Food, Medicine and the Silk Road: The Mongol-era Exchanges

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The Mongols are known for their restructuring much of Eurasia in their particular political mode, even when elements of it were borrowed and reinterpreted. They also had an immense cultural impact as well. This ranged from art styles to the complex hat and associated hair styles known as *boqta*, which even reached European high society. The Mongols carried art styles rather than originated them, but they set the style for much of Eurasia. They added many loan words in an incredible variety of languages. Some of these latter were spoken far beyond any area of direct Mongol influence, showing the power of the forces at work. One popular loan word was the Mongolian *sauqat*, "bribe," originally a "share of booty." Even the Portuguese, never touched directly by Mongol conquest or envoys, knew the word (Doerfer 1963-1975, Bd. I, pp. 345-347).

Another Mongol gift was an active exchange of foods and recipes, continuing and intensifying earlier exchanges. In addition, for the first time in history, there was the emergence of a unified Eurasian medical tradition, the "Islamic" medicine preferred in the Mongolian Empire and within its successor states. This was based on the same medical traditions taught in Salerno and in other early European medical schools. In China it even briefly eclipsed Chinese medicine as the preferred system. For a brief moment China, the Middle East, and the West were united medically. They even used some of the same recipes, including a few attributed to the great Greek masters — usually mentioned by name, even in distant China. Physicians in almost the entire Mongol world order got used to speaking about the body in more or less the same terms and even using generally the same interventions, including surgical.

Food

Food exchanges among the cultures of Eurasia were nothing new at the time of Mongol conquests. China had long borrowed foods, spices and even recipes from the West and Central Asia, and some foods and elements of food culture, such as Chinese tea-drinking, had even moved to the Middle East and beyond. (It took a long time to catch on, but was not common in China at that time either.) What was new with the Mongols was the unprecedented scale of the exchanges involved. Mongol court cuisine became the preferred cuisine of much of the Old World. It was greatly influential even where it was not preferred. Some of the foods involved, I would argue, even persist until the present day in their popularity. One, baklava, is very much a world food these days (Buell 1999, p. 216). The Mongols also popularized a new type of pottery, blue and white porcelain, which, if we may believe John Carswell, became popular precisely because porcelain dishes were ideal for consuming the new soupy dishes introduced by the Mongols. The fact that blue was the Mongol imperial color was merely icing on the cake.

Most popular among China's early food borrowings from the West were various bread foods and dumplings, including the relatives of the ubiquitous *jiaozi* 餃子 raviolis of today, but also apparently including the buns now known as *mantou* 饅頭(Buell 1999, pp. 216-217), both already popular under the Tang (618-906). These borrowings greatly expanded in scope under the Mongols as witnessed by the amazing variety of new bread foods found in Mongol-era collections of recipes. Among them are the relevant sections of the early Ming encyclopedia *Jujia biyong shilei* 居家必用事類 (*JJBYSL*), "Things that Must be Used When Living at Home," which, despite its date, carries on older, Mongol-era traditions. Interestingly, this text even goes so far as to call some of its fried dumplings by their Iranian name *sambusak*, or *samosa*, clearly pointing up their ultimate origin in the Middle East (Osamu and Seiichi 1973, 14: 34a).

Also a major part of Chinese food and foodstuff imports from the West was a great flow of spices and medicinals, both, in Chinese

terms, foods, at least when the medicinals were for internal use. Those from the Iranian side have been detailed by Berthold Laufer (1919) and by Edward Schafer (1963). Some cultivated plants, e.g., sorghum, were also introduced from as far as Africa via the Arabic and Iranian West. Sorghum acquired particular importance with the coming of distillation since sorghum is not only a useful plant in semi-desert areas, where it produces a good crop under difficult conditions, but can be fermented and distilled to produce a much favored vodka, *gaoliang* 高粱.[1] The truly important exchanges took place after the Han Dynasty, and especially during the period of disunity, China's middle ages, and under the Tang, the most geographically expansive of all Chinese dynasties. Yet wheat, goats and sheep had come to China during very early times indeed, and Chinese millet had moved west to the Tripolye Culture of Ukraine at an early date as well (Buell et al. 2000; Anderson 1988). Other traits probably moved with it.

The Mongol period began in China in the early 13th century when the north was conquered. The conquest of all of China followed in 1279. Mongol tastes determined a sophisticated court food culture stretching across Eurasia. There was an entirely different base for food among the Mongols, compared to China, Iran, or the Arabic world (Buell 2006).

The Mongols rose to power herding sheep and goats, along with some cattle, as well as horses, yaks, yak hybrids and camels, and moving from pasture to pasture to sustain their grazing. Besides their herding, they had time to hunt, gather a few wild plant foods and, when times were good and they could spare the manpower and their enemies were weak, they could raid and impose tribute relationships, often extracting food. Thus they came by cultivated grain, although the Mongols did raise a little millet on their own. But grain was never important on the steppe.[2]

By contrast the herds provided most of the food of the Mongols, supplemented by rare game and even rarer gathered foods. But, contrary to the popular impression about the Mongols, their herds were rarely consumed as meat. Mongol herds were more important as sources of dairy products, the true staples of daily life, and when meat was eaten it was rarely consumed in a whole form. Rather the preference was for a boiled product, a rich or not so rich soup (*shülen*) believed to concentrate the essence of the slaughtered animal (Buell et al. 2000; Buell 2006). It was this practice above all, i.e., the Mongolian preference for broth, and for soup, that proved to be their most influential contribution to the world cuisine of their era.

