



Portrait of Nicolas Claude Fabri de Peiresc (1580-1637)

Counsellor to the Parliament of Aix

by Anthony Van Dyck (1599-1641).

Provenance: Sir Peter Lely; sale, 18th April 1682
"Item. Thirty -Seven Pictures done in Grisaille done by Vandike after the life of the most eminent men in his time, from which the plates were graven" (ii125 to Ralph, 1st Duke of Montagu).

Engraved: by L. Vorsterman

Nicolas-Claude Fabri seigneur de Peiresc was a French astronomer, antiquary and savant who maintained a wide correspondence with scientists. He was a successful organizer of scientific inquiry.. He wrote a short biography of Drebbel based on information of Drebbel's sons in law, the Kuffeler brothers. They visited him during their commercial trips and sold him instruments made by Drebbel such as the telescope and the microscope. Peiresc used them for various observations. Peiresc took great pleasure in collecting animals and plants. His garden at Belgentier was the the third largest in France.

Peiresc about Drebbel

(this document presents the English translation of the French original)

from: **Prof. Dr. F. M. Jaeger**, *Cornelis Drebbel en zijne tijdgenooten* (Groningen 1922).

XII. Manuscripts of N. C. F. de Peiresc, from the Bibliothèque de Carpentras. a. (Ms. No 1776)

From several points of view **De Peiresc** reports are an important illustration of **Drebbel's** character features. When the **Kuffler** brothers share what they learned from Drebbel himself, the message is always fantastic and exaggerated, often pure joke. However when they communicate their own experience and knowledge of the matter, it appears that they have such a poor knowledge of the matter that – as correctly mentioned by de Peiresc – “they entirely loose their credit”. De Peiresc himself wasn't sufficiently expert to reconstruct the correct mecanism of the apparatus from the confused and rudimentary communications of the two brothers.

Drebbel [1572 - 1633] himself appears as a strange, unlimited dreamer (inextinguishable fire, viewer to concentrate daylight at night, etc.), as the mysterious, bragging addicted inventor, and as the pitiful toy of his frivolous wife and his reckless sons.

As such it is in complete accordance with the image of his person, sketched before on different grounds [Cf. p. 95: "no physicist ", rather "inventor", "real child of the van 15th and 16th century". And: "vivid interest in nature", "he presented her activities as 'miracles' "; and p. 34: "an excited dreamer".]

TRANSLATION of the text from FRENCH in English (march 2006):

Cornelius Drebbel.

What I have learnt from the life and inventions of **Cornelius Drebbel**, from Alkmaar, Holland, through **Abraham Kuffler** his son-in-law and **Gilles Kuffler** his brother, in Paris, in the beginning of September 1624.

Cornelius Drebbel from Alkmaar, Holland, 55 years old, is an engineer for the King of England. His father was a gentleman and one of the first consuls of the twelve. He was rich and had ten children male and female who all died unmarried. Cornelius was then left as the only heir and used all possible means to search for secrets. Lands around Alkmaar are still named Drebbel, the name of the family they belonged to.

The mother realizing her son's bad household kept 20 thousand pounds from the price of this land, that she invested in the hospital of the city at a 3% rate, to be put aside for the children of Drebbel. He's a man of good spirit, subtle and full of great inventions. He says that at the age of eight he started discovering perpetual motion, which has since then been perfected, and that it was playing with a jack and a straw, creating a small fountain, that laid foundation for all his invention, which, as far as I could find from **Abraham Kuffler's** tale his son-in law, was purely trying to find out a way to raise water by one or two inches, or any material that one wants to use to create the so called motion. As when it is raised, it will raise higher because of its fall and falling again it is straining more and give more movement to the instrument that it wants to move, which does not require a lot of strength as it is a huge clock, with a two cogwheels movement, the biggest of which is subdivided into 32 cogs and the smallest I don't remember. On top of the two wheels there is a huge pendulum, which was almost like this:

[Fol. 407 v.] There were other small elements I cannot remember; the small wheel was making the hand of the watch turn. I saw a small piece of wood, on top of which there was a small copper instrument of the following shape, supported by the "miton". The forward end was hitting, as if it was an anvil, a piece of copper which was hammered in this wood, while the other end was lowered by a copper counterweight attached to it and was entering a hole, drilled on purpose in this wood and was piercing it from one end to the other.

