

The Pursuit of a Pestilence

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AMERICAN history offers exceptional opportunities for the study of diseases which spread by personal contact because of some unusual conditions peculiar to the development of this country. Here, for example, the people were protected from these diseases by a broad ocean which became a less effective barrier as the transportation time was shortened; here people were subject to great differences in climate; and here, too, can be traced step by step the development of large cities. To express this more simply and in other words, American history can be utilized to throw some light on the everlasting warfare between disease organisms and their hosts because in this country one factor, the disease organisms, remained fairly constant while the other factor, the hosts, underwent significant changes. And most important of all, thanks to American historical societies, the medical records of those changes are surprisingly good and all that is needed is the desire to search them out.

The early epidemics should be of interest to other than medical historians because of the effects of these repeated and sometimes terrible "visitations" on other phases of colonial social life. Occasionally they had grave economic consequences, for when an epidemic swept through a small community and left "not enough well persons to tend the sick or bury the dead," as was so often literally true, not only was the economy of that community disrupted, but many of the survivors were left in dire financial straits. Boston was closed up once by the British, but four or five

times by smallpox. And not infrequently colonial newspapers, or town authorities through the newspapers, deliberately attempted to minimize epidemics in order to counteract the stifling effects upon the country trade.

Students of colonial military affairs are no doubt aware that the epidemics which broke out frequently in camps should be more thoroughly investigated. At Louisburg in 1745, to cite but one example, the name of the enemy that killed less than 100 men during May and June is known while the name of the enemy that during the following winter killed 560 men, or about one-quarter of the total fighting force, remains unknown. Sometimes these camp distempers were directly responsible for frightful epidemics among civilian populations, the diseases having been carried back home by sickly soldiers. This was true particularly of dysentery as can be amply demonstrated by the Massachusetts epidemics of 1745, 1756, and 1775.

The impact of epidemics on the religion of the times is reflected in the numerous sermons that were preached to the terrified and suffering people, for the clergy considered such disasters opportune occasions to drive home their solemn warnings. "I incline to preach a Sermon," wrote Cotton Mather on one of these occasions, "at a time when God makes their Hearts soft; and the Almighty Sends Troubles on them, that may awaken them to hearken unto the Maxims of Religion." For medical historians it is indeed fortunate that Mather's idea was shared by many of his fellow clergymen, for these sermons are now exceedingly valuable sources of information on colonial diseases. In at least two instances the epidemiological parts of the sermons are so valuable as to make them worthy to be considered among the foremost scientific contributions of the times. The first of these was a statistical account of throat distemper in New Hampshire by Jabez Fitch whose figures can now be interpreted as proof

not only that diphtheria was not a "new" disease as was supposed, but also as proof that immunity to it increased with age. The other was the younger Joseph Emerson's thanksgiving sermon preached at Pepperell in 1760 at the conclusion of four annual epidemics of what may have been typhoid fever. Had Emerson's observations been reported to a scientific society he would now be honored as a great American scientist, for not until that year had the epidemiology of a single disease been so well defined.

The particular pestilence which is the subject of this paper has had many different names but is nowadays known only as influenza. That name, influenza, coined by the Italians to signify the influence of celestial bodies on man's affairs, was first used in England during the epidemic of 1743, but was not used in this country, so far as I could determine, until after the Revolution. The colonial epidemics when given definite names at all were usually called "uncommon colds," "very deep colds," "pleuritic fever," or "malignant pleurisy." Since pleurisy usually implies painful respiration or coughing, and since the disease may occur when fever, not pain, is the presenting sign, there must have been some outbreaks when the nature of the disease was totally unsuspected. Before the history of influenza in this country can be complete there must be a re-examination of those epidemics that are known to us only as burning, malignant, mortal, wasting, or nervous fevers. These descriptive names were not applied to specific diseases; they mean only that the diseases could not be identified beyond their most noticeable characteristics—malignant or mortal fever when signs were ominous and the case-fatality rate was high; wasting fever when a great many persons died; or nervous fever when delirium was the outstanding clinical sign.

An indefinite descriptive name should never discourage the researcher in his attempt to discover the underlying cause of

an epidemic. Except for some seventeenth-century epidemics he can usually find ancillary data, such as town and church vital records, from which he may learn some gross characteristics of the disease. Such data, although frequently nothing more than lists of names, sometimes reveal enough information to allow one to say that a particular epidemic probably was or probably was not influenza. As an illustration, the Plymouth epidemic of 1620-1621 has on occasion been considered as influenza, and, indeed it had many characteristics of that disease. But the list of deaths shows that it took six months to spread through that small colony and therefore it very probably was not influenza because most colonial influenza epidemics swept through small towns in two or three months, seldom as many as four, even though the towns were five to ten times the size of Plymouth.

Whether the victims of an epidemic were mostly children or adults, which can frequently be determined from vital records, is sometimes helpful in distinguishing influenza from other common contagious diseases. During diphtheria and scarlet fever epidemics very few of the victims were adults. Adult victims of dysentery epidemics amounted to about one-quarter of the total. Although influenza attacked all age groups children withstood it much better than adults, for statistics when available usually show that adults comprise about two-thirds of the total deaths. During many colonial epidemics the fact was stressed that this disease was unusually fatal to those in the prime of life, the group that was expected to withstand epidemic diseases best of all.

Multiple deaths, or the deaths of two or more members of a family within a few weeks of each other, are also helpful in determining the nature of the disease. Influenza was one of the few diseases that frequently caused the deaths of two adult members of a family. The deaths of one adult and of one child were also common, but seldom does one find more

than two children in one family dying of this disease. Multiple deaths can also be used to determine the duration of the fatal illness. Tuberculosis frequently caused two or more adult deaths in a family, but deaths from tuberculosis and other chronic diseases were usually weeks or months apart. When two or more members of the same family died within a few days of each other the cause was usually a disease of short duration.

The season during which the epidemic occurred may also be helpful in determining the nature of the disease, because New England epidemics of intestinal diseases usually reached their peaks from August to October whereas respiratory diseases occurred more often in the other months. There are, of course, exceptions to the rule; nevertheless, one should be wary in accepting influenza as the cause of any late summer epidemic unless other evidence is pretty strong.

