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Editorial

Epidemics Over the Centuries

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The history of pandemics goes back a long way and has been marked by many mistaken beliefs,[1] some of which have led to massacres of innocent people, blamed for plagues whose true origin has only recently been discovered.[2] If we disregard the first epidemic in the 5th century BC, known as the Athens Plague,[3] and of which little is known, the first recorded epidemic was the Justinian plague which started in 540 AD, lasted for 2 centuries, and undoubtedly precipitated the fall of the Roman Empire.[3] This was followed by the Black Death in the Middle Ages.[4-6] which also originated in Asia, and lastly the bubonic plague pandemic, the third largest recorded, which originated in Yunnan during the 19th century, and spread from China to pose new epidemiological threats to humanity.

Every pandemic has a point of origin and its spread owes as much to globalization as to related migrations. Microbes, viruses, and rumours contaminated firm beliefs that exotic Chinese food was the root cause of the crisis or that the virus in question was created artificially for commercial exploitation. This is a classic popular reaction. For example, during the 16th century, the French called syphilis 'Spanish smallpox,' the Spanish called it the 'malady of Naples' and for the English it was a 'French Pox.'[3]

The spread of epidemics had long remained a mystery. In 1346, the Black Death bacillus was inoculated as an entomological weapon by the Mongol Khan, who threw the corpses of the infested Mongols over the walls of the besieged city of Caffa, a Venetian trading post on the Black Sea.[2] The plague took advantage of the Genoese galleys' return to Europe to infest Venice. From that European entry point, pilgrims and merchant travellers spread the epidemic, eventually killing-off nearly half the population of Europe.

Where does the term quarantine derive from?[7] It was a health measure implemented in the Middle Ages in Dubrovnik and then in Venice to isolate ships suspected of being carriers of the plague. According to Hippocrates, after 40 days of isolation acute illness did not manifest itself. In Venice, the ships were isolated at the shores of the island of Santa Maria di Nazareth, and because of the connection between Nazareth and Lazarus (the leper of the gospel), leper colonies were thereafter called "lazarets." This 40-day isolation period during Lent came from the Latin Quadragesima (fortieth), which also refers to the 40 days that Jesus spent in the desert, as well as the 40 years of wilderness that the Israelites endured following their exodus from Ancient Egypt.

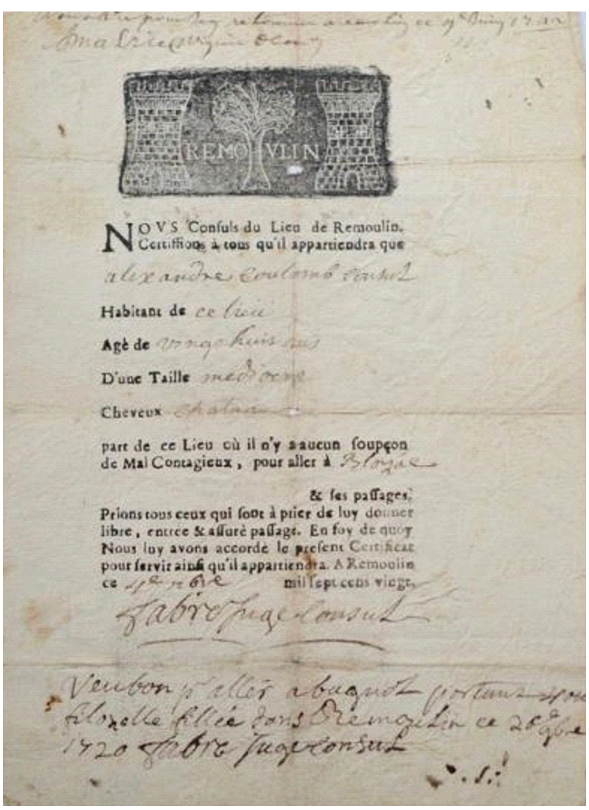
Confinement is not a new measure? It is an ancient practice of grouping the citizens of a city or a region in a contained zone.[8] It has proven to be effective and has enabled the restriction of pandemics close to their origin. King Louis XV of France was the first to impose it

on Marseilles[5] in an effort to curb the Black Death which decimated more than 50,000 people in that city alone (Fig. 1).

Contact between healthy and infected people generally results in a public health catastrophe. In fact, only isolation at home limits the spread of an epidemic and was gradually adapted, without understanding the underlying reasons, from the Roman times of Justinian to the end of the 19th century. Confinement ends only when the pathogen is seen to have stopped transmitting or when a new means of treatment is discovered, such as a vaccine or an antibiotic.