I also saw a small piece of wood, with a small glass pipe inside, pushed in, in the following shape and size: (diagram).

When he wanted to make a model of perpetual motion to show to the king, he wanted to have a glass bottle made, the same size and according to the model that will come after and of this shape. It is 2 feet long as a whole and 4 fingers wide; the bottleneck is 4 fingers long.

[Fol. 408] He requested glass pipes the length of one ell but they had to be slim, and said that with this he would make his instrument and that the material he was using for the motion was quicksilver as it did not consume as would water and other types of liquor that might dry out. The painted model that he had made to show to the king was only a huge clock resting on a huge base, bearing two figures on each side: a satire holding a horn from where a small fountain was pouring into a huge shell at its feet and on the other side a fountain was pouring out of the feet of a young child and gushing into a similar shell and flew back in the base. Those two fountains must have been in quicksilver and only pushing nothing thicker as the iron of a needle. I don't know if it is but to use the wind or the air to set up this primary raising and thereby power the movement (unclear sentence in French!):

[Fol. 408 V.] **Kuffler** told me that sir **Drebbel** had made one of his perpetual motions for the Prince of Wales. And there was another fine thing. You had to install this instrument against a wall where a hole was drilled, a wall facing the sun. Then insert a small wooden instrument, as the one used to knead bread, in the hole and lay it in such a position that the sun can reach it at least once a month. There is a huge pendulum attached at the end of this instrument and said that when the sun reaches this instrument it adjusts the hand to its real midday, such as if the hands were showing 3 o'clock, they would turn back by themselves to midday. These wooden instrument looked as follows and could be adjusted in the middle:

That's what I have learnt from **Kuffler** as far as perpetual motion is concerned. Let's go back to the life of **Cornelius Drebbel**. He tells me that while getting older he still had more inventions that proceeded from the vividness of his mind, and this without reading any books, which he always despised, following the principle that the truth and the excellence of sciences stems from the knowledge of the secrets of nature, where they can all be found. And as he was already old when he didn't understand or speak Latin, he taught it himself without anyone teaching him.

At the age of 17 he invented the **boat to go under water** and since then he invented long sight glasses, the ones to distinguish small objects and many other odd things. He also practiced alchemy where he says he discovered miraculous things, and invented remarkable stoves especially to keep fire to the same heat according to ones wish to have it more or less hot. [Fol.409].

The Emperor **Rodolf** learning that **Drebbel** had many beautiful inventions and that he knew how to make a glass globe in which he captured the four elements and that it was moving, sent a messenger to ask the King of England to send Drebbel to make one of these globes. The king of England agreed on it. He was then led by this messenger to the Emperor who made him work non stop and marvelling his findings promoted him to the head of his close council and gave him the palace of Cardinal **Clesel**, from whom he refused sixty thousand rics tallers (sic) and sent him every week two men bringing money from Germany some of which the good man used

to blow and constantly look for a new secret; and the rest of the money, which was the largest part, was given by his wife to a man in Amsterdam that she supported for several years and who benefited so much from it that he is now one of the richest men in Amsterdam where he retired. As Drebbel was always in need of money, this man was lending him money given to him by Drebbel's wife and for repayment took all the patrimony **Drebbel** had in Alkmaar, sold to him by **Drebbel** who is still accountable for a large amount of money.

[Fol.409 v.] When he was at the service of the emperor he made this glass globe and started to build on a square a fountain that could reach up to one thousand feet (sic!) if he wanted to. The structure of it would be high and on top would rest his perpetual motion, which would activate a clock.

