Typhus was a new disease in 1492. It came to Western Europe from the Levant, the first cases appearing in Spain in 1490. It was then taken to Italy by Spanish soldiers. The first mass European outbreak was in 1494. Thereafter, typhus was the most significant disease of armies, of the poor and crowded urban proletariat, of jails. It killed more soldiers between 1500 and 1914 than all military action. In cities, more died from typhus than from street accidents, crime and starvation. In jails, typhus killed far more than illness, torture or execution: it became known as 'jail fever'. Judges dreaded contact with prisoners, and smelt their posies of herbs and flowers in an effort to ward off the dreadful unknown ailment. 

The path and pattern of the disease was not known until just before World War I. In turn, the knowledge of how to prevent typhus led to the infinitely more lethal conditions of the trenches in France in 1914-18, which would have been impossible if clever men had not 'discovered' the typhus cycle. The clever men, of course, were acting from the best principles and the best motives, humanitarians all.

Some diseases are directly contagious or infectious; the pathogens pass from animal to animal by contact or the sharing of breath or by mouth. These are some of the most important human diseases besides smallpox: TB, measles, scarlet fever, chicken-pox, mumps, 'flu, and whooping cough. All have been in turn fatal, then serious, then endemic, then 'childhood' diseases and relatively harmless. Occasionally, a new strain appears, and becomes, successively lethal, then endemic, and so forth. Drugs have been found to deal with some of these diseases, notably TB. There is a vaccine for whooping cough. Most of the rest have become successful as diseases go.

There is another group of diseases, where there are at least two hosts involved. The Black Death, Pasteurella pestis, 'bubonic plague' needs fleas and rodents, as has been seen. Sleeping sickness needs the tsetse fly and cattle. Typhus was a third disease which moved between rats and humans and killed differentially. These double-parasite diseases were much more difficult to discover and 'cure' because of the sophistication of the pattern established by the successful organism. In short, all these 'successful' organisms established patterns difficult for humans to detect and interdict. Lateral thinking was required to trace the life of the parasites.

Typhus was no exception. For four hundred years, the problem was thought to be the smell of the great unwashed. Indeed, the poor smelt since they could not afford to be clean. The poor also had typhus, they were probably twenty times as likely to have typhus as the rich.

This kind of proof by association was common enough until this century. Malaria was connected with swamps, not with mosquitoes and plasmodia. The Black Death was connected with crowded cities, not with Pasteurella pestis and rats. The Red Plague, smallpox, was connected specifically with dirt, litter and unburnt rubbish as late as 1890-1900, even though vaccination could be proved to prevent it. The secrets of typhus were only unravelled a few years before World War I.

Typhus, according to an up-to-date account before the mystery was solved, had four stages. The first is that of incubation. This lasts from 7-10 days. 'Languor' was said to be the only symptom. As languor could be caused by many other factors, from insufficient nutrition to depression, this clue was not exactly helpful.

Then there are the symptoms of the second stage: rigor, chilliness, prostration, sleeplessness, feverish headache, and a temperature of 39 40°C (103-4°F). The pulse is rapid, the patient is at first excited, and after a week may become as feeble as the pulse. The tongue is at first covered with white fur, then brown and dry; appetite is lost, constipation is characteristic, urine diminished and highly coloured.

The third stage is that of the rash, which is very dark, the spots mulberry-coloured and often accompanied by a subcutaneous haemorrhage. The patient lies with his eyes open, on his back, with a stupid expression on his face, apathetic, but in the worst cases with a wild and maniacal look. The patient may also mutter incomprehensibly.

The fourth stage, at fourteen days, is the crisis. There is an abrupt lowering of temperature, a return of normality to the alimentary system, and a recovery. Alternatively, the patient may die. Death-rates from the disease came down from the high point when the disease was 'new' to an average of about 18-20 per cent which was noted in scores of statistical studies at the turn of the nineteenth century. At this level, typhus would have made World War I impossible.

The discovery of the cycle was rapidly followed by prophylactic measures which were developed during the two Balkan Wars of 1912-13. The cycle involves rats and their fleas, as with the Black Death. But the rat flea and the rat live happily with typhus and recover from any attack. The flea transfers its own parasitic passengers to the human louse, which then sucks human blood and infects one human after another. Certain prerequisites exist.
The virus Rickettsia prowazekii kills the human louse, as well as infecting the human being, guinea-pigs and monkeys, which, unlike the rats and the rat flea, are killed. Before death, the human louse not only can infect its own human host, but also move from human to human. Thus, proximity is necessary to the success of the disease. The louse may live happily on an immune native, but jump to a stranger, who is then infected.

