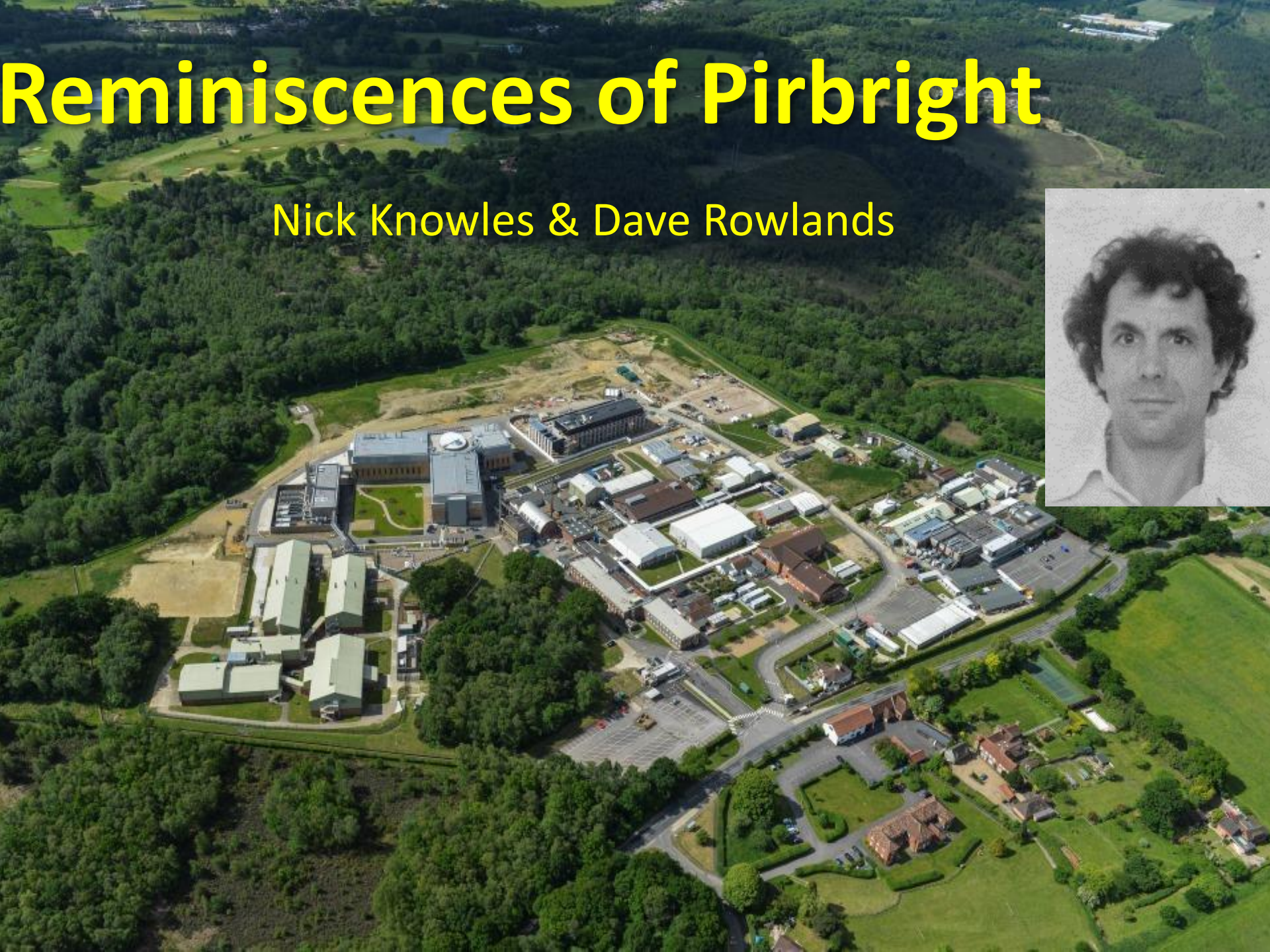


# Reminiscences of Pirbright

Nick Knowles & Dave Rowlands



# 1964

The **A**nimal **V**irus **R**esearch **I**nstitute (AVRI)

It was very different to the **TPI** of today:-

- Labs mostly modified cattle sheds
- Bucolic atmosphere
- Herd of free-range geese
- 'Old Jock' the gateman in a small brick gatehouse





