



# Pachyonychia Congenita Project

15 March 2005

## FOREIGN LANGUAGE ARTICLES.

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We hope that making available the relevant information on Pachyonychia Congenita will be a means of furthering research to find effective therapies and a cure for PC.

Translated to English, January 25, 2005, PC Project

Thomas Bartholini<sup>1</sup>

Acta medica & philosophia Hafniensia

Ann. 1671 & 1672

p. 43

XVI

### **Wildly growing fingernails**

A teenager strolled across the places in the capital to beg for alms. He appeared to be an associate of Nebuchadnezzar<sup>2</sup>. All of the fingers on the hand, except for two, are deformed by thick, hard, long nails, the way I described it in the old Cimbroatias<sup>3</sup> at another time (Cent. II, Epist. 100<sup>4</sup>). The claws of this boy are much longer and more severely curved. They grow out of a broad base from the nail bed and from two digits<sup>5</sup>. When they are cut, they grow back. The claw that I am presenting here is from the thumb. The nail was cut off early this year because of its weight and in the third month after this, it grew back in the same manner as before, from there he sold me this [illegible]. I believe he is especially happy to be noticed, not just because of his name<sup>6</sup>, but because he wears horns on his fingers that do not reveal anything about the age of his head.

There is also a very old woman who walks around here with a similar horn growing on her head, as it was recently seen in Purmerantana<sup>7</sup> and as I described in "Stories of Anatomical Coincidences." We have reported in "Observations about the unicorn<sup>8</sup>" the fact that this phenomenon is derived from heavy descent<sup>9</sup>.

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<sup>1</sup> Thomas Bartholin, see bio on next page.

<sup>2</sup> Translator's note: Reference most likely to Bible verse found in Daniel 4:33, in which King Nebuchadnezzar was driven away, "and his nails were like birds' claws". (RSV)

<sup>3</sup> Translator's note: A publication?

<sup>4</sup> Translator's note: A "journal" in which academics frequently reported such cases: "Centurien"; probably available in a German library.

<sup>5</sup> Translator's note: Meaning not clear.

<sup>6</sup> Translator's note: A guess! Perhaps an idiom "because of his name"?

<sup>7</sup> Translator's note: Place name?

<sup>8</sup> Translator's note: Latin title: de unicornu observationes novae

<sup>9</sup> Translator's note: Literally, from "heavy blood".

Thomas Bartholin

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From: <http://www.whonamedit.com/doctor.cfm/894.html>

Danish physician, naturalist, physiologist and anatomist, born October 20, 1616, Copenhagen; died December 4, 1680; Copenhagen.

Associated eponyms:

[Bartholin-Patau syndrome \(Thomas Bartholin\)](#)

A congenital syndrome of multiple abnormalities produced by trisomy of chromosome number 13.

[Ullrich-Feichtiger syndrome](#)

A syndrome of multiple congenital abnormalities, including polydactyly with genital abnormalities, clubfoot, partial atresia of the anus, hypospadias, and masklike facies.

Biography:

**Thomas Bartholin** is commonly credited with the first description of the thoracic duct in man and Jean Pecquet with recognizing it in animals a few years earlier. He described the intestinal lymphatics and their drainage via the thoracic duct into the venous system. He edited one of the earliest medical journals, *Acta Medica Hofmensia*, and described an encephalitis epidemic in Denmark in 1657.

**Thomas Bartholin** was the second of the six sons of the famous family produced by Caspar Bartholin and his wife Anna, daughter of Thomas Fincke (1561-1656), who successively became professor of mathematics, rhetoric and medicine at Copenhagen. When his father, Caspar Bartholin the elder, died in 1629, his brother in law, Ole Worm (1588-1654), took over the custody of the young Thomas Bartholin. Ole Worm was famous as professor of medicine and founder of the study of Nordic antiquity.

Thomas entered the University of Copenhagen in 1634, at first devoting himself to the study of theology. Then, three years later, with the support of his custodian and a scholarship from King Christian IV, he was able to spend nine years visiting the universities of Europe, among them Paris, Leiden, Basel, Montpellier and Padua. It was in Leiden, in 1637, he decided to make medicine his vocation. While in Leiden he concerned himself chiefly with the lymphatic vessels and William Harvey's (1578-1657) theory of the circulation.

