

CHAPTER 10

ONCE UPON A RHINO TOOTH...

THE STORY OF HUNTING

Once upon a rhino tooth? What happened to “time”? It turns out time *can* be told by rhino teeth. And our story begins with one.

If you imagine fog rolling in onto the beaches of Sussex, England, you probably wouldn't put a rhinoceros in the picture. But 500, 600, 700,000 years ago, they were there—along with a lot of other animals we think of as African. There were lions, bigger than any you'd find today, and elephants—twice the size of modern African elephants.

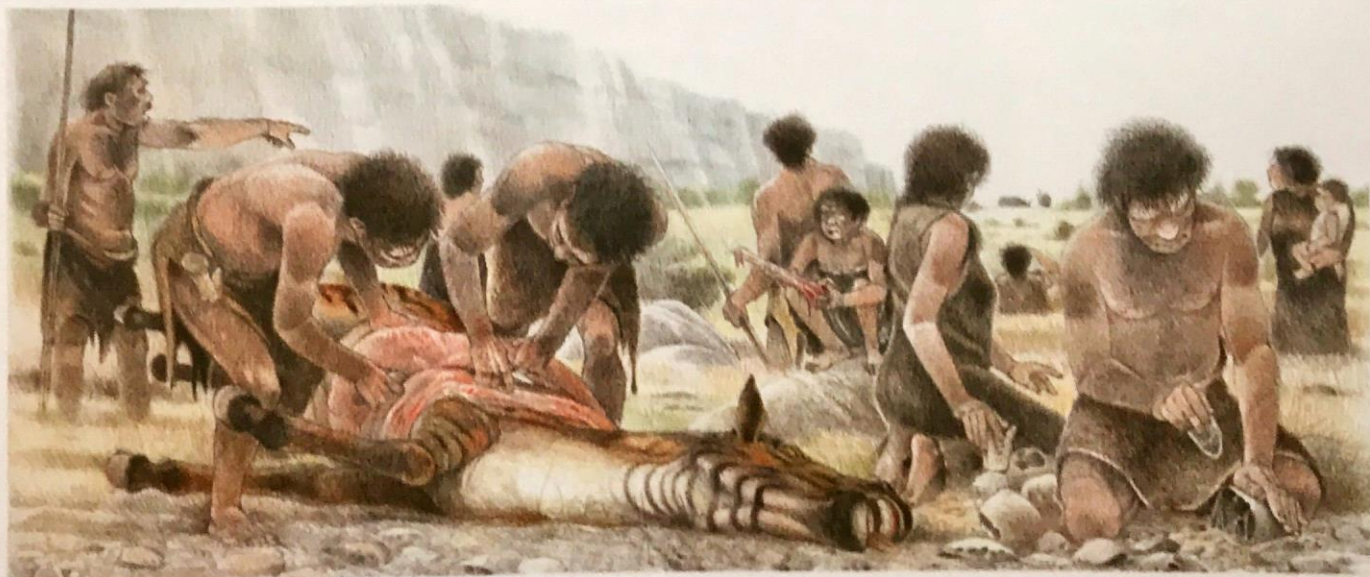
The hominids were big, too. The leg bone dug out of a chalky pit at an archaeological site called Boxgrove, in the hills of West Sussex, was massive. It belonged to our weak-chinned relative first found near Heidelberg, Germany, named *Homo heidelbergensis*. *Homo heidelbergensis* roamed Africa and Europe around half a million years ago. Their faces are the largest of all the hominids, their noses the widest. Their teeth were longer than ours and crowded

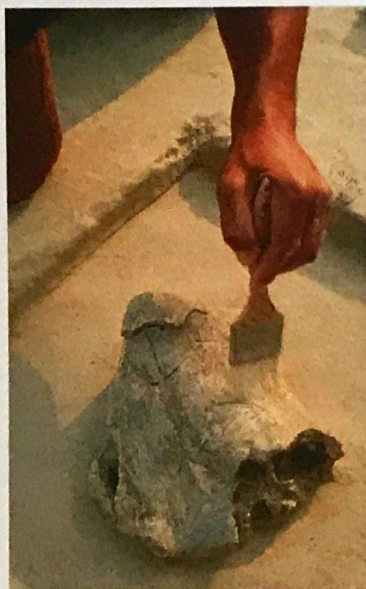
“ HOMINID LEG BONE, RHINO TOOTH, TOOLS, AND HORSE BONE IN ENGLAND



“ *Homo heidelbergensis* leg bone, Boxgrove, England, 500,000 years ago

A group of *Homo heidelbergensis* butcher a horse at Boxgrove in this artist's reconstruction. They probably wore skins for warmth and to protect themselves from sunburn.





