studied medicine under Koch and other prominent German professors were actively engaged in public health measures. Kitasato Shibasaburō was the most eminent of those coteries of German-trained doctors who became the leading figures in public health in Japan. These German-trained Japanese medical scientists quickly trained younger students in Japan, at the University of Tokyo and the Institute for the Research of Contagious Diseases established by Kitasato in Tokyo in 1892.[18] By the late 1890s, bacteriological research in Japan was sophisticated enough to produce its own vaccine and to discover different strains of cholera bacillus. Both the vaccine and the strains generated huge and fierce controversies. Despite these controversies, the core part of the policy at the level of the central government proceeded relatively smoothly: basic principles such as disinfection, cleanliness, quarantine and isolation had not changed from the first establishment of state policies in 1877.

Devising policies was one thing, implementing them was quite another, however. At the practical and local level, the policy of the central government met with considerable difficulty and resistance.[19] Especially difficult was the enforcement of the isolation of patients in hospitals. The core problem was in sending patients away from home, the traditional locus of cure, care and death. Moreover, hospitals were alien to the majority of Japanese people. For reasons which are unclear, Japanese society in the early modern period had not developed hospitals, although in the medieval period there was extensive provisions of cure and care at hospitals run by Buddhist temples and monasteries.[20] At the beginning of the modern period, people were still unaccustomed to sending the sick to hospitals away from the home. The high death rate of the patients sent there and the wretched conditions of the cheap and makeshift buildings further increased people's distrust. The new government's unpopular measures such as the Conscription Law (1873) and the introduction of police force in the early 1870s acted as predisposing causes of the people's distrust of hospitals enforced by the government. Consequently, isolation hospitals were feared and hated, with rumours running that doctors disembowelled the patients alive and sold the livers as medicine. Particularly during the cholera epidemic of 1879, there were about fifty reported incidences of popular riots against the government's measures, many of which were centred on the resistance to isolation hospitals. In 1879 in Niigata, about 1,000 peasants gathered in the manner of a traditional peasants' uprising and demanded the closure of isolation hospitals. When their demand was not heard, they resorted to violence, killing several local government officials and looting rich merchants' houses.[21] In Chiba in the same year, a doctor who worked for the local isolation hospital was pursued by the angry people, beaten and killed. He had been extremely unpopular because of his practice of digging up corpses for the purpose of anatomical study.[22]

These social historical studies of people's response to cholera, conceived mainly in the New Left historiography of popular culture, have concentrated their attention on incidences of resistance against the measures introduced by the government. In so doing, they have framed popular attitudes to cholera in the dual dichotomy of modernity vs. tradition and the state vs. the populace. In this dual dichotomy, the social elite associated with the state is understood as having pursued Western-modelled public health measures and the populace is conceived as having clung to traditional ways of coping with epidemics. The so-called cholera riots are seen as the clash between the modern and the traditional, between the culture of the elite and that of the masses, and between the isolation hospital and the religious ritual against the demon of cholera.

Although those studies have thrown invaluable light on the incidence of resistance to medical modernisation in the context of the response to cholera, particularly on the schism between the elite and the masses, they are somewhat misleading in their emphasis on the resistance of the latter. There were numerous signs of compromise and adaptation from both the government and the populace. Central and local governments took pains to soften stern measures.[23] Isolating patients at their own home instead of hospitals was soon admitted. Doctors were given considerable autonomy and jurisdiction over whether to send the patients to hospitals or to admit isolation at home. The practice of domestic quarantine was soon found to be too cumbersome and of little use, and its enforcement considerably diminished. On the side of the populace, many actively supported the governments' policies against cholera. The donation of money and disinfectant medicine to local offices was widely practised. Brothel houses voluntarily proposed to build their own isolation hospitals, largely because they would rather pay the cost than suffer the closure. The donation of money from prostitutes was routinely reported in the press.[24] Likewise, theatres were quick to disinfect and clean their premises.[25] Stories were told of the members of local elite who chose to enter the isolation hospital in order to become an example for the masses.[26] In the light of those pieces of evidence mentioned above, it is better to characterise the Japanese government's policies as a mixture of enforcement and adaptation, and the Japanese people's response to the policies as a mixture of acceptance and resistance. The situation was much more fluid than has been depicted by the historians who have studied popular riots against the government's measures.[27]

Cholera and *kakuran*: caring for one's stomach

If the policies of isolation of patients suffering from cholera in hospitals represented a clean break with the past, the dietary regimen for the prevention of the disease showed remarkable continuity between the Tokugawa Period and the Meiji Period. It was also practised across diverse social classes. The reasons for this continuity and social inclusiveness will be discussed below.

