Diseases of those who do fine work

Amongst all groups of workers, there is one whose skill lies in their extremely delicate craftsmanship: goldsmiths, makers of automatic machines such as clock-makers, and painters of portraits on gems, and writers such as, if we are to believe Cicero, the man who wrote Homer's *Iliad* on a piece of parchment so tiny it would fit into a nutshell. As well as all the ailments that come from a sedentary life, these workers are also afflicted by myopia, that is, the well-known affection of the eyesight where it is necessary to bring objects closer and closer if they are to be seen clearly. Thus we see that nearly all these workers wear spectacles while carrying out their work. Wedel made particular mention of these workers, stating that they suffer from a weakening of the eyesight in accordance with the principle that the more you use an organ, the weaker it becomes. I, however, would like to put forward another explanation by following the principles of optics.

If we want to understand why we can actually see, I have always believed that the best possible example is the camera obscura, where the image of external objects is reflected onto a white sheet. For this observation first we have Platte to thank, then Fortunatus Plemp and his *Ophthalmographia*. If a convex glass is placed in front of the aperture of the camera obscura, the closer you place the object to this aperture, the further you have to remove the sheet from it if you are to have a clear reflection of the object. If the object is placed further way, the sheet has to be brought closer to the opening otherwise the images will appear to be confused. This is because the images are only reflected clearly on the retina at the point at which the rays converge and meet, as if by a painter's brush. If the structure of the eye, therefore, is to be able to see...
things both close up and at a distance, it has to be flexible and able to move, so that the retiform tunic and crystalline humour can move with ease. One can constantly observe that when we cannot see an object in the distance clearly because the rays, which are almost parallel when they enter the eye, meet too closely behind the pupil, we find that if we use our eye muscles and eyelids we can change their shape in such a way that we can see clearly and discern objects that were previously confused.

Since those doing fine work spend their entire day working on minute objects, they need to be able to see and distinguish even the tiniest objects clearly, so they keep their eyes in a steady gaze with continuous muscular tension. As a result, although their eyes are mobile by nature (which, as we have already pointed out, makes it easier to distinguish objects both in the distance and up close), there is strain and constant tension of the muscle tone. This causes the retiform tunic, held in the same position for an extended time, to remain as such even when the work is finished; it is no longer able to move with ease to see things clearly at a distance. This is why these workers are nearly all afflicted by that kind of weakness of the eyes that we call myopia.

In addition, while the eyes are constantly immobile, concentrating on the work, its humours thicken and lose their fluidity and translucence. So, after a while, the vision of these workers becomes increasingly weaker and, even if nature gave them excellent eyesight, they become myopic and dim-sighted.

Those who work with minute objects are therefore so grievously afflicted by crafts that are so elegant and useful (such as clock-making in particular), that their eyesight is weakened so considerably that they nearly go blind even before they reach old age. I met a Jewish woman in this city who excelled at stringing pearls, ordering and placing them in such a way that one could not notice if any of the pearls were blemished. She made a considerable amount of money from this trade, but by the time she was forty she had to stop since no spectacles of any kind were of help to her and she gave up this fine work.

I am unable to say what remedies might help these ill-fated workers. Indeed, it is not at all easy to persuade them to leave a trade that provides a good living good wage. Doctors have no remedy to restore the strength and mobility they have lost once the
affliction has taken hold. Furthermore, purgatives and blood-letting are ill-advised, as are other remedies, since these workers were born of strong constitution and one cannot lay the blame for this ill on condensation or darkening of the spirits. Neither would it be fair to torment an innocent organ with pharmacy.

