

Headache in the scientific traditions of the Salerno Medical School

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Summary. The author describes the state of knowledge on headache in the 12th century, which constitutes the golden period, when the School reaches a magisterium of studies and research such as to outshine the other medical institutions of the time.

Key words: Headache, humoral theory

The golden period

The 12th century represents the most interesting period in the School's history (1). Numerous pathological and therapeutic manuals are published by prominent personalities such as Master Bartolomeus who wrote the *Practica*, at the time the most important text on general pathology; Master Salernus, author of a series of treatises - *Catholica*, *Compendium*, *Tabulae* - on diagnosis and treatment (2); Master Ferraro and Nicolò Salernitanus who published, respectively, the *Curae* and the *Antidotario*, two textbooks on pharmacological therapy widely used at the School (3).

The ancient hippocratic-galenic theories, although revisited, were substantially confirmed: pathogenesis of illness was explained on the basis of an *imbalance* of the four humors inside the human body (blood, phlegm, yellow and black bile). Therapies aimed to rebalance the equilibrium utilizing diagnostic elements derived from urine, fevers and pulse examinations. Nevertheless greater importance was attributed to practical intentions and didactic objectives (4).

We will refer to some of the texts from this period to describe the state of knowledge about headache (fig. 1).



Figure 1. Avicenna, Canon Maior, 14th-15th centuries, Bologna, University Library, Ms 2197, f 317 v. This picture provides an idealized image of the Salerno Medical School within a complex environmental framework. The illustration portrays a town full of towers, closed within walls which overlook a gulf broken by numerous inlets and used by shipping. The picture shows Robert, Duke of Normandy, who asks the doctors on his departure for a vade mecum, a volume containing the basic principles of the ancient hippocratic art of Salerno. Thus arose the dedication of the Regimen Sanitatis to the king of Angles. In the left of the picture, Sibyl of Conversano, wife of duke, is dying having sacrificed herself by sucking the poison from her husband's arm while he was asleep. On the right, the Fusandola stream, where, according to tradition, the School was located. The year is 1103.

Headache

The Master Salernus in his work *Catholica* distinguishes headache in which the pain is *total*, spread to the whole head, from *migraine*, a painful affliction of one half of the head. Master Bartolomeus in his textbook *Practica* describes migraine as “*passio capitis in media parte aut in destra aut in sinistra*” and defines unilateral pain as *monopagico* (from the latin *mono-pagus*, one part) (5).

The Masters identify headaches characterized by frequent attacks and forms with sporadic attacks, spaced by days or weeks.

The qualitative distinction of pain is given attention: acute, continuous, persistent, periodic, irregular and grave (5).

According to the principles of hippocratic-galenic medicine, pathogenesis can be explained by an accumulation of humors due to an “*oppilazione*” (blockage or occlusion) of the cerebral ventricles as a result of various external and internal factors (stress, alcohol, indigestion, medicinal abuse) that can create a general imbalance of the humors such as to prevent the discharge through the various cranial holes (6).

Migraine can be caused by an excess of blood or other body humors (“*quod aliquando fit ex sanguine, aliquando ex aliis humoribus*”) (7).

The distinctive characteristics for the *blood headache* are pulsation of the temples, sensation of burning in the head, dilatation of the veins, heaviness of the forehead (5).

The diagnosis is aided by a rich urinary semeiology: the doctors observe the colour, quantity, sediment and above all the urine layer in which the sediment is deposited. In particular, the urine could be fluid and greasy if the headache is caused by phlegm; thick and greasy if caused by blood; fluid and fine if caused by bile (fig. 2, 3).

For the treatment of *blood headache*, bleeding is caused in the cephalic vein of the right arm or a scarification in the occipital bone; while if the back of the head is painful, an incision will be made at the level of the frontal area (fig. 4).

Blood-sucking leeches (“*sanguette*”) would remove the pain if they were located on the vein of the forehead, on the root or the tip of the nose or between the eyebrows. Head wrapping is also useful (5).

Among the hygiene rules, the Masters suggest avoiding afternoon sleep, in particular the “nap with the head raised”; alcohol (new wines are considered to be a primary cause of severe headache); stress and any excess. Best to avoid use of baths and dairy products. Purging agents (including those that “purge” the moods of the head) and particular diets are also advised, according to the type of headache.

A “cold and humid” diet based on vegetables (especially lettuce and vegetables) if the pain is caused by black bile. For a “cold headache”, useful a mush with bran and salt boiled in wine (8).

