

CHAPTER 3

**ATTACKS OF THE MUTATED VIRUS:
AUGUST 1918 ONWARD**



Kitasato Institute technicians busy producing influenza “vaccine.”
(*Ōsaka Mainichi shinbun*, 10 January 1920)

In the latter half of August 1918, the influenza virus underwent a mutation, either in the western part of France (e.g., at Brest or other ports¹) or in the crowded African port of Free Town in Sierra Leone. The relatively mild influenza that had laid up soldiers on the Western front with fevers, interrupted the practice and tournaments of sumo wrestlers in Japan, and kept longshoremen in Manila from going to work—had at least not been a killer virus. After going around the world once, however, it returned in mutated and virulent form to attack humankind with new fury, and these ports offered fertile flesh for the virile virus. At that time in the final stages of World War I, a huge number of ships from the Americas, Africa, Europe, and Asia were docking there, and the influenza virus, which must at first have infected only one or a few people, began to mutate, emerging as a highly infectious strain. Numerous people contracted the mutated strain and scattered it widely around the world in a matter of days. The spreading virus was very soon out of control.

United States

The first records of the specific conditions of the second wave of the pandemic are found, once again, in the United States. A Norwegian cargo vessel that docked at New York on 12 August had buried at sea during the voyage four people who had died of influenza. In New York, other sick crew members were hospitalized, but the hospitals did not have any effective treatment to give against the virus and instead the patients' presence led to the further spread of the infection. It is not known whether the virus brought across the Atlantic then was a mutated form of the "spring wave" influenza virus or not, but it was a highly infectious virus—that much is certain.

In September, the ports of call of ships from Europe along the East Coast of the United States were places where influenza-virus-infected people disembarking from ships from Europe were crossing paths with young recruits about to head to Europe to fight in the war. Along the Western front, the German army continued to put up fierce resistance and the Allies reinforced by American troops were about to launch a major offensive. AEF commander General Pershing pressed the home government to send as many troops as possible, as soon as possible.

1 The port of Brest, on the tip of France's Bretagne peninsula jutting into the Atlantic, was a major port of call linking Europe to Africa, Asia, and the Americas; with ships from all over the world docking there, it made an ideal mingling place for the influenza virus. On 10 August, numerous French sailors contracted influenza and pneumonia and were hospitalized at a naval hospital there. Soon the hospital facilities were overflowing, however, and mortality began to rise. Barry 2004, p. 182.

The Virus Rampage at Fort Devens

Fort Devens was a new training ground for troops created near Boston, Massachusetts, but in the middle of August, several people were diagnosed with pneumonia.² It is not known why they contracted pneumonia, and at that point it was not reported as the side effect of influenza. It was in September, when a number of patients developed meningitis, that the infected patients were quarantined. Apparently influenza was being treated with little concern when the serious outbreak occurred. On the 22nd of the month nearly 20 percent of the soldiers at the camp had contracted the virus and by the end of the month the hospitals were overflowing with several thousand patients, the doctors and nurses tending them from early morning to late at night, many of whom eventually themselves fell ill. In a letter to a friend, army surgeon Roy Grist vividly portrayed what was happening:

These men start with what appears to be an ordinary attack of La Grippe or Influenza, and when brought to the Hosp, they very rapidly develop the most vicious type of Pneumonia that has ever been seen. Two hours after admission they have the Mahogany spots over the cheek bones, and a few hours later you can begin to see the Cyanosis extending from their ears and spreading all over the face. . . . It is only a matter of a few hours then until death comes . . . It is horrible . . . We have been averaging about 100 deaths per day . . . For several days there were no coffins and the bodies piled up something fierce.³

It was horrible, but even worse was that no one knew what this cruel affliction was, not to mention how to combat or prevent it. U.S. Army Medical Department staff bravely went to inspect the situation and were struck speechless by the scene they beheld.

