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Eyewitness accounts of the 1510 influenza pandemic in Europe

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Abstract

“On this day [July 13, 1510]...in Modena there appeared an illness that lasts three days with a great fever, and headache and then they rise...but there remains a terrible cough that lasts maybe eight days, and then little by little they recover and do not perish.”

So wrote Tommasino de' Bianchi in a rare first-hand account of perhaps the first recognised pandemic of the disease we now call influenza. As we wonder about new epidemics today, the accounts by de' Bianchi and six other men who documented the 1510 pandemic (panel) offer insights into how this disease was understood at the time. These chroniclers of events in 1510 wrote about what they thought this disease was, where it came from, who was susceptible to it, what its complications were, how fatal it was, and how it could be treated. Their accounts illuminate our understanding of the history of influenza in 16th-century Europe.

In 1510, there was little appreciation that a specific respiratory disease might have been recurring over centuries, but historians now believe that influenza had probably been circulating as an epidemic disease since as early as the 9th century AD, if not earlier. The respiratory disease known as *febris Italica* (Italian fever) followed Charlemagne's army around Europe in 876–77 AD. Later, similar European-wide epidemics appeared between 1173 and 1387, two of them even called “influenza”, a popular Italian term that did not, however, become permanently attached to a respiratory disease until centuries later. A disease referred to as “sweate” (English sweat, *Sudor Anglicus*) was repeatedly epidemic between 1485 and 1551, but was considered by the physician Jean Fernel and others to be distinct from influenza. Only in the 19th century was sweate plausibly attributed to influenza by the sifting of centuries-old evidence. Had observers recognised these major European epidemics as one distinctive disease they might have also recognised, in 1510, the return of an explosive respiratory epidemic, known as *horion* or *le taq*, that had struck 100 years earlier in 1410 with accounts of violent coughing and miscarriages among pregnant women.

While contagion had been understood and linked to a short list of diseases over the preceding 300 years, the notion of infection was almost non-existent in 1510. Humoralist ideas from the Greco-Roman era often influenced treatment decisions, leading to attempts to remove the humors believed to be causing disease. In 1546, Girolamo Fracastoro would propose that some epidemic diseases were caused by, and transmitted to others by, what he called living *seminaria*, but this idea was at best only percolating in 1510. Unable to identify microbial agents or understand aetiopathological entities, observers like de' Bianchi probably did not suspect that periodic epidemic fevers with cough might represent a single continually re-emerging disease.

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Epidemic diseases of the 16th century were nonetheless given transient popular names that varied from place to place and time to time, often being “recycled” from earlier and very different outbreaks. The disease of the summer and autumn of 1510 was called, in various European locales, *cephalie catarrhale* (catarrhal headache), *coquelicot* (poppy, perhaps because opiates were used to treat it), *tussis quinta* (fifth cough), or more commonly words indicating “hoods”, such as *capuchon*, *cocoluccio*, *coqueluche*, *cuculionibus*, or *cucullo*, since those affected by the illness seem to have worn coverings over their heads. Coqueluche still survives in French today, but as “pertussis”, not “influenza”.

Under whatever popular name, Pope Julius II (1443–1513) had a very traditional idea about the cause of the 1510 pandemic: namely that it reflected God’s wrath. Many people undoubtedly accepted this orthodox explanation, but others, including Fernel, claimed that the “respiratory catarrh...with cardiac and pulmonary constriction, and coughing” was of unknown cause, and focused on describing what we would now call its clinical and epidemiological characteristics. The chronicler Francesco Muralto described it as a “precipitous illness...with coughing and a high fever”, while the renowned surgeon Ambroise Paré called it a “rheumatic affliction of the head with...constriction of the heart and lungs”. Historian Jean Bouchet was impressed by marked anorexia leading to “extreme distaste for bread and wine”, and the physician Jacques Houllier documented associated “confusion and dizziness”. Another doctor, François Valleriola, recorded “constriction of breathing, and beginning with a hoarseness of the voice...[and] shivering”. Valleriola further noted that “not long after that there being a cooked humor which fills the lungs”, followed by “a great deal of clearing of the throat that is viscous, slow, not a little thin, and quite foamy. Following that there being sputum, coughing, and difficulty in breathing may return for several [days]...weakness of the body...and aversion to food...restlessness, weakness, wakefulness caused by a strong cough all press them...[and] from others a great deal of sweat flows.”

Supplementing these first-hand accounts are works by scholars born after 1510 who apparently had access to primary accounts and the recollections of older observers. In the 17th century, Johannes Schenck von Grafenberg emphasized in *De cephalgia seu catarrho epidemico* (1665) “respiratory constriction and hoarseness of voice, then soon shaking chills, fever, and robust coughing”, while François-Eudes de Mézeray in his *Histoire de France, depuis Faramond jusqu’au règne de Louis le Juste* of 1685 described “violent aching of the limbs...[with] delirium”. In his *A General Chronological History of the Air, Weather, Seasons, Meteors, &c* of 1749, the physician Thomas Short described “loss of strength...a terrible taring Cough... [and] Shortness of breath”.

