In the past, pallbearers and undertakers had to do much more than those in the same trade today. Indeed, they were responsible for preparing the corpses - washing, anointing and cremating them - and storing the ashes in the urns. This might be why those employed to wash, anoint, and embalm the bodies, carry them on their shoulders and cremate them, came from the lowest of the common people. Today, however, the bodies are simply taken to churches or cemeteries and given to the hired pallbearers to place in the tomb.

In cities and towns, in Italy at least, every wealthy family has its own family tomb in the most important churches, while common people are interred in large shared vaults in their respective parishes. Since the pallbearers have to go down into these fetid caverns that are full of decomposing corpses to bring down another to inter, they are afflicted by serious illnesses, especially malignant fevers, sudden death, cachexia, dropsy, suffocative catarrh and other grave illnesses. They always have a cadaverous look and a sickly pallor, as if they were on the very point of death. Indeed, what is as sure a cause of pestilential illness as going down into a sepulchre and of necessity breathing in, for a certain extent of time, putrid air that poisons the animal spirit – which by its nature must be ethereal and thus weakened, is unable to sustain the whole of the vital machine? As Hippocrates so rightly said, “Air is the originator of death, life and illness? It is impossible that the air in the vaults is anything but extremely pernicious to the pallbearers and taints their blood mass. In ancient times, slaves were made to carry out this vile service, as in mines and sewers. Their heads were half-shaven and they were called inscripti, as Martial says: “Four inscripti were carrying the pauper’s corpse, just as a thousand like it the unhappy pyre receives”.

Chapter XVIII

Diseases of pallbearers
Today, it is sordid money-grubbing or need and indigence that compel free men to pursue such a trade, but with results that are anything but satisfactory – I have never seen a pallbearer grow old. The terrible ability of the decomposing bodies of any animal to taint the air is generally well-known. It has often been observed how corpses that were not interred after great battles or the imprudent opening of old tombs have caused dire pestilences that claimed countless victims. It should therefore come as no surprise that both pallbearers and those who carry out the cremation are afflicted by pestilent diseases after handling the corpse, opening the burial vault, and going down into it. A well-known pallbearer called Pistone interred a well-dressed young man who was wearing new shoes. Several days later, around midday, when he saw that the church doors were open, he went to the tomb, removed the tomb slab, went down into the vault, removed the shoes of the corpse, and expired on the spot, thus paying the price he deserved for having violated the tomb.

One can frequently smell the most terrible stench of putrefaction in churches, in summer in particular, and this bothers the attendees greatly. This is caused by the large number of sepulchres and the fact they are frequently opened. That is why frank, incense, myrrh, and other perfumed substances are burned in churches. In his outstanding work, Lilio Giraldi rightly criticizes the custom that is still followed today of interring the dead in churches. In the past, when Christianity was in its earliest stage, only the bodies of martyrs would be buried within church, while the rest of the faithful were buried either near the sacred space or in a cemetery. The manner in which country-people bury their dead is certainly more correct than the way it is done in the city. They place their loved-one in a wooden coffin when they die, dig a deep pit in a meadow near the parish church, and commit him to the earth; all of this is done by friends and family. A custom that can never be praised enough is that of the Romans, who took their corpses outside the city, or the Athenians, who either took them to Kerameikos or cremated them and stored the ashes in marble or bronze urns. The Via Latina and Via Flaminia, and particularly the military roads were renowned to the Romans because of the number of funereal monuments they boasted, as Juvenal says: “I shall discover the fate of those buried along the Flaminia and Latina roads”. 
According to Giraldi, mentioned earlier, this was done for three reasons. Firstly, so these monuments would encourage travellers to be virtuous, thus the ancient epigraphs generally directed to the traveller with this message. Secondly, because whenever the city was endangered by a siege, the townspeople would fight the enemy with greater courage to defend the ashes of their loved ones. Thirdly, and this was the principal reason, to save the city from the terrible stench of decomposing corpses. However, the Vestal Virgins and Emperors were granted the exceptional privilege of being buried within the city. According to Cicero, the Twelve Tables of the Roman Law prohibited funeral pyres from being laid near any houses at all, even if outside the city walls: "It is forbidden ... to build a new pyre or a burning mound nearer than 60 feet from another's house without his consent". Thus states Cicero; this was not due to fear of fire, but because of the terrible stench from burning corpses. The ancients were so cautious and paid such heed to the salubrity of the air in looking out for public safety, that not only did they insist that rubbish be deposited outside the city walls, but also, too, the ashes of their beloved. Hesiod even disapproved of putting manure on the fields, since he considered the health of the people more important than the fecundity of the soil. According to a Roman municipal edict, it was forbidden to bring leather objects into temples, since entering with anything that was taken from the dead was considered a sacrilege.