Although there may be good reasons to suspect that influenza caused many of the indefinite "mortal fevers," a final diagnosis should not be made without some clinical details concerning the disease. This does not mean that it is necessary to have exact descriptions written by doctors; on the contrary descriptions written by laymen and particularly by clergymen are much more valuable because medical men usually had theories to prove, treatments to justify, or (more often than not) reputations to establish. Not infrequently the physicians colored their observations to fit their fanciful theories, whereas a layman, writing to a distant friend or in his diary, had no reason to distort the basic facts. This clinical evidence need be only a one-line description of the disease or of its complications. In searching for influenza the mention of pleurisy or of peripneumony—the most common complications of this disease—clinches the diagnosis provided that there is at the same time ample evidence of an epidemic.

In the following account of influenza in colonial New England an attempt has been made to exclude epidemics of the common cold. It was said that some of the Pilgrims, after wading ashore from the *Mayflower*, came down with "grievous colds." References to colds appear with increasing frequency after 1660; and there is evidence that in the eighteenth century the common cold was as common as it is now. Joshua Hempstead, for example, caught colds two or three times a year after 1748; and David Hall also recorded his frequent colds particularly when he was unprepared for his Sunday sermons. It is sometimes difficult to distinguish these common colds from influenza and especially in the inadequately described seventeenth-century epidemics and more especially when mortality statistics on which the differential diagnosis frequently depends are missing or incomplete.

The early New England colonists, although familiar with coughs, colds and pleurisies, were apparently not familiar with a disease which could, as did the epidemic of 1647, appear in so many widely separated towns at nearly the same time "as if there were a general infection in the air." Beginning late in May this disease spread rapidly "through the country among Indians and English, French and Dutch," meaning presumably from Canada to New York. It spared no one, old or young, good or bad. The Reverend John Eliot thought it "exceeding strange . . . to have such colds in the height of the heat of summer," and also strange that nearly every one should recover, some after having been made very weak, but most after only a few days of light fever. Had it not been for the deaths of two of "the choysent flowers and most precious saints," John Winthrop's wife and the Reverend Samuel Hooker, it is doubtful if much would have been written about this epidemic for otherwise it seems to have been taken very lightly. "Everyone has

gotten a cold," wrote John Brock just as if that was all there was to be said about it. It was generally agreed that the angel had been sent with a rod to chastise and not with a sword to kill.

Unfortunately the few available vital records for 1647 do not show the effects of this epidemic, but John Winthrop made a crude estimate of the total casualties. "Few died," he wrote in an off-hand manner, "not above forty or fifty in the Massachusetts, and near as many at Connecticut." Eighty to one hundred deaths from one disease in an estimated population of 25,000 may not have seemed very unusual in those days, but by modern standards this epidemic will have to be classified as moderately severe. There is a chance, of course, that Winthrop's estimate may have been much too high.

It is impossible to evaluate references to colds during 1649 and 1650 because of the prevalence of whooping cough at that time. But the epidemic of "inward colds" that broke out in New Haven during the winter of 1654-1655 was without doubt some form of influenza because many of the patients had chills, fever, sweats, and headache along with their painful and difficult respirations—signs and symptoms indicating something more severe than the common cold. There were about ten or twelve deaths in New Haven. The same disease prevailed in Hartford during March; and in Windsor the deaths that year rose from an annual average of five to seventeen, about half of them adults.

Massachusetts also had an epidemic of colds this year, but the peak was reached apparently in late spring and early summer. Adult deaths in Boston increased slightly during June. When the Reverend Nathaniel Rogers of Ipswich died July 3, 1655, it was said to be the result of an epidemic cough. In Roxbury the "epidemicall sickness & faintness" reached its peak in July. Although written many years later,

Cotton Mather's statement that in 1655 "an epidemical sort of cough had arrested most of the families in the country" suggests that all of these New England epidemics were caused by the same disease. If so, it follows that influenza was sometimes very slow in spreading from one colony to another, which is what one would expect in those days of slow communications.

Letters written during the winter of 1660-1661 by many persons living in different parts of New England confirm John Hull's observations on an "epidemical cold" prevailing not only in every town but "almost upon every person." Hull did not seem greatly impressed with the seriousness of the disease, no doubt because his family had it "very gently," but John Davenport, possibly influenced by his son's alarming attack of pneumonia, wrote that in New Haven some were "very ill and in great danger." The conflicting clinical evidence makes this epidemic difficult to classify although an incomplete list of deaths in Boston tends to confirm John Hull's opinion.

Of the next epidemic, that of 1670, the only information is to be found in a letter written by Richard Smith to John Winthrop, dated New London, May 2, 1670:

Here is many pepoll deed att Rode Island the Later hand of wintar and this springe 30 or 40: Mr John Gard the Chife: others those you know not and verely sickly: still it takes them with a payne in hed & stomok & side on which folowes a fevor, & dyes in 3 or 4 days.

This will have to be considered as a probable influenza epidemic since there are not many fulminating fevers with pain in the side as a salient feature which can cause 30 or 40 deaths in a population of 5000. It may be an early example of a number of colonial influenza epidemics that now seem very peculiar in that they were confined to sharply circumscribed areas.

An unusual number of different "sad diseases" prevailed throughout New England during all of 1676. A few cases of

smallpox had appeared in Boston during December, 1675, and soon thereafter an epidemic of this disease broke out in Gloucester. Most of the deaths that occurred during the latter half of the year can be attributed to the bloody flux which began in August, especially in Boston. Aside from these two diseases, however, there were numerous outbreaks of a "mortal contagious fever" in various towns between January and June. Plymouth seems to have been hit the hardest for the disease was reported to have been "very mortal" there in January, yet as late as May and June the church was still observing days of fasting and prayer because of "war and sickness." Epidemics of "that fever" were also reported in Boston and Salem during January and February; and in April the inhabitants of Westfield, having been advised to withdraw to Springfield because of Indian raids, were reluctant to do so because many were dangerously ill of the "prevailing sickness." April was also a very sickly time in New Haven; and it was during 1676 that deaths in Windsor reached another peak.

