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History of ophthalmology

The invention of spectacles

The benefits of viewing the world through glass have long been recognised, and the fact that the emperor Nero invariably watched the gladiators' events through a large emerald held to his eye is often quoted as an example. There are, however, several explanations for this, none of which include the principles of optics. Firstly, it was rumoured that Nero disliked the colour of blood (of which there was always plenty), and secondly, he loved to show off his wealth. Possibly he was using his emerald as sunglasses against the glare but, sadly, it never occurred to him to have it attached to a frame as a primitive pair of spectacles. Myopia was certainly recognised in his time, with short sighted slaves being sold at a discount. It is recorded that Dionysius in 460 BC, was myopic, and that his terrified courtiers (he was a tyrant) all feigned the same affliction in order to pacify him.

The credit for securing lenses in front of the eye may go to the Chinese, who were apparently seen by Marco Polo in 1270 to be sporting framed lenses attached to the head by weighted cords hanging over the ears. In Britain, it was left to Roger Bacon to moot the concept of 'using glass lenses to aid those who are old and have weak sight' (his own words). The Italians would disagree, and give the credit to Armati, who died in 1317, largely because his tombstone bears the inscription 'the inventor of spectacles.'

Religious paintings of the fifteenth century show St Hieronymus and St Donatus availing themselves of the devices, and apparently the church saw nothing heretical in their use. It certainly condoned them in 1623 when de Valdez (who happened to be an officer of the inquisition) published a superb monograph on their use at that time.

De Valdez reports that the 'refractionists' of his day did brisk trade, and began by asking the patient's age. As a rule of thumb, a man between 30 and 40 would require glasses of two varas (the vara approximates to one diopetre), a woman

would get a stronger lens. The 'optician' would then inquire – if it were not obvious from the customer's dress and demeanour – whether leather, brass, silver, or gold frames were required. Common sense was present in the 1600s, as the optician would warn that glasses were not a 'cure-all,' and that a lens that was too weak was better than one that was too strong. 'Opera glasses' that were held for short periods of distant vision were available, and glasses to protect from the 'winds of winter and bright lights of summer' came in yellow, brown, red, green, and blue.

De Valdez touches upon the debate about nose-glasses versus earframes, etc. King Philip had his glasses set into 'temple pieces' which attached to his hat and steadied the spectacles on the royal nose, but de Valdez notes this is impossible for the common man, who needs to be continually removing his hat from politeness.

Although glasses were ridiculed at certain times in history, snobbery reared its ugly head in England in the 1700s. Then the gentry purchased glasses as a sign of intelligence and refinement, whether they needed them or not, but the lower classes – however much they stumbled into doors and dropped things – did not dare wear them in public. This was just as well, since they couldn't have afforded them anyway. Until the seventeenth century spectacles were so valuable as to be separately bequeathed in one's will, presumably regardless of the visual acuity of one's beneficiaries.

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