80 Percent of "War Dead" Died from Influenza?

Army authorities, realizing they needed to contain the situation within Fort Devens, prohibited personnel from the fort to go to other camps or to have contact with the general citizenry. But it was already too late. On 7 September, 300 seamen from the port city of Boston arrived at a naval arsenal in Philadelphia, and four days later, among them it was reported that 19 had contracted influenza. Seamen from Boston had also been sent to the Great Lakes region, as well as to Puget Sound base near Seattle on the West Coast. There, they fell ill and some died.

The virus, which had moved from the ports to inland areas, assailed military camps located near ports of embarkation, taking the lives of many soldiers, even before they crossed the Atlantic, at their camps, on their way to the ports, while waiting in port for

2 Barry 2004, p. 185.

3 Barry 2004, pp. 187–88.

ships, or aboard ship to Europe. Word of these deaths began to reach military headquarters formally on 8 September. Even among those who reached ports in England or France, some fell ill on the way to or at the rendezvous points for their units; those who actually arrived at the front still able to fight were perhaps the lucky ones. About 100,000 American soldiers died in World War I, and it is generally said that as many as 80 percent of those died from influenza. In a recent study Carol Byerly indicates that official U.S. Department of War figures on World War I give 50,280 for those who died in battle and 57,460 for those who died of illness.⁴ As the influenza pandemic raged the sheer numbers of soldiers contracting the virus—with many dying even before they crossed the Atlantic—led some to argue that the dispatch of troops to Europe should be abandoned. When President Wilson called in his Chief of Staff, Peyton C. March, however, the general rejected the idea out of hand. American troops continued to be sent to Europe even after the ceasefire.⁵

Clearly, the military forces were the breeding ground and the carriers of influenza; the dispersal of personnel in all directions carried the deadly virus to other camps and military bases, to the American populace at large, and then all around the world.

Literature's Testimony

The pandemic haunted society in its time, from children to adults. As Alfred Crosby recounts, there was even a jump-roping song chanted by little girls that went:

I had a little bird
And its name was Enza
I opened the window
And in-flew-Enza.⁶

Crosby dedicates his book “To Katherine Anne Porter, who survived.” In 1918, the young Porter contracted influenza while living in Denver, where she was working for a newspaper company. Porter would later become a celebrated writer of the American South along with William Faulkner. The story “Pale Horse, Pale Rider,”⁷ published in an anthology of the same title in 1939, gives a vivid account of her near-death experience. The story tells of Miranda (apparently modeled after the author herself), a journalist, who meets and falls in love with Adam, a young officer who is about to be sent to serve in the war in Europe. Within a few days, she falls victim to influenza and suffers hallucinations in the delirium of the fever.

4 Byerly 2005, p. 10.

5 Crosby 1989, pp. 124–25.

6 Crosby 1989, p. 53.

7 Porter 1939.

Although her doctor, Dr. Hildesheim (clearly a name of German derivation) abandons her to her death, one of her nurses, named Tanner, pulls her through. After she recovers, she finds among the letters sent to her during her illness one saying that her lover, Adam, has died from influenza in military camp even before going to across the Atlantic.

Cornelia Tanner, a nurse who knew her business, had snatched [Miranda] back from death with her own hands. "Nursing is nine-tenths, just the same," Miss Tanner would tell the other nurses; "keep that in mind." Even the sunshine was Miss Tanner's own prescription for the further recovery of Miranda, this patient the doctors had given up for lost...⁸

Porter gives great immediacy to this work by describing, based on her own experience, the atmosphere of the day, such as parades selling Liberty Bonds to support the war, the gossip about the European front, and the bells tolling in celebration of the signing of the ceasefire. Carol Byerly's recent book on the pandemic also mentions Porter's story.⁹

The literature of influenza also records an identifiable anti-establishment antipathy. Another literary work in which the influenza pandemic is the main theme is *Laughing in the Jungle*, by Slovenian-born American writer Louis Adamic.¹⁰

Among the memorable passages in this book are those describing how the soldiers conscripted in the American South to participate in Wilson's "war to make the world safe for democracy" and "the war to end all wars" include groups of uneducated men who were sometimes illiterate or could not understand English and how the camp degenerated into chaos as influenza raged through it. Adamic's company was quarantined and with thousands of men coming down with influenza every day, they could not even train for battle. At the height of the pandemic, an average of 70 men died every day, and by the time it had passed, one-fifth of the company was dead. The story proceeds as a conversation between a "sergeant" (Adamic himself) and a Bohemian-born officer named Captain Koska. The work is filled with condemnation of the influenza, criticism of the establishment, and antipathy for the war fever that pervaded U.S. society.