Unfortunately not enough records have been found to solve all of these mysterious epidemics, although it can be said that some respiratory disease, probably influenza, prevailed in at least two other towns. In Hartford many persons, including numerous children, were suddenly seized during January with "a violent fever and pains in their left sides," but when last heard from most of them were "hopefully recovering." There may have been two epidemics in Boston during the first half of the year. Increase Mather, after recording the prevalence of "malignant fever" during the winter, appears to have attended still more sick families and more funerals during May and June when "almost every body was ill of the cold that was epidemical." Sewall also took more notice of funerals during May, and recorded particularly the death of Mr. Russell who had "drowned in flegm."

It is obvious that more research is required for a satisfactory explanation of the mortal fevers of 1676. We can safely say that influenza prevailed in some New England towns while these epidemics were progressing, but the exact diagnoses of the epidemics in other towns are not warranted by the material now at hand. The fact that influenza prevailed in England during the early winter of 1675-1676 may have some bearing on these "mortal fevers" of New England.

In March, 1694, the Reverend James Noyes, who took excellent care of bodies as well as souls, sent Samuel Sewall a vivid account of an epidemic in Stonington which had caused the deaths of twelve out of seventy patients within a few months. Noyes did not name the disease, but said that he himself had had a cold and cough and that his five-year-old son had been dangerously sick with "malignant putrid Pluretic fever," indicating the probability that some respiratory disease such as influenza was the cause of the epidemic. A different source reveals that the victims of this "very mortal fever at Stonington which they knew not well what to make of . . . [were] generally lusty young persons."

In Providence two members of the Hearndon family died on successive days in April most likely from some contagious disease; and in Rehoboth there was another epidemic which reached its peak in May, causing ten deaths all between ten and forty-seven years of age, four of them from one family. Cotton Mather's vague reference to "Angels of Sickness" carrying off "Some Scores" of persons in "Some Towns" probably means that the epidemic did not spread to Boston else he would have been more specific. In short, this epidemic was very much like that of 1670 in being severe yet confined to a limited area. The number of deaths distinguishes it from the mild respiratory disease that prevailed in Europe during the winter of 1693-1694.

The epidemic that broke out in Boston, Braintree, Salem and many other towns in eastern Massachusetts toward the

end of December, 1697, was without question caused by a "sore cold attended with a cough and feavor." In Boston and Braintree, where nearly everyone got the disease, "many dyed . . . and some dyed in a strange and unusual maner . . . some very sudenly." Incomplete Boston death records for that winter, while showing an increase in January, do not throw any additional light on the severity of the epidemic there. Braintree had twenty-four deaths that year, half of them adults. In the Wolcott family correspondence there is a letter from Salem dated February 15, 1697/98, saying that "the Great Colds among us" had caused the deaths of many "considerable" persons including three adult members of the Appleton family. Cotton Mather, while suffering his "exquisite Miseryes" for about a month, was one day confidently expecting to join the angels, and the ensuing exhaltation prompted him to record that he was overcome with "Tears of Joy." He had spent most of his life preparing for just such an event, yet when the critical moment seemed near at hand he suddenly changed his mind. "I resolved," he wrote, unaware of any inconsistency, "that I would keep out of those blessed Hands, yett for a while, if I could." Upon his recovery he published his *Mens Sana in Corpore Sano* (Boston, 1698).

Until clinical descriptions become available the sickness in Connecticut will probably have to be considered as a part of the same epidemic inasmuch as it began at the very same time. It lasted a little longer, however, and seems to have been very severe, particularly in Fairfield where out of a population of considerably less than 1000, seventy persons died within three months. For the next forty years those days were remembered in Fairfield as "The Sickly Winter." Late in March there was a day of fasting and prayer throughout Connecticut because of "great sicknesse, and also . . . the sharpnesse and long continuance of the winter season." Roger Wolcott implied that this epidemic prevailed through-

out Connecticut but no records of it in other towns have so far been discovered.

The seventeenth century closed with "Malignant Colds and Coughs" in Boston during November and December, 1700, "so epidemical that there [was] hardly a Family free from sore Inconvenience by them." Cotton Mather, prone to magnify any epidemic into a "Calamity," said nothing about fatalities, whereas Samuel Sewall, who usually took such matters in his stride, said that it was "mortal to many." No statistical information about this epidemic has as yet been found.

Up to this point there had been two outbreaks of influenza (in 1647 and 1697) of more than average severity which spread rapidly over most of New England, but just how far south they extended is unknown at the present time. The 1660 epidemic also spread rapidly, but the weight of evidence indicates that the disease at that time was not severe. There are indications that two other epidemics (1670 and 1694) were very severe but had definite geographic limitations. Not enough facts are known to warrant definite conclusions concerning the remaining three appearances of the disease. It is obvious that since our knowledge of these seventeenth-century epidemics depends so much on chance observations in diaries and letters, any conclusions concerning them may have to be altered as more source material is examined, except perhaps for those of 1647 and 1660.

For the eighteenth century there is a much richer record, consisting in the main of sermons, broadsides, proclamations, and especially newspapers, which make the task of the medical historian much simpler.

During the winter of 1710-1711 influenza raged violently in France and the Low Countries, whence it was carried by disbanded soldiers to England, where it acquired the name of "The Dunkirk Rant." Whether or not this epidemic was in any way responsible for subsequent epidemics in America

it is impossible to say, but, at any rate, a frightful epidemic started during August, 1711, in South Carolina. In mid-November, when most South Carolina epidemics abated, this one increased in virulence; and by that time four distinct diseases had been identified—"small pox, Pestilential Feavers, Pleurisies and Fluxes." In Charleston the daily burials increased from three or four in November, to five or six in January, and to nine or ten in February—a terrific death-rate for a town of 3000 inhabitants. The Reverend Gideon Johnson, believing that this was "a sort of Plague, a kind of Judgment" upon his sinful people, toiled night and day among the dying and the dead, but complained bitterly that he received nothing for his pains except a "few rotten gloves."

