



Polio: the virus and the vaccine

A special report by Janine Roberts

There is a rarely mentioned epidemic raging in the world today, one that is crippling children in more than 100 countries. In extreme cases the disease starts with a fever, which is followed by vomiting, delirium and spreading pain. Within days of being infected, the motor-neurone cells in victims' spines cease to function properly. Pain intensifies as victims' limbs are paralysed. In the very worst cases, their chests are also paralysed, which prevents them from breathing. Even when the children recover, the illness often returns in later life. Health authorities say it has no cure. The number of cases increased by over 250 per cent worldwide between 1996 and 2003¹. It is a disease with a long history and many names. The condition's official name now is 'Acute Flaccid Paralysis' but it was once known as 'infantile paralysis'/'poliomyelitis' (polio for short). Some people called it 'thecrippler'.

Polio is a devastating disease; the preferred method for fighting it is vaccination. Yet there is a mass of historic evidence that suggests it is not caused by a virus but by industrial and agricultural pollution

A shot in the dark

During the first half of the 20th century infantile paralysis surged like a bush fire, moving from place to place, afflicting large numbers of children, but only in the industrialised West. Prior to these outbreaks it affected very few and was often called 'palsy'. In the 19th century scientists gave it the name 'poliomyelitis', referring to the inflammation of the grey nerves of the spinal column in cases of paralysis. Poisonous metals were suspected of causing this

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disease, particularly lead, arsenic and mercury. In 1824 the English scientist John Cooke stated: 'The fumes of these metals, or the receptance of them in solution into the stomach, often cause paralysis.'² In 1878 the link between palsy and toxins was strengthened when Alfred Vulpian found that dogs dosed with lead suffered the same damage in their motor-neurone cells as found in the human victims of infantile paralysis.³ The

Russian Popow discovered in 1883 that the same damage could be done with arsenic.⁴ This should have sent shockwaves through the medical establishment as the arsenic-based pesticide Paris Green had been widely used since 1870 to stop Codling moth caterpillars ruining apple crops. But strangely it didn't. In 1892 Paris Green was replaced in Massachusetts by the more toxic pesticide

lead arsenate. Two years later the first recorded epidemic of infantile paralysis struck in Massachusetts' neighbouring state of Vermont. The outbreak was investigated by Dr Charles Caverly, who reported that it was probably caused by a toxin rather than a micro-organism. Caverly said: 'It usually occurred in families of more than one child, and as no efforts were made at isolation it was very certain it was non-contagious.'⁵

Lead arsenate rapidly became the principal pesticide used on fruit and berries throughout the industrial world. In 1907 calcium arsenate was introduced for use primarily on cotton crops and in cotton mills. A year later 69 healthy children suddenly fell paralytically ill in Massachusetts. They lived in a town with

three cotton mills, and in settlements downstream from those mills. Nearby there were also orchards on which lead arsenates were almost certainly in use. They were also living only a short distance downstream from the location of the Vermont outbreak.

A further epidemic in Massachusetts in 1908 caused enormous public concern, but, despite the evidence that exposure to toxins might have been responsible, the investigating health officials overlooked the newly introduced pesticides; they thought them essential to their war against viruses and bacteria – and to the financial health of the agricultural industry. Thus, the children paralysed in Massachusetts were not treated with toxin antidotes to see if these would benefit them. Instead, parents were advised to keep their children clean while the scientists, distracted by the then brand new theory that all epidemics had to be caused by infectious germs, looked for the virus 'responsible'.

In 1908 two scientists working in Austria, Karl Landsteiner and Erwin Popper, reported that they might have found an 'invisible virus' that had caused these epidemics. They had made their discovery, they claimed, after making a suspension in water of minced diseased spinal cord from a nine-year-old victim of infantile paralysis. They had tested this noxious suspension by injecting one or

two cups of it directly into the brains of two monkeys. The monkeys fell severely ill (as might have been predicted). One died and the other had its legs paralysed. The scientists then dissected the monkeys and found damage in their central nervous tissues similar to that found in human cases of infantile paralysis.⁸

Today the World Health Organisation (WHO) still credits Landsteiner and Popper as having found the poliovirus with this experiment. Why it does so is inexplicable. The fluid they injected must have contained much human cellular debris, any toxins involved in the child's illness, and probably several kinds of viruses. So, it was no wonder the monkeys fell so desperately ill. Such a soup could in no way be considered an 'isolate' of the tiny organism we now call a virus. It was also strangely non-infectious for a so-called virus, for the monkeys were not paralysed when made to drink it or when one of their limbs was injected with it, nor did they pass it on to other monkeys. The experiment, in fact, shed no light on what had paralysed the monkeys, and for that matter, the children.

Nevertheless, the following year Simon Flexner and Paul Lewis of the illustrious Rockefeller Institute for Medical Research in the US 'proved' a similarly made noxious soup was 'infectious' by injecting it into the brain of one monkey. They then extracted some fluid from its brain, injected this

Milk paralysis

Many infantile paralysis outbreaks between 1905 and the 1940s would be linked by doctors to supplies of contaminated milk, including one in 1927 in Broadstairs in Kent. The Broadstairs outbreak was fairly typical. It affected institutions such as boarding schools that had little contact with each other, but which took milk from a common source. These epidemics ended when suspected milk supplies were stopped. Lead arsenate was being used as a cattle dip, but the formaldehyde that used to be added to milk to prolong its 'shelf life' may also have been responsible. (In 1897 *The Australian Medical Gazette* reported that formaldehyde in milk had caused several cases of paralysis.)⁷

Polio: are pesticides to blame?

Endocrinologist Morton Biskind said the spread of polio after WWII was caused by the 'most intensive campaign of mass poisoning in human history' – the spraying of some 3.1 billion pounds of pesticides

The first epidemic of poliomyelitis in a tropical nation was contemporaneous with the introduction of the pesticide DDT in that country. Towards the end of WWII, US military camps in the Philippines started to be sprayed daily with DDT in order to kill flies.²⁹ Writing in *The Journal of the American Medical Association* two years after the war, Albert Sabin reported that poliomyelitis became, after conflict, the major cause of death among the troops stationed at these camps. And yet unsprayed neighbouring populations were not affected by the disease.³⁰ At the end of the war, the US military's stocks of DDT were sold onto the public – despite the gravest warnings from establishment scientists.

