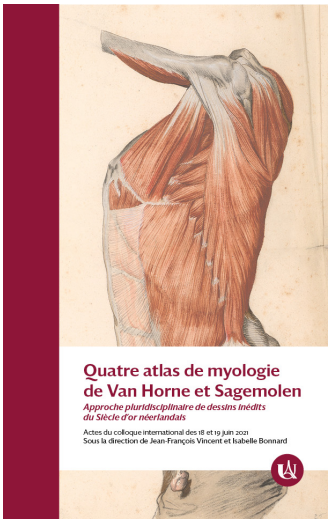

Sous la direction de Jean-François Vincent
et Isabelle Bonnard

Quatre atlas de myologie de Van Horne et Sagemolen

Université Paris Cité

A Private Anatomical Atlas?

Tim Huisman

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A Private Anatomical Atlas?

The Myological Illustrations of Johannes Van Horne and Martin Sagemolen

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When the personal library of Herman Boerhaave was put on auction in Leiden in 1739, one year after the death of the famous medical scientist, one of the most important – and expensive – items in the catalogue was number 521: 'icones anatomicae totum musculorum […] ad viva exempta a Martino Sagemole (sic) in usum J. Hornii.' These 'images of the anatomy of all the muscles, drawn after life by Martin Sagemolen and used by J(ohannes) van Horne' were supposed to fetch 390 guilders, according to an annotated copy of the auction catalogue preserved in the Royal Library in Den Haag.[1]

That Boerhaave owned these drawings is not surprising; he collected more unpublished manuscripts of his scientific predecessors which he deemed important, often with the intention of making them ready for the press and thus available to a wider public. This was for instance the case with a series of physiological experiments by Leiden professor of anatomy Charles Drelincourt and, most famously by purchasing and publishing the manuscripts of Johannes Swammerdam as *Bijbel der Nature*.[2] Arguably Boerhaave had the same intention with the Sagemolen-Van Horne manuscript but never got round to realising his plans.

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1. *Bibliotheca Boerhaaviana, sive Catalogus librorum Hermanni Boerhaave* […] *in officinna Luchtmanniana die Lunae 8 junii et seqq.* Leiden: Luchtmans, 1739. Another copy however seems to suggest that the item was not sold. Whichever is the case, the anatomical drawings in four volumes of 'folio forma Atlantis' format and two volumes in quarto format ended up in the collection of Boerhaave's son-in-law, the collector of art and antiquities Friedrich de Thoms.

2. Drelincourt, Carolus, *Opuscula medica quae reperiri potuuere omnia*, Den Haag: Alberts & van der Kloot, 1727; Boerhaave, Herman and David Gaubius, *Bijbel der natuure, door Jan Swammerdam, Amsteldammer*, Leiden: van der Aa, 1737-1738.

Already in the 1660s the illustrations made between 1652 and 1660 by the German artist Martin Sagemolen as an assignment by the Leiden anatomy professor Johannes van Horne had a certain reputation which merited Boerhaave's later interest in them. They were mentioned in contemporary sources like the diary of Olaus Borrichius, the Danish scholar living in Leiden in the early 1660s.[3] Borrichius visited Van Horne's private quarters and saw the illustrations there. Van Horne and Sagemolen's illustrations of the human myology also figure in the correspondence of another Dane, the anatomist Thomas Bartholin. Besides that, evidence of Sagemolen and Van Horne's work on the project can be found in the archives of Leiden university. When the manuscript was in his possession, Herman Boerhaave made an elaborate and thorough summary of the atlas, describing its contents in detail. Boerhaave's description leads a somewhat obscure life even to this day, as it is kept in the Military Medical Library in Saint Petersburg. However, a photocopy of the document is present and accessible in the library of the Rijksmuseum Boerhaave in Leiden.[4] So, some tantalising information about the atlas of Van Horne and Sagemolen was known but not the actual plates, as the manuscript was lost between the end of the 18th century until 2016. The resurfacing of the manuscript in the collection of the Bibliothèque interuniversitaire de santé in Paris enables us to put forward various questions to this remarkable anatomical project from the Early Modern era.