8 Porter 1939, pp. 203–204.

9 Byerly believes that the war human beings waged against their fellow humans was the direct cause of the pandemic. Also quoting Porter at the beginning of her book, Byerly states that "Adam" was Porter's fiancé.

10 This autobiographical account tells about the soldiers called up to be sent to the European front in the final months of World War I and how influenza contracted in their tents in a Louisiana camp decimated one-fifth of their ranks. Sergeant Adamic, the protagonist who appears under his own name, does not contract influenza, and is sent to France and deployed to the frontlines in the war. The book vividly portrays the soldiers' lives at the military camp, their transportation by train to the port from which they cross the Atlantic, conditions on the ship, conditions in Brest when they arrived, accidents at the front in which they are injured, and so on. It depicts the vast distance between the high ideals held by President Wilson and the realities of ordinary people, based on the author's personal experience. I learned about this author from the following site: <http://www.synapse.ne.jp/saitani>.

These depictions through the sensibilities of American writers give us a glimpse of the thinking of American intellectuals of the time. In a sense, such accounts are more persuasive than statistics, newspaper articles, and reports based on them, representing “facts” as far as people’s state of mind is concerned. Unscientific as they may seem, such accounts cannot be ignored. The works of writers inevitably express subjective sensibilities, and do not give a full picture. So now, let us look at the situation from the opposite point of view, through statistics and figures that tell about this period.

Spread of Infection across the United States

Alfred Crosby’s book includes a chart of weekly mortality figures for influenza and pneumonia from the second week of September in 46 cities across the United States.¹¹ Crosby also appends to his book another chart of weekly deaths from influenza and pneumonia for members of the army and navy on domestic duty.¹² According to the latter chart, between September and the end of November there were 21,193 deaths in the army and 3,137 in the navy. With the ceasefire on 11 November, many recruits were discharged, but many had probably already contracted influenza or would soon after, so the number of deaths is probably much higher in actuality.

The first feature we can observe from Crosby’s chart is how the influenza pandemic began in Boston and spread first to the large cities along the East Coast, then gradually westward, a matter of two weeks’ time, reaching all the way to the West Coast. The peak seems to have been the fourth week of October (20–26 October), the period around when the scenes depicted in Porter’s story must have unfolded.

The second feature the chart reveals, overlapping also with the third feature, is that the peak for some of the cities shown comes after the last week of November, the last week in this chart, and this applies to the cities further west. The peak for St. Louis comes in the week ending 14 December, while Denver, Grand Rapids, Kansas City, Milwaukee, and Spokane all peaked in the week ending 14 December. The peak in these cities, which are situated in the country’s Midwest and West, came about a month and a half behind the cities in the East. This time sequence in the spread of influenza can be readily observed in a sprawling country like the United States.

Third, although not detectable from Crosby’s chart, there are a number of cities that experienced a recurrence of the influenza epidemic in 1919. Although not as severe as the outbreak in the fall of 1918, New York in the week ending 1 February had 1,212 deaths from influenza, and even in the week ending 15 March, had 695 die from the virus. Indeed, by the end of March more than 1 percent of the population of the city had died

11 See Ministry of Health of Great Britain 1920, pp. 319–20. Crosby also cites this chart in his own work, Crosby 1989, pp. 60–61. The chart itself was originally based on data from the *Weekly Health Index* compiled by the U.S. Bureau of Census.

12 Crosby 1989, pp. 58–59.

from influenza or complications from it. High mortality is recorded for other big eastern cities such as Philadelphia and Pittsburgh. 1 percent may not seem like a large figure, but when we think that mortality in the United States in 1917 prior to the spread of the influenza was 1.35 per mil for whites and 20.4 for blacks,¹³ influenza raised mortality one and a half times.