In 1944, the US federal research centre the National Institutes of Health reported that DDT damaged the same part of the spinal cord (the anterior horn cells) that is damaged in infantile paralysis. Endocrinologist Dr Morton Biskind further



THE LINKED HISTORIES OF POLIO AND PESTICIDES 1
1873 First pesticide sprayer patent granted
1894 US state of Utah orders spraying of fruit trees with chemical pesticides



1894 The first polio epidemic in the state of Vermont
1897 The permitted milk additive formalin (diluted formaldehyde) is discovered to cause paralysis

1903 The UK sets limits for the use of lead-arsenic pesticide

1907 Calcium arsenate introduced as a pesticide for cotton
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1908 Carl Landsteiner (below) and Erwin Popper claim the discovery of the polio virus



1908 Polio epidemic in Massachusetts

1917 Polio epidemic in New York State

1925 UK threatens ban on US apples treated with cyanide pesticide



'Especially those who ate the most fresh fruit'

The use of lead arsenate to spray orchards was widespread in 1930s America. Orchards were sprayed 10 or more times a year. Spraying occurred in summer, the season when children went down with infantile paralysis. Many researchers associated outbreaks of the condition with fruit supplies. The UK threatened to stop imports of US apples unless the pesticide level was cut. Tobacco and other crops were also sprayed. Today the soil in heavily sprayed areas remains so polluted that it is a major problem to housing developers: in many places the soil has to be completely removed.



into another monkey, and so on through a series of monkeys, paralyzing all of them in the process. Flexner and Lewis reported: 'We failed utterly to discover bacteria... that could account for the disease [paralysis]... The infecting agent of epidemic poliomyelitis [probably] belongs to the class of the minute and filterable viruses that have not thus far been demonstrated with certainty under the microscope.'⁹ In other words, we've injected a cocktail of viruses, cellular debris and DNA into a series of monkeys, and we believe that a virus, not yet identified within this noxious cocktail, is responsible! The procedure of Flexner and Lewis was just as dubious as their conclusion: they took no account of the contaminants in their mashed-up soup; they presumed what happened in monkeys would be replicated in humans; and surprisingly, given the evidence around at the time, they didn't inject samples of cyanide or lead into the brains of monkeys to see if they also caused paralysis. In 1910 neonatologist L Emmett Holt reported: 'Even five years ago if anyone had suggested that the disease under discussion was an

infectious or contagious one, it would have been looked upon as a joke.'¹⁰ Nevertheless, this crude science inspired a 40-year hunt for the infantile paralysis virus. All kinds of biological materials – spinal cord, brain, faecal matter, even flies – were ground up and injected into monkeys' brains to try to induce paralysis.¹¹

Meanwhile, US president Franklin D Roosevelt, himself a victim of infantile paralysis, set up in 1938 the National Foundation for Infantile Paralysis (NFIP). The NFIP promptly decided that there was no cure for those already suffering from the disease. It would also refuse to examine reports of successful treatment involving antidotes against toxins. It instead focused on raising money for vaccine research by releasing stories about the horrors of infantile paralysis. The worst cases were indeed frightening: some victims had to be placed in 'iron lungs' to help them breathe.

This advertising drive was sensationally successful, effective both in raising money and in spreading fear of

the poliovirus, especially among parents. But the authorities had little immediate help for them. They simply advised them to keep their children clean, away from places where infections could be passed on, such as public swimming pools, and to kill flies. The zeal of the parents was encouraged by advertisements showing giant flies attacking children. While the poorer families responded by swatting flies and using more soap and water, the more affluent tried to turn their homes into sterile zones by constantly spraying them with insecticides. But these sprays proved useless. And what was even more peculiar was that doctors reported the disease was affecting mostly the children from better-off families – especially those who ate the most fresh fruit. People thus started to call the disease 'the middle-class plague'. All this was so utterly inexplicable that parents were left feeling helpless and despairing.

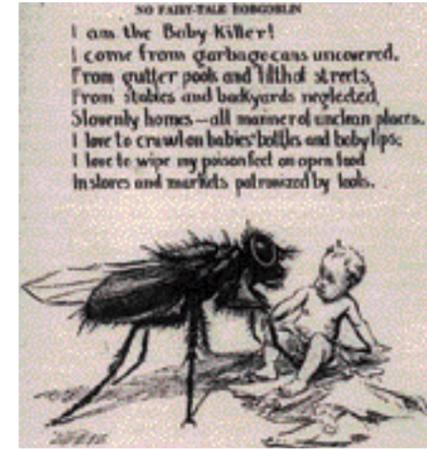
By the end of the 1930s the vaccine scientists had tested various 'viral isolates' from infected monkey brains, but when these isolates were fed orally to monkeys the animals did not fall ill. This was most puzzling. The monkeys produced antibodies afterwards, so some virus must have harmlessly infected them. The only way the scientists found they could create a version of infantile paralysis in the monkeys was by injecting large quantities of the 'virus' suspensions directly into their brains.

In 1941 the work of the virus hunters received a potentially fatal setback. Dr John Toomey reported in *The Journal of Pediatrics* that it was not passed between individuals 'no matter how intimately exposed.'¹² If the disease was non-infective, then it could not be caused by a virus and thus a vaccine would not work.

Other holes started to appear in the virus theory. During WWII army doctors found widespread immunity to the suspected poliovirus, and no evidence of infantile paralysis epidemics, in the

Middle East, Asia and Africa. In Turkey they found people who called infantile paralysis 'the American disease'. The doctors were surprised: immunity to the virus presumably meant that it had infected the population. So, how come it caused no epidemics in these countries?

However, the scientists racing to find a vaccine were so convinced that a virus was to blame that they effectively disregarded any evidence to the contrary. Among these it seems was Jonas Salk. In 1947 he found among the debris and toxins of 'viral isolates' from monkey brain experiments what he believed to be the poliovirus. Although he had not proved that this could cause polio in humans, he hoped he could use it to make a vaccine.



But the highly respected bacteriologist Claus Jungeblut thought otherwise. He observed that such 'viral isolates' did not create in monkeys the same disease as found in human cases of infantile paralysis.¹³ He concluded: 'The highly specialised ... virus which has been maintained in the past by intra-cerebral passage in rhesus monkeys is more likely a laboratory artefact than the agent which causes the natural disease in man'. In other words, the 'virus' found by the vaccine scientists probably did not exist in the wild but was a product of their experiments.¹⁴ If he were right, the consequences were vast. It could mean that the 'isolates' used by Salk to make a vaccine injected into over a hundred million people, had no relationship to the human disease it was supposed to counter.

Then, in 1948 Gilbert Dalldorf and Grace Sickles of the New York Department of Health triumphantly claimed that they had found the virus in the excrement of paralysed children.

