

Prions: How can a protein cause an infectious disease?

- Different diseases, similar symptoms
- Searching in vain for a virus
- Proposed mechanism for prion diseases
- How are prion diseases transmitted?
- What can be done to fight prion diseases?

Spongiform encephalopathy (CJD brain sample)

Note numerous vacuoles (holes) →

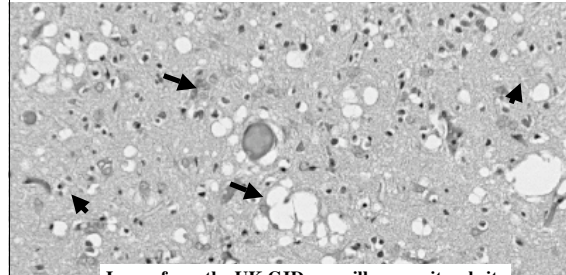


Image from the UK CJD surveillance unit website <http://www.cjd.ed.ac.uk/path.htm>

The Nobel Prize in Physiology or Medicine
Prions win twice!



D. Carleton Gajdusek: 1976
(with Baruch Blumberg—Hepatitis B)

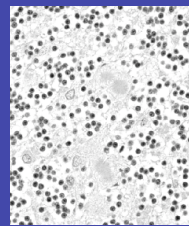
"for their discoveries concerning new mechanisms for the origin and dissemination of infectious diseases"



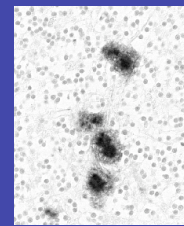
Stanley Prusiner: 1997

"for his discovery of Prions—a new biological principle of infection"

Creutzfeldt-Jakob disease pathology



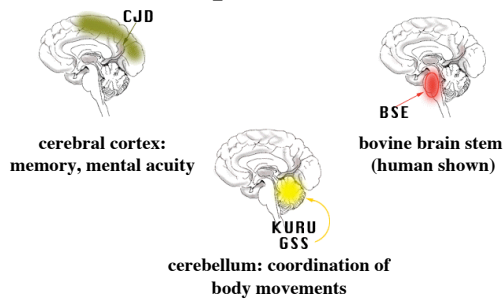
Amyloid plaques



Plaques stained to reveal PrP

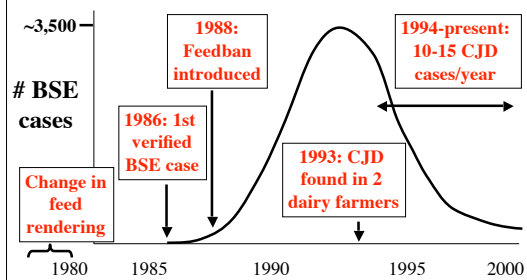
Images from the UK CJD surveillance unit website <http://www.cjd.ed.ac.uk/path.htm>

Different prion diseases affect different parts of the brain



<http://www.nobel.se/medicine/laureates/1997/medanim/med-ani7.html>

Bovine spongiform encephalopathy Timeline in the United Kingdom



**Different angles on BSE reflected
in the press**

Nation's Restaurant News:

"No case of BSE ever has been found in the United States. And that isn't for lack of looking"

C. Schroeder: "Questions about Mad-Cow disease should be steered towards learning the facts" NRN Mar. 19, 2001

In These Times:

"Mad Cow prions . . . have not been found in the U.S. cattle population. However, testing by the U.S.D.A. is so inadequate that such a statement is meaningless"

J. Bleifuss: "A 21st century plague?; Britain's mad cows may harbingers the deaths of millions" Feb. 7, 2000

In These Times

"A newsmagazine committed to extending political and economic democracy in the United States and around the world and to opposing the dominance of transnational corporations and the tyranny of marketplace values over human values."

<http://www.inthesetimes.com/aboutitt/aboutitt.shtml>

Nation's Restaurant News

In 1967: "born as an exciting news tabloid, replacing the Chain Store Age for Fountain and Restaurant Managers magazine."

Quest: "to provide the most timely and important information about the foodservice industry, which today is a \$320 billion business with no end to growth in sight. "

<http://www.nrn.com/feedback/aboutnrn.htm>