However, it is advisable not only that these workers should wear eye glasses, but that they should not always keep their heads bent down at their work; every now and then they should stop and turn their gaze elsewhere, taking a little break from their work, so they can rest their eyes by looking at other things. In fact, it is difficult to believe just how much looking at a variety of different objects, from close up, from a distance, straight ahead, sideways, or in any other fashion helps preserve the mobility of the ocular membranes and the native fluidity of the humours. In this manner the eyes' natural habits are preserved since the pupil is made to contract and dilate and the crystalline humour moves either closer to the pupil or recedes, depending on the need to see the objects either close-up or far-away. Otherwise, the same will happen to the eye as to other organs. When it is kept in the same position for a long time, it becomes rigid and is no longer able to move the way it did before. This can be observed in those who have been kept in dark prisons when they come out. They gradually have to get used to seeing the light and since the pupil had been dilated in the dark for so long and therefore its elasticity impaired, it has to learn to contract as quickly as it did before, as it were.
Diseases that generally afflict music teachers, singers and the like

No matter how healthy and harmless, there is absolutely no kind of physical exercise that does not cause serious ill when practised without moderation. This is common knowledge to music teachers, singers, preachers, monks and nuns who continuously sing psalms in church, the ranting speaker in a public forum, town criers, those who read aloud, philosophers who in schools continue debating until they are hoarse, and all those who sing or use their voice in their profession. These workers usually suffer from hernias, with the exception of eunuchs who have been castrated. This is because when singing or reciting, they have to breathe deeply and hold in the air for a long time so that the abdomen muscles that aid respiration and the peritoneum relax, thus facilitating inguinal hernias; we can observe the same inguinal swelling in small children when they scream or cry excessively. Falloppio has observed this phenomenon in singers and monks in particular, stating: "Singers with deep voices, commonly called bass, and Capuchin monks usually suffer from hernias because they sing without interruption and have to use their abdominal muscles to produce this resonance and sing loudly". The learned Mercurial confirms this hypothesis when he says singers today are subject to hernias unlike those in ancient times who "Bathed more frequently to moisten the peritoneum, scrotum and testicular sac, making it less dangerous to stretch them, as they remained soft and would therefore not rupture as often as is now the case". In fact, I have observed a considerable number of nuns with hernias, far more than other women, and this is because, just like monks, they sing excessively.

In his work Gymnastica, Mercurial observes that "Pitching the voice high leads to swelling in the head, throbbing temples, pulsa-
tions of the brain, swelling of the eyes and a tinnitus of the ears. This is because they have to inhale a great deal of air and hold their breath if they are to be able to pitch their voice high and prolong it this is not the case for those pitching the voice low. Anyone can try this for themselves by singing a scale. When you reach the last note of the scale, all the muscles in the chest and abdomen are stretched, thus delaying the return flow of the blood. This leads to a flushed face, pulsations in the temples, and the ailments mentioned above. Head colds and hoarseness are common ills in singers and actors, once again owing to the muscle tension that causes more lymph than necessary to be secreted by the salivary glands.

I once met the renowned opera singer Margherita Salicola Scevina, when she was living in Modena. After the exertions of singing she was frequently afflicted by extreme hoarseness, and this occurred each time she had been singing for prolonged periods. What I found amazing in this woman when she was still in perfect health, was that she could spit at will, a moment’s notice, copious amounts of thickened lymph from her mouth whenever she wanted, since her salivary glands were so dilated; she attributed this exclusively to the strenuous modulation required in singing. However, she also confessed that when she was on stage and held her notes with her mouth open without breathing, she would become dizzy.

Since singing and loud talking tax the head and make it heavy, doctors regard these as harmful activities and are correct to forbid giving speeches and reading aloud when some one is suffering from a headache or the like.

I am absolutely convinced that using the voice heats up the entire body more than any other kind of physical activity. Indeed, it is a well-known fact that after having spoken for an hour, preachers are drenched in sweat. The lungs are perhaps taxed more by singing, reciting, reading out loud than by running due to the uneven rhythm of breathing, since the words have to be pronounced either quietly or with emphasis, as the occasion demands. It is therefore no surprise that they are troubled by shortness of breath and sometimes spit blood because a vessel in the chest ruptures, as I recently had chance to observe in an eloquent Jesuit orator. After a serious illness from which he had not yet completely recovered, he risked mounting the pulpit to deliver a public eulogy and then suffered copious haemorrhaging from his mouth. I observed the very same
thing in a learned professor from the University of Padua, who for one hour straight used to deliver his public lectures.