The use of masks is recent. The first mask was used by a French doctor, Charles de L'Orme,[1] (Fig. 2) appointed to the court of King Louis XIII, and was developed during the plague of 1619 which decimated Paris. In the 1890s the use of surgical masks and gloves was introduced by surgeons, unrelated to any epidemic episodes, to fight against postoperative infections. At the beginning of the 20th century, an Asian doctor, Wu Liande, the first Chinaman admitted to study medicine at Cambridge, was sent by his country in 1910 to help confine the so-called "Manchurian" plague. This plague, with a mortality rate close to 100%, was a resurgence of the 1894 Hong Kong plague which gave the Frenchman Alexandre Yersin an opportunity to discover the bacillus of the disease almost concomitantly with the Japanese Kitasato Shibasaburo. Dr. Wu Liande confirmed the value of the mask by equipping all Chinese doctors in Manchuria, and in 1918, the Spanish flu definitively consecrated the wearing of masks in Japan. Photos published in the press of American health corps wearing masks in the streets of San Francisco completed their promotion as a means of protection. In France, Dr. Hyacinthe Vincent, despite popular reluctance, recommended wearing masks as protection against the Spanish flu, although its viral origin was not confirmed until 1933.

How is an epidemic stopped? There are 2 radical methods: finding an effective antibiotic treatment when the origin is bacterial or a vaccine when the origin is viral. In a viral epidemic which is not 100% fatal, when 60% or more of the population is infected, the disease ceases to spread because the vector no longer finds enough subjects to be infected ("herd immunity"). However, controlling an epidemic is eminently political. Nobody imagined that we would have to return to quarantine and isola-


REMOULIN

NOVS Consuls du Lieu de Remoulin. Certiffions à tous qu'il appartiendra que

Habitant de

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D'une Taille

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part de ce Lieu où il n'y a aucun soupçon de Mal Contagieux, pour aller à

& ses passages.

Prions tous ceux qui sont à prier de luy donner libre, entrée & assuré passage. En foy de quoy Nous luy avons accordé le present Certificat pour servir ainsi qu'il appartiendra. A Remoulin ce mil sept cens vingt.

Fig. 1. Autorisation to circulate outside the epidemic zone, delivered by the royal attorney for the commune of Remoulin, during the plague of Marseille in 1720.

Fig. 2. First mask used during the plague of Paris in 1619. The mask is filled with aromatic herbs to help the wearer bear bad smell. The doctor also has a stick to examine patients without touching them.

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tion in the 21st century. These measures, first adopted by the Chinese and then by a large majority of the countries hit by coronavirus disease 2019 (COVID-19), have brought us back to the times when there were no vaccines or antibiotics to fight infectious diseases.[9,10] Today, faced with coronaviruses, we have no medication. We are therefore returning to old methods in an effort to slow the spread of the epidemic. Controlling an epidemic is also political because in democratic regimes containment is less effective than in those that are authoritarian. In the 19th century the great cholera epidemics prompted politicians to take hygiene measures.[9] Great advances were made in housing, especially for the working class, sewage systems were developed and access to drinking water provided.[11] In hospitals, surgical instruments were sterilized, and infected patients isolated. In 1920, after the Spanish flu epidemic, France established a ministry of health, which was called the ministry of hygiene, and the League of Nations started to think about international cooperation to manage epidemics.

Historically, epidemics have decimated populations, sometimes over long periods of time, but they have also facilitated discoveries, essentially for diagnosis and treatment, which have led to an improvement in the well-being of humanity. Hopefully, the COVID-19 epidemic will also lead to scientific progress in terms of viral disease management and that the economic consequences of confinement will lead to political and environmental decisions that ensure a better future for all.

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Title: Cat Catching a Bird
Artist: Pablo Picasso
Year: 1939
Is this an image of the war in Spain, or a premonition of even worse things to come? During the first three months of 1939, the cities of Madrid, Barcelona and Valencia fell into the hands of Franco's troops, while Hitler was making inroads into Eastern Europe. Picasso's mother died on 13 January. Political and personal events combined in his imagination to find expression in tormented pictures full of allegorical resonances. Picasso explained: "I did not paint the war because I am not the kind of painter who sets out looking for subjects, like a photographer. But there is no doubt that the war is present in the paintings that I did at the time. Later, perhaps, a historian will demonstrate that my work changed under the influence of the war." From pictures of women mourning the war victims in Spain, Picasso turned to visions of animals with ferocious expressions.
More information: https://www.pablopicasso.org/cat-catching-a-bird.jsp

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