XXVII. The blood that was drawn by blood-letting, using scarified cupping-glasses, was relatively good and was brilliant and reddish in colour to the naked eye. This was even more so with blood that came from nose bleeds, and no patients, regardless of temperament, had blood that seemed a little like glue in consistency.

XXVIII. I have to admit that during this constitution of petechial fevers blood-letting proved extremely ineffective and all the patients would shiver each time it was suggested, while the use of scarified cupping-glasses was so popular it was sometimes used to deceive the sick when they insisted on having their blood drawn from the larger veins owing to a plethoric disposition. The cupping-glasses would be applied to their backs and shoulders and only a little blood would be drawn; then, several hours later, a more abundant amount of blood would by drawn from a vein by hand. Not only the inexpert masses were convinced of this, but also the experts, and once the scarified cupping-glasses had been used, they no longer feared the petechia would return, even though the blood was drawn from the veins more than once. It was a strange sight to behold, with the surgeons running to and fro in the city with their bags full of cupping-glasses while they administered this kind of remedy to the common people without even consulting the doctors. It can therefore be said that in these fevers venesection was not just regarded with suspicion, but was actually "infamous", while on the other hand, the application of the cupping-glasses, whether scarified or dry, was a resounding success, although it is unclear whether this was a result of the deep-rooted conviction of the effectiveness of this remedy, or because there actually was something hidden in this remedy that was escaping the doctors.

XXIX. Furthermore, the other remedies used to assuage this fever aided the movement of the humours throughout the body, for example those with abundant volatile salts. Diaphoretics were therefore administered, but this did not lead to a greater appearance of the spots. However, as the saying goes, by "adding fuel to the flames" the febrile incandescence was augmented (which, left to its own devices, would have driven away the humours more quickly) and nature was distracted from revealing on the skin what was going on below. When I saw all of this was to little avail, I went from the alkalis to the acids, in accordance with Hippocrates' saying, "If one brings about no improvement, resort to the opposite".
and by doing so I had reasonable success as this curbed the effervescence of the humours considerably. Nevertheless, I would not go so far as to say that patients were either cured or died thanks to any remedy in particular, since it was necessary to fight this fever according to the rites of the gladiators who fought blindfolded. Furthermore, despite years of experience, older doctors were no more successful with their cures than the younger ones who had just left schools, because in the dark everyone is equal.

XXX. Application of the ointment Aetius aided the eruption of the petechia, as did that of vesicants on the arms and legs. However, this resulted more in the people holding the doctors in higher esteem, as they were leaving no stone unturned, rather than in an improvement in their patients' health. Because although this aggravated the fever, it did not encourage the eruption of the petechia unless the latter was delayed until serous material had been expelled via the urinary tracts. Since both internal and external remedies brought about little improvement in this febrile outbreak, it was therefore better "to buckle down but without haste" and wait for the humours to mature, without taking any notice of the patients' complaints. They would insist on all possible means being tried to fight the pending storm, and believed great opportunities would be missed by waiting. Since they did not have the courage to criticize these hostile complaints, the doctors would prescribe unsuitable, dangerous remedies and thus saw success elude them, just like Pompey the Great, who believed that prevarication would easily help defeat the enemy as they had run out of food; he was criticized for this delay by his soldiers and allies, and thus suffered a humiliating defeat on the battlefield. They forgot that "those physicians who never gratify the morbid desires of their patients", met with approval, as Plutarch wrote in the Life of Pompey.

XXXI. Since there was still no suspicion of an epidemic illness (as the fevers were of a different nature), as soon as this form of petechial fever began to rage, purgatives were administered, as is common practice in these cases in accordance with the principle of administering medicines in the so-called "minorative" illnesses. However, once the petechia appeared, doctors then felt they were to blame for having hindered the eruption of the exanthema, by having driven the humours towards the interior. Nevertheless, since the petechia still appeared in abundance and followed their usual
course, in the light of their experience, those professors who observed the phenomenon with closer attention did not spurn a bland purgative. When I was summoned with great urgency and believed the stomach was burdened with impurities, although I was sure it was a petechial fever, I myself prescribed a light purgative and not only did it cause no harm, but the exanthema appeared even more readily. Baillou describes a similar case and says with great candour that he had prescribed purgatives and blood-letting for those fevers he did not believe to be of a petechial nature and found that both remedies were harmless. Hence, Hippocrates' warning that one should observe "what good doctors do to the patients they are treating thanks to fortuitous success".

