BOOKS & ARTS

In a hole in the ground...

What happens when you find a hobbit — or a unicorn?

The Discovery of the Hobbit: The Scientific Breakthrough that Changed the Face of Human History

by Mike Morwood & Penny Van Oosterzee

Random House: 2007. 326 pp. Aus\$34.95.

To be published as *A New Human* by HarperCollins/Smithsonian in May.**Henry Gee**

The unicorn, wrote Jorge Luis Borges (in *Kafka and His Precursors*), is universally regarded as a supernatural being of good omen. But there's a problem: despite its folkloric familiarity, we wouldn't know how to recognize a unicorn if we met one in real life. It "does not figure among the domestic beasts, it is not always easy to find, it does not lend itself to classification," Borges continues. "It is not like the horse or the bull, the wolf or the deer. In such conditions, we could be face to face with a unicorn and not know for certain what it was."

Most science consists of elaborations on well-tested themes. The discovery of something genuinely unexpected, however, kicks over the traces. Even the discoverers find it hard to accommodate the new arrival in a picture of the world that they have, perhaps inadvisedly, taken for granted.

Many manuscripts received by *Nature* are full of the confidence of scientists who know precisely what they have found and why it is important. But a paper that landed unannounced on my desk on 3 March 2004 was surprising, not only for the extraordinary discovery that it reported, but for the matter-of-fact, almost muted, tones in which it was described. Reading between the lines, it seemed as if the discoverers of *Sundanthropus floresianus* weren't entirely clear in their own minds about what manner of unicorn they had unearthed.

The report, although hard to interpret, is easily summarized. Peter Brown of the University of New England in Australia and his colleagues described a hitherto unknown and extinct member of the human family from a cave called Liang Bua on the island of Flores in Indonesia. The skeleton was archaic in form and extremely small — smaller even than Lucy, the primitive, pre-human hominid discovered in Ethiopia whose species (*Australopithecus afarensis*) died out around 3 million years ago.

But there were two big surprises, as Mike Morwood, co-principal investigator of the joint Indonesian and Australian project on Flores, relates in his book *The Discovery of the Hobbit*.

Home to a hobbit: *Homo floresiensis* was found in Liang Bua cave on the island of Flores in Indonesia.

The first is that the Flores hominid lived as recently as 18,000 years ago. The second is that the form of the remarkably tiny skull, especially its teeth, suggested a more derived ancestry, not from *Australopithecus* or any other (unknown) primitive hominid, but from a form of *Homo* — perhaps a population of *Homo erectus* that was marooned on Flores a million years ago and had undergone the kind of endemic dwarfing seen in the native, pony-sized elephants already found on Flores. The prior existence of stone tools dating back 800,000 years from elsewhere on Flores suggested the second scenario. And yet the jarring anachronism of the Flores hominid — literally so, given its recent date and weird morphology — prompted the authors to place their creature in its own genus, at least for the present, as *Sundanthropus*, or Sunda man.

The referees responded with one accord. To be sure, the creature was strange, but the strangeness might be a consequence of its size. The skull, though, was clearly that of a member of our own genus, *Homo*. In addition, one referee commented specifically on the specific name, *floresianus*, noting that generations of students would dub it 'flowery anus'. The authors duly changed the generic and specific name to *Homo floresiensis* and, after several

iterations, that was the name attached to the fossil when the discovery was published in *Nature* on 28 October 2004.

The rest, as they say, is history. In *The Discovery of the Hobbit*, Morwood and science writer Penny Van Oosterzee relate the discovery, its background and the fallout. To be fair, it's not great literature, but it is of vital importance, standing as the first, book-length, 'official' account of the discovery. Here you will learn how and why the researchers came to be in such a remote place, what they found, and the considerable logistical and administrative obstacles they faced.

Disbelief and doubt were not confined to the researchers and their circle. As Morwood recounts, hardly had the finds been made public than commentators queued up to declare *Homo floresiensis* not a new species, but a pathological specimen of modern humans, *Homo sapiens*, perhaps suffering from some form of microcephaly. This was despite the presence of not one specimen but several, now known to have existed perhaps as long as 95,000 years ago.

Such reaction is common in the wake of new hominid discoveries, which are routinely dismissed either as pathological humans (*Homo neanderthalensis*) or apes (*Australopithecus*

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africanus and *Sahelanthropus tchadensis*). Such reactions say less about the facts than the mindsets of commentators, who might be unwilling to have their comfortable views of the world so forcibly changed. Confronted with what might be a genuine unicorn, many would prefer to see a pantomime horse with a spike glued to its head.