However, going back to our main theme, it is only right to worry about the health of pallbearers since theirs is a trade we cannot do without. It is only right, since they not only bury the dead, but also the errors of physicians. So it is only right that, as far as possible, they be repaid for their service protecting the reputation of the medical profession. Measures must be recommended that limit, as much as possible, the harm inflicted by their trade on those who serve the dead. These measures are the ones that are usually adopted during a plague - rinsing the mouth and throat with strong vinegar, keeping a handkerchief soaked in vinegar in the pocket to refresh oneself, leaving the tomb closure slightly ajar before entering so that the exhalations within may come out. Once they have completed their work and return home, if they have the financial means, they should change their clothes and clean themselves as well they can. When they fall ill, they need to be treated
with the closest attention possible. In the past when I treated men of this trade, I prescribe blood-letting as rarely as possible, since the blood is as cadaverous as the colour of the face; purgatives are more suitable for those suffering a foetid cacochymia and they generally succumb rather quickly.
The work of pallbearers is the complete opposite to that of midwives. The latter helps man enter the stage of life while the former helps him take his leave. Since both professions deal with the beginning and end of one's life, however, they make the conditions of human existence more than clear. Unlike pallbearers who deal with corpses, while midwives are not afflicted by particularly serious illnesses, yet they are not totally immune. And it is impossible for them to avoid the risks posed by the uterine discharge that flows with such abundance from the womb together with the infant, as they themselves affirm and which has also been observed in many cases. There is no need for me to dwell on the danger of the lochia since everyone knows that if the flow is made to diminish or is suppressed altogether for just a few hours, the woman will die. In the past and until today there has been much discussion on the danger of the menstrual flow. According to Pliny, it is so harmful because "must turns to vinegar, crops become sterile, insects perish, and buds and fruit whither in orchards where women have sat upon them". Falloppio, on the other hand, tries to acquit the menstrual blood of all these accusations and claims that if a woman is healthy, this blood might be beneficial, since it is the very same blood the woman and foetus are being nourished with and the only reason the womb is expelling it, is because there is too much of it. Rodrigo de Castro and Baillou are of the same opinion. The latter says that the sin of uterine menstrual flow lies in its quantity, not quality and, in the notes on a case he includes a passage in which Hippocrates calls the menstrual blood a flower, not a flow: "the monthly flows flower". Baillou also states that there is nothing wrong with either the quality or quantity of menstrual blood, "but this sort of
purgation is one of nature's mysterious and marvellous laws and the divine providence for the continuation of the species’. To my amazement I have observed more than once in women afflicted by lengthy illnesses and almost reduced to wasting away, and in one nun of high rank in particular who had been confined to her bed for over ten days, that on set days these women would still have their menstrual flow, albeit in a more modest quantity, at times just a few drops. It is to be supposed that menstrual blood has noxious characteristics and indeed, it has been rightly defined as a secretion, and simply an excretion. This secretory menstrual flux is the result of a fermentation that is unknown to us, when saline particles of various origins precipitate in the glands of the womb and are then expelled from the body.

Women are all too familiar with the powerful effects of this fermentation and the disturbances it causes, both before and during their menstrual flow. This is why some is called, not inaptly, menstrual fever, yet it is also a medical fever since it leads to an improved and greater bodily vigour. In his writings on these troubling flows, Oribasius writes that “women are distressed by what causes them pleasure, and are pleased at what causes them distress”. If history is to be believed, menstrual blood was drunk in the belief it was a kind of philtre (love potion) with the power to make one lose one’s wits. Thus it is said that Gaius Caligula was poisoned by the menstrual blood of his wife, Caesonia. Amongst their remedies for treating wounds, Fragoso, Lanfranchi of Milan, and other famous surgeons also include the following: all surgeons must be extremely careful not to use swathes made from women’s linen or nightgowns, no matter how many times they have been washed, due to the poisonous nature of menstrual blood. Menstruating women should also be kept away from persons with wounds, as should men who have recently had intercourse because of the goatish smell they give off. According to Gaspar de los Reyes, what Pliny and Joachim Camerarius have to say is not all that fanciful – although they are completely chaste themselves, bees will swarm around a man who has just had sexual intercourse since they are attracted by the sweetness of those smells.

No matter what the characteristics of menstrual blood and the opinions regarding its properties, there is no doubt in regard to its noxiousness and virulence in the uterine flux that precedes and fol-
lows childbirth. This has been sufficiently proven by the fact that, after the sudden suppression or reduction of the post-partum flow, the woman is afflicted by a malignant fever that leads to a quick death, which is something that does not occur if the menstrual flow is suppressed. In the latter case, the woman falls ill and becomes cachectic, but it is not fatal. The foetus absorbs the purest and richest part of the spirits from both the blood and chyle and thus deprives the womb of the fluids that should have been its own. As a result the humours congest, not just in the entire blood mass, but also in the uterus, which grows considerably in size during pregnancy, as Graaf and De le Boe have observed, and the more it grows, the more distended it becomes. During pregnancy these humours are enclosed and tranquil, causing no problems at all, but during labour, it is like a swamp that is stirred up and if it is not expelled immediately through an ongoing flux, it can be fatal.

Since they spend hours on their knees, assisting women in labour sitting on a chair with their hands outstretched to reach the new-born child, midwives are therefore subject to serious diseases that are caused by the post-partum flow falling onto their hands, and at times inflaming and ulcerating them because of its corrosive nature. Marvelling at the virulence of contagious diseases, Fernel describes the case of one midwife who, after assisting a woman in labour, developed a lesion on her hand which after a time destroyed it. Fernel adds, however, that the woman who gave birth had had syphilis. The midwife’s hands were infected after having touched the post-partum discharge of a woman with syphilis, in the same way that a wet-nurse’s breasts are infected if she breastfeeds a baby with syphilis; conversely, if a wet-nurse has the disease, the infant will show the first symptoms of syphilis in its mouth and throat. Experienced, astute midwives are well aware of all this and when they have to assist a woman in labour with syphilis, they told me they cover their hands in linen swatches and wash their hands frequently in water and vinegar, since they have learnt at their own expense that syphilis and other illnesses can be transmitted via direct contact. It should also be added that through the mouth and nose, midwives inhale noxious smells and fumes emitted by the post-partum discharge, since there is no way they can protect themselves against harmful, unpleasant smells unless they want to throw the woman in labour into hysterics.
Midwives might be at an advantage in England, France, Germany, and in other countries where women in labour give birth lying down in their beds and not on chairs with hollow seats, as is common practice in Italy. In this country midwives assist those in labour by leaning forward and bending over, with their arms outstretched waiting for the newly born child to come out of the vagina; they exhaust themselves to such an extent (in particular when assisting the wives of the wealthy and when labour is particularly difficult) that, when it is over, they return home exhausted and worn-out, cursing their profession.