Van Horne, background and education

In this article I want to offer some ideas on the role and the use of these anatomical plates, particularly in the academic activities of their instigator Johannes van Horne. But first I will offer some biographical information on the professor of anatomy and surgery Johannes van Horne and a sketch of the milieu in which he lived and worked: Leiden university in the 1650s and 1660s (Figure 1).

3. Borrichius, Olaus, *Itinerarium 1660-65, edited with introduction and indices by H. D. Schepelern*, Copenhagen: Schepelern, 1983.

4. Boerhaave's description is kept in the Military Medical Library of the Kirov Institute in St Petersburg and is known by me in photocopy form, kept in the archives of the Rijksmuseum Boerhaave (reg nr A 648).

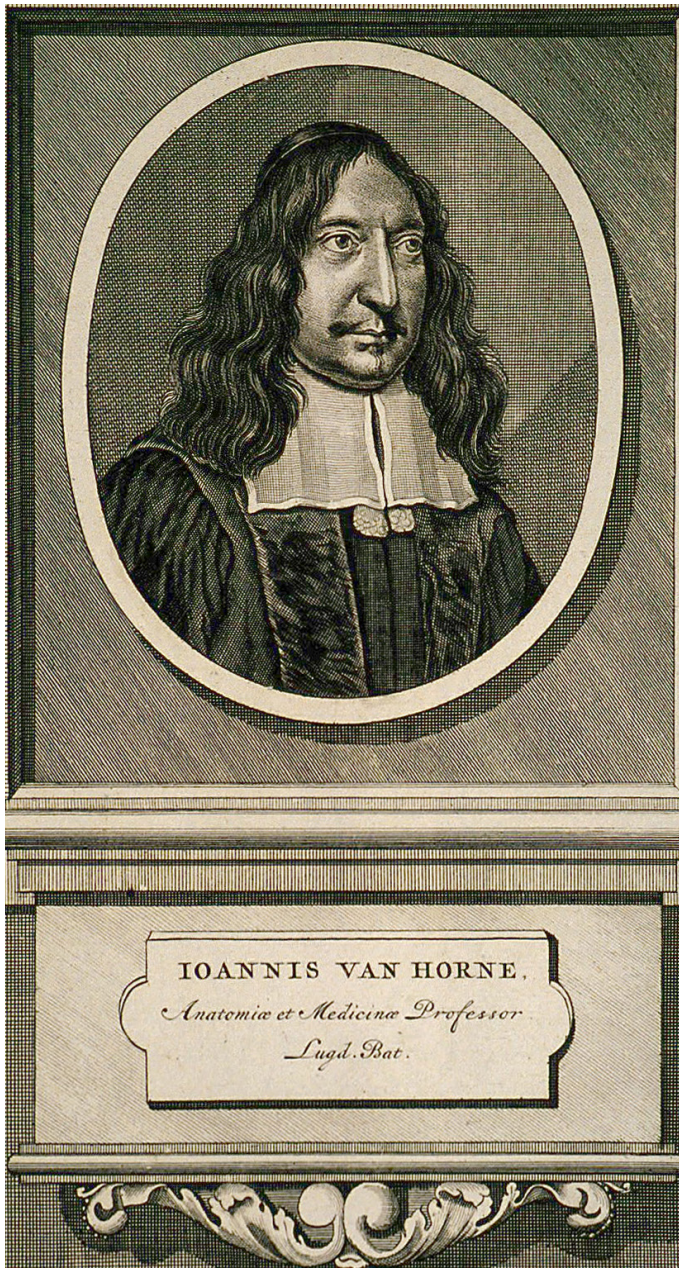

Figure 1.

Johannes van Horne (1621-1670), anonymous engraving published by Pieter van der Aa, ca. 1730, Collection Rijksmuseum Boerhaave

Johannes van Horne came from a family of rich Flemish merchants. Van Horne's father moved to Amsterdam from Antwerp for religious reasons. In Amsterdam the Flemish refugee quickly regained his status as prominent and wealthy businessman: he was, among other things, a high official on the board of the Dutch East India Company.[5]

In this wealthy Amsterdam-Flemish family Johannes van Horne was born in 1621. He matriculated in Leiden in 1636.[6] First in the arts faculty, which was the usual propaedeutic course of academic study. The idea was to then move on to the faculty of law, as his father wished. But Van Horne changed his plan and took up medical studies. Anatomy in particular fascinated him.