As usual for his family, besides medicine he also studied philosophy, archaeology, law, Arabic and philology. His most important work, however, was in anatomy. During his three years stay in Leiden he was a pupil of Johannes de Wale (1604-1649) (name also spelled de Waal, Latin *Walaëus*), who influenced him to publish a new and improved edition of his father's textbook of anatomy. This, the first in a series of revised editions of *Institutiones anatomicae*, was published in 1641, with the help of Wale and Sylvius (Franciscus de le Boë, 1614-1672). Notably, the new edition recognized the work of Gaspare Aselli (1581-1626) and William Harvey.

In 1640, threatened by pulmonary tuberculosis, Bartholin went to Paris, then to Orléans and Montpellier, and finally to Padua, where he regained his health - only to develop chronic renal stones. In Padua, he studied with a fellow countryman, Johan Rhode (1587-1659), and was mainly the pupil of Johann Vesling (1598-1649). The latter assisted him with a second revision of the *Institutiones*, published in 1645. Whilst still a student he held the honorary position of Consilarius to the German nation, as well as that of a prosector and syndicus.

In the winter of 1643-1644 Bartholin visited Rome and Naples, where he gained the enduring friendship of Marco Aurelio Severino (1580-1656). On an excursion to Venice he became a member of the *Academia degli incogniti*. In the following spring he visited Sicily and Malta. At Messina he was offered, but declined, a professorship in philosophy. During this time he wrote a thesis (never published) on fossil shark's teeth (*glossopetrae*), which were thought to have value in medicine. When he returned to Padua, he produced a related treatise, **De unicornu (1645)**.

His guardian, Ole Worm, as early as in 1643 advised his custodian to concentrate on anatomy, in order to enable him to become deputy to his grandfather, 80-year-old professor of medicine Thomas Fincke. Undecided, Thomas Bartholin then went to Basel, where he was conferred doctor of medicine by Johann Caspar Bauhin (1606-1685) in 1645. In October 1646 he returned to Copenhagen, where he joined the faculty as professor of philosophy, and besides this started representing his grandfather. Three years later he married Else Christoffersdatter. Of their children, the most notable was Caspar Bartholin (Secundus), known eponymously for Bartholin's (*Glandula vestibularis major*) and Bartholin's duct (*Ductus sublingualis major*).

Besides philosophy Thomas Bartholin taught mathematics and philology. In the catalogue of lectures, however, he is entered as professor of philologiae already from 1646-1648. In 1649 he was chosen to succeed Simon Paulli (1603-1680) as a third professor at the medical faculty. He now took over the chair of anatomy as well as the anatomical institution connected to it. King Christian IV had established this institution and the discipline connected with it especially for Simon Paulli in 1639 for the promotion of surgery. In order to make this chair available to Thomas Bartholin after the succession to the throne of Frederik III, Simon Paulli was offered a compensation for resigning his position. Thus Paduan anatomy was introduced to Copenhagen. His most famous student was Niels Stensen (1638-1686).

Thomas Bartholin now continued his studies intensively. Hitherto, human dissection had been performed only at the discretion of the king, who sometimes observed from a concealed position. The discovery of the ductus thoracicus was a result from this time. He was also extensively engaged in examinations of the lymphatic vessels and their connection to the chylus and blood vessels. In addition to this come his achievements in correcting the Galenic view of the blood-producing factor of the liver.

After being informed by his brother Erasmus Bartholin (1625-1698) of Jean Pecquet's (1622-1674) discovery in dogs of the thoracic duct (*ductus thoracicus*) and the cisterna chyli (*receptaculum chyli*), Bartholin undertook a search for them in cadavers of two criminals, donated for the purpose by the king. He found the duct, which he reported in *De lacteis thoracis in homine brutisque nuperrime observatis* (1652), but apparently he overlooked the cisterna chyli and declared that it is not always present in man.

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Bartholin's greatest contribution to physiology was his discovery that the lymphatic system is an entirely separate system. At first he sought to explain the lymphatics, already recognised as anatomical structures, as providing the liver with chyle for the manufacture of blood. On 28 February 1652, working with his prosector Michael Lyser (1626-1659), Bartholin concluded that the lymphatics formed a hitherto unrecognised physiological system. This was reported in *Vasa lymphatica nuper hafniae in animalibus inventa et hepatis exsequiae* (1653).