Despite my detailed studies, I have been unable to discover whether in the past, women gave birth in beds or sitting on chairs. Together with other facts that deserved to be known, we would have known this, if fire had spared for the world of culture Thomas Bartholin's library, where that illustrious man kept his admirable and nearly completed work, De puerperio veterum. Giving birth in bed is gradually becoming more common in Italy too, and I believe this is more than praiseworthy since many inconveniences can thus be avoided. Indeed, (unless labour is extremely easy), it is often the case that before women give birth, they are moved from the bed to the chair and from the chair to the bed repeatedly, fatiguing themselves unnecessarily and wasting energy. It may also so happen that they haemorrhage severely after the birth, faint on these chairs, and then expire.

That a child is born more easily when lying down rather than standing or sitting is shown by all animals, for when they give birth they lie down and nature is their midwife. But this might be the case for animals in order to avoid their young ones falling onto the ground and dying, or, since their eyes are always on the ground, their uterus is not in the same position as a human's and giving birth may therefore be easier. However, smaller-sized animals, such as dogs, cats and mice, where there is absolutely no danger that their offspring fall from a height, all give birth lying down, too. I do not even believe that a vertical position of the uterus makes giving birth easier, because there is reason to believe that once the foetus has freed itself of its wrappings and is trying to get out, it moves rapidly towards the vagina, often coming out in an unnatural position, with its hands outstretched or in some other way, as has sometimes been observed.
But what remedies does medicine offer to assist midwives and help them so they can carry out their profession without danger, if possible? None at all, other than washing their hands and arms with water and wine whenever they can and when the woman has given birth, they should wash their faces and rinse their mouths with diluted vinegar and then, once they are back home, they should put on clean clothes. In short, they should pay attention to personal cleanliness. An elderly midwife once told me that every time she assisted a woman who was thought to have syphilis or be cachectic, before she gave her the chair she would wait until the last throes of labour so her hands would not be soiled for too long with the discharge.
Chapter XX

Diseases of wet-nurses

Once the midwife has completed her work, it is the turn of the wet-nurse to feed the infant. While breastfeeding, wet-nurses are also subject to various diseases. When I speak of wet-nurses, I am referring not only to the women who breastfeed other people's children for money, but also those who breastfeed their own. The diseases they are most often afflicted by are the following: consumption; hysteries; pustules and scabies; headaches; vertigo; difficult, rapid, and shallow breathing; and impaired eyesight. They suffer from a number of other disorders, in particular in their breasts when they have excessive milk or when it curdles, and when the breasts become inflamed or have abscesses or nipples develop fissures. It is easy to understand how a lengthy period of breastfeeding can lead to atrophy and exhaustion of the mammary glands because the more the child grows, the more milk it sucks (it would appear that milk is either formed from the blood, as the ancients believed, or from the chyle, according to more modern opinions) and thus deprives the nurse of the natural fluids juices that should nourish her. She then grows thinner and thinner, until she becomes as thin as a reed, to use an expression from Palatus. This is particularly the case when she nurses twins or when she is breastfeeding her own child and another child to earn some money. Wet-nurses often complain of itching, a result of looking not only after the infant, holding it in their arms and to their breast if it has milk crust and scabs on its head (according to Hippocrates, children that are not cured of these outbreaks are later afflicted by serious illnesses), but also because the best part of the blood or chyle is carried to the breasts where it is transformed into milk, and all that remains to nourish the nurses are the serous and saline humours which then lead to pustules and scal-
ing skin. Hippocrates wrote that “a woman who was breastfeeding was covered in pustules, which disappeared in the summer when she stopped breastfeeding”. Our Martial (I call him such because he was born and brought up in this area, in Sassuolo, not Rome) interpreted this passage and, unlike Valles who was convinced that while she was breastfeeding this woman had no menstruations which led to cacochymia and hence the pustules, Martial claimed that the cause for these must lie in their “errors of diet and drink since they believe they are thus increasing their milk, although this is also because they have much more appetite”. Additional factors are having to stay awake or the wet-nurse waking up during the night to feed the child, leading to changes in the body which, together with the addition of saline humours, then results in boils.

Hippocrates wrote the following about another wet-nurse: “Thersander's wife, who was not of a particularly strong constitution and was leuco-phlegmatic, developed an acute extremely high fever while breastfeeding. Her tongue was parched and she had all the symptoms that go hand in hand with a fever. Her tongue then became covered in nodules that were as big as hailstones and the woman had worms from her mouth. On the twentieth day she was still not completely cured”.