Pliny wrote a beautiful letter on the subject. In it, he recommends to Paulinus, a freeman, Zosimus who is seriously ill, has had a haemorrhage and is believed to have pulmonary consumption. He describes him as accomplished in many arts, but in reading aloud and reciting in particular. He says that while reciting with such vigour and emphasis, he spat blood and for this reason had been sent to Egypt. He had returned recovered, yet even though not overtaxing his voice, a slight cough recalled of old problem and once again, he spat blood. He then tells his friend that he intends to send this freeman to Paulinus' estate in Friuli, asking that he be allowed to use his villa, since the air there was so good.

At this point I would like to quote an invaluable phrase by Hippocrates: “Any kind of exertion of the voice, whether talking, reading or singing, stirs up the anima”. Is it possible that with the word “anima” Hippocrates was referring to the blood, since any exertion of the voice automatically violently arouses the whole blood mass? Furthermore, it is common belief that the blood is the seat of the “anima” and this is frequently made clear with the term as well. For example, Virgil says, “His lips disgorge the crimson stream of his animus”.

There is no doubt that the blood mass heats up when one sings, as singers themselves admit; they sometimes even pass blood with their urine when they have finished a recital and left the stage. On the other hand, and slightly more likely, does “anima” refer to the air inhaled and exhaled when breathing? If we compare exertions of the voice with any other kind of physical exercise, one can see that it arouses and excites all the respiratory organs. And then there is Plautus’ famous saying: “My wife’s anima reeks”.

Flautists and any other players of wind instruments also fall into this category of infirmity. Indeed, owing to their considerable exertions while blowing their trumpets and flutes they are not only afflicted by the aforementioned ills, but also by much more serious ones, such as rupture of pulmonary vessels and sudden discharge of blood from the mouth. In his Observations, Diemerbröck describes the pitiful case of a flautist who wanted to outdo those playing the trumpet and thus ruptured a large vein in the lung, resulting in such copious blood loss that he died within two hours.
As far as the remedies for this category are concerned, the workers should wear a truss as a precaution against hernias, which are very common in their professions, and even more so if they are already suffering from one. Any other remedies such as ointments, plasters, or poultices are laughable. Freshwater baths are much more useful to keep their voice in good form or to soothe it when it is hoarse; Cyprian terebinthina and its syrup are also beneficial. Galen recommends baths more than any other remedy and says: “That is a valid custom followed by those who in their professions overexert their voice. When they have strained it, they take frequent baths and eat light and laxative food; I am referring to those who sing accompanied by the lyre, public criers, and actors in tragedies or comedies”. However, if there is the risk of a lung disease of any kind, as can be prognosticated by a slight cough and an ill appearance, they need to be persuaded to leave off this kind of work.
Chapter XXXIX

Diseases of farmers

“Blessed are the farmers, if they only knew just how blessed”.

