Diseases of soap-makers

From the works of the ancients we know that soap was used to clean woollen and linen garments. According to Pliny in *Naturalis Historia*, it was invented by the ancient Gauls, who have always paid great attention to elegance and cleanliness, “This was invented by the Gauls to give a red tinge to the hair and is made of fat and ashes. The best kind is made with beechwood ash and goat’s fat and is of two kinds, solid and liquid. Both are more popular with German men than women”. In his work *De simplicium medicamentorum* and in other books, Galen mentions soap and says it is made of lime, lye, and he-goat’s fat or beef suet or she-goat’s fat and has the properties of cleansing dirt. From this description it is clear that there is a considerable similarity between the soap used in ancient times and the one we know today. The ancients mixed the fat of various animals with a solution of quick-lime and wood ash, while today we usually add olive oil. Venetian soap is the most famous of all and is exported to distant lands in great quantity. It would take too long to describe how soap is made in Venice. Suffice it to say, it is a much more complex and tiring process than is commonly believed. Soap is made up of three substances – quick-lime, ash, and olive-oil. The quick-lime is fresh and of the highest quality, coming from the mountains nearby. The ash comes from far away, either from Spain or Alexandria in Egypt. The workmen of Venice prefer the ash imported from Spain. I have been unable to discover from which plants these ashes come, but I am inclined to believe they grow near the coast. First of all, the workers dissolve the quicklime in fresh water, or in seawater if the latter is not available, shaking it energetically. Once the ash has been ground to powder using a millstone, it is added to the quicklime solution
and more water is added until it becomes a granulated mass of a certain consistency. They then put this paste into trenches that have been dug for that very purpose, then throw water over it to absorb all its acrid particles, and it then flows down the trenches and into other pits. This process is repeated until they obtain a liquid that is as acrid and strong as Stygian water. When they have produced the quantity desired, the workmen put a certain amount of this liquid into large copper cauldrons. Then, after making a large fire and leaving the water to boil for the whole day, they add the olive oil in the proportion of one and a half parts to eight of the water if the olive oil is fresh and of the best quality, otherwise they add more. This is left to simmer and some of it is then poured into other cauldrons; they then add a fresh supply to the first cauldron. This process is repeated every six hours and they keep careful watch until it begins to thicken. They then remove it from the vessels and pour it over the floor in the open air so it can solidify. Finally, it is cut into pieces with a saw. This is how Venice soap, famous throughout Europe, is made.

The workers are not at all affected by the substances they are handling, although they inhale air that is saturated with those acrid particles that pervade the rooms they are working in. They suffer no ailments in their chest or in any other part of their body and are generally fit, robust, and of a healthy complexion. Only those who go barefoot have abrasions on their feet or on other parts of the body that come into contact with the "aqua fortis". The ailments that afflict these workers are caused by the toil they endure day and night and the excessive heat from the fire that is constantly burning in the workshop. Indeed, it is so hot that they often have to go out for a moment to take a breath of fresh air. In the middle of winter, these workers therefore expose themselves to the cold air wearing thin clothing and it is this that leads to serious blockages, acute fevers, and chest maladies such as pleurisy and pneumonia. Another factor is dietary error. This is because when they leave their workshops they are parched and consumed by the heat, so they go straight to the taverns where they drink great quantities of undiluted wine. The only advice I can offer soap-makers is that they moderate their physical exertion and, if they have to leave their boiling workshops in winter, that they dress warmly and cover their heads. If they are afflicted by acute fevers, repeated
blood-letting should be administered immediately, together with
the remedies prescribed in similar cases.

Knowing the details of how soap is made, it is easy to under-
stand the nature of medicines that have the so-called properties of
soap, that is, that they clean the human body of foul matter. This
quality depends mainly on the mixture of alkaline and lixivial ele-
ments tempered with an oily substance, in the same way that oil is
added to aqua fortis to temper its acridity and correct its noxious
and corrosive character when making soap. In medical treatments
with the properties of soap, nature so wished that there should be
an oily substance to make them milder. The herb soap-wort owes
its name to the fact that when it is steeped in water it produces
a soap-like lather and also contains both oily and acrid particles,
thus making it effective in cleansing the ills of the French disease,
either alone or together with other remedies of the same kind. The
powerful alexipharmic against the “Celtic plague”, guaiacum, also
has both acrid and oily properties. So it is oil that reduces excessive
acridity and eliminates its corrosive power. It is therefore correct
to say that oil corrects both kinds of acrimony, whether alkaline
and lixivial kind or acid. When treating bilious attacks, Hippocrates
recommends oil more than any other remedy and says, “You should
give him oil so that he might settle and have his bowels moved”. It
also tempers the acridity of the acid. An example of this is sulphur,
which contains a great amount of acidity, but this is not perceptible
as it is masked by the fatty and inflammable component it contains.
The oil we obtain from olives is therefore never at war with any-
thing, but contributes its goodness to all substances. Indeed, as the
saying goes, whatever declines to diffuse itself is no good.
Dissertation:
The Care of the Health of Nuns