In the middle of the machine he would build an artificial sun that would always be lit night and day. These were three huge and rare inventions. When the archduke **Mathias** seized Vienna and took hold the Emperor his brother, he seized all the people that were (sic) member of the emperor's council and among them this (sic) **Drebbel**. His house was looted and all his furnaces and tools broken and the house was given back to its owner Cardinal Clesel. The archduke sentenced all his (sic) state councillors to death and set up the scaffold to chop their heads in a square in front of the Emperor's Palace, who seeing the preparations from his bedroom window asked his guards the reason for this. Hearing that it was to sentence Drebbel to death he had great afflictions. The Archduke visiting him and finding him so sad asked him the reason of his extraordinary affliction, the Emperor answered that the most important person in the world was about to die, the one who invented and made this (sic) glass globe which he showed him and undertook the abovementioned fountain. The Archduke **Mathias** ordered **Drebbel** to be released and sent to him. Once done, he apologized for the bad treatment received due to the ignorance of whom he was and that if he wished to keep working as he was for the Emperor and finished his work, his salary would be doubled. He answered that he would be pleased to serve him but that he belonged to the King of England and that without his order he could not set about anything and begged him to ask the king of England if he would agree upon him remaining at his service. The Archduke **Mathias** sent a messenger but behind his back **Drebbel** asked the King of England not to agree on him staying there any longer and on the contrary asked him to send him back because he had been so badly treated that he did not want to stay. That was then done by the King of England who promised the Archduke to send him back in one or two years to finish something he started for him. So, the Archduke sent him back to England in a good coach and gave him two thousands crowns.

When the Emperor **Rodolf** died and the archduke **Mathias** was elected in his place, several philosophers and mathematicians asked to see the invention of this globe from **Drebbel** and convinced the Emperor to allow them to break it, reassuring him that they would easily make a similar one afterwards. Having obtained this permission, they gathered for this matter but none of them dared breaking this item, which they thought miraculous. Nevertheless, eager to see the invention they had it broken by one of the king's jokers. But while breaking it he broke several small glass pipes that were inside this (sic) globe, so that they did not learn anything from it and were incapable of piecing it back together. The emperor begged the King of England to send him back to repair this (sic) globe and sent a coach to pick him up but **Drebbel** never agreed to go back.

He lived as a full philosopher, only caring about his observations and despising all the things of the world and powerful people and would rather greet a poor man than a lord. He lived according to the rules of nature and did not believe in anything. He would not offend anyone with words or acts whichever the subject. When he was insulted he did not reply, or pretend that they were right and honest people without showing any emotions. He never carries a sword neither in the city nor in the countryside and would not defend himself if he were to be beaten although he was strong and tall [Fol. 410 v]. His son-in-law **Kuffler** is catholic but he stands by this last maxim of never answering any offences and not to carry a sword.

He married a lecherous wife who led a bad life and spent all the money he earned on keeping several people that she loved, even nowadays, although she is old after more than 25 or 30 years of wedding. From this wedding he has two sons and two daughters, the latter older than the boys who are only 12 or 15 years old. They are completely different from their father who they despise and do not esteem; moreover he does not teach them anything he knows. His eldest daughter has been married for 2 or 3 years to a young man named **Abraham Kuffler**, born in Cologne,

he came to England with his brother that you have known and who died in Rome. The latter considering that they were four brothers and that they did not have that much money to survive, and having studied philosophy and medicine, wrote a book that he brought to England, thinking that the king who was well taught would find this (sic) book interesting and might want to print it under his name. And on this hope they gathered all their valuables to equip themselves to receive the best welcome and reward.

When they arrived in England they found out that the King was not interested in their (sic) books but having heard about him went to see **Drebbel**, and this young man who had studied well, after having talked to him, realized that they could learn a lot from him if they could gain his good grace. They both decided to search for his daughter and that the one she would like the most she would marry, believing that through this union they would learn his secrets. [Fol. 411]. They succeeded and the girl favoured the ignorant as he was better looking; he asked and married her and with his brother used all their means and efforts to oblige **Drebbel** to teach them something. The one who died and was of good intelligence learnt something but when he died, the married one sent for his elder brother who was in Italy and another brother who had remained in Cologne. **Drebbel** liked the latter who married the other daughter and became the guardian of the book where Drebbel had written the secrets he wanted to become public after his death but not while he was alive. There are more than 200 hundred things that have never been done and he said that when he died he would bury with him more than 1000 secrets that he did not want to teach anyone. **Abraham** and his older brother **Gilles** have learnt as much as they could from the perpetual motion invention, his telescope and other small secrets. He sent them with this knowledge trying their luck to see how they would benefit from his secrets and with the guarantee that if they succeeded he would teach them many more things.

The mistake they made is that they shouldn't set about without having practised and done it in England and also practised the other things they spoke about like his **long distance glasses** and the glasses to see at night that they never managed to finish and that made them loose credentials.