Valles blames the absence of menstruation for this high fever and says: “Wet-nurses are in great danger that the impure excrements, which should come once a month, replace their pure milk, which then disappears”. I find Martial’s opinion more plausible. Indeed, those wet-nurses who have no menstruation while breastfeeding should not be considered oddities, since it would be even stranger if they breastfed and experienced their menstruation at the same time. On the contrary, it is their errors of diet, sleepless nights, depletion of their nutritive fluids, and other causes listed by the learned Martial that should be taken into consideration. Indeed, the woman described by Hippocrates was full of fluids and in the respiratory tract in particular as was more than clear by the very words of Hippocrates himself when he wrote she was “leuco-phlegmatic” and brought-up worms.

This is therefore why wet-nurses suffer from poor eyesight, headaches, vertigo, shortness of breath, and leucorrhoea, especially when they breastfeed for several years. Baillou, the most experienced doctor of his times, says “his practical experience has convinced him...
that nearly all women who breastfed for longer periods become frail, sickly, debilitated and suffer from leucorrhoea. This is because in wet-nurses, the humours become liquefied; Baillou continues that this was the case with a woman with copious milk who breast-fed three children for a long period of time and it was this that led to her vessels being drained of nourishment and to infirmity. Baillou describes the case of a wet-nurse, which provides a useful suggestion for the correct treatment of all wet-nurses. In his own words, “One wet-nurse was almost completely rigid because of pains in her spine; this ill might have been caused by none other than her diligence and constant breastfeeding. She was administered a potent medicine, with the application of cotton and oil, after which she made a rapid recovery without any need for blood-letting. The warmth of her bed and the ointment accelerated the maturation of the ailment. Another doctor might have bled her”. Very often, however, doctors erred when they attributed the causes for the wet-nurses’ ailments to the suppression of menstruation and therefore ordered blood-letting. Today, in similar cases, at least here in Modena, doctors would order blood-letting not just once, but two or three times, and if they had not done so, they would have believed they were committing a crime so serious it was worthy of capital punishment. When a wet-nurse is afflicted by one of the illnesses mentioned above or by any other, doctors have the greatest faith in blood-letting, believing it to be a solution for no other reason than because the wet-nurse has had no menstruation while breastfeeding. This line of reasoning is nearly always wrong because one must not just regard the absence of the flow as the cause of the disease and an excess in blood, but also cacochymia and the ailments caused by an extended period of breastfeeding. Since there are a great many wet-nurses with restricted financial means in need of treatment and very few of them (at least in this region) are nursing the children of the wealthy, it is essential that great caution be paid when recommending blood-letting, in order to avoid weakening their bodies even further and exacerbating their diseases; in this case purgatives are more advisable than rash venesection at the wrong moment.

Everybody is aware just how many breast troubles wet-nurses are afflicted by – too much milk, its excessive flow when it is too thin (which leads to weakness and exhaustion), curdling, inflammation of the breast, abscesses, and nipple fissures. I shall not go into the
details of what causes these ailments here and propose remedies because others have already done so. Suitable suggestions together with a wide range of remedies are to be found in works on practical medicine, such as the outstanding book by Ettmüller.

At times, wet-nurses complain of a constricting pain in the back, in particular those who have recently given birth and an excess of milk; this is either because their breasts are too soft and flaccid or because the child is too weak to drink enough milk. They suffer from this pain mainly because the milk vessels of the thorax, which run along the spinal cord and are believed to take the chyle needed to make milk to the axillary glands or breasts, become too full and distended. A remedy for this pain is moderation of diet, especially in regard to drinking, excessive wine in particular; if the pain is acute, blood-letting may be recommended. This pain, at times followed by fever, is usually observed in stouter women.

As I mentioned earlier, wet-nurses can also be subject to hysteric, especially if they are living in the houses of the wealthy and are eating a rich diet, but are kept from intercourse with their husbands. This is because when the stomach is well-nourished, the uterus becomes bloated with seminal liquid and is irritated and upset, thus defiling the milky fluid in the breasts. Nearly everyone who has written about the regimen wet-nurses accepts without a doubt, almost like an oracular utterance, the principal that they must avoid sexual intercourse, otherwise their milk will suffer. Galen says: "I advise women who are breast feeding to abstain from intercourse completely, indeed, coitus causes menstruation and the smell of the milk becomes unpleasant". It would be too long-winded to name all the authors who insist on the need for wet-nurses to abstain from sexual intercourse. I consider this view to be totally unfounded, unhealthy, and contrary to practical experience. I do not deny that the milk produced by an expectant wet-nurse is of poor quality and bad, so much so that the infant either has to be weaned or entrusted to another wet-nurse. The story Reiner de Graaf tells deserves mention. A man in Delphi had a small fat dog in his home that had never had puppies, but that was suckling a cat. Its master paid great heed when she was in heat to make sure she could not leave the house and mate. In the end, a stray dog managed to enter and, from that day onwards, the cat would no longer drink the dog's milk. I do not deny, however, that wanton, excessive sexual inter-
course affects the milk. Nonetheless, it might be the case that the milk is affected even more if the wet-nurses, who are employed in the houses of others, are kept away from intercourse or even from the very presence of their husbands, to the extent that they are not even allowed to go back home and visit their own children. Indeed, what happens is that they long for this forbidden intercourse more and more and spend day and night brooding with desire until they are overcome with hysterics and even fury. In this fashion, it is none other than the innocent body of the infant who pays the price for the delirium of a wet-nurse and for the errors of one who guard the nurse even more zealously than his own wife.

