Medical Thesis
on
Scurvy

Presiding the most widely knowledgeable, most excellent and most expert Dn. Olaf Wormius, Doctor of Philosophy and Medicine most famous Professor at the Royal Academy of Copenhagen and teacher, patron and promoter for

M. Ambrosius Rhodius,
from the city of Kembergen in Saxen,
who present in a public defense
in the main auditorium on June 10 at 8 a.m.

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The thesis is dedicated to Dr. Jasper Brochmand, Bishop in Denmark and to Dr Henning Arnisæus, court physician to King Christian IV.

To the most important, excellent and most famous men, the magnificent and reverend
Dn. Jasper Brochmand, for long time most famous Doctor of Philosophy and SS Theology, Public Professor of the Royal Academy of Hesniae as well as pro tempore Magnificus Rector, and to Dn. Henning Amnisæus most experienced Doctor of Philosophy and court physician to the most serene king of Denmark, Norway etc., court physician most successful and most deserving, and to the patrons and leaders, as well as protectors and parents that are present for the cult of honor, this, albeit not quite ready production of ingenuity, wanted to propose as a sign of due respect

M. Ambrosius Rhodius from the city of Kemberg in Sachsen.

Author and correspondent

alpha/omega

I will discuss and bring to light scurvy, a terrible disease indeed, and one that hides under different manifestations. And not undeservedly, since this is indeed a domestic enemy of this region, which many host within themselves and fear, which they nourish, which in many ways at times deceives by promising truce and at times lurks under the appearance of another disease; at times everywhere as immaterial ghost throughout the body shows up quite readily and
debilitates and destroys the health of many, and feeds off vigor and beauty. You, God, who are our physician and our health, and our life, be a guide and shine light on me against such a terrible enemy; do so that its character, and violence becomes evident and once revealed becomes well known, so that once well known it will be conquered.

Thesis I

I define scurvy as a vicious and hidden entity or disposition of the entire body, but mainly of the viscera, and one caused by nutrition, which derives its origins from a peculiarly corrupted melancholy mood, and has varying symptoms, such as spontaneous exhaustion, the breakdown of the gums, the tightness of the chest, spots and many other things associated with it.

II

It is called by the inhabitants of inferior Saxony “Scorbod or Scorbud”, by the Dutch “Scharbed” because of the ruin of the mouth, by the Danes “Starbug” because of the torment and colic and sharp pains of the belly, so that they yell all kinds of things, that they would remove their skin and be torn to pieces, and for the intensity of their pain they don’t know where to turn, and about this thing writes Eugalenus Obs. 69. From here Hippocrates.” Liber de intern. Affection.”, appears to have described this disease under the name “volvuli haematitis”, which however is disagreed upon by Wierker in his observation on scurvy. And indeed Sennertus Book 3. Pract.Part 5. Sect. 2.c.1, and Horst Sect. 1.on scurvy with sufficiently clear reasons disagree with the opinion of Hippocrates about scurvy.

III

So that the nature of scurvy be better known, two things offer themselves to be first investigated: the nature of the liquid in scurvy, of the organ producing it and the way it forms; and the maladies and symptoms which frequently accompany scurvy. All these things we will follow first from the food, so that they become clearer.

IV

And indeed since we believe that the foods undergo some fermentation in our body, by which, food is prepared for nourishment and useful things are separated from useless ones. And in fact we see in the works of chemists that fatty substances are made more transparent through fermentation, that solid things are transformed into volatile things, and are liberated optimally from their waste products, so that from fruits, pears and apples from which nearly nothing could be extracted prior to fermentation, how after fermentation a lot of alcohol is derived. Similarly we see in the must, in beer, that after fermentation they let precipitate a great amount of waste products to the bottom. And certainly for bread, if it is fermented, it becomes much lighter and it is digested much more easily by the stomach.
V

