SMALLPOX IN THE AMERICAN WAR OF INDEPENDENCE

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FEW diseases have exercised a more profound influence on the life of civilized peoples than smallpox. The celebrated passage in Macaulay's History of England vividly expresses the terror with which it was regarded at the end of the seventeenth century: "That disease, over which science has since achieved a succession of glorious and beneficent victories, was then the most terrible of all the ministers of death. The havoc of the Plague had been far more rapid: but the Plague had visited our shores only once or twice within living memory; and the smallpox was always present, filling the churchyards with corpses, tormenting with constant fears all whom it had not yet stricken, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to the lover." It is, therefore, somewhat strange to discover how little this dreaded disorder appears to have influenced the military and naval strategy of the period, before the discovery of vaccination at the end of the eighteenth century removed its worst terrors. History is for the most part silent either upon outbreaks of this disease in the armies and navies of the time, or upon the means adopted by the great leaders to protect their forces from its ravages. We know something of the measures taken by Marlborough for the care of his wounded, but very little about the incidence of smallpox, or, indeed, of other epidemic disease in an army which was operating in a country where it was certainly widespread. Similarly in the campaigns of Frederic the Great and Napoleon, history has nothing to tell us of any military operations which had to be suspended or came to a disastrous close by the advent of an epidemic. It may be objected that the great disaster of the retreat from Moscow is an instance to the contrary effect: but in that instance the retreat was dictated by reasons of military strategy, and it was not till hardship and starvation had consumed their strength that disease came to complete the ruin of the French. There is, however, one occasion in the later years of the seventeenth century in which the onset of an epidemic does appear to have dictated the strategy of the commander. When Schomberg faced the army of King James at Dundalk in 1689 his army was in a few weeks reduced from some twelve thousand men to five thousand effectives by an epidemic which killed more than six thousand. It was not smallpox: possibly it was typhoid fever: more probably it was epidemic dysentery. Whatever its nature it completely determined the course of the campaign. Even had Schomberg wished for a battle, and he was a fighting general, he could not possibly have entertained any thought of an engagement. "Wise and candid men," says Macaulay, "said that he

(Schomberg) had surpassed himself, and that there was no other captain in Europe who, with raw troops, with ignorant officers, with scanty stores, having to contend at once against a hostile army of greatly superior force, against a nest of traitors in his own camp, and against a disease more murderous than the sword, would have brought the campaign to a close without the loss of a flag or a gun."

Such can be the result of an epidemic ravaging an army. Yet of the most prevalent epidemic of the time, the smallpox, we hear nothing either in this or the campaigns of Marlborough.

One reason may be suggested, although I do not know that it can be supported by any authoritative records. Smallpox found its victims chiefly in childhood, and in the seventeenth and eighteenth centuries few persons arrived at manhood who were not already immune to the infection by the fact that they had survived an attack in their earlier years. So it may reasonably be assumed that epidemics of smallpox were not very probable in the armies and navies of the period, since almost every man had already suffered from the disease.

When, however, at the end of the eighteenth century the scene shifted from the crowded areas of Europe to the more sparsely populated American colonies the story is different. Smallpox was indeed a familiar disease to the inhabitants of the coast towns, and was known to be especially rife among the Negroes of the southern plantations, but it was by no means so universal as in Europe. From 1775 onwards, smallpox was the most dangerous foe which the colonists had to fight. In 1777, Washington wrote: "I know that it (the smallpox) is more destructive to an army in the natural way than the sword, and I shudder whenever I reflect upon the difficulties of keeping it out, and that in the vicissitudes of war the scene may be transferred to some Southern State." This passage occurs in a letter which he wrote to Patrick Henry, then the governor of Virginia, Washington's own native state, which had previous to the war enacted a penal law against the practice of inoculation with smallpox, and the letter explains why Washington had been converted to a belief in the necessity of inoculation in order to secure an effective army. But Washington had been compelled to challenge this law by nearly two years of experience of the power of smallpox to influence military strategy.