In Leiden Van Horne seems to have been associated with Johannes Walaeus, among other teachers. This is not without significance. Johannes de Wale (Walaeus) became lector at the faculty of medicine in 1632 and extraordinarius professor a year later. At the end of the 1630s, exactly at the time Van Horne was at Leiden, Walaeus was involved with the public lectures Franciscus de le Boë Sylvius held at the Leiden botanical garden between 1638 and 1641. In these lectures Sylvius, who was at that time an independent scholar, demonstrated and defended the double circulation of the blood as proposed by Harvey, a concept that was still controversial at the time. The lectures attracted much attention from the scholarly community. It is known that René Descartes attended them in 1640. Johannes Walaeus was also among those attending the demonstrations and was converted by Sylvius' physiological demonstrations from an opponent of Harvey's theory to a staunch adherent, conducting experiments himself in support of Harvey's concept.[7]

Arguably these early stirrings of a new, mechanistic view on the workings of (human) bodies and its repercussions on medical science in Leiden's medical faculty stimulated the young student Johannes van Horne in 1641 to continue his training at the faculty of medicine

5. *Nieuw Nederlandsch Biografisch Woordenboek*, Leiden: Sijthoff, 1911-1937, p. 624.
6. *Album Studiosorum Academiae Lugduno Batavae 1575-1875*, Den Haag: Martinus Nijhoff, 1875, p. 270: 10 sept (1636) Johannes ab Horn Amstelodamensis 16 (= age) P (= Facultas Philosophiae).
7. See Lindeboom, G. A., 'Dog and Frog – Physiological Experiments at Leiden during the Seventeenth Century,' *Leiden University in the Seventeenth Century*, Leiden: Brill, 1975, p. 281; and Suringar, G. C. B., 'Stichting der school voor klinisch onderwijs te Leiden,' *Nederlandsch Tijdschrift Voor Geneeskunde*, 1862, pp. 515-532.

of another Dutch university, Utrecht. At this university, upgraded from the status of *atheneum illustre* only five years before Van Horne arrived, one of the two professors of medicine was Hendrik de Roy (Henricus Regius). Regius was an early proponent of cartesianism and corresponded frequently with Descartes.

After these two Dutch universities Johannes van Horne continued his studies in Padua under Johannes Veslingius. In Padua he also received his medical degree. Van Horne's further travels abroad seem to have been some kind of academic pilgrimage, mixed with a grand tour. They lasted six years, in which he visited Naples, Sicily, Malta, Basel, France (Montpellier among other places) and England.[8]

Professor in Leiden

In 1650 Van Horne was back in the Netherlands and looking for a job. He asked the university authorities in Leiden if they would allow him to conduct anatomical demonstrations in the public anatomy theatre.[9] It is unknown if Van Horne actually held these demonstrations but in January 1651 he was appointed extraordinarius professor of anatomy, and he was expected to restore the practice of anatomy in Leiden which was in a sorry state at the moment. His salary was a meagre 400 guilders compared to the 1000 guilders many of his colleagues earned.

One of the first things Van Horne did as the newly appointed extraordinary professor of anatomy was to play an instrumental role in acquiring new skeletons for the collection of the anatomy theatre: three adults and a child and various animal skeletons. But most wonderful of all in this acquisition – as Van Horne himself proudly states – was a prepared human body, complete with beard, scalp and eyes. The provider of these specimens was a Flemish nobleman and amateur anatomist Van Horne met in Amsterdam called Louis de Bils and the donation was commemorated on a large panel, bearing the coat of arms of De Bils' family and signed by Van Horne.[10] We will return to De Bils later on.

8. *Nieuw Nederlandsch Biografisch Woordenboek*, p. 624, Bantjes, A. A., Van Poelgeest, L., *Leidse hoogleraren en lectoren 1575-1821 dl 2 de medische faculteit*, Leiden (Typescript), 1983.
9. Archive of the University Curators, AC (Archief Curatoren) 24, fol. 203.
10. This panel is now in the collection of the anatomy museum of the Leiden University Medical Centre.