And therefore, when the stomach, liver and gall bladder are not inhibited in their function, or the same things are not lacking, everything works well. However, they are blocked in their function when fatty food and food of hard cooking is ingested, from which many hostile, undigested and solid things, as Hippocrates says, are left behind, which are not digestible, and cannot be led to become thinner and convenient for bodily disposition. Whence the digestion of the intestines, and flatulence, by which all foods are fermented, and must nearly be transformed into spirit, as Hippocrates talks about (Hipp., 3 de vict. rat. in acut. T. 38), to be rarefied and to be let into the air; instead it goes bad and gets fixed in salt and wine stones, as it is called by chemists, and consumed in large quantities with foods, it cannot turn into something volatile or light, and the viscera themselves in the end are weakened and are oppressed by those fatty and infernal parts so that in the end they are forced to, having lost their function, let in without discrimination the useless and useful things.

VI

For this reason that fixed and horrible liquid subsists in the first conduits, in the veins and in the branches of the mesenteric veins, and it establishes itself in the pancreas and in the omentum, and because of the daily persistence of the cause, which gives matter for subsistence to this disease, it grows more and more, where other sick liquids converge, and are stabilized in those places, until they acquire a corrupt and contagious disposition, characteristic of the scorbutic condition.

VII

And, even though in these places this collected dirty liquid remains quiet for a time, nevertheless, under the appropriate condition, it bursts, it goes to the liver, it distributes itself through veins and arteries, and pervades and corrupts various parts of the body, the muscles, the articulations, tendons, and generates different diseases according to the condition of the parts by which it is received. For in external places it causes exhaustion and vagrant pains: when reaching the gums, it causes pruritus, ulcerations, and heavy odors: on the surface of the skin it gives rise to spots either red ones or purple or dark. And finally from here it then produces six hundred other effects through the entire body.

VIII

From these things scurvy is easily recognized, because we have established a double thing, the source and the place in which the putrid liquid of scurvy is formed and the place where, once generated, it is contained.

IX

The mesentery, pancreas, omentum and the branches of the portal vein constitute the source, in which the putrid liquid of scurvy is generated as it becomes evident from the preceding things.
The cavity in the left hypochondriion under the diaphragm can be added, which originates from the connection of the ventricle, of the omentum, of the colon and viscera and is described very clearly by Hyeronym. *Fabric. ab Aquapend. in hist. seu structura omenti.* In this place often gathers such an unpleasant residue of fetid liquids that *Fern. lib. 6. de part. morb. & Sympt. c. 7.* most rightfully concludes that choler, melancholy, diarrhea, diphtheria, cachexiae, atrophy, weakness, and contagious fevers of pilgrims were self-generated there, and finally he thought to have caught the causes of hidden diseases. And *Sennertus lib. 3. pract. part. 5. sect. 2. c. 2* says that nearly no disease is in the body, which could not derive from the excrements accumulated in these places.

X

This defect is mainly promoted by the spleen, whose function it is to attract the fatter part of the chylus, not simply as such, but in some way in respect to its real constituents, which are transported to the liver, for similarity of composition. In this way it not only would yield a better blood production, through its access to the liver, but it would also from the attracted chylus prepare blood for itself and the other organs, as suggested by *Platero lib. a. tabul. anat. Casparo Bauhino lib. 1. theatr. anatom. C. 43.* On the other hand *Gal. l.2.de loc. affect. c. I* thinks that the liver’s function is to clear the fats, and the slimy and dark bile juices generated in the liver. And when the function of the spleen is lacking, not only are the undigested and harder parts of the chylus not digested, but also they are corrupted beyond nature, and they perturb the digestion by the liver of other parts dedicated to the digestion, and what follows produces a specific corruption, various symptoms of malnutrition, and finally they generate scurvy.

XI

Nor, however, for this same reason, when I say that the bile causes the coming together of these bad liquids in the mesentery, do I say that the function of the bile in scurvy is always gone bad, and that it is always affected, since it some times happens, that it is found intact by the test of Senertus, who found in the open cadaver of a person dead from scurvy that the omentum was indeed nearly all putrid and corrupt, while the bile was in reality intact, of which a lot could be a matter of perception. And *Forest. lib. 20 observ. 11* made note of the fact that in a certain governor of Holland, who was fighting against scurvy, the liver had been affected more than the spleen.

