Drebbel, Cornelis

**Born:** Alkmaar, 1572
**Died:** London, 1633

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**Abstract**

**Alternate Names**
Cornelius Drebbel, Dremmel

**Biography**
Drebbel began his career as an inventor and engraver, marrying the sister of artist Hendrick Goltzius. He and Goltzius also practiced alchemy, and Drebbel composed a natural philosophical work, On the Nature of the Elements. The first surviving edition is a German translation (Drebbel 1608). In 1604, Drebbel moved to Ipswich, England. In 1607, he offered King James I a “perpetual motion” device (Drebbel 1607). James assigned Drebbel to Prince Henry’s service. Drebbel installed a complex of “perpetually” moving devices in Eltham Palace outside London, all sensitive to slight changes in temperature.

This was a period of rising epistemic status for the study of meteors, as scholars sought to identify consistent causality for impermanent phenomena and to use contrived demonstrations to measure and depict meterologic change. Drebbel’s theory of the origin of the winds, in which he was preceded by Giambattista Benedetti (1585), opposed dominant views (Borrelli 2008; Martin 2016). Drebbel’s recognition of weather patterns was also significant (Dove 1866). Drebbel deployed his meterological ideas in the design of his “perpetual motion” devices and “glasses of thunder and lightning,” as well as in his more utilitarian thermostatic oven, which engineers today consider a milestone in feedback control (Mayr 1970; Keller 2013b). His discussion of vital substances borne within the elements also contributed to debates concerning the “aerial nitre” (Keller 2013b).

Drebbel was invited to Prague to reproduce his perpetual motion for Rudolf II, a trip which coincided with Rudolf’s death in 1612, and Drebbel’s brief imprisonment, followed by the death of Prince Henry (Jaeger 1922). The next 8 years saw straitened finances but fertile inventions,
including the submarine, a new mordant for scarlet dye, a method of chemical air-conditioning, and various improvements to telescopes and microscopes. Drebbel’s *On the Fifth Element* was published in Latin (Drebbel 1621). No surviving works relate closely to the inventions of this stage of his career, his optical writings having been lost (Keller 2008).

Around 1620 Drebbel met the Küffler brothers of Cologne in England. They peddled his microscopes and telescopes in France and Italy, married his daughters, and after his death, further developed his inventions, including the scarlet dye and an improved oven for drying malt. Drebbel also developed a relationship with the brothers Sir William and John Heydon, in the circle of Prince Charles (Keller 2012). With the support of Charles, William Heydon developed a plan for deploying Drebbel’s submarine and air-conditioning in India in 1622. This plan was not realized, but Drebbel enjoyed renewed courtly employment (Keller 2013a). He worked for the Duke of Buckingham’s building, gardening, and collecting project at New Hall in 1624 (McEvansoneya 1986). With the accession of King Charles I, William Heydon was appointed Lieutenant-General of the Ordnance Office, overseeing Drebbel’s development of military technology. Drebbel traveled to France to serve as engineer in the battle of the Isle of Ré in 1628 and continued to serve in the Ordnance Office in the position of Chief Engineer until his death (Keller 2008).

Drebbel’s career has been considered in light of Francis Bacon’s *New Atlantis* (Colie 1954). Drebbel claimed to discover his ideas with “his own hands,” through the use of “living instruments,” but without difficult mathematics or lengthy writing. His texts proved popular, with twenty-six editions in Dutch, German, French, and Latin until 1785 and an enthusiastic reception within the new discipline of academic alchemy (Keller 2010). His modern reputation has been mixed, due to heated debates over his role in the invention of the thermometer, barometer, and microscope, and in other discoveries (Naber 1907; Jaeger 1922).

### References

#### Primary Literature


#### Secondary Literature


Cornelis Jacobszoon Drebbel (1572 – 7 November 1633) was a Dutch engineer and inventor. He was the builder of the first navigable submarine in 1620 and an innovator who contributed to the development of measurement and control systems, optics and chemistry. Cornelis Drebbel was born in Alkmaar, Holland in an Anabaptist family in 1572. After some years at the Latin school in Alkmaar, around 1587, he attended the Academy in Haarlem, also located in North-Holland. Teachers at the Academy were Hendrik Cornelis Jacobsz Drebbel (Alkmaar, 1572 – London, November 7, 1633) Dutch builder of the first navigable submarine in 1620. Drebbel was an innovator who contributed to the development of measurement and control systems, optics and chemistry. He was active in many fields. From engraver he developed himself as a builder of all sorts of innovations, such as fountains and special effects on masquerade. Drebbel was a