POLICY

UK loses track of its policy research

Report slams government for missing studies.

BY DANIEL CRESSEY

The UK government doesn't know how much policy-linked research it has commissioned, or how much of such research has been published. That is the stark conclusion of an independent inquiry, published on 2 June, which details confusion about the status of research produced for government departments in areas ranging from social policy to climate change.

The inquiry was carried out by Stephen Sedley, a judge, law professor and trustee of Sense About Science, the London-based science-advocacy group that published the report. He spoke to government advisers, civil servants and researchers, and used multiple freedom-of-information requests to find out how much research commissioned by the government gets published.

According to official estimates, the government spends around £2.5 billion (US$3.6 billion) a year commissioning research linked to policy issues. But, Sedley says, it has "no comprehensive account" of how much is commissioned or published.

Just 4 out of 24 government departments told Sedley that they kept a centralized database of commissioned research. Others could not provide a list of the studies that they carried out or commissioned. Many departments said that it would be too costly to provide the information, because it was held in many different files and locations.

Civil servants told Sedley that they often waste time trying to find past studies. The report also notes several cases in which the publication of reports has been delayed owing to "political concerns about the implications of the research" — including work on drug policy and immigration.

"The fact that a few departments do maintain a research register, handle awkward findings and publish promptly exposes the excuses of those that don't," said Tracey Brown, director of Sense About Science, in a statement. The report calls for a central register of all government-commissioned research, a commitment to prompt publication, and routine publication of any work that has been used to inform government policy. ■

The late rock-art specialist Mike Morwood at Liang Bua cave, where his team discovered *Homo floresiensis*.

ACHMAD IBRAHIM/AP

PALAEOANTHROPOLOGY

Hobbit relatives hint at family tree

Possible ancestors of Homo floresiensis *found after long hunt.*

BY EWEN CALLAWAY

More than a decade after the discovery that a diminutive relative of modern humans once lived on the Indonesian island of Flores, Gerrit van den Bergh was losing faith that he would find any clues to the ancestors of the 'hobbit'. It was October 2014, and for four years he had co-led an industrial-scale excavation near the cave where the metre-tall skeleton had been found. Then, weeks before packing it in for the year, a local worker found a 700,000-year-old molar. More teeth and a partial jaw quickly followed.

"We had given up hope we would find anything, then it was 'bingo!'," says van den Bergh, a palaeontologist at the University of Wollongong, Australia, whose team reports the finds in two papers in this issue (G. D. van den Bergh *et al. Nature* **534,** 245–248; 2016; and A. Brumm *et al. Nature* **534,** 249–253; 2016). "We had this enormous party. We had a cow slaughter and there was dancing. It was marvellous."

The unusually petite jaw and teeth are from at least one adult and two children — the first possible ancestors of *Homo floresiensis* ever to be discovered — and resemble the hobbit remains found on the island, which are between 60,000 and 100,000 years old.

The jaw and teeth address two questions that have dogged the study of the species — where did it come from and how did it get so small? But as with all things hobbit, there is little consensus among researchers, who say that firm conclusions require more fossils.

The hobbit's discovery in 2003 in Liang Bua cave, by a team led by the late Australia-based rock-art specialist Mike Morwood, was an instant sensation. But its place in the human family tree is contentious. Morwood's team proposed that it was a shrunken *Homo erectus*, the same species that probably evolved into *Homo sapiens* in Africa and that roamed as far as Europe and Asia. Other scientists who have examined features of *H. floresiensis,* such as its long, flat feet, think that it descended from a smaller, more primitive human relative such as *Homo habilis* or even *Australopithecus*,

known only from remains in sub-Saharan Africa.

Seeking the hobbit's ancestors, in 2004, Morwood's team returned to a site 74 kilometres from Liang Bua called Mata Menge, where elephant bones and tools had been found in the 1960s. The dig started small, but in 2010 the team scaled up. Bulldozers cleared an area of 2,000 metres square, and more than 100 locals then dug for 6 days a week using chisels and hammers. They found hundreds of stone tools, thousands of fossils from animals such as crocodiles, rats and komodo dragons, but no hominin bones.

By then ill with advanced prostate cancer, Morwood visited the area for the last time in 2012. "He really made an effort to walk through the site, you could see he was in pain, but he was so detailed-minded," van den Bergh says. "He increased the pressure to dig more holes and go faster. He really wanted to find them."

Morwood, who died in 2013 before the teeth and jawbone were found, is an author on the *Nature* papers, which were co-led by scientists based in Japan, Australia and Indonesia.

The team concludes that the jaw excavated at Mata Menge is from an adult (its wisdom tooth had erupted) who was even smaller than the hobbit, and that two canines are the milk teeth of two different children. The thin jaw looks more like that of *H. erectus* and *H. floresiensis* than the beefier jaws of more primitive hominins such as *H. habilis*. The square-shaped teeth are intermediate between *H. erectus* and *H. floresiensis*. One tooth and the rock around it led the team to estimate that the remains are some 700,000 years old. The oldest artefacts in the region, meanwhile, suggest that a group of *Homo erectus* arrived on Flores about one million years ago, says van den Bergh.

"We had given up hope we would find anything, then it was 'bingo!'"

DWARFED BY DIET

He and his team note that the remains point to large-bodied *H. erectus* as the likeliest ancestor of the hobbit, and propose that it shrank in just a few hundred thousand years to cope with the meagre resources on Flores. Elephants and other large creatures have been known to shrink over time to cope with the lack of food typical of islands, and red deer on the island of Jersey in the English Channel shrank to one-sixth of their original size in just 6,000 years, says van den Bergh.

Both Fred Spoor, a palaeontologist at University College London, and palaeoanthropologist Chris Stringer at London's Natural History Museum agree that *H. erectus* is now the best fit for the hobbit's ancestor, although Stringer isn't so sure that the shrinkage happened on Flores. It's just as likely that the hobbit emerged on another island, such as Sulawesi, and then moved to Flores, he says.

But William Jungers, a palaeoanthropologist at Stony Brook University in New York, says that the fossils are not complete enough to favour the *H. erectus* origin: "I don't believe these scrappy new dental specimens inform the competing hypotheses for the origin of the species one way or another."

A small river that leads down a hill deposited the sandstone in which the teeth and jaw were found, and van den Bergh expects that more hominin remains lie there. His colleagues, meanwhile, have found stone tools in Sulawesi, north of Flores. For once, the prospect of more hobbits isn't looking so bleak. ■ SEE EDITORIAL P.151 AND NEWS & VIEWS P.188

CORRECTION

In the News Feature 'South Korea's Nobel dream' (*Nature* **534,** 20–23; 2016), one paragraph incorrectly gave numbers in billions instead of trillions of won. In fact, 63.7 trillion won was spent on R&D, 49.2 trillion of which came from private enterprise; and 11.2 trillion won was spent on basic research.