They had spun a sample to remove larger particles, diluted it and injected it into the brains of mice. The animals unsurprisingly became dangerously ill and paralysed.¹⁵

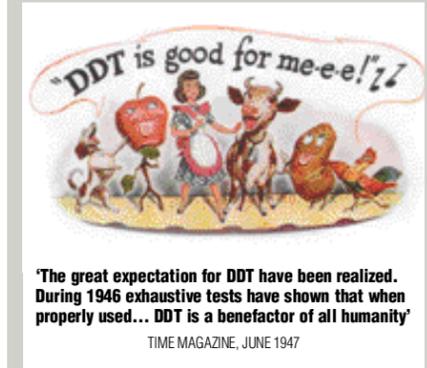
The news of Dalldorf and Sickles' experiment was nevertheless welcomed by the vaccine scientists. Up to now they had struggled to find the poliovirus in human spinal tissue. It would now be vastly easier to collect the poliovirus they believed they had identified from human excrement than from human spinal tissue. But why was it so hard to find it in the nerve cells in the spinal column that it supposedly damaged – that is where it had to be, if it really were the

cause of infantile paralysis? In 1951 they discovered a reason why. Quite simply, it was not always there. Instead a different virus might be present eg the Coxsackie virus. This news was grimly received. Their planned polio vaccine would not work against the Coxsackie. There was 'some feeling of dismay ... [this] added one more problem to the nebulous conditions surrounding poliomyelitis... the more we learn about poliomyelitis, the less we know,' wrote AL Hoynel in the journal *The Medical Clinics of North America*. A *Lancet* editorial in the same year said this discovery brought 'a crop of new snags' to developing a vaccine.

Soon they discovered that it was possible for many different viruses to be present in these damaged nerve cells. If toxins caused the disease, this would be easy to explain. Many kinds of viruses are attracted to toxin-damaged cells. More bad news for the polio vaccine scientists. The public expected them to deliver

Polio: are pesticides to blame? (cont.)

described in 1949 how DDT caused 'lesions in the spinal cord resembling those in human polio in animals'. He commented: 'Despite the fact that DDT is a highly lethal poison for all species of animals, the myth has become prevalent among the general population that it is safe for man in virtually any quantity. Not only is it used in households with reckless abandon so that sprays and aerosols are inhaled, the solutions are permitted to contaminate skin, bedding and other textiles.' The same year in Germany, Daniel Dresden found that acute DDT poisoning produced 'degeneration in the central nervous system' that seemed identical to that reported in severe cases of infantile paralysis.³¹



'The great expectation for DDT have been realized. During 1946 exhaustive tests have shown that when properly used... DDT is a benefactor of all humanity' TIME MAGAZINE, JUNE 1947

Yet DDT was used to replace lead arsenate as a pesticide in fruit farming and with which to wash dairy cows. Heavy levels of DDT were soon reported in milk supplies. The organochlorine pesticide DDE (which is several times more dangerous than DDT) was also widely used in the US. Both were known to penetrate the blood-brain barrier that protects the human brain from viral invasion. Housewives were actually advised to spray DDT to stop infantile paralysis. Children's bedrooms had wallpaper pre-soaked in DDT. Epidemics of infantile paralysis started to occur every year. By 1952 the number of cases of infantile paralysis was three times higher than the figure for 1940.

Biskind treated over 200 patients affected with such neurological disorders. He found that many of these patients recovered when foods contaminated with pesticides were removed from their diets; this applied

1933 THE LINKED HISTORIES OF POLIO AND PESTICIDES 2
Failed polio vaccine in St Louis: 100 of those vaccinated die

1938 President Franklin D Roosevelt's Foundation for Infantile Paralysis set up



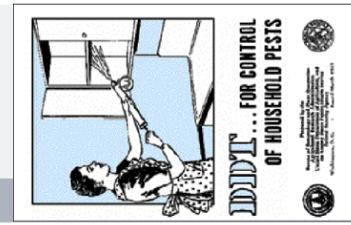
1941 Paralytic polio is shown not to be infectious; US army doctors report that there are no polio epidemics in the Third World

1944-1947 DDT found to cause the same damage to motor-neurons as is seen in paralytic polio



1946 US troops in the Philippines suffer a polio epidemic after DDT is used against flies on US army bases; neighbouring civilian populations are unaffected

1946 Lead-arsenate pesticide is phased out and replaced in civilian use by DDE and DDT



The case against the polio virus

When it was eventually photographed using an electron microscope, the poliovirus was shown to be tiny: an elegant sphere made up of triangular equal-sized sides, and in all just 25 millionths of a millimetre across. Is this 'poliovirus' the cause of infantile paralysis / polio? Or is it an ancient and harmless companion of the human race? All the evidence suggests the latter:

1 It had been around humans for thousands of years and in nature only reproduces in human throats or guts. Such viruses are normally totally harmless, since we have become adapted to them and they to us. It lived in the dirt ingested by human infants, and did not hurt them. Instead it helped activate their immune system, giving them a stronger resistance to illness.

2 If it were the dangerous pathogen that causes infantile paralysis, then it would be more common in countries with infantile paralysis epidemics, and less common in countries with no infantile paralysis epidemics. But the reverse is true.

3 To say it causes polio may violate one of the most famous laws of virology. These are called the Koch Postulates. They

set up the rules for declaring a disease to be caused by a virus. The 1st Postulate states that the virus must be found in every case of the disease as defined by its symptoms – but the poliovirus was not always present in such cases of poliomyelitis.²⁵

4 It widely infects children without causing them any illness. The Koch Postulates lay down that if it causes a disease, it should do so whenever it infects.

5 It seemed mostly to infect the cleanest children of middle-class parents. Infectious viruses are not supposed to behave in this way: they are indiscriminate as to social class, and do not thrive in conditions of good hygiene.

The US Centers for Disease Control and Prevention (CDC) has published a theory to explain this extraordinary behaviour. The

children of US middle-class parents were uniquely liable to fall ill with infantile paralysis because in their infancy parents kept them away from the dirt in which the virus lives. This meant these children were not infected when it was safest – while protected by their mothers' milk. Once again, this theory contradicted everything known about infectious illness: good hygiene nearly always stops epidemics; with infantile paralysis, the CDC argued, good hygiene was the cause.²⁶

Furthermore, the CDC's theory was based on the assumption that working-class children are uniquely exposed to ordinary dirt. Yet surely middle-class children also go out into the garden? The theory was also conceived without checking medical reports on the early epidemics of infantile paralysis. Referring to a 1908 epidemic in

Massachusetts, US health inspector Herbert Emerson noted that most cases occurred in households with no sewers and low hygiene. If the CDC's theory was sound these children would have had antibodies and been immune to polio. In reality, they were the ones who fell ill.

6 If guilty of causing paralysis, it would have to travel from the gut through the formidable blood-brain barrier that protects our brains and spinal cords. We still have not observed it doing this, despite many decades of intense research.

7 It is rarely found in human blood – the easiest route from the gut to the blood-brain barrier. Yet this is where Jonas Salk's vaccine was supposed to intercept it.