# Fred Brown FRS

1925 - 2004

Biochemistry Dept., c.1970's



Donald Black



Joan Crick



Ben Cartwright



Tim Doel



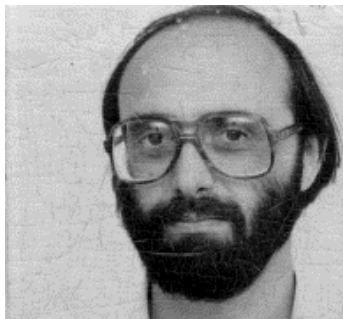
Dave Rowlands



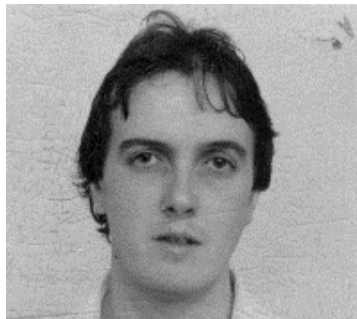
Fred Brown



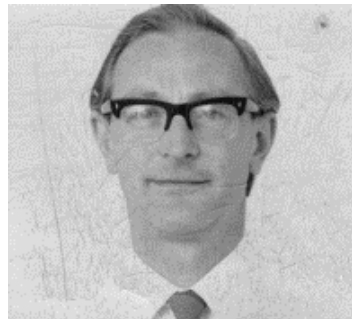
Dave Sangar



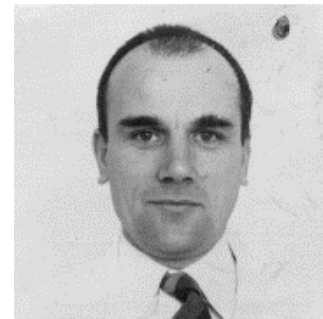
Tony Carroll



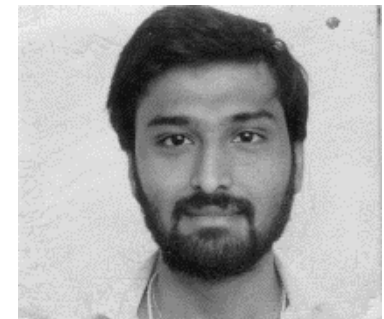
Berwyn Clarke



Chris Smale



Bryan Underwood



Eric d'Souza

FMDV purification in the 1960s



# Importance of Biochemistry/Biophysics

1967-68 outbreak in UK

Associated with bones from Argentinian carcasses

Post mortem pH in bone marrow too high to inactivate FMDV

1970 – the NEW research  
laboratories!!!!

Main Lab (recently demolished)

Air filtration for the first (and nearly  
my last) time.

# Importance of Molecular Biology

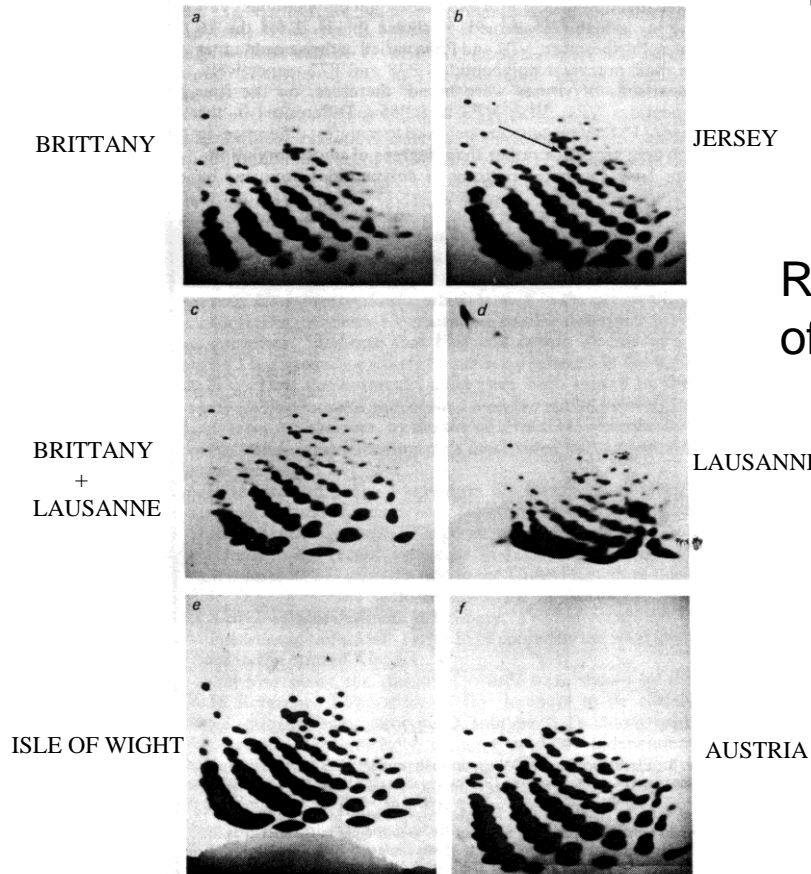
1981 outbreak in Northern France/Isle of Wight