In 1653 Van Horne was promoted to a full professorship. This appointment was probably connected to initiatives in Amsterdam to make Van Horne city professor of anatomy for the Amsterdam surgeons and doctors. He was considered as a successor of Nicolaes Tulp who gave up his medical duties in 1652. Obviously the Leiden university directors wanted to keep Van Horne on and were therefore obliged to offer him an ordinary professorship.[11] As professor ordinarius Van Horne's salary was raised from the initial 400 guilders to the still not very extravagant wages of 600 guilders a year.

Van Horne's atlas and other projects

The first mention of the project of an anatomical atlas in official documents dates from Van Horne's days as extra-ordinary professor. In 1652 he asked the university authorities for a subsidiary of 200 guilders as compensation for the expenses he suffered out of his own pocket for 'certain anatomical drawings he was having made for the perfection of the study of anatomy, the honour of the university and the benefit of the students.' A subsidy that was indeed allowed to Van Horne.[12]

In January 1653 he asked for this 200 guilders allowance to be continued, although he had received a salary raise on account of his promotion to ordinary professor. The university officials decide to send someone to have a look at Van Horne's anatomical drawings and form some kind of judgment on them before they decide to allow Van Horne his extra money.[13] Evidently the drawings were satisfactory, because from August 1654 onwards Van Horne got his extra 200 guilders a year for his anatomical work.

Other scientific activities and publications of Van Horne include two medical textbooks: *Mikrokosmos, seu brevis manuductio ad historiam corporis humani*, first published in 1660 and *Microtechne, seu methodica ad Chirurgiam introductio*, in 1663. *Mikrokosmos* is a manual on anatomy, which saw various reprints and translations. *Mikrotechne*, on surgery,

11. Eventually the job of professor of anatomy for the Amsterdam surgeons went to Jan Deijman.
12. AC 24, fol. 216 vo.
13. AC 24, fol. 290 vo.

reminds us that the Leiden professor of anatomy was also professor of surgery. Moreover, teaching the surgeons and apprentice-surgeons and presiding over the surgeons' exams belonged to the duties of the professor.

Another part of Van Horne's not very long list of publications offers a more experimental and exploratory vision of him. They are *Novus ductus chyliferus* on the chylus duct in the thorax, published at the very start of his academic career in 1652 and a short *Prodromus*, published in 1668 to claim priority over Reinier de Graaf in the question of the ovaries. The full title of this 12-page pamphlet is *Suorum circa partes generationibus in utroque sexu observationibus prodromus*. It is a preliminary publication describing the work on the anatomy of the sexual organs Van Horne undertook with his brilliant student Johannes Swammerdam. The eventual study with illustrations was only published in 1672, two years after Van Horne's death.

Van Horne and his colleagues

In the tableau de la troupe of the mid 17th century Leiden medical faculty Van Horne can be categorised as a progressive figure, just like his more prominent and more flamboyant colleague Franciscus Sylvius, who joined the faculty in 1658, after 17 years of a very successful practice as doctor to the Amsterdam Walloon community.

The other two medical professors for most of the period, Vorstius and Van der Linden, were of a more conservative medical persuasion. This division of the faculty in a progressive and a conservative faction nicely reflects the policy of Leiden university in the 17th century to have a balance of forces in the teaching of the students.

Despite their progressive outlook on medical science, neither Sylvius nor Van Horne can be characterised as outright Cartesians. When in 1658 the philosopher Johannes de Raey (who was an outright Cartesian) was appointed to teach the *Institutiones medicinae* at the medical faculty, Sylvius and Van Horne joined their more conservative colleagues in protest against this. The four medical professors stated that the philosophy of Cartesianism alone did not suffice for the students to pass their exams and that teaching the *Institiones* was better left to the medical professors.[14]

14. Otterspeer, Willem, *Groepsportret met dame I; Het bolwerk van de vrijheid. De Leidse Universiteit 1575-1672*, Amsterdam: Bert Bakker, 2000, p. 406.

In describing their scientific orientation it is probably closer to the mark to say that Sylvius the iatrochemist and Van Horne the anatomist and physiologist adopted Descartes' mechanistic view of nature as a research programme to guide them in their experiments, or in the experiments they inspired or conducted together with their most talented students, like Johannes Swammerdam, Nils Stensen, Frederik Ruysch, Reinier de Graaf, Cornelis Bontekoe.