This rhino skull was found at Boxgrove. Without fire, the hominids ate the butchered rhinos raw.

their mouths. *Homo heidelbergensis* had no chins. But their brains were close in size to ours.

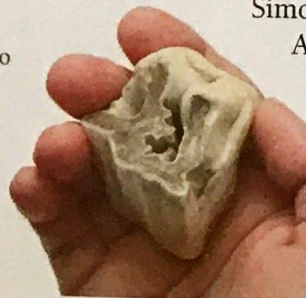
The leg bone found at Boxgrove must have come from a male. Hominid males are bigger than hominid females and the further back you go in our ancestry, the more the sexes differ in size. If this

leg bone had been from a typical *Homo heidelbergensis* female, then she would have stood six feet tall and the male would have been much taller. He would have been a giant. Even though the animals at Boxgrove half a million years ago were big, they weren't *that* big. This isn't a fairy tale about giants. It begins, as we said, with a rhino tooth.

On a summer's day in 1986, the tooth was on its way to London by train. Simon Parfitt, Mark Robert's assistant director at the Boxgrove dig, was carrying it. Roberts writes in his book *Fairweather Eden*,

It lay inside his battered briefcase, wrapped in tissues in a plastic carrier bag. Of one thing, Simon was certain: it was a rhino tooth.

And he knew enough about prehistoric rhinos to know that various species came and went during the long span of ice ages, which went from almost 2 million years ago to just down to 10,000 years ago. What he didn't know was how to tell them apart. Which was frustrating...



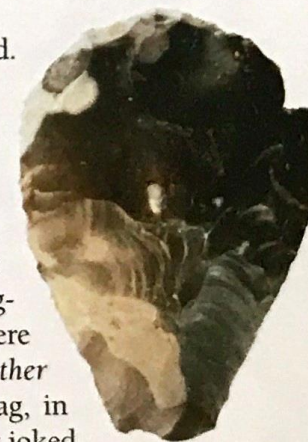
44 Rhino tooth, Boxgrove, England, 500,000 years ago

It was frustrating because if he knew which species of rhino this tooth came from, it would give him a timeframe for the layer at Boxgrove where the tooth had been found.

Suppose you had a tooth belonging to King George. But you didn't know which King George—the First? Second? Third? Fourth? *Fifth*? If you knew the tooth belonged to King George I, you would know the tooth was from some time between 1660 and 1727, because that's when King George I was alive. Which is why Parfitt was on a train to London—to see a man about a tooth—a man who could tell Parfitt when *this* rhino ruled Sussex.

Scientists were in agreement that the species of rhino the tooth belonged to died out before the worst of the ice age known in Britain as the Anglian. Because the Anglian began around 480,000 years ago, this rhino tooth had to be older than 480,000 years. Scientists also agreed—at least they did in 1986—that there were no hominids in Britain until *after* the Anglian. The discovery of a single rhino tooth changed everything. The tooth was from the rhino that had died out before 480,000 years ago. And what else did they find in that layer at Boxgrove with the rhino tooth? They found hand axes. Hominids had made it as far north as Sussex half a million years ago—*before* the Anglian. They must have, because it sure wasn't rhinos whacking on rocks to make hand axes.

Archaeology is tough work in England. It's cold and wet and the finds aren't glamorous enough to make the cover of *Rolling Stone*. The winter after the archaeologists found the rhino tooth, the cold was so bitter that diggers lost feeling in their fingertips and their picks bounced off the frozen quarry floor. The workers had a bigger problem than cold—the rats! "They were everywhere," wrote co-author of *Fairweather Eden*, Michael Pitts, "in your sleeping bag, in your clothes, in the kitchen, perhaps, they joked, even in the stew—Mark shot anything that moved." But the scientists kept digging. They kept digging because