Soups

Although the unvarnished steppe broth or soup was not very sophisticated, made with some meat, bones, and whatever else was to hand, this quickly changed as the Mongols became masters of the old world. For one thing, no longer being dependent just upon what herds produced, the elite at least could eat more meat. This meant richer soups, and not just lamb, mutton and goat, although these meats remained the preferred repasts. They also had access to a wider range of additives, including cultivated plant foods, although the old gathered foods remained popular, and, most important, a widening range of spices, some brought from great distances, even as far afield as Africa (grain-of-paradise, for one example, *Amomum villosum* or *A. xanthioides*, called for in a number of Mongol era recipes). Just what resulted can be seen in the recipes for court banquet soups that form one of the largest single complex of recipes in the imperial dietary manual of Mongol China, the *Yinshan zhengyao* 飲膳正要, "Proper and Essential Things for the Emperor's Food and Drink" (*YSZY*), presented to the court and published in 1330. Altogether there are 27 recipes for variants of the traditional Mongol soup, all with additives that mark these *shülen* as much more than a simple Mongolian meat broth, although each is based on a mutton broth flavored with large, smoky cardamoms. These are the kind used today in Punjabi cooking (the Chinese, who got them from Southeast Asia, know them as *caoguo* 草果). To this is added one or more thickenings, most commonly chickpeas, an importation from Iraqi cuisine, in 15 of the 27 recipes, with the chickpeas first cooked and then skinned, in a manner characteristic of Mesopotamian cooking. Also used as thickenings are barley and fenugreek seeds (another Near Eastern contribution). There is one mention of oleaster fruits, at one time a Mongolian gathered food. Rice occurs in six recipes, three of which combine it with chickpeas (Buell et al. 2000, pp.105-107). The following soup is typical. It is named after a major spice, mastic, here given in a Turkic form:

Mastajhi [Mastic] Soup

It supplements and increases, warms the center, and accords *qi* 氣.

[Ingredients:]
Mutton (leg; bone and cut up), *caoguo* cardamoms (five),

cinnamon (2 *qian)*, chickpeas ["Muslim beans"] (one-half *sheng*; pulverize and remove the skins).

Boil ingredients together to make a soup. Strain broth. [Cut up meat and put aside.] Add 2 *ho* of cooked chickpeas, 1 *sheng* of aromatic non-glutinous rice, 1 *qian* of *mastajhi*. Evenly adjust flavors with a little salt. Add [the] cut-up meat and [garnish with] coriander leaves. [Buell et al. 2000, pp. 275-276]

Or, here is another court soup, with bear meat replacing the usual mutton:

Bear Soup

It treats migratory arthralgia insensitivity and [evil] foot *qi* [usually beriberi].

[Ingredients:]
Bear meat (two legs; cook. When done cut into chunks), *caoguo* cardamoms (three)

[Boil] ingredients [together into a soup]. Use three *qian* of black pepper, one *qian* of *kasni* [asafetida], two *qian* of turmeric, two *qian* of grain-of-paradise, one *qian* of *za'faran*. Adjust flavors of everything together with onions, salt, and sauce.[3]

Although the above examples are from Mongol China, we know that variations of these soups were eaten throughout the Mongolian world, with many local variants. This is witnessed by the widespread borrowing of the Mongolian word for them, *shülen*, into a variety of languages. In the Iranian west, *shülen* means an official banquet. It also was the honorific word for soup, what was ideally offered to an important personage (Doerfer 1963-1975, Bd. I, pp. 368-370). One actual recipe for one of these court soups from the Mongol west, called a *shülen*, survives in a Mughal-era court ritual book. Typically, it calls for starting with mutton and then thickening with chickpeas, and also rice. Added at the end are spices and other flavorings, namely salt, pepper, ginger, garlic, butter, onion, cinnamon, cardamom and cloves, all but the butter well known from recipes for the Chinese equivalents (Buell et al. 2000, pp. 106-107).

In addition to the banquet soup proper, the *shülen*, the Mongols of the imperial age also consumed many other forms of soups, or foods starting as soups. Most used noodles and other grain foods, a topic we will visit below.

Drinks

In addition to their soups, the Mongols also had other ways of consuming their preferred liquid diet. Although the distinction is not always well drawn in comparison to the *shülen*, the most common form was the *umdan*, "drink." This could be anything from a light broth to dried cheese added to water, or even a simple liquor, above all fermented mare's milk. It is generally called *airag* in Mongolian, but better known by its Turkic designation, kumiss. The *Secret History* makes it clear that *umdan*, "drink," and *shülen*, "soup," were the primary forms of food offered Chingis Khan by the members of his bodyguard:

When [Temüjin] had become Cinggis-qahan, Ögölei-cerbi, the younger brother of Bo'orcu, put on a quiver [*i.e.*, became a member of the *qan*'s bodyguard]. Qaci'un-toqura'un put on a quiver. Jetei and Doqolqu-cerbi, the two brothers, put on a quiver. When Önggür, Söyiketü-cerbi and Qada'andaldurqan, the three of them, spoke, saying:

Let us not allow [your] morning drink
[*umdan*] to be too little,
let us not allow [your] evening drink
to be neglected,

they became stewards [*bawurcin*]. When Degei spoke, saying:

Making a wether of two years into *shülen*,
let me not allow it to be too little in the morning.
Let me not be late with it at night.

Having [your] spotted sheep herded,
let me fill a cart [with them].
Having [your] yellow sheep herded,
let me fill up a pen [with them].
I have been gluttonous and bad.
Having [your] sheep herded,
let me eat their rectums,

Degei caused the sheep to be herded.

[*Secret History of the Mongols*, cited in Buell *et al*. 2000, pp. 43-44]

Such simple drinks of the Khan did not stay simple long. The sources of the period do make frequent reference to unsophisticated light broths, dried cheese in water (*grut*),[4] a Mongol favorite, and also to traditional beverages such as kumiss, from mare's milk and occasionally from camel's milk. Also increasingly noticed are many other kinds of drinks, some of them quite exotic. The *YSZY*, for example, has quite a number of non-traditional *umdan*, including several of the Arabo-Persian *sharab* tradition, one drink even called by that name (Buell *et al*. 2000, p. 389). There are herb and conventional teas, including what are apparently early variants of the later concentrated Mongolian tea, made in one case with butter (Buell et al. 2000, p. 393). There

are also a great many liquors. These are primarily wines but also distilled liquors, then finding their way into the steppe along with simple distillation apparatus. Interestingly, a great many of the known names for the liquors of the period are Turkic, pointing up probable origins.[5]

Once the predominantly liquid diet of the Mongols was established as court food, their subjects took it up as well, for prestige reasons. Another reason was that the food was getting better and better itself as court cooks and dietary physicians found ways to improve it, with the exchanges taking place by no means involving just liquid foods. Court cooks eagerly took up the best that the Old World had to offer with the tastes of their masters in mind. This above all included another side of the Mongol cuisine of the era, *ash*, another Mongolian borrowing from Turkic (Doerfer 1963-1965, Bd. II, pp. 59-62), meaning grain-foods, or, more narrowly, noodles, but also food in general, i.e., not *shülen* or *umdan*, per se.[6]

Above all the foods in this category were noodles and noodle-like foods, none of them as far as we know of Mongolian origin but borrowed from others and popularized by the Mongols. Perhaps the most famous example, and still eaten today,[7] was the large stuffed noddle known as *tutumash*, a Turkic term describing a noodle (*ash*) that was pulled and kneaded (*tutum*).[8] The *YSZY* has the following recipe:

Tutumash (This is a kind of kneaded noodle.)

