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ORIGINAL ARTICLES.

CONTAGIONS AND EPIDEMICS IN AMERICA.

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The Address of the Retiring President Read before the Second Annual Meeting of the Ohio State Sanitary Association, held at Columbus, Ohio, February 5 and 6, 1885.

In the collation of the facts contained in this paper I have drawn from a great variety of sources. The first epidemic to which I allude is one usually referred to in histories of the North American continent, and in nearly all monographs upon the subject of ancient mounds and mound-builders, in explanation of the obscurity of their origin, and the theory that the builders became extinct by a great pestilence. But the first pestilence on this continent, of which we have undisputed proof, occurred among the Aborigines of the eastern coast, in 1617. How general this epidemic was remains an uncertainty; but in 1618-19 Captain Dermer, an English adventurer, wintered among the Indians; and as he coasted southward in the spring towards Virginia, he stopped in several towns that he had visited the season before. He says he found many Indian towns "totally depopulated." In other towns a few remained alive, but not "free of sickness." The disease, he says, was the "*plague*, for we might perceive the sores of some that had escaped, who described the spots of such as usually die."

In a sermon preached in Plymouth, Massachusetts, by Elder Cushman, in 1620, and which was published in London, mention is made of this epidemic. He says "they (the Indians) were very much wasted of late by a great mortality, that fell amongst them three years since, which, with their own civil dissensions and bloody wars, hath so wasted them, as I think the twentieth person is scarce left alive."

This epidemic spread along the coast from Naraganset to Penobscot. Plymouth settlers who went to Massachusetts bay to buy corn, "found among the Indians" (in 1622) "a great sickness not unlike the plague, if not the same." The Plymouth settlers found the "bones of many who had died, still unburied."

In 1633 a "pestilent fever" carried off 20 of the Plymouth settlers, and the small-pox appeared among the Indians with great mortality. It spread from Naraganset to Piscataqua, and westward to the Connecticut river.

In December, 1638, a general fast was observed by the Plymouth settlers, one of the reasons for which

was on account of the prevalence of "small-pox and fevers."

In 1647 an epidemic *catarrh* appeared in America. There died in St. Kitts and Barbadoes 6,000 each.

In 1655 appeared the second epidemic of *catarrh*. It was general in New England.

In 1659 the *cynanche trachealis* prevailed.

The legislature of Connecticut, in 1662, appointed a day of supplication "for the abatement of the sickness in the country" and "a supply of rain in time of drouth."

In 1666 the small-pox raged in Boston; and sickness, attended with great mortality, in New York.

In 1667 the small-pox prevailed in Charlestown, Mass., with the mortality of a plague.

In 1678 the small-pox prevailed in Boston, malignant diseases were general, and a blight fell upon fruits.

In 1692 a malignant fever visited Jamaica and Barbadoes, upon which islands 3,000 in each perished in that year.

In 1693 the fleet, under Sir Francis Wheeler, which was sent for the subjugation of Martinico, was seized with the "American plague" (doubtless yellow fever) and three-fourths of the seamen and soldiers perished.

In 1697-98 an epidemic *catarrh* was general; and *pleurisy*, as an epidemic, followed in 1698.

In 1699 in Charleston, S. C., and in Philadelphia the *yellow fever* raged with unprecedented mortality. It was called the "Barbadoes Distemper." The patients "vomited and voided blood." In Charleston the "principal officers of the government, one-half the members of the assembly, and many citizens died." This disease appeared in August, simultaneously in both places, and abated as winter approached.

In 1702 the general court of Boston adjourned to Cambridge, on account of the mortal small-pox, in Boston "attended with a sort of scarlet fever." In this year the assembly of New York met at Jamaica, Long Island, on the account of the prevalence and great mortality of yellow fever in New York city. It was called the "great sickness," and scarcely a patient recovered.

In 1712 epidemic *pleurisy* again prevailed throughout New England; and again in 1719 it prevailed in Hartford, Conn.

In 1720 the *yellow fever* devastated some of the towns in the State of Delaware; and, in 1723, in Martinico and Barbadoes.