Making anatomical preparations

From contemporary sources, especially the journal of Olaus Borrichius, we learn that Johannes van Horne owned an important collection of anatomical preparations. In this private collection were preparations of organs, like the lungs, the liver, the spleen, genitals and testes. Many of these preparations were stripped of their flesh to expose the blood vessels. This suggests these preparations were made with some kind of injection technique, which is quite early, as Borrichius' report dates from 8 April 1661.[15]

Another preparation which drew quite a lot of attention from visitors to Van Horne's collection was the so-called Hoornian mummy. This was a preparation of a human arm, with all the muscles, arteries, veins and tendons that the dissector's knife can reveal, intact. The mummified arm even retained its natural flexibility![16]

It is obvious from these descriptions of the specimens in his collection that Van Horne was very interested in the preparation and preservation of anatomical material. This is not to be wondered at: anatomical subjects were hard to come by, even for the Leiden professor of anatomy, who performed one, two or sometimes three public anatomical demonstrations a year in the university's anatomy theatre. Specimens which could be used multiple times for demonstrations would therefore help a lot to meet the problem of the shortage of bodies. This problem of the scarcity and perishability of anatomical specimens, and its possible solution by using anatomical preparations which were durable and could be manipulated, also explain Van Horne's involvement from 1651 onwards with the anatomist-entrepreneur Louis de Bils. De Bils claimed to have invented an embalming process which enabled him to preserve bodies for an unlimited amount of time and thus produce whole

15. Borrichius, *Itinerarium*, Pt. I, p. 96.
16. *Ibid*, p. 97.

anatomical subjects in different stages of dissection. How he did this De Bils kept to himself, or would only reveal for a large sum of money. Johannes van Horne saw the possibilities of De Bils' secret embalming techniques, or the techniques De Bils claimed to have, and throughout the 1650s tried to persuade him to let him in on the secret. De Bils was not forthcoming, but instead made liberal use of the text of the endorsement Van Horne had written in 1651 concerning the donation of the skeletons and preparations to the Leiden theatrum anatomicum. The text appeared in De Bils' pamphlet for a money making scheme for an anatomical museum he planned in Rotterdam.[17] Furthermore De Bils announced that his anatomical preparations would reveal that Van Horne, Rudbeck, Sylvius and other 'new anatomists' had a totally wrong idea about the workings and function of the chylus or thoracic duct. All this led to a rift between Van Horne and De Bils – the anatomy professor would never learn the nobleman's secret.[18]

As for Van Horne's own attempt at an embalmed anatomical preparation, the mummy which so impressed Olaus Borrichius did not equally impress everybody. Frederik Ruysch – one of Van Horne's students and a man with a great talent for making anatomical preparations – remarked that the mummy was evidently made using a desiccation process involving brine. The result of this was that the preparation was okay on dry days, but in a humid atmosphere would leak a nasty salty liquid.[19]

Public versus private

For someone so interested in anatomical preparations and anatomical preparation techniques one might wonder at the lack of enthusiasm Van Horne had for the collection of the Leiden anatomy theatre. After all, as professor of anatomy he was responsible for the theatre and for its large

17. In 1659 De Bils published a small prospectus asking people to invest in his project. If the total of investment reached 20 000 pounds he would reveal his embalming secrets. De Bils, Louis, *Kopye van zekere ampele acte* […] *rakende de wetenschap van de oprechte anatomije des menschelijken lichaams*, Rotterdam: Johannes Naerus, 1659.

18. About De Bils, his schemes and dealings with Van Horne: Fokker, A. A., *Louis de Bils en zijn tijd, Verslag van de Commissie voor de Geschiedenis der Geneeskunde in Nederland* [s.l.], 1865; Jansma, J. R., *Louis de Bils en de anatomie van zijn tijd*, Hoogeveen, 1920; Margoczy, Daniel, 'Advertising Cadavers in the Republic of Letters; Anatomical publications in Early Modern Europe,' *British Journal for the History of Science* (42/2), 2010, pp. 187–192. https://doi.org/10.1017/S0007087408001556