XXXII. Cinchona was also summoned to assist the other remedies in defeating such a hostile enemy. It was primarily used in those who had recovered from the illness, but its administration on the basis of the eruption and disappearance of the petechia was not as well assessed as it should have been. Since they had been plagued by prolonged fevers, the patients were not much assisted by this medicine and immediately fell into a state of torpor and drowsiness.

XXXIII. I also observed that the use of opiates was very effective in dysentery which, as I said earlier, in 1693, had followed petechial fever during the autumn. There is probably no other illness in which this kind of remedy may be given with greater safety and in larger doses, even if the patient's strength is weakened, if not exhausted. I gave a patient who was suffering from terrible dysentery 3 or 4 ounces of opiate laudanum several times but it brought little relief. He had been completely frozen and without a pulse for many days, but he still had enough strength to move around. I feared that such a generous dosage of laudanum would eliminate the little strength he had left. I gave him another 5 ounces of laudanum, which made him sleep soundly and warmed him up. I believed this was not so much because the pain that accompanies dysentery had abated but because of the opiate's diaphoretic nature. During this constitution (and especially with the outbreak of dysentery and verminosis) since this kind of cooling of the whole body and the lack of pulse was to be expected, stupor was also quite common because in stomach and intestinal ailments this kind of cold and the disappearance of the pulse are also quite frequent. However, this was not the case in diseases of the chest such as pleuritis, since
these body parts are more membranous and nearer the heart, unless this is the case because a more numerous stirps of nerves is located in the intestines and stomach than in the pleura and the lung membranes, or because the sharper perception of pain, which is due to the confluence in the brain, interrupts the flow of animal spirits to the heart and then to the whole body, which is without a pulse and would then grow cold.

XXXIV. This was the nature of the purple fever, and its symptoms were very similar to those described by Fracastoro, who dedicated a particular chapter to the lenticular fever that raged in 1528 for the first time in Italy. He explicitly mentions exhaustion and physical weakness in the whole body, a dulling of the senses, red eyes, weak pulse, urine retention (which is said to be a terrible sign), the eruption of spots around the fourth and seventh day, and hardly any or no thirst. Above all, he observes that very few old people suffered from this fever but many robust children and young girls and boys did. While I was reading this chapter I was struck by the fact that the appearance and character of the lenticular fever described by Fracastoro and our (generically speaking) petechial fever are extremely similar, and they might either be related to one another in some way, or the first brought the second one back to life. However, since that fever afflicted roughly the same regions and people who were eating almost the same kinds of food, and after studying many other things described by that learned man on the causes of the fever, for example the flooding of the Po and the Atesi, fruit and other crops ravished by blight, I was no longer surprised. Indeed, if doctors were to take much greater care in writing the annals of diseases, and the repetition of the same temporal changes, they would have no difficulty in realizing that almost identical illnesses repeat themselves and that the best way to get rid of them is always the same. As in political matters, as Tacitus says, “Better to have different men than different customs”, thus in medicine it is better to have a different kind of man than different kinds of illnesses.

XXXV. At that time there was such great discussion amongst doctors regarding the cause of the fever and how it should best be treated that, as Fracastoro himself says, it was almost ridiculous since they were not only fighting over which surgical and pharmaceutical aid should be administered, but also which diet, and when reading Fracastoro’s description, one’s initial amusement soon turns to pity.
However, there was just as much discussion amongst our professors today and these were public debates and, what is even more regrettable, the most famous authors of our times are unable to agree on the cause of the purple fever and how it should best be treated. After Fracastoro's glorious discoveries it seems the field of medicine has made very little progress indeed, since we are still none the wiser about the causes of malignant fevers and how to treat them.

XXXVI. However, the weakness of the field of medicine aside, let us see if we can hypothesize, if not establish, what the causes of these two related fevers were and what the state and condition of the blood and other liquids was in the bodies of those suffering from the fevers. I believe this can be gleaned from the observations and outcome of the illnesses, no matter what the poet said, thus forecasting negative results for those who believe that facts must be noted on the basis of the outcome. Indeed, since the most useful indications in medicine come from the things that are most beneficial or noxious, it is wise to follow experience and results as the best guides, if this really means we shall find the truth by following their footsteps along a path that is both safer and shorter. As Oppiano says, “What do men know if they are unable to see it with their eyes?”