T1 mapping of viral genome showed outbreak originated from non-inactivated vaccine.



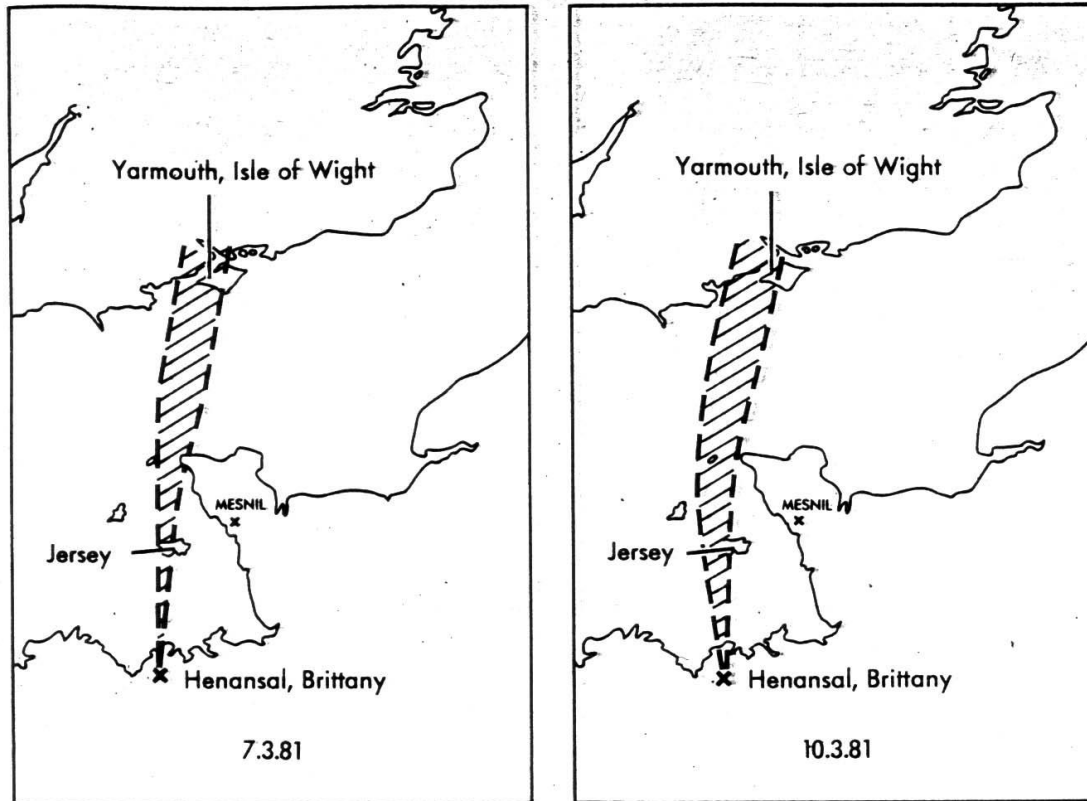
# 1981 outbreak of FMD

RNase T1 fingerprints  
of FMDV Type O RNAs