During the two epidemics of cholera in the Tokugawa Period, Japanese doctors found that curing the disease was largely out of their reach. They mostly agreed, however, about the nature and diagnosis of the disease. The way in which doctors in Japan settled on the diagnosis of cholera reveals the smooth mixing of the indigenous medicine and Western medicine at that time.[28] Japanese doctors were quick to learn from Dutch sources that the disease which hit their country was called 'Asiatic cholera' by Western doctors. Since Japanese practitioners learned that cholera originated from India about which they knew very little, they were ready to follow the western diagnosis. On the other hand, Japanese doctors were far from blind followers of the Dutch medicine. They found that Chinese medicine was also helpful in understanding the disease. They readily identified the clinical picture of the disease called Asiatic cholera by the Dutch with one of the disease discussed in classic texts of Chinese medicine. The disease was *kakuran*, which had long been a well-established disease category within Chinese medical classics.[29] Several doctors independently reached the identification of cholera with *kakuran*, or at least many observed that cholera was very similar to *kakuran*. The typical symptoms of cholera – the violent diarrhoea and vomiting, the coldness of the extremities, the cramps of the legs, the agony of the patient and the rapid succession of death – all pointed toward the identification of *kakuran* with cholera. The season in which cholera hit Japan in 1858 confirmed the similarity, for *kakuran* was a disease that took place towards the end of the summer season. The two disease names, 'cholera' and '*kakuran*', thus coexisted in a single description of the disease in a very facile manner.

This identification profoundly influenced the subsequent medical discourse and people's response to cholera in Japan. Both the learned discourse about cholera and popular measures against the disease was formulated with the aetiology of *kakuran* in mind. *Kakuran* in Chinese medicine had long been regarded as caused by the combination of two factors affecting one's stomach: immoderate eating and cooling one's stomach. Likewise, Japanese medicine in the early modern period formulated the disease of *kakuran* into one of indigestion. When the food taken stayed too long in one's stomach and turned putrid, the putrid matter would become poisonous and harm one's stomach, causing violent diarrhoea or vomiting. The process was called *shokushō*, or alimentary harm.[30] There were many reasons for food staying too long in the stomach: most typical were taking too much food and eating particular kinds of food which were hard to digest. All these factors cause the stagnation and putrefaction of food in the stomach. Eating food which was already becoming putrid had a similar effect. When one's stomach was deficient in the vital heat, it lacked the power to digest food and stagnation and *shokushō* would follow. *Kakuran*'s aetiology was framed around the stagnation of food in the stomach.

During the cholera epidemic of 1858, the Japanese understanding of the disease was put squarely into the model of *kakuran*: in order to prevent

cholera, one should avoid the stagnation of food in the stomach and follow a special dietary regimen. Interestingly, this idea with a clear resonance with Chinese or indigenous medicine was most clearly formulated by Pompe van Meerdervoort, a Dutch military surgeon who was in Nakagaski during the epidemic to teach medicine to Japanese students.[31] Pompe (as he was called in Japan) asked his Japanese students and learned that the disease, or one with very similar symptoms, was called *kakuran* in Chinese and Japanese medicine. Although Pompe thought that cholera was more contagious than *kakuran*, his subsequent rules for the prevention of cholera for the city of Nagasaki clearly had *kakuran* in mind. The Dutch doctor notified the municipal governor that one should avoid cucumber, watermelon, apricot and unripe plum and that one should not spend the night in a naked state. Later, the governor added sardine, mackerel, tuna, octopus and others to the list of foods to be avoided. Focusing on digestion by way of the selection of food and of the heat of the stomach, the rules fitted very well with the aetiology and prophylaxis of *kakuran*. Interestingly, Pompe must have found that these precepts also made sense in the Western medical system. The cucumber and the melon, which had long been regarded as 'cold' and possibly harmful food in the Galenic system of dietary regimen, were regularly invoked as one of the causes of cholera in nineteenth-century Europe and North America.[32] It is very hard to know exactly what Pompe's rules of regimen owed to Western medicine or to Chinese–Japanese medicine. In any case, a Western doctor formulated one of the first rules for the prevention of cholera in Japan after the pathological model of *kakuran* and *shokushō*. Tokugawa Nariaki, a prominent *daimyo* (feudal lord) in the early nineteenth century, recorded in his medical notebook that freeing one's stomach from the stagnant food was key to the prevention of cholera: Nariaki added peaches and persimmons to Pompe's list of harmful fruits.[33]

The dietary regimen for the prophylaxis of cholera based on *kakuran* continued well into the Meiji period: indeed, it was preached with intensified ardour. In the epidemics of cholera in the 1870s and 80s, the dietary regimen continued to play a large part in the precepts issued by the government, along with cleanliness, isolation and disinfection. The Home Ministry's *Korera Yobō Yukai* [Instructions for the Prevention of Cholera] (1876) put cleanliness at the top of the list of rules, and second on the list was dietary regimen, which advised not to eat bad fish, shellfish, oysters and prawns, as well as unripe or overripe fruits.[34] The seventh item on the list said that one should put on a belly-warmer when asleep and should not sleep naked. Doctors trained in Western medicine regularly included these rules of regimen for the prevention of cholera which had unmistakable resonance with the aetiology of *kakuran* and *shokushō*. Even elite doctors who had studied medicine in Germany were keen to preach the harm of food stagnation: Mori Ōgai, one of the leading German-educated intellectuals at that time who later became the surgeon-general of the army, wrote about the harms done by unripe fruit and food that contains too much fat. Although Mori

thought he was extending the theory of cholera by Pettenkofer, under whom he studied, his use of a particular Chinese character suggests he had *shokushō* in mind.[35]

When one goes down to the more popular advice manuals, the emphasis on diet, foods to be avoided and keeping one's stomach warm is even more prominent. A broadsheet entitled '[An] illustrated guide to the prevention of cholera' issued in 1877 for the populace told its readers not to expose one's stomach to cold air, and to avoid indigestible food, as well as preaching cleanliness, temperance and suitable rest.