Outbreaks Not Confined to 1918

The figures Crosby cites give just a glimpse of the situation, but as we can tell from the charts in his book, influenza struck major cities of the United States and then, in a relatively short period of time, vanished, although after-effects were visible for a long time in some cities. Most of the leading works on influenza in the United States speak of the “1918 pandemic” as if it were limited to 1918, but as mentioned above, a considerable number of patients and deaths are recorded also from the beginning of 1919 and even from the end of 1919 to early 1920. Of course, the situation that unfolded in fall 1918 was the first time such an attack had been experienced since the end of the “spring wave,” bringing a shock far greater than anything that would happen thereafter. However, not only in the United States but elsewhere, the influenza pandemic continued after 1918, well into 1919 and in many places until the spring of 1920.

On this score, the work of Dorothy Ann Pettit and Janice Bailie deliberately follows the different phases of the pandemic from 1918 through 1920.¹⁴ Their research makes extensive use of letters, diaries, and other documents by people who experienced the pandemic. They do not cite many statistical documents, but describe the situation in 1920.

Patients multiplied from around the middle of January 1920 in New York and Baltimore and new outbreaks of influenza and pneumonia were reported in Chicago on 15 January. In Washington, D.C., where enforcement of the 18th Amendment to the Constitution launching Prohibition began that very week, the secretary of state, the army chief of staff, justices of the Supreme Court and others became ill with “colds.” The weekly mortality figures for Washington, D.C. for January were 22 for the week ending the 10th, 27 for the week ending the 17th, 81 for the week ending the 24th, 181 for the week ending the 31st, and 164 for the week ending 7 February, after which the outbreak appeared to have come to an end. The weekly average number who died is smaller than that during the fiercer outbreak in the fall of 1918 shown in Crosby’s tables, but is comparable to that from the end of 1918 to January 1919.

All this taken together, it is clear that at the beginning of 1920, outbreaks occurred along the U.S. East Coast and later spread across the country. As I will describe below regarding Japan as well, it had swept over the entire nation by the end of April 1920.

¹³ Figures from Mitchell 1985, p. 113.

¹⁴ Pettit and Bailie 2008.

Although these later outbreaks were not as serious as those of the autumn-winter of 1918, they resulted in the second largest number of deaths of any such event in the twentieth century.

Mortality Calculated on the Low Side

Another problem with the record of the influenza pandemic is that those who have published on this subject, including Alfred Crosby, have quoted figures from the Ministry of Health of Great Britain report. For its time, the *Report* was by far the most reliable source, but in fact its figures were recorded on the low side of actual mortality from the virus. One problem is its publication in 1920, which limited the figures available to those for 1918 and 1919. Another is that the figures are based on those for death only from either influenza or bronchitis or pneumonia resulting from influenza. In fact, the patients who had earlier developed chronic bronchitis or phthisis and died should have been counted. “Excess deaths” (see Chapter 6, pp. 109–111) of such patients would push much higher the number of “deaths from influenza” than that of those who died of influenza per se and from influenza-associated complications of pneumonia, bronchitis, or meningitis. This question of the content of the figures takes on significant meaning with regard to Japan, where statistical figures of various sorts are easily accessible, as I shall explain later.

In fact, Crosby’s charts do not give figures for the whole United States, so they must be referred to within those boundaries. In many countries influenza at the time was not an illness that had to be reported under the law, and even more surprising is that there were some states in the United States that were not bound to report statistics on deaths to the federal government. Today, the number of deaths for the pandemic is believed to be at least 550,000. The population of the United States was 105,710,000 in 1920. Since mortality in those days was around 15 per mil, an average of about 1,580,000 died per year. So, the influenza pandemic seems to have increased mortality to about 5 per mil, but we may be advised that these are minimal figures and that many more actually perished from the virus.