8 It has never been observed reproducing in victims' motor neurone cells.²⁷

AN ALTERNATIVE PROPOSITION
Poliomyelitis researcher Dr Ralph Scobey suggested in 1954 a reason

why viruses might be found on damaged motor neuron cells in cases of infantile paralysis. He posited that the body itself might activate or produce these viruses, perhaps when under threat or to clean up cellular damage. While 'the fundamental cause of human poliomyelitis appears to be a poison or toxin', Scobey said, 'the virus is synthesised or activated within the human body as a result of the poisoning'. He suggested that the virus might remain 'dormant' within cells until something activates it. We now know that the poliovirus can be dormant. It is also widely known that toxic-damaged tissues attract viruses. One of the standard tests for toxins, the Ames Assay, utilises the fact that if viruses mutate and multiply in the presence of a certain amount of a chemical then that amount is dangerously toxic. Scobey went on to list anti-toxins that had proved effective in curing polio, citing 11 scientific papers written between 1936 and 1949.²⁸

vaccines that would stop the epidemics, but it was now evident that their polio vaccines would, at the very best, only prevent some cases, the ones with their poliovirus present.

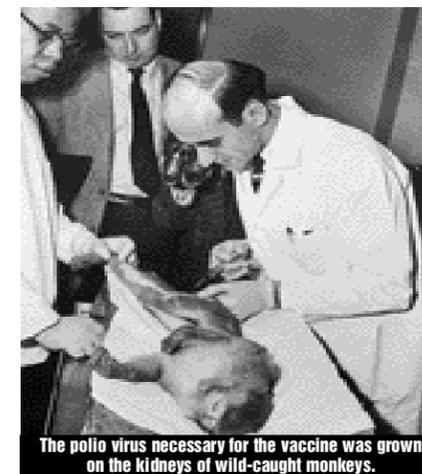
And yet despite all the doubts and contrary findings, the vaccine research continued. In 1949 John Enders and Thomas Weller discovered how to grow the poliovirus in cell cultures, rather than only in the brains of living animals.¹⁶ This made possible the commercial production of virus-based vaccines. Then it was discovered how to grow their poliovirus on cheap monkey kidney and testicle cells.¹⁷ Monkeys soon became the

'growing bed' for the virus. They would be trapped, imported and slaughtered by the hundreds of thousands to make the polio vaccines, and are still caught in the wild today for the purpose of testing the UK vaccine.

By 1954 Salk had his polio vaccine ready for testing. (He confessed to 'sacrificing' some 17,000 monkeys in the process of developing it) He based the vaccine on his theory that children would gain immunity to living poliovirus if dead poliovirus were injected into them. He hoped our sensitive immune system would react by creating antibodies to these

viral corpses that would also protect us against living wild poliovirus. To kill the virus he poisoned it with formaldehyde before putting it into his vaccine.

In 1954 he tested this concoction on more than 400,000 US children. It was reported afterwards that 'only' 112 of the children who received three jabs of his vaccine contracted polio within the next few months. Salk judged his experiment a success.¹⁸ But his safety-test results omitted all cases of children who were paralysed after one or two doses of the vaccine – or within two weeks of taking the third dose. These were counted as cases of polio in the non-vaccinated



The polio virus necessary for the vaccine was grown on the kidneys of wild-caught monkeys.

control group and thus in my view cast doubt on the validity of his results, for it made it impossible to tell just what impact his vaccine had had. It could have been that many of the cases of polio in the control group were caused by one dose of his vaccine – there was nothing in the published accounts I have seen to say that this was not so.

Salk claimed that his vaccine protected '30 to 90 per cent' of those who received it (a remarkably vague statistic). But more than 60 per cent could have been immune already, at least according to the theory of the US federal agency the Centers for Disease Control and Prevention (CDC)

Polio: are pesticides to blame? (cont.)

particularly to milk products. Biskind found high concentrations of DDT in butter purchased in New York. In 1949 he wrote: 'Though it was originally observed in 1945 that DDT is absorbed through the skin, accumulates in the body fat and appears in the milk of animals, it has recently become almost universal practice to spray cattle with DDT... Although young animals are much more susceptible to the effects of DDT than adults, so far as the available literature is concerned, it does not appear that the effects of such concentrations on infants and children have even been considered.'³²

Despite the official complacency about substances like DDT and DDE, a few doctors did consider the effects of toxins. Some reported successfully treating paralysed patients with dimercaprol, an anti-toxin that is still used in hospitals since it 'binds' heavy metal poisons such as arsenic and lead and renders them non-toxic. In 1951 Dr Irwin Eskwith reported successfully using dimercaprol to cure a child suffering from bulbar paralysis, the most severe form of infantile paralysis.³³ A medical journal also reported that 17 acute cases of polio were cured after treatment with very large doses of another anti-toxin – ascorbic acid.³⁴

A year earlier investigators from the US Food and Drug Administration (FDA) had announced: 'The finding of [liver] cell alteration at dietary levels as low as five parts per million of DDT, and the considerable storage of the chemical [in body fats]... makes it extremely likely that the potential hazard of DDT has been underestimated.' Polio epidemics had been becoming more and more severe from 1945 onwards. Biskind reported that this was due to the 'most intensive campaign of mass poisoning in known human history', the spraying of some 3.1 billion pounds of pesticides.³⁵

In a 1953 paper published in the *American Journal of Digestive Diseases* Biskind said: 'It was known by 1945 that DDT is stored in the body fat of mammals and appears in [their] milk... Yet, far from admitting a causal relationship [between DDT and polio] so obvious that in any other field of biology it would be instantly accepted, virtually the entire apparatus of communication, lay and scientific

THE LINKED HISTORIES OF POLIO AND PESTICIDES 3			
1948	Dalldorf and Sickles claim to have isolated the polio virus from the excrement of polio victims		
1950	The US Food and Drug Administration reports on damage caused by DDT		
1951	Gamma globulin, after having been injected into thousands, fails as a prophylactic against polio		

1951	A US Public Health Service report criticises DDT		
1951	New York stops vaccinating for whooping cough and smallpox in the summer polio season, as the vaccines are found to make children more susceptible to paralysis		

1952	The largest of the polio epidemics kills 3,000 people		
1952	US calves found to be paralysed by organochlorines; restrictions imposed on pesticides		



that working-class children were already immune as a result of exposure to the virus in dirt. It is not known if Salk ever checked to see if children were already immune before he vaccinated them, but Hilary Koprowski reported in 1957 that the inhabitants of the Congo were 85 per cent immune before they ever saw a dose of polio vaccine. (Amazingly this didn't stop Koprowski. He went on to uselessly administer to them hundreds of thousands of doses of his experimental vaccine.)