The broadsheet issued in 1886 listed foods to eat and not to eat in the style of a sumo league table. The champion of 'good' foods was *hirame*, or flounders. The list shows that soft-boiled eggs, soles, brines and eels were good. On the other hand, octopus was the champion of bad foods, with tunas, crabs, soba noodles and cucumbers following in the list.

In order to help common people memorise the rule, two verses were composed, printed and distributed in 1879. They are about food, regimen and the stomach, as well as about cleanliness and miasma:

> Eat and drink moderately
> Avoid things that are smelly
> Don't catch cold at stuffy night
> Keep away from any crowded site
> Put on clothes that are clean
> These are the rules for your hygiene
>
> Greasy food, sea food, green fruit, and sushi
> Noodles, and dumplings do you harm, you see?[36]

Newspapers reported *ad nauseam* incidences of cholera allegedly caught by eating particular food items. As late as 1900, *Yomiuri Shinbun* reported that a woman caught cholera because she ate melon, corn and shellfish.[37]

Figure 5 Korerabyo Fusegi no Zukai.
Source: Illustrated Prophylaxis of Cholera, 1877; Naitō Museum of Drugs

Figure 6 Korera-yobō Nichiyō Shokumotu Kokoro-e
Source: Guide to Everyday Food for the Prevention of Cholera], 1886; Naitō Museum of Drugs.

The dietary regimen for the prevention of cholera and the theory of dietary pathogenesis showed remarkable tenacity in the late nineteenth and early twentieth centuries, both in the learned and popular discourse on cholera. It also straddled the indigenous/traditional and the Western/modern, as mentioned above. Perhaps because of this structure, it was supported by both the progressive and the conservative, the elite and the masses. Most importantly, the dietary regimen was hailed as an important key by progressive-minded Westernisers. *Yomiuri Shinbun*, for example, embraced Western medicine and preached preventive measures against cholera based on western medical science. It also showed unrestrained contempt for practitioners of Chinese medicine, maintaining that their medicines of roots and barks were ineffectual and outmoded remedies. The newspaper's hostility to 'superstitious' healing methods such as amulets and religious rituals was particularly strong. The paper was, nonetheless, adamant in maintaining that dietary regimen was the most important. The newspaper even launched an attack on the emphasis on germs, isolation and disinfection. Not that the newspaper was out of touch with the latest development of bacteriology, on the contrary, it closely followed the discoveries of French and German medical scientists. In particular, it extensively covered Robert Koch's discovery of cholera bacillus in Calcutta, his triumphant return to Berlin and his receiving an honour from the German emperor. Nonetheless, this enlightened newspaper insisted that eating improper food resulting in the disturbance of the stomach was the chief cause of cholera. In an editorial which ran for two days, the paper made a foray into the contested terrain of the aetiology of cholera.[38] Although it sounded somewhat apologetic in not respecting some expert opinions, the editorial adopted the familiar 'seed and soil' model in the aetiology of the disease and laid very strong emphasis on the soil, namely the health of the stomach.[39] Devising its own metaphor of oil and fire, it

insisted that without the accumulation of combustible material, a spark should not cause fire: the cholera bacillus identified by Koch was compared to a spark, and the food that became putrid due to an inactive stomach was the combustible material. On the basis of this metaphor, the editorial maintained that the stagnation of putrid matter in the stomach was a necessary cause of cholera. Thus, the 'seed and soil' model was an important theoretical apparatus which secured continuity with the indigenous preventive measures of dietary regimen.

Dietary regimen persisted well into the age of triumphant bacteriology.[40] In 1906, a book of popular hygiene listed 'regimen' as one of four principles for the prevention of cholera, the other three being isolation, disinfection and cleanliness, combining bacteriology and *yōjō* (a Japanese word for traditional regimen) in the same book.[41] Sophisticated epidemiological research based on bacteriological principles in the 1900s did not so much reject as reframe the rules of dietary regimen, or at least certain parts of them. Since bacteriological experiments confirmed that water was necessary for cholera bacillus to survive, water and things related with water became the focus of bacteriological detective work. People working close to water, such as boatmen, fishermen and dockworkers became major suspects in the transmission of cholera.[42] When cholera broke out in a city, close epidemiological vigilance was cast over the city's wells, canals and rivers, which provided the dwellers with water for drinking, cooking, washing and other everyday activities. In a similar vein, certain foods associated with water and water-borne transportation were routinely invoked as responsible for transmitting cholera. This bacteriological reinterpretation of dangerous food concurred considerably with the old rules of *yōjō*. As fishermen were often carriers of cholera bacillus, fish from Tokyo Bay were suspects; a small outbreak of cholera in Kyoto in 1909 was traced to sushi bought in Osaka which had cholera outbreaks at that time; an explosive outbreak in a village near Kyoto in 1910 was attributed to eating mackerel imported from Korea where cholera was epidemic at that time.[43] Takano Rokurō's *Cholera in Japan*, a work published in 1926 as an epitome of Japanese research in cholera, listed dozens of works on the survival of cholera vibrio in tuna, devil-fish, oyster, shellfish and others.[44] In the caution against aquatic products, the old rules of *yōjō* survived with the help of bacteriological reinterpretation.