19. Kooijmans, Luuc, *De doodskunstenaar; De anatomische lessen van Frederik Ruysch*, Amsterdam: Bert Bakker, 2004, p. 46.

collection of rarities, anatomical and otherwise. However, apart from the skeletons and the prepared human body he acquired from De Bils in 1651 Van Horne added nothing to the collection. On the contrary, in the 1660s, under Van Horne's reign as anatomy professor the exploitation of and care for the theatre's collection of rarities and curiosities was turned over to the anatomy servant or custos.[20]

Any collection building Van Horne undertook was done to expand his own private collection. The reason for this is twofold. Firstly, the collection of the anatomy theatre, originating in the late 16th century, but largely from the 1620s, was very much a traditional collection of rarities, a *wunderkammer* one might say. There were some 400 items displayed in showcases, hanging from the ceiling, hung on walls and placed on shelves. Its concept was to show the wonders of creation through objects that were in some way out of the ordinary, *mirabilia*, like monstrosities, exotic animals and artifacts and even miraculous objects like a mermaid or representations of miraculous phenomena like an engraving of herrings with strange markings on their flanks or of a sperm whale beached on the Dutch coast. In a humanist, Aristotelian fashion every individual object in this collection could function as the starting point for scholarly musings about the phenomena that could occur in the world or about the richness of God's creation.[21]

This way of collecting and looking at nature through *mirabilia* and miracles was thoroughly out of date for a representative of the 'anatomia nova' as Johannes van Horne presented himself to be. The new anatomists looked for uniformly valid laws in nature, including nature as represented in the human body and its workings. Rather than trying to adapt the old-fashioned collection of the anatomy theatre to this new science, Van Horne concentrated on building a modern anatomical collection from scratch, reflecting his interest in physiology, the structures of the blood and lacteal vessels, etc. as well as his experiments with preparation techniques.

20. On the roles of the anatomy professor and servant in managing the collection of the theater, see Huisman, Tim, 'Resilient Collections, the Long Life of Leiden's Earliest Anatomical Collection', Knoeff, R. and R. Zwijnenberg (eds.), *The Fate of Anatomical Collections*, Farnham: Routledge, 2015, pp. 73-91.

21. Descriptions and interpretations of the collection of the Leiden theatrum anatomicum in: Lunsingh Scheurleer, Th. H., 'Un Amphithéâtre d'anatomie moralisé,' *Leiden University in the 17th Century*, Leiden: Brill, 1975, pp. 216-277; Huisman, Tim, *The Finger of God; Anatomical Practice in 17th Century Leiden*, Leiden: Primavera Pers, 2009, pp. 16-121.

The other reason for Van Horne to turn away from the old collection of the anatomy theatre and establish his own collection is the importance – also economically – of *privatissima*, private lectures by university professors, as opposed to public lectures. Students would have to pay a fee for these private lectures while the public lectures were free. The public lectures were held in the university's public lecture halls, or auditoria, while the private lectures were at the professor's house.[22]

For a student who wanted to get on with his studies, a student with ambitions in any way, attending these private lectures was essential. In private lectures the student could really learn from the professor, much more than during the public lectures, which consisted of the professor reading from authoritative texts and commenting on them. Private lectures allowed the professor to include more of his personal approach, insights and originality in his teaching.

Van Horne's private collection was a major asset in his private lectures, being invaluable as instructive demonstration material. And this not only goes for the anatomical preparations like the mummified arm and the various injection specimens of organs, but also for objects which can be described as anatomical models. In the journal of Olaus Borrichius a model of the human skeleton is mentioned, valued at 1000 guilders and made of iron wire. The life size model, made by the Swedish scholar Petrus Hoffwen, showed arteries and veins in red and blue, nerves in white and the lymphatic system in glass beads.[23]

Drawings for instruction

Side by side with the 3D instructive model of the skeleton, Van Horne could offer his paying students another instructive model, 2D this time. Namely the anatomical drawings he had made by Martin Sagemolen. Borrichius describes them as 'representations of all the muscles of the human body, painted in their natural colours. And also depictions of the skeleton in black ink, with numbers corresponding to the locations of the muscles.' Borrichius also reported on the illustrations in a letter to the Danish anatomist Bartholin.[24]

22. On privatissima: Otterspeer, pp. 374-377.
23. Borrichius, *Itinerarium*, pp. 96-97.
24. Bartholin, Thomas, *Epistolarium medicinalium, centuriae III*, Copenhagen: Haubold, 1667, p. 390.