The Salk vaccine could have been derailed if a 1954 report by Dr Bernice Eddy, the scientist in charge of the US government safety-testing lab, had been taken seriously. Eddy stated that when she tested the Salk vaccine it caused severe paralysis in monkeys. She photographed the diseased monkeys, took these photos to her boss – and was reprimanded as an alarmist. She was not sure what it was in the vaccine that caused the paralysis: was it a virus, cellular debris or a toxin? Something

Manchester Guardian, Alistair Cooke wrote: 'Nothing short of the overthrow of the Communist regime in the Soviet Union could bring such rejoicing to the hearts and homes in America as the historic announcement last Tuesday that the 166-year war against poliomyelitis is almost certainly at an end.'

Medical Fraud

The triumph following the launch of the Salk vaccine was short-lived. The medical historian Dr M Beddow Baily recorded what happened next: 'Only 13 days after the vaccine had been acclaimed by the whole of the US press and radio as one of the greatest medical discoveries of the century, and two days after the British ministry of health had announced it would go right ahead with the manufacture of the vaccine, came the first news of disaster. Children inoculated with one brand of the vaccine had developed poliomyelitis. In the following days more and more

cases were reported, some of them after inoculation with other brands.'¹⁹

Within two weeks of the launch the number of cases of polio in vaccinated children had nearly reached 200. This created near panic in the White House. President Eisenhower had publicly endorsed the vaccine at its launch, so he sent the US health secretary Oveta Hobby to make it very plain to the Surgeon General that the president needed to be spared the embarrassment of further such cases.

On 8 May 1955 the Surgeon General suspended the entire US production of the vaccine. After hurried meetings between Salk, manufacturers and the surgeon general, distribution of the vaccine was resumed five days later, with new regulations in place to ensure better standards in the vaccine laboratories. The general consensus was that these cases had been caused by viruses in the vaccine that had survived the formaldehyde, despite evidence that

repeated injections can cause paralysis. However, despite

these new regulations, four months later more than 2,000 cases of infantile paralysis were recorded in Boston, despite the vaccination of 130,000 children in the city. The previous year it had seen only 273 cases. The number of cases doubled in vaccinated New York State and Connecticut, and tripled in Vermont. They increased by five times in both Rhode Island and Wisconsin. Many were paralysed in the injected arm.

It seemed that the vaccine would soon be totally discredited. So, to protect the President, Salk, the vaccine manufacturers and themselves from the humiliation of an unmitigated failure, the US health authorities had to dramatically slash the incidence of poliomyelitis. They managed this by simply changing the way they recorded the incidents of poliomyelitis. It worked like this:

Prior to 1956, the authorities recorded a patient as having paralytic polio (infantile paralysis) if they suffered from paralytic symptoms for 24 hours. After 1956 patients had to have these paralytic symptoms for at least 60 days to be counted as having polio. As many people recovered within 60 days, this measure alone dramatically cut the official number of cases. This 'drop' in polio cases was publicly credited to the vaccine. Furthermore, all cases of polio occurring within 30 days of vaccination (such as the first 200 cases that had so alarmed the White House) were in future not to be blamed on the vaccine but to be recorded as 'pre-existing'.

But Salk continued to worry. Despite its regulatory and statistical 'success', the reputation of his vaccine was plummeting. In June 1955 the British doctors' union the Medical Practitioners'



In 1955 Salk's polio vaccine was pronounced totally safe and effective in providing complete protection against poliomyelitis

The first news of disaster came only 13 days after Salk was awarded a Congressional Medal in 1955 with his vaccine being acclaimed as one of the greatest medical discoveries of the century.

quite deadly was clearly present. (One year later, after her warnings proved true, she was stopped from working on polio.) On April 12 1955, Salk's polio vaccine was pronounced totally safe and effective in providing complete protection against poliomyelitis (infantile paralysis), when it was launched by the National Foundation for Infantile Paralysis before an invited audience of 500 doctors and 200 journalists. The launch ceremony was relayed by closed-circuit television to some 54,000 doctors in cities throughout the US and Canada. Salk was immediately awarded a Congressional Medal by US president Dwight Eisenhower. Church bells were rung in celebration of Salk's victory. In *The*



CORBIS

Vaccine Paralysis

- 1 Muscles can be poisoned and paralysed by being repeatedly injected with vaccines or antibiotics; this is now called 'provocation paralysis', and was no secret in the 1950s. In 1952 vaccinations had been suspended for the summer in the UK and US (the 'infantile paralysis season') as the injected arms of many children had been paralysed. *The Lancet* had reported: 'Clinically, the cases associated with recent immunisations were indistinguishable from the acute cases of paralytic poliomyelitis.'²⁰ By 1955 US children were receiving three injections with Salk's polio vaccine, as well as the smallpox and whooping cough vaccines.
- 2 Also, the Salk vaccine was far from pure. We now know that it was contaminated with a small amount of formaldehyde and viral debris.

THE LINKED HISTORIES OF POLIO AND PESTICIDES 4	1953 The incidence of polio starts to decline sharply	1953 Salk (below) develops a vaccine using dead polio virus utilising some 17,000 monkeys	1954 Eddy tests Salk's vaccine on monkeys, which then suffer paralysis	1955 The Salk polio vaccine launched; Salk awarded Congressional Medal in the US	1955 Some 200 children contract polio within two weeks of vaccination	1955/1956 Epidemic of polio among vaccinated children	1957 Koprowski finds that 85 per cent of the non-vaccinated population of Congo are immune to polio – and then goes on to vaccinate them.	1958 New definition of polio slashes the number of cases reported after vaccination

Polio: are pesticides to blame? (cont.)

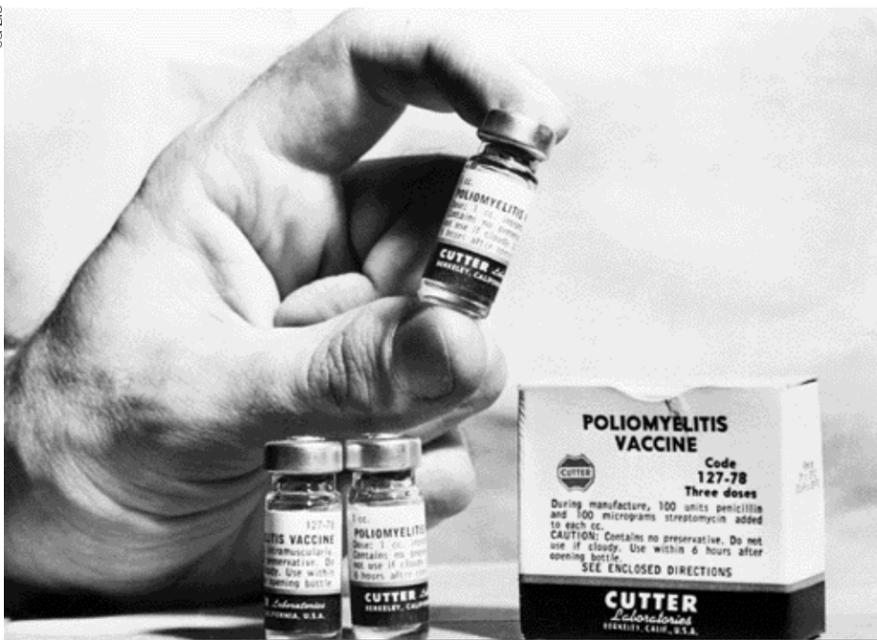
alike, has been devoted to denying, concealing, suppressing, distorting and attempts to convert into its opposite the overwhelming evidence. Libel, slander and economic boycott have not been overlooked in this campaign.'³⁶

