

OBSERVER
28 JUL '85

✓ Cep. Slade / Pub. Affairs
30/7

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Parkinson's disease linked with pollution

by ROBIN McKIE, Science Correspondent ⁹/₁₀

PARKINSON'S Disease — the crippling ailment which affects 1 per cent of the world's population — may be caused by environmental pollution.

Research presented by Canadian scientists at a recent international conference showed that people living near petrochemical plants and pulp mills have strikingly high chances of contracting the disease. The weedkiller paraquat may even be a cause.

The study is the latest and most controversial of several research projects which have linked Parkinson's Disease to chemical causes.

This new scientific activity was triggered two years ago by one of the most bizarre breakthroughs in modern medical science. A young drug addict, George Carrillo, was admitted to Santa Clara Valley Medical Centre in San José, California, unable to move or talk.

A few days later doctors' bewilderment increased when Carrillo's sister, then several other people with a similar condition, were admitted.

All had tremors, mask-like faces, stiff muscles and other symptoms identical to those of Parkinson's Disease. But all the victims were young. Parkinson's Disease typically affects old people.

Rapid scientific detective work revealed a common link. All patients had just taken a form of synthetic heroin, a drug manufactured in back-street Californian laboratories and sold on the streets of San José.

An error in manufacturing allowed an impurity — a chemical called MPTP — to contaminate the samples taken by the victims. This caused their Parkinson-like symptoms.

It was a crucial discovery. Until then, doctors could not find the cause of Parkinson's Disease, despite its prevalence. (Victims have included Mao Tse-tung, Eugene O'Neill, Sir John Betjeman, Terry-Thomas, General Franco and Salvador Dali.)

The illness begins mysteriously with the degeneration of cells in the *substantia nigra* part of the brain. When most are destroyed, victims suffer speech and movement problems that can lead to paralysis, though new drugs like L-Dopa help to alleviate symptoms.

With the discovery of MPTP, scientists found a chemical that could produce the same effect in only a few days. It has led

to a mushrooming of research.

'The importance of MPTP cannot be overestimated,' said Dr Peter Jenner, a London Institute of Psychiatry researcher. 'Its discovery has completely revitalised the fight against Parkinson's.'

The effect on research was shown by the staging of four international conferences in the past three weeks when first results were presented.

Several researchers revealed they were now convinced the striking chemical similarity between MPTP and a range of industrial chemicals, including paraquat, showed that Parkinson's Disease was environmentally caused.

The strongest claim was made at a New York symposium on Parkinson's Disease by Canadian scientist Professor André Barbeau, head of neurology at Montreal's Clinical Research Institute.

His team studied 5,000 cases of Parkinson's Disease and found a direct correlation between use of pesticides, and similar chemicals and the incidence of the illness.

Professor Barbeau told *The Observer*: 'Our data showed that in south-west Montreal people living near pesticide-sprayed farmland were far more likely to get Parkinson's Disease than others. Similarly, people living near petrochemical plants, and near wood mills where fungicides are used, were also considerably more at risk.'

Professor Barbeau said that risks were not evenly spread, however. His team found that many Parkinson's victims were genetically vulnerable to paraquat-like chemicals.

But other researchers disagree completely, pointing out that cases of Parkinson's Disease have not increased since the turn of the century, when chemicals such as paraquat were hardly in use. They believe there must be another, still unknown, cause.