Therefore he wrote to them asking them to come back to England to bring back from there an instrument already built. He taught them how to make scarlet dying much more beautiful than the ones done presently and at a better price than ordinary colours. He showed me several samples that were extremely beautiful.

[Fol. 411 V.] Kuffler was telling me that in addition to that globe that he invented for the emperor, he invented 17 or 18 types of instruments showing the ebb and flow of the sea. He invented a type of glasses, on which he is now working for the Prince

of Wales to see as clearly at night as during the day and to be able to distinguish a man from a mile and more. He had invented and made it but he now worked on finding a lens composition that would render the effect of quartz so that people who saw these glasses without knowing the composition couldn't meet the invention as they would be able to if he had to use this (sic) quartz. He then told me that if he were to go to Italy he would find a piece as large as an arm and a foot and a half long to extract from it. I think that these glasses are made with a lens with several convexes as I saw at **Kuffler's**, convexes on two sides and on one side only. They are moulded pieces of lens as big as a hand palm and square, convexes equidistant to each other and well proportioned; the lens plane between the convexes is flat and smooth. The ones I saw at **Kuffler's** were with four convexes and somewhat similar to the following diagram: (diagram).

[Fol. 412] He said that he adjusts it so that he collects in one point the four different points of each convex and that he has joined some to up to eight different points and that at night it is of a great effect.

These glasses to see at night are made in such a way that they gather and collect what is left from day light in the night into one point, that makes you see clearer and more distinctive than during the day, because there are no rays to dazzle you and the obscurity of the rest of the earth makes us see more clearly; because the scope you are seeing is not wider than eight or ten toises, but by slightly turning you still have the same clarity with your sight until you found what you were aiming at. That's one of those things I would like to see to believe it.

He does not care (sic) about the other glasses to see at night with a torch that he promised to make for me. They are made of two convexes and one concave or of three convexes, two that magnify strongly and the other one a little or a convex lens on one side and concave on the other because he told me that one just had to adjust to the glasses he made me, made of two convexes, only one lens to see and read at night which we will show you next to a torch. Mr **de La Rochemaillet** tells me that **Keplerus** was teaching in his proposition 86 if I am not mistaken, the way to make glasses with three lenses. He always told me that he did not have the third lens and the eldest told me that if Mr **Drebbel** knew that they made these glasses for me, he would be embarrassed because an man with optical knowledge would easily find several other inventions and other interesting matter related to optics. He also told me that he was making long distance glasses with three lenses, which were showing marvels and others also with three lenses to look at the sun. He says that the sun is not as we see it in the shape of a globe but that this roundness that seems smooth is made of seven small globes and **Drebbel** is proving that thisw has to be so because otherwise, we would not feel the great heat from the sun if

it was not due to the reflection of those small globes from one to the other. He also says that they are so big that he has only been able to four globes at the same time see with his glasses and if we are not carefully watching it and do not avoid the sunrays, it is capable to burn the eyesight of the person watching. We had a demonstration with him as follows:

[Fol. 412 v] The last and excellent invention from **Drebbel** is an artificial sun, a perpetual fire which will always burn and light. When the prince of Wales left for Spain, Drebbel made a proposal: as London has been filled with fountains by means of a small river that was distributed and divided by small pipes leading to whole the houses that wished it, he would like to start a fire on a small hill near London, where all Londoners could get this fire and bring it to their houses and with it boil and roast their meat without using wood. The Prince's journey stopped him from providing what was required to realise this miracle. I think he was only asking for twenty thousand pounds. This trip incurred a loss for the general public. He told me that he was digging a hole in the soil with tools that gathered so many rays of the sun in this place that it would light a material, making it burn and light without being consumed. I am reporting.

He says he makes blazing mirrors that will set on fire everything crossing its way half a mile, a mile around and to everything that we can cover with our sight. **Kuffler** told me that he knew how to make one that burns at 200 feet around but not further. But he did not have any and always told us he would make one when the king would order him to. Then he would build his mill (to make lenses that he would require, whether convexes or concaves) similar to the one he has in his house near London, which makes lenses to the desired size with no discrepancies and that he will make lenses from the same tool as good and with the same effect with no shortage.