# 1981 outbreak of FMD

## Air trajectories



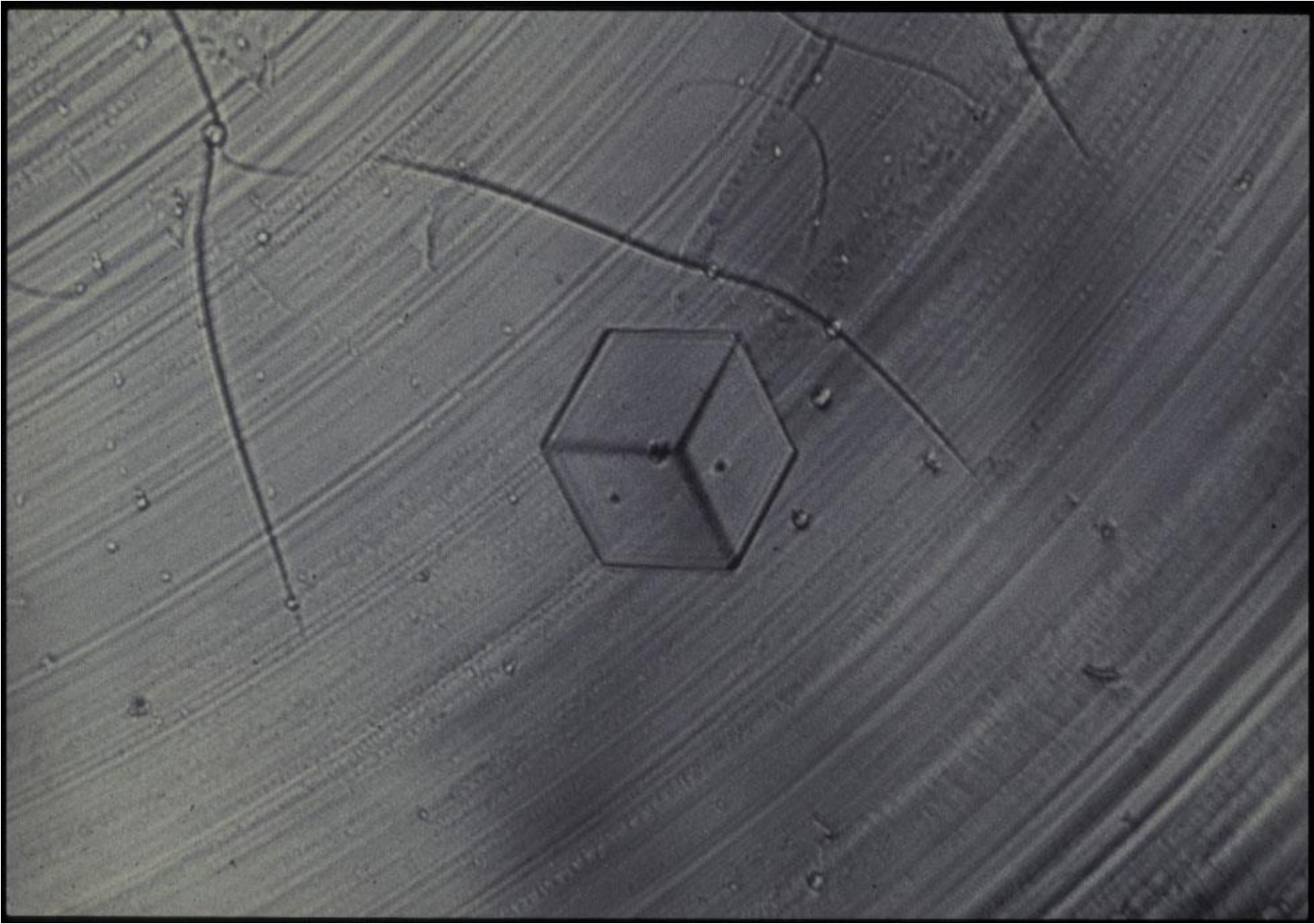
# Importance of Structure

Protease hydrolysis studies had helped define antigenic determinants but more detail was needed.