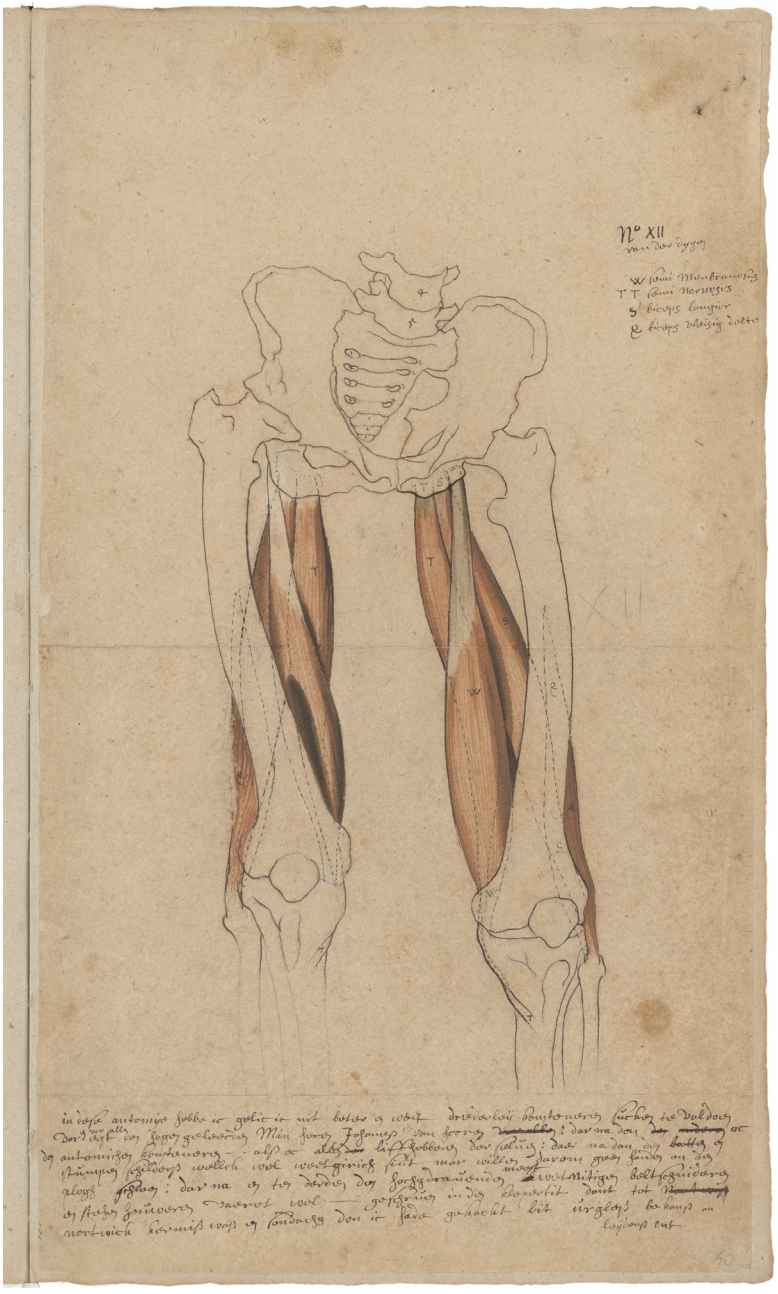

Figure 2.

Martin Sagemolen's comment on his work for Van Horne and its intended audience, BIU Santé médecine, cote Ms 29 (40)

Within the context of Van Horne's private collection, and within the context of his private lectures the anatomical illustrations certainly fulfilled a function. After all, Van Horne was professor of anatomy and surgery, and had to instruct his students about the fabric of the human body. What better teaching aid than this ensemble of neat uncluttered and comprehensive drawings, done in natural and realistic colours.

It is by the way, tempting to try and connect these illustrations to *Mikrokosmos*, Van Horne's book which forms a sort of introduction to anatomy for students, first published in 1660 and so more or less contemporary with the work on the illustrations. Comparison however between the contents and organisation of this book and the organisation of Sagemolen's illustrations uncovers no obvious connection between these two works. It would certainly be erroneous to consider the illustrations as a companion to *Mikrokosmos*.