Typhus needs cool climates, people in mass, especially strangers, the difficulties of hygiene associated with war and famine, and the retention on the body of foul clothing. Jails were, of course, ideally suited to the spread of the disease. Yet, though the disease was rampant in the eighteenth century, and though ships were often filled with jailbirds, outbreaks on board ship were rarer than in the army. This was presumably because ships were intolerable for the officers, without hygiene. There was also an ample supply of sterile water for washing. This came, at ambient temperature, from the sea. The lesser mortals in the army, however, had to suffer and die until the cure was discovered largely by the American Typhus Commission in the Balkans just before World War I. First, remove clothing, steam or boil same. Bathe soldier. Spray him with petrol (sic). Examine soldier for lice and nits. Allow him to get dressed in sterile clothing.

This procedure was standard in the Western armies once the static warfare of the trenches had become normal. Troops were deloused every time they left the trenches, and before they returned, say every two to three weeks. On the Eastern Front, in Serbia, Russia, and in Poland, typhus raged from the beginning of the breakdown of effective resistance to the Germans, which was as early as the winter of 1914 in the case of Serbia. Losses in Eastern Europe due to typhus in the period 1914-21 were at least double the casualties by direct action. It was only the prophylactic measures which made possible trench warfare.

Ironically, the good men who solved the problem, those hardworking doctors, nurses and health workers of the American Typhus Commission were many of them Quakers. All of them believed in peace rather than war. Yet, their efforts to prevent typhus enabled trench warfare to be developed in a way impossible to conceive without delousing stations. Out of their efforts came the ritualized slaughter of World War I in France. Perhaps this irony, like so many other ironies, is grossly unfair. If the Allies had not been given the benison of the work of the Commission, perhaps the Germans, much more alive to health and hygiene than the French or Belgians, would have deloused their troops first. In that case, the Germans would have won the war in the West as they did in the East. It is entirely possible that if Russian delousing had not broken down, the Russians would not have lost; in that case, no 1917 Revolution, no

Communism, no Nazism, no World War II, perhaps. These are extreme hypotheses. There is no doubt, however, that, from 1494 onwards, typhus was a more important factor for armies than strategy, tactics weapons, courage or leadership. Human beings, of course, do not like to think of such matters. How dull history would be if it were always due to some causative factor invisible to the naked eye.

Typhus, of course, was not only a disease of armies. It changed history first in Naples in 1494, where it made the continued siege impossible. The French king, Charles VIII, discharged his soldiers who survived the typhus-ridden investiture of the city without the formality of terminal pay or transport to get home. Not unnaturally, they lived off the country, in doing so, they spread typhus wherever they went. No one knows how many reached France, but it is certain that the attempt killed many more innocent Italian civilians than the actual warfare. It is possible that winter warfare became even more difficult than it had been before because of typhus in cold countries. Soldiers, huddled together to keep warm, may well have produced a death-rate too high to contemplate. Hence the safer summer 'campaigning season'. Typhus, of course, like other diseases, became milder. But as a killer, it exceeded all human efforts even in that most savage of all conflicts, the Thirty Years War. Typhus was particularly lethal in Germany in 1618-48. During that time, Germany suffered so much as to reverse the advances made during the renaissance itself, and to make of parts of Germany a cultural and intellectual desert. Typhus, of course, killed half Napoleon's army which went to Russia in 1812. Despite all the great man's efforts at vaccinating his troops against smallpox, no one could, at that date, have prevented typhus.

The disease was selective, in the Darwinian sense, like all diseases. It killed more Northerners, more men, more gregarious people rather than individuals, and above all more poor people. The death-rate in prisons was such as to make a penal policy hardly necessary.33 Above all, perhaps, typhus destroyed the already weak, those who were ill-fed, half-starved, those on the way to death from famine. In this case, was it more merciful? Perhaps half or more of those who died in the Irish Famine would have had the disease as the proximate cause of death.

It followed, therefore, that individualism, cleanliness, sufficient food and a sharp sense of the disagreeable nature of most other humans were protective instincts which were selected over the four hundred years during which typhus occurred in armies, slums and prisons. 'The great unwashed' became a group to be avoided, potential killers. It would be interesting to know whether the fever made more obvious class distinction, pity for the victim, or a useful desire to find a cure. Whatever
may be thought by anachronistic moderns, the evidence of the time does not suggest that typhus sufferers were regarded by the majority as anything more than people to be avoided. The avoiders of typhus were the selfish, the rural, the clean, the well-fed, and those who had no desire to commune too closely with others. The sharp distinction between countries with and without a long history of typhus will not escape the amateur of history.34

31 English judges still carry these posies in official processions, though prisoners are no longer lousy.

32 There is, of course, always a danger that a new strain of disease will prove lethal, or will emulate chicken-pox and encourage a relative into the human body. Chicken-pox, now relatively harmless, permits the ingress of the parasite which causes shingles many years later. Shingles is painful, quite unlike chicken-pox.

33 Death from disease was often considered a kinder fate than public execution.

34 Japan only became obviously lousy and carrying any kind of typhus in the summer of 1945; it is possible that the pathogen was brought over from Korea or China, and that the national breakdown at the end of World War II made it too difficult to contain the disease by hygiene.