In 1723, in Rhode Island, prevailed the "*burning ague*," as mortal as a plague; and in 1728 *yellow*

fever in Charleston, of a pestilential type; and malignant measles and epidemic *pleurisy* in portions of Connecticut and Massachusetts.

Small-pox was in Boston in 1730, and in 1731 in New York, as epidemics.

In 1732 epidemic *catarrh* was universal in America, and the following year spread over the whole earth.

In May, in 1732, appeared at Kingston, New Hampshire, a disease among children, commonly called "*throat distemper*." The disease was very malignant, with swelling of the throat, with white or ash-colored spots, an efflorescence on the skin, great debility of the whole system, and a tendency to putridity. Of the first forty patients *all died*. In August it appeared in Exeter; in September, in Boston, fifty miles distant, and continued to spread from place to place through that and the succeeding year, and passing to the southward it literally *stripped the country* of children. Although *very infectious*, yet it spared not the most sequestered spot, without any possible communication with the sick. In many families all the children died. It spread westward as least as far as the Hudson river. In 1737, while this *angina maligna*—for such it doubtless was—was spreading over the northern part of America, yellow fever was prevailing in Virginia, and epidemic *influenza* became universal—prevailing also in the West India Islands.

In 1739 the small-pox was in New York, and the yellow fever in Charleston, followed by measles over the whole continent.

In 1740 yellow fever was in Philadelphia and Virginia, followed, in 1742, by a universal epidemic of *angina maligna*.

In 1743 yellow fever again prevailed in New York, and in 1745 it was in Charleston, S. C. In this same year a malignant *dysentery* carried off *seventy* persons at Stamford, Conn., and one of the peculiarities of the epidemic was that it was confined to *one single street*. In this same year Albany, N. Y., was visited by a malignant fever, in which some of the patients turned yellow, and many who recovered were *left imbecile*. The Mohican Indians suffered severely by the same disease. *Dysentery*, of an epidemic character prevailed, also, in many localities.

In 1747 epidemic *catarrh* became universal, while yellow fever prevailed in Charleston and Philadelphia.

In 1749 *dysentery* and the "*nervous long fever*" prevailed in Connecticut, with great mortality. This was probably what we now call *typhoid fever*. It was then considered contagious, but there were many who had it contracted it from "the pestilential condition of the atmosphere."

In 1751 *dysentery*, in an epidemic form, and also *angina maligna*, became general, and prevailed for several years.

In 1755, in one town on Long Island, but two children were left alive—all else having died of *angina maligna*!

In 1760 *pleurisy* was again epidemic in Connecticut, and in 1762 yellow fever prevailed in Philadelphia.

In 1763 the Indians on Nantucket and Martha's

Vineyard suffered severely by yellow fever—two-thirds of their whole number dying in that year.

In 1770 *angina maligna* prevailed from Boston to Jamaica and West India Islands, followed in 1772 by epidemic *catarrh*.

In 1773 measles became general, and was characterized by secondary fever and tedious convalescence, attended with excessive expectoration. It seemed "that some discharged to the amount of their weight."

But the most fatal disease was the *cynanche trachealis*, or "bladder in the throat." In general there was little canker, but excessive bronchial and pulmonary secretion—very tenacious, and generally fatal. In some towns but few recovered. This was followed by an epidemic of *dysentery*, which was very fatal, ending in gangrene on about the third day.

In 1774 *scarlatina anginosa* was in Philadelphia; and in 1775 *cynanche trachealis* spread all over the northern part of America.

In 1776 epidemic *dysentery* appeared among the troops at New York and Ticonderoga; and in 1777 there were 4,000 cases of small-pox among the soldiers at Crown Point, Vermont. From this time on until the close of the Revolution, epidemics of *measles*, *scarlatina* and *angina maligna* prevailed to a greater or less extent. Measles, in New England, was of a very malignant character—usually of the kind called "black measles," and inclining to gangrene and putrescence. My impression is that this and some other diseases assumed the putrescent type, from the habitual use of *corn bread*, the grain of which did not fully mature in New England, but more particularly the habitual use of *rye bread*, in which flour there was a mixture of "blasted rye," or ergot.