Crosby mentions, in fact, that his initial interest in the influenza pandemic was sparked when he noticed in the almanac for that year the sharp drop in the life expectancy of Americans in 1918. An increase in mortality large enough to lower life expectancy occurs through the increase in mortality for young adults. The age ranges for those who died from influenza in this period results in a W-curve. In other words, the virus was all the more fearsome because it took the lives of not only the very young and the very old but also a large number of young adults between ages 20 and 40, the age group that ordinarily does not show high mortality, thereby shrinking the average lifespan in population statistics.

Between Panic and Distraction

In Boston, which first experienced the deadly toll of influenza, there were signs of panic as clearly absurd rumors circulated—due to strong anti-German sentiment—such as that German submarines had planted the virus on U.S. shores or that Germany had put poison in aspirin. Compared to the nations of Europe, where the fighting took the lives of millions of men, the American war dead was relatively small. Fear of death, or the meaning of “death,” therefore, differed greatly in the United States from the other countries participating in World War I. Because of that the mass media (at this time, of course, that meant the newspapers) in the United States reported on the extraordinary phenomenon of infectious disease-caused deaths far more clamorously than the media in the other countries.

The influenza struck suddenly, rampaging in the large cities and leaving several hundreds dead, in some places over two months. In Philadelphia, one of these cities, supply of coffins could not keep up with the demand and the mayor had to call on other cities to supplement its supply. Playhouses and movie theaters were closed and all kinds of public gatherings prohibited. Even church services ended up being held out of doors. Everyone wore facemasks and the hospitals were overflowing with patients.

Just at the time the pandemic was at its worst, however, the Great War in Europe was coming to an end. The Allies launched their final offensive at the French front, the Germans retreated and on 11 November, the ceasefire was signed at Compiègne in northern France. With the signing of the truce by Austria-Hungary on 3 November, the Kiel mutiny of German sailors on 3 November, the flight of the Kaiser and the transformation of the German government into a democratic republic (10 November), and the ending of the centuries-long Habsburg dynasty when the Austrian emperor renounced the throne, the political map of Europe was suddenly undergoing dramatic changes. In the United States, where the majority of the population was made up of immigrants from Europe, people’s attention was almost entirely focused on Europe. American newspapers devoted many pages to international news. Wilson’s “war to end all wars” was over, and President Wilson proposed the creation of the League of Nations. The United States began to take up a leading role in world affairs in place of an exhausted Europe, and international politics had become a lively subject of American public opinion.

Ironically, the ravages of influenza were in the process of taking literally millions of lives—far more than the toll of World War II—in places all around the globe. And just about the time that the war in which human beings killed more of their own kind than ever before in history had ended, their battle with an invisible pathogenic microorganism had begun. The pandemic, the most fearsome in recorded history, claimed victims faster than the bodies could be taken care of in almost every country.

In the United States, efforts by the military forces, the medical world, and health-care institutions, as well as by the local, state, and federal government agencies to cope

with the pandemic were substantial. Nevertheless, many doctors and other medical care personnel had been sent to the front in Europe, and often many of those who remained fell ill themselves, and there was a severe shortage of professional expertise to deal with the crisis. It was only fortuitous that the influenza struck suddenly and then passed on in a relatively short period of time. In the United States, the Second Wave arrived in the fall of 1918 over a period of about six weeks, in early 1919 over about four weeks, and in early 1920 over about six weeks, raging in a certain part of the country and then moving on to the next place. Apparently, many people who had once suffered from the virus had acquired immunity, limiting the extent of its spread.

Inequities of Suffering

The situation in El Paso, Texas, on the border with Mexico, offers an example of how the pandemic diversely affected certain areas differing in socio-economic conditions.¹⁵ In this city of 75,000, the pandemic hit in October 1918; more than 250 people were taken ill on the 2nd of the month, most of them army trainees from Fort Bliss. Although there was no quarantining, the city authorities were quick to close schools, churches, theaters, and other places where large numbers of people gathered. On 8 October, the number suffering from influenza rose to 1,800, half of whom were army trainees. Both army and civilian hospitals were full to overflowing and there was a shortage of doctors and nurses. The situation was the same across the border in Mexico, but the situation was critical in the Mexican quarter of El Paso, and on 15 October the newspapers reported that 37 people had died. The southern part of the city was home to large numbers of Mexican immigrants and sanitary conditions were quite poor for lack of social capital. The white population of the city showed no interest in conditions in the Mexican areas but General Pershing, commander of Fort Bliss, asked the city to do something about cleaning up that part of the city. In response, the city launched a clean-up drive, but it does seem that the poor sanitary conditions of the southern part of the city were El Paso's greatest problem.