XII

For, if the spleen is safe, it is easier to verify in those, who are afflicted by the contagion, and more difficult in those, who contract this disease for themselves through excessive gluttony of fat foods. And indeed when the primary roads are studded with salty concretions and an excess of mucinous formations, it can hardly be, that the spleen will fail in its function because of an external error, rather it will be debilitated by obstructions, and it would be forcibly led into permitting and favoring the generation of this disease. But on the other hand the spleen may become in some way weaker, and can more easily promote the generation of this disease; and it can happen that the spleen,
because of its weaker constitution first gets obstructed, and then performs its actions more slowly, and the mesentery and the primary veins be filled with foul liquids.

XIII

Afterwards, if that putrid matter increases a lot, from these places and if it acquires the corruption typical of scurvy, it pervades (the organism) through the venous bed, and through the arteries in the entire body, so that it also becomes apparent from the superior parts. Indeed the chylus, while transiting through places filled with this foul liquid, also becomes polluted and together with these foul liquids runs to the liver and spleen and it debilitates the intestines, and it infects them: and with those being affected the infection penetrates to other and yet other parts, and finally it pervades the whole body with the bad chemistry of scurvy.

XIV

Therefore the cause of scurvy is a preexistent black bile (melancholy), raw, undigested or serous liquid, which usually is collected in the mesentery and the primary routes by a debilitated and deprived digestion, and not only the preceding ration of food, but also the symptoms that accompany it witness to the scorbutic outcome. And so that it may be possible to approach the reason for the plausible cause, it is necessary, as I will spell out, that a simultaneous corruption be associated with this scorbutic outcome. And this transpires from the infection, of which other diseases such as atrabilia and hypochondriac disease are deprived.

XV

For this same thing we refer to the opinion of Reusnerus lib. de scorbuto. Exerc. 4., which states that the proximate causes of scurvy are the watery humors, which are endowed much more with weakness than with strength. And indeed, all these things, which contribute to the generation of scurvy, do not contribute to the production of aqueous and weak liquids, but rather to the fatty and black bile. Nor, however, when a mention is made of fatty and black bile humor, we understand plainly fatty and sticky, as did Reusnerus, page 171: but the fatty one, even though very diluted, as like lye, which is made of water and salts and muddy stuff and is made up of combusted parts, as found in a book of the most famous Sennertus, 2 instit. part, 2 c.

XVI

And this dark and serous liquid of the spleen is not generated in other ways than vinegar is from wine Gal. 3. de sympt. causs. c. 5. And indeed, just as in wine, when it turns to vinegar, the volatile spirits are fixed to its salts, so also in the elaboration of nourishment, when that bubbling, or digestion, through which all foods are fermented and must be transformed into spirits, is lacking, not only a lot of fat, salts and solids become aggregated, but also liquid humors are impeded in their ability to evaporate, they are fixed, and they are changed into acidic rawness, of which speaks Gal. 8. meth. med., c. 5.
XVII

And things that show sufficient curative abilities, when dissolved through medication, and abound in volatile salt, are things like scurvy grass (*cochlearia*), common chickweed (*beccabunga*), water cress (*nasturtium*), mustard plants (*sinape*) and others; and indeed opposite things are cured by their opposites, and something fixed is returned to volatile by a volatile substance, just as on the other hand, things that are volatile become fixed by fixed things and are returned to their solid state *as per Sennertus lib. de cons. & dib. Chym. & Arist, c 12*. However, it cannot be denied that, because something occult may hide in this condition, the same things also may in an unknown fashion fight against that corruption by scurvy and win over it.

XIX

As far as the facilitating causes, they are nothing else, other than six non natural things, so called not because they are not within the number of natural things, but because they are not pertinent to the constitution of our body, and as such are also outside of the natural, but among those which make up the human body, and beyond natural almost intermediate as *Senn. lib. 2. Instit., part. 2, c.2.* explains. Among these in first place the heavy and squallid ambient air is placed, which assimilated through inhalation, or through the pores of the skin admitted into the body contaminates blood and spirit, and permits the generation of undigested material, as *Eugal. de scorb. pag. 2.* and *Albertus lib. de scorb. th. 44* state most correctly.