Let those writers think what they will, let them adhere to Galen’s maxim and insist wet-nurses avoid sexual intercourse with their husbands, and imprison them in the women’s quarters. With all due respect, I am of a different opinion and as a certain orator said regarding the effectiveness of eloquence, “I appeal to the people”. One should remember that among the common people, all the mothers breastfeed their children and unless there is particular reason not to, they sleep with their husbands each night without abstaining from sexual intercourse. Yet there is no evidence this has the negative effects on their breastfeeding that are feared and imagined by the doctors of wet-nurses to princes and the rich and who would have absolute chastity enforced. It is therefore my belief that, although approved of by the most renowned physicians, this is neither correct nor healthy. Furthermore, in this city there are very few wealthy people who have wet-nurses staying in their own homes, both because such high-living induces airs of sauciness and petulance that make them unbearable, and because they see that their children are not growing up any better than those of the common folk or country people. On the contrary, they might even be less robust and weaker. It is for this very reason that most of them entrust their children to wet-nurses who suckle them in their own homes together with their own children, and they prefer to give their children to women from the country rather than from towns so they are nourished on richer milk.

Although others probably believed in good faith that the practice was so healthy, to my knowledge there is only one doctor, the aforementioned Martial, who wholly criticized the rule that wet-nurses should abstain from intercourse completely. After having
described how he believes milk is formed in pregnant women and those who have just given birth, he adds the following: “If I am correct, those who forbid wet-nurses to have coitus are mistaken in their belief that the milk is spoilt because sexual intercourse stimulates the movements of the uterus and this is what the formation of milk depends on; it makes the women more lively which, according to Hippocrates, dilates the vessels, and this undoubtedly contributes to the goodness and abundance of the milk. Furthermore, abstinence from coitus is harmful and all those who have become accustomed to this (as all women who have lost their husbands have learned all too well and are afflicted by all kinds of ailments), then it is unadvisable to keep wet-nurses from their husbands”. If the matter is considered with great care, it must be admitted that the primary cause for the formation of milk lies in the uterus since, when it is stimulated and aroused by sexual pleasure, all the bodily functions are affected and the blood vessels are dilated. At this point, a customary task that wet-nurses once had during wedding celebrations springs to mind. They would measure the bride's neck with a thread as she was getting into her wedding bed for the first time; the next morning they would measure it again with the same thread to see if it would still go around the neck. If it did not, they would proclaim that the virgin had been made a woman by her husband. In reference to this custom, in the nuptial poem of Thetis and Peleus, Catullus says: “When her wet-nurse sees her again at dawn, she will not be able to encircle her neck with yesterday's thread”. This means that the bride's neck became bigger because coitus had swollen the veins.

I have often reflected on the ingeniousness of nature and the fact that milk is formed in the breasts after childbirth and even before, almost as if there were some kind of intelligence at work that has the foresight to take care of the needs of the newborn, but I have been unable to find a satisfactory explanation, not even in the works on this subject, including those by Diemerbröck, Kaspar Bartholin, Thomas the Younger, and others mentioned by Diemerbröck. At this point, however, I would like to digress a little.

The description of lacteal vessels is relatively well-known. Although Hippocrates already appears to have mentioned the matter, Aselli was the first to begin studies on the subject in this propitious century, but it was Pecquet who completed them. No matter how
inexperienced, all doctors not only know of the movement of the chyle along its own ducts to reach the blood vessels, but also of the more recent theory regarding the formation of milk from chyle. Although anatomists have not yet been able to illustrate the exact steps of this transformation (even though Diemerbröck was convinced that he had demonstrated the process through numerous examples), it is believed that milk is an ingredient of chyle mixed with the blood and separated in the breasts. This is the opinion of the authors of Biblioteca anatomica, but it was our Martial who understood and described it first with such brilliance. If this excellent commentator on Hippocrates were still alive today and were to actually see the multitude of lacteal vessels he had perceived by intuition, he would be extremely proud of himself. What were once just uncertain theories regarding the composition of milk have now been proven. What remains to be shown, however, is the mechanism by which this chylous liquid is pushed in such vast quantities to the breast glands both before and after childbirth, despite the abundant flow of post-partum uterine fluids. All we know with certainty is that the chyle does not go there of its own accord, and neither is it attracted by some driving force or intelligent faculty.

Since the views of the moderns on this subject are unsatisfactory, let us return to the maxims of the ancients to see if we can find something that looks like the truth. Plautus says: “I regard those as wise who employ old wine freely and enjoy old comedies, because the new ones are worthless than new coins”.

In his explanations of the marvellous things that take place in our bodies, at times the great Hippocrates used the term “nature”, yet he still recognized the need for a mechanical theory for the formation of milk, as is evident in many of his works (the sort of theory that today's writers so pride themselves on, relegating to bakers the ferments that were once used to explain everything, and resorting to mechanisms and artificial structures to explain everything). Indeed, Hippocrates says that women give birth with ease “When, once the membranes are broken, the child comes forth head first; whereas it comes out slantwise or feet first if the momentum is in that direction”. The Greek word was correctly translated as momentum or inclination. Hippocrates explains the mechanical theory of the milk formation process with the following words: “Milk is formed by a process of the following nature: when
the uterus swells with the growth of the foetus, it presses on the woman's stomach; when this is full because of the pressure exerted by the uterus, the richest part of food and drinks is pushed away, into the omentum and the flesh". With the words "milk is formed by a process of the following nature", Hippocrates is referring to a mechanical process through which this phenomenon occurs.

