



They came from the deep

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They're big, they're slithery, they're terrifying, they've never been seen alive – and now, it's reported, they're taking over the world, with a greater total weight as a species than the entire human race. Richard Askwith reports on the mysteries of the giant squid, a profoundly elusive creature that suddenly seems to be popping up everywhere.

IF YOU were looking for a suitable place to begin the last chapter in the story of mankind's dominance of this planet, you might do worst than choose Seven Mile Beach, Tasmania. Ten miles east of Hobart, overlooking the aptly named Storm Bay, it's a place of humbling bleakness, battered by great oceanic breakers whose scale encourages the thought that our role in the great scheme of things is perhaps more marginal than we like to imagine.

Which is appropriate, because it was here, two weekends ago, that early morning joggers chanced upon a remarkable piece of jetsam: the remains – almost intact – of a giant squid. Even to those unversed in marine biology, it was clearly a remarkable discovery: a 250kg beast, 15 metres long, with eight giant arms, eyes the size of small plates, a parrot-like central beak and – as one observer enthusiastically put it – “calamari the size of truck tyres”.

But for the local scientists who rushed to the scene it meant much more than that. The giant squid – commonly known as the kraken – is one of the most elusive creatures on earth. Nautical folklore is full of reports of its terrors: attacking whales, snatching people from the shore, swallowing ships with 75-metre tentacles. But in the whole of human history, only a few hundred specimens – or, more usually, parts of specimens – have come to light; it's only for the past century or so that science has even accepted that they exist at all. Finds such as this are therefore of extraordinary value. Squid scientists – teuthologists – live for such moments.

“It was amazing,” says Dr David Pemberton, Senior Curator of Zoology at Tasmanian Museum and Art Gallery, who rushed to the scene just in time to save the delicate corpse from the incoming tide and is now making arrangements for it to be analysed and put on public display. “You’re standing there on the beach, and you’re thinking: this is the biggest invertebrate on earth. And it was so fresh: it must have been feeding in the waters nearby – and breeding too, because it had sperm sacs on it, and sucker marks on its head and neck. I looked at this animal and said: This is telling us something.’ You don’t often get a moment like that.”

Except that, these days, perhaps you do. Six months earlier, another almost complete specimen was washed up, this time near Aberdeen. “It’s like winning the lottery,” said Kelvin Boot of the National Maritime Aquarium in Plymouth (where the squid was hastily conveyed). “I never believed I would see one in my lifetime. They really are the stuff of mythology.”

A few weeks before that, scientists from the US, Japan, Spain and France reported eight separate sightings, in various oceans, of a hitherto unknown species that, if not strictly a Giant Squid, was certainly – at seven or eight metres long – a Very Large Squid Indeed. “I’ve encountered numerous odd and unusual creatures,” said Professor William Sager of Texas A&M University, who observed one of them from a submersible. “But I’ve never seen anything like this creature. It just hung there, looking at us.”

A much-publicised mass stranding last month of “jumbo” squid off La Jolla, California, can probably be dismissed as irrelevant to this trend. Not so the appearance last summer of another giant squid corpse – give or take a tentacle – in nets of Spanish trawlermen fishing off the Azores. That, too, is now on public display – yet another rare, precious building-block in the fragile edifice of teuthology, and further evidence that, in giant squid terms, something strange is happening.

But perhaps the most significant find of all took place in March, some 150 miles east of New Zealand. This time, the squid in question – 14 of them, caught in a special fine-mesh net – were only the size of shrimps; but they were genuine, if juvenile, giant squid, which would have grown to several metres in length within a few months; and, most extraordinarily of all, they were alive. This was, in other words, the first ever authenticated sighting of a live giant squid.

Dr Steve O’Shea of the National Institute of Water and Atmospheric Research in Wellington, New Zealand, had been searching for the creatures for years, helped by sponsorship from the Discovery Channel. “Finding them after all these years was great,” he says. “Nobody even knew what they looked like prior to undertaking this work.” Unintimidated by the giant squid’s fearsome reputation, Dr O’Shea attempted to nurture the specimens in the laboratory. They died after a few days, which, he says, “was one of the worst experiences of my life.” But he is confident that his life’s quest is close to completion. “I am absolutely certain that, one day, we will be able to keep and breed

giant squid in captivity. And I certainly believe that we'll not have to wait long to see the adult alive."