The Simples

As expert connoisseurs of the plant world, the Masters of the School offer a wide variety of remedies, provided with recognized therapeutical properties: *Rosa*, *antimoro*, *diacastoreo*, *blanca* (used for “long lasting headaches”); *Boswellia* (*Boswellia serrata*);



Figure 2. Turin, National Library. D I 14, f 1. The uroscopia. In the School, uroscopic investigation played a fundamental part in the semeiological field: no diagnosis could be made without considering the urological examination. The Master observed the colour, the quantity and the sediment of the urine in relation to the various illnesses. In all the Salernitan handbooks one finds a constant reference to such a practice. Mauro, Urso of Calabria and Egidio of Corbeil were the most significant authors of specific texts on this fundamental and widely diffused subject. In *De urinis*, Mauro gave all the indications for a correct uroscopic investigation.

Butterbur (*Petasites hybridus*); *Feverfew* (*Tanacetum parthenium*), *Alchemilla* (*Alchemilla vulgaris*), *Angelica* (*Angelica dahurica*), *Brunella* (*Prunella vulgaris*), *Roman Camomilla* (*Anthemis nobilis*), *Chrysanthemum morifolium*, *Blessed grass* (*Geum urbanum*), *Magnolia denudata*, *Sweet clover* (*Melilotus officinalis*), *Gentian* (*Gentiana lutea*), *White willow* (*Salix alba*), *Scutellaria* (*Scutellaria baicalensis*) (8) (fig. 5).

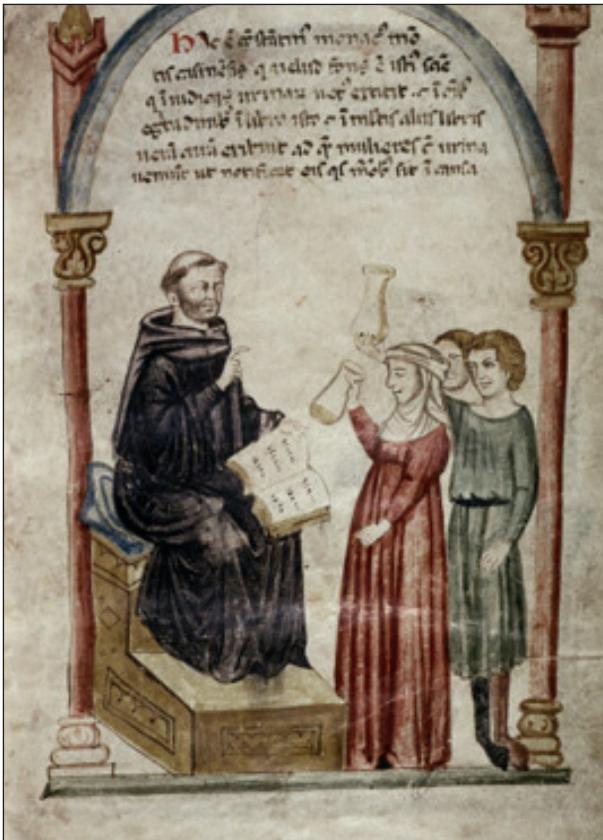


Figure 3. Bodleian Library. MS. Rawl. C. 328, 14th century middle. *Albucasis*, Lectures on uroscopy by Constantine the African (1015-1087), considered the first promoter of Islamic medical science in the West. After a life of studying and travelling through Persia, Arabia and Spain, in the second half of the 11th century, he went to Montecassino. Here he dedicated himself to the translation of numerous textbooks of classic, Hebrew and Islamic medicine such as *the Aphorisms* and *Predictions* by Hippocrates; *Ars Parva* and other works by Galen; writings of Isaac the Jew on pigs, urine and fevers; the *Isagoge* and *De oculis* by Johannitius; the *Viaticum* by Abu-Bakr Mohammed Ibn Zakadia; the *Cirurgia* and the *Kitab-al-maliki* of the distinguished master Ali Ibn Abbas. In particular, the translation of the latter text, also known as *Liber regalis* or *Pantegni* – one of the most important pharmacological textbooks of Arab medicine – enriched the knowledge of the salernitan masters about a lot of remedies, unknown until then (11).

