It's Jakob's disease, not Creutzfeldt's

Sir — Creutzfeldt–Jakob disease (CJD) is a misnomer. In 1921, the Hamburg neuropathologist Alfons Maria Jakob (1884–1931) published three papers, "*Über eigenartige Erkrankunbgen des Zentralnervensystems mit bemerkenswertem anatomischen Befunde*" ("On peculiar illnesses of the central nervous system with remarkable anatomical findings")[1–3].

In these and in a paper of 1923 (ref. 4), he described the cases of two men and three women aged between 34 and 51 who progressively developed disturbances of motor functions, speech and emotion, with obvious personality changes and loss of memory; eventually they were unable to move, stand or speak, and died in dementia between a few weeks and a year after the start of more serious symptoms.

In 1920, the Breslau neurologist Hans Gerhard Creutzfeldt (1885–1964) had described "a peculiar focal illness of the central nervous system" of the patient Berta E.[5]. Jakob writes in his second paper on these new diseases that he came to the conclusion that Creutzfeldt's case refers to a "nosologically very closely connected if not identical affection" ("*nosologisch sehr nahestehende, wenn nicht wesensgleiche Affektion*") to his own cases[6]. Thus the designation "Creutzfeldt–Jakob–Krankheit" was logical. It had first been used in 1922 (ref. 7).

Medicine today considers CJD as a rare, progressive and always deadly transmissible spongiform encephalopathy (TSE), and also as a prion disease. Careful perusal of the case reported by Creutzfeldt on the basis of the clinical and pathological findings and his illustrations showed that his case does not belong to the TSE group.

E. E. Manuelidis reports: "Dr Creutzfeldt after the Second World War told me that his case did not bear any resemblance to the cases described by Jakob"[8]. Strictly speaking, therefore, the sickness should be called Jakob's disease. It was of course Jakob's own fault that his name is connected erroneously with Creutzfeldt.

But, even of Jakob's five cases, only two are what we understand today as CJD. C. L. Masters was able to re-examine the original slide preparations of Jakob's cases still preserved in the archives of the department of neurology at the University of Hamburg, and he found that only the third and fifth of Jakob's cases fall within the present diagnostic criteria. Five of six subsequent cases published from Jakob's laboratory, however, under his supervision, showed the typical changes of spongiform encephalopathy[9].

Because of bovine spongiform encephalopathy, Creutzfeldt–Jakob disease has become almost a household name. It seems impossible, therefore, to drop the Creutzfeldt part of this term because everybody would think that Jakob's disease is something different. But it would be possible to do Jakob historical justice by changing the order of the two names so that his comes first, and by always using the term Jakob–Creutzfeldt disease as is often done in German medical literature.

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Patents paved the way

Sir — As the original patentee of the nuclear radiometer concept, I am impressed with Daedalus's imaginative applications of the idea (*Nature* **392**, 337 & 443; 1998).

The basic patent (Self-Propelled Nuclear Radiometer, US Patent No. 3,110,811) almost 40 years ago employed precisely the principle that Daedalus describes — to create thrust for small motors or in outer space. Five years earlier, that principle was employed in another patent (Nuclear Radiometer for Neutron Flux Measurement, US Patent No. 2,951,942), using a neutron absorber such as fissionable materials or boron-10, to create particles to heat one side of radiometer panes to measure neutron flux.

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Training undervalued

Sir — The German labour market is in its deepest crisis of the post-war era. One of the severest shortcomings in Germany is a lack of willingness to take young people into apprenticeship. More than 200,000 such positions are likely to be needed each year. At the same time, the effectiveness of research activities inside and outside universities is lagging behind that of US and British institutions. The possible causes and potential remedies are widely discussed in the media. I should like to suggest a way in which the German science community might help to solve Germany's labour problem and at the same time increase its productivity.

Technical personnel in Anglo-Saxon countries usually have a university education, often a bachelor's degree. As a consequence, their education is up to date with the most modern technologies and knowledge. In Germany, by contrast, equivalent workers are educated either within companies that employ largely traditional methods or in schools whose curricula are years behind the state of the art. Young workers newly employed by research institutions and technology companies have therefore to be entirely retrained to be able to perform as desired. Because such retraining is usually unsystematic, the theoretical background of technical personnel in Germany is often insufficient to allow their creative participation in research.

Large research institutions, even those entirely financed through the government, only very rarely offer apprenticeships. Academics are extremely reluctant to educate technical personnel, considering such activity a burden. But the blame does not lie only with academics. Government and large research institutions do little to convince their employees of the need to educate young people or otherwise promote activities along these lines. For example, very few positions would have to be created in big institutes that coordinate teaching. Apprentices could rotate through different laboratories and acquire profound and versatile skills.

This would not only not be a burden, but within a few years would result in much better educated staff and, in consequence, higher research productivity. Thousands of positions could be created by this means, and each graduate would certainly be sufficiently qualified to compensate for the trouble caused to the scientists involved in training.

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