In the middle week of October, 102 of the 131 deaths from influenza in that part of El Paso were patients of Mexican background. Volunteers helped fit out a school in the Mexican quarter as an emergency hospital in hopes of encouraging local people to seek medical care, but many refused to leave their homes and the death toll in October rose to 600. As this example shows, in the American South, the suffering was often harsher for those of poorer background.

¹⁵ Luckingham 1984, pp. 6–17.

United Kingdom

The outbreak of the second wave of influenza in the U.K. began in Portsmouth and Liverpool in September 1918.¹⁶ These cities were ports linked to the European continent, and the influenza most likely came in from France.

By annual mortality, the peaks for these two cities were the two weeks ending 5 October, next, for London the two weeks ending 19 October, for Bradford the two weeks ending 2 November, for Manchester the two weeks ending 16 November, and Nottingham and Birmingham the two weeks ending 16 November, showing that it swept over the entire island of England in six weeks. During June-July, England had experienced a relatively light “first wave” of influenza, but the “second wave” in the autumn took a much higher toll. A “third wave” hit in February 1919, but with fewer victims than for the second. In both the first wave and third wave, influenza occurred simultaneously in the cities mentioned above.

It is difficult for the U.K., as in the case for other countries, to establish clear figures for how many people died strictly from influenza. The Registrar-General of the time lists the deaths from influenza for England and Wales at 151,446, of whom 140,989 were civilians, but these figures have been frequently revised until it appears that about 200,000 died, and if the revised figures for Scotland are added, a total of 225,000 deaths is now believed to be the widely supported figure. The 1920 mortality for England was 6.3 per mil for England and 8.3 per mil for Scotland and 45 per mil of those who died were the young, between the ages of 15 and 35.¹⁷

The Ministry of Health of Great Britain *Report* provides color-printed images of the faces of three influenza patients,¹⁸ showing the progress of cyanosis from the flushed face of a feverish patient who has just contracted influenza to the more serious discoloration resulting from inadequate oxygenation of the blood as the functioning of the lungs declines with the spread of the virus. These images provide a valuable record of the condition of patients for that era before the era of color photography.

Pronounced Mortality

The Ministry of Health *Report* gives the number of deaths in London¹⁹ for the period of about a year between the week of 29 April to 5 May 1918 (18th week) and the week of

16 Johnson 2003, pp. 132–55.

17 See the footnotes in Johnson, in Phillips and Killingray 2003, p. 132. See also Registrar-General 1920.

18 Ministry of Health of Great Britain 1920, plates 1, 2, and 3, between pages 74 and 75.

19 The population of London can be defined in a number of ways. The city can be divided into Greater London, London Boroughs, and City of London. These statistics appear to be those for the London Boroughs (29 boroughs), which had a population of about 4.5 million at the time. See Winter and Robert 1997. The 1981 figures in the “Statistical Appendix: Tables. Table A4. Age-structure, London, female population, 1911 to 1921” at the end of the book gives the female population of London in 1918 as 2,350,742, and I use that figure here.

27 April and 3 May 1919 (18th week). It has tables indicating deaths by age group for four respiratory-tract illnesses (influenza, pneumonia, bronchitis, and phthisis).²⁰

The table shows clearly three waves of influenza that hit London in 1918 and 1919. The weeks there that were more than 500 deaths per week are shown as the 27th to the 29th weeks of 1918 for the first wave (1 to 28 July). The second wave occurred the same year from the 42nd week through the 51st week (14 October through 22 December), and the third wave fell between the 6th and 13th weeks of 1919 (3 February through 30 March). The high number of deaths did not happen suddenly, and especially for the first and second waves, within two weeks of normal times the number of deaths abruptly rose to over 500.