In a pregnant woman, when the foetus begins to grow, the uterus presses on the intestines, stomach, diaphragm and all the organs below, thus forcing them into a more restricted space and, at the same time, driving the chyle through the lacteals of the abdomen and the thoracic duct towards the breasts. This means it is easier for the chyle to reach the breasts via the chylous ducts, since the former are softer and more relaxed and, if the ducts are not yet completely opened, via the mammary arteries, which is the commonly held belief of Richard Lower, Pier Dionis and others. According to Hippocrates, all that is needed is this pressure, although the movements of the foetus itself may also reinforce this kind of pressure. Indeed, when the child starts to move in the uterus, the first milk appears in the breasts. Even the greatly renowned Pecquet, who was the first to observe the lacteals in the thorax, claimed that the chylous humour is pushed by the movement of the diaphragm from the abdominal lacteal ducts to those in the thorax before being able to return to the blood mass. Of great interest is what Herodotus wrote about how the Scythians managed to increase the amount of mare's milk on which they lived. "They take small bone tubes like flutes, thrust them into the mares' genitals, and then blow with their mouths; while this is being done, someone else milks them. They claim that this makes the mares' veins swell and fill up, thus making the teats press downwards". Although a pregnant woman's uterus is not so similar to that of an animal, which does not stand upright, when it dilates with the growing foetus it has enough strength to press hard on the parts around it and to push the liquid in the vessels upwards; the movement of the foetus itself also adds to the pressure of the fully swollen uterus.

However, once the child is born and the uterus returns to its natural size, this pressure ceases and with it, so does this upwards movement. Hippocrates adds that this is the very reason "The milk flows to the breasts if the mother is breastfeeding the child; since when it sucks at the breasts and the milk comes out, the vessels ex-
and absorb fats from the stomach, thus reaching the breasts. The child's sucking is sufficient to keep up this flow of chyle. When the child stops sucking, the source of milk soon dries up. Hippocrates therefore believed it was this mechanism that produced milk in the breasts. This theory of Hippocrates is confirmed by the following observation of animals that produce several young at one birth and have a long series of teats in two rows (such as the sow, dog, cat, etc.); the teats that are closest to the cornu of the uterus have the most milk, since this is where there is the most pressure, both before and after giving birth. I have observed this phenomenon many times when I was in the countryside. This is why the dogs that happen to suck the teats in the middle are stronger and more robust than the others who suck milk from the teats at the two extremes.

Hippocrates, therefore, tried to explain the movement of the liquids that leads to the creation of milk in the breasts in mechanical terms and, if his successors had followed in his footsteps, medicine would have achieved much greater results in countless fields. Faced with a problem they find hard to understand, many doctors have resorted to the concept of “nature”, thus doing medicine no favour (indeed, in the natural sciences there is nothing more deceptive and no greater evidence of ignorance than invoking this concept). Diemerbröck studied this subject in great detail in an attempt to discover why the chyle, whose flow is impelled solely towards the heart via the chylous ducts, was being lead to the breasts to generate milk. First of all, he rebuts Deusing's theory, that explained this based on certain the characteristics of the body to rarefy and ferment liquids, then he put forward his own explanation, but it cannot be said that its foundations were particularly sound, since it is underpinned by his own imagination. He explains the phenomenon with the woman's strong desire to have milk so that she can feed her child. This theory was later skilfully rebutted by Bartholin. However, to loosen asunder Diemerbröck's contrivance, I think that the following observation suffices: noble and overly delicate women who have just given birth, and who are refusing to breastfeed their own children, not only are neither thinking of nor longing for milk in their breasts, it is their sole desire to make this go away. Nevertheless, no matter how against it they are and all the remedies they resort to in order to fulfil their objective, on the third or fourth day past-partum, their breasts are aflow with milk. Bartholin
offers no sound or satisfactory explanation for this; indeed, he puts forward these thoughts rather doubtfully. External factors play a role in preparing breasts for the production of milk; first of all, that sudden change that can be seen in young girls when they have their first menstruation, hair grows in the pubic area, their voices change and their breasts grow; secondly, male semen also plays a role, since through conception it makes the blood mass ferment and facilitates the secretion of chyle in the breasts. Bartholin then looks at the internal factors, explaining that the reason the breasts swell three or four days after giving birth is because they are engorged by the chylous blood refluxed from that which previously flowed in such abundance only towards the uterus to nourish the foetus. Ortlob is in agreement with this when he states that "Once the uterus contracts after giving birth, the substances destined to nourish the foetus are once again absorbed by the blood, and thus the mammary glands, which are more dilated than usual, commence with the secretion of the humour as the uterus had done before". These speculations are certainly extremely ingenious, given that it actually is true that milk originates from the uterus; for example, sterile women, nuns and other women who do not conceive and marry only rarely produce milk in their breasts, although this does occasionally happen with young girls. However, one must still ask oneself, once the uterus has rid itself of its burden, why is the chylous blood that nourished the foetus via the hypogastric arteries reabsorbed by the veins, flowing to the right ventricle of the heart and then the left before rejoining the arterial blood? I ask myself what sort of intelligence then guides it towards the breasts where it becomes milk only after childbirth when the lochia is still flowing, and not at another moment when women are not pregnant and are more robust, stronger and not so worn-out by pregnancy, childbirth, and the copious flow of lochia? In short, the question still remains as to what force, what mechanism causes the constituents of milk to flow to the mothers' breasts? This question has not yet been answered.