They supplement the center, and increase *qi*.

[Ingredients:]

White flour (six *jin*. Make into *tutumash*), mutton (leg. Roast the meat. [Make into] *quruq qima* [and stuff *tutum ash*]).

Use a Good Meat Soup for ingredients. Add the noodles and roast [cook dry]. Adjust flavors evenly with onions. Add garlic, cream [or yogurt], finely ground basil.[9]

Quruq qima is a roasted and finely minced meat, another Turkic contribution. The garlic, basil and cream or yogurt, by the way, are superb additions. Note the role that broth plays in preparation of the noodle.

More or less the same recipe occurs in the nearly contemporary *Kitab al-tibakha*, written in Syria but reflecting Mongol-era cuisine, using an Arabized form of the name:

Tutmaj: Roll out dough and cut it [into noodles] and cook it in water until done. Put yoghurt, mint, garlic, clarified butter and fried meat with it [Perry 2001].

It is referred to frequently elsewhere as well, even if no recipe is given, indicating that this was a popular food indeed.[10]

Many other, still more assimilated borrowings eaten in Mongol China are listed in the *JJBYSL*. It includes 12 Muslim recipes: a [Tu.] *Chäkärli Piräk*, "sweet borek"; "Rolled Thin Pancakes"; filled dumplings; a [Tu.] *Kogurma*, a meat paste starting with a sheep's head; a "Sour Soup," black plums boiled in vinegar with sugar added, also nuts, cream (or yogurt) and broth; another East Asian variant of *Tutumash*; [Tu.] *Baldy*, a honey dish thickened with a paste fried in sesame oil and basted with butter; a [Ar.] *Halwa*, a traditional Arabic sweet paste; [Tu.] *Güllach*, a primitive baklava; a *Qoresh-e*, a Persian classic stew; [Ar.] *Julapia*, Persian fritters; a Persian *Qarisa*, another meat paste using wheat and sheep's tail fat and head oil; and "West of the River Lungs," sheep lungs Uighur-style (Buell 1999).

Porcelain: The Carswell Hypothesis

Nonetheless, despite these more solid foods, the emphasis remained on liquid. Consequently with the advent of the new Mongolian court cuisine in Eurasia came a change in eating habits as well. This found expression in the plates, pots, jugs and other dishes which graced the tables and rugs of the period. These are well illustrated in the Central Asian and Iranian miniatures of the period, which are, in fact, our most importance source (Komaroff and Carboni 2002).

John Carswell, distinguished British Arabist and art historian, has proposed that one of the main reasons for the rise in popularity of blue and white and other forms of Chinese porcelain during the late 13th and early 14th centuries in all areas of the then Mongol world was the associated spread of Mongol court cuisine.[11] Since this cuisine emphasized liquid foods, such as the great banquet soups, also kumiss, the Mongol drink of choice, bowls, cups, servers and pots had to be convenient for liquids. They had to be leakproof, washable and sanitary, and not easily contaminated by absorbed liquids from main dishes or drinks. Porcelain, besides being beautiful, easily met the needs of a liquid diet. It was, as a result, ideally suited as a serving and consuming medium for the Mongol courts and elsewhere.

The Mongols loved all kinds of liquid refreshments, including their native fermented milks but also the *sharab*, sweet drinks, from West Asia. The old dishes and old pottery, mostly porous and crude and thus too absorptive and likely to retain unpleasant flavors, became obsolete virtually overnight once the new foods caught on. Chinese porcelain was beautiful. It was also abundant after the conquest of the Chinese south (definitively by 1279) by the Mongol successor Khanate of China. It thus seems to have quickly replaced most other forms of pottery as prestige dishes. In this case the culinary process paralleled an equivalent one in the textiles: the highest quality Chinese silk became the cloth of choice for Mongol costume. This had formerly been largely made of animal furs. Silk and other woven textiles had been rare commodities.

The primary objection to Carswell's thesis has been the conventional wisdom that Blue and White Porcelain was a comparatively late development and that large scale exports of porcelain from China, by sea, only came at the very end of the Mongol period. In fact, this traditional wisdom can now be regarded with a great deal of skepticism. Evidence reveals earlier Blue and White Porcelain in West Asia, even in Europe, and a substantial overland trade that preceded ocean carriage by many decades. Much of this has been uncovered by Carswell himself. He has identified, apparently, the earliest European porcelain, in what is now Bulgaria dating to the early 14th century.[12] Thus Blue and White was becoming available at the height of the Mongol era, a fact strengthening Carswell's association of pottery with Mongol court cuisine. His explanation of events is increasingly plausible. It makes sense in terms of other known cultural exchanges then taking place, including painting.[13]

Although the term is often applied to late Chinese pottery in general, from Tang times on, porcelain is, strictly speaking, a rather more specialized product. It is produced by using special clay combinations (principally but not exclusively kaolin) (Carswell 2000, pp. 20ff) and fired at an extremely high temperature. The final product is finely glazed, strong but light, and relatively dense and nonporous. Porcelain dishes and pots are noted not only for their consistent fabric throughout their structure, but also for their stunning appearance. Although the Song Chinese preferred a less gaudy decoration, namely greens and shades of blue, or even a plain white, the Mongols of north China preferred pots with a painting of cobalt blue underglaze, resulting in a more stunning appearance. The Mongols also had their potters introduce new shapes to accord with their particular needs, associated by Carswell with their cuisine (Carswell 2000, p. 31).

One reason for a Mongol interest in pots with a cobalt blue underglaze is most likely to have been nationalism. That is to say, what could be more appropriate than "blue" pottery as symbolic of the court culture of the people later known as the "blue" Mongols, due to their association with "Blue Heaven," their protector and dynastic support. In any case, pottery directly ancestral to the later Blue and White that became a world craze seems to have appeared among them no later than 1300 and probably some decades before. Among other things, fragments of Blue and White are associated with the wall around what later became the Forbidden City and which dates to the early Mongol period in China (Ibid.). There is a great deal of other evidence as well which remains to be evaluated. Marco Polo, by the way, gave the world the word porcelain. It is not entirely clear what he understood by the term, since he uses it to describe cowry shells as well as pottery (Carswell 2000, p. 18).