This in itself is a fairly astonishing development: a creature once dismissed as a fantasy on a par with the yeti or the Loch Ness monster has been both observed alive and, it seems, all but tamed.

But that, it now emerges, is only the beginning of the story. Last week brought even more dramatic news: the respected journal *Australasian Science* was reported to have announced that giant squid are currently growing so fast – both in size and in number – that, in terms of total biomass, they now surpass the human race.

On the face of it, this is absurd. Here is a species whose existence mankind has scarcely even noticed until now; for living examples of which scientists have spent whole careers searching in vain. How can they suddenly be occupying more of our planet than us? And how can scientists be so certain – when they are simultaneously so ignorant?

But the article, based on the work of Dr George Jackson of Tasmania's Institute of Antarctic and Southern Ocean Studies, seemed plain enough. Squid, it insisted, are the new "big players of the ocean". Previous constraints on their population – such as predation by sperm whales and tuna and competition for food by smaller "ground fish" such as flounder, halibut, cod and hake – have in recent years been abruptly removed, in both cases by overfishing. At the same time, global warming has heated the ocean to a temperature better suited than ever before to rapid growth – both for giant squid and for cephalopods in general.

Jackson describes recent growth rates – inferred both from finds on beaches and in fishing nets and from squid remains in the bellies of sperm whales – as "exponential". Warm water, it seems, encourages increased mating activity and increased metabolic efficiency; and, in the absence of predators, the sky – or the surface – is the limit. "Just as fast-growing weeds can quickly colonise an area of ground that has been denuded of vegetation, so the rapid growth-rate of squids and their short life-cycles have enabled them to move into regions that have been heavily over-fished," says Dr Jackson. "You just heat them up a little bit and everything just ticks over that much faster."

Jackson calculates the mass of the human race at 400 million tonnes (an average of 11 stone each). But 60 per cent of our planet's living space consists of unexplored ocean depths more than a mile below sea level. "If you assume that the depths of our vast oceans are occupied by giant squid and average them out to around half a ton each," he told the *Daily Mail*, "they are going to outweigh humans."

It sounds like a fairly giant "if", but Jackson is not alone in his beliefs. Even more sceptical scientists – such as Professor Paul Rodhouse of the British Antarctic Survey – admit that "we can expect to see these things turning up more and more", and that the past 20 years have seen a huge increase in the number of giant squid – or bits of giant

squid – that have been turning up in trawlers’ nets (sometimes, it’s rumoured, not wholly dead on arrival).

The sceptics, notably Professor Rodhouse, attribute this not to a giant squid “boom” but to the fact that we are fishing more “away from conventional fishing grounds, away from the continental shelves and into the deep ocean”; although this doesn’t explain the apparent increase in the number of specimens being washed up naturally on beaches.

What isn’t in dispute is that cephalopod populations as a whole are booming. Statistics from the UN’s Food and Agriculture Organisation imply a 200 per cent increase in squid tonnage in the ocean between 1970 and 1994 alone; and, according to Dr Daniel Pauly, professor at the Fisheries Centre of the University of British Columbia, Canada, “Very few scientists dispute that the phenomenon is near universal.”

Does that mean that giant squid are among the cephalopods affected? Not necessarily. Even Dr Jackson admits, when pressed, that “We can’t know that the giant squid population will necessarily increase, because we don’t know how global warming affects the deep ocean.”