In 1789 epidemic *influenza* became so general that it spread even to the solitary Indian in his hut in mid-wilderness. In Philadelphia, according to Dr. Rush, this *influenza*, in September, seemed to swallow up or absorb the prevailing *scarlatina anginosa*; but as winter approached it was succeeded by the *scarlatina*. The *scarlatina* which was epidemic in Philadelphia in 1789, did not reach New England until 1791, before which time it had been little known in that part of the country.

In 1790 *catarrh* again became universal; and in the following year it assumed a type of great severity in Pennsylvania and Virginia. In this same year, 1791, yellow fever reappeared in New York, and the remittents in Philadelphia assumed a type like hepatitis, as though the disease was modified by, or was possibly a full cousin to the prevailing yellow fever of New York.

In 1792 yellow fever was again in Charleston, S. C., and *scarlatina anginosa* was general in New England.

In 1793 in Philadelphia, appeared *influenza*, *scarlatina*, and mild *remittents*, in the order named, and late in summer they all disappeared or were *merged into* the prevailing epidemic of yellow fever. The latter disease carried off 4,040 persons in that season in Philadelphia alone.

In 1794 the yellow fever appeared in New Haven,

Conn., and spread along the coast; but in the following season, 1795, an epidemic *dysentery* carried off more people than had died of yellow fever during the preceding season.

In 1796 epidemic *dysentery* prevailed in Wilmington, North Carolina, which seemed to merge into, or was succeeded by, yellow fever. Yellow fever also prevailed in Charleston, Philadelphia, New York city, Newburyport and Boston.

In 1797 it was again in Charleston, Norfolk, Baltimore and Providence, Rhode Island. In this same year, *pleurisy* and *peripneumonia* became epidemic in some localities. In this same year *dysentery* was experienced in Portland, Maine. Some had yellow bodies; but, as some lived as long as thirty-six days, it is presumable it was an epidemic of dysentery assuming a typhus or malignant form.

In 1798, catarrhal fevers were general during the spring months; but later in the season, the most general epidemic of *yellow fever* that has ever visited this country supervened. It appeared in Philadelphia and in Boston in June, and did not break out in New York until August. This epidemic was not confined to cities, towns or villages, but became *general*; and in New York, toward its close, many had buboes and carbuncles, as in *true plague*. In New York 2,000 died of the disease, and it was everywhere esteemed *contagious*, although it had spread without any known means of communication unless it was the pestilential condition of the atmosphere.

The "jerks" first appeared at the "Cane Ridge" camp-meetings, in Kentucky. Peter Cartwright, the eminent pioneer of Methodism, says in his autobiography, that at Cane Ridge sometimes as many as 2,000 persons would all be jerking at once. Lorenzo Dow leaves a vivid description of it as it appeared in Tennessee. In clearing off a camp ground for one of the meetings he held there, the people cut off all the sapplings about six feet high, leaving the stubs *to jerk by!* His description of it at Knoxville, Tenn., bears date of 1803; but it appeared at Cane Ridge earlier. This singular disease did not seem to arise from the exaltation of religious fervor or excitement; for scoffers were often the first ones seized, and the most violently affected. The disease became somewhat general, I suppose, as I have heard my mother describe how the women's hair combs would fly, and how their hair would *crack*, like the ox-man's whip! and her knowledge of it was as it appeared to her in the province of Maine, I suppose, for she was there during her childhood. The latest epidemic of it, of which I have any account, was in McLean county, Illinois, in 1866, a description of which was sent me by a personal witness at that time.

The Asiatic cholera visited us in 1817-19, and again in 1832. The latter visitation appeared at Quebec, June 8, 1832; at Montreal, June 10; and thence pursued a rapid course up the St. Lawrence to the Great Lakes and the Valley of the Mississippi. Another column of it attacked New York on the 24th of June, and in its northward march laid siege to Albany on the 3d of July. The southward column, from New York, spread down the Delaware and

Chesapeake bays, reaching Philadelphia on the 5th of July, and Baltimore in the course of the same month. In November it appeared on an island off Charleston, S. C.; in February, 1833, in Havana; and before the close of the year it had overspread Mexico.