These words are of the Prince of Poets; thus might we well refer to farmers who, with their oxen, would cultivate their forefathers’ land. The same cannot be said of farmers today, since they have to toil in perpetual labour on land that is not their own, living in the most abject poverty. In Italy, and especially in the regions on both sides of the River Po, the illnesses farmers are most commonly afflicted by are pleurisy, pneumonia, asthma, colic, erysipelas, eye ailments, angina, and toothache and dental breakdown. These illnesses basically have two causes – the weather and a poor diet. Being exposed to the inclemency of the weather while working in the fields – buffeted by a south wind and then by a north wind, soaked by the rain and the night dew, or burnt by the summer sun – no matter how strong and robust the farmers are, they cannot tolerate such violent changes unharmed. Thus, since one minute they are bathed in sweat and another are chilled through; and, in addition, they live on an unwholesome diet, their humours become dense and viscous, resulting in an endless number of ills. Thus the entire mass of humours is excited to a febrile effervescence, facilitating stagnation of the dense and slowed humours in the lung vessels into which all the venous blood flows. Each time there is an epidemic outbreak of lung disease, this is why it afflicts the country-folk foremost, reigning tyranny over them. For the very same reasons, farmers are often afflicted by colic and hypochondria, which they call “the master’s disease” [in Italian il mal del padrone] because its symptoms are similar to those of a hysterical passion; the heavy, glutinous food in the stomach and intestines causes a considerable build up of pituitary and acidic juices, piercing and distending the gut.
A farmer's work varies according to the region and seasons. Thus, in the winter and at the beginning of spring, farmers are usually tormented by lung diseases, fluxions to the eyes, and angina. As we have already said, the cause of these ailments lies in the slowness and density of the blood that flows sluggishly and stagnates readily, thus resulting in the inflammation of various parts of the body. During these periods, the blood obtained in blood letting is so dense that it resembles bee's wax in both density and colour.

I believe that there is no category of people whose blood undergoes such great changes and in such a short period of time as farmers. Indeed, if you draw their blood in spring it is dense and glutinous, while in the summer, if they are suffering from some ailment that requires blood-letting, it is bright and ruddy. The power of their physical exercise and toil is so strong that the mass of humours passes rapidly from one crisis to another, something that cannot be observed in townspeople.

I have had the chance to observe something very curious in farmers in this area, and in their children in particular. In the month of March, around the equinox, the eyesight of young children under the age of ten is weakened considerably. The whole day they can see next to nothing and wander around the fields as if blind. When night falls, they regain most of their eyesight and this ailment then disappears without any treatment whatsoever. In fact, by around the middle of April, it is completely restored. When I have had the opportunity, I have examined the eyes of these children and I have observed that the pupil was excessively dilated. The doctors call this malady 'mydriasis', but there are contrasting opinions regarding its cause, as can be seen in the works of Sennert, Rivière and Platter.

According to Gorris, this illness is similar to a paralysis of the pupil. I believe that during the month of March, the sun's rays affect the brain and optical nerves in some way that weakens the tone of the uvea so that it fails. During the winter these children spend their days in hot, damp stables and then, around the equinox, they come out of their hiding place and expose their bare heads to the sun's rays, which then facilitates the diffusions of humours, resulting in dilation of the pupils and impaired vision through the admission of too much light. Around the end of April, the humours that have accumulated are dispersed by the strength of the sun's rays, the pupil
contracts and its natural elasticity is restored, so that the eyesight is completely restored without the aid of any remedies at all.

During the summer, farmers are frequently afflicted by sudden high fevers, especially when their bodies begin to be burnt by the "fire of raging Leo". In the autumn, they suffer from dysentery, probably caused by the fruits of the season and other errors of diet. Furthermore, it is during this season that they usually steep hemp and flax in pools in the marshes. This task is generally assigned to the women; they wade in the water up to their waist to drag out the bundles of hemp for them to dry. As a result of this filthy task, many of them are attacked by high fevers that prove rapidly fatal. This is certainly not just owing to the constriction of the pores of their skin and checked transpiration, but also to the complete destruction of the animal spirits by the horrible mephitic exhalations that pollute the entire area. This is why townspeople rightly believe it is dangerous to stay in the countryside in that season, when every farm gives off such an awful stench. Father Kircher believes that this stench alone is responsible for the terrible plagues that several cities have experienced. Schenck in his work Observationibus, Pedro a Castro, Simon Paulli and others all state clearly just how noxious the vapours are that emanate from waters where hemp has been steeped. Women who are subject to hysterical passions (e.g., hysterical fits) know all too well just how powerful smells are, no matter of what kind.