US farmers had been officially recommended to stop washing cattle with DDT in 1949, but this advice was not enforced and was mostly ignored. In 1950 supplies of US milk were found to contain up to twice the amount of DDT that was needed to produce severe illness in humans. Biskind and fellow poliomyelitis researcher Ralph Scobey were invited to testify to Congress in 1950 and in 1951, respectively.³⁷ They drew up a formidable case for banning DDT, citing the work of many scientists. In 1951 the US Public Health Service said: 'DDT is a delayed-action poison. Due to the fact that it accumulates in the body tissues, especially in females, the repeated inhalation or ingestion of DDT constitutes a distinct health hazard. The deleterious effects are manifested principally in the liver, spleen, kidneys and spinal cord... DDT is excreted in the milk of cows and of nursing mothers.'

Effective action was slow to be taken, however: the health establishment was in total denial as far as pesticide effects on humans were concerned. Precautions were put in place too slowly and too late to stop the greatest of all the infantile paralysis epidemics – that of 1952, when some 57,700 cases were reported across the US, of which a third had paralytic symptoms.

By the end of the 1952 epidemic there was a vast amount of evidence to suggest that infantile paralysis was not caused by a virus:

- 1 Farm and domestic animals were paralysed at the same time as children. Chickens that had become lame were found to have suffered motor neurone damage. The poliovirus only infected humans and thus could not have caused the animals' paralysis. Exposure to poisons, on the other hand, can damage many different species at the same time.
- 2 Most cases of paralysis were incurred within 48 hours of each other. That is not



	Non-paralytic polio cases	Aseptic meningitis cases
1951-1960	70,083	0
1961-1982	589	102,999
1983-1992	0	117,366

Jim West, *Images of Poliomyelitis*

These classifications are still used today. Last year the US National Center for Infectious Diseases reported no cases of poliomyelitis but 30,000 to 50,000 cases of aseptic meningitis requiring hospitalisation. There are probably several times this number of incidents of aseptic meningitis that did not require hospitalisation, but statistics are no longer kept for such cases.

Then another scam was enacted to massage down the poliomyelitis figures. It took advantage of the 1951 discovery that different viruses could be present in cases

new rule, 49 per cent were found to have no poliovirus. They had to be reclassified as having 'non-poliomyelitis acute flaccid paralysis' even though they were suffering from symptoms identical to poliomyelitis with the same paralysis and the same pain. Other polio cases were reclassified as 'Guillain-Barré syndrome', which some researchers now think is what crippled Roosevelt. Yet more cases are now referred to as 'Hand, Foot and Mouth Disease', which can also cause paralysis. And last year the Coxsackie virus was found in cases of Chronic Fatigue Syndrome (CFS), which sometimes shows polio-like symptoms of muscle damage; in the past CFS might have been classified as a form of polio.

If this process of reclassification had not occurred, it would have been impossible to hide the fact that infantile

paralysis cases had sharply increased after the introduction of Salk's vaccine. Without the Coxsackie and aseptic meningitis reclassifications, for example, the number of reported cases of paralytic polio would have doubled from 2,500 in 1957 to 5,000 in 1959.²³

This deliberate fraud did not go entirely unnoticed, however. Dr Bernard Greenberg, the then head of the Department of Biostatistics at the University of North Carolina, testified at a 1962 Congressional hearing that infantile paralysis cases had increased after the introduction of the vaccine by 50 per cent from 1957 to 1958, and by 80 per cent from 1958 to 1959. He concluded that US health officials had manipulated the statistics to give entirely the opposite impression.²⁴

Polio: are pesticides to blame? (cont.)

the pattern for infectious outbreaks, which start slowly, grow faster as the infection spreads and then diminish as immunity develops. It is the pattern of a mass poisoning event.

3 Parents reported that some children fell ill immediately after eating fresh fruit. Fruit was sprayed heavily with lead arsenate at the time.

4 The illness was relieved by the administration of antidotes for chemical poisoning, and chemicals associated with poisoning appeared in the diseased tissues of the victims of paralytic polio – including oestrogenic chemicals now widely associated with environmental poisoning.

5 The spread of poliomyelitis was not affected by the closure of schools, as it should have been if the disease was infectious. Nor did close contact with paralysed children spread paralysis. Yet the virus presumed to cause the illness was highly infectious, as was shown by the widespread presence of antibodies for it among healthy individuals.

6 There was little or no correlation between the prevalence of polio antibodies in the population and the incidence of paralytic polio. In fact patients deemed to be recovering from paralytic polio were found to 'be completely lacking' in polio antibodies.³⁸

7 And the most virulent viral epidemics occur when viruses are newly introduced into populations. The poliovirus had been present long before the epidemics started. The use of chemical pesticides, in contrast, began just before the epidemics started.

Slowly, the US authorities began to act. Following the FDA secured legislative restrictions on the use of pesticides in 1954³⁹ and 1956⁴⁰, the incidence of infantile paralysis in the US plummeted immediately. By the time Jonas Salk's polio vaccine was publicly released in 1955, the level of infantile paralysis in the US was *already* below a half of what it had been in 1952. The figures for the UK were even more dramatic: the incidence of infantile paralysis fell by more than 82 per cent between 1950 and the first mass administration of the vaccine in 1957.

By the time Jonas Salk's polio vaccine was introduced in America in 1955, the level of infantile paralysis in the country was *already* a third of what it had been in 1952, due to legislative restrictions on the use of pesticides.

Union wrote: 'These misfortunes would be almost endurable if a

whole new generation were to be rendered permanently immune to the disease. In fact, there is no evidence that any lasting immunity is achieved.'²¹

The following month Canada suspended its distribution of Salk's vaccine. By November all European countries had suspended distribution plans, apart from Denmark. By January 1957 17 US states had stopped distributing the vaccine. The same year *The New York Times* reported that nearly 50 per cent of cases of infantile paralysis in children between the ages of five and 14 had occurred after vaccination.