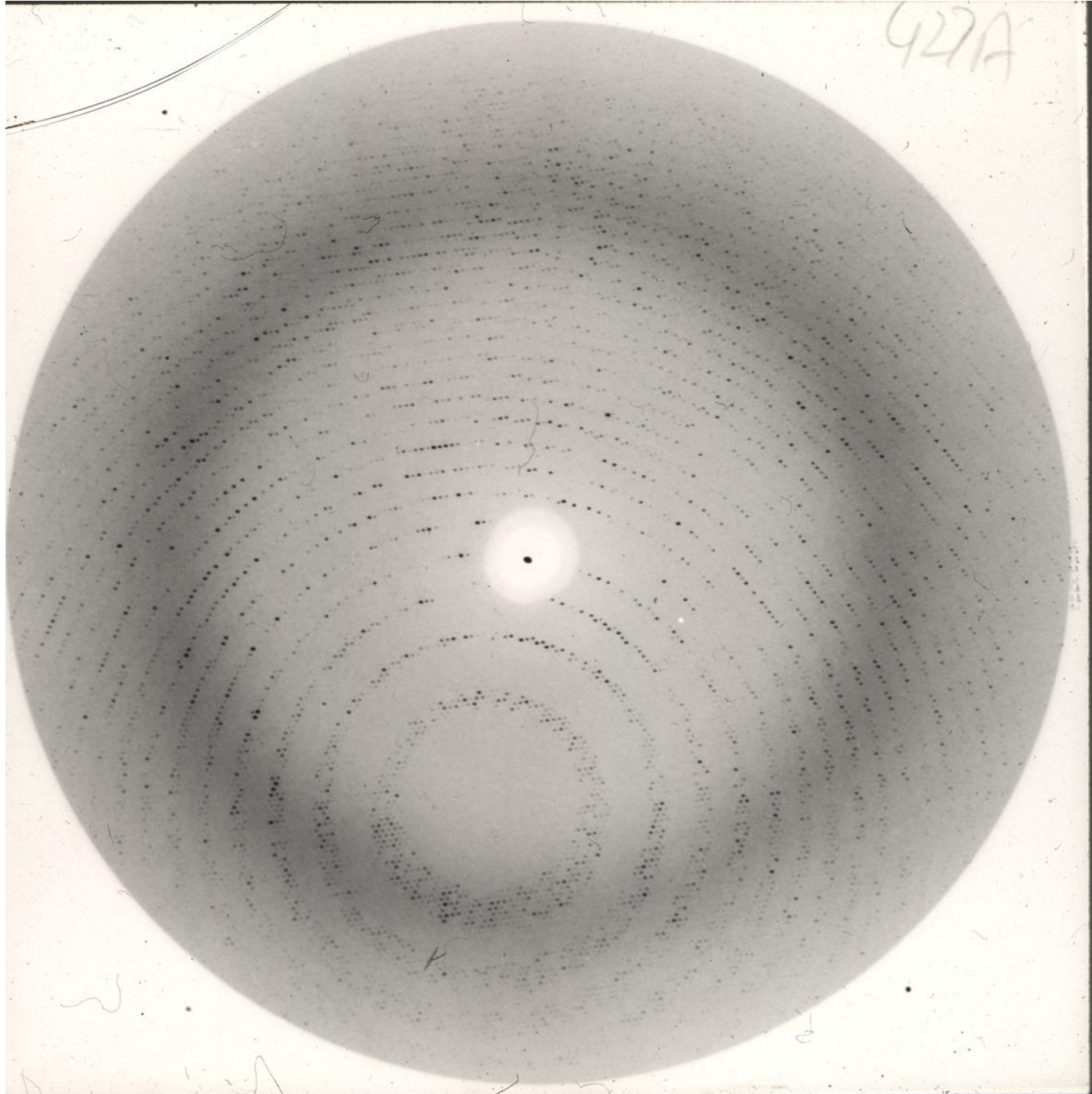
**1989 - Atomic structure of FMDV reported**

Provides for greater understanding of antigenic structure.

Paves the way for development of virus free (VLP) vaccines.