When the news reached Boston late in January, 1712, that 700 persons in Connecticut, including twenty-four members of the General Assembly, had died of a "Malignant Dis-temper" within two months, Cotton Mather naturally interpreted this as a heaven-sent occasion to preach a fitting sermon. *Seasonable Thoughts Upon Mortality* was off the press and liberally distributed in Connecticut before it was learned that the first reports were false and that "through God's Goodness . . . [there were] not above 250" deaths. This must have been a pretty severe disease since the terror caused by the numerous sudden deaths was still vividly remembered a quarter of a century later; but the nature of it seems to have been as obscure then as it is now. Mather obviously knew few details for his scientific interests certainly would not have allowed him to spend twenty-six pages spiritualizing melting snow had he known a single symptom or the name of the disease. His only statements which have any scientific value now were that the disease caused sudden deaths among all age groups, and that it was particularly severe among "Young, and Strong, and Hearty Men."

Joshua Hempstead of New London recorded the deaths of three adult members of the Lester family within one month, as well as the deaths of a few more who died after short illnesses during the winter of 1711-1712, but he said nothing definite about an epidemic. Nearby in Groton, and in Milford, there are a few gravestones suggesting the prevalence of a contagious disease among adults that winter and spring.

Jonathan Burt's broadside *Lamentation Occasion'd by the Great Sickness . . . in Springfield* contains a few verses which indicate that the same disease spread up the Connecticut River valley:

Three Couples in this Town did die,
the Husband and the Wife,
Follow each other speedily
ending their Mortal Life.
Some Young Men dyed in their prime
and flower of their Age,
Others that liv'd some longer time
ended their Pilgrimage.
Two Brethren dyed in one day
few Hours was between;
For Seventy Years the like, I say
in this Town was not seen.

Governor Dudley's February proclamation, Mather's *Seasonable Thoughts*, as well as some letters written later in 1712, all show conclusively that this epidemic did not reach Boston or its surrounding towns. The letters written from Boston contain no signs or symptoms referable to the Connecticut disease.

A "Second Breaking out of the Malignant Distemper that proved so Mortal . . . the last winter; especially in *Hartford, Weathersfield, and Glassenbury,*" appears to have reached its peak during September or October, 1712. The two outbreaks caused two hundred deaths in these three towns alone; and forty more were said to have died in

Windsor between August and November. The Reverend John Southmayd, apparently writing from memory in 1729, sent to Thomas Prince when the latter was gathering material for his *Chronological History* a letter describing the sickness in Waterbury during which twenty-one persons died between October, 1712, and the following September. "The sickness was so great that there were hardly enough well to tend the sick." There are some indications in the vital records that Southmayd included deaths from all causes during this interval and that this "Great Sickness" which Noah Webster guessed was "a species of putrid pleurisy" may have been caused by two distinct diseases, one prevailing in the autumn and the other the following spring. At all events the sickness in Waterbury has gone down in history while the other Connecticut epidemics have mostly been forgotten simply because Noah Webster happened to overlook them.

These epidemics in Connecticut and Springfield have been included in this article on influenza because many of them had epidemiological characteristics of that disease. It is probably only a question of time before confirmatory evidence becomes available, but until it does the diagnosis must remain in doubt.

Governor Shute, when composing his annual proclamation for November, 1717, in which he urged the people of Massachusetts to thank God for "continuing a great Measure of Health and remarkably keeping off Contagious Diseases when threatening to break in upon us," was either using stock proclamation phrases, as so many of our modern governors do, or was possibly thinking of the epidemic then raging in Jamaica, W. I. But by the time this proclamation appeared in the *News-Letter* (November 25, 1717), not only had the word spread far and wide (at least as far as Martha's Vineyard and New London) that most of November was "a very sickly time in Boston," but the

Governor himself had felt obliged to prorogue the General Court because of "the Sickness" before some "Affairs of Importance" could be completed.

When the annual records of Boston deaths are charted on a graph, the rise in 1717 (which, fortunately, includes most of the winter) does not appear very significant alongside the tremendous rise caused by the smallpox of 1721; but actually the increase in 1717 was about 100 over the previous twelve months. It seems justifiable to attribute all of these 100 deaths, if not more, to the epidemic in view of Mather's statement that in his congregation alone there had been "many more than twenty" deaths within two months, and that before the epidemic had run its course. Compared with other colonial epidemics this does not appear too startling, but in proportion to population it is the equivalent of more than 7000 deaths from one disease in modern metropolitan Boston within three months. It is not surprising, therefore, to find the chronically apprehensive Cotton Mather in his sermons (*Hades Look'd Into*, etc.) frequently referring to the "dreadful Feavour," "uncommon Mortality," and "horrible Slaughter." Samuel Sewall, too, had particular reason to be concerned about "the violent Fever," for among the early victims were his wife, Hannah, and his son-in-law, Grove Hirst. The funerals of Mr. and Mrs. Robert Winsor and of Mr. and Mrs. Henry Dering prompted Sewall to record that two double funerals on one day was a sight that had never before been seen in Boston.

In one of his entries Mather said that the epidemic was still worse in some neighboring towns, and although good accounts are difficult to find there is some evidence to support his statement. Benjamin Webb, Sr., made a few notes on the epidemic in the little town of Weymouth where eleven persons died within one month; and beginning November 30, 1717, "the Hand of God came forth against the Inhabitants of Concord in a very awfull manner sending a

very malignant & fatal distemper amongst . . . men women & children . . . [and mostly by] very sudden & unexpected deaths . . . removed not less than 27 persons" within three months. This was probably three to four per cent of the total population. In the Rehoboth records, Mr. Richard Bowen recently discovered an epidemic there of unknown cause; and on February 13, 1718, there was a private fast in Danvers "occasioned by a Sore Visitation, by Sickness & mortality." The vital records of Dorchester, Dedham, Braintree, and Newbury show enough multiple deaths to indicate the presence of a contagious disease; and, in fact, the General Court, when reconvening on February 6, moved for a "Day of Publick Fasting . . . throughout the Several Towns of this Province, particularly [because of] the Epidemical mortal Fever that is in most of them."