Carelessness is also injurious to the farmer's health. Indeed, they keep all the excrements to be used as manure on the fields in front of the cattle-sheds, pigsties and their own homes, which may truly be called Augean stables, and it stays there for the whole summer, as if it were a delicacy. It is therefore inevitable that the air is constantly contaminated by these foetid vapours. It is for this reason that Hesiod condemned manuring the fields and wanted more attention to be paid to farmers' health than the fertility of the fields.

Zaccchias pointed out that gardeners frequently suffer from cachexia and dropsy. This is because they are forced to spend their time in humid places providing the irrigation that gardens require, they cannot help but absorb this dampness into their bodies. I once treated a gardener who had become partially paralyzed. Although he had lost all power of movement in one of his legs, its sensibility was not impaired. In the other he had lost all sensibility, but could
still move it. After several years he was cured after being treated with solutions of boiled guaiac and many other remedies.

Hippocrates describes a case study I would like to quote: “A man who lay ill in the garden of Dealcis had heaviness in the head and pain in the right temple for an extended time. He developed a fever from some exciting cause and took to his bed”. In his comment on this case study, Galen criticizes Sabinus who believed that the word “garden” had been added to Hippocrates’ original text, as though in Galen’s view this indicated the true cause of the illness. Galen seems to incriminate the garden air as indeed the cause, because of the manure and the harmful smells from trees such as from boxwood and other similar plants.

Those living in the vicinity of meadows also suffer from these ailments. Indeed, owing to the reasons stated earlier, meadows make the air unhealthy. For this reason, according to the Jureconsultus, one can take legal action against a neighbour who wants to convert arable land into meadowland. In fact, those who work in meadows and those who make hay are afflicted by serious ailments.

But how can the medical profession help those citizens whose work is of such importance to society? It is almost ridiculous to suggest medical remedies for our farmers to avoid illness, since they hardly ever turn to a doctor, if at all, and if one is proposed, they pay no attention. I shall simply suggest certain precautions that should be taken when treating farmers when they are already in city hospitals because of the aforementioned illnesses or, if they are better off, when they do actually consult a doctor. The first piece of advice is that abundant amounts of blood should not be drawn as is common practice with townsfolk in the case of pleurisy or other chest diseases. Since their bodies are already so exhausted by constant exertion, it does not take much to make them weaker. In addition, their blood is almost totally gelatinous and its volatile component exhausted. For these reasons, excessive blood-letting would weaken them even more and they would be unable to overcome the illnesses through anacatharsis. I am well aware that there are those who favour more drastic blood-letting, because when the blood is so dense, they believe this aids its circulation. This is certainly easily said, but they should consult the learned Bellini to know more about what precautions are necessary in blood-letting to ensure blood does not accumulate in just one area. There is no
doubt that blood is not removed through its channels of its own accord and by the force of its own gravity. The spirits provide drive force by means of the action of the heart. For this reason, if the spirits are weakened, this promotes stasis rather than encouraging the movement of the blood.

Baillou wonders why, when they fall ill, the bodies of male and female servants whose bodies are otherwise so strong, well-built, and more resistant to illnesses than their masters, suffer more from purgatives and blood-letting that those whose bodies are loose and soft. He believes there are several reasons, the main one being that since their bodies are so dense and distended by hardened viscera, purgatives are less effective and blood-letting is less beneficial. The same may be said of farmers. Hippocrates also describes an epidemic during which female slaves afflicted by angina died, while free-born maidens did not. For this reason, illnesses should not be diagnosed and treatments recommended merely on the basis of the patient's physical condition, but also on the basis of their lifestyle and occupation. I must say that a considerable number of mistakes are made in treating these kinds of people as it is assumed they can tolerate stronger remedies more easily than townsfolk just because they are robust. I pity those poor farmers in public hospitals here and there, entrusted to the hands of young doctors who have just finished school, and exhausted by the strong purgatives and repeated blood-letting that is practised without considering either the fact they are not used to strong medicines nor their strength sapped through hard labour. This is why many of these farmers prefer to die in their cowsheds rather than take their leave of life in a hospital, with their veins drained of blood and a belly that has been emptied by purgatives. Every year, once the harvest has been completed in the Roman countryside, the city hospitals are filled with a multitude of reapers and it is difficult to say whether it is Libitina that mows them down them or the surgeon, wielding his blood-letting lancet.