Failure, in this edition, to indicate the date of discovery by more than the term "28 February" and the inclusion of the further date "1652" in the second edition led to the belief by many that the true year of discovery was 1653. Such was the opinion of Olof Rudbeck (1630-1702), who claimed priority of discovery by reason of his demonstration of the lymphatics in April 1652. Although there was extended controversy, there is now little doubt of Bartholin's priority. In *Vasa lymphatica in homine nuper inventa* (1654), he confirmed the existence of the human lymphatic system.

Many considered Thomas Bartholin the greatest anatomist of his time, a fame achieved by his teaching, but even more by his publishing. During his first years, until 1654 or 1655, his lectures were attended not only by Danes, but also by foreigners as well, and sometimes even by King Fredrik III himself. Already in 1656, however, he let himself be relieved of the duty to give public lectures. In 1651 he published the third revised edition of the *Institutiones*, an edition much superior in text to the second, which had been severely criticized, both justly and unjustly, by Caspar Hoffmann (1572-1648) and Jean Riolan (1580-1657), neither of whom recognised circulation. The third edition was also noteworthy for the illustrations from Giulio Casseri (1561-1616) and Vesling that replaced earlier Vesalian figures.

Continuing attacks of renal stones forced Bartholin to give up his anatomical duties in 1656, after which he turned his attention to a wider range of medical problems. His *Dispensarium hafniense* (1658) was the first Danish pharmacopoeia. The *Historarium anatomicarum rariorum centura I-VI* (1654-1661) dealt with numerous limited problems of human and comparative anatomy, and *Cista medica hafniensis* (1662) was a medical miscellany.

Bartholin immediately recognised the significance of Marcello Malpighi's (1628-1694) work on the lungs, *De pulmonibus* (Bologna, 1661) - not least because it provided the first account and illustration of the capillaries, the link between arteries and veins hypothesised by Harvey as a requirement for a systemic circulation of the blood. Consequently, he included these two celebrated letters in *De pulmonum substantia et motu* (1663), their second publication in Europe.

As he had achieved the efforts of the family clan to place as many as possible of his family members in high positions at the university, Thomas Bartholin in 1661 was elected professor honorarius, which freed him from all academic duties. In 1663 he bought the estate of Hagestedgaard, 75 km from Copenhagen, and, with the permission of the king, retired there.

There he devoted himself largely to literary, historical, antiquarian, and medicophilosophical studies. Sometimes he visited the capital to see to his cabinet of naturalias, which had partly been founded by him. In 1670 his house Hagestedgaard with his library was destroyed in a fire, an incident of incalculable damage, as even large numbers of manuscripts were lost. In order to comfort him, the king - now Christian V - freed the estate of all taxes and appointed him his personal physician - with a handsome compensation. He described this incident in *De*

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bibliothecae incendio (1670).

One year later Thomas Bartholin was appointed rector and librarian to the University of Copenhagen. As the most distinguished physician in Denmark and held in esteem by the king, Bartholin was responsible for the royal decree of 1672 that decided the organisation of Danish medicine for the next hundred years. In 1673 he established the first examination of midwifery at Copenhagen, and in the same year he began publication of the first Danish scientific journal, *Acta medica et philosophica hafniensa*.

Shortly afterwards, in 1675, he received a high position in the judicial system - Assessor to the superior court - and for this reason declined a call to become professor of anatomy at Padua. His health continued to decline, and in 1680 Bartholin sold Hagedestgaard and returned to Copenhagen, where he died. He is buried on the Vor Frue Kirke (Church of Our Lady), but unfortunately the location of his grave is not known.

Long after his death - in 1731 - both he and his family were raised to the peerage (see: Caspar Bartholin Secundus). His exhaustive written work comprises all fields of medicine, besides philosophy, medical history and pharmacology.