44 Hand ax, Boxgrove, England, 500,000 years ago

TIDES OF ICE

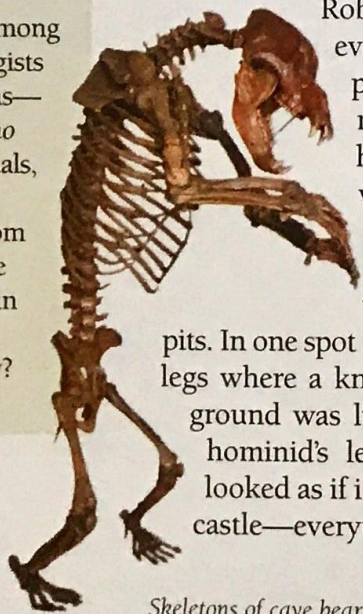
If we could speed up time and watch the expanding and contracting of glaciers from 1.8 million years ago to 10,000 years ago, it would look like tides coming in and going out. The Anglian would be one of many high tides.



MEANWHILE IN SPAIN...

Boxgrove is spectacular in the picture it draws of hominid behavior. We see how our ancestors lived off the land a half million years ago. But it wasn't glitzy and glamorous like some sites. In the limestone caves of Northern Spain at Atapuerca, something a whole lot flashier was getting attention. Even its name is more dramatic: The Pit of Bones.

The pit is at the bottom of a 15-foot shaft inside a hill. The series of chambers and tunnels was once home to cave bears. Among their bones, archaeologists found hominid remains—the remains of 32 *Homo heidelbergensis* individuals, mostly children, from 300,000 years ago. From the looks of things, the humans were thrown in on purpose. Did a disease wipe out so many? Was this a burial pit?



Skeletons of cave bears indicate that they weighed more than 1,000 pounds. Although the bears hibernated in caves, they spent most of their waking time outdoors munching on roots, berries, and other vegetarian foods.

there were flints and animal bones by the thousands—by the hundreds of thousands.

They found so many hand axes they lost count. Hand axes are not like the primitive Oldowan tools found at Olduvai Gorge. A craftsman who worked with stone told Mark Roberts, “The ability to make a handaxe says everything you need to know about *Homo heidelbergensis*. People say it’s just banging rocks together. But ask anyone who has to make a handaxe and you’ll get a different story. . . . It’s all planning. . . . It’s like chess. . . . Sometimes you have to think five or six moves ahead. It takes months, if not years, to learn to do it well.”

These were not dim-witted hominids at Boxgrove. These were chess masters. What were they thinking? How do you get inside the heads of the hominids who made these tools? What were they doing at Boxgrove? From the cut marks on the bones, it appeared as though they were butchers.

Scientists were amazed by how little the things they were finding had been disturbed. It had been half a million years, after all. Boxgrove wasn’t like most sites, Roberts writes, “where rivers had jumbled everything together. Here the bones were perfectly preserved, so that the butchery marks could be seen even as you stood high above the trench floor. The flint axes were as sharp as the day they were made.”

In fact they were so sharp that the diggers had to be careful not to cut their hands when they removed them from the gravel pits. In one spot Roberts could see the outline of a hominid’s legs where a knapper had sat making tools all day. The ground was littered with fragments except where the hominid’s legs had touched the ground. Boxgrove looked as if it were under a spell, like Sleeping Beauty’s castle—everything untouched until the prince came to

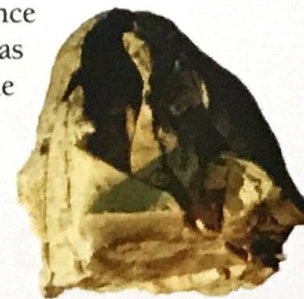
wake her. Mark Roberts was the prince waking up Boxgrove. Boxgrove was coming alive again in the minds of the archaeologists who worked there.

Roberts writes about how the bones revealed the ancient butchering process:

Once the animal is down and dead, then the animal is skinned—there are certain characteristic cutmarks, especially around the head, that indicate skinning. . . . After all the flesh had been cut and scraped away, the bones were smashed between a pebble and a flint anvil so the hominids could extract and eat the marrow. This, of course, would have been eaten warm and raw.