From 1841 to 1846, an epidemic of erysipelas of the throat, usually called "black-tongue," spread all over the United States. It was not infrequently complicated with pleurisy, peritonitis, meningitis or pneumonia. It was generally of an asthenic character, attended in some cases with œdema of the glottis and larynx, and suppuration of the glands of the throat.

The Asiatic cholera again visited us in 1848, invading New Orleans by way of immigrant ships from Havre, France. It spread along the Mississippi river, one column marching westward from St. Louis along the great overland route to California, strewing this obscure highway with the bones of more than 1,000 of those adventurous argonauts, besides other hundreds of Indians who were attracted along the route from curiosity. Another column marched eastward from Cairo, along the Ohio, reaching central Ohio about June, 1849.

During this epidemic 5,000 persons perished of it at Kingston, Jamaica, and in that island its devastations reached to Radner, and at other points in the parishes of Port Royal and St. Andrew,—3,000 feet above the level of the sea. In 1849 it prevailed here in the city of Columbus, and among its victims were Doctors Taylor, Gard and Butterfield,—physicians who stood at the head of the profession. In the months of June, July and August, 1850, there were *fourteen hundred* deaths by it in Cincinnati alone. In Ohio the epidemic, in many localities at least, invaded the country districts. In the village of Amity, Madison county, and its surroundings, about one-fifth of the population perished within three weeks.

The deaths in the United States probably reached 200,000; and it did not disappear entirely until after 1855.

In 1853 an epidemic of *yellow fever* prevailed in the lower Mississippi Valley. At New Orleans, in June, July and August, there were over 16,000 cases in the different hospitals alone, of whom over 8,000 died.

During the time of the civil war our armies were generally spared from any scourges from epidemic causes. This seems unaccountable, especially under some circumstances—as, for instance, within the stockade at Andersonville. There, from March, 1864, until April, 1865, 49,485 prisoners were received. The largest number in at any one time was 33,006. A small stream running from west to east passed through the inclosure. The borders of this stream soon became a quagmire; and there was drawn a line around the entire inclosure, nineteen feet from the inside of the stockade. This was the "dead line," beyond which none might pass without being summarily shot. Deducting the quagmire and the space beyond the "dead line," there remained to 30,000 prisoners about seventeen square feet to the man. A small shed, covered, but never inclosed,

was the only shelter ever furnished for all these thousands within the stockade. That these unfortunate thousands did not fall victims to some sweeping pestilence seems to set at defiance all known laws of health; but while 12,962 were carried out for burial, 3,952 are reported as having died of diarrhœa, 3,574 of scurvy, 1,648 of dysentery, 1,268 of *unknown causes*, of anasarca 377, typhoid fever 229, pneumonia 221, debility 198, intermittents and remittents 177, *gunshot* 149, pleurisy 100, bronchitis 93, rheumatism 83, varioloid 63, gangrene 63, catarrh 55, ulcers 51, and phthisis 36.

At Wilmington, North Carolina, just before the war closed, 10,000 of our men were brought in from Confederate prisons. They were carried by rail; and when night approached the trains were stopped and the prisoners *corralled* until morning. From one train-load, on the night before reaching Wilmington, 30 were left dead in the *corral*. At Wilmington, those who were able for transportation were sent north, whilst the others were cared for in and around the city. An epidemic—somewhat like a *typhus*—sprung up in the city. For over a month the death rate was about 120 a day—60 soldiers and 60 citizens! This disease followed our moving columns out into the country. At Goldsboro, Raleigh and Salisbury, within about one month I had about 140 soldiers detailed as division hospital nurses, *not one of whom*, I think, escaped from contracting the disease.

As a sample of its occasional malignancy, I recall one case. Dr. W. A. Spain, of the 80th Indiana Volunteers, who had but recently gone on duty at division hospital, approached my tent one day and said, humorously, that a new nurse from his regiment was certainly a *character*. The nurse had taken him into a tent, and carefully removing his shoe and stocking, had shown him an eschar reaching obliquely across his entire instep, which he said he had voluntarily made to avoid going into battle. Another eschar was shown which he said was made for like purposes, on another occasion. Upon which he deliberately drew on his stocking and shoe and went off to his duties. I told the Doctor that I supposed the case he had described was similar to several I had seen in the hospital—and that most likely—as the eschars were old and white—they had been received in childhood,—that his temperature was probably as high as 110°, his pulse frequent and weak, and his death not more than thirty-six hours ahead. The man was found on duty, after a long search for him, and my predictions found to be true as to disease,—and the second morning thereafter he was buried.