Regimen, consumerism and citizenship

Most importantly in the context of the argument of this paper, dietary regimen was about which food to *buy*, at least for residents of large cities of Tokugawa Japan. With the development of water-borne transportation and the establishment of Edo as a huge centre of consumption, the diversity of food consumed by common people in Edo is bewildering. Sushi and tempura, now the two most internationally famous of the Japanese cuisine, were sold on the street of Edo for artisans and labourers in the eighteenth and

nineteenth centuries.[45] Since food became something over which people could exercise *choice* as a consumer, *shokuyōjō* or dietary regimen was closely linked with the consumer culture of food in early modern Japan.

The dietary regimen for cholera persisted well into the age of bacteriology, partly because of the strength of the tradition of dietary regimen in traditional Japanese medicine in the Tokugawa period. During the Tokugawa period, more than one hundred books on general regimen (*yōjō*) were published, among which *Yōjō-kun* (1713) by Kaibara Ekken (1630–1714) was the most famous. These works on regimen were widely read, and were popularised through circulating libraries.[46]

Dietary regimen was a major part of the preventive measure against epidemics of cholera and other infectious diseases such as smallpox and measles. The regimen during an epidemic was often simplified into the avoidance or recommendation of specific food items. Dietary regimen was also regarded as effective on diseases which are not gastro-intestinal: for smallpox, there developed an elaborate system of dietary regimen according to the progress of the disease; during the epidemic of measles in 1862, a lot of published broadsheets told the populace in an easy-to-read format which food should be avoided and which food should be consumed to prevent measles.[47] One humorous print depicted the vendors of forbidden foods such as fish, sushi, soba and others taking revenge on the disease of measles.

These instructions were not just preached, but at least some of them were actually followed. Earlier records of epidemics often contained which particular food was avoided or sought after. When certain items were alleged harmful and others beneficial, and when a large number of people followed the advice, the prices of those food items were affected. From around the late seventeenth century, chronicles recorded the fluctuations of prices of particular food during an epidemic almost as a matter of routine. *A Chronicle of Edo* noted large fluctuations of the prices of various food items during the cholera epidemic of 1858:

Figure 7 Tosei Zatsugo Ryūkō Mashin Kassenki
Source: Contemporary Miscellany on the Battle of Measles Epidemic; (part), c.1860; Naitō Museum of Drugs.

> Vendors of fish became very small in number, because fish would turn out to be fatal when eaten. Accordingly, fishermen and fishmongers suffered heavy loss. So did restaurants and bistros. Sardines were thought to be especially poisonous, and few people bought them even when they were fresh. On the other hand, prices of eggs and vegetables rose.[48]

During the cholera epidemics of the 1870s and 80s, a similar phenomenon of the ups and downs of food prices according to the rules of dietary regimen was abundantly observed. Sudden shifts in demand and prices of particular food were regularly reported in the press. In Kyoto in 1878, the matsutake mushroom, a delicacy usually much loved by the Japanese, was reputed to have caused cases of cholera. Its price suffered a heavy slump immediately. The next year, the fishmongers of Kyoto were at a loss what to do with their octopus, which nobody ate lest they should catch cholera.[49] In Tokyo in 1879, the price of Chinese melons suffered a heavy downfall. Also in Tokyo in 1882, stalls which sold ice-lollies diminished from 108 to 79 due to the cholera epidemic in the summer. Soba-noodle bars and tempura bars also decreased considerably.[50] On the other hand, eels and loaches were reputed to be good and their prices soared in 1884, although some cases were attributed to eating these kinds of fish.[51] In the outbreak of 1886, *Yomiuri Shinbun* conducted a survey of the prices of various food items in Tokyo. In June the newspaper found that the sales of fishmongers slumped and sushi bars and soba-noodle bars suffered heavy losses. On the 26th of June the newspaper published an article which listed the ups and downs of the sales and prices of various food items. Items which recorded good sales and high prices were eggs, poultry, beef, dried bonito, grilled eels, vegetables, pickled radish, milk, starch gruel, dry confectionaries and choice sakes. The food items whose sales slumped included: raw fish, salted fish, tempura, sushi, shellfish (which suffered the heaviest slump), *nattō* and *tōfu*.[52] In Yokohama in the same year, stalls selling iced waters, fishmongers, tempura-bars, soba-noodle bars and fruit shops had no customers, while poultry, eggs, eels and Western food were in high demand.[53] In 1886, farmers in Chiba who brought peaches for sale to Edo found that the price had gone down so much that they could not pay the cost of transportation. Likewise, farmers of the agricultural hinterland of Tokyo found that bringing and selling Chinese melon to cholera-struck Tokyo did not pay.[54] Other instances of the ups and downs of food prices during the economy of epidemics were numerous.

The connection between the epidemic and the buying trend was such that some merchants would exploit it. A producer of pickles in Odawara reputedly made a fortune during the cholera epidemic in 1858. Learning this, a merchant speculated on pickles and prepared a huge stock, but, alas, pickles diet this time did not become fashionable and he suffered a heavy loss.[55] Indeed, such a practice had had a long history and was a well-established part of people's life since the early Tokuagawa period. In Edo in 1699, the city was hit by an epidemic of an unidentified disease called *korori*. During

the epidemic, the prices of pickled plum and the fruit of nandina (*Nandina domesticat*) soared, due to the reputed preventive qualities of these foods. It was, however, later found that a grocer invented the theory. He had a large stock of pickled plum imported from Osaka and he found that the supply of plums would be short this year. Intending to exploit this situation, he tried to beguile people into buying the food. In the end, however, his unethical business was found out and he was severely punished.[56]