XXXVII. Since this malignant fever afflicted men of all kinds indiscriminately, whether rich or poor, idle or busy, and ran its course in the same manner, its cause must be one and the same and be one of the six unnatural elements. It is not improbable that the food the earth gives us, such as cereals, vegetables, fruit and animal meat (since they eat the grass and fruits of the earth) is contaminated by blight and might thus result in contaminated juices in the blood mass, thus providing the stimulus for malignant fevers. However, when I began writing this work during the constitution of 1690, that terrible blight destroyed all crops and fruits in an instant and I, at least, did not observe one case of malignant fever, either with or without petechia. The only disease that raged throughout the domain of the Este and the neighbouring regions was a rural epidemic of intermittent tertian fevers. There was barely one peasant who did not fall victim to this, so I can hardly see how the food spoilt by the blight can be considered the principle cause. Likewise, I do not believe the high cost of food that afflicted these regions for many years can be blamed. Nevertheless, according to Hippocrates in Enq legs and knees were greatly weakened by the consumption
of legumes; however, in this region everyone was suffering from the same symptoms, whether they ate the best bread or ate badly. XXXVIII. There is even less reason to believe the blame lies with the water, the use of which is so essential to human life. Although polluted waters can transmit epidemic diseases, there is no way we can suspect our water because in this area, in this city in particular, it is very healthy. Thanks to a divine blessing that was not granted to others, the water from our sources is always very pure, as I expounded in my treatise on the astonishing source of the waters of Modena.

XXXIX. Therefore, of the six unnatural elements the only possible common cause is the air, which is both so common and essential (indeed, those who live in the same area may eat and drink different things, but the air is one and the same), so there must be some kind of defect and pollution in the air that led to the changes in the blood mass so it had the strength to provoke this malignant fever. The composition of such air and its nature is not so clear. This malignant disposition can certainly not be led back to its elementary characteristics alone, and those in search of the truth would not be so easily satisfied. Furthermore, as I mentioned earlier, during these three years the constitutions of each year varied considerably but the fever still raged with the same fury. Nevertheless, there can be absolutely no doubt that the air we breathe and the whole atmosphere harbours various particles of different kinds. These might come from the skies above or from below; in other words, the heavens and stars, the sun, moon and other stars release them and throw them with all their strength into the air together with their light, which we cannot deny, as can be deduced from the evanescence of the solar flashes; in the same manner, the terraqueous globe releases substances of all kinds that it is harbouring, not so much because of the sunlight, which heats the areas of the earth in turn, but because of the central heat and fires that the earth itself is hiding in its bowels. It therefore follows (even if it is invisible to the naked eye) that there is nothing more heterogeneous in this universe than being a participant in the terrestrial impurities and celestial emanations from the great sea of the heavens.

XL. This is therefore where we must seek the cause for our epidemic - from the air contaminated by these heterogeneous particles of all kinds that came from above and below, especially those from
the south, as during these three years it was the southerly winds that prevailed, subduing the northerly winds that blow the clouds and impurities in the air back to where they came from, i.e. to the south. It is therefore legitimate to believe this is where the ill came from. As the key figures in all of this were the southerly winds, it therefore follows that while this fever raged in the city and countryside, the villas and towns in the hills suffered less as they were protected from the southerly winds by the peaks of the Apennines, as if watching a shipwreck from a harbour. In the higher lying places in the Apennines this was not the case as they were more exposed to the winds, as was our city and the whole valley.

XLI. The bad reputation of the southerly winds is renowned everywhere, as not only doctors but also the common-folk believe it bears the germs of pestilential diseases. However, it is not at all easy to say what exactly this wind is carrying, whether it is so harmful because of its excessive humidity, hence its name (indeed, in Greek the southerly winds are called Notos) or, as Lange believes, because it becomes infested with poisonous animals when it crosses the Libyan deserts and brings this poison to us. What is certain, however, and is clear to perceive, is that nothing is able to instantly change the state of the air like the southerly winds, because they make the air much lighter. This might be why we find it so hostile and unsuitable to our vital functions. The barometer shows this all too clearly. Indeed, in my Barometrical Ephemerides, which I published in 1694, I observed that each time the southerly winds blew, the mercury would drop so low it could no longer be seen on the barometer. I was asked if anyone had discovered why the southerly winds make the air much lighter even though everything is dripping with humidity but, to tell the truth, I was unable to help.