We could call nuns and monks and all other religious orders in each and every city a sacred army on earth. The nuns living within the walls of their cloisters may also be regarded as a kind of army that bravely fights with all its strength to defeat the enemies of mankind, sure-footed as if within a fortress. No kind of society, either pagan or Jewish, has ever thought of an army of this kind because it is too conditioned by its love and desire for procreation. The only religion that can boast such a glory is Christianity, led by Christ, the only Being to be born of a virgin who was the flower of all virgins. In Rome there also used to be nuns called vestal virgins after their Goddess, and it was their duty to look after all the sacred objects of Vesta and the eternal fire. At first there were only four of them, but the number then increased to six, and they lived in the goddess's temple where everyone was allowed in during the day, but at night no men were allowed to stay. These are therefore the origins of our nuns, but how different their lives are today! For a certain period they had to vow to remain chaste, but once they had served Vesta for thirty years and preserved the eternal fire, they were allowed to wed and, as Prudentius said, "Submit their wrinkles to the yoke of marriage".

There are countless legions of our nuns in all cities, and their perpetual virginity is preserved in devotion to God. In the same way that traditional armies have their own doctors when they are sent on expeditions, as it is important they are healthy and properly looked after, nuns also need to be looked after by knowledgeable doctors with experience, who can look after their health as best possible. I wanted to discuss the illnesses of nuns and how they should be treated; but then I thought that it might be more
opportune to write this dissertation on looking after their health first, since I believe that prevention is better than cure.

The doctor who has this task must be experienced, prudent and endowed with healthy principles. First of all, he has to observe where the convent is situated — if the location is healthy it will not be difficult to look after the nuns' health, while the opposite will be true if the location is unhealthy. Indeed, the air we inhale influences the functions of our body considerably. Very often convents are well-built and have spacious orchards and rooms for the nuns, but they can also be found in unsuitable locations, for example along the city walls and the city sewers, where all the waste is deposited. One can observe that more people fall ill and with more serious illnesses in areas along the city walls than within the city. Hippocrates himself observed this in *Epidemion* when he was discussing the case-study of someone who lived near the city walls. I have observed the same thing in convents. If the convents are located in the more inhabited areas of the city, even if they have no gardens or spacious roads, the nuns enjoy better health than those that do but are in unhealthier areas. The doctor must therefore take particular care to keep anything that might infect the air away from them and advise the nuns to make sure they do not inhale the air from the sewers. They should not keep heaps of manure in their large orchards but should have it brought in from outside when it is old and not fresh if they want to manure their gardens without infecting the air with noxious fumes. As I said earlier on the subject of the diseases of farmers, Hesiod also disapproved of putting manure on the fields since he considered people's health more important than the fertility of the earth. If nuns do not want to suffer from heaviness of the head, they should avoid taking walks in their gardens during the morning and evening hours. In short, they should do everything they can to make sure the air in the convent is as pure as possible.

I have observed that in nearly all convents they have four or five pigs to make salamis, hams, sausages, lard and the like. Even if they are kept in their sties, it is inevitable that these animals spoil the purity of the air. When the pig-sties are cleaned, particularly in the summer, the whole convent is infested with a terrible stench. It is impossible to persuade the nuns to give up this custom, though in truth, in view of the cost of breeding these animals, they do not make as
much money as they think. However, if this is their wish, they must take as much care as possible to preserve the purity of the air.

