

Report of 27 August 2015 Meeting

Royal Society

Southern Highlands Branch

Speaker: **Professor Richard “Bert” Roberts**
 Director of the Centre for Archaeological Science,
 University of Wollongong

Topic: **Human Evolution and Dispersal from Africa to Australia**

Richard Roberts received his training in the Earth sciences, first in the UK, then in Canada. Australia was next. His interests centre on the interactions between prehistoric people and their environments, and in particular the timing, causes and consequences of modern human (*Homo Sapiens*) migrations around the planet.

The team which he heads is based at the Centre for Archaeological Science at the University of Wollongong, and is dedicated to archaeological dating and the reconstruction of past environments. Early work was concerned with the first evidence for the human colonization of Australia and the resulting mass extinction of the megafauna. Richard has since expanded these interests into Asia and Africa, and was involved in the discovery and dating of the “Hobbit”, a new species of tiny human (*Homo Floresiensis*) found in 2003 on the Indonesian island of Flores.

Many in the audience of 65 persons had come to hear in particular Professor Roberts’ presentation and comments of his research experiences relating to the Hobbit. They were aware that twelve years ago in Australia and Indonesia, the scientific world had been turned on its head. By a very small head at that. The newly reported species of human was only one metre tall, with a brain the size of a chimp’s, leading some to theorise that the Hobbit was the unfortunate consequence of one of our species, *Homo sapiens*, suffering from a severe medical condition called microencephaly, in which the head and brain are massively reduced in size.

When the find of a partial skeleton was made in the Liang Bua cave, the archaeologists had been searching for the remains of the ancestors of the first Australians, early *Homo sapiens*, dispersing through the Indonesian archipelago to Australia. The skull was that of an adult human, but far too small to be one of our own species, and many other features of the skull, teeth and lower jaw didn’t fit the modern human mould. The same was also true of the rest of the body, with the Hobbit having very different limb proportions to us. Opinions were given by some in the field that a variety of different pathologies such as Down syndrome could explain the curious anatomy of the Hobbit. However as more bones have been excavated and described, expert opinion supports overwhelmingly the original diagnosis of the Hobbit as a new species.

Richard Roberts is the first to admit that there are huge gaps in our knowledge of the Hobbit. Two gaping holes are the early years of the Hobbit, including its evolutionary

history and route of passage to Flores, and its final days. He also says that it is even possible that the Hobbits met and bred with the enigmatic Denisovans, a sister group to Neanderthals, who may have inhabited parts of Southeast Asia at the same time as Hobbits and Homo sapiens. The cave deposits represent a snapshot in time, a mere glimpse of human activities over the last 100,000 years. We remain ignorant of the early evolutionary development of the Hobbit.

One thing about which there is no doubt however, is that we should expect the unexpected when excavating the lost worlds of Indonesia. Professor Richard Roberts feels that it is not beyond reason that another new species of human might be discovered in the years ahead. He cites advances in archaeological science techniques that are helping to illuminate the human past, from improvements in scientific dating techniques to the chemical analysis of residues attached to ancient artifacts, illustrated by examples from his current project funded by the Australian Research Council.

Anne Wood