In 1866 emigrant ships again brought *Asiatic cholera* from Havre to New York. It spread all over the United States, and as far west as the Smoky Fork, in Kansas.

The next great epidemic was of *yellow fever*, in 1878. It spread along the Mississippi valley, from New Orleans as far north as the Ohio river, and up to Gallipolis. It was not confined to the cities along the Mississippi river, but invaded towns, villages and hamlets; and even the laborer and his family, in the

most sequestered places in Louisiana, Mississippi and middle and western Tennessee, were stricken by the disease. Probably 30,000 persons, in all, were affected by the disease.

During the winter of 1881–82 small-pox prevailed as epidemics in San Francisco and Chicago. A number of cases, in each city, that proved fatal, were in persons who had had previous attacks and were left badly marked by the first seizure.

In 1882–83 it was epidemic in Cincinnati, where about 4,000 cases occurred, with an aggregate of 1,600 deaths.

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I think it *impolitic*, as well as dishonorable, for sanitarians to claim too much power in the avoidance or suppression of epidemics. Diseases that are *infectious* alone are always avoidable; and most diseases that are *exotic*, by proper caution and untrammelled liberty of action, can be prevented from obtaining a foothold at any point along our coast or on our borders. But there seems to be a subtlety about scarlatina, diphtheria, epidemic cerebro-spinal meningitis, and a few others not yet fully comprehended; and all are probably *endemic*.

As to measles, whooping-cough, chicken-pox and mumps, they are among our milder contagious, and should probably not be avoided at all, unless it is for the purpose of postponing an attack until a more favorable part of the season. They are usually considered as diseases of childhood,—probably from the fact that they are easy of communication, and not avoided as other more deadly contagions are, and so overtake us before we are out of childhood; and, possibly, because they may be *spontaneously originated*, and then become epidemic.

It was probably demonstrated to the satisfaction of most surgeons, in the late civil war, that measles could be and often was *originated* by placing soldiers to sleep on damp straw. But whatever are the facts connected therewith, I look upon it as being as much the duty of parents to see their children safely through these common contagions, as to care for them through their period of teething, or to see to their education, or any other parental duty that fits them for the great battle of life. It should be looked upon as *destiny* to suffer from these milder contagions at some time in life; and as fewer die of them in childhood, in proportion to numbers, than die of them after maturity, it is better to have them in childhood, when loss of time counts for nothing, and home nursing is assured, than to wait until maturity, when, if the attack be fatal, the cost of raising would all be thrown away!

That *yellow fever*, of a sporadic character, sometimes originates in the United States, is probable; but if these sporadic cases are *genuine yellow fever*, there is no evidence that any of them have ever proved *foci* for an epidemic, or have ever proven infectious at all. At this age of the world, infectious yellow fever is a native of the West India islands, and epidemic Asiatic cholera a native of India.

A returned missionary of the Methodist Episcopal church, Mrs. Mary A. Scott Badley, who had been ten years at Lucknow, told me last year that in India

sporadic cases of cholera were *usual*. For instance, a wayfarer, weary, footsore and half-famished, would pluck an over-ripe cucumber from the tree and eat it, and by morning be dead of cholera as the result of his indiscretion; and yet these cases were not considered infectious or contagious, but that epidemics spread from cases occurring in crowded marts or great assemblages,—as they always do from the great congregations of religious pilgrims at Hurdwar.

But, from the careful study of most of the histories of the great epidemics of Asiatic cholera or yellow fever that have been transplanted to our continent, I think that *every one of them was preventable!*

When *once transplanted*, overcoming them or keeping them in subjection becomes quite another question, and may often eventuate in partial failure. The *materies morbi*, whatever they are, seem to become so extremely concentrated, widely and universally diffused, and *pestilential*, that even the birds of the air sometimes either disappear or die.