These instances amply show that people changed their diet in response to epidemics and rules of dietary regimen. The dietary regimen was often called 'private' preventive measures which lay outside the direct activities of public authorities and civil society and was left to individuals, while isolation, hospitalisation, quarantine and disinfection were 'public' measures. The dietary regimen was, however, far from purely individualistic. Indeed, it was repeatedly claimed to be one of the cores of public duty of an individual in the time of epidemics. The dietary regimen straddled individual well-being and public welfare. The dual nature was put into sharp relief during the epidemics of cholera, because of the highly contagious nature of cholera and the 'seed and soil' theory in which it was seen. Indulgence in one's desire to eat and drink would bring cholera to the individual, who would then infect his or her family members, neighbours, fellow villagers and citizens. Gluttony of an individual would cause stagnation of undigested food in his or her stomach, cause cholera in him or her, and then spread the disease. The editorial of *Yomiuri Shinbun* was outraged at the selfish indulgence of a handful of people: 'despite their knowledge that certain foods were harmful, they ate thirty peaches, drank six glasses of iced water, and devoured tuna.'[57] Bad food items were often delicacies eaten for pleasure rather than for subsistence – sushi, tempura, soba noodles were (and still are) pleasure food, so to speak. The pleasure of cooling one's body in stuffy and humid summer nights were also frowned upon, since it deprived the stomach of the heat necessary for digestion. Ogata Masanori, the professor of hygiene at the University of Tokyo, succinctly summed up in his popular lecture on cholera: 'those who indulge in immoderate eating and drinking are manufacturers of cholera'.[58] Giving up those temporary pleasures of the body and the senses was to protect the health of both the individual in question and the community to which he or she belonged.

People's behaviour in terms of the choice and consumption of food was thus an integral part of their citizenship in the hygienic community of modern society, so to speak. The market of food acted as a social space that created conditions for hygienic citizenship.[59] Although we have ample reasons to believe that dietary regimen was practised by many people across diverse social sectors, not all of them followed the rules. In other words, the sphere of food consumption driven by the rules of dietary regimen was not comprehensive: a significant minority stayed outside this culture of health-oriented food consumption.

To begin with, the choice of foods, which underpinned the dietary regimen discussed above, was limited to those who lived in cities, while residents of

rural areas subsisted on relatively monotonous foods. In their 1877 instruction about the regimen to avoid fish, the Sanitary Bureau acknowledged that avoiding fish altogether must be difficult for those who lived near the sea.[60] This concern of the Bureau reveals that in many rural parts of Japan, there was little choice of food and epidemics could not much change the situation. All the accounts of price changes mentioned above came from large cities.

More importantly, a significant minority of city dwellers did not participate in the dietary regimen mediated by the food market. Many urban poor stayed outside the culture of preventing cholera through changing their food. Some consumers have tried to exploit the low prices of food that was redeemed harmful: *Yomiuri Shinbun* noted with glee that a man who ate many Chinese melons when their prices went down due to their reputed pathogenic quality died from cholera: he was, in the view of the newspaper, duly punished for his greed and indulgence.[61]

Urban slums presented more serious problems. In large cities in early Meiji Japan, urban slums mushroomed, and their residents suffered from chronic destitution. In the mid-1890s, journalists and social investigators started to visit those slums and publish what they saw in lurid and sensationalistic language. Works of journalists such as Matsubara Iwagorō and Yokoyama Gennosuke depicted almost subhuman conditions of those who lived in urban squalors.[62] One of those works, Suzuki Umeshiro's report on Nago-cho, Osaka's most destitute slum, included detailed observations of the people's attitude to cholera, since the reporter stayed there just when cholera broke in Osaka.[63] The reporter found that residents of Nago-cho had absolutely no qualms about eating foods that were deemed harmful. Fishmongers sold awful fish – bony scraps or half-rotten fish discarded by other fishmongers as unsuitable for respectable customers. Observing people eating such horrible food, the reporter wrote: 'every items sold in the shop was a powerful cholera-causing material in its own right.' Expressing the theory of dietary pathogenesis of cholera, the reporter also claimed that the rapid diffusion of cholera in this area was primarily due to their eating horrible and half-rotten food.[64]

From the viewpoint of the slum dwellers, eating proper food was far beyond their means: their income was not enough for buying just rice, and they collected half-rotten discarded food to survive. They could not afford proper food: their poverty forced them to eat half-rotten food and to become a spreader of cholera. One of Nago-cho's informants protested against the charge of their dietary habit propagating cholera: 'Rich people blame us for eating improper food and thus diffusing cholera to society. When we try to buy proper food, we find that we cannot make ends meet unless we engage ourselves with illegal activities.'[65] Although there is some doubt over the authenticity of the informant's words, Suzuki pointed out the crux of the problem: if eating properly was a requisite of hygienic citizenship, the urban poor, who could not buy proper food, faced a hard choice of being a criminal or being a cholera spreader. The vision of hygienic citizenship through the regimen under the marketplace excluded the poor sector of society.