In any case, porcelain, particularly Blue and White Porcelain, became increasingly popular [Fig. 1, next page]. Demand for it grew in the West. Efforts were made to adapt it to Western, and for that matter, Mongol tastes. Decorations became west Asian, in a kind of early Chinoiserie, for example, and many of the shapes of pots suited west Asian (and Mongol) rather than Chinese needs [Fig. 2, next page], often closely imitating the older pottery, or even leather and wood pots, which it was gradually replacing. Some even had inscriptions in Persian. Local copies began to emerge, many of them highly interesting artistic creations themselves, and free combinations of East and West as western potters strove to figure out just what their Chinese brethren had done to achieve their effects (Carswell 2000, pp. 35ff and *passim*). The real heyday of Blue and White Pottery, under the Ming and Qing, does not concern us here. The pattern had already been set for a world art craze and, as Carswell suggests, this probably accompanied the emergence of the first world cuisine, that of the Mongol courts.

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Fig. 1. Two Yuan period blue and white porcelain vases in the collection of the British Museum.

Medicine

Food was one part of the cultural exchanges of the Mongol era, moving primarily along with Silk Road, but also, to a more limited degree, by sea. Likewise extremely important was the associated exchange of medical ideas and systems, associated because much of the medicine of the time was based in dietary medicine.

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Fig. 2. Blue and white porcelain ewer, Yuan era (ca. 1335). Musée Guimet MA 5657.

For example, in China at least, along with Mongol court cuisine came distinct Mongol ideas about food and health, in particular the medicinal values of foods and types of foods. One of the innovations of the *YSZY*, for example, and it became a major pattern for later dietaries, is that text's interest in an amazing variety of animal foods. The Chinese had always eaten wild animals and parts of domestic animals associated with *qi*, to gain an advantage from consuming the powerful and uncanny. Animal products have also been important in Western pharmacology. Nonetheless, neither Chinese nor Western tradition quite prepares us for the profusion of wild animal products, for example, consumed at the Mongol court according to the *YSZY*. These wild animal products became part of the Chinese tradition thanks partly to the popularity of that text. Also conspicuous in the Chinese text is the presence of so many Mongolian gathered foods for use in recipes. While some were perhaps consumed simply out of tradition and nostalgia, many also have known medical values. The recipes of the *YSZY* are nearly all assigned specific medicinal properties, and these must derive from the foods used. In fact, modern Mongols, as a number have informed the author (e.g., Bold, personal communication, spring 2005), assign specific medicinal properties to different animal meats and parts of animals and modern Mongols know a great variety of medicinal herbs, many of them simultaneously gathered plant foods of the very kind called for in *YSZY* recipes (Boldsaikhan 2004). In any case, if such ideas appear so well represented in China, they must have been found in the Mongolian west as well, meaning that we should begin to sift Iranian and other Islamic sources of the period to see what changes in medical and dietary ideas were introduced in the Mongol period.

Also a part of a possible Mongol contribution to medical ideas in China, were Altaic ideas regarding the importance of boiled food. According to Roux (1984, pp. 160ff), the essence of an animal is resident in the bone and marrow, and thus boiling concentrates this essence. This was why the Mongols preferred boiled foods. There were also practical considerations, e.g., the need for moisture in a dry environment, the need to share meat to the maximum. If this is the case, then the banquet soups of the Mongol courts in Eurasia communicated Mongolian ideas about the universe as well as feeding the court multitude. They represent one more area of cultural interaction during the Mongol age.

But in addition to ideas apparently their own, the Mongols also actively encouraged the exchange of other medical ideas east to west and west to east. In part this occurred because such medical ideas were part of Mongolian court cultures wherever Mongols ruled. For Iran, the most celebrated exchange was the importation, primarily through the agency of Rashid al-Din (1247-1313), of Chinese medical ideas, e.g., pulse lore in the form of a Chinese text translated into Persian (Rall 1960; Abdulhak 1940). Also involved in the flow were other importations, ones that we know little or nothing about.

Rashid knows a great deal about China and Chinese culture. For China, a huge importation was Eurasian cosmopolitan medicine, known as "Muslim" medicine in China. This is something of a misnomer since the medicine involved was as Greek as it was "Muslim" or Arabic. Syrian Christians and others, not just Muslims, were actively involved in transmitting it to China. The *YSZY*, already mentioned above, is replete with the ideas of this medicine, in addition to including many West Asian foods for its dietary medicine. And even bigger witness of what was taking place is comprised of the surviving fragments, nearly 500 manuscript pages, about 15 percent of the original, of what is now known as the *Huihui yaofang* 回回藥方, "Muslim Medicinal Recipes" (*HHYF*), once a massive encyclopedia of cosmopolitan Eurasian medicine to serve the needs of Mongol China's official medical establishment.

As it survives today, the *HHYF* consists of three content chapters (*juan* 12, 30 and 34) and the table of contents for the second half of the complete encyclopedia. This covers *juan* 19-36, providing some indication (along with *juan* 12) of the contents of more than half of the original encyclopedia, a total of 19 *juan*. Of the three surviving content chapters, *juan* 12 focuses on various kinds of paralysis, "wind" attack (including strokes, etc.), and related conditions, in terms of the traditions of the medicines involved. *Juan* 30, is devoted to "various symptoms." We know that it is is one of two *juan*, along with *juan* 29, once devoted to such general conditions and to the body and its structures in general. *Juan* 34, one of the most interesting, is devoted to various kinds of injuries, from arrow and sword wounds to blows (such as fracturing the skull), with a listing of advanced surgical interventions. Lost now are the following *juan*:

19. coughs;
20. chest symptoms;
21. stomach problems;
22. dysentary and related problems;
23. vomiting, constipation, etc.;
24. heat and chill;
25. *qi* (in this case meaning breath and connected matters);
26. fatness and leanness of the body, and pain, lice, and hand and foot, etc.;
27. jaundice, worms, etc.;
28. beriberi, etc.,hemorrhoids;
29. the first part of various symptoms;
31. a large section on women's medicine;

32-33. ulcers and swelling;

35. vermin and animal wounds;
36. listing of *materia medica*.