XIX

After the air, the ration of food is considered, which, if fat and muddy, contributes a lot towards the generation of scurvy. To this category belong fish of the lake and of the sea, such as sparrow fish, crewfish, anchovies, and others dried out either with smoke, or the heat of the sun, or by freeze-drying, and rendered stiff such as bovine, goat meats previously marinated in salt and brine, or smoked, and all those things which abound in dark juice. In comparison with the other things, smoke functions as a carrier, as if supplying a fueling juice. For through fumigation the meat is imbibed with many exogenous qualities, which, when the good and innate juice evaporates away, become the cause of the melancholy juice. An acidic liquid is also formed which is trapped with bad consequences, for as death from cholera so is the life with melancholy disease, as in *Hipp. lib. 3. in acut. de vict. rat. t.*, 38.

XX

Further, if the exercises of the body are neglected, this can contribute a lot to the generation of scurvy. And so it happens that those who are dedicated to doing nothing, and lead a sedentary life are more easily affected by scurvy, than those who work out often, by whom heat is formed and ventilated, and a large amount of foul liquid is dissipated.

XXI

Also pertinent is excessive sleep, which allows for accumulation of raw liquids in the body according to *Gal.lib.12 meth. med. c. 3.* Similarly also excessive awakening,
because through being awake the natural body heat is weakened by loss of water as suggested by Gal. lib. 3. de causs. puls.

XXII

Further, regular emptying, if it is not there, just as the menstrual cleansing in women, or in men the bleeding of hemorrhoids, as says Eugal. de Scorb. p.2. And so also the aggravations of the soul promote the onset of scurvy. From which in Eccles. cap. 20, (the exhortation) “Do not give to your soul sadness, and remove stagnant sadness from you: for sadness kills many”. And Eugal. pag. 3, de scorb. writes that longer duration depression affected those with fatter rations of food, from these sick people it could be predicted always those who were affected by scurvy alone or mixed to other (diseases). To all of these, infection can be added.

XXIII

A great mixture is given of the diseases and symptoms which usually accompany scurvy; not all of them, however, appear at the same time, but now some, now others are not manifest. However, often the malfunction or the obstruction of the spleen or of the portal veins, and the loss of coordination between these, with consequent increased or decreased function and cause melancholy mood to creep in, together with sadness, weakness, a lack of strength in the limbs, difficult breathing, and a tightness of the chest, a change of vivid colours into dark and livid. Further, the urines appear fatty and whitish at first, and then, with advanced disease a colour from dark to reddish appears, the pulse varies; at times weak and unequal, and often it appears to be moving like a worm rather than pulsating, more like creeping than pulsating.

Sometimes feverishly excited vertigo gets a hold of the head, sleep becomes less, nor does it proceed naturally, and at times they fall asleep, but always with anxiety and fear, the heart palpitates, and emaciation consumes the entire body; often the gums break up at the beginning, the teeth are unsteady, and a bad odour emanates within the body, spots mainly erupt into hemorrhages, to which large tumors sometimes and not rarely follow malignant ulcers. And many other things, the fluxes and constipations of the intestine, fevers, fainting, headaches, colic, pleurites, convulsions, arthritis, and to mention them all would be much longer, all of them are joined to scurvy, as nearly no disease exists, under which scurvy may not hide, and to which it may not associate, so that often it may deceive the unwary.

XXIV

And, before we start therapy, a few things will have to be known on prognosis. And indeed, so that we don’t deceive ourselves, in making a prognosis, it is necessary to act cautiously and with circumspection after considering well all circumstances. And, even though the pulse rather often is so weak that Eugalenes wrote in observ. 35. that Italus ignorant of these things, would be surprised, because with such a pulse a man could not only live, but also walk around, and take care of his business at home; however, it is not possible to right away predict death.
XXV

And if this disease occurred recently, it can be removed easily with appropriate medications. If one removed the root causes but the scurvy juices have influenced the function of liver and spleen, especially if it (scurvy) has been transmitted by inheritance from the parents to someone, it is hardly ever removed totally, as Albertus stated.