Conclusion

This paper has examined the medical modernisation of Japan from the viewpoint of social history of health-seeking behaviour in the context of cholera. Although Japan was one of the first, and arguably most successful, non-Western countries which modernised and Westernised its medical and public health provisions, its path was far from a story of the even progress of modernisation and Westernisation. The pattern of modernisation was markedly different from one social sphere to another, and this paper highlighted the stark difference between the sphere of the policy of the state and other public authorities on the one hand and the sphere of individual consumption of food in the marketplace. Japan's modernisation of the state's public health machinery represented a sharp break around the Meiji Restoration, while the commercialisation of health-seeking behaviour that had developed much earlier in Edo and other large cities showed remarkable continuity. Commodification of health was flexible, or even protean, absorbing traditional *yōjō*, Western medicine, elite discourse and popular culture.

In his account of medical modernisation in Qâjâr Iran in the nineteenth century, Hormoz Ebrahimnejad excluded discussion of the practice of common people such as faith healing, magic and folk or household medicine, 'primarily because they were not involved in the nineteenth-century process of modernization'. I should like to argue that at least one aspect of medical modernisation in Japan was markedly different from Ebrahimnejad's Iranian model, in which the merging of the traditional and the modern took place within an institutional setting, centred on the hospital.[66] As an alternative or complementary perspective to works such as Ebrahimnejad's one that examines the modernisation process within the state institutions, I propose to study the role of the marketplace as the meeting point of modern and tradition. Fernand Braudel wrote '[the] clamour of the market-place has no difficulty in reaching our ears.'[67] Perhaps it is time for medical historians to listen to the clamour of the marketplace, in order to grasp the complex set of modernisations of medicine.

The economic and commercial aspect of medical modernisation is emphasised partly because it is a relatively new historiography, which one hopes will yield fresh insights into the medical history of modernisation, which has been told using the framework of science, the development of state apparatus, or imperialism. It will also help us to contextualise the present situation of post-modern medicine, in which medical knowledge is increasingly becoming a commodity chosen by individuals as consumers in a free market.[68]

Notes

1 Ban Tadayasu, *Tekijuku to Nagayo Sensai* (The School of Tekijuku and Nagayo Sensai), Osaka: Sōgensha, 1987; Nagayo Sensai, 'Shōkō Shishi' (Autobiography), in Ogawa Teizō and Shizu Sakai (eds), *Matsumoto Jun Jiden, Nagayo Sensai Jiden* (Autobiographies of Matsumoto Jun and Nagayo Sensai), Tokyo: Heibonsha, 1980.

2 See, for instance, Andrew Gordon, *A Modern History of Japan: From Tokugawa Times to the Present*, Oxford: Oxford University Press, 2003, pp.9–137.
3 Ban, *Tekijuku to Nagayo Sensai*, pp. 133–34.
4 The episode is placed at the beginning of the official history of Japanese health policy. See Ministry of Health, *Isei Hyakunenshi* (One Hundred Years of Medical Polity), Tokyo: Gyōsei, 1976, pp.11–12.
5 See James Bartholomew, *Formation of Science in Japan*, New Haven: Yale University Press, 1989; William Johnston, *The Modern Epidemic: a History of Tuberculosis in Japan*, Cambridge, Mass.: Harvard University Press, 1995.
6 Major works include: Ministry of Health, *Isei Hyakunenshi;* Ono Yoshirō, *Seiketsu no Kindai* (Cleanliness and Modernity), Tokyo: Seikyūsha, 1997; Susan Burns, 'Constructing the National Body: Public Health and the Nation in Nineteenth-Century Japan', in Timothy Brook and André Schmid (eds), *Nation Work: Asian Elites and National Identities*, Ann Arbor: University of Michigan Press, 2000, pp. 17–50.
7 Works of Roy Porter on the subject of commercialization of health are vast. See, e.g. Roy Porter, *Health for Sale: Quackery in England 1660–1850*, Manchester: Manchster University Press, 1989.
8 Yamamoto Shun'ichi, *Nihon Korera-shi* (The History of Cholera in Japan), Tokyo: University of Tokyo Press, 1982, pp. 3–13.
9 Wakimura Kōhei, *Kikin, Ekibyō, and Shokuminchi Tōchi* (Famine, Diseases,and Colonial Government in British India), Nagoya: Nagoya University Press, 2002.
10 Yamamoto, *Nihon Korera-shi*, pp. 14–26.
11 The problem of epidemic flight in Europe and the USA is discussed in many works. See, for example, Paul Slack, *The Impact of Plague in Tudor and Stuart England*, Oxford: Clarendon Press, 1985; Charles E. Rosenberg, *The Cholera Years: The United States in 1832, 1849 and 1866*, Chicago: University of Chicago Press, 1962.
12 Takahashi Satoshi, *Bakumatsu Kyōran: Korera ga Yattekita!* (Orgy of Cholera at the end of the Tokugawa Era), Tokyo: Asahi Shinbunsha, 2005.
13 Yamamoto, *Nihon Korera-shi*, pp. 27–66. One Professor of Medicine at Tokyo University wrote that cholera was semi-endemic in Japan during the decade. Osawa Kenji, 'Nihon no Korera' (Cholera in Japan), *Tokyo Igakukai Zasshi*, No.6 (1887), 287–95, No.7 (1887), 11–12, No.8 (1887), 1–19, No.9 (1887), 28–31.
14 Yamamoto, *Nihon Korera-shi*, pp. 249–328.
15 For works on local public health reforms, see, e.g. Kasahara Hidehiko, *Nihon no Iryō Gyōsei: Sono Rekishi to Kadai* (Medical Administration of Japan), Tokyo: Keio University Press, 1999; Baba Yoshihiro, 'Sanshinpōki no Toshigyōsei' (Urban Administration of the Era of Three New Local Legislations), *Historia*, no.141 (1993), pp. 48–66; Ozaki Kōji, '1879 Nen Korera to Chihō Eisei-seisaku no Tenkan' (Cholera of 1879 and the Transformation of Local Hygienic Administration), *Nihonshi Kenkyu*, no.418 (1997), pp. 23–50.
16 Yamamoto, *Nihon Korera-shi*, pp. 745–857.
17 Yamamoto, *Nihon Korera-shi*, pp. 600–607.
18 Odaka Takeshi, *Densenbyō Kenkyujo* (Institute for the Research of Contagious Disease: a History), Tokyo: Gakkai Shuppan Centre, 1992.
19 Local studies of cholera riots are now vast. See, among others, Obinata Sumio, 'Korera Sōjō wo Meguru Minshū to Kokka' (People and the State over Cholera Riots', in Minshushi Kenkyukai (ed.), *Minshushi no Kadai to Hōkō* (Problems and Directions of Popular History), Tokyo: San-ichi Shobō, 1978; Sugiyama Hiroshi, 'Oboegaki: Bunmei Kaikaki no Hayariyamai to Minshūishiki' (Notes on Epidemics and Popular Consciousness), *Machidashi Jiyūminken Shiryōkan*, no.2 (1988), pp. 19–59.
20 For the development of hospitals in Japan, see Sakai Shizu, *Nihon no Iryōshi* (History of Medicine in Japan), Tokyo: Tokyo Shoseki, 1982.