After that, research fades into hypothesis, and thence into myth. It was perhaps inescapable that the researchers chose to name their find 'hobbit', after those small, secretive and entirely fictitious residents of J. R. R. Tolkien's Middle-earth. It may be telling that the researchers couldn't even agree on this soubriquet, but it was wished upon them by the press.

And what of *Homo floresiensis*? Although the most parsimonious view is that it is *Homo erectus* writ small, Morwood reminds us that evolution is not obliged to be parsimonious,

and that the very existence of *H. floresiensis* reminds us that much remains undiscovered. In which case, perhaps the researchers were right to begin with in supposing that their creature represented a hitherto unknown and primitive hominid that arrived in southeast Asia, from places unknown, long before *Homo* evolved.

The unicorn remains as it always did, frustratingly elusive. This year, the researchers will return to Liang Bua to see if they can discover more. But stories such as this demand a mythological beast altogether less serene. It is as if the researchers had set out to discover some new form of fossil mouse, only to find that they had grabbed a dragon by the tail instead. And as any devotee of Harry Potter will remind you: *Draco dormiens nunquam titillandus*. ■

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from the oil drums (bidons) of North Africa, or the crates used to import tractors to Durban, these urban centres are home to distinctive, and effective, local 'creole technologies' about which we understand far too little. The book is filled with powerful and thought-provoking examples derived from Edgerton's enormous experience of the mainstream history of technology, but also, unusually, of South America and other parts of the 'poor world'.

With his emphasis on use, the author takes us into areas that most accounts of technology overlook, such as slaughterhouses and execution chambers. In one of the most valuable essays he reminds us that many people (perhaps most?) engage with technology through repair and maintenance. According to this perspective, the technological story of Toyota or Mercedes is not exemplified by the production lines and industrial culture of Nagoya or Stuttgart, emblematic though these may be in technological history. Equally important are the communal repair sites of Ghana known as 'magazines', where tools are rudimentary — "hammers, spanners in incomplete sets, files and screwdrivers" — but where the vehicles are reworked to be indefinitely maintainable, within their local system, and where those who repair them get to know them much more intimately than do drivers or mechanics in any rich country.

The account is a compelling *tour de force* and a corrective. My own institution, the Science Museum in London, does not entirely escape; he scolds it for an 'innovation timeline' that orders the showcase gallery "grandly" entitled 'Making of the Modern World'. However, as curators, we believe it is most effective to engage with audiences, initially at least, through what they know about technology. We may regret that an older historiography of technology dominates public understanding, but this is the case nonetheless, so icons

A user's guide to technology

The Shock of the Old: Technology in Global History Since 1900

by David Edgerton

Profile/Oxford University Press: 2007.
320 pp. £18.99/\$26

Andrew Nahum

As an academic discipline, the history of technology has spent many decades refining models of technological change. There has been a move from a relatively deterministic 'engineering darwinism' to considering technologies, at least in part, as being elicited and selected in the light of social values, aspirations and prejudices.

The polemical thrust of David Edgerton's book *The Shock of the Old*, however, is that this analysis of the succession of technologies, techniques and machines has the wrong focus. It is hopelessly biased towards innovation and novelty, and implicitly creates a tidy 'timeline of progress'. Moreover, things are not always as they seem. For example, B-52 bombers, an important part of the US Air Force today, are almost 50 years old and might be flown by the grandsons of their first pilots. In the Second World War, more than half-a-million horses dragged the 'mechanized' German army into Russia, while Britain's wooden Mosquito aircraft outpaced metal Messerschmitts.

Counter-intuitive examples such as these are the firecrackers of Edgerton's original and timely book, which has been promoted and packaged on the basis of the title and these old-new teasers. However, the author does not fully complete this advertised mission, for his real agenda is to promote an analysis of technology that is rooted in use and in practice, rather than in innovation and invention.

"One particularly important feature of use-based history of technology," Edgerton argues,

"is that it can be genuinely global." Rather than focusing on the dichotomy between the technology-rich developed world and what Edgerton calls the 'poor world', usually presumed to be deficient in technology or furnished only with second-hand or debased versions, user-based history engages "with all the world's population, which is mostly poor, non-white and half female".

This reading of the dislocation between the present reality and our "reheated futurism" is typified by a section on urban development entitled 'Not Alphaville but bidonville', which notes that by the end of the twentieth century, "most of the largest cities in the world were poor places where once Paris, London and New York led in scale and opulence". Whether built

A hands-on approach: mechanics in Cuba maintain old American cars indefinitely using basic tools.

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