Bread is the most common food in the diet of the entire human race. There is no need for me to go into this since the bread they eat in convents is both excellent and fresh as the nuns make it themselves, and one could not wish for anything better. However, the same cannot be said of what they drink, that is, wine. The wines nuns drink are usually those that change during the summer. Indeed, when they suffer from the heat of the dog days and when Leo is raging, they evaporate and turn sour. I have seen that this happens every year. Since the wine is extremely diluted from the very start, either to make it less harmful or so that the barrels are always full, it suffers quickly from the summer heat. And the nuns make one more mistake – they usually make the new wine early, using sour, tart and acidic grapes and leave it to ferment for just a few days, and then drink it straight away. As a result they suffer from stomach-aches and flatulence. To treat these ills they then obtain wines made from raisins and pure water heated in the sun as this produces a concentrate of wine. If they do not like this kind of wine, they ask their relatives and friends for older wines as new wine always gives them stomach-ache, and if they can find sufficient old wine, they can avoid the new ones. In the Gospel according to Saint Luke, our Saviour says: "No man having drunk old wine will desire new". I always tell the mother superior to strain the new wines and not to dilute them excessively before letting them rest in the casks. This is because once it has been strained properly and cleansed of tartar and sediments, it does not effervesce in the casks, while the other wines usually do so for months on end. Strained wines also tend not to become weaker and cloudier; it is only excessive heat that makes them acidic. It would be better for nuns' health and the whole convent if the person in charge of the wine-cellar prepared purer wines at the right time for the summer months, and then diluted them just before drinking, as is common practice in many places. They would surely enjoy better health and the convent chemists would make less. I know for sure that in some convents alum is added to the wine to stop it evaporating, but it then acts as an astringent and blocks the intestine and so is not good for their health.

As far as their diet is concerned, this varies according to their or-
der. Some eat fish, others meat and any other kinds of food enjoyed by the common folk and, as their age, habits and temperaments vary, I can only give general advice. In all cases however, as Polykleitios says in his Kanon, moderation is required. In those orders where meat is forbidden and they live off fish and vegetables alone, the nuns are usually in poor health. Hippocrates says: “Less substantial food leads to a short life”. This also applies to food that is not very nutritious and goes off easily. According to Marsilio Ficino in his De studiosorum valetudine tenda, they should eat four times as much bread as fish and vegetables. All legumes cause flatulence and the secretion of bile in particular, both of which are contrary to good health. In his book De ratione victus in acutis Hippocrates writes that all legumes produce flatulence, whether cooked, raw or fried, but not when they are green. Martiano says this is why vegetables that are soaked or green are less harmful than those that are dry. In general, a prevalence of dried legumes leads to flatulence. The opposite is the case if the vegetables are not dry, i.e. those that are fresh or have been soaked. If legumes are to cause less harm, they need to have been soaked for as long as possible in water. Furthermore, in addition to flatulence, legumes also result in restless sleep and erotic fantasies. Hence Pythagoras’ saying, which has now become a proverb: “Abstain from beans”. For the very same reason Saint Jerome would urge his monks to abstain as far as possible from legumes and to eat vegetables instead, as they would punish their bodies by fasting to make sure they remained chaste.

I would advise those who belong to less rigid orders and are allowed to eat meat to choose castrated meats in particular as these are more easily digestible. According to Santorio in his book De statica medicina the most digestible is veal, then chicken and fowl if they have the money to satisfy their whims. Beef, pork and hare are difficult to cook and cause the formation of fat humours. In Modena there is a famous convent called the Salesian Nuns of San Francesco di Sales. It was built in accordance with the wishes of Duchess Laura, a woman who was both wealthy and generous. The nuns there ate only veal so that they would enjoy the best of health and be able to serve God in delight. Nuns’ blood should always be light and flow fluidly through the veins, in particular at a certain age.

I know the rules and customs of religious life force these nuns to mortify their bodies by frequent fasting but even in this case
they should abide by the saying that nothing should be in excess. Very often nuns, who are such devoted followers of the harshest discipline, fade away while at the flower of their youth, impoverished of both blood and strength and they not only become sickly but also a burden to the other nuns and doctors as they are in need of effective remedies.

I would like to quote what Saint Jerome wrote about the fasting of nuns in the aforementioned letter to Demetriade: “You must fast but in such a fashion that you are not afflicted by palpitations and breathlessness and have to be looked after by your companions; you must fast so you quell any bodily desires and can still devote yourself to your reading, songs and vigils. Fasting in itself is not a perfect virtue but the basis of all other virtues, such as holiness and chastity. A moderate diet would be preferable, fasting for three days and still preserving a slight appetite”.