We must believe that the Divine Architect created the uterus and breasts with structures and mechanisms we still know nothing about and, in such a way that when the uterus releases the foetus, milk is automatically produced; similarly, after having been inactive for nine months, the foetus' lungs begin to function independently.
as soon as external air enters via the mouth and inflates them with its elastic force; at the same time, the foramen ovale is no longer used and the blood circulates through other conduits. One cannot but admit that this harmony between the uterus and breasts is extraordinary, but so far human intelligence and anatomical studies have not been able to explain it. Hippocrates perceived this harmony when he wrote the following: "If the breasts' nipples lose their reddish colour, the uterus is ill". The aforementioned Bartholin explains the "accord" among the uterus, placenta, and the breasts on the basis of their mutually similar gland structures in the uterine placenta and the breasts. The chylous blood that had flowed to the placenta, carried by circulation, is diverted to the breasts, finding a familiar home, as it were. Nevertheless, we have to recognize there is an accord between the breasts and uterus even in those cases where the placenta plays no role, as in the case of virgin girls who sometimes lactate. Furthermore, experience has shown that, due to uterine abnormalities, cancerous tumours are often formed in a woman's breast and this is found more frequently in nuns than in other women; it is my belief this is not because of absent menstruation, but because of celibacy. I have often observed nuns with healthy complexions, regular menstruation and who were endowed with a salacious nature, but who suffered miserably from horrendous breast cancer. In Italy where each city has multiple convents, it is often the case that within their walls there are nuns suffering from this terrible illness. Why is it that only the breasts are affected by a disordered uterus, and not other organs, or at least in the same way and as frequently? The answer undoubtedly lies in that accord, the workings of which still have not been discovered by anatomical studies, but that one day might be revealed in full.

This admirable accord between the breasts and the uterus, both of which are sources of libidinous pleasure, has been extensively proven by the considerable sexual arousal women admit to when their breasts are caressed. Carpi has observed that when caressing the breast and the nipples in particular, they become erect like a penis, stimulating dormant desires. I prefer to quote his own words: "Caressing the breast incites sexual intercourse, both in the male and female, but in the latter to a greater extent. There are veins that go from the female genitals to the breasts and it is really true that when the breasts are caressed, the nipples become erect just like
the penis". The sympathy and accord between these organs must therefore be attributed more to the to the venous system rather than, as was Bartholin's belief, tissues that are almost nonexistent, because once the uterus has rid itself of the post-partum bloody discharge and has returned to its original size, it consists of membranes, unlike the breast which is made up of glands.

The speculations and theories of the moderns as to why the breasts swell with milk only after childbirth and at no other moment are therefore in no way preferable to Hippocrates' hypotheses. Indeed, although Hippocrates ignored the circulation of the blood and chyle, which we have now discovered, he acutely observed the amazing accord and reciprocal exchange between the breasts and uterus, and then rightly went on to attribute the formation of milk to the pressure and movement of the foetus in the uterus. Anyone who rebuts this theory should put forward a better one, but at the end of this century it is difficult to believe that we will discover the solution to this problem that the Supreme Bestower of all things might have reserved for a coming century.

However, let us abandon any further study of a mystery that has taxed many illustrious minds and let us return to the diseases of wet-nurses to find remedies for their suffering in the sanctuary of medicine. Regardless of its nature, if the illness is serious and is caused by excessive breastfeeding, the latter must be stopped because elimination of the immediate exciting cause of excessive secretion is preferred. If impending consumption is suspected, as indicated by emaciation, anorexia, insomnia, and facial pallor, breastfeeding must be stopped immediately and the remedies given that prevent wasting and re-nourish the body. Richard Morton gives an accurate description of consumption caused by excessive breastfeeding; this author should therefore be consulted for various remedies for wasting that he proposes. However, the best remedy is that of a donkey's or cow's milk, unless acute fever, excessive stomach acidity, or other factors do not stand in the way. It is rational, indeed most suitable, to treat consumption resulting from too much lactation with milk replenishment. First of all, donkey's milk should be prescribed to purge the corrupted humours, followed by cow's milk to treat the emaciation. This is the best method of giving milk as a remedy for wasting. The Divine Preceptor himself also used it, as can be seen in the case history of the son of Eratolaus. He be-
came extremely emaciated from severe and prolonged dysentery; Hippocrates gave him donkey's milk as a purgative and then cow's milk to nourish him. Hippocrates says: "After drinking nine half-pints of boiled donkey's milk in two days, he had a strong flow of bile, all his pains disappeared and his appetite returned. In place of donkey's milk, he then drank four half-pints of crude cow's milk, two glasses a day at one go, after mixing it with a sixth part of water and a bit of black wine". Prospero Marziano's notes on this passage deserve mention. "It is well-known that donkey's milk was not administered to fortify the patient, as in the modern practice where it is preferred to any other cure for wasting, but rather that of cows, whose density is suited to fortify the body". A milk-based diet administered in the following way will serve both purposes: first it will purge the body's humours of its saburra and then it will rebuild it. Morton describes the case study of a woman who became extremely weak, lost her appetite, and was subject to hysterical choking fits after breastfeeding for four months. She refused to follow his advice to stop breast-feeding and follow a milk-based diet and, in the end, she was afflicted by pulmonary wasting with coughing, severe shortness of breath, and hectic fevers.

