

## LECTURE BY PROFESSOR HALL OF OXFORD

On the evening of Wednesday 15th February Professor Edward Hall, Director of the Oxford carbon-dating laboratory, gave an illustrated lecture on the shroud to a packed meeting of the British Museum Society. The venue was the Logan Hall at the Institute of Education in Bedford Way, London, a few minutes walk from the British Museum. Professor Hall had entitled the lecture "The Turin Shroud - A Lesson in Self-Persuasion."

After amusing the audience by displaying in *Observer* cartoon of a scientist sitting in a confessional box saying "And I confess to two instances of carbon dating", Hall began by explaining how back in 1954 he had participated in the un-hoaxing of Piltdown Man, showing the cranium to be human, but the jaw that of an orang-utan. In corroboration of these findings, he said that only within the last month he had carbon-dated the Piltdown jaw to around 100 years old, and the cranium to the early mediaeval period.

After some similar dismissive comments on dowsing "It doesn't work, whatever you say," Hall outlined the theory and history of carbon-dating, and in particular how the known fluctuations in carbon 14 content century by century have been calibrated to a fine accuracy with the aid of tree ring dating. He also explained the development of the AMS method of carbon dating, and how by needing "a thousand times" less sample than the older proportional counter method, this has opened up the practicability of carbon dating for many more items, including single seeds, tiny fragments of charcoal, slivers from very precious objects, and of course the Turin Shroud.

Of the Shroud he said that even when he first saw it, it looked "too good to be true". The wound marks looked too complete. If the cloth was genuine, some surely would not have come out. With the aid of a specially prepared slide, he said the only certain facts on the Shroud's origins were (1) the foundation of the "Chambry" (sic) church in 1353; (2) Bishop Henry declaring the Shroud a fake in 1359 (sic); and Bishop D'Arcis complaining to Pope Clement VIII of renewed expositions in 1389. [Note: there were errors in each of these "certain facts"].

Of the Shroud's negativity, he said this was enhanced by photography. With regard to the pollen evidence, he pointed out how dust from the Sahara can often be found carried by the wind onto cars in London. He said that people who write books on the Shroud are automatically biased, as are Groups such as STURP, ASSIST and the "more respectable" British Society for the Turin Shroud. "You don't start these groups unless you believe in it". He criticised the STURP Group as particularly culpable for giving the Shroud some false scientific credibility.

On the carbon dating proper he described the meeting of seven laboratories in 1986, and the "entirely wise" decision to reduce to the three chosen ones. He said that even with three it was difficult enough, not least because "we weren't allowed to talk to each other". Harwell was unsuitable for inclusion (1) "because we're both Brits", and (2), because Harwell would have needed five times more sample than Oxford. He showed slides of those present at the taking of the samples from the Shroud on 21 April 1988, pointing out that Giovanni Riggi was clearly in charge, with Dr. Tite of the British Museum the only scientist allowed near the Shroud, and the carbon dating laboratory personnel "kept well back".

Of the known raised objections to the carbon dating verdict, Hall said he intended to "shoot these dead." With regard to the disparity between Oxford, Harwell and the archaeologists in the case of the datings of Lindow Man, he said that Oxford worked from some 25 samples of differing types, e.g. stomach contents, etc., and the results were very close to each other. "I believe they're the right dates". Of the pathological evidence advanced in favour of the Shroud, he was dismissive of pathological evidence in general. He cited how in 1983 the police brought him a skull which a pathologist was "absolutely sure", on the basis of photographic comparison, to be that of a woman murder victim of a few years before. Hall's team dated the skull to 410 AD.

Countering some arguments that the Oxford laboratory is relatively inexperienced, he said that it now does some 1,000 datings a year and "we haven't been caught out yet - although of course some can't be proved." Of the possibility of some factor such as the 1532 fire having baked contaminants into the Shroud he described how microphotographs had indeed shown a lot of crystals of sodium chloride and calcium carbonate on the Shroud's surface, but these had been carefully removed by washing in solvents. Some 20% of the original material had been dissolved in this process. For a false mediaeval date to be arrived at from a genuine first century cloth a 60% level of modern contamination would be needed. He said such a level was ridiculous; he would be amazed if even 1% had been left. With regard to the idea that the carbon 14 content might have been altered by a burst of radiation Hall argued that the odds were one in a thousand million that such a process should have given a date of the fourteenth century, the very date that, if a forgery, the Shroud is most likely to have been created.

He said that at Oxford at least the carbon dating was done "blind". After the combustion of the samples to gas, they were recoded so that while he, Professor Hall continued to know the identity of the samples, Dr. Hedges, who was actually carrying out the work, did not.

Professor Hall said he felt that on the whole the Turin authorities had "behaved rather well during all the carry-on." They said they would accept the result, and they have stuck to that. But he concluded "There will be some Flat Earthers who won't accept this. They're onto a loser. Anyone can take refuge in a miracle". Both he and Dr. Tite had had some amazing letters, including ones condemning them to hell-fire many times over. He could only take comfort in the fact that there did not seem to be any Christian Ayatollahs around.