There is nothing more harmful to nuns’ health than not being able to enjoy a good night’s sleep. Nuns usually sleep in their own beds, in spacious rooms that are called dormitories, and although the rules of their order allocate sufficient hours of sleep, they cannot sleep for the whole time. This is because they all sleep in the same dormitory and some of them cough or sigh, while others snore or talk. This therefore leads to a considerable lack of sleep and when dawn is breaking and they are finally sound asleep, the bells ring and it is time for them to get up and go to church. In addition to this lack of sleep there is a further problem; since there are so many of them sleeping in the same room, the smell is extremely unpleasant and whoever enters the room in the morning is struck by this and, although they are used to it, even the nuns themselves notice the smell and call it dormiticcio. In his book of Epidemics Hippocrates recommends sleeping in cold rooms but well-covered, in other words, in a spacious room but with lots of blankets so that sleep is not disturbed by the cold. In this fashion, the air is cleaner, as we mentioned earlier.

Nuns who have their own cells sleep much better, especially in winter, because they can sleep undisturbed for all the hours they are meant to. However, this is not the case in the summer. There is a further problem – they cannot help breathing in the air that has been contaminated by constant exhalations from their very own bodies. To avoid this danger as much as possible, I suggest they leave the
dormitory doors ajar, in both winter and summer, so that fresh air can enter. If some nuns believe they have not slept enough at night, in particular during the summer when the nights are shorter, they should sleep for a couple of hours before dinner, following Celsus' advice: "When the days are long, it is advisable to rest either before or after lunch, and in winter throughout the whole night".

However, if these sacred virgins are unable to benefit from sleep, they may benefit from the advantages of physical exercise. If we look closely, nuns lead a sedentary life. They spend most of the days at their work-place, embroidering or doing some other delicate handiwork, singing or meditating in church and this harms their good health. However, they themselves claim that singing and reciting psalms is a kind of physical exercise that they did not use to do when they were living at home with their parents. It can certainly not be denied that singing and reciting psalms involves physical exercise, but this is not sufficient if the whole body is not exercised properly. According to Plato, true physical exercise is when both the interior and exterior of the body moves. Reading and singing exercise the lungs, but not the whole body. The nuns reply that every day, early in the morning, around midday, in the evening and sometimes even at night, they exercise their bodies by ringing the bells, which is a kind of exercise that warms the whole body and can even make them sweat. I would not dare criticize such exercise other than it makes them unpopular with the entire neighbourhood.

I once treated young nuns more than once who were afflicted by severe catarrh, because although it was the deepest winter, they still had to ring the bells at night for hours with all their strength, standing at the top of the bell-tower to announce some religious holiday. This was usually the case if one of the young nuns was to take the veil. I will never cease to be amazed that in nearly every city nuns find this din pleasant.

There are also other kinds of exercise that involve the whole body or individual parts such as the hands or feet; for example, weaving, although I have never seen a loom in a convent. If there is anything that stops intestinal blockage or removes it quickly, it is working at the loom since this involves the whole body. Weavers are the most robust and healthy looking women around. In the Bible we can read, "Who will find a strong woman? He asked the linen and the wool and worked with his skilled hands".
It was once customary for nuns to leave the grounds of their convents so they could take part in long solemn processions in the city, but never alone. This certainly did them good, but ever since Pope Boniface VIII believed it better they be kept closed within their convents so that they would concentrate more on heaven than the outside world, this type of exercise needs to be replaced with some other kind. If they do not wish to become envious of their happiness because of their robust and vigorous appearance, they should not leave the more tiring chores to their servants, called lay sisters, who frequently came from the country. In some cities I have also visited convents that had no servants and where all nuns were equal and had to do what was necessary by themselves. If their good health is important to them, it is therefore better if not only the nuns’ hands are kept busy, for example with embroidery, but also their whole body. As doctors continue to repeat, the balance between assimilation and excrement depends on the moderate exercise of the body, just as fruit comes from its roots. When whatever has to be eliminated is expelled, the body finds it easier to retain what is necessary to nourish the body.