Nevertheless, regarding the number of deaths, some 200 to 300 people had been dying of respiratory-related illnesses for several weeks before the first wave outbreak occurred. The standard can be observed in the period before the first wave and between the first and second waves, giving a figure for the average year. The number of deaths between the second and third waves was nearly 500, quite a bit higher than for normal times. The number of deaths from influenza remained at a low level, but that for those suffering from pneumonia, bronchitis, and phthisis was somewhat high, raising mortality for this period somewhat higher than for the average year.

All three peaks are common in the pattern of death from illnesses, with an especially sharp increase for influenza. Deaths from pneumonia and bronchitis rise, but the figures for the second and third waves show a slight time lag. By age group there is a sharp increase for people in the prime of life (20–44). The figures for the 45–64 age group follow the roughly the same pattern of increase as those for the 20–44 group, while for the second wave, the figures for the 0–4, 5–19, and 45–64 age groups were roughly the same.

Pattern of Spread for the Three Outbreaks

Death in the case of influenza comes several days after the virus is first contracted, so the peak of the outbreak can be considered to have come about one week earlier than the peak in the number of deaths as is shown in these figures. For the first wave, there were virtually no deaths until the 25th week and then the beginning of an increase in the 26th week, so that means that the outbreak actually began in the 24th (10–16 June 1918) to 25th weeks (17–23 June 1918).²¹ As far as the British Navy is concerned, it is recorded that of the ships of the British Fleet anchored at Scapa Flow on the northern tip of Scotland, one tenth, or 10,313 men were influenza patients as of 10 May and the ships' departure was delayed three weeks as a result.²² The first wave came to an end in the 32nd week (week of 5 to 11 August), and the situation returned to normal.

20 Ministry of Health of Great Britain 1920, pp. 37–39. The Report defines the age brackets as 0–5; 5–20; 20–45; 45–65; and 65 and over, but I have changed the notation so that the age brackets do not overlap. I have also corrected one figure in the statistics that seems an obvious error.

21 Johnson suspects the date of the outbreak was 19 May. Johnson 2003, p. 146.

22 Crosby 1989, p. 16. See also Kolata 1999, p. 11.

For the second wave we can see signs of an increase from the 40th and 41st week, meaning that the outbreak began around the 39th week (23–29 September), roughly one week before patients were first diagnosed with influenza. The number of deaths from this second wave then jumped sharply, rising in the 43rd and 44th week (21–27 October and 28 October to 3 November), leaving a total of nearly 5,000 dead for these two weeks.

Deaths from the second wave had dropped off by the end of 1918 and the situation had returned to normal by the 4th week of 1919 (20–26 January), but then for a third time, the figures start rising, and that week, new influenza patients were appearing. The third outbreak of influenza was not as fierce as the second, but it was the 14th week (31 March–6 April) before a combined number of deaths from influenza and its complications fell below 500 as a whole.

Influenza in London seemed to have ended with the third wave. The pandemic had extended over the entire British Isles, but some remote islands such as the Isle of Eigg, did not experience outbreaks until March 1919.²³

In a report published in January 1919, in the space of eight weeks the Prudential Life Insurance Company had paid out 620,000 pounds on policies for people who had died of influenza and its complications, which was more than twice as high as the 279,000 pounds it had paid for direct victims of the war that was going on simultaneously.²⁴

France

The mutated influenza virus hit France in the autumn of 1918 at the port of Brest.²⁵ In September, 25,000 French soldiers came down with influenza and in the ten days between 26 September and 5 October, 30 of them died every day and 1,600 of them were withdrawn from the battle lines (accounting for one third of the French troops at the front). In ten days of October 36,000 soldiers contracted influenza and of those 2,400 died. In the year between 1 May 1918 and 30 April 1919, statistical data shows that 408,180 French soldiers contracted influenza (at a rate of 12.6 percent) and 30,382 of them died. This deadly form of influenza first hit the American Expeditionary Forces in the final week of September, the French army in the 12–20 October period, and lastly the British troops, from 27 October through 2 November. The epidemic hit those on the front lines less fiercely than those in the rear or in training. The rate of those who contracted influenza on the front lines was 10 percent, while those in the rear guard was 22.8 percent, and mortality was 6.3 per mil for the front lines and 17.7 per mil for the rear guard.