The story begins in 1775. The battle of Bunker Hill had been fought in June of that year, and the British army under the command of General Howe was in occupation of Boston, with Washington and his troops occupying the surrounding hills, and observing, rather than besieging, the town. He neither had the numbers nor the necessary munitions for a regular siege, but Howe was not prepared to attack him. Among the reasons for this inertia was the fact that there was an epidemic of smallpox which affected the citizens and to some extent Howe's troops. A British deserter reported to Washington "that there are two thousand sick among the troops in Boston, many of them ill with the smallpox." Probably, as we know that inoculation was the practice in the British army, these were men suffering from the inoculated disease. On December 4, 1775, Washington reported to the Continental Congress that "General Howe is going to send out a number of the inhabitants, in order, as it is thought, to make room for his expected reinforcements. There is one part of the information that I can hardly credit: a sailor

says that a number of them coming out have been inoculated with the design of spreading the smallpox throughout the country and the camp." Ten days later he writes: "The smallpox is in every part of Boston. The soldiers who have never had it are, we are told, under inoculation, and considered as a surety against any attempt of ours to attack."

So the situation remained, with Washington in fear of the disease and Howe paralysed by its actual presence, till on March 7, 1776, Howe notified Washington that he was about to evacuate Boston. Whereupon Washington issued a general order: "As the enemy has with malicious assiduity spread the smallpox throughout all parts of the Town, no officer or soldier may go into Boston when the enemy evacuates the Town." On March 17 he reported to Congress: "As soon as the Ministerial troops had quitted the Town I ordered one thousand men *who had had the smallpox,* under the command of General Putnam, to take possession." From these letters it appears certain that the long deadlock of nine months, from June 1775 to March 1776, was due in great degree to the existence of the smallpox in Boston and to Washington's fear of it for his army.

Paralysing as the influence of smallpox was on the military operations at Boston, it yet did not lead to any definite disaster to either combatant; but in Canada an outbreak of the disease was the deciding factor in the campaign. After the battle of Bunker Hill the Colonials were persuaded that the Canadians and the small British forces there were likely to make a descent on Albany. To anticipate such an enterprise they collected a small force of frontiersmen and sent it up to the St. Lawrence under the command of Benedict Arnold and Montgomery. This body after toilsome and hazardous marches had some successes and was able to turn their opponents out of some of the smaller fortified posts. They then appeared before Quebec, which was but weakly occupied. However, the British governor, Carleton, a man of great energy and force of character, threw himself with a few men into Quebec, and successfully resisted their first attack. The Colonials were, however, the stronger party, and maintained a siege which caused the greatest anxiety to Carleton. Had Quebec fallen it would probably have entailed the loss of the greater part of Canada. But in May 1776 when the Colonial forces to the number of about two thousand men were still pressing the siege, they were smitten by the smallpox. Nine hundred of their strength were sick, the majority with smallpox, and the mortality was very high. They were compelled to raise the siege and make a retreat to Crown Point on Lake Champlain. An account of these events was given in letters to his friends by one of those serving as an officer with the expedition, Charles Cushing. He gives an appalling picture of the conditions. "We have now been at Crown Point for eight days and since then have buried great numbers, some days not less than fifteen or twenty: but few have died except of the smallpox. Some regiments which did not inoculate have lost many and Colonel Reid in particular says that by the time it has gone through the regiment he shall have lost one-third of them."

Of this disaster one member of the Congress wrote to a correspondent: "Our misfortunes in Canada are enough to melt the heart of stone. The smallpox is ten times more terrible than the British, Canadians and Indians together. This was the cause of our precipitate retreat from Quebec." Another

contemporary letter says: "Our Northern army has left Canada and retreated to Ticonderoga and Crown Point. The smallpox has made great havoc among them. . . . In short the Army has melted away in a little time as if the Destroying Angel had been sent on purpose to demolish them as He did the children of Israel."

Nor did the situation improve much with the lapse of time. Months later, in June and July 1776, "Crown Point was not a camp but a lazar-house." General Thomas in command took the disease and died, and Sullivan wrote to Washington: "The raging of the smallpox deprives us of whole regiments in the course of a few days. Of the remaining regiments from fifty to sixty in each are taken down in a day, and we have nothing to give them but salt pork flour and the poisonous waters of this lake."

With such evidence it is hardly an exaggeration to say that smallpox was the main cause of the preservation of Canada to the British Empire, for although there was further fighting about the Lake, reinforcements began to arrive in the St. Lawrence, and by the time that, thanks to the adoption of inoculation, the American army was free from the disease, there was no longer fear for Quebec and Canada.