Thomas Bartholin's self praise as well as the exaggerated praise lavished upon him by friends and colleagues have made a just evaluation of his efforts difficult. However, he must be seen as a man of the 17th century - with its rather different standards. Bartholin was a prolific writer and like his father, Caspar Bartholin, the equally famous Danish anatomist, Thomas wrote several anatomical treatises that became very popular textbooks and were translated into several other languages. In reality, however, they were revisions of his father's *Institutiones anatomicae* (1611). Although the illustrations differed from edition to edition, few of them were original. Most were after Vesalius, Casserio, Vesling, Bauhin, Ruysch and others.

«Unfortunately, there are enough people who are so infatuated with their specialized studies that they are ignorant and unaware of other disciplines. If fate happens to lead them to fields other than their own, they are helpless and lost. May God protect you from an infection with the germs of haughty contempt for the efforts of scientists in other branches of science. Your country demands more than one-sided proficiency. Only the correlation of knowledge will bring us closer to actual wisdom.»

*De theologiae et medicinae affinitate* (translated by Max Samter).

Bibliography:

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Leiden, 1641, 1645, 1651.  
Revised editions of his father's work.
- *De unicornu*. Padua, 1645.
- *De lacteis thoracis in homine brutisque nuperrime observatis*. Hafniae (Copenhagen), M. Martzan, 1652.  
Contains Bartholin's discovery of the thoracic duct.

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- *Vasa lymphatica nuper hafniae in animalibus inventa et hepatis exsequiae.*  
Hafniae (Copenhagen), Petrus Hakius, 1653.  
Facsimile edition, 1916.
  - *Vasa lymphatica in homine nuper inventa.*  
Hafniae (Copenhagen), 1654.
  - *Historarium anatomicarum rariorum centuria I-VI.*  
Copenhagen, 1654-1661.
  - *Historiarum anatomicarum rariorum centuria I et II.*  
Amsterdam: Apud Johannem Henrici, 1654. 326 pagers.  
The first edition of was published in 1641. It was one of several of his collections containing descriptions and illustrations of anatomical anomalies (including a superb illustration of a horse-shoe kidney), monsters (i.e., human freaks), and normal structures, together with some brief case histories of unusual anatomical and clinical structures.
  - *Anatomia.*  
The Hague. Ex typographia Adriani Vlacq, 1655. 592 pages.  
This second edition contains the sixth edition of two letter of Johannes Walaeus, *De motu chyli et sanguinis*, which supports Harvey's work. Bartholin has added a final chapter, "De lacteis thoracicis et vasis lymphaticis," on the thoracic system and lymphatic vessels.
  - *Dispensarium hafniense.* Copenhagen, 1658.
  - *De nivis usu medico observationes variae. Accessit D. Erasmi Bartholini de figura nivis dissertatio.*  
Written with Erasmus Bartholin (1625-1698).  
3 parts in one volume. Copenhagen: Typis Matthiae Godichii, sumptibus Petri aubold, 1661. 232 pages.  
Chapter XXII of this historically important book makes the first known mention of the use of mixtures of ice and snow for freezing to produce surgical anaesthesia. The author states that one Marco Aurelio Severino of Naples taught the technique to him. In order not to kill the tissues and cause gangrene, the ice-snow mixture was to be applied on the parts in narrow parallel lines. After a quarter of an hour, feeling would be deadened and the part could be cut without pain. This may be the first mention of such a technique since the time of Avicenna (Ibn Sina, 980-1037). The treatise on snow crystals, by Bartholin's younger brother, Erasmus, is the earliest publication on crystallography, and preceded Robert Boyle (1627-1691) on gems (1672) by eleven years. This interesting work also contains a list of Thomas Bartholin's works.
  - *Cista medica hafniensis.* Copenhagen, 1662.
  - *De pulmonum substantia et motu.* Copenhagen, 1663.
  - *De insolitis partus humani viis.* Copenhagen, 1664.

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- *De medicina danorum domestica*. Copenhagen, 1666.
  - *De flammula cordis epistola*. Copenhagen, 1667.
  - *Orationes et dissertationes omnino varii argumenti*. Copenhagen, 1668.
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  - *De bibliothecae incendio*. Copenhagen, 1670.
  - *De morbis biblicis miscellanea medica*.  
2nd edition, Francofurti, D. Paulli, 1672.  
A study of the diseases mentioned in the bible.
  - *Acta medica et philosophica*. 1673-1680
  - *Dispensatorium Danicum*.  
Prescriptions published by Farmakopénævnet.