More than once, I have been amazed by the number of these farmers afflicted by serious illnesses who recovered. I do not say without any remedies, although that would not surprise me in the least, but thanks to a rich, even sumptuous diet. In fact, no matter how poor these farmers are, when one of them falls ill, his neighbours rush to him bringing eggs and chickens from which prepare multiple dishes and this is how they either overcome the virulence of the illness or
are released from their life of toil and trouble. For this reason, in this area there is a common saying that the country folk go to the after-life well nourished and with full bellies, while those in the city die miserably of hunger and starvation, tortured by doctors.

When these workers begin to recover, they return to their usual diet of garlic and onions which they devour avidly, almost as if they were great delicacies or highly esteemed foods. And I believe that this acrid alimentation serves as a medicine when their stomachs and whole of the blood mass is sharp. In the autumn, when the summer toils are over, onions and garlic manage to dissolve the gluten and alleviate the acidity, like other anti-scorbutic remedies. I have met many of these workers who recovered from quartan fevers in mid-winter with garlic, onions and abundant wine.

Galen describes the case study of a man of the countryside who was seized with colic pains and cured himself in the following way: He tightened his belt, ate garlic and bread, and carried out his usual tasks during the day. In this manner the colic resolved. Galen says, "Thus, I call garlic the peasant's theriac and anyone who forbids Thracians or Gauls, and anyone living in cold countries to eat garlic, would be causing them grievous harm". Our farmers have a different remedy for curing colic. They take yellow bugle leaves, pound them, and then make a poultice with egg yolks which they apply to the abdomen.

Hippocrates tells an extremely interesting story: "There are certain positions that alleviate pain more than others; indeed, there was a man who plaited and twisted twigs with his hands; he was forced to take to his bed in pain and found relief by taking hold of the top of a pole that he had fixed in the ground". In his comment, Galen believes (since Hippocrates did not specify in which part the pain was) that the pain was in his hand. Valles, however, believes that the man was suffering from colic pain and that, by placing a wooden pole precisely where he felt the greatest pain, almost as if it were a spear, he was exerting pressure on that part. In fact, he says that such pains are alleviated "by strong pressure, by a specific movement of the body, or by a change in posture". In the case of abdominal pains, it is nature herself that has taught us to press a hand or fist on the painful part, since this stops it from distension or protrusion. In the case of hysterical fits, Hippocrates also recommends using one's hand to exert pressure to keep the
uterus in its proper place, and I have found this remedy extremely effective, much more so than the endless series of medicines usually administered for hysterics.

Let me summarize the things that have been said at greater length regarding the treatment of these farmers, on the basis of my experience and studies: their bodies, broken-down by toil and a poor diet, must not be weakened by extensive and repeated blood-letting or purgatives. Emetics are more easily tolerated. Cupping with scarification is often amazingly effective in persistent fevers, either because of the great faith farmers have in such a remedy or for some other unknown reason. If an antidote has to be administered, those that are volatile are better, since they cause sweating, which farmers are accustomed to both in the summer and winter, and as is the case with physical exercise. When the farmers have done battling their illness and are beginning to convalesce, they should be allowed to return to the humble homes and resume diet they are accustomed to. Plato was right to deride the physician Herodicus for wishing to prescribe what workers ate.