21 Obinata, 'Korera Sōjō wo Meguru Minshū to Kokka'.
22 Numano Genshō, *Korera-i Genshō* (Gensho: a Cholera Doctor), Tokyo: Kyōei Shobō, 1978.
23 For changes in these measures, see Yamamoto, *Nihon Korera-shi*, pp. 407–584.
24 For hygienic co-operation of brothel houses and prostitutes, see *Yomiuri Shinbun* (Yomiuri News, hereafter YN) 1879/7/27; 1879/8/16; 1886/8/7; 1886/8/17; 1886/8/19; 1886/9/21; 1886/9/25; 1886/9/29.
25 YN 1879/8/9; 1886/8/12.
26 YN 1879/8/28.
27 Also there were considerable local difference in people's response: generally speaking, resistance in the form of riot was more prominent in rural areas in north-eastern parts of Japan, while fewer instances of riots took place in the economically advanced south-western parts of the country.
28 The overwhelming majority of Japanese medical practitioners at that time were trained in medicine that originated in China – the medical census of the 1870s counted that about 15 per cent of the entire medical practitioners identified themselves as practitioners of Western (Dutch) medicine, the rest being various 'schools' of Chinese medicine.
29 Otsuki Moshichi, 'Bunsei Jingo Tenkō Banki Kon Kakuran Ryōranbyo Zakki' (Kakuran of the Year of Bunsei Jingo), *Chugai Iji Sinpō*, no.1131 (1928), pp. 45–49; no.1132 (1928), pp. 106–7; no.1133 (1928), pp. 162–64; no.1134 (1928), pp. 216–18.
30 For a perceptive discussion of alimentary harm in early modern Japan,see Daidōji Keiko, 'Edo no Shokushō' (Alimentary Harm in the Edo Period), in Akihito Suzuki and Ishizuka Hisao (eds), *Shokuji no Gihō*, Tokyo: Keio University Press, 2005, pp. 147–67.
31 For the life of Pompe van Meerderwoort, see Miyanaga Takashi, *Pompe: Nihon Kindai Igaku no Chichi* (Pompe: the Father of Modern Japanese Medicine), Tokyo: Chikuma Shobō, 1985.
32 During the epidemic of cholera in England in 1832, an article in the *Edinburgh Medical and Surgical Journal* said that 'repletion and indigestion should be guarded against; all raw vegetables, acescent, unwholesome food and drink avoided' and an article in the *Foreign Review* said to avoid 'exposure to cold, to chills, to the night dew, to wet and moisture; the use of cold fluids, and of cold, flatulent and unripe fruit'. R. J. Morris, *Cholera 1832*, New York: Holmes & Meier Publisher, 1976, p. 175. For similar advice, see Charles E. Rosenberg, *The Cholera Years*, Chicago: University of Chicago Press, 1987, p. 30. For the Galenic regimen, see Ken Albala, *Eating Right in the Renaissance*, Berkeley: University of California Press, 2002.
33 Ishijima Isao 'Mito Rekkō no Isei to Kōsei-Undō' (Medical Polity and Health Movement of Mito Rekkō), *Kōshu-Eisei*, 58 (1940), pp. 691–98.
34 Home Ministry, *Korera Yobō Yukai* (Instructions for the Prevention of Cholera), Tokyo: Shajikyoku, 1877.
35 Mori Ōgai, 'Korera Hō', (Legislation on Cholera), *Collected Works of Mori Ogai*, vol. 26, Tokyo: Iwanami Shoten, 1971, pp. 532–36.
36 YN 1879/9/13.
37 YN 1900/8/30; 1900/11/1.
38 YN 1885/9/2; 1885/9/4.
39 Many works have examined the social implications of seed and soil theory. See e.g. Michael Worboys, *Spreading Germs: Disease Theories and Medical Practice in Britain, 1865–1900*, Cambridge: Cambridge University Press, 2000.
40 The stark contrast often alleged between hygiene and regimen (or yōjō in Japanese), the former based on Western medical science and enforced by the modernising state and the latter embodying traditional people's view of their

body, is not tenable in this respect. For a similar continuity between traditional Japanese medicine and Western one, see Johnston, *Modern Epidemic*.