In proclaiming a general fast for February 27, the Governor said that "great Numbers of People [had] been carried off, and many of them Persons of Singular Note and Usefulness." Among those mentioned in the newspapers and elsewhere were Wait Winthrop, Elisha Hutchinson, Andrew Belcher, Dr. John Cutler, the wife of Dr. John Clark, Samuel Bridge, Hannah Meyelin and her son-in-law William Tilley, the Reverend George Curwin and the Reverend Nicholas Noyes of Salem, Captains Ebenezer and Roger Billings of Dorchester, and Mr. and Mrs. Timothy Dwight of Dedham.

Except for a few shore towns, Connecticut source material for the sickness during the winter of 1717-1718 is too scanty to warrant definite conclusions. Joshua Hempstead, though himself sick for about a month, recorded some multiple deaths in New London from "the distemper that I have." Mrs. Pemberton, his nurse for one night when he was "very sick and low," was stricken three days later and died on her fifth day of illness. There is some suggestive gravestone evidence of epidemics in Essex and Lebanon that winter, and an

epidemic in Lyme appears to have reached its peak in April.

The similarity in epidemiological statistics of various New England towns during the winter and spring of 1717-1718 justify the conclusion that this was an epidemic of a single disease. Apparently when fatal it was of short duration, because at least four of the Boston victims had attended Hannah Sewall's funeral and therefore they could not have been sick for very long. Obviously it was none of the childhood diseases which caused so many severe eighteenth-century epidemics, for the combined Weymouth, Concord, and New London records show that adult victims outnumbered childhood victims more than two to one. The adult multiple deaths and the season make the circumstantial evidence in favor of influenza fairly complete, but in order to make the diagnosis certain it is necessary to have some clinical evidence which is compatible with the epidemiological evidence so far obtained.

It is curious that the nature of the disease which caused the deaths of so many prominent persons in such a widespread epidemic should be so difficult to determine by an examination of the usual sources. The *News-Letter*, although the file for that period is complete, contains nothing of diagnostic value, in fact very little about the epidemic, probably because it was not news in Boston. Funeral sermons, frequently rich in just this sort of information, are, in this instance, sterile. The Hempstead, Mather and Sewall diaries contain a few suggestive hints, but they usually refer to the disease by some such name as "The Mortal Fever."

Fortunately there are two letters written by independent observers which go far to explain the epidemic as a whole. Writing to Jeremiah Dummer in London on January 25, 1718, Samuel Sewall said: "Lamentable Havock has been made amongst us, by a mortal Pleuretick Fever, whereby we are bereaved of many of our most valuable men." The diagnosis of the epidemic along the Connecticut shore rests also

on a single sentence in an unpublished letter from Peter Pratt, dated Lyme, April 23, 1718: "the Pleuritick Disease Rages here and has bin mortal to Sundry amongst us." Since most of the evidence indicates that the epidemic was caused by a single disease; and since the presence of some serious respiratory disease can be definitely established in at least two towns, the diagnosis narrows down to influenza as the only disease that could have been responsible.

Were it not for E. Burleson's broadside *Lamentation in Memory of the Distressing Sickness in Hartford* there would be very little known about the epidemic that caused the deaths of fifty-five persons between November 5, 1724, and February 20, 1725, for the early Hartford vital records have not survived. The broadside shows that at least two persons died in each of nine families; and it also states that "most were in their prime." Probate records exist for twenty of the twenty-eight males whose names were mentioned, which means that children must have withstood the disease better than adults. The broadside, however, discloses no clinical information.

Beginning about mid-January, 1725, another epidemic broke out fifty miles away in New London where, according to Caulkin's "Necrology," the deaths that year increased to eighty-four from an annual average of twenty-one. When fatal the disease was of short duration, some of the victims dying within five days. One died within eighteen hours of the onset. It was a disease of all age groups although adult deaths comprised about sixty-five per cent of the total. There were two deaths in at least six families. Hempstead said that this was "the most sorrowfull time that ever was seen in New London," and he seems to have been unusually busy "blocking & cutting grave stones."

Here, then, were two outbreaks statistically so similar that they appear to have been caused by the same disease. For this epidemic, however, the clinical information, while

not strong enough for a final diagnosis, is suggestive enough for a tentative diagnosis. Hempstead recorded that when his nineteen-year-old son was ill of the disease in New London he suffered so much from "Pain in his right Breast . . . [that] Mr. Miller let him bleed in the morn & bathed his Breast with ointment of Marsh Malloes." For the Hartford epidemic a prolonged search has resulted in the probate records furnishing the only clue. The administrators of the estates of Joseph and Mary Meakins paid eleven shillings for "Suggar & Rhum . . . in their Sickness," and since sugar and rum was a fashionable cough remedy throughout the eighteenth century it looks as if Joseph and Mary died from some respiratory disease. Thus there is both clinical and epidemiological evidence in favor of influenza.

The "fevers" in southern New England during the spring of 1722, and in Essex County during both the spring of 1723 and the winter of 1726, have some characteristics of influenza epidemics but no such diagnosis is justified from the inadequate descriptions at hand. In Dedham an "Uncommon Sort of Cold" prevailed during September, 1723, and again in May, 1727. The epidemic of 1732 should be considered in detail, however, because it is said that it was a part of an influenza pandemic, or an epidemic that spread throughout the world.

Considering the slowness of the means of travel and the fact that we are concerned with a disease which could have been transmitted only by personal contact, the 1732 epidemic of "General Colds" spread with remarkable rapidity throughout the colonies. It appeared first in Salem about mid-September, and within two or three weeks spread "all along to the Eastward, even as far as Casco." On October 5, it was reported that none of the towns to the south of Boston had become involved, but by late October it had reached Newport and towns on the Connecticut shore. New York and Philadelphia became involved by

November, and on December 12, the *Weekly Mercury* of Philadelphia reported that it was "exceedingly sickly" in the Lower Counties. Although no reports of the disease in the southern colonies are available, the *Mercury* concluded as a "reasonable supposition" that the disease had spread "throughout the whole Continent." Inasmuch as measles epidemics in those days usually took one or two years to spread over the same area, the above reports indicate an exceedingly contagious disease.