XLII. It is therefore admissible to lay the main blame on the constitution of the southerly winds for contaminating the air more than anything else. Nevertheless, amongst the other primary causes I would still not completely exclude the food spoilt by blight, the irregularity of the seasons and excessive rainfall. In short, it was a syndrome with multiple causes that caused the humoural mass to change and allow this malignant fever to emerge, and it persisted until the air had returned to its opposite state and the blood and spirit returned to their former combination.

XLIII. It appears that the actual state of the blood and other liq-
uids during this fever is not very clear, for example whether it tended to flow or to coagulate. In actual fact, if we consult the oracles of both the ancients and the moderns, we will find such a vast array of contradicting replies that instead of establishing the true natural cause of malignant fevers, we will come away from our books more confused than ever. Here I have neither the time nor the wish to summarize the lengthy list of contemporary writers who are divided in two camps as if they were fighting one another. Some believe the most immediate cause lies in the tendency to coagulation due to the prevalence of acid and the Gorgon spirits, as they call them; others believe it lies in the excessive fluidity of the blood due to the volatile salt and alkali that have been introduced. Thus, when one reaches this crossroads, no matter which way one turns, one will be alongside great names supporting their own cause in the event that things did not go quite as one had wished. Thus, in something as important as the knowledge of a malignant disease, there was so little agreement amongst the forerunners of medicine, and after so many glorious anatomical and chemical discoveries, we are none the wiser and still do not know which way to turn.

XLIV. However, I would never have deemed the notion of malignancy that arose from the experience with infusory medicine as unworthy. This is because when acid liquids are injected in to the veins of living animals and the same animals are then dissected once dead, one can clearly see that the blood in the veins and heart has coagulated and is clotted. In the same way, if one injects alkali and liscival liquids, the blood becomes fibreless and totally fluidified. This would mean that all poisons, whether external or those generated within the body, can easily be led back to one of these two categories. It is therefore thanks to the diligence of our doctors today that such experiments and the use of the senses has shed some light on our thinking, how and with which weapons the nutrient humours in our bodies are equipped, when they become velenous and arouse malignant fevers and can either coagulate or dissolve and liquefy the blood. This is of the utmost importance because in malignant diseases (once the facts have been reflected upon with the severest judgement), the correct treatment can be established and therefore makes the indiscriminate use of antidotes unnecessary, such as administering alkalis when an acid would have been more appropriate.

XLV. Although doctors today have provided a much more satis-
factory explanation about the nature of poisons than the ancients, whether administered, inflicted by a bite or generated within our bodies provoking malignant illnesses. The ancients believed in a common ground of the hidden qualities and, although it is now believed that there is a better cure for malignant illnesses, i.e. using acids to correct the irregularities produced by alkalis and vice-versa, the ancients were probably also aware of this. In numerous passages Galen repeats Asclepiades’s belief that these two contrasting dispositions of the blood, i.e. excessive distension and condensation, were the cause of all diseases. Vegetius seems to be of the same opinion, as he recommends venesection as a remedy for blood that is too thick. Hippocrates describes a remarkable case that deserves to be mentioned, and which clearly shows that the ancients would not prescribe anything that might be called an antidote in malignant fevers, unlike today when even if the fever is clearly of a malignant nature, they “mix the heavens and earth” and prescribe any kind of antidote. Nicoxenos was afflicted by a malignant fever and Hippocrates says, “His tongue burnt up, with a heat upon him, but not very vehement outwardly; his body was terribly loose and flabby; his voice so broke that it was a trouble to hear him, though it was at the same time distinct; his temples fallen; his eyes hollow; his feet soft and warm; and a distension about his spleen, [...] The urine was clear and bright; his position in bed supine; his legs parted as through excessive weariness; but he could get no sleep all the time”. So why did nobody believe it might be a malignant fever? Nevertheless, he made a full recovery. But with what variety of remedies and effort did he manage to tame such a mortal fever? “His drink was bran-water, with the juice of apples and pomegranates, the juice of cold roasted lentils, and the washings of meal boiled into a thin soup”. These are the words of Hippocrates. The Lord knows which remedies would be recommended today to treat such a fever. It is certainly to be feared that Plutarch’s criticism of Erasistratus might be appropriate, that is, that “Mineral, vegetable and animal elements are mixed together, whether from the land or sea”. However, I beg you to listen to the account by that outstanding commentator Vallés. He says, “One must remember that at times the fever may be of the pituitious, malignant kind with exanthema, at others bilious or atri-bilious, so the treatment therefore varies. In that man, the parchedness and sleeplessness indicated there was an abundance of acrid,
subtle humours rather than fat ones. This is why it did him good to drink, while it would have been extremely harmful in another case. For example, it would have been extremely harmful to give him teas or drinks and hot herbs, such as dittany, scabacious and blessed thistle as such remedies are usually beneficial to others”.