427A

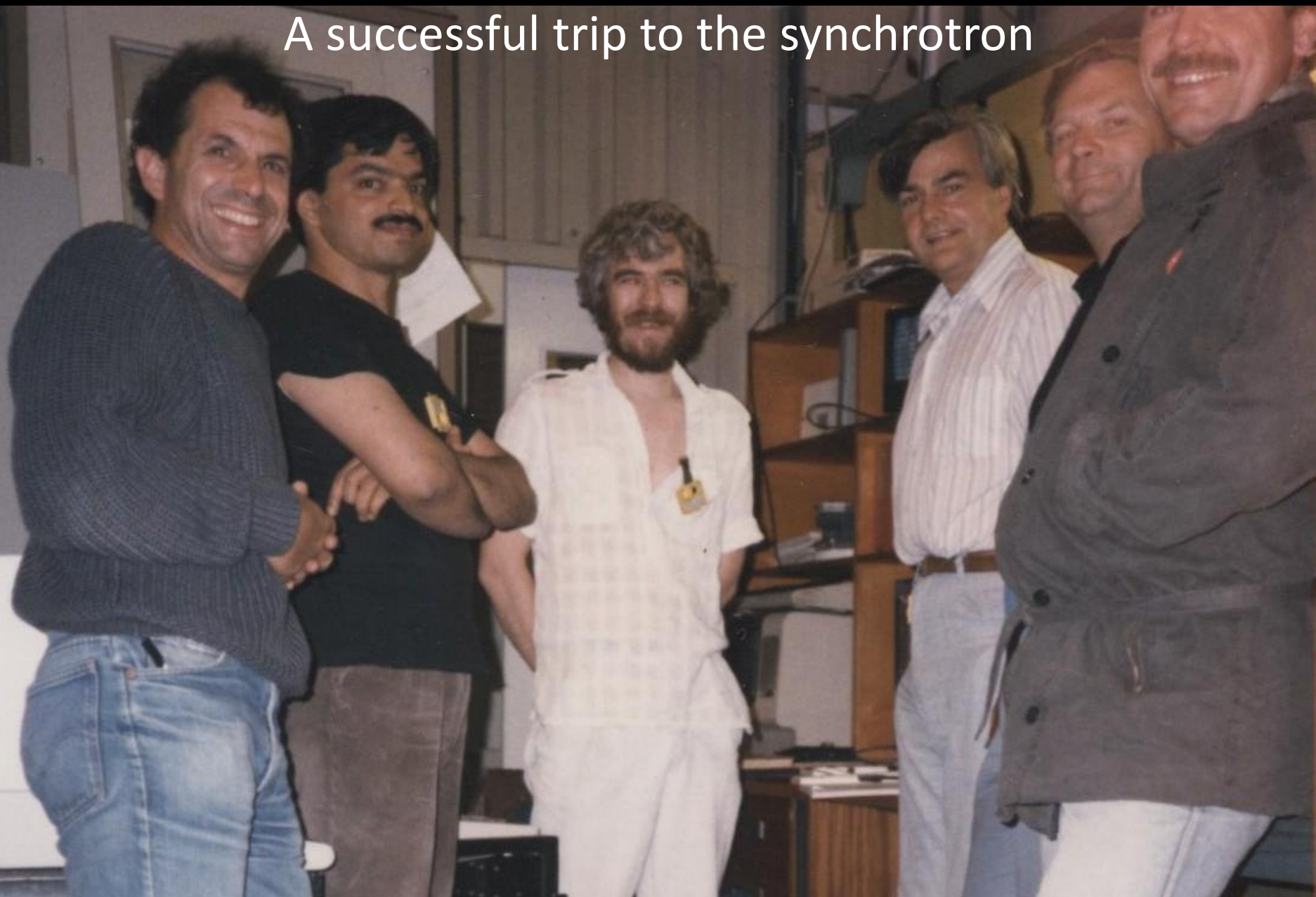




Celebration of the first good diffraction data



A successful trip to the synchrotron





# Fred Brown 'retirement' cake

Liz Fry



# nature

INTERNATIONAL WEEKLY JOURNAL OF SCIENCE

Volume 337 No. 6208 23 February 1989 £1.95



**STRUCTURE OF FOOT-AND-MOUTH  
DISEASE VIRUS**

**12 YEARS LATER**

**2001 – The Big One**

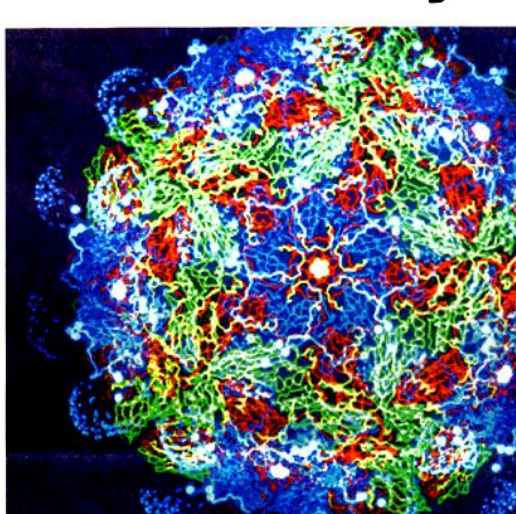
Pirbright on War Footing

Subsequent reviews (RS) deemed  
infrastructure at the Institute not fit for  
purpose