The Regimen Sanitatis, a vade mecum to be healthy

One of the merits of the School is the dissemination of doctrines and treatments through the oral tradition. About this, it is worth mentioning *Regimen Sanitatis*, a manual containing the sum of the hygienic precepts expressed by the Salernitan Masters (9). There the rules for maintaining good health are advised (“*de conservanda bona valetudine*”) and the right remedies for each disease are offered, using the countless products present in nature: a preventive vade mecum rather than a medical textbook.

The text is written in a cultured Neapolitan dialect mixed with medieval Latin and Tuscan, in leonine verses (kissed rhymes) so to be easily memorized and recited by *clerici vagantes*. It is the result of a collective work, started by Arnaldo da Villanova in the 13th century and which over time is enriched with a large number of annotations, passing from the 262 verses of the first edition (1479) to the 3.520 of

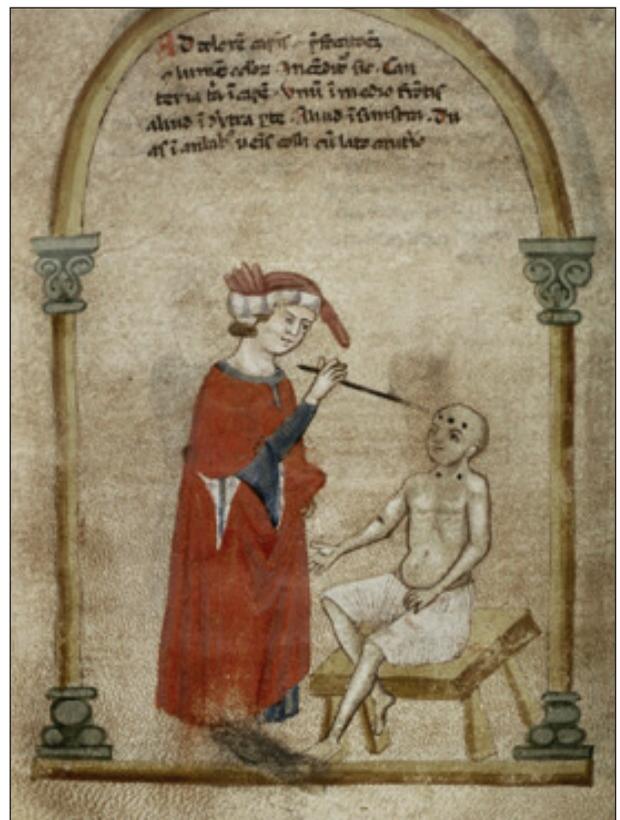


Figure 4. Bodleian Library MS. Rawl. C. 328, 14th century middle. *Albucasis*, A doctor cauterises a patient for headache, choking and light in eyes.



Figure 5. Liber de Herbis et Plantis, Paris, National Library, Cod. Lat. 6823, f 1. The natural principles: the Salernitan doctors were profound connoisseurs of the plant world and were able in the manipulation of herbs. Their experience is manifested in handbooks in which the active principles are scientifically investigated and classified on the basis of their medical properties. The fundamental work of medicinal botany in medieval times is the *Circa instans*, title derived from the first words of the prologue, attributed to Matteo Plateario, containing a detailed description of about 500 plants.

the last, edited by the historian De Renzi (10) (fig. 6).

The link with popular traditions

The wide diffusion of the School's doctrines explains the close link between "official" and popular medicine (11), both united by a holistic approach aimed at facing the existential precariousness of man, victim of mysterious and unpredictable forces, whose



Figure 6. Liber De Rigimine Sanitatis, Naples, National Library, Ms XIII C, 37. The text, a preventive vade mecum rather than a medical textbook, is written in a cultured Neapolitan dialect, mixed with medieval Latin and Tuscan. The transcription of the precepts of Salerno's *ars medica* into Leonine verses allowed them to be easily disseminated and memorized.

individual destiny must be included in a social perspective.

The health rule

We conclude by citing the famous *School rule* (8), which condenses in a few verses the summa of a teaching whose echo is a long way from dying out:

"The Salernitan School of Salerno unanimously wrote to the king of England:

If you want to be well, if you want to be healthy, expell grave thoughts, to get angry is harmful.

Drink a little, eat soberly; it will not be in vain, get up after lunch, shun the afternoon nap; don't hold urine, don't restrain your abdomen for too long.

If you observe these rules faithfully, a long time you will live.

If you are in need of doctors, for you these three things will be doctors: a merry suol, tranquillity and a moderate diet".

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