XXVI

The old ones are more in danger than the young ones, women more than men.

XXVII

As the disease gets more serious, it usually progresses to dropsy and cacheticsia, because blood generation is impaired when liver and spleen are debilitated and a large amount of serous humour is formed.

XXIIX

The flesh of the gums, if appropriate medications are not applied to it promptly, decays to the bones, and the teeth fall off.

XXIX

Spots in the legs because they tend to become livid and dark, for that reason they signify a bigger danger and they attest to the big malignancy of the humour. And if they go into ulceration, they are harder to heal. This as far as the prognosis.

XXX

In those who are otherwise favourably disposed toward this disease and want to prevent it, prevention would be if they follow a ration of food favouring their nature and contrary to scurvy. And because all dietary mistakes can hardly be avoided during the winter and in the fall, the poisonous humours must be emptied from the body.

XXXI

And if the disease will already have occupied the body, and taken hold of it, four things will have to be observed most of all, according to Forestus; aperture (of veins), intestinal emptying, change and counselling.

XXXII

For, first of all, if there is any abundance of bleeding, having the primary channels already been evacuated either by enema or by any gentle medicament, let a cut of a vein be made, unless weakness forbids it. And let this vein be opened either on the right or on the left side, as is discussed by some, Sal. Albert. lib. de scorb. Wier. observ. de scorb. Forest. lib. 20, observ.II. (who) prefer the veins of the left side.
Instead Thaddeus Dunus lib. 1. Artis evacuand. per venasect. c.3. Reusn. lib. , de scorb. exerc. 7. prove that the veins of the left branch do not have as big a connection with the spleen, as the veins of the right branch, since all the veins of either branch originate from the liver and not from the spleen, and that the veins of the left branch have nothing in common with the spleen, if not through the liver, from which they exit in the same way, as the right side veins. And this opinion is also shared by Sennertus lib. 5. Instit.p.5.s. 1.c.17. And indeed lib. 3 Pract. p. 5.S. 2. C. 6 says that perhaps it will not be useless, if it (the vein) is hidden from direct observation by reason of a convergence of both liquid and gaseous materials, to make a connection of right to right and left to left.

XXXIII

Having accomplished the cut of the vein, it is necessary to progress to the preparations, which diminish the brown earthly liquid, by incision, and dry out through dispersion, as Solomon Albertus says which are the roots of belenium, polypody, vipers gras, rhubarb; the outer barks of capers; and the leaves of fumitry, agrimony, germander speedwell and similar. And if the juice of these or similar plants will have been prepared, and the channels are open, lighter laxatives, as Albertus informs and Severinus Eugalenus warns of dosage, are to be used, since scurvy does not allow strong laxatives.

XXXIV

The body having been evacuated in this way, of necessity those means must be used which more strongly open up obstructions to fight some peculiar characteristics of the person affected by scurvy. And as it is known from what has been said above, the collection of liquid in scurvy from bad digestion and evaporation of the salt, which originates from fatty food left in the body from those foods which abound in volatile salt, and fight the peculiar characteristic of the decay caused by scurvy, the medicaments must be composed of things such as scurvy grass, common chickweed, watercress, horseradish, mustard which also, and not without merit, is added to meats hardened with brines and smoke as condiments.

XXXV

Before the rest of them is favoured the fruit of a certain Chamaerubus, which Carolus Clusius describes under the name of Chamamorus of Norway in his “Hist. plant rarior. lib.1. C.5.” and he brings many things worthy of notice from the letter of Dr. Henrik Høyser, among which he has the following, “Because you would not easily believe which miracles these people in Norway make with this one medicine every day: indeed they absolutely swear that nothing has been celebrated with as many praises until now, not even either the scurvy grass, or the common chickweed, or water cress, and other plants of this type which the Germans brag of and use for themselves.” And year by year from Norway into the regions of Denmark, as I hear many vases full of this fruit are brought, and they are added to food in lieu of preserves with great advantage to health.
And also the matters that induce perspiration, such as *decoctum guaiachi, china, sarsaparilla, bezoardicum minerale*, which can be made availale externally and within the body, should be discussed and are not to be neglected. Let a bath be prepared, and put in the water decoct of brooklime, water cress, mallow, hogweed, Roman chamomile and similar plants. And before the sick person goes into the bath he should drink extract of wormwood, scurvy grass or elder. Finally the limbs will be fortified by the favourable medication, about which speaks *Sennertus lib. 3. Pract. p.5. s.2, c. 6.*

