

Research Article - History of Anatomy and Embryology

## Neither Darwin's nor Woolner's, rather Matsys's tubercle in the 16th century

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### Abstract

The description of a swelling of the posterior part of the ear helix is usually credited to Darwin and Woolner, but they were preceded by the Flemish artist Quentin Matsys (1466-1530) in his painting *Ecce homo*, now exhibited at the City Museums of Venice.

### Key words

Ear, helix, anatomy, comparative anatomy.

Darwin's tubercle is a swelling of the posterior part of the helix of the ear, which can be appreciated in certain individuals, with varying prevalence and specific morphologies in populations around the globe. It develops during ontogeny, probably as a result of an uneven folding of the helix at the foetal stage, determined by an as yet unidentified genetic predisposition and environmental modulation (Loy and Cohen, 2016). Because of its upwards pointing appearance in monkeys, notably *Macaca* and *Papio*, it has historically been regarded as an atavistic trait by Charles Darwin (1809-1882) in his work *The Descent of Man* (1871) and later even by the criminal anthropologist Cesare Lombroso (1835-1909) (Millard and Pickard, 1970). While commonly referred to as "Darwin's tubercle", this morphological trait was first highlighted by the artist Thomas Woolner (1825-1892) who sculpted it in his fawn-resembling statue "Puck". Darwin drew inspiration from the artist's work and credited him with the discovery by suggesting that the trait be named "Woolnerian tip" or "Angulus Woolnerianus". The reanalysis of the correspondence between Darwin and Woolner by Millard and Pickard in 1970 led to the proposal of a new label, Woolner's tubercle (Millard and Pickard, 1970). Moreover, Darwin described a pointed ear in a foetus of a *Pongo pygmaeus* in 1871, as well as in a *Macaca nigra* on a drawing in *Expressions and Emotions in Man and Animal* (1872). The description of the latter led to the name "*tuberculum Darwini*" (Ankel-Simons, 2000). Nevertheless, Adolph H. Schultz (1891-1976) studied the original orang-utan foetus and stated in 1965 and 1969 that the pointed ear was caused by a deformation of the foetus (Ankel-Simons, 2000). Thus, only the two genera of the Cercopithecidae, *Macaca* and *Papio*, show a

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**Figure 1.** Quetin Matsys (or Massys or Metsys). *Ecce Homo*. Between 1520-1526, Palazzo Ducale, Musei Civici Veneziani, Venice, Italy. Formerly attributed to Albrecht Dürer (1471 – 1528). On the right: detail of the devilish character's left ear, with a clearly visible upward-pointing ear tubercle. Photo credits: 2018 © Photo Archive - Fondazione Musei Civici di Venezia, reproduced with permission.

pointed upper margin of the ear comparable to Darwin's tubercle in humans (Loy and Cohen, 2016).

Although art abounds with portrayals of beast-shaped ears, in particular in representations of demons, satyrs (e.g. Silenus, the companion of the Greek god Dionysus), as well as statuettes from the ancient world retrospectively diagnosed with such conditions as acromegaly, it is not possible to speak of a deliberate depiction of the Woolner-Darwin tubercle as observed in humans. Rather, it seems more plausible that animal ear morphologies were incorporated in human figures with the intention of extolling their basest instincts, as typical of ancient physiognomy.

The painting "*Ecce Homo*" by Flemish artist Quetin Matsys (1466-1530) shows a character behind Christ with devilish features; namely an evil look, an enlarged aquiline nose, a protruding lower jaw and a clearly visible upward-pointing ear tubercle (Fig. 1). Renaissance Flemish art was permeated by extreme realism allowing it to depict several pathological traits, most notably rheumatological alterations (Dequeker, 1991). Matsys, specifically, paid great attention to altered facial morphologies, por-

traying coarse features and the degeneration brought in by old age with his painting "The Ugly Dutchess" (c. 1513, National Gallery, London, UK), so accurate in the representation of a greatly transformed face to allow a confident identification of systemic pathologies, Paget's disease or acromegaly (Dequeker, 1989; Sharma, 1989). Therefore, it appears most reasonable to postulate that, rather than an inspiration derived from the animal world or previous artistic expressions, Matsys faithfully reproduced a human anatomical variation he might well have observed in living subjects, degenerating it into the grotesque with the intention of strengthening the morally evil connotations of the character tormenting the Christ. While, unlike Woolner and Darwin, he may not have contemplated notions of heredity and atavism, the clarity of his representation makes it legitimate to give credit to Matsys for the discovery of the ear tubercle, which ought to be renamed the Matsys tubercle, or more conciliatorily the Matsys-Woolner-Darwin tubercle.

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