# This is the virus that has closed the countryside



A computerised image of the foot and mouth virus. Britons are being urged to keep away from farmland until the outbreak is contained. (Image: Oxford University)

**Paul Brown and John Vidal**

A "highly infectious" new case believed to be foot and mouth disease was found last night in a pig at a farm in Northumberland. It could be the source of the original outbreak of the virus, which has thrown the British farming industry into fresh crisis.

The development came as the countryside began to close down, with appeals for rambles and horse riders to stay away, markets shutting up shop and the suspension of all hunting for a week.

The suspected outbreak at Barnside Farm, a pig holding centre, in Northumberland, at Heddon-on-the-Wall, was traced by the Ministry of Agriculture because the centre had delivered pigs for slaughter to Chew-Meat at Little Warty in Lancashire, where the virus was first identified on Monday night. When vets arrived at the farm some of the remaining pigs were sick with symptoms similar to foot and mouth but no confirmation has been made.

Another case of the disease was confirmed in cattle at

Great Witley, near Brentwood, inside the 10-mile exclusion zone around the abattoir. The case had been extended from five miles early yesterday as a precaution. The new case is likely to have been spread by the wind.

All movements of animals, and next visitors to the Essex slaughterhouse and its neighbouring farms over the past three weeks were being traced yesterday. The investigation involves hundreds of inquiries as far away as Northern Ireland and Scotland.

The president of the National Farmers Union, Ben Gill, warned: "The outbreak of foot and mouth could become a disaster if people travel into rural areas. Everyone must be vigilant and journeys into the countryside where there is livestock should not take place."

Postal workers were asked to leave mail at farm gates and farmers were asked to place disinfectant-soaked straw at access points to their land. At agricultural merchant CWG in Bury St Edmunds, Michael Walpole had run out of disinfectant by lunchtime yesterday.



**Main points**

- Farmers advised to cancel all visits to affected counties and stay away from farmland throughout Britain
- Pigs told to keep to roads off highways and farmland suspended for a week
- All hunting voluntary
- All markets and fairs suspended for a week
- Farmers asked to place disinfectant-soaked straw at entrances to their farms
- Postmen delivering to infected farms told to hand mail over at gates
- Public kept from contact with Epping Forest deer

In the Peak District, Bawell livestock market cancelled a planned sale on Monday. A partner in the market, Alastair Swenden, said the outbreak could have far-reaching consequences for farmers. "I think the financial and emotional strain could quite simply be too much for some of them."

The ban on all animal exports, which was imposed on Wednesday night and is covering more than 61m a day, will

be in force until Britain controls the spread of the disease, the European commission said. If the source of the contamination were pinpointed the ban could be limited to that region, a spokeswoman said.

Tony Blair, on a visit to Canada and the US, said the outbreak was "the very last thing that farmers need" in the aftermath of BSE. "This is a very, very tough time for them," Mr Blair said in Ottawa. "We have to contain the outbreak. We've taken the action necessary to do so, and we will look into the consequences for individual farmers, of how we help them, at a later time."

As fears spread to the continent, the French government ordered checks on the wind direction across the Channel.

The British Veterinary Association said it and Maff had put the country's 6,000 vets on red alert. "Extreme surveillance is needed," said Kifon Evans, past president of the BVA.