Three main types of material are found in the content chapters. First of all, there are hundreds of simples, herbal formulae of various origins, some of them Greek, some Arabic, some of uncertain origin but still largely Persian in nomenclature. Also a major part of the text are theoretical discussions, some quoting the great names in Greek and Arabic medicine. Finally, there are listings of detailed procedures, how to set a bone, treat a wound, to fix a fractured skull, the latter among the most advanced of their kind from anywhere in Eurasia.

The following is a typical simple, in this case treating symptoms associated with wind attack, strokes and similar conditions:

Another Recipe

It can treat wild thoughts, confused perception and the symptoms of [Ar.] *malin-khuliya* [melancholia]

([subtext] This is symptoms of a lack of peace in the heart and wild talk due to being attacked by a wind):

Kabuli myrobalans [*Terminalia chebula*]

([subtext] [Persian in the Arabic Script] *Halilaj-e Kabuli*)

[Ar.] *Balilaj* [belleric myrobalan]

([subtext] [Arabic Script:] *Balilaj*)

"Ox orange seeds' [unidentified]

([subtext] Each one *liang*)

[Ar.] *Afsintin* [wormwood, *Artemesia absinthium*]

([subtext] This is artemesia)

[Pr.] *Sana-ye Makki* [*Cassia angustifolia*, Meccan senna]

([subtext] [Persian] *Sana-ye Makki*)

[Pr.] *Shahtiraj* [Fumitory, *Fumaria officinalis*]

([subtext] *Shahtiraj*)

[Ar.] *Afithimun* [dodder, *Cuscuta epthymum*]

([subtext] *Afithimun*. One *liang*)

[Ar.] *Basfayij* [=*Basfayij*, *Polypodium vulgare*]

([subtext] *Basfayij*)

[Ar.] *Turbid* [*Ipomoea turpethum*]

([subtext] This is hare's ear [*Bupleurum falcatum* and *B. spp*])

[Ar.] *Ustukhudus* [lavender, *Lavandula stoechas*]

([subtext] *Ustukhudus*. Each five *qian*)

Chinese spikenard [*Nardostachys chinensis*]

[Pr.] *Mastaj* [mastic]
([subtext] This is the rue of the Western Regions)
Nutmeg
([subtext] Each two *qian*)
[Ar.] *Lisan* [*ath*]-*thaur* [borage, including *Borago officinalis*]
([subtext] This is dock [*Rumex* sp] root)
[Ar.] *Afranj-mushk* [sweet basil, *Ocimum basilicum* ot *Calamintha officinalis*]
([subtext] *Afranj-mushk*)
"Golden Essence Stone" [lapis lazuli]
([subtext] Or [Ar.] *hajar*. [This is] a stone flown by water of the Armani land)
[Pr.] *Badranj-buya* [balm, *Melissa officinalis*] [Ar.] *Karafs* [seeds of celery, parsley, etc.] seeds
([subtext] [Persian] *tokm-e karafs*)
"Rumi' Fennel [anise]
([subtext] Each two *qian*)

Pound the medicinals into a fine powder. Having soaked with [Pr.] *badam* [almond] oil ([subtext] [Persian] *raughan-e badam* ["oil of almond"]), take processed pure honey or dried grapes. Remove the kernels and pound until soft. Combine together and use.[14]

Here a plethora of plants known to Greek and Muslim medicine are combined to provide a medicinal for responding to the described condition, providing one of several related compounds used to treat similar conditions. Few of the medicinals in any case were widely used in the Chinese medicine of the time. Most, like the disease categories themselves, are imported. Even the method of compounding is not Chinese and calls for almond oil and dried grapes, both products typical of Middle Eastern but not Chinese medicine. Note that although many of the names of the medicinal are common Arabic, the descriptive terminology tends to be Persian, something typical of the *HHYF* as a whole. Like Marco Polo, the editors of the *HHYF* were perfectly comfortable with Persian, as well many others associated with the Mongol court in China where Persian was one of several official languages used.

Also not very Chinese is the following discussion, the first in *juan* 12, from which the recipe above comes as well. Following the discussion of general paralysis conditions is another simple, a shorter one:

Category: Left Paralysis, Right Numbness, Wry Obliqueness of Mouth and Eye

Treating left paralysis, right numbness:

With this disease movement or the stopping of movement does not accord with the intention. That is, movement or the stopping of movement are mutually entangled and are constricted. When movement and the stopping of movement exhibit a movement and a stopping of movement that are mutually entangled, this becomes transformed into this disease. Because of this, there is a diminution of strength; movement and the stopping of movement are also diminished. If on account of the disease strength is diminished, the disease should inevitably be chronic. If a person indulges frequently in sex, or overexerts or suffers a fright, or climbs to a high place, or is overwhelmed by joy, the heart main artery [*jing* 經] strongly starts and the body struggles. If the seven apertures are all diminished, there is excess moisture within the muscles [*jin* 筋].[15] It is the nature of muscles that they come forth according to the intention, and must [then] become chill and slack. Because of this, heavy inebriation, overconsumption of chill liquids, and food that is not dissipated, will avail of the proximity and give rise to turbid illnesses. If the root is obstructed, the strength of the *qi*[16] does not pass through and cannot reach the body. If [the condition] arises due to extreme anger, then in most cases there is moisture in the muscles. Moreover, it attaches to the anger fire and destroys the ability to move. Or illness symptoms of paralysis and numbness are frequently in the muscles of the head and hands. These are the implements of movement and of the spiritual facilities. The top of the muscles is the top of the brain. This is the seat of the brain. If the hand approaches and attaches itself to moisture, the muscles of the brain also approach a condition whereby they are soft. Because of this, these illnesses are mostly in the lower half of head and hand. The muscles of a turbid body are stiff because they are situated at a distance from the head. The body is also stiff and sinking because it sustains the body attached to turbidity. Because of this, the body does not produce the paralysis and numbness illness. If the disease attains the root, there is then nothing beneficial or harmful in treating symptoms of paralysis and numbness diseases. If the root of the disease is dampness or there

is wounding eating to repletion because of loss or starvation, then treatment requires the spitting up of phlegm. If there is heavy inebriation due to liquor, the inebriation is generally cut off after easing nature twice.

