Figure: Aortic wall
Acute inflammation with neutrophils and macrophages and destruction of the lamina elastica (elastica stain).

On admission he was breathless at rest and had a fever of 41°C. Physical examination showed a pulsatile mass in the upper abdomen and rales in the right middle and lower lobe. He had a leucocytosis of 15.7×10^9/L (93% neutrophils) and a C-reactive protein of 390 mg/L. Routine serology for bacterial and viral pathogens was negative. He was treated with cefotaxime, tobramycin, and erythromycin. A chest radiograph and computed tomogram showed a right-sided pleural effusion and a possible abscess in the right lower lobe. There was also a thoraco-abdominal aortic aneurysm. Blood cultures grew a gram-negative rod, identified as *Burkholderia pseudomallei* and confirmed by a positive reaction to a monoclonal antibody specific for an exopolysaccharide of *B pseudomallei*. Antibiotics were changed to ceftazidime and tetracycline, the sensitivity to which was confirmed by minimum-inhibitory-concentration broth-dilution assay. The patient remained stable for the first few days, then his condition deteriorated. On day 9, a computed tomogram showed striking progression of the aortic aneurysm and disseminated nodular densities throughout both lungs along with hepatomegaly. On day 12, he died due to rupture of the aneurysm. A mycotic aneurysm was confirmed at necropsy (figure).

The soil saprophyte *B pseudomallei* causes melioidosis, one of the few genuine tropical bacterial infections. It is assumed that most cases become infected when minor cuts or abrasions are inoculated with environmental organisms. Clinical manifestations of melioidosis are variable; however, to our knowledge, this is the first report of a mycotic aneurysm of the aorta caused by *B pseudomallei*. Few infections in European travellers returning from endemic areas have so far been described,1 until recently there have been only sporadic reports,1,2 despite similarities in latitude, weather, crops, and cultivation methods. However, in January, 1995, a case of melioidosis, acquired in Kerala, was reported.3 Subsequently, eight further cases have been diagnosed. We did a serological survey of 176 residents of a rice-growing village, 25 km from Vellore during June–July 1994, using two tests, an ELISA and an indirect haemagglutination assay (IHA). ELISA used microtitre plates coated with boiled whole cells of strain 204 to determine the optical density of serum at a dilution of 1:500.4 IHA was with sheep erythrocytes coated with crude antigen, obtained from autoclaved culture filtrates, in a modification of a previously described technique5 to determine antibody titre. For IHA, sera were diluted in doubling dilutions from 1:10 to 1:10240. A pool of normal human sera and serum from a patient with confirmed melioidosis known to be antibody positive were used as negative and positive controls, respectively. All sera were examined at least three times by both tests, and the mean taken (figure). Mean optical density for all samples was 0.226 (SD 0.201); median 0.176.

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**Melioidosis in India**

Sir—Melioidosis is increasingly recognised as a problem in some areas of southeast Asia.1 In Thailand, *pseudomallei* septicaemia is an important cause of death, and from other parts of southeast Asia, tourists, immigrants, and war veterans have returned with acute, chronic, and recurrent disease.2 The causative bacterium can be isolated from soil, stagnant water, rice paddies, and market produce in endemic areas.

Although it has been suggested that the disease is endemic in India,3 until recently there have been only sporadic reports,1,2 despite similarities in latitude, weather, crops, and cultivation methods. However, in January, 1995, a case of melioidosis, acquired in Kerala, was reported.3 Subsequently, eight further cases have been diagnosed. We did a serological survey of 176 residents of a rice-growing village, 25 km from Vellore during June–July 1994, using two tests, an ELISA and an indirect haemagglutination assay (IHA). ELISA used microtitre plates coated with boiled whole cells of strain 204 to determine the optical density of serum at a dilution of 1:500.4 IHA was with sheep erythrocytes coated with crude antigen, obtained from autoclaved culture filtrates, in a modification of a previously described technique5 to determine antibody titre. For IHA, sera were diluted in doubling dilutions from 1:10 to 1:10240. A pool of normal human sera and serum from a patient with confirmed melioidosis known to be antibody positive were used as negative and positive controls, respectively. All sera were examined at least three times by both tests, and the mean taken (figure). Mean optical density for all samples was 0.226 (SD 0.201); median 0.176.

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**Figure: Optical densities by ELISA for antibody to *B pseudomallei* in 176 people**

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*B Melioidosis in India*

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Six samples had ODs greater than the sum of the mean and twice the SD (0-627). Of 144 samples with an OD of less than 0-35, six had IHA titres of 10, while the remainder had titres of 0. The six sera with an OD greater than 0-627 had IHA titres of 40 or more, and there were also a further six sera with similar IHA titres but lower ODs. However, only one of this group had an OD of less than 0-5. These results suggest that a proportion of the rural population may be exposed to _B. pseudomallei_, although there may be cross-reactions due to other infections.