In my opinion it therefore follows that these workers should be treated with remedies that are simple and full of common sense, since a long, complicated therapy would consume their strength, "growing sicker with the healing".
Diseases of fishermen

Just as farmers supply food for the people with abundant crops by ploughing and sowing the earth, so do fishermen play their part in supplying food and delights to the tables by *ploughing* the seas and rivers to catch fish. Indeed, the earth alone would not be able to nourish man if the sea did not assist with its abundant supply of fish. This is why coastal cities and seaports suffer less than inland regions during periods of want. There are certain peoples, such as those who live near the Red Sea, who are called ichthyophagist because they live off fish alone, broiling it on stones made glowing hot by the sun and making their bread in the same manner. As Hippocrates so rightly said, medicine must come to the aid of everyone, taking care not only of the farmers, but also of fishermen, who frequently fall ill. Should a doctor have to treat a fisherman, he must take into careful consideration just how taxing and difficult his trade is, how dangerous the gusts of wind are, the freezing cold in winter, the scorching heat in the summer, and the kind of food he eats; he should bear in mind just how irregular his lifestyle is. Because while other workers return to their homes, exhausted by their day’s toils to spend the night in their own beds restoring their strength, fishermen usually spend their nights working without sleep. The Apostles complained to Jesus that they had toiled the whole night, catching nothing. The condition of these workers is therefore deplorable: Their only home is a little boat and when they fall ill, they have no choice but to go to hospital where they will not be completely cured unless the doctors know what trade they do.

Fishermen are always wearing wet clothes, so are subject to illness caused by the obstruction of transpiration, such as acute fevers, illnesses of the chest, pleurisy, pneumonia, cough, dyspnoea, and
similar morbidities. Their principle diet is fish of the poorest kind, because the most sought after fish ends up on the tables of nobility, such as the turbot Juvenal described in his Fourth Satire. As a result, fishermen are cachectic in appearance and tend to dropy. As Hippocrates says, “Food too weak to nourish has a brief life”, that is, according to Valles’ admirable comment, it certainly does not help prolong one’s life. Lievin Lemmens was therefore right in saying that a fish-based diet requires a greater quantity of bread, as fish putrefies quickly. Since they spend all their time in damp places, fishermen suffer from ulcers on their legs that are difficult to heal. However, it should also be known that the ulcers of those who fish in rivers and swamps differ considerably to those of men who fish the seas. In fact, the former are of a suppurating nature and easily turn into gangrene, while the latter are dry and flaky, as Hippocrates remarks in his book De humidorum usu no. 7. He recommends flannel compresses soaked with sea water for the treatment of this second type of ulcer. Marziano wrote an excellent note on this passage. Although it might seem irrational to use sea water for dry, flaky ulcers since its sharpness could irritate and exacerbate any discharge, Hippocrates rightly recommended it because the ulcers of sea fishermen are very hard and dry, and by inducing irritation you can provoke suppuration, which is necessary for healing. Galen says the same. The suppurating ulcers of those who fish in rivers and marshes require a different treatment. The most suitable remedies are those that are drying without any acidic characteristics. In fact, according to Hippocrates, “a dry ulcer is healthy, while a wet one is not”. Sea fishermen usually suffer from persistent constipation, although they eat much more than those who live ashore. Van Helmont believes this is due to the air that is impregnated by saline vapours that both increase the appetite and cause constipation; the constant motion of the waves also renews the air, which thus stimulates fermentation of the blood. Clysters of sea water help bowel movements, but also lead to constipation. There is a noteworthy passage by Hippocrates in which he says that “People are mistaken about saline waters; from lack of experience, they think they relax the bowels and promote stools”. Hence, those who prescribe pungent clysters saturated with salt have strayed far from his teachings. Thus, fishermen suffering from constipation should be given softening, oily clysters and also swallow mild lenitives and laxatives.
It is also known that fishermen are afflicted by numbness and insensibility of the arms and feet when a torpedo fish (cramp-fish, sting ray) happens to find its way into the net with the other fish. Indeed, as Pliny says, there are venomous creatures in both the sea and on the land. According to the writings of Dioscorides, Pliny, Mattioli, and others, this can occur not only through direct contact, but also from a poisonous emanation that reaches the fisherman's arm via the line or spear. However, numerous experiments by Stefano Lorenzini have shown that this only happens through bodily contact and not to any part of the body, but only in certain sickleshaped muscles. Sennert has described the ability of the torpedo to cause insensibility and its remedies in great detail.
Diseases of military camps