XLVI. Not only do professors of medicine disagree about the cause of malignant fevers, they disagree even more about the explanation of the nature of petechial fever and its causes. However, this was also the case in the past. Indeed, the famous Fracastoro says that while the lenticular fever was raging in 1528, there was such disagreement amongst the doctors regarding how this fever should be treated that it almost seemed a farce since “nearly all the mortals and nobility” died because of their ignorance of what was causing the fever, which meant they could not agree on either which diet should be followed or what kind of remedy recommended. Today, writers of medicine seem to be divided into two opposing camps regarding the explanation of petechial fever; one believes it results from the coagulation of the blood while the other believes it results from its fluidification. The explanation offered by the illustrious Willis, Simon Pauli, the authors of Zodiacus Medico-Gallicus and others seems rather more likely. They believe that during this fever the natural consistency of the blood gradually becomes denser and therefore moves more slowly because of the prevailing acid, until its denser (less mobile) particles are less easily absorbed by the extremities of the veins while the blood is flowing around the body, and since they are kept there like prisoners, spots appear on the skin. Ettmüller, De la Boe, Menotius and others believe this fever and the generation of the petechia is caused by the fluidified constitution of the blood. The latter alters its normal position because of the acrid and volatile salt that makes it liquefy, and when it flows towards the openings of the small arteries, its lightest parts leave the path of circulation as if they were exiles, leaving the signs of their mistake on the skin.

XLVII. As I wish to waste no more time on the opinions of others, let us say that in this petechial fever, the blood mass is more inclined to become more liquid than coagulate and we can base our reasoning for this on the spots that can be seen in the blood that is drawn. I and other professors have found such blood to be rosy and purple and not at all viscous, either in summer or winter. Since this blood was therefore so different from that drawn from patients with
other illnesses, such as pleuritis, pneumonia, erysipelas and other epidemic diseases, revealing its contamination in its colour and vis­
cousness, I believe one should “believe one’s eyes rather than one’s mind” (to use Hippocrates’ very words). That is, the lighter parts of
the blood are ignited in some way and there is an effusion of serum
from the vessels, which results in the fatal nature of the numerous
symptoms we have described. There are many other factors that
confirm this was the disposition of the blood mass, above all the fact
that this savage fever assaulted robust, well-built young girls and
boys but not those who were older or less healthy, a little like how
“the lion’s rage ignored the defenceless sheep”. Indeed, this internal
ergm, which was inhaled together with the air or in some other way
and which contained such alkaline acrimony, was much more pow­
erful in those with rich blood with spirituous particles than in those
who were less healthy and the elderly whose blood was weaker,
and therefore more able to blunt the sharp weapons of this mali­
gnant miasma. This might be why the elderly “are not affected by the
plague”, as Pliny wrote, unless they are not less subject to the plague
than the young. See Zarotti on Martial for more on this. Thus, in the
same way that generous wines turn acid more easily in the summer
than diluted wines (at least in this city since there is such a lack of
cellars owing to the abundance of water underground), because of
an abundance of spirits that swell, pure, generous wines tend to
corruptive fermentation much more easily under the scorching sun,
which is not the case with oligophorous wines as they abound in
water. Further confirmation that this was the condition of the blood
was the sudden physical weakness and weak pulse, two symptoms
that abounded in this illness, as in diseases of the chest, when clear
concretions were to be seen in the blood drawn by venesection. Fur­
thermore, the use of acids was more beneficial than that of alkalis,
and the application of vesicants proved relatively ineffective.