60 soil samples taken from a depth of 30 cm below the surface of the soil from fields surrounding the village were cultured in threonine basal salt solution at 42°C for 48 h and subcultured on Ashdown’s agar, but _B. pseudomallei_ was not recovered. Cultures were attempted during the dry season and after the rains. We plan to culture rice paddies during the growing season.

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Lady Mary Wortley Montague’s contribution to the eradication of smallpox

**SIR**—In view of the bicentenary of Edward Jenner’s experiments with vaccination against cow-pox, the genetic manipulation of vaccinia virus with the eventual aim of launching vaccination campaigns against herpes viruses, hepatitis B virus, and HIV, a reminder of the historical background to this proposed cloning vector may be timely.

Few subjects have aroused more debate or received greater coverage in the history of medicine than the gradual eradication of smallpox. Credit for the first major step towards its elimination is invariably given to Edward Jenner. Most people have forgotten that Lady Mary Wortley Montagu introduced inoculation against the disease into England almost 80 years before publication of Jenner’s *Inquiry.* Had she not done so Jenner could hardly have tested his vaccination by subsequent variolation. He was a variolator for many years before his first historic vaccination in 1796.

Lady Mary had been disfigured by smallpox at the end of 1715. She was probably unaware of the accounts by two Italian physicians, Emanuel Timoni and Jacob Pylarini, published shortly before and shortly after her own illness, of the procedure of prophylactic ingrafting as practised in Turkey. In 1717, however, she accompanied her husband on his embassy to Constantinople and there she must have met Timoni, for he was engaged by Wortley to attend the family, together with a surgeon brought from England, Charles Maitland. She was also rapidly convinced of the efficacy of the inoculations carried out chiefly by old Greek women in Turkey. Halsband gave a detailed account of her subsequent part in introducing the method in England. It is clear from the descriptions given by Timoni, Pylarini, Maitland, and Lady Mary that the importance of choice of donor, temperature, and timing for the safety and success of the treatment was fully appreciated, even if not understood.

Later, in the hands of skilled operators variolation offered considerable protection against smallpox, with a low frequency of complications.

Jenner is responsible for distinguishing the term vaccination, yet variolae vacciniae (vacca=cow) is perhaps a misnomer on two counts: first, he firmly stated that it originated in the horse and was only passed through the cow; second, the cow-pox matter he and his contemporaries, Woodville and Pearson, distributed all over the UK and to many other countries remains controversial and may, in some instances, have been attenuated human smallpox. This issue has been addressed by many, one of the most reasoned overviews being by Derrick Baxby, who considers the possibilities of various origins, various strains, contamination, and genetic hybridisation. Baxby concludes that gratitude is owed to Jenner for showing that the vaccine could be carried in series by arm-to-arm passage and for focusing public attention on the procedure. It might, however, be argued that Jenner’s further contribution was to focus scientific attention on the possibility of attenuating viruses by passage through animals—ie, it directed research along one particular path. The older variolation was made illegal in England in 1840 and vaccination, since it was made compulsory under penalty from 1853, finally won the day.

Although one can only admire his generosity of spirit in making the results of his investigation public immediately, the interpretations Jenner and the other early vaccinators placed on their observations would hardly be thought impartial today and their procedures were scarcely less cavalier than those of their predecessors, the variolators. Also, when Jenner petitioned Parliament in 1802 he was rewarded with a grant of £10,000, and when a second grant was proposed in 1807 the House of Commons voted him a further £20,000. Lady Mary offered both her son (1718) and, on her return to London, her daughter (1721) as subjects to prove the reliability of the method she advocated. Her attitude is conveyed with customary dryness in her short essay. “‘Tis no way my interest (according to the common acceptance of that word) to convince the world of their errors; that is, I shall get nothing by it but the private satisfaction of having done good to mankind, and I know no body that reckons that satisfaction any part of their interest”.

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1 Jenner E. An inquiry into the causes and effects of the variolae vacciniae. London: Sampson Low 1798.
5 Wortley Montagu M. A plain account of the inoculating of the small pox by a Turkey merchant. The *Flying-Post*: or, _Post-Master_ Sept 11–13, 1722.

**DEPARTMENT OF ERROR**

Myoclonic encephalopathy after exposure to aluminium—In this letter by Hoang-Xuan and colleagues (March 30, p 910), the units for aluminium should have been μmol/L.

Primary angioplasty for acute myocardial infarction—In this commentary by Freek Verheugt (May 11, p 1276) the figure given in the table for the primary angioplasty group should have read 565.