In respect to the severity of the epidemic the reports are difficult to evaluate because of local variations. At least it can be said that the disease was fatal for the infirm and the aged, and incapacitating for the others. Church services were suspended in some towns either because the ministers were sick or the congregations were "pretty thin." Of seventeen adult deaths in Salem within three weeks, five were described as "ancient standers." On Nantucket "several aged People" died. In New London there were two deaths in each of three families, yet the total deaths for the year in that town did not increase significantly. In New York some of the patients had "Pain in the Side"—the common name for pneumonia in that locality. In Philadelphia many elderly persons died "of the colds," and several young persons died "of the Pleurisy." There was a report from the Lower Counties that "the living [were] scarce able to bury the Dead." On the other hand, both Governor Belcher and Governor Talcott, probably comparing this epidemic with the smallpox of the previous year, said in their Thanksgiving Proclamations that the people should be grateful for the "general health;" and the *News-Letter* for January 11, 1733, mentioned "that Epidemical Illness with the Symptoms of a common Cold, which prevailed in the Autumn all over our Northern Colonies." On the whole, the epidemic in New England appears to have been more incapacitating than fatal, for in spite of numerous reports

on the prevalence of the disease in Massachusetts fairly reliable figures show no great increase in Boston deaths during 1732.

One curious aspect of this epidemic is that it invaded Britain *after* it had spread through the American colonies.

Noah Webster later said that influenza prevailed in Springfield during 1733, and according to the contemporary newspapers "Pluresy Fever" caused many sudden deaths during April, 1734, in New Haven, Rye, and other towns thereabouts; but not enough is known about these epidemics to permit profitable discussion.

Webster's statement that a "very severe influenza invaded both hemispheres" during the winter of 1737-1738 is somewhat difficult to confirm because most contemporaneous references to sickness in New England that winter pertain to throat distemper, a deadly disease for the children which had seldom been observed before that time. Early in November, however, the *News-Letter* mentioned that a number of persons, presumably adults, had died shortly after visiting their sick friends, but the report throws no light on the nature of this disease. Later in November the Reverend Thomas Smith recorded an outbreak of "pleurisy fever" at North Yarmouth; and about a month later the *News-Letter* reported that the mortality among the Indians afflicted with "a grievous mortal Fever" at Yarmouth was as high as fifty per cent. Ebenezer Parkman's diary discloses an unusual amount of sickness in Westborough where some had died of "the Quinzey" which at that time meant laryngeal inflammation from any cause. It was also very sickly at Braintree that winter "by the prevailing of a pluretic Fever and the Sore Distemper in the Throat." In other words there is confirmatory evidence that influenza prevailed in some New England towns, but Webster's estimate of its extent and severity will for the present have to be accepted more or less on faith.

Numerous secondary sources say that influenza "raged all over North America" in 1747. John Bartram's letters refer to a severe epidemic in Pennsylvania that year, but so far only two localized outbreaks in New England have been found. It was said to have raged in Dedham in 1747; and the Bidwell manuscript list of deaths in Hartford names two or three persons who died of "Malignant Pleurisie" during the winter of 1747-1748.

It is well known that the smallpox which appeared in Chelsea during December, 1751, soon spread to Boston where during the next six months it caused one of the worst epidemics of the eighteenth century. This epidemic had hardly reached its peak, however, when an epidemic of still another "fever" broke out among those who had been obliged to remain in town. The evidence for two separate epidemics is in the selectmen's minutes for April 22, 1752, which begin, "Whereas the smallpox and a malignant Fever now prevail in Town and several Persons have died of those distempers," and close with orders that every victim was to be buried in a tarred sheet without ceremony in the middle of the night. On June 5 Lieutenant Governor Phips issued from the Council Chamber in Concord—the Council having retreated first to Cambridge and then to Concord—a fast proclamation which discloses not only two separate epidemics but also the fact that they had spread to other towns: "Forasmuch as it hath pleased God . . . to visit the Capital Town of this Province, and other Towns within the same with a contagious Disease of the Small Pox, as also with a malignant Fever, which hath proved mortal to great Numbers of Persons. . . ."

Inasmuch as the *News-Letter* for February and March, 1752, contains numerous references to various outbreaks of throat distemper, it would seem that the two separate epidemics in Boston could be easily explained. But all references to throat distemper concern its prevalence "in some

Countrey Towns," and although one can trace its ravages among the children of Abington, Attleborough, Bridgewater, Framingham, Hanover, Hingham, Sudbury, and Weymouth during 1751-1752, no specific references to this disease in Boston have been found. There is additional evidence that the "malignant fever" was not throat distemper. March 12, 1752, was a day of fasting and prayer at Framingham "on account of a sore fever among them, accompanied by the throat distemper." Thus the evidence is pretty clear that at least three very serious and mortal diseases raged simultaneously in eastern Massachusetts during the first half of 1752.

The only document that has been found which helps to clarify these confusing facts is the diary of Israel Loring of Sudbury who, on being informed of the prevalence of "mortal fever" in Roxbury, recorded on May 7: "Thus, partly by the smallpox, fevers of one kind and another, and the throat distemper, we are wasted away." The nature of this mortal fever is explained by his entry for June 7, the day that Benjamin Loring of Hingham came to visit him in Sudbury. After saying that eighty children had died in Hingham and one hundred more in Weymouth from throat distemper, Benjamin went on to say that both Hingham and Weymouth had lost "most of their principal men by Pleuritic Fever."

Here, then, was smallpox causing hundreds of deaths in Boston and a good number in some of the larger towns, throat distemper causing hundreds of deaths particularly among the children in towns just to the south and west of Boston, and influenza superimposed on both of these diseases. It was truly, as Israel Loring said, "a dying time."