However, if hysterical fits are caused by over-eating, as is the case with the wet-nurses of princes and nobility, then some sort of evacuation should be attempted; in particular, by prescribing repeated blood-letting to eliminate any the engorgement of the vasculature and, at the same time, instituting a strictly regulated diet. Other remedies that act as sedatives in hysterical fits can also be given; of these, practitioners have a large supply. However, if hysterical fits are caused by excessive uterine liquid due to overfeeding, as is often the case with wet-nurses of this kind, or, as the moderns will say, if the ovaries are swollen and the Fallopian tube sounds its summons for sexual intercourse, then they should either be dismissed from their job and stop breastfeeding or should be allowed intercourse with their husbands, otherwise their cravings may be harmful to the infant they are nursing. One must pay particular attention because at times wet-nurses are overcome with sexual desire and are tormented by a fire that they keep well-hidden, out of fear they will be sent back to their poverty-stricken homes; in addition, these women are not always afflicted by obvious hysterical outbreaks. Their hidden passions may change their behaviour.
- they are no longer as cheerful as before, they are quieter than usual, and when they meet a handsome, elegant man they become talkative and merry. If this kind of behaviour is observed, there is no doubt that the wet-nurse's mind is being tormented by amorous cravings. For this they can certainly not be blamed, on the contrary, they deserve compassion, since these are all natural sentiments that torment them night and day, in spite of themselves. As a patella libidinis ("shallow bowel of libidinous desire") as Saint Jerome calls the womb, then begins to boil, both the entire body, including the mind, are shaken. Thus, when these wet-nurses are aroused by sexual cravings, they imprint indelible marks on the child. In fact, according to van Helmont, a salacious wet-nurse overcome with a longing that is left unsatisfied will transmit this weakness to the child she is nursing.

As we have already mentioned, very often wet-nurses, particularly if plump, of a whitish complexion, and with breasts distended with milk, complain of a constricting pain in the shoulder that is caused by the excessive flow of milk that passes through the thoracic ducts to the subclavian vein and then to the breasts. In this case, their diet should be reduced and they should abstain from any food that augments their milk. Hippocrates knew of this kind of case, as can be seen from his words, "the shoulders are distended with food and drink", when describing pregnant women. In his notes on this passage, Martial, as mentioned above, comments that the constituents of milk are derived from the stomach, being the body's main source since it supplies all parts and receives from all. He recounts the testimony of the wet-nurses themselves, who, as soon as they have eaten or drunk something in particular, they can feel the humours descend down from their shoulders, past the clavicles and into the breasts, and this is most clearly felt when the infant is actually suckling. This is why the most effective way of reducing the formation of milk is to apply cupping glasses to their backs; wet-nurses who are aware of this refuse this kind of treatment, precisely so their milk will not dry up.

As far as the itching from which wet-nurses suffer is concerned, something that is difficult for them to avoid, since they have to carry infants with "milk crust" in their arms and put them to their breasts, topical antipruritic remedies are preferable to internal ones such as purgatives and a thousand other things of this nature that
are generally used against cutaneous affections. Thus rather than purgatives, ointments that overcome scabies are allowed, as long as the ailment is not caused by a corruption of the humours but rather by close constant contact with the child; in this case, there is no fear of any ensuing illness if first the miasma inherent in the pruritic skin has been quenched. However, should the scabies be caused by a cacochymia due to prolonged breast-feeding, different measures are required to cleanse the corrupted humours before eradicating the scabies with topicals. I have met many perfectly healthy wet-nurses who, several months after no longer lactating, became tainted with disease due to their constant contact with children afflicted by diseases of the skin. Wet-nurses must therefore be very careful when handling the infants they are breast-feeding and, if at all possible, they should make sure not only they, but also the infants are clean. If this were the case, we should not see so many dirty children covered in sores, crying and wasting away. Galen tells the story of a child who cried the whole day and the wet-nurse was unable to console it, not by rocking, putting it to her breast, or any other method; when she followed Galen's orders and changed its dirty clothes and gave it a warm bath, the child calmed down and slept soundly for a long time.

Before I take my leave of wet-nurses, I would like to give a piece of advice concerning their own and the infant's dietary regimen. They should be less inclined to breastfeed their infants with such frequency and should not put them to their breasts every time they cry. It is a mistake to breastfeed a hundred times a day, and even more often at night, to stop them crying. This only results in the wet-nurse becoming more and more worn out and the infant overloaded with milk - in the end, both wet nurse and infant become miserably ill. Indeed, how is it possible for such a delicate stomach to digest so much milk without suffering from indigestion, acidity, curdling, and frequent vomiting, and for the woman not to waste away from such unremitting suckling? Our country women folk show more sense when they raise their children. They nurse just three or four times a day and let them cry when it suits them, while they see to their work in the fields. They themselves say they are following the example of the calves whose mothers allow them to suckle just three times a day. Perhaps it is because wet-nurses have this bad habit of feeding the children so often that in England and
Germany the habit has arisen to feed the infants with a pap consisting of cow's milk, egg yolk, and sugar. This makes it easier to regulate the child's diet and allows an accurate calculation of how much food they should be given. Excellent instructions on this subject are to be found in Van Helmont's *Zodiacum medicum gallicum*, and in works by Ettmüller and other authors.