THE ZOO OF TOGIDUBNUS

The impressive model in the reception area of the Palace shows the building in its heyday. A Roman galley is picturesquely moored behind the south wing. Recent research has shown that in fact there was a sizeable 'vivarium' or animal park there. Chichester's District Archaeologist says that there may well have been a deepwater channel out there but the main landing place for the Palace was at Dell Quay, a little further south.

The fascinating detective story of the discovery of the animal park was told by Dr Naomi Sykes, Associate Professor in Zooarchaeology at the University of Nottingham, in an informative conference organized by the university in association with Sussex Archaeological Society early in September.

Nottingham archaeologists re-examined the thousands of animal and bird bones found when the Palace was excavated in the early 1960s. There were 30 bones of fallow deer – the spotty ones with the spreading antlers, *dama dama* – including, significantly, two jawbones, the only ones to have been discovered in the whole of Roman Europe. It was generally accepted that fallow deer had first been brought into Britain from Turkey by the Normans. Naomi wanted to investigate further but lacked the funding needed to have radiocarbon dating and strontium isotope analysis done. She applied successfully to Sussex Archaeological Society (the owners of the Fishbourne site) to provide £700 from the Margary Fund.

One jawbone was dated to about 60 AD, the other to about AD 90. That ruled out the Normans. Naomi's next step was to send enamel samples from the teeth that form during the first few months of life (the so-called M1) and those between 1 and 2 years (the M3 and P4) to the School of Ocean and Earth Sciences at the University of Southampton. There strontium isotope analysis was carried out to determine where the deer were from. The principle behind the science is that different geological terrains contain varying strontium isotope ratios which leave a signature in tissues. Tooth enamel, laid down when the tooth forms, can reveal where an animal lived.

Enamel samples from sheep, goats, pigs, dogs, red and roe deer established the strontium signature for Fishbourne. The early teeth of the AD 60 fallow deer fell outside the Fishbourne range, showing that the individual originated outside the area. But a later tooth fell within the local range, so the animal lived in the Fishbourne area before its death.

Tests on the AD 90 jawbone and teeth showed that this individual was born and raised here and would have formed part of a breeding population – the first direct evidence for deer husbandry in Roman Britain.

Columella (4 – c. 70 AD), the most important Roman writer on agriculture, says "*wild creatures sometimes serve to enhance the splendor and pleasure of their owners…..those who keep game shut up for their own pleasure…..construct a park on any suitable site in the neighbourhood*". The area to the south of the Palace with its stream, ponds and woodlands, was ideal for fallow deer, contemporary with and

complementing the formal gardens. This is the first evidence for a *vivarium* or park in Roman Britain. Until now parks were thought to be a mediaeval invention. Unsurprisingly this animal is associated with Diana, goddess of the hunt.

Naturally Naomi's work throws up a host of other, far-reaching questions – what other fallow deer herds were there in Britannia (one has recently been identified on the Isle of Thanet); where was the AD 60 individual brought from? And leading on from there, where did the Normans get their deer from, since fallow deer are not found in Britain in the Anglo-Saxon period, and are unknown in Northern Europe, including Normandy, until the late 12th century.

Further work is being done by Naomi and others under the Dama International project, 'Fallow Deer and European Society 6000 BC to AD 1600', a major international effort employing methods proven by the pilot study – the integration of archaeology, history, geography and anthropology with genetics, stable isotope analysis and osteological research - to examine the origins, circumstances and cultural significance of this species' diffusion across Europe.