[Fol. 413.] And it is very easy as one only has to fit the glass onto the tool and then let the mill be turned by a little boy. One can go for a walk and does not have to look after it for more or less three or four hours, it never fails. He does not polish his lenses with sandstone as our workers do but with pewter. **Drebbel** is always showing humility and ignorance. If someone asks him if he does not know how to do one thing he says no and only unveils to people he believes are intelligent or wish to be so.

For the past three or four years he started to drink tobacco, which he hated before. He is so keen on it that he spends whole days and nights drinking it, and states that those who do not drink do not have a good taste. When he meets someone who drinks a lot, he esteems him, likes him a lot and might reveal him some of his secrets; apart from that he is not at ease.

[Fol. 407] About the eye

1622 Glasses from Drebbel

They were given to me on June 2, day of the octave of God's celebration. And on the 21 of the same month, I received two more glasses and it costed me 6 pistoles worth 43 pounds 16 shillings.

On Sunday May 22, 1622, I saw glasses that magnify a mite to a big fly, an invention from Cornelius Dreubelsius or Drubelius seu Dreubels born in Alkmaar in Holland, expert in mechanics who boasts on discovering the perpetual motion during the reign of the Emperor Rodolph and alchemy, or even gold of the same alloy as German currencies and since then has retired in England where he is kept by the King of Great Britain

and he is making a ship that navigates between two waters, of a capacity of nine passengers. After which the King ordered one hundred smaller boats, able to carry one passenger. He promised to make long distance glasses able to see even writing from seven miles far; to make a mirror that can burn as far as half a mile; to multiply the light from a star so that it would be able to read a letter at night and to light a space of a diameter of 30 feet.

Jacques Kuffler, a brother of his son-in-law named **Abraham Kuffler**, born in Cologne, was the one who showed me these glasses in the bedroom of the King's Mother in the Palais du Luxembourg on the Faubourg Saint Germain where he was looking for fresh air and sunshine at one in the afternoon.

His glasses are a **par?** long or like a fountain pen of an inch diameter. They are made of gilded copper and assembled with three pieces extending more or less according to the distance of the very small objects. On the side of the eye it has what resembles a small funnel painted in black with a hole the size of a small nail. 2 fingers away from this hole is set a lens convex on both sides and a piece of a rather small globe.

[Fol.407.]

On the other extremity a smaller pipe is inserted, its diameter a third of the size of the other, no longer than half a finger, to the end of which fits another lens, flat on the side facing the convex and round on the side facing the object, covered with copper so that only a tiny hole is showing, so small that a big pin could fill it. He says that it is neither regular convex nor concave and that it is not made of ordinary glass, as to make it clearer when it is melted and ready to freeze he pours another material on it that clarifies it. I am reporting, as from looking at it, it must be half of a lens' globe the size of a small cherry because, dismantled, the flat can be easily distinguished inside the pipe, and from the outside the roundness of half a globe covered with a gilded copper skin can be easily seen.

This instrument was inserted in a small gilded copper circle resting on three small feet hanged on a small contact as if it was the toothed wheel of a writing case and between the contact and the glasses there was a small rounded sheet, black and mobile, where he was putting the objects and was moving them here and there to bring them back to the exact location where the ray from the glasses was aiming. He chose a plate where the sun lit the object without importuning the one looking at it.

Moreover the object could be seen in reverse, for example if animals were going right as seen with your own eyes, they were looking as if they were going left through the glasses, the effect of this multiplication being a consequence of the conversion point.

Or by shortening the pipe from three, four and six fingers and of more than half its length, the objects underwent no confusion, as it was always looking very neat, even more clear the more it was shortened, but it was shrinking as writing looks through a magnifying glass the more you draw the magnifying glass closer. This comforts me in my opinion that these are two magnifying glasses on top of each other.

[Fol. 408.] **Cornelius Drubbel's** inventor dioptrae
 Abraham Kuffler, gener Dubrelii
 Jacobus Kuffleir, generi frater, dioptrae custos

[Fol. 408.]

[Fol. 409.]

Firstly he laid on the black sheet with the extremity of a knife a few grains of powder coming from the cheese rind called *artisons* in Provence, here *mittes* and in Holland *mitons*.