XLVIII. It is not surprising that blood-letting was ineffective while
such a disposition of the humours persisted. This is common in epi­
demics and pestilential epidemics in which bleeding does not enjoy
a good reputation as at such times the humours hardly ever tend to­
wards immobility rather than liquefaction owing to the poison in the
air, which is relatively light and too hostile to the more spirituous
parts of the blood. For the same reason blood-letting is to be used
with great caution in all malignant fevers in the fear that the strength
is also removed with the blood. In his writings on the treatment of pestilential fevers Celsus said, “Do not draw blood too readily and do not empty the bowels too readily”. Likewise, in his *Physical-medical Theorems*, with great reason the chief physician of Urbino, the learned Giovanni Battista Scaramucci, disapproved of venesection if the liscival salts prevailed as it could lead to fluidification.

XLIX. However, someone is sure to ask why such things were not to be feared from the use of scarified cupping-glasses, since the blood being drawn came from the same source as that from blood-letting unless, perhaps, the blood drawn using the cupping-glasses is also more florid after many small arteries have been cut? I can certainly not deny that the blood drawn with the cutting-glasses is brighter, but it is not common daring but experience that often misleads us, and the latter was sufficient proof that the use of cupping-glasses was more beneficial than blood-letting. This also had its sound reasons. Indeed, in this fever, when nature was pushing the humours from the interior to the exterior, they tended to move more through the body, and in various places, once the skin was cut, some of that occult poison transpired, after having been pushed as far as the skin where it remained because it was driven back by the surrounding air.

L. At the beginning of this epidemic disease I was strongly opposed to the untimely use of cupping-glasses and believed that blood-letting should first be used to remove the burden that was oppressing it. I believed that the movement of the humours should not be excited by the inopportune application of cupping-glasses, especially during ebullition, and I protested that drawing blood did not move anything from the periphery to the centre. On the contrary, during the time the vein is open, the blood moves with more impetus towards this part than the other, and one has to trust more in reason than in the outcome, which Fabius Maximus called the teacher of the foolish. Much has been written about the use and, if one so will, the abuse of cupping-glasses, for example Ippolito Obicio in his book on multiple abuse in medicine. However, in actual fact, nearly everyone disapproves of it being used at the beginning of acute diseases (unless blood-letting was first carried out to deal with plethora). Nevertheless, in lenticular fever, which was very widespread in his days, Fracastoro believed blood-letting was to be avoided, especially when the contagion was already relatively
widespread; instead, he would recommend the application of cupping-glasses, unless it was a case of serious plethora. We can glean just how much P. Alpino praised the use of cupping-glasses in this fever from the one chapter he wrote in the book on Egyptian medicine. He says, “The Egyptian doctors were wrong not to use cupping-glasses to encourage the eruption of exanthema”. Amongst the moderns, however, P. Borelli observed that in 1648 there was a vast outbreak of purple epidemic malignant fevers and the frequent use of cupping-glasses helped a great deal.

LI. At this point I do not think the petechia should be considered as a mere symptom of malignant fever, as is commonly believed. Neither do I believe that they should be excluded from the category of critical secretions, which can be confirmed on the basis of the observation by the illustrious Diemerbroeck in Bonet, with his outstanding history of petechia. He says that in his autopsies of those who had had purple fever he observed that all the internal body parts were covered with petechia. Not much earlier, the same thing was observed (albeit through reasoning and not with the naked eye) by Vallès in his case study of Simone, by Baillou in his *Epidemics* and by Fernel in his book on fevers. I was unable to dissect any corpses to confirm this diffusion of petechia in the internal parts of the body as nobody around here would willingly give the corpse of one of their family members for such a study at any price. However, the repeated observation of the fact that those who recovered from this disease without any perceptible secretion of the humours, as I mentioned earlier, but only with the appearance of the petechia at the right time and in the right place, gradually covering the whole body and then slowly disappearing, led me to believe that after the fermentation of these humours at the beginning of the illness, Nature shook off that virulent serum by depositing it first on the internal and then on the external parts, so that the whole blood mass could return to its natural pure state, once that dark miasma had been emptied outside via the thousand openings of the arteries. Furthermore, it is strange that Diemerbroeck says that in the corpse of a man who died of this fever, he observed that the spots began from the periosteum itself and then went up to the skin from a wide base, like a pyramid, through the muscles, like the smoke of a lamp that has just been put out.