23 This small island is located to the west of Scotland. See Johnson, in Phillips and Killingray 2003, p. 148.

24 Johnson 2003, p. 150.

25 This account is based on Zylberman 2003, pp. 191–201. On the situation in Paris, I referred to Puklin 1993.

It is said that the toll among the general populace was about a third of that among the armed forces, yet the figure of 137,200 dead from influenza in 1918–1920 for the French including soldiers, seems too small to be true. When we add those whose condition progressed to pneumonia or bronchitis, the more reasonable figure seems to be that some 240,000 people, including soldiers, died in France in the fall of 1918 alone.²⁶ Mortality in Paris from influenza was 2.9 per mil, and here, too, if we combine the deaths from influenza-induced pneumonia and bronchitis, it rises to 3.5 per mil.

Apollinaire Syndrome

As in the other countries, in contrast to usual outbreaks of influenza, a large proportion of those who died were adults in the prime of life. This epidemic is called “Apollinaire Syndrome” after the surrealist poet Guillaume Apollinaire, who succumbed to influenza at a young age.

In Paris, in the final four weeks of September 451 people had died of influenza, but in the four weeks from 6 October through 2 November, that number multiplied 11-fold to 4,915. The death toll decreased from the middle of November, and by December, mortality in Paris was lower than for other parts of France. However, compared to the 127 people who died of influenza in Paris in 1917, 6,394 died in 1918, and 2,270 in 1919; even in 1920, there were 689 deaths and 45 in 1921 when the situation finally returned to normal (these figures represent those who died directly from influenza).²⁷

The ages of many who died from influenza was between 20 and 29 and between 30 and 39, a much larger number than for other age groups. With the outbreak of the war, many doctors were mobilized for the war front and the majority of hospital beds had to be set aside for the wounded and ill from the war. As influenza patients rapidly multiplied, at the end of September, doctors were notified that influenza was an infectious disease they were bound by law to report to the authorities, but with the shortage of hospitals and medical care personnel, many patients had to be looked after by their families, which led to a situation in which accurate numbers are not well known.

There is one point of difference in the influenza epidemic in France—especially Paris—compared to other countries. When the outbreak began in other cities throughout Europe, playhouses, movie theaters, and other places where people gathered in large numbers were all closed down, but not in Paris. The Opera, the Comédie Française, the Opera Comique, casinos, and other entertainment spots remained open and Parisians continued to enjoy their nightlife as usual.²⁸ This might seem typical for Paris, but in fact the fighting had been concentrated in the northern part of the country, and Paris had been a bombardment target only at one point. As the time of the ceasefire on 11

²⁶ Patterson and Pyle 1991. In the U.K. the death toll was 225,000 and in Germany 223,000.

²⁷ Puklin 1993, p. 74.

²⁸ See Puklin 1993, p. 74.

November approached, therefore, Parisians' attention was all the more focused on peace and the threat of influenza was pushed into the background.

Quite apart from this optimistic mood, meanwhile, mortality in Paris from influenza was very high, between September 1918 and May 1919 totaling 45,000 deaths from influenza and pneumonia. In Paris, too, the second wave was the most virulent, and as was the case in London, it was also hit by a third wave that also took many lives. The population of Paris at that time is presumed to have been about three million.²⁹

The pandemic was of course not limited to England and France but rapidly spread through the whole world, as detailed in such works as Alfred Crosby's book. There are also many studies of the pandemic focused on a country-by-country basis including fine studies of the Union of South Africa and New Zealand.³⁰ However, this monograph focuses on the influenza epidemic in Japan, so rather than go into further detail about these other areas, I will concentrate on observations about Japan.

29 Similar to the case of London, this estimate is based on the population (1.53 million) given for women in 1918. See note 19 above.

30 See Phillips 1990 and Rice 2005.