But the fact remains that, even if they’re not taking over the world, giant squid are spectacularly well-placed to do so. They are, for a start, bigger than us. They grow faster, have more room to expand, and, unlike us, have never had it so good environmentally. And it has to be said that, as rival species go, they are worthy contenders for the title of heavyweight champions of the world. Based, for the most part, in the great, dark depths of the unexplored trenches of all the world’s oceans, they grow fast and die young (typically before the age of five), which is an ideal recipe for rapid population expansion. Their love-making techniques don’t sound much fun (think “3ft muscular appendage”, “staple-gun effect” and possible “post-coital disintegration”), but in other respects they are models of sophistication. They have proportionally bigger brains than any other invertebrates. They may well communicate, like other squid, by some form of the mysterious visual process known as bioluminescence. They move by jet propulsion (“They invented the jet engine,” says David Pemberton) and do not, as far as we know, have any current plans for civilisation- threatening wars – although sucker scars found on sperm whales testify to the fact that they are no slouch in a fight. Even their scientific name – finally conferred on them in 1880 – implies dominance. *Architeuthis dux*: chief leader among squid. It’s the marine equivalent of *Tyrannosaurus rex*.

Most of us, of course, will stick to our habitual assumption of human superiority. However, it is worth asking: if we’re so clever, how did we fail to spot a population explosion in the biggest species on earth?

There are four answers to this. The first is that giant squid have perhaps not been quite so invisible as scientists have hitherto insisted. History and literature are full of references to kraken and kraken-like creatures: Homer’s Scylla, Tiamat in Gilgamesh, and any number of sea-serpents may all be reasonably supposed to have been inspired

by giant squid. Pliny the Elder described such a creature (remarking on its bad breath). So too did Melville, who writes in *Moby Dick* of “A vast pulpy mass, furlongs in length and breadth, of a glancing cream colour... innumerable long arms radiating from its centre, and curling and twisting like a nest of anacondas”; and that other great chronicler of 19th-century whaling, Frank Bullen, who claimed in *The Cruise of the Cachalot* to have seen a giant squid entangled with a sperm whale off Sumatra. If it comes to that, the great giant squid fight scene in Jules Verne’s *20,000 Leagues Under the Sea* was allegedly inspired by an actual encounter, involving the French battleship *Alecton*, near Tenerife, in 1861.

There are many more such instances of alleged sightings of live giant squid in their natural environment, most of them no doubt fanciful; but it is worth remembering that, when scientists say no one has ever seen one, all they really mean is that they have never seen one.

The second reason for the seeming ubiquity of the giant squid is that the way we live now is making us more aware of them. New fishing methods have led to a huge increase in accidental “catches”. (Professor Rodman suggests there may have been as many as 100 in the past 20 years.) The world’s remote places – where giant squid traces are often found – are less remote than they once were. And, as Dr O’Shea puts it: “Information spreads to the media at a faster rate than ever before, fuelled by the public fascination with these animals, and what once was lucky to make the local rag now makes world headlines.”

The third reason is that scientists are now looking in the right places, particularly in terms of identifying shallower waters which giant squid seem to visit at certain times of year in order to mate. “We know so much about this animal now that we can predict where it will be and when, at what depth we will find it, and what species it is associated with,” says Dr O’Shea, who believes he succeeded in catching those 14 juveniles “not because the animals are more abundant now than before, but because we employed a little science in our search.

“I don’t know if giant squid tours’ will ever make it big as a new tourism industry,” he adds, “but finding the adult alive in its natural environment should not be difficult.”

And then there is the fourth reason, which is that giant squid really might be taking over the world. They may not have done so yet, and reports based on the Australasian Science article may have exaggerated their growth, or our knowledge of it; but the simple truth remains that something that grows exponentially grows very fast indeed. Even if they haven’t overtaken us yet, the day when they do so may be nearer than we think.

Most people are familiar with the opening thoughts of Tennyson’s “The Kraken Wakes”, either through the original or via John Wyndham’s 1953 thriller: “Below the thunders of

the upper deep,/ Far, far beneath in the abysmal sea,/ His ancient, dreamless,
uninvaded sleep/ The Kraken sleepeth...”

The closing lines of the poem are more obscure, but may yet prove more prophetic:
“There hath he lain for ages, and will lie/ Battening upon huge sea -worms in his sleep,/ Until the latter fire shall heat the deep;/ Then once by man and angels to be seen,/ In roaring he shall rise and on the surface die.”

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