41 Anonymous, *Tsūzoku Densenbyōgaku Eiseigaku Kōgi* (Popular Lectures on Bacteriology and Hygiene), Tokyo: Chuō Eiseisho Shuppan, 1906, pp. 17–23.
42 See, for example, anonymous, 'Chiba-ken no Korera Denpan no Keiro' (The route of transmission of cholera in Chiba), *Dainihon Shiritsu Eiseikai Zasshi*, No.153 (1896), pp. 114–18; Yamagata Kitarō 'Meiji Yonjūichinen Chiba-ken ni okeru Eisei-jimu no Gaikyō' (Summary of Hygienic Works in Chiba Prefecture in the 41st Year of Meiji), *Chugai Iji Tsushin*, 27 (1908), pp. 65–67.
43 Anonymous, 'Kyoto no Korera' (Cholera in Kyoto), *Kyoto Igaku Eisei Zasshi*, no.199 (1910), pp. 12–14; Izutumi Juichi, 'Meiji Yonjūninen Kyotofuka ni Ryukōseshi Korerabyō ni tsuite' (On Cholera in the 42nd year of Meiji in Kyoto Prefecture), *Saikingaku Zasshi*, no.180 (1910), pp. 855–71.
44 Takano Rokuō, *Otsubo Itsuya, and Inouye Zenjurō*, (Studies of Cholera in Japan), Geneva: League of Nations, 1926, pp. 68–70.
45 Mitamura Engyo, *Goraku no Edo Edo no Shokuseikatsu* (Entertainment and Food Life of Edo), Asakura Haruhiko (ed.), Tokyo: Chukō Bunko, 1997, pp. 215–343.
46 Takizawa Toshiyuki, *Kenkō Bunkaron* (Health and Culture), Tokyo: Taishukan, 1998, pp. 18–42.
47 For the dietary regimen for smallpox and measles, see Kawamura Jun'ichi, *Bungaku ni Miru Tōsō* (Smallpox in Literature), Kyoto: Shibunkaku, 2006; Naito Museum of Drugs, *Hayariyamai no Nishiki-e* (Colour Prints of Epidemics), Kawashimacho: Naito Museum of Drugs, 2001, pp. 32–93.
48 Kanei Kengo (ed.), *Bukō Nenpyō* (A Chronicle of Edo), 3 vols, Tokyo: Chikuma Gakugei Bunko, 2003–4, vol.3, pp. 103–4.
49 YN 1879/6/12.
50 YN 1879/7/22; 1882/7/18; 1882/7/23.
51 YN 1884/8/28.
52 YN 1886/6/23; 1886/6/26.
53 YN 1886/7/6.
54 YN 1886/7/30.
55 YN 1886/7/30.
56 Kōkan Igaku Kōkyujo (Institute of Japanese–Chinese Medicine), *Bōbyō Sōsetsu* (Collected Treatises on Cholera), Tokyo: for Kitazawa Ihachi, 1879.
57 YN 1886/7/25.
58 YN 1890/7/21.
59 For the concept of hygienic citizenship, see, for example, works of sociologists, David Armstrong, 'Public Health Spaces and the Fabrication of Identity', *Sociology*, 27 (1993), pp. 393–410; Deborah Lupton, *The Imperative of Health: Public Health and the Regulated Body*, London: Sage Publications, 1995.
60 The Home Ministry's 'Advise to People over the Prevention of Cholera' appeared in YN 1877/8/31, 1877/9/1, 1877/9/3, 1877/9/4.
61 YN 1879/7/22.
62 Matsubara Iwagorō, *Saiankoku no Tokyo* (The Darkest Tokyo), 1893; Tokyo: Iwanami Shoten, 1988; Yokoyama Gennosuke, *Nihon no Kasō-shakai* (The Lower Societies of Japan), Tokyo: Iwanami Shoten, 1949. These and similar works are discussed in Kida Jun'ichiro, *Tokyo no Kasō-shakai* (The Lower Societies of Tokyo), Tokyo: Chikuma Shobō, 2000.
63 Suzuki Umeshirō, 'Osaka Nago-chō Hinmin-shakai no Jikkyō Kiryaku', (A Reportage of the Society of the Destitute of Nago-chō of Osaka) in Nishida Nagahisa, *Toshi Kasō-shakai* (Urban Underclasses), Tokyo: Seikatsusha, 1949, pp. 213–62.
64 A similar idea was expressed over the cholera in slums in Tokyo in YN 1886/8/12.
65 Suzuki 'Osaka Nago-chō Hinmin-shakai no Jikkyō Kiryaku', pp. 196–97.

66 Hormoz Ebrahimnejad, *Medicine, Public Health and the Qājār State: Patterns of Medicial Modernization in Nineteenth-Century Iran*, Leiden: Brill, 2004.
67 Fernand Braudel, *Civilization and Capitalism 15th–18th Century: Volume Three. The Perspectives of the World*, translated by Sian Reynolds, London: HarperCollins Publishers, 1984, p. 25.
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