

Gourmet cannibalism in New Guinea tribe

Sir — June Goodfield is partly right in her defence of Shirley (Glasse) Lindenbaum and Robert Glasse's priority in identifying Fore cannibalism as the aetiological agent in the epidemic spread of kuru¹. The facts are, however, more complicated.

Before February 1966, when Gajdusek, Gibbs and Alpers reported² that kuru is transmissible, speculation about an aetiological agent could be no more than that — speculation. An epidemiologist at the US National Institutes of Health, Leonard Kurland, raised the possibility in a letter to Joseph Smadel, then the institutes' associate director, in 1957 (ref. 3). Gajdusek, who was in New Guinea, as it was then called, reviewed the issue, not for the first time or the last, and rejected the possibility, as he wrote to Smadel, because he could "see no sign of infection or post-infectious phenomena"⁴.

Ann and J. L. Fischer, two American anthropologists, proposed in spring 1961 that "the Fore habit of eating corpses suggests a way in which a viral agent might be passed"⁵. Alpers told me he found such speculation commonplace in bars in Goroka following his arrival in New Guinea in October 1961.

Thus the Glasses' priority is justified not by chronology but by their important role, which Alpers emphasized to me, in collecting detailed evidence of cannibal feasts which could be matched with the subsequent appearance of the disease in participants — evidence first

presented in 1963 (ref. 6).

Both Alpers and Lindenbaum told me that Fore women typically ate every part of the bodies they cannibalized, even the faeces and the bones — the practice was, after all, an alternative burial of family members. Lindenbaum does not attach the word "ritual" to the practice; she calls it gourmet cannibalism. Fore women told her they ate the dead because they were "delicious".

Direct inoculation through the mucous membrane was certainly one probable route of infection, as Gajdusek and Gibbs continue to maintain, but with mountains of cannibal cattle dead of bovine spongiform encephalopathy and sheep of scrapie, it is quibbling at this late date to deny oral transmission of spongiform encephalopathy.

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2. Gajdusek, D. C., Gibbs C. J. Jr & Alpers, M. *Nature* **209**, 794–796 (1966).
3. Gajdusek, D. C. (ed.) *Correspondence on the Discovery and Original Investigations on Kuru (Smadel–Gajdusek Correspondence, 1955–1958)*. National Institutes of Health DHEW Publ. No. 76–1168, 253 (1976).
4. Gajdusek, D. C. (ed.) *Correspondence on the Discovery and Original Investigations on Kuru (Smadel–Gajdusek Correspondence, 1955–1958)*. National Institutes of Health DHEW Publ. No. 76–1168, 299–300 (1976).
5. Fischer, A. & Fischer, J. L. *J. Health Hum. Behav.* **2**, 24 (1961).
6. Glasse, R. M. *Cannibalism in the Kuru Region*. (Dept of Public Health, Territory of Papua and New Guinea, Mimeographed, 1963).

nonexistent; nevertheless, the appropriate publicity leads to the fraudster's admission to the Institut de France. It is interesting to come across this comedy just now when scientific misconduct is openly discussed in industrial societies but remains concealed in developing countries.

The small scientific output of Mexico and the lack of high-profile fraudsters do not guarantee proper behaviour among Mexican scientists²; in fact, it may well be the other way round. Developing countries also need to set up procedures to deal with scientific misconduct.

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1. Romains, J. *Donogoo* (Spanish version by Massanes, N. & Losada, S. A., Buenos Aires, 1957).
2. Rivera, H. *Arch. Med. Res.* **27**, 587–588 (1996).

Scientific advance thrives on openness

Sir — I greatly enjoyed your recent leading article on "Flawed understanding of the scientific process", with its thoughtful emphasis on science as a continually evolving path to better understanding rather than a set of certainties (*Nature* **388**, 607; 1997).

Your leading article was set against the background of recent controversies in the United States and in France. I think there are, however, interesting resonances between the principles you set out and those that underpin the UK government's document *The Use of Scientific Advice in Policy Making* (DTI/Pub 2808/0.5k/5/97/RP. <http://www.dti.gov.uk>).

This document was prepared by the Office of Science and Technology for the previous government, and strongly endorsed by the present Minister for Science, Energy and Industry, John Battle, in his speech to the Parliamentary and Scientific Committee on 10 July: "Involve at least some experts from other, not necessarily scientific, disciplines, to ensure that the evidence is subjected to a sufficiently questioning review from a wide ranging set of viewpoints; [and] ensure that data relating to the issue are made available as early as possible to the scientific community to enable a wide range of research groups to tackle the issue. Scientific advance thrives on openness and competition of ideas."

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Pseudo-authorship

Sir — A recent leading article (*Nature* **387**, 831; 1997) raises the question whether authorship should be redefined. I think it should: readers should know who is really responsible for published research results.

As things stand, researchers need to publish as many articles as possible and this leads to multi-authorship, gift authorship and 'salami' tactics. Journals prescribe how to submit a manuscript, so why not prescribe correct authorship?

In more than 25 years working as a scientific editor (in geology, nuclear energy and technology) and in national and international editorial organizations, I have not been aware of any valid argument for more than three authors per paper, although I recognize that this may not be true for every field.

Perhaps scientific journals and

international organizations could take the lead. If journals were to instruct authors that manuscripts with more than three authors would not normally be considered for publication, there would soon be a drop in the number of pseudo-authors.

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Fraud foreseen

Sir — The widespread occurrence of fraud and misconduct in scientific research prompts me to honour the foresight of Jules Romains (1885–1972) who satirized such improper behaviour many years ago¹. His farcical comedy *Donogoo* (1920) deals with the description by the famous geographer Yves Le Trouhadec of the golden city of Donogoo-Tonka, which is later shown to be