LII. This therefore means that the secretion from the blood mass
during petechial fever is not at all insignificant. On the contrary, throughout the course of the illness this secretion should be placed in the category of what is critical. However, it is not as considerable as the other kinds of evacuation, both because of the lightness of the substance that transpires imperceptibly through the skin and because most of it is diffused through the internal parts of the body before appearing on the skin, like the top of a pyramid. I therefore believe that this is a satisfactory explanation of the symptoms mentioned above that accompany this fever, and also of how Nature takes care of this fever. Indeed, the exhaustion of the back and whole body, called *kopiodeis* (exhausted) in fevers, is caused by none other than that serum, which flows through the artery openings in the membranes and muscle fibres. In the same way, the agitation of the precordium, the parchedness of the mouth, deafness of the ears and torpor of the mind are all caused by the same substance that flows to the body parts while they are carrying out their animal and vital functions. Indeed, when nature wanted to purify the whole venous system of that malignant miasma, it did not choose just one way to eliminate the noxious humours (as is the case with vomiting, evacuation of the bowels, the urinary tract, and the skin pores) but it opened all the openings of the arteries so that almost the whole body felt the damage until it had been eliminated and was restored to its previous state. Since this is how nature overcomes this fever, it is therefore no surprise that venesection and the prescription of remedies is to be done with great caution, as otherwise nature would be distracted and the outcome would be more positive for those doctors who abstain from blood-letting than those who do not. This is why the inhabitants in villages recovered more easily than those in the towns, since it was often the cures that were making them ill.

LIII. However, while that malignant poison prevailed, the situation deteriorated rapidly, eliminating even the vital and animal spirits. This was the case both when the petechia appeared slowly and when they appeared suddenly, frequently accompanied by extreme exhaustion, asphyxia, chilling of the whole body, hiccups and urine retention. Once the flow of animal spirits had ceased and the heart was hindered in its natural movement, no arterial blood flowed to the kidneys and, as a result, no serum was secreted. As mentioned earlier, those who were afflicted by this fever were florid and plump because it was not accompanied by high tem-
temperatures (which is why they were not at all thirsty) and because what was being exhaled via transpiration was extremely light. The reason it raged even more during the waning and new moon (if it is admissible to make conjectures on something so abstruse), might be explained by the fact that in the microcosm it is said that the moon rules the darkness and changing waves since it moderates the sea. In the same way, it governs the lymph of the microcosm and “all the seas are purified during full moon”, as Pliny says. Thus, in this fever when the moon is at its fullest, it sets the blood serum in motion, hence the sudden eruption of spots and the purification of the entire humoral mass; however, as its light gradually fades and when it is absent, the humours move more sluggishly and are therefore less able to escape, thus increasing the fever.

LIV. As far as the other symptoms that appear during this fever are concerned, for example hiccups, bowel evacuation, and worm proliferation, these not only show just how terrible the illness is, but also that it was exacerbated by crude humours; consequently, a light purgative at the onset of this petechial fever was not totally inappropriate, although it was decided by chance and was not believed to be of great help. Once this mass of humours in the stomach had been removed, Nature could then complete its work more easily, purifying the blood mass of the malignant miasma with the diffusion of the spots to the skin. I believe that administering a bland purgative at the beginning, which was regarded with such disdain or believed to be of little benefit, actually did considerable harm to the patients. Indeed, once the first paths had been cleansed, the doors were then closed to the cordial remedies that would have expelled the fever, and they were not even allowed to invade the blood and heart, unless in disguise. This is why antidotes were inappropriate at the beginning of malignant illnesses unless the paths had already been freed of any obstruction, as we can read in Galen and Settala and others, while Manelfi states the opposite in his book on fevers.