In several of the letters from which I have quoted there are references to the practice of inoculation. A quarter of a century later Jenner's great discovery of vaccination displaced inoculation as a preventive measure, but at this time the practice was recognized, and though reprobated by some medical opinion as a danger to the community because of the tendency of the inoculated disease to spread to an epidemic of the natural disease, it was accepted that under proper control the inoculated disease involved a mortality much lower than that of the epidemic disease, and that a community efficiently inoculated was completely immune from the ravages of an epidemic. In America, no less than in Europe, opinion was much divided and in some States, notably in Virginia, inoculation had been made a penal offence. This however had not put a stop to the practice, but by driving it to secrecy had increased its dangers. Individuals who believed in the efficacy of the method got themselves inoculated sub rosa, and even inoculated one another, without any attention to isolation, and so became the sources of an epidemic of the natural disorder.

In the British Army it seems to have been an established practice at this period. In 1793, there was published in London a small volume entitled "A View of the Diseases of the Army," by Thomas Dickson Reide, Surgeon to the 1st Battalion of the First (or Royal) Regiment of Foot. This book is one of the first examples—if not the first—of purely military medicine. But for my present purpose it is of considerable importance, because the Regiment landed in Canada from Europe early in 1776, and the whole period of its service there covered the years of the War of Independence, at the conclusion of which it went to the West Indies. The Regiment seems to have been on the whole fairly healthy and not to have suffered from any severe epidemic during Reide's service with it. But with smallpox, Reide and his commanding officer took no risks. The moment there was any chance of smallpox all who had not already had the disease were inoculated. Soon after its disembarcation the Regiment was ordered to Montreal, and in June 1776 Reide records: "The Americans having left some sick with the smallpox on their quitting Montreal the Commanding Officer ordered that

all who had not had the disease should be inoculated immediately. In consequence Mr. Offrell the Surgeon and I performed that operation on twelve or fourteen men: all of whom did well." This record incidentally affords some support to the suggestion put forward earlier in this paper, that comparatively few adults had not already had the disease. It is not very easy to discover from Reide's accounts the numerical strength of the battalion at various times, but at this period it was certainly not less than six hundred men so that well over 90 per cent of the soldiers had already had the disease.

Later on the Regiment was sent to garrison Niagara, and in view of the prevalence of smallpox in the surrounding country, "Major Campbell and I agreeing that such of the men, women and children belonging to the garrison as had not had the disease might be infected, I was directed to inoculate them; they amounted to thirty-two." And again, later, "Many of the inhabitants wishing to have their children and servants inoculated . . . from the 15th of December 1785 to the 7th of March 1786 I inoculated 182." When the Regiment went to the West Indies, a hot-bed of the disease, no cases of smallpox occurred. It would appear from Reide's records that properly controlled inoculation was effective and unharmful.

This contemporary evidence is valuable because it throws some light on the story of Washington's struggle against what he knew to be "more destructive than the sword." In spite of all his precautions the disease made considerable inroads upon his available strength, and by the end of 1776 not only had it seriously impaired his power, but—a fact which alarmed him even more—the fear of the disease had almost stopped the flow of recruits. These considerations, the ascertained efficacy of the practice of inoculation in the Northern army, which was in August reported as "entirely free from the disease," and the pressure of his medical advisers, determined him to adopt a system of wholesale inoculation of all who had not had the disease, and especially of all new levies. In January 1777 he wrote to Dr. Shippen, then the medical director of the army: "Finding the smallpox to be spreading much, and fearing that no precaution can prevent it from running through the whole of our Army, I have determined that the troops shall be inoculated. The expedient may be attended with some inconvenience and some disadvantages, but yet I trust in its consequences will have the most happy effects. Necessity not only authorizes but seems to require this measure, for should the disorder infect the Army in this natural way and rage with its usual virulence we should have more to dread from it than from the sword of the enemy. I would fain hope . . . that in a short space of time we shall have an Army not subject to this the greatest of all calamities that can befall it when taken in the natural way."

Congress at once passed the necessary resolution: Washington gave the orders: the soldiers received it with enthusiasm, and were inoculated in batches, the two churches in Morristown being used as the centers of the necessary isolation: and in a few weeks Washington was in command of a smallpox-free army, with his principal anxiety entirely and permanently removed. Even when the army moved South we hear little more of the dreaded complaint. It is on record that the deaths from the natural disease exceeded 16 per cent and that the mortality from the inoculated disease, when proper control was exercised, averaged but one in three hundred, and that

many regiments of five hundred men were inoculated without a single loss. More than all, the adoption of this measure removed one of the principal obstacles to recruiting. Gates's smallpox-free army forced the surrender of Burgoyne at Saratoga: and Washington's smallpox-free army went from strength to strength till in 1781 he was able to compel the surrender of Cornwallis at Yorktown.