Colour

Finally, were these drawings made exclusively with the purpose of their restricted use as teaching aid in private lectures? Or were they intended for a wider audience *i.e.* were they produced in preparation for a printed anatomical atlas?

The words of Martin Sagemolen, written down on folio 40 of Ms 29 certainly seem to hint that the artist, at least, had a wider audience in mind. Sagemolen names not only Professor Van Horne and the students and amateurs of anatomy as the target audience for the anatomical plates, but also painters, engravers and sculptors, eager for anatomical knowledge. This suggests that Sagemolen for one wanted this work to be known outside Van Horne's immediate private sphere (Figure 2).

The fact that between 1652 and 1660 Van Horne requested and received money from the university directors for this project also seems to point in the direction of a publication. Would the university directors spend 200 guilders a year for eight years on anatomical illustrations used only in private lectures and in a private collection?

On the other hand, precisely one of the most extraordinary features of Sagemolen's anatomical plates, their intricate and exquisite colours, argues against this. Why spend so much attention on this feature when the printing techniques in existence in the second half of the 17th century could only reproduce in black and white and shades of gray?

Concerning the question of the use (or non-use) of colour in scientific illustrations, an interesting analogy can be found in the work of Van Horne's one-time student and collaborator Johannes Swammerdam. Besides collaborating with Van Horne on anatomical and physiological experiments, Swammerdam took a great interest in entomology. He published two pioneering studies on insects: one on their generation and one on the particular subject of the mayfly, in 1669 and 1675 respectively.[25] In 1675 he was preparing a further study on the silkworm when a personal religious crisis moved him to (temporarily as it turned out) abandon his scientific research as earthly vanity. The mental turmoil of this religious crisis also caused him to destroy much of the work he had done so far on the silkworm.

However, by way of legacy Swammerdam sent 24 of his drawings of the silkworm to his colleague (and rival) in the field of entomology Marcello Malpighi.[26] Strikingly these illustrations were executed in realistic colours. The question here is: why did Swammerdam send Malpighi these coloured drawings and not illustrations in the grisaille technique?

In a comparative study on the role of visual representation in the entomological work of Swammerdam and Malpighi, Matthew Cobb dwells extensively on the function of coloured drawings in the body of work of these researchers.[27] Why did both entomologists invest so much attention into rendering their subject in colour while coloured illustrations could not be reproduced as such? After all, illustrations had to be rendered in the grisaille technique (which Swammerdam mastered perfectly) in order to make reproduction in engraving or etching possible. Besides, on more than one occasion Swammerdam stated that

25. Swammerdam, Johannes, *Historia insectorum generalis* [...], Utrecht: Meinard van Dreunen, 1669; and *Ephemeri vita of afbeeldingh van's menschen leven*, Amsterdam: Abraham Wolfgang, 1675.
26. These drawings are now kept in the Bologna University Library, Ms 936.
27. Cobb, Matthew, 'Malpighi, Swammerdam and the Colourful Silkworm: Replication and Visual Representation in Early Modern Science,' *Annals of Science* 59, no. 2 (2002): 111-147.

black and white representations functioned best to illustrate his observations of insects. Why then did Swammerdam choose to send Malpighi his coloured drawings of the silkworm by way of legacy?

According to Cobb the answer lies in the fact that these drawings [convey] 'some of the sense of wonder and beauty to which Swammerdam so often gave voice in his writings.'[28] Although they could not be reproduced in this form, they were the best way to embody all Swammerdam had found fascinating – mesmerising even – in the intricate anatomy of these small creatures.

Something similar must have motivated Johannes van Horne in the project of his anatomical atlas, even though he was not the author but the instigator of the drawings. Sagemolen's exquisite colour renderings of the anatomy of the human musculature perfectly suited Van Horne's use of the drawings as didactic material for his privatissima. Rather than going through the complicated and costly business of having them transferred into grey-tones and onto copper plates in order to have them reproduced and published, Van Horne seems to have been satisfied with the product as it was.

28. *Ibid*, p. 131.