Military service, which has an age-old dispute with the profession of letters regarding which is more superior, prestigious, and able to make a man immortal, differs from other professions, since the latter was created with the purpose of preserving life, the most precious thing on earth, while the former seems to have been created to destroy it. Today it is difficult to imagine a way of life that is more dangerous than that of a soldier, at least of those in the lower ranks, whether on the battle-field or besieging a fortress, but even in the barracks as well. This might be because military service is generally neglected and less attention is paid to the health of soldiers than was once the case. Very often these poor soldiers survive the dangers of fire and battle on some campaign, only to be afflicted by a host of illnesses, and all too often entire armies are decimated by some terrible epidemic. Camp fevers are therefore famous, or rather infamous, as are other mortal, contagious illnesses such as the Hungarian Fever that first appeared in 1566 in the Austro-Hungarian expedition of Emperor Maximilian II against Suleiman. Sennert describes this fever in detail and he calls it "military" or "camp" fever because it arises in camps and is caused by poor food and contaminated water. However, he also adds other causes such as lack of sleep, excessive toil, rain, heat, cold, sudden alarms and a thousand other hardships known only to those who have experienced them.

Yet it is my firm belief that in the camps nothing causes as much harm as filth and lack of personal hygiene. In ancient times a divine edict was issued forbidding the Israelites to deposit their faeces within the camp. They had to do so in a hole in the ground outside of the camp and then cover it. Each soldier had to keep a small
pointed stake with him for this very purpose, and I have heard that this law is still observed by the Turks, whose soldiers pay great attention to personal hygiene. These are the words in Deuteronomy: "Thou shalt have a place also without the camp, whither thou shalt go forth abroad: and thou shalt have a paddle upon thy weapon; and it shall be, when thou wilt ease thyself abroad, thou shalt dig therewith, and shalt turn back and cover that which cometh from thee: for the Lord thy God walketh in the midst of thy camp". I have to confess that I have never practised medicine in a camp, but I have learned from those doctors who have worked in large armies that during the summer one can sometimes smell such a terrible stench that not even the Cave of Charon could stink so. It is therefore not at all surprising that particular illnesses requiring specific cures are to be found in these camps. There has been no lack of learned men who have written about this subject in great detail, such as Raymund Minderer with his treatise De militari medicina, Heinrich Screta and De febre maligna castrensi, and the learned Luca Antonio Porzio who wrote De militis in castris sanitate tuenda.

I once thought that in camps medicine was practised differently to in the city and that it was more arbitrary and at times even reckless as it called for immediate remedies. Since the length of time spent in camps is brief, I also believed that the healing process was meant to be quick, not lengthy, and, as it was always an emergency, any attempts at healing inevitably entailed risks. I also believed that owing to the unforeseeability of the cases and the frequent shifting of the camps, the doctor was unable to intervene correctly, and could not offer the patients the most appropriate treatment. However, I met the renowned Doctor Barnstoff, chief physician to His Serene Highness the Duke of Hanover, when he came to Modena and he told me that the medicine practised in camps is by no means as rudimentary or haphazard as is generally believed. The princes and commanders of armies want to have highly skilled doctors for both themselves and their soldiers, with a vast supply of medicines, and they are paid large sums of money to do so. This was the case in the Trojan War, for we can read that the highly renowned surgeon Machaon was with the Greek army. My learned colleague was in Hungary in five camps with the troops of Brunswick and Luneburg; he told me a great number of things which I would like to record here, thus completing my task as regards the