LV. I have to admit that the use of the so-called syrnesma medications for purification at the beginning of this disease does not meet with much approval. In his valuable pamphlet on fevers with cutaneous eruptions, for example, P. à Castro criticizes palliative electuary in particular, and Antonio Ponce de Santa Cruz criticizes Vallés’ comment on Hippocrates’ Simone. Amongst the moderns, Ettmüller believes both enemas and purgatives inappropriate in
purple fevers. There are some, however, such as Settala, who believe a light purgative is admissible. He says that Galen himself recommended a purgative in the famous description of Simone, who also suffered excessive exanthema.

LVI. It was found that the use of Peruvian bark brought about little improvement, either because it was prescribed when a stimulus and not a restraint was required and because, as mentioned earlier, it was prescribed in the case of slow fevers following ill-judged petechial fevers, or because it was simply not suitable for fevers of this kind. Opinions certainly differ on its use, and the fate of those who use it varies. The use of this famous antipyretic is both praised and criticized all over. Willis calls Peruvian bark *medicina dolosa* while in *Pyretology*, the English doctor Richard Morton calls the plant this root comes from the tree of life. This might be because of the ineffectiveness of the remedy, which is not suited to all kinds of fevers and temperaments, or because of the negligence of doctors who do not prescribe it at the right time or place. However, it is sheer folly to wish to use this as a weapon against all kinds of fevers, whether big or small, intermittent or continuous. And let us not forget the cases in which it was used with such fatal consequences, or at the least reducing the patients to permanent infirmity. In his dissertation on the use and abuse of precipitants, the caution recommended by the illustrious Ettmüller in the correct use of cinchona is noteworthy. He recommends the spirit of sal ammoniac to rouse the fever that has been put to sleep by cinchona, whenever abdominal pains, osteoscopic pain of the limbs, intestinal obstruction, sweating at night and other ills appear. He says he observed that the spirit of sal ammoniac was immediately able to arouse the fevers that had been subdued by this bark. This is not the right place to go into the use and nature of such a famous antipyretic in more detail. I shall limit myself to pointing out that in my first dissertation on the constitution of 1690 I observed (and I know there was further confirmation) that in the cold, damp seasons when our bodies are filled with dense humours, the use of Peruvian bark proved ineffective, while in the hot, dry seasons, when the humours need some restraint, the results were excellent.

LVII. During this dissertation I have mainly concentrated on the nature and character of this long-lasting malignant fever, and explained which remedies were adopted to eliminate it. However,
there was also the sporadic appearance of other serious diseases that also sometimes resulted in death. These were the diseases that are typical of the seasons; for example, cholera in summer, erratic and quartan fevers in autumn, and the same for winter and spring. However, since these were not of an epidemic nature, I have ignored them, as both theory and practice abound with how they should be treated, and I can add nothing more on the subject, other than a doctor's prudence and foresight. However, I have had to toil considerably, having observed that Hippocrates' divine saying has been neglected in epidemic illnesses, and I shall never cease to urge professors to set foot in this field, where they will not find mere gleaning, but a generous harvest of observations that will be an honour to both them and their patients' health.

LVIII. Hippocrates wrote that we fight to two ends, "One for man, the other for art", but nowadays I do not know which spirit today's doctors are following when they are striving to attain honour for the art, but almost none for their patients. Indeed, since they are all so intent on studying the tiniest details, just like in haruspicy, believing the tiny fibres of the bowels will allow them to make prophesies regarding the otherwise incomprehensible works and teachings of nature, all they think of is attaining glory and fame for themselves, as if the only ones who can exercise their wits and achieve fame in medicine are the professors. What would Aristo- phanes say if he were alive today? What perspicacity would not arouse such diligent dedication? I would like to quote his lines in all the spirit and vigour of their purity in the translation by Andrea Divo Giustinopolitano. When Socrates' disciple is asked by Strepsiade whether the buzz of the mosquito issued from the mouth or the anus, "He said the mosquito's intestine is narrow and that its breath, being even lighter, is pushed behind its tail, into the cavity next to the narrow tube and it is this that makes the anus resonate".

LIX. Far be it from me to regard anatomical study as a dishonest task. I simply find it regrettable that since this sword already seems to be as well-decorated and clear as medical practice requires, nearly all those devoting themselves to this field do so to waste time. It would be much more profitable if they turned their minds and energy to other things that would be of much greater use. The history of epidemic illnesses is certainly not the least of these, as it is one of the most sought-after and least known fields.