Beginning mid-December, 1753, in Holliston, roughly half-way between Boston and Worcester, and quickly spreading over a twenty-square-mile area to include Hopkinton, Marlborough, Medway, Mendon, Sherborn, Shrews-

bury, Southborough, Westborough, and Wrentham, the epidemic of what was then called "Putrid Fever" or "Malignant Fever" caused considerable alarm because of the frequent deaths that so often followed a few days after the patients were first attacked. Of all the eighteenth-century epidemics in this area this particular one was singled out to be remembered for many, many years as "The Great Sickness." Within a month of its first appearance forty-four persons, or more than ten per cent of the population, died in Holliston alone, and, as was said of so many colonial influenza epidemics,—"The Distress was so great that they were obliged to get Persons from the neighboring Towns to assist in attending the sick, and bury the dead." Within three weeks of its appearance in Holliston the disease had attacked twenty more persons in Hopkinton, roughly five miles away. The best contemporaneous description of this epidemic is in the Reverend Ebenezer Parkman's diary—incidentally an exceedingly valuable diary for medical historians of colonial New England because, as he does in this instance, Parkman so often supplies valuable, detailed, clinical information. He participated in many fasts while the epidemic was making headway, and at one of these in Hopkinton on the night of January 7, when the visiting ministers were obliged to tarry overnight because of inclement weather, a Doctor Wilson told them that "in the Fever there is much of pleurisy & peripneumony." In a subsequent entry Parkman called the disease "the Pleure-tick Fever." He also noted some gruesome details,—ten corpses awaiting burial on one day, and "for want of help, so many being sick and dead they draw some corpses to the graves on sleds," which was apparently a necessary but undignified way to bury people in those days.

This epidemic in Holliston well illustrates the economic distress that so frequently accompanied colonial epidemics. Of the fifty-three who died within six weeks more than half

were heads of families, and in four families both the mother and father died. The town was therefore obliged to appeal for assistance to the General Court which subsequently granted £26 "in consideration of the calamitous circumstances occasioned by the late mortal sickness that prevailed there."

Incomplete data preclude a compilation of the total deaths from the epidemic. It is known that nineteen died in Medway, and twenty-five more in Sherborn. Parkman said that the disease was also very fatal in Hopkinton and in Southborough. An occasional town appears to have been fortunate. David Hall of Sutton, although recording many cases of "fever" at this time, intimated that very few had died. In Wrentham at least sixty persons died during the whole year, but in some of these towns influenza was followed by throat distemper and dysentery epidemics in the autumn.

There is substantial evidence that the epidemic remained confined to this limited area. Boston newspapers in commenting on the deaths of Mr. and Mrs. Edward Goddard and of their two sons, the Reverend David of Leicester and the Reverend Benjamin of Shrewsbury, all within three weeks, referred to "this dreadful Fever . . . in that Part of the Country," meaning apparently that other parts were free and particularly Boston. Another newspaper item states that there were no deaths in Beverly during the first half of 1754. Even Bellingham, just to the south of Holliston, appears to have escaped entirely; and there are no deaths during early 1754 in the available Grafton records.

The diagnosis of influenza having been established for "Malignant Fever" in Boston and surrounding towns during 1752, and in Holliston and surrounding towns during 1754, it may be well at this point to review very briefly all the epidemics of the early 1750's since the disease appears to have broken out in different towns in an interesting se-

quence. Every attempt has been made to disregard all the numerous outbreaks of the common cold, and only those epidemics of respiratory diseases which were accompanied by moderate to severe mortality or which were definitely identified by some such name as "pleuritic fever" will be considered here as probable influenza. There is the possibility that these epidemics were distinct and unrelated outbreaks of pneumococcus pneumonia, not related to influenza in any way. Competent epidemiologists inform me that epidemics of pneumococcus pneumonia in a general population seldom occur, and that usually an influenza virus is the damaging invading organism which prepares the ground, so to speak, for secondary invasions by bacteria. So at the risk of over-simplification these epidemics will be treated as having been caused by influenza.

Although the rather severe epidemics in Falmouth and Gorham, Maine, during November, 1750, had some earmarks of influenza, they will be disregarded for want of detailed information, and the epidemic in the first parish of Beverly will be taken as the first outbreak of "pleuretick Fever" in this series. Little is known about it except that twenty-five of the thirty-five victims were adults and also heads of families. That spring was also a "melancholy time" in Scarborough from some still unidentified disease. There is good reason to believe that Massachusetts was free from influenza during the ensuing summer and autumn, but toward the end of 1751 severe epidemics of "Pleurisy & Nervous Fever" broke out in Dedham and Dorchester. In Dorchester most of the victims were "hearty persons, and many of them of middle age." As mentioned previously the spring of 1752 saw the spread of influenza to Boston and many surrounding towns; and "pleuretic fever" was also "exceedingly and remarkably mortal" in Wells and Biddeford. Some of these epidemics were still raging late in June.

It is curious that no more records of this disease have so

far been found for the winter of 1752-1753, but late in the spring of 1753 a "mortal fever" appeared in Grafton and a few towns thereabouts. Though no clinical descriptions or statistics concerning this particular outbreak have been found it is, nevertheless, included in this series because of the prevalence of "pleuratic distemper" in nearby Brooklyn just across the Connecticut boundary, and also partly because Grafton appears to have escaped the epidemics of the subsequent winter. The severe epidemics around Holliston during 1753-1754 have been treated separately. Thus it appears that influenza was a common disease during the early 1750's yet it did not spread rapidly over all New England in one devastating wave as the disease would be expected to do in modern times, but it kept reappearing here and there in apparently isolated outbreaks over a period of at least three years.

No records of influenza epidemics in New England have been found for the remaining years of the 1750's with the possible exception of 1756. That year was very much like 1675 with "diseases of various kinds . . . [occurring] in dreadful Succession." It, too, was a dysentery year, in fact one of the frightful dysentery years of New England history with abundant instances of multiple deaths of children especially during August and September. Despite all the epidemics during the early months of 1756 it seems as if every one deliberately avoided giving them names by which they can now be recognized. John Tucker called the January epidemic in Newbury "the wasting pestilence." Parkman made frequent notes on "malignant fever" in Marlborough and Westborough between January and March. David Hall, after noting a few cases of throat disease in children, mentioned a different disease of all age groups in Sutton which he called "The Nervous Fever." During May and June sickly soldiers were returning from Albany and Nova Scotia bringing with them "an Infectious Distemper" which

quickly spread in Boston. And in one of his sermons John Mellen of Lancaster made indefinite references to some "mortal distempers" and "contagious diseases." A few statistics in the vital records suggest influenza as a possible cause of some of these epidemics, but until clinical details are found that diagnosis cannot be made.