The safe and sure time to save property from destruction by fire is not when whole cities are ablaze, but before the torch of the incendiary is first applied.

CHRONIC HYDROCEPHALUS.

A CLINICAL LECTURE DELIVERED AT THE
GOOD SAMARITAN HOSPITAL,
CINCINNATI, OHIO.

BY F. FORCHHEIMER, M.D.

PROFESSOR OF PHYSIOLOGY AND CLINICAL DISEASES OF CHILDREN,
IN THE MEDICAL COLLEGE OF OHIO.

Reported by James M. French, M.D., Former Assistant to the Children's
Clinic.

GENTLEMEN: The clinical history of this child is as follows: He was admitted to the hospital October 11, and was at that time twenty months old. The family history was that the mother, the maternal aunts and uncles, and the grand-parents are healthy; the father died of phthisis. The record of the examination, at the time of admission, shows that the child was very anæmic and badly nourished; that he had a large, square head, and that the fontanelles were still open, the protuberance prominent, and the lymphatics generally enlarged. There was observed, also, a prominence of the sternum and lateral depressions of the chest. The liver and spleen were slightly enlarged, and there was a slight curvature of the spine in the dorsal region. There was slight dullness on percussion over the apex of the left lung, bronchial respiration, increased vocal fremitus, and a few râles. The diagnosis then was *phthisis in rachitico*. The child was put upon proper treatment, but without benefit. It was found that the appetite, which had been almost ravenous, began to diminish, and there were slight elevations of temperature in the evening, although there was never very pronounced fever. Never during the whole course of the trouble has the temperature been above 100°. It was further observed that the child's whole manner of behavior was becoming changed. When brought into the hospital, the child was apparently normal in his manners; he did not cry more than a healthy child would cry, he

was not fretful; but he has since then become more and more fretful. Instead of sitting up on the bed with the other convalescent children, and playing with them and the other rachitic children in the ward, this child preferred to be alone. He would lie down and could not be kept up; so he was finally put into his crib and kept there. It was then noticed, upon more careful examination, that the pupils reacted in a peculiar manner. They began to react very poorly to the stimulus of light. They would no longer contract to their fullest extent, but after contracting to a certain degree, their contractility would cease.

Furthermore, as the child's head was very large when he first came under observation, we began to take measurements of it; and we discovered that, whereas, on the second of November, the head measured just 48 centimeters in circumference, on the ninth of the same month it had increased one centimeter, and ever since the circumference has gradually but steadily increased. The child has been put, as I have said, upon what we consider the proper treatment, but with no effect. He has lost steadily in weight. The bowels, instead of being loose, as is the rule in rachitic children, have now a tendency to be constipated, so that it is with difficulty that he has a passage. In other respects that I shall show you, the child has been behaving in a manner that indicates but one thing; and what that is, we shall now see.

Those of you who remember seeing the features and expression of the child some time ago, when I brought him before the class, will agree with me that he has lost a great deal since he was here before. The first thing that strikes you is the intense anæmia. The skin, instead of being a beautiful pink, as a child's skin should be, is almost colorless; it is waxy. The child is also intensely emaciated. You see, too, all the evidences of rickets; the chicken breast, the enlarged abdomen, and prominent epiphyses everywhere. But what we wish to examine especially is the head of the child. You see the peculiar form of the head. I find upon examination that the fontanelle is still widely open, and that I can feel very distinctly the sutures. Upon measurement of the head, now, I find that it is 18¼ inches in circumference, whilst the circumference of the thorax is only 14¼ inches. That gives you a correct idea of the relative sizes of the head and chest; but you must not forget that the circumference of a child's head at that age is normally somewhat greater than that of the thorax. Nevertheless, there is normally no such difference as you see here.

You notice that the child has his hands up to his head all the time; I take the hands away, and they immediately go up again. You look at the child's face and you are at once struck with the fact that it takes up much less of the outline of the head than it should. The greater part of the face extends from the eyes up; in other words, the child's head is too large. You are probably aware that an artist, in drawing a typical face, draws first an oval outline. This he then divides, by a straight line running parallel to the long axis of the oval, into two equal parts. This straight line he then divides into two parts by a