**Four and mouth crisis, pages 4-5**  
**Chatham on page 33**  
**Let's see on the outbreak at garden.co.uk/foot**

# Daily Mail

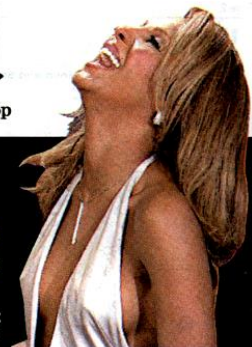
FRIDAY, FEBRUARY 23, 2001

35p



# Courtney, Toni and the tackiest show on Earth

SEE CENTRE PAGES



# DEADLY VIRUS THAT HAS SHUT DOWN THE COUNTRYSIDE

**THIS IS THE VIRUS WHICH HAS PARALYSED THE COUNTRYSIDE AND LEFT FARMERS IN FEAR OF FINANCIAL MELTDOWN. BY LAST NIGHT, KEEP OUT NOTICES HAD BEEN SLAPPED ON ALL FARMLAND IN BRITAIN IN A DESPERATE BATTLE TO STOP THE SPREAD OF FOOT-AND-MOUTH.**

Hunting was banned, postmen were ordered to leave deliveries at farm gates and ramblers were warned to keep away from areas containing livestock.

So infectious is the disease, shown here in a remarkable computerised image produced by Oxford University, that merely walking across an affected field can transfer it to neighbouring areas. It can be carried under the fingernails after contact with an infected animal. And released into the air, it can travel

on the wind to strike down cows, pigs and sheep hundreds of miles away. After another case of foot-and-mouth was confirmed in Essex yesterday, there were demands for a mass cull of thousands of animals.

**SEE PAGES 6 & 7**

# Fund to beat third world disease

**Larry Elliott and Mark Atkinson**

Gordon Brown and Clare Short will announce plans on Monday for a multi-billion pound international fund to provide cheap vaccines against childhood diseases to developing countries.

The chancellor and international development secretary will use a London conference on children to unveil proposals for the fund, aimed at reducing the 10m deaths each year of children under five.

The plan is for the world's richest countries, the International Monetary Fund, the World Bank and the UN Child

ren's Fund (Unicef) to guarantee a market for drugs produced by the pharmaceutical industry, and subsidise research costs.

It is intended to make up ground in meeting the aim of reducing world poverty by 2015, set at the UN summit in Copenhagen in 1995.

Mr Brown said in an interview with the Guardian: "The world's richest nations have a recognition now that unless we act together and are clear about who takes responsibility, the targets we have set will take longer to meet and in some cases may not be met at all. We are determined to move further and faster



How the Guardian focused attention on the drug industry.

towards meeting the UN targets."

Two weeks ago the Guardian highlighted the problems faced by developing countries which cannot pay the huge bill for drugs needed to fight Aids and

required to meet the first target if present trends continue there will be 8.5m child deaths in 2015.

The education target is even more in danger unless the G7 takes the initiative next week, and this too will be raised at Monday's conference.

The confab attended by the heads of the World Bank and IMF and addressed by Clinton and the UN secretary general, Kofi Annan, will be the first of a series of international meetings highlighting concern for children.

Continuing at the spring meetings of the Bank and IMF and the summer meeting of the G7 the programme will culminate in a special session of the UN.

Mr Mandela and his wife Graca Machel are leading a Global Coalition for Children.

# Clinical scare

Hillary Clinton, involved in President Bush's bid to win office, has revealed she had a heart scare (p.27).

She was hospitalized in a cardiac clinic in the US last week. As Mr Clinton continued his well-timed "cash for pills" campaign in the US she was hospitalized in the cardiac clinic in the US last week. As Mr Clinton continued his well-timed "cash for pills" campaign in the US she was hospitalized in the cardiac clinic in the US last week.

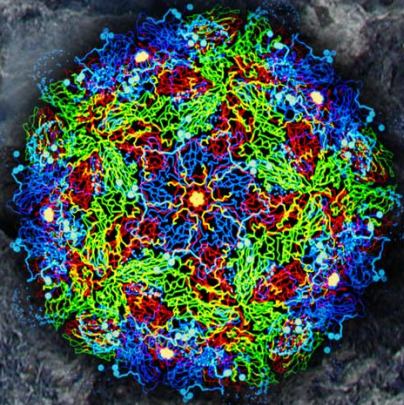


**Quick Index**  
Weather 22  
Cryptic Crossword 36



# Foot-and-Mouth Disease

Edited by  
David J. Rowlands



Elsevier

# 2007 – PR disaster

Value of genome sequence analyses in determining source of ‘feral’ virus.

ALSO

Did it stimulate the decision to finally bring Pirbright into the 21<sup>st</sup> century?

**Goodness!!! We had FUN**





And after work --- Gone Fishin'