It is generally accepted among medical historians that severe influenza spread throughout most of the country during the winter and spring of 1760-1761. Early in September, 1760, rumors had reached the country towns that as many as twenty persons were dying in Boston daily, but the *News-Letter* of September 11, in denying such stories, said that there were not twenty deaths a week, yet acknowledged the prevalence of two diseases, the bloody flux and colds. Various sources indicate that by late September "Great Colds" were prevalent throughout Massachusetts, and October was "a tedious Time for Colds and Caughts" among the Massachusetts men in the camps around Ticonderoga. The *New London Summary* (February 20, 1761) said that "Great Colds" had prevailed in Connecticut throughout the autumn.

The first indication of severe influenza was the outbreak which began in Bethlehem, Connecticut, that November and caused 34 deaths, five of them in the home of Dr. Zephaniah Hull. "During this epidemic, a flock of quails flew over the chimney of a house, in which were several diseased persons, and five of them [meaning quails, I presume] fell dead on the spot." Webster thought that this was natural in view of the concentration of infected air. He was told that the disease was "malignant pleurisy" yet he preferred to call it "inflammatory fever, with symptoms of typhus" or "a species of winter fever." Other severe epidemics were reported in Connecticut between November, 1760, and March, 1761, particularly in Woodbury, New

Haven, and East Haven. It was said that many robust men in the prime of life died after a few days of sickness.

Nathaniel Ames had predicted in his *Almanack* that March 22, 1761, would bring forth "searching winds which produce Colds, Coughs and Pleurisies;" and Parson Smith of Falmouth, Maine, while saying nothing about the winds, wrote in his diary that the end of March was "a sickly, dying, melancholy time." Massachusetts had a second round of "colds" during the spring of 1761 when they "were never known to prevail so universally." Doctor Cotton Tufts sent Webster a description of the "malignant fever" which prevailed in Weymouth during April and May, a description which has been quoted as representative of New England influenza, but Tufts said that this disease was fatal only to the aged. In fact there is some doubt about the prevalence of influenza in Massachusetts during the spring of 1761. The May 28 issue of the *News-Letter*, in correcting another newspaper's account of the "mortal fever" in Halifax, said "That it was only a Cold, such as has prevailed in this and the neighbouring Towns lately."

Between 1763 and the coming of the War there were, as usual, many minor epidemics of coughs and colds, and every now and then there was a death recorded as having been caused by "a great cold" or the "rising of the lights" which were probably sporadic cases of pneumonia. There was also an occasional localized outbreak of probable influenza such as the fairly severe one in Newport during January, 1764, which Ezra Stiles called "a nervous pleuratic disorder." Timothy Dwight said (1811) that there was an epidemic of influenza in New Haven during 1771. The disease in nearby Southbury during March, 1771, does not appear to have been severe, at least the only harm it did to David Hicock, the school-teacher, was to exhaust his supply of cough medicine. "I got a gallon of Rumb at Ensign Hinmans at 4s. and 2

ounces of loaf sugar," he wrote in his diary on his first day out of bed.

The year 1772 was said to have been another influenza year throughout the colonies. Webster called the disease "epidemic catarrh" in one article and "influenza" in another. Doctor Tufts of Weymouth wrote on February 29 that "an epidemic cold or catarrhal fever was in almost every family" in Massachusetts, but he did not mention any deaths. March was "a very dying time" in Newport from the "universal cold which becomes either peripneumony or pleurisy as it seats on the lungs or side;" and forty persons died in Wellfleet from a "mortal fever." In Farmington two adults and a child in the Miller family died of "malignant pleurisy" and were buried in one grave; but the deaths in a number of other Connecticut towns show no great increase that year. Like the epidemic of 1732 this one is difficult to summarize in a few words. The disease appears to have spread more universally and to have been more severe than the usual epidemics of the common cold, yet it caused no great increase in deaths except in a few towns here and there which is a little difficult to explain. Isaiah Thomas wrote as good a summary as any one could in the March 19 issue of the *Massachusetts Spy*: "The cold, (a disease) which lately so universally prevailed in this province, we hear has circulated throughout the whole continent, by which many persons have died."

Before bringing this incomplete report on early influenza to a close it may be of interest to compare the early epidemics with the terrific epidemic of 1918 which most of us remember. It can be said at once that there were no colonial epidemics comparable to that of 1918 in respect to both severity and rapidity of spread. The only early epidemics that are now known to have spread rapidly over most of the colonies (1732, 1760, and 1772) were not very severe in

New England except perhaps that of 1760 which was severe in some Connecticut towns. The vital records of other Connecticut towns, however, show no increase in deaths.

The epidemics of 1670, 1694, 1724, and especially those of the early 1750's, are comparable to the influenza of 1918 in respect to severity, but those epidemics, so far as is known, did not spread to the other colonies. Some of them did not spread throughout New England. There were, however, a few severe epidemics which did spread over a good part of New England and may have spread further south, but until the "mortal fevers" of the other colonies are more thoroughly analyzed no such conclusion can be drawn.

The student of colonial influenza should bear constantly in mind that an epidemic was sometimes exceedingly slow in spreading from town to town. During the 1717-1718 epidemic, for example, it took two months for the disease to spread from New London to Lyme, a distance of eight miles, and numerous other instances could be cited. This is not very surprising when it is remembered that most New England towns were very small and that traffic along communicating roads was usually very light. Since the basic conditions on which the spread of epidemics depended were not at all comparable to those of modern times it should be more surprising to find any colonial contagious disease behaving as it does today.

The primary purpose of this paper, however, was not to present a mere catalogue of colonial influenza epidemics, particularly since our knowledge of them is so incomplete. The paper was intended rather as a plea for more research on this and other colonial diseases to the end that what may now appear to some as only a confusing array of dates will eventually appear to all as an interesting and important aspect of colonial social life.

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