The meat would have been eaten raw, too. There was no evidence at Boxgrove that these hominids had controlled fire. But without fire, how did they keep the scavengers away? What kept the lions and wolves from robbing the hominids of their kill? These hominids didn’t even appear to be in a hurry. Roberts estimates that at most 10 or 12 people worked together to butcher an animal. The same number of butchers today would take two or three hours to complete the work. Did the hominids chat while they worked? *Homo heidelbergensis* may have been the first hominid to talk. They wouldn’t have sounded like we do because of the shape of their nose, but they were capable of talking. But did they? Mark Roberts thinks so. Something gave these hominids an advantage. It’s clear they were not to be messed with—Roberts points out that even the hyenas that can heckle a lion away from its kill left the hominids alone.

Boxgrove shows a complete picture of butchery. Could it settle the argument scholars have debated for years? If Boxgrove could show how the hominids got the animals they butchered, scientists would be able to answer one of the key questions about hominid behavior. When did

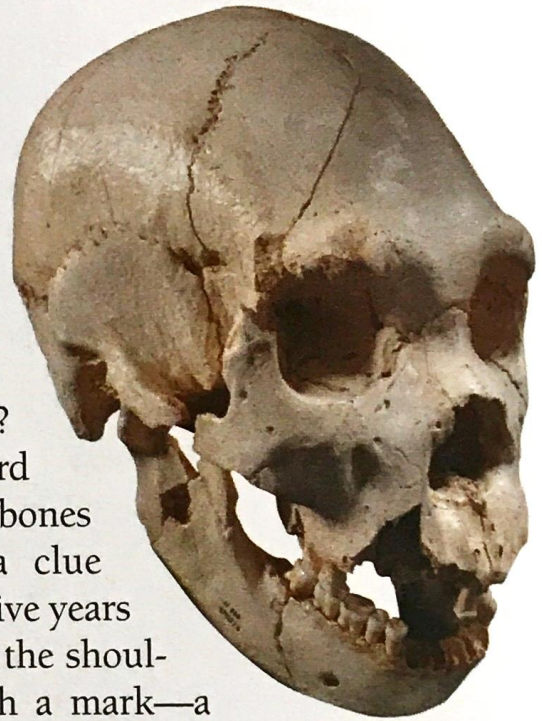


“ Tool fragment, Boxgrove, England, 500,000 years ago

THE OLD STONE AGE

Hand axes belong in a tool kit called “Acheulian,” named after St. Acheul, a site in France where they were found. The period when Oldowan stone tools and Acheulian stone tools were being crafted is the earliest part of what archaeologists call the Paleolithic, which means “old stone.” The Paleolithic lasted from the time of the first stone tools 2.5 million years ago to the end of the last ice age about 10,000 years ago.

This skull from Kabwe, Zambia, comes from a species, *Homo heidelbergensis*, that may have been an ancestor of the Neandertals and modern humans.



“ Horse bone, Boxgrove, England, 500,000 years ago

hominids begin to hunt large game with success? Locked up in a cupboard among the thousands of bones taken from Boxgrove, a clue waited to be discovered. Five years later it was. The clue was the shoulder blade of a horse with a mark—a mark made by something that rotated, something that rotated *fast* like a missile, or a spear.

The hominids hunted.

After a decade, the digging at Boxgrove was done. The work moved to cluttered tabletops in quiet labs. Cleaning and sorting and cataloging began. Years of study stretched ahead. Boxes of stones and bones are packed away in wooden drawers. There are hand axes made of flint. There's the long leg bone of *Homo heidelbergensis*. There are butchered remains of rhinos and horses and deer. Half a million years ago, these were not items stored in a narrow room in the natural history museum. That hand ax was someone's tool. That leg bone belonged to a man who looked out over the edge of the cliff watching the fog roll in. That shoulder bone with the circular scar was once part of a horse. They were all, as Roberts and Pitts wrote, “creatures that nuzzled and crawled and swam their lives in a landscape that we would recognize. Almost every animal we know today in Britain is there. The rabbits and robins and squirrels from our story books, the bears and wolves of fairy tales...” and the once-upon-a-rhino-tooth.



MEANWHILE IN GERMANY...

At the same time Boxgrove was being excavated in England, scientists were digging in Schöningen, Germany. The site wasn't as old as Boxgrove. It was from between 400,000 and 300,000 years ago. But a startling find linked the two sites. At Schöningen archaeologists found three wooden spears shaped like javelins. They may not have been the same style of weapon used to scar the horse at Boxgrove, but evidence for a hominid who hunted was piling up.