So, more regulatory and statistical changes were needed in order to give the polio vaccine the appearance of a triumph of modern medicine. What better way to achieve this than to reclassify all the cases of polio into numerous other diseases resulting in a massive reduction in polio cases, and a

host of other diseases to attract funding. And this is exactly what they did. Prior to 1958 the definition of infantile paralysis (polio) included cases in which paralysis was minimal: perhaps manifesting itself as a very stiff neck, often accompanied by widespread pain. Polio also included cases of 'meningitis', or of inflammation of the membrane that protects the brain and spinal neurons. The CDC describes such cases as 'serious but rarely fatal'.²² Prior to 1958 these cases were scientifically referred to as 'non-paralytic poliomyelitis', or polio for short. Henceforward, they would be reclassified. The Los Angeles County health authorities stated: 'Most cases reported prior to July 1 1958 of non-paralytic poliomyelitis are now reported as viral or aseptic meningitis.' The incidence of meningitis soared as official polio cases declined, as the following table (compiled from national surveillance reports) shows.

of infantile paralysis. Prior to 1958 this did not matter. A doctor diagnosed a person with polio by taking note of their evident symptoms. They did not investigate to see if the poliovirus were present. In 1958 a new regulation was put in place requiring doctors to only register a patient as having polio if the poliovirus were present, something that was very difficult to establish for sure. For a start, it was impossible to tell by looking at symptoms. *The Textbook of Child Neurology* reported: 'Coxsackie virus and echoviruses can cause paralytic syndromes that are clinically indistinguishable from paralytic poliomyelitis.' This new requirement for doctors caused a vast drop in the number of cases registered as poliomyelitis – a drop that ever since has been credited solely to the vaccine.

So, when patients diagnosed as having polio in a 1958 epidemic in Detroit were re-tested as required by this

What are viruses?

The pharmaceutical industry makes vast profits by exploiting paranoia about viruses, so it is important to understand just what viruses are. When viruses were first discovered they were presumed to be enemies. (The word 'virus' is Latin for 'poisonous fluid'.) This was a serious misconception.

We now know that human bodies need and create viruses. Our cells contain tiny molecular engineers, known as transposons, which cut and adapt our DNA. Sometimes we may need to send genetic code from one cell to another – perhaps so as to resolve genetic problems or to deal with toxins. Cells can do this by turning transposons into messengers that carry genetic code from cell to cell. Travelling transposons are called 'endogenous' viruses: we manufacture them ourselves. They are essential to our genetic information highway. We make millions of such viruses.

Other viruses are 'exogenous': they originate from outside the human body. They must enter (infect) cells in order to 'reproduce'. Some kill the cells they use to do this – others do not. If they are viruses that we have never met before, then they are more likely to be dangerous to us. Such a virus has recently been found present in 85 per cent of all cases of a cancer, mesothelioma, which is caused by asbestos. This virus, SV40, seemingly makes this toxin more dangerous to us, by switching off a human gene, p53, which protects us against cancer. And yet many exogenous viruses also do us no harm. We sometimes welcome them by making their genetic code part of our DNA. As such these harmless viruses are likely to have been around humanity for a long time. We have become adapted to each other.

<p>THE LINKED HISTORIES OF POLIO AND PESTICIDES 5</p>	<p>1960 Introduction of the Sabin polio vaccine (below), which uses living polio viruses grown in monkey kidneys</p> 	<p>1962 Publication of Rachel Carson's book on the dangers of pesticides <i>Silent Spring</i></p> 	<p>1972 Organochlorines and organo-phosphates are temporarily banned in the US; US exports of organochlorines and organo-phosphates expand</p>	<p>1986 US ban on organophosphates lifted; victims of earlier polio epidemics report recurrence of symptoms</p>	<p>1995-2003 World Health Organisation reports an enormous increase in 'non-polio paralysis' around the world</p>	<p>2005 The year by which the WHO said the polio virus will finally be exterminated</p> 
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The World Health Organisation (WHO) confidently predicts that polio epidemics are all but over and that the poliovirus itself will become extinct by the end of 2004. Who is it trying to fool and why?

The hidden epidemic

The disease that struck down so many in the 20th century epidemics was then known as infantile paralysis, or poliomyelitis. It was this disease the polio vaccines were intended to eliminate. But today infantile paralysis is renamed as Acute Flaccid Paralysis (AFP). How could the WHO be claiming to have nearly eliminated this disease when, by its own figures, epidemics of AFP are not ending but

rapidly getting worse.

Take the WHO's figures for the east Asian/Pacific region as an example. They reveal that the incidence of AFP went up between 1994 and 1998 by 50 per cent in China, 400 per cent in Malaysia, and 1,500 per cent in the Pacific islands. But other than providing these statistics, WHO pays little attention to any of these cases in which the poliovirus is absent – meaning nearly all of them.



REUTERS

These cases are left without a cure – and even without a vaccine! They become effectively a hidden epidemic.

WHO makes even bolder claims for Europe and the Americas. It states that they are now free of both polio and AFP. On closer inspection, WHO's figures do not bear much scrutiny. It declares that there is 'no data' for the number of cases of AFP in the UK and the US. It then interprets 'no data' as if it means 'zero'.⁴¹ But the US government's Centres for Disease Control (CDC) does not agree. The CDC records that many thousands of cases of AFP occur in the US every year. It reports that AFP can have many causes. For example, it says that Guillain-Barré disease causes 17 cases of AFP per 100,000 of the US population. That translates into around 50,000 cases annually. The CDC also says that every year there are some 30,000 to 50,000 cases of aseptic meningitis serious enough to require hospitalisation. Both Guillain-Barré disease and aseptic meningitis were diagnosed as polio during the US epidemics prior to 1957. If you use the pre-1957 definition, then there are many more cases of poliomyelitis occurring in the US today, than there were in 1952 – at the height of the US polio epidemics.

To this tally of 'Acute Flaccid Paralysis' one could add the many more cases of AFP reported by the CDC as occurring in an epidemic that has swept across the US over the past five years, and which is attributed to the 'West Nile' virus (WNV). The CDC states that WNV can cause a 'polio-like' paralysis. Many scientists have been less ambiguous. They say WNV is clinically indistinguishable from poliomyelitis.⁴² A paper recently published by the *British Medical Journal* suggests WNV may be 'rapidly evolving to fill new ecological niches'.⁴³ In 2003 there were 9,389 cases of this disease in the US, of which 2,773 showed damage to the nervous system and 246 were fatal. Some researchers think WNV has links to pesticides and other pollutants. A legal action is currently underway in New York to stop the aerial spraying of the city with Malathion, an organophosphate pesticide first used in the 1950s. The city authorities want to use it to kill the mosquitoes it blames for WNV. The litigants maintain that the pesticide is

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The search for a virus and vaccine for polio was based on a flawed theory. This tragically distracted the medical establishment from the environmental science that might have cured a large number of children – and which could still do so

more likely to cause the disease than prevent it.