As ingredients use rose oil, or [Pr.] *murd* [myrtle] oil ([subtext:] [Pr.] *murd*). Along with this combine vinegar and attach to the head. For food, use foods that aid the blood. Use dolichos beans, [Pr.] *kurunb* [cabbage] ([subtext:] [Pr.] *kurunb*), and roasted rabbit brain. If the one consuming has left-over medicinals, he can take [Ar.] *ustukhudus* [lavender] ([subtext:] [Ar.] *ustukhudus*). Use honey water, combine and consume. Or take a [Pr.] *quqiya* [narwhal] pill ([subtext] [Pr.] *habb-e quqiya* ["pill of *quqiya*"]) for 18 days. Or if the disease is chronic one, can also take this: [Pr.] *myan-e khiza* ["middle of (beaver's) testicle," castoreum] ([subtext:] [Pr.] *miyan-e khiza*). Combine with honey and take. It will treat if there is a wasting [*lau* 勞 = 癆] disease due to dryness [Kong 1996, p. 25].

The main condition described, "left paralysis, right numbness," etc., apparently includes parasthesia, various paralysis, loss of muscle tone and muscle atropy, speech impairment, and compromised pulmonary, cardiac and other functions.[17] The description is extremely specific compared to the categories of the Chinese medicine of the period and uses none of the generalizing terms, i.e., the five elements, *qi* in the Chinese sense, etc. The ingredients called for in the simple are, again, typically Middle Eastern and include substances that must have been quite rare in China, i.e., narwhal horn pill, and even were uncommon in the Middle East.

Other sets of directions like this may include actual surgical intervention. For example, in the sections found in *juan* 34 on broken bones there are careful instructions regarding removal of bone fragments embedded in the tissues surrounding the brain. Also found in *juan* 34 are instructions detailing cauterization techniques, including some using special metal instruments. This is a typical of the Western medicine of the time and not of Chinese. Also a more or less Western technique was therapeutic bleeding. Likewise more Western than Chinese are the *HHYF*'s many dietary prescriptions. While dietary medicine is certainly Chinese too, the foods called in the *HHYF* are not, including chickpeas under their Persian name.

The following, reproduced here in full, is typical of the highly interesting and detailed material on various injuries found in *juan* 34:

> [This section] discusses all small wound injuries named [Arabic] *wakhz* [puncture wounds] [and] [Ar.] *khazq* [tear wounds] along with the various [other] things including puncturing arrow heads that are to be taken out of the wound-injured place.
>
> All [Ar.] *wakhz* are wounds from puncturing [arrow] heads or needle heads. Also, if it does not deeply penetrate into the flesh, even if the wound is large, it is a matter of this. [Ar.] *khazq* are spear or arrow head, etc., wounds. Also, [Ar.] *wakhz* wounds are somewhat better. They need not be treated by a doctor. If the original nature of the wounded man is uneven, and there is swelling at the wound place, together with throbbing pain, or perhaps there is a small wound entering into the flesh, there also is this treatment to get rid the swelling and throbbing pain. One only needs to dissipate the swelling and that is all. In the case of [Ar.] *khazq*, one must threat the swelling and throbbing pain, and afterwards treat the wound so that it is in balance and restored. In general, in terms of the treatment methods of this chapter, one only needs remove the various things wounding. The methods for removing these things: either it is a matter of pushing out, or of removing using some implement, or using a medicine to suck it out. The method for pushing out: people can all understand. It need not be discussed. When one uses an implement, one must first examine the nature of the wounded place, whether it is concave or a cavity, and whether one can remove things directly or from the side. If it is a side removal, it must be that the wound mouth is narrow and the arrow head is deep into the flesh, or the arrow head has a corner. If one takes it out straight, one must fear that the [arrow head] corner will resulting in a hindering, and cause extreme pain to the patient. Also, when one removes from the side, one can observe whether or not it is without obstacle or hindrance, and cannot harm the blood pulse, and also the

blood vessel and main arteries. One can say in general: one only needs that the arrow heads, *etc*., are not broken off and remain behind in the flesh. Moreover, when they are removed, one must have ascertained if previously the wounding material has been agitated. Only then does one remove it. Also, the implement to remove are iron forceps. On top of the forceps one adds an iron ring that rigidly enfolds it. When it is like this one can take [the arrow head] out. There will be times when the arrow head will have poison and the flesh of the wound will be decayed. One must use [something] to remove the [decayed] flesh and clean its appearance. If one observes that the color of the flesh has changed, and it moves like dead flesh, then scatter and disperse what has become bad. In general, if the arrow head is deeply situated in the bone and flesh, and one cannot take it out, take the implement and position around the bone so that one can take it out easily. If the arrow head wounds in a critical part of the body like the brain, heart, lungs, liver, the stomach artery, the bladder, and a bad sign is manifest and the signs lead one to believe that it will not get better, then it probably cannot be healed. If bad signs are not perceived, and they lead one to believe that one can heal in the future, one can discuss the danger of these symptoms with one's colleagues, and afterwards treat. Now, although these symptoms are dangerous, one can also treat and there is the possibility of healing. Also use medicines, *etc*. This means taking [Ar.] *ushaq* [gum ammoniac, of *Dorema ammoniacum*] ([subtext] *ushaq*) and transforming it and opening it and placing it in the wound injured place. If there are things inside, it can suck them out. If one combines it with honey, it will be powerful. Also take [Ar.] *Zarawand* [*Aristolochia*] ([subtext] *Zarawand*), the round kind, grind finely and combine with honey. Create an application medicine and use. Also take bamboo root and pound until soft, or use alone or combine with honey, and create an application medicine and use. One recipe uses small bamboo root leaves, one *liang* [?]. Pound finely and stick onto [the wound place]. If the wound place has an arrow head, the bamboo will pierce so that it comes out itself. Also [take] the leaf of the black opium tree [?], fig tree leaf, and mix with barley flour and henbane. If one adds it to alum and combines it, it is very much possible. In the case of all of the following: Sichuan Kueihua [*Osmanthus fragrans*], [Ar.] *Zarawand* [*Aristolochia*], [Ar.] *narjis* [narcissus] ([subtext] This is the *chuandi* 穿蒂 flower [? Character?]) and onions, either use alone or combine and use. They can suck out the things that are lodged. Also [take] a frog[18] and remove the skin and create a pasting medicine. It can also suck out things. One recipe uses a fresh frog [found] on land where the five cereals are [413]. Remove the skin and create a pasting medicine. It can also remove barbs and arrow heads. One recipe uses dried frog to make a powder. Combine with honey and stick on. This is also possible. If there is something lodged in the bone it can also suck it out. Now this is because by its original nature it can remove teeth. Also grind finely swimming crab. This is also possible. One recipe uses creek crab fish [lobster-fish, shrimp?] bladder. All have removing strength that achieves the miraculous. Also all sticky milks [*anafih*] of moving animals also can help. There is a thing called [Ar.] *wazaghah* [pl., geckos] ([subtext] This is the gecko). It is also able to help. One recipe takes [Ar.] *wazaghah* heads, puts them into an ointment recipe, and pastes it on. It can remove barbs along with arrow heads. If one takes [Ar.] *wazaghah*, [Ar.] *zarawand* [*Aristolochia*], the long kind ([subtext] [Pr.] *zarawand-e tawil* ["long *Aristolochia*"]), bamboo root, [Ar.] *narjis* [narcissus] ([subtext] This is *chuancao* 穿草 [?]), and onions and combines them into a sticking medicine and uses, then it can take the things left behind and bring them out. One recipe uses [Pr.] *sam-abras* [gecko] ([subtext] This is the gecko). Take the meat and pound until tender and put on the sword punctured place. It can suck it out. One recipe uses [Ar.] *wushshaq* ['*ashaqah*? gum ammoniac; ivy?] ([subtext] *ashuku* [?]). Make a powder and paste onto the wound. The thing [in it] will come out of itself. [Ar.] *wushshaq* combined with honey is powerful. Or use round [Ar.] *zarawand* [*Aristolochia*] ([subtext] [Pr.] *zarawand-e gerd* ["round *Aristolochia*"]) and pound with bamboo root and use honey to combine and paste on. Also use