I do not, of course, ignore the many other factors which enabled the American colonists to secure their independence: the military genius of Washington; the desperate plight of England with an Irish rebellion of formidable proportions on her hands in addition to a war with France and Spain; the strong feeling on the part of many Englishmen in favour of the American claims; nor least of all the magnificent spirit of American patriotism; but I think it is fair to claim that an intelligent and properly controlled application of the only method then known of defeating the ravages of smallpox, which in the years 1775-76 threatened to ruin the American cause, was a factor of considerable importance in the eventual outcome of the War of Independence.

There was one other occasion during these anxious years when smallpox exercised a decisive influence upon the course of military, or rather in this instance of naval, operations: and this time on our own side of the Atlantic. The episode is, I cannot say, forgotten, for it furnishes some of the most brilliant pages in Trevelyan's "Life of Charles James Fox": but it is so little familiar to the majority of Englishmen that the story will bear repetition. Napoleon, it will be remembered, considered that if he could have command of the Channel for two days the invasion of England would be an easy matter. In 1779 the French and Spanish fleets actually had command of the Channel for a period of four days, and as the naval historian remarks, "they did nothing with the opportunity." The French government had planned an invasion of the South coast, knowing that the main strength both of the Army and Navy was three thousand miles away on the other side of the Atlantic. In pursuance of this plan they had collected an army of 40,000 men between Havre and St. Malo: and provided transport for them. To secure command of the Channel they had formed a formidable fleet of their own ships and had arranged for a junction with the Spanish fleet. The combined fleet was vastly superior in numbers to any fleet which England could at the moment send to sea: but it was considered that a squadron under the command of Sir Charles Hardy could at least delay them and possibly, given favorable conditions, engage a part of them, before the French and Spanish had united their fleets. This strategy failed for the enemy fleets duly came together and in foggy weather eluded Hardy, and with the wind in their favor appeared off Plymouth. They were thus placed in great strength between Hardy's squadron and the Portsmouth squadron which was delayed by the same winds which brought the French to Plymouth. The British 64-gun ship *Ardent* was captured by the French within sight of the Hoe: and Plymouth hourly expected an attack in force, which there was but small hope of resisting successfully, for there were few troops, few guns, and almost no munitions of war. "England," says Trevelyan, "had never been so near to an immense and possibly an irredeemable disaster since the day when Admiral de Ruyter broke the chain at Chatham." The West of England rose

to the help of Plymouth: the Cornish miners marched in to the number of 6000 men; the Devon, Somerset and Cornish squires raised their men: and all possible measures were taken for an improvised defence. And yet the French did not attack. It was for them the golden opportunity, but they lay there for three days and made no effort. The reason was that they had smallpox on board, and far from being in a condition to fight, they were so weakened that it would have been impossible to maneuver their ships. On August 16, their sick were "at least equal" to the number of sound men. Their line-of-battle ships had many of them from 50 to 60 per cent of their crews hors de combat, and the dead were flung overboard in such numbers that it is recorded that "the inhabitants of Plymouth ate no fish for a month." On August 18, a wind increasing to a gale blew from the east and the weakened French and Spanish fleets were blown a hundred miles into the Atlantic. Hardy actually sighted them off the Scillies but could not engage them, and with the weather moderating made his way to the Channel and soon united with the Portsmouth squadron. The French commander, Count D'Orvilliers, by September had recollected his scattered squadrons, and had sent the worst of his sick into Brest, but at the same time informed his government that "The fleet was incapable of maneuvering in the fairest of weather and most certainly could not ride out a gale or survive a battle." Soon afterwards the Army of Invasion was dispersed, and with her fleets again united and strengthened England could again dispute the command of the narrow seas.

So ended a threat of invasion, which came nearer to success than either that of the Armada or that of Napoleon: ruined at the crucial moment by the incidence of the ghastly scourge of smallpox. In his defence of his conduct Count D'Orvilliers, relating the marked deficiencies of his equipment especially with regard to the prevention of sickness, made the general statement that all such business was better ordered in England: a somewhat curious remark to anyone who is at all familiar with the conditions of naval service in the eighteenth century. Yet after all I have not been able to find any Fleet operation of the English Navy paralysed by smallpox in this period so that it is possible that the Count's remark really expressed a known superiority of administration.