Although moderate physical activity is so good for one’s health, no less important is serenity of the soul, as body and soul are bound together so intricately that they transmit both good and ill to one another. In De passionum characteribus, the learned Chambraeus states quite clearly how the passions of the soul such as anger, fear, happiness and other strong emotions in excess can lead to serious disturbances in the human body and in the blood mass in particular. He describes the signs and colours that each strong emotion produces in one’s face, so that from these external manifestations it is possible to understand which internal changes have been brought about, in women in particular. More than once I have observed that in almost an instant, a sudden emotion has resulted in such a constriction of the internal parts of a woman that her menstruation stopped while at its most abundant. Nuns should therefore abstain from strong emotions as far as possible, anger in particular, and should quell it immediately, just like one does with the snake when it is still in its shell. However, I would not like them to live in a state of “apathy”, as was once the case with certain philosophers. This would be unbecoming to the unselfishness of nuns. Passion may run its rightful course, but only if it is directed in the
right way. It suffices that we know how to curb our passions. "Curb the passions of the soul, restrain them, and enchain them, because otherwise they will have the upper-hand".

Someone might ask if advice and a healthy lifestyle are sufficient to guarantee nuns' good health, or if time should be spend on treating them. My reply is that since good health is so important, one may also spend time treating it. "For some, blood-letting or purgatives is to be recommended; for them, either purgatives or blood-letting is to be prescribed". That disjunctive particle should be noted. Indeed, Hippocrates does not suggest these two great remedies should always be used together, as some believe it a sacrilege to draw blood if a purgative has not been administered. For some nuns blood-letting is not advisable because they have high blood pressure, while for others only a purgative should be recommended since their digestion is poor; then again, there are others for whom both may be necessary. These remedies may be prescribed in both spring and autumn, purgatives to correct the errors made during the summer in particular, when they eat the fruit that has ripened under the spring or summer sun.

I wanted to give these few pieces of advice although much more could be added, so that the nuns may enjoy the best of health in those religious institutions that have so generously embraced them. Undertaking an oath of eternal chastity is one that is so arduous it can be compared with martyrdom, as Saint Jerome wrote so beautifully: "Not expressing what one was born for is against nature, or rather above nature, if you are to forswear your natural function, to cut off your own root, to cull no fruit but that of virginity".
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Appendices
9. Frontispiece of a new Italian version of De Morbis by Luigi Albanese “for the private study of medicine”, Naples 1842
10. Frontispiece of the Italian translation of *The Health of Scholars* by Emilio Masi and published on the occasion of the 5th National Congress of Occupational Medicine, Florence 1922
11. Frontispiece of the new version in French of *De Morbis* (translation by F.C. Meyer) published on the occasion of the 5th International Medical Congress for Industrial Accidents and Occupational Diseases, Budapest 1928
BERNARDINO RAMAZZINI
Professor di Medicina Pratica
nelle Università di Modena (1682-1700)
e di Padova (1700-1714)

LE MALATTIE
dei LAVORATORI
(DE MORBIS ARTIFICVM DIATRIBA)

TRADUZIONE ITALIANA DEL
Dr. O. ROSSI
Sulla 1° Edizione (Modena 1700)
e sulla 11° (Padova 1713)

TORINO
EDIZIONI MINERVA MEDICA
1933 XI

12. Frontispiece of a new Italian translation of De Morbis by O. Rossi with a presentation by L. Devoto and published on the occasion of the celebrations marking the 300th anniversary of Bernardino Ramazzini's birth, Turin 1933.
DE MORBIS ARTIFICUM
BERNARDINI RAMAZZINI
DIATRIBA

DISEASES
OF
WORKERS

The Latin text of 1713
Revised, with translation and notes

By

WILMER CAVE WRIGHT
Emeritus Professor of Greek in
Bryn Mawr College

THE UNIVERSITY OF CHICAGO PRESS
CHICAGO · ILLINOIS
1940

13. Frontispiece of the first English-American edition of De Morbis, by the Greek scholar Wilmer Cave Wright with an extensive, sound appendix, Chicago 1940
BERNARDINO RAMAZZINI

Al Dr. Santiago Montaldo
con toda simpatía por su adhesión a la medicina del trabajo.

Dissertación acerca de las Enfermedades de los Trabajadores

Traducción al castellano del original en latín por la Sra. Susana Victorica. Supervisada por el Prof. Dr. Juan A. Codazzi Aguirre

* Ingrid Coggi 1979

EDITADO POR LA
UNIÓN AMERICANA DE MEDICINA DEL TRABAJO

BUENOS AIRES
1949