long [Ar.] *zarawand* ([subtext] [Pr.] *zarawand-e tawil*), onion water, Chinese sacred lily [*Narcissus tazetta*] leaf, fig leaf, barley sugar, and pound together and paste on. It has the power to grab iron. Also, in the case of barb needle wounds, where it takes on swelling and is dissipated, it cannot be treated, or if it is large, the medical treatment of it is in the previous category of wounds from knives and arrows. It has been discussed in the section on wound trauma where ulcers have been formed [Kong 1996, pp. 411-413].

Such lore was obviously of utility for the warlike Mongols. The same sections also provides many first aid applications, many including substances in use today to kill germs and promote healing. Whether any of the specific medicinal mentioned above work, awaits further research. Note that gecko parts and meat are called for under both their Arabic and Persian names, indicating a compilation from different sources.

Origins

Whence such medicine? We do know that many of the official medical institutions of the Mongols in China focused on Muslim medicine. This included an office, ranked first under the *Xuanhui yuan* 宣徽院, "Bureau for Imperial Household Provisions," and then under the Yuan Office of the Chief Physician (*Taiyi yuan* 太醫院), called the *Guanghui si* 廣惠司, "Administration of Broad Compassion," charged with "preparing and presenting Muslim (*huihui* 回回) drugs and preparations to the emperor in order to treat members of the bodyguard and poor people in the capital" (*Yuanshi* 1976, *juan* 88, 2221). The founder of this office, which seems to have been more important than the above brief notice indicates, was Jesü (Aixie 愛薛) or, as he is known in Iranian sources, Isa, the "Translator" (1227-1308), a Nestorian Christian whose family originally had come Syria. Jesü began his service to the Mongols under Khan Güyük (r. 1246-1248) and later associated himself with then prince Qubilai (r. 1260-1294), forming part of the prince's "brain trust" of associates who were to stand him in good stead when the prince had to fight to become ruler in Mongol China as the old Mongolian Empire broke down. As far as can be determined the *Guanghui si* grew out of Jesü's private practice of "Muslim" medicine, or more properly of the Eurasian cosmopolitan medicine that had started primarily with the Greeks but belonged by his time equally to Greeks, Latins, Syrians, Arabs, Persians and others, even, as we will see below, Tibetans, who had their own school of this medicine. In any case, after the *Guanghui si* was founded, it, and an observatory for Muslim astronomy were put under Jesü, and members of his family continued in control after his death. Interestingly, Jesü did not just stay in China, once he had become associated with the house of Qubilai, but in 1283 went on an embassy for his ruler to Mongol Iran, then Qubilai's principal ally in his wars in Central Asia. Unlike his companion, the minister Bolad, who remained in Iran, Jesü returned again in 1286 and remained in office in China for more than twenty more years, until his death aged 82.[19]

We do not know what books Jesü had with him when he first founded his practice or what, if any, books he brought back with him from Iran in 1286. His role in founding and managing the *Guanghui si* was such that the *HHYF*, which in its present form is a Ming Dynasty (1368-1644) copy, but is based upon a now lost original Yuan Dynasty (1260-1368) version, must go back at least in part to materials assembled and held by Jesü and his family, which were perhaps added to by others as time went on.

And what of these materials, as witnessed by the *HHYF*? Clearly a major source for the surviving chapters was the *Qanun fi al-tibbi*, "Canon for Medicine," of Ibn Sîna (980-1037), a standard Arabic-language medical encyclopedia in the Islamic world, but some of the material from this source seems filtered at best, perhaps through another, more popular collection that may now be lost. Other sources include the Arabic and possibly Syrian translation literature for works by Galen and other Greek doctors. Other, more immediate sources, in view of the Iranian connection of Mongol China, were probably works such as the *Nuzhat al-Qulub*, "Hearts' Delight," a scientific and medical encyclopedia written by the son of Rashid al-Din, Ghiyath al-Din Muhammad, but also possibly the now lost *Lata'if al-Rashidiyya*, "Pleasures of Rashid al-Din," by Rashid's associate, the doctor Ibn Ilyas, and the latter's other works, including his treatise on food (Elgood 1979, pp. 302-323).

More than one cosmopolitian system is involved in the text. I have suggested in a forthcoming paper that Tibetans, drawing upon their own Greek traditions of

medicine (those of the Bi-ci school and its texts, in particular), may have been another source of medical information, theory and even recipes in the *HHYF*. The text's humoral system, for example, is apparently based on three humors, those of India and Tibet, and not the four of the Islamic world. Tibetan influence is even clearer in the *YSZY*, which has a great deal of Islamic cosmopolitan medicine in it and a clear trail back to Tibetans involved in imperial dietary medicine (Buell forthcoming 1).