How does WHO distinguish the very few cases of AFP it says are caused by polio from other cases of AFP? It cannot do this easily – as there is no distinguishing symptom. It instead instructs doctors to send two samples of excrement from AFP patients to one of the scores of laboratories it has set up around the world. These inspect the excrement for poliovirus. If it is present, then they register this as a case of poliomyelitis. If they don't find the virus, then it is registered as a case of 'Non-Poliomyelitis AFP'.⁴⁴ But this WHO test is in effect meaningless. The poliovirus is by definition a type of enterovirus, which means a stomach bug. Its presence in excrement is thus natural – and does not indicate that it has damaged nerves.

WHO actively discourages doctors from looking for the poliovirus themselves in cases of AFP, because 'the

virus is very hard to find' and research shows that 'there was no relationship between finding the virus and the course of the disease'. It adds that presence of the virus in the central nervous system (CNS) 'appeared to have no diagnostic significance.'⁴⁵ And yet this is the very reason given for the need to vaccinate against the poliovirus.

The Sabin polio vaccine has been chosen by WHO to finally eradicate the poliovirus. It hopes to achieve this by inspecting the excrement from every case of AFP reported. Should it find a case in which the poliovirus is present, then the polio vaccine will be administered on a national scale so as to eliminate the risk of its spreading. This has happened now so many times that in countries like India children have

received up to 10 doses of the vaccine.

But this is the strangest tool for the WHO to choose to eradicate the poliovirus

with. Sabin's vaccine, unlike Salk's, contains living mutated poliovirus. This will breed in the vaccinated. WHO recommends this vaccine for the developing world for this very reason, for the vaccinated widely spread the virus, to infect and immunise those who have refused vaccination. WHO is thus strangely choosing to spread a poliovirus in order to eliminate it!

WHO shows little concern over replacing the natural poliovirus in the environment with an 'unnatural' laboratory-made mutated poliovirus bred in monkey cells. This is astonishing, given that this synthetic virus does not remain stable, but continues to mutate. Poliovirus contains RNA – a type of genetic coding that allows rapid mutation – and the vaccine's mutated poliovirus has acquired a reputation

among researchers for the speed with which it does this. The virus can also reside inside humans for more than 20 years, making it practically impossible to exterminate. And what is more shocking, but not surprising given the nature of viruses, it is now reappearing in more mutated forms in outbreaks on several continents.⁴⁶ The danger now is that these might now evolve to present a threat that the natural virus never did.

But why do we still have epidemics of infantile paralysis/AFP?

Organochlorine and organophosphate pesticides are back in widespread use. They may be better regulated, but their toxins still accumulate in body fats until they reach dangerous levels. The level of pesticide pollution on farmland in America is now so bad that the US Environmental Protection Agency 'estimates that there are 10,000 to 20,000 cases of physician-diagnosed pesticide poisonings' every year among agricultural workers. The CDC reports that approximately one billion pounds of pesticides are now used every year in the US. The global market for pesticides was estimated at \$1,761 billion in 1989; it would surely be bigger today.

The fact is, the victory won against pesticides in the early 1950s was very short-lived. In 1955, the very year that Salk's vaccine was launched, organophosphate pesticides were introduced into the US in *partial* replacement for organochlorines like DDT. The organophosphates were perhaps less dangerous than the organochlorines, but they were still highly neurotoxic.

It was only after the publication of Rachel Carson's sensational book *Silent Spring* in 1962, telling how pesticides were endangering the survival of America's symbolic bald eagles, that more meaningful restrictions were put on organophosphates and the remaining organochlorines. They were banned in the US in 1972, but not for long. In 1983 organophosphate pesticides were reintroduced.

During the ban, US pesticide manufacturers simply shifted markets. They redirected most of their sales to the

developing nations as infantile paralysis ceased to be the 'American disease'. The first polio epidemic in Manila happened in 1972. Today the WHO encourages developing nations to use cheap DDT to kill malaria-spreading mosquitoes, while it organises vaccination campaigns in the same countries to fight the polio that DDT may cause. Effectively, the pesticide companies are now partners to the WHO in its war against viruses. It's safer for them to blame a virus for polio than pesticides: viruses can't be sued.

WHO is now raising over a billion dollars, not to cure those still suffering from the original disease, not to look to see if toxins caused the children's paralysis, but solely as a matter of pride to try to win for the polio vaccine a seeming victory by eliminating a practically harmless virus.

It states on its website: 'There is no cure for polio: its effects are irreversible.'

The evidence strongly suggests that the polio epidemics of the past were man-made and caused primarily by the gross overuse of very dangerous pesticides

This is only so because public funds have been wasted on an ineffective and wrongly targeted vaccine that cannot cure a single case of AFP. This is nothing other than tragic for the thousands of children involved.

And finally, why is the WHO ignoring the possible role of pesticides, and sticking with its vaccination assault?

Is it because in our increasingly specialised, non-holistic world, the virologists involved with vaccines have not been talking to the toxicologists involved with chemicals? Despite the fact that there are literally hundreds of papers produced by the latter documenting how pesticides can harm our immune systems, dramatically lower the number of our vital illness-fighting 'T-cells', and cause numerous other diseases as well as paralysis⁴⁷, this research unfortunately does not seem to be filtering through to the vaccine industry, which is still based on the theory that viruses must be the principal

cause of all paralytic epidemics.

One hopeful sign of progress was a recent report by the US National Academy of Sciences, documenting how current levels of food contamination by organophosphates can cause 'acute poisoning in children'.⁴⁸ Another ground-breaking piece of recent research focused on treating individuals suffering from paralysis up to 40 years after becoming ill with poliomyelitis. A group of 17 individuals were placed into an environment from which most toxic substances had been removed, and were treated with antidotes to toxins. 'Long-term follow-up of the 14 improved patients showed general return of wellbeing and renewed vigour,' and 'eight became totally pain-free'. The researchers concluded that 'post-polio syndrome' was due to an 'overload of environmental pollutants on wounded target organs'.⁴⁹

The evidence thus strongly suggests that the infantile paralysis (polio) epidemics of the past were man-made disasters caused primarily by the gross overuse of very dangerous pesticides, and that these epidemics are continuing. The poliovirus,

along with other viruses, may play a role, but it seems it is a far smaller role than that given to it by the vaccine industry. The weight of evidence also strongly suggests that the search for this virus, and for a vaccine, was and is based on a flawed theory. This has tragically distracted the medical establishment from the science that might have cured a large number of children – and which could still do so.

The consequence of the campaign to spin the polio vaccine as a great success is not simply that the public has been deceived. If toxins are the primary cause of this disease, then countless thousands of paralysed children have never been treated correctly. Many could have had their pain removed. Many might have been able to walk again. This is not some abstract academic issue: it affects real people, enduring real suffering and real paralysis. This is a story of a hidden epidemic. It is surely time to cast aside the fog of doctrine and urgently consider what can be done to cure such people.