Epidemiological observations were also made by those who witnessed events in 1510. Fernel and Paré agreed that the pandemic “spread to almost all the countries and the whole world [excepting the New World]”. Local epidemic behaviour was also noted. Bouchet recorded that the epidemic “appeared in the entire Kingdom of France, as much in the towns as in the countryside”, while de’ Bianchi attributed its spread in Modena to the fact that “[i]t was so hot in August 1510 that the Christians [did] not live indoors but live[d] among the gardens and plants”. Later writers, such as Gregor Horst in his *Operum medicorum tomus primus* (1660), emphasised that it had arisen in the Orient, had spread from East to West along trade routes, had arrived in southern Europe from Africa via Malta, and had then spread northward from Sicily into Italy and Spain, travelling over the Alps and into all of Europe to reach the Baltic Sea.

Contemporary observers in 1510 offered little evidence that standard therapies to remove “ill humors” by inducing diarrhoea or vomiting, or perspiration, or blistering, or, most dangerously, blood-letting were beneficial. Paré claimed that “neither bleeding nor

purgation was otherwise of assistance in the rheumatism, but that all who adopted such agents for use were placed in mortal danger". Yet physicians at the time were well aware that epidemics of the few distinct diseases they recognized often targeted different segments of the population. For example, smallpox affected only people who had not had smallpox previously and *Morbus gallicus* (syphilis, which had emerged explosively in 1493) affected only those who had had sexual contact with victims. It was agreed by all, however, that the 1510 pandemic struck a large segment of the population, sparing few; only Paré noted that "not all were afflicted with this catarrh".

The future Pope Gregory XIII, then 8 years old, became dangerously ill with the disease but survived without permanent complications, emphasising to all that serious complications sometimes followed an attack. Valleriola wrote that "where it settled on the lungs...they were not able to expectorate it", with Schenck von Grafenberg adding that "this might lead to suffocation", both apparently describing pneumonia. Nevertheless, there was disagreement about the extent of, and causes of, mortality. Muralto noted that "this illness was reported to have killed ten people out of a thousand in one day"—a 1% mortality rate comparable to, or higher than, the typical mortality rates of the "Spanish" influenza pandemic of 1918. Houllier also claimed high mortality, whereas Valleriola stated that no one died except children. By contrast, de' Bianchi differed in claiming that most people "recover...and do not perish". Of the later scholars, Jean Coytard de Thairé, writing in 1578, was sceptical, cautioning that "[i]t is now perilous or difficult to determine an estimate of the number that died...but of those who were seen with serious symptoms a sufficient number departed". Both Schenck von Grafenberg and de Mézeray later dismissed such caution, concluding that there had been significant mortality after all.

The 1510 pandemic was followed by recurrent episodes of apparent "seasonal influenza" and by two additional influenza pandemics in 1557 and 1580, resulting in an accumulation of increasingly well-documented descriptions from various observers. An important catalyst for rapid growth in understanding influenza was perhaps the era's greatest technological breakthroughs, the printing press and moveable type, which led to affordable books and a tremendous explosion of knowledge and communication. We suggest that well before the end of the 16th century influenza was beginning to be conceptualised as a specific, clinically recognisable disease that appeared frequently in both epidemic and endemic form. Indeed, it is striking how 16th-century chroniclers of this disease recorded how it caused moderate mortality in the very young, the elderly, in pregnant women, and in the infirm, which are the basic features by which we know influenza today.

Panel: Chroniclers of the 1510 influenza pandemic
Francesco Muralto (late 15th early 16th centuries)

Italian lawyer and politician whose *Annalia Francisci Muralti* was written between 1492 and 1519 and published in book form in 1861.

Jean Bouchet (1476–1557)

French barrister, poet, and historian who wrote *Les annales Daquitaine* (1535).

Jean Fernel (1497–1558)

Physician to French King Henri III, physiologist, mathematician, and astronomer who described the spinal canal and lunar craters. He wrote *De abditis rerum causis libri duo ad Henricum Granciae regem Christianissimum* (1548).

Jacques Houllier [Hollerio] (1498–1562)

French physician and surgeon who wrote *Magni Hippocratis Coaca Præsagia, Opus Plane Divinum, Et Veræ Medicinæ Tanquam Thesaurus, Cum interpretatione & commentariis* (1576).

Tommasino de' Bianchi [de' Lancillotti] (1503–54)

Italian chronicler who wrote *Cronaca modenense* in the early 16th century, which was published in book form in 1862–64.

François Valleriola [né Variola] (1504–80)

Montpellier physician, proto-epidemiologist, and contagion theorist who wrote *Loci medicinae communes, tribus libris digesti* (1562).

Ambroise Paré (1510–90)

Anatomist and surgeon to French Kings Henri II, Francis II, Charles IX, and Henri III who invented surgical instruments and prostheses. The German edition of his collected works, *Wund Arzney, oder, Artzney Spiegel*, published posthumously in 1635, includes a full depiction of the pandemic.

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