Nonetheless, what is important about the *HHYF* is that it represents a type of medicine found from one end of the Silk Road to the other and beyond. Not only was much the same medicine practiced throughout Central Asia and in the Middle East, but "Muslim" medicine, including texts translated from the Greek, before the actual Greek texts reached the West, was also the basis of the European medicine of the time as taught in the early medical schools such as those of Salerno or Taranto. Texts used there, in fact, included standardized collections of quotations of theory, procedures, and recipes, more or less identical in format and approach to the *HHYF*.[20] As a consequence, for once in history, China and much of the rest of the Old World were at the same place in terms of their medicines. That the West choose to continue on this basis and China did not is irrelevant (the question of Islamic influence on the Chinese medical schools of Yuan and Ming is a whole other topic). For a brief moment the Mongols had created, at the court level at least, a single system of medicine, although beyond the court a great many local systems still existed, including Chinese medicine, which remained alive and well under the Mongols even if not so favored. In this respect, medicine and food developed into world systems in much the same way, surrounded by a great deal of local color.

Conclusion

In conclusion, we are only beginning to understand the full range of cultural exchanges characterizing the Mongol age. Some of them are obvious. Some, such as the possible exportation of Mongolian ideas about medicine and diet, are not so obvious. In any case, it is now clear that the Mongols exported their cuisine and ideas about it and participated in a remarkable, if temporary, codification of medical ideas with a little help from doctors of various persuasions practicing the Muslim, better cosmopolitan medicine of the day. On another level, John Carswell is probably entirely correct in assuming that a wetter cuisine required new dishes and that Chinese porcelain was ideally suited to this mission. What is interesting is that Blue and White Porcelain, the food that it contained, and the cosmopolitan medicine of the time — never entirely Muslim, but a mixture of traditions — once again suggest the ability of the Mongols to combine the best that East and West had to offer in tune with their own views of the universe and traditions. This being the case, that Chinese porcelain, glazed in the Mongol color, with west Asian designs and pot shapes, disseminated throughout the Mongol world order, should in no way surprise us. Neither should the universality of the foods that it contained, Mongol base soups and other foods, but with the refinements that the whole world had to offer. Lastly a medical unification paralleling those in food and eating utensils should hardly be unexpected. This was all a matter of what the Mongol age had to offer and what it did for the peoples and cultures of the Old World as the Mongols laid down the foundations of our modern age.

About the author

Paul D. Buell holds a PhD in history and an MA in Chinese from the University of Washington and is a specialist in the history of the Mongolian Empire with special reference to the cultural history of the Mongolian period and the interchanges between east and west. He is the lead author of *A Soup for the Qan: Chinese Dietary Medicine of the Mongol Era as Seen in Hu Sihui's Yinshan Zhengyao, "Proper and Essential Things for the Emperor's Food and Drink,"* and is currently completing a full translation of the *Huihui Yaofang*, "Muslim Medicinal Recipes," supported by a National Endowment for the Humanities individual scholarship.

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Notes

1. On the history of Chinese food in general see the relevant chapters of Chang 1977 and Anderson 1988. See also under individual foods and spices Buell et al. 2000.

2. On the traditional Mongolian way of life as it relates to food see also Buell et al. 2000.

3. Adapted from Buell et al. 2000, pp. 294. Today a *qian* is about .011 oz and a *sheng* is 31.5 in^3 while a *he* is one tenth of a *sheng*. The values of the *qian*, *sheng* and *he* were similar in the 14th century, with the *sheng* and the *he* slightly less than today.

4. William of Rubruck speaks of the processing of cow's milk and the making and consumption of *grut* in the following terms:

> They first extract the butter from cow's milk and boil it until it is perfectly de-cocted and subsequently they store it in rams' paunches which they keep for that purpose. And they do not put salt into the butter which nevertheless does not putrefy on account of the great degree to which it has been decocted. And they keep it for the winter. The buttermilk which remains after the butter [has been removed] they allow to sour, as sharp as it can be. And they boil that and it is coagulated by the boiling. And that coagulated buttermilk they dry in the sun, and it is thereby made hard, just like the slag of iron and they store the dried buttermilk in sacks for the winter. During the winter when they lack for milk, they place this bitter coagulated milk, which they call *grut*, in a hide bag and pour on top hot water and they shake the bag strongly until the coagulated milk is dissolved in water which is made totally acid by this. And this water they drink in place of milk. They take the greatest care lest they drink pure water [Wyngaert 1929, p. 179].

See the discussion in Buell et al. 2000, p. 36.

5. On the general topic of Turkic influence on Mongolian foodways see Buell 1999.

6. In Iran today an *ash* can be a stew, pointing up a further evolution.

7. For modern variants see Haroutunian 1982, p. 80, and Roden 1970, p. 135.

8. On the word and some of its occurrences in Persian texts see Doerfer 1965-1975, Bd. II, pp. 457-59.

9. Adapted from Buell et al. 2000, pp. 298-99. A *jin* is today about 500 g.

10. On Rumi and *tutumash* see Algar 1991, pp. 6-7, 174.

11. Carswell 2000, pp. 23-24, and personal communications to the author.

12. John Carswell, personal communication to the author, summer 2005.

13. The whole question of the movement of Chinese ideas of painting west during the Mongol era is now an area of renewed interest. See Komaroff and Carboni 2002, particularly the articles by James Watt, pp. 63-73, and Komaroff, pp. 168-195.

14. Kong 1996, p. 104. This and other translations below from the *HHYF* will be contained and further annotated in Buell forthcoming 2. All rights are reserved.

15. This term is difficult to translate in the *HHYF* since it can be used there to designate muscles and tendons, minor blood vessels, nerve tissue, and even the spinal cord.

16. In the *HHYF*, *qi* most commonly means simply "breath." Here the meaning is unclear but the context would be perfectly comprehensible in terms of Chinese medicine, thus the translation. An alternative translation would be "vital force." As a humor, *qi* is the air or wind of Indian medicine. See also below.

17. I am grateful to colleague Chris Muench for discussing this section of the *HHYF* with me.

18. The second character is not the usual one and may be a phonetic spelling.

19. On Jesü see Weng 1938. I am grateful to Igor de Rachewiltz for discussing his own forthcoming work on Isa with me and for supplying me with a copy of Weng's dissertation. See now also Kim 2006.

20. On early medical texts used in the schools see, as an introduction, Kristeller 1982, and also Baader 1982. On the rise of standardized texts as a publishing phenomenon see also Buell 2001.