With all these things having been conducted according to prescription in an accurate way, if the disease will not as yet have planted itself firmly, and established a stable station for itself, the symptoms disappear spontaneously. It would be excessively long to describe in which manner each one affected by the growing disease should be rescued from the specific symptoms associated with scurvy.

I will say a few things about loss of teeth to scurvy and lameness. In disease of the mouth the medications that clean up and inhibit the corruption, in part with drying and astringent activit, are rosemary, hissop, bistort, sage and those which fight scurvy with peculiar strength, nasturtium, waterweed, creeping Jenny, scurvy grass must be added; from which various medications are put together. First against bleeding and weakness a certain powder is prepared according to Albert, containing among other things flour of caper, ashes of peppermint etc (*putam cohl. Ustor scrup. Y. missc. F. pulvis*), with which the gums of the teeth should be treated.

In lameness, uncontrollable laxness, large tumors, spots, and ulcers on paralyzed legs are to be cared for. Against the paralysis help can be brought with cooked preparations of *malva chamamel. meliloti, matricaria, nasturt. aq. becabungae granis Juniperi*. After the medications an ointment should be applied, made of the mixture of the following: camomile oil, castor oil, bovine bone marrow, with juice of reddish and of scurvy grass and nastusium mixed with common oil and cooked to a proper consistency.

And if in reality the large tumors are close to the legs, Albertus prescribes lotions of the following ingredients cooked in lye or in sea water to dry and destroy the stanchly tumoursThese ingredients are *bacca Juniperi, rosemarinus, raphanus agrestis, flores sambuci, salvia, chamamelum, sisimbrium, modicum alumen etc.*
Bloody and infected spots are removed with solvents, such as a cooked potion of seeds of Juniper, scurvy grass, honey, etc.

Finally it is appropriate that for the ulcers for which we said above to be healed with greater difficulty, that the best means should be tried. Albertus first spreads syrup from dry roses on the ulcer and covers it with a leaf of Broadleaf Plantain. And afterwards he applies rose honey and sugar syrup of Thomaeum, which clean up with a gentle application. Sennertus says in lib.3, Pract. P. 5.f.2.c.8. that beccabunga cooked by itself in beer, and applied twice a day to a large and bone-deep ulceration of the leg, occupying nearly the entire length of the tibia, was able to cure it. Whoever wishes more details about the therapy of these ulcerations should consult Gal. lib. 4. meth. Mcd. and lib. 2. artis curativae ad Glauconem, ut & Paraeum lib. 12. chirurg. Aquaepend. lib. 3. de ulc. c. 4.

Additional items.

1. Plants are more efficacious under a given constellation.
2. Men become subject to a disease under a given constellation
3. In conformity with optical demonstrations vision does not happen in the crystalline humor but in the reticular tunic.
4. The causes of the critical days are the Moon, the condition of the offending liquids and the ability to get rid of the bad influences.
5. The book on the world is to be attributed to Aristotle.
6. The embryo in the maternal uterus lives both with his own life as well as the life of the mother.
7. The ulcer of the lung at times is emptied through the urine.
8. Not always does a man die from a wounded brain, even if a portion of it is removed.
9. In our regions a split head not always must be shaved immediately.
10. In total decay an incision must be made, even in healthy portion.
11. Calcolosis is not considered a disease.
12. Urgent symptoms are not informative.
13. Opium must be prepared with vinegar and not with wine.
14. The tincture of the plant Hyosciamus should not contain Laudanus.
15. Things that are slimy, fatty and warm are not true antagonists for scammonium.

Glory to God alone.