GREENWICH AND THE EARLY EMPORIA OF KENT

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The name of Greenwich reveals the place's early function as a river harbour and trading post or emporium. About 35 other places in Kent with an element wic in their names share a common feature of having good transport links, especially by water.

Greenwich lies at the western edge of the historic county of Kent. Its name is routinely explained as a compound of green (the colour of grass) plus wich (settlement) from Latin *vicus*. But is that true?

Over 1,500 place names around Britain contain an element variously spelled wich, wick, week, wyke, etc., which is usually traced back to an Old English form *wic*. The meanings of *wic* have been much discussed, initially focusing on 'dwelling, building or collection of buildings for special purposes, farm, dairy farm', plus (in the plural) 'hamlet, village' (Smith 1956). Ekwall (1964) advocated further translations of 'town, port, harbour' and sometimes 'salt-works', and explicitly described Greenwich as 'probably an old harbour'. Coates (1999) recognised a core meaning of 'dependent economic unit'.

Most scholars who studied English place names were primarily linguists, not geographers, and inevitably could not visit all the places they discussed. So they have left much still to be discovered by a modern investigator aided by the latest maps, aerial photos, scientific archaeology, etc. This article uses Greenwich as a model to probe the history of waterside places and river transport in early Kent.

The earliest recorded form of Greenwich was *Gronewic*, mentioned in charters dating from AD 918. In later documents, that *Gron-* mutated into *Gren-*, which became assimilated with green. Ekwall accepted an idea of greenness for both Greenwich and Greenhithe, but for the Isle of Grain he invoked an Old English **greon* 'gravelly or sandy ground', a word inferred from analogous words in early German dialects spoken around the North Sea and from recorded Old English *greosn* and *greot* 'gravel'.

Modern Greenwich is proud of its parks, lawns, and woods, yet it is not a good place for agriculture. Uphill lies Blackheath, which has remained open ground precisely because of its thin topsoil over gravel and sand. This essential geology of Greenwich is obvious when the tide is low in the river Thames and one can observe the foreshore, shown in the top two photos of **Fig. 1**, looking upstream on the left and downstream on the right. There are various modern wharfs and river walls, and the straight walkway in front of Christopher Wren's grand buildings cuts off an originally curved bank, but fundamentally this riverside is much as it was in Viking or Roman times.

Fig. 1 The river frontages at Greenwich. The top two photos show the Thames and the bottom two show inside Deptford Creek. Looking upstream on the left and downstream on the right.

The presence of sand and gravel on the foreshore is worth noting, because there are serious quantities of mud at the adjacent mouth of Deptford Creek (where the river Ravensbourne enters the Thames), shown in the lower two photos of Fig. 1, looking upstream on the left and downstream on the right. Mud gets deposited where the water flow rate is low, quite unlike the gravel higher up the Ravensbourne or where fast currents scour the main Thames.

It is possible that *Gronewic* was green because it had an overgrown old Roman road, a figurative sense often seen in place names. However, on balance it seems more likely that Greenwich was originally a 'gravel harbour', and that this name sheds a little light on the lives of its early inhabitants. The key feature of Greenwich was its location where three transport routes met: the river Thames, Watling Street running from Canterbury to Westminster, and the river Ravensbourne serving a hinterland beyond Lewisham. But why did it contain the word *wic*, rather than any of the other place-name elements that commonly occur beside water: port, ford, hythe, staithe, hamm, etc?

Early Greenwich

Written texts take the history of Greenwich back no earlier than those charters from 918 and an account in the *Anglo Saxon Chronicle* of Viking raiders murdering Ælfheah (St Alfege), archbishop of Canterbury, in 1012. Archaeological remains are plentiful on nearby high ground (including numerous burial mounds, a hill fort, and a Roman-era temple) but much was lost to early, unskilled investigators (Brown 2002).

Greenwich lies on the Roman road from Canterbury to London that became known as Watling Street (Tatton-Brown 2001). Obviously that road points straight towards the ancient ford across the Thames at Westminster, after just grazing the Thames at the mouth of Deptford Creek. However, the modern A2 actually branches off that line before Greenwich Park, descends Blackheath Hill, and then heads into London along the Old Kent Road. The modern Deptford Bridge is well inland from the mouth of the Creek.

Ancient Southwark was a patchwork of marshy islands, so the layout of Roman roads in south London is uncertain (Margary 1973). The roads probably changed over time, responding both to human activity such as the building of London Bridge and to natural events, such as rising sea level and occasional bad floods. The present consensus seems to be that a relatively southern course, like the modern A2, prevailed during most of the Roman era. However, there is still a strong argument for the straight course over Deptford Creek, as set out for example by John Chaple (*www.johnchaple.co.uk/watling.html*).

How much of a water barrier did Deptford Creek originally represent? Sea levels were lower in Roman times, with middle tide then probably roughly equivalent to low tide now. So for at least half of each day an ancient traveller needed to contend only with the natural flow of the Ravensbourne. Nowadays, at low tide and during dry weather (as shown in the bottom of Fig. 1) that flow can be a mere trickle, easy to jump over. The ancient river would have flowed more robustly (before modern sewers) but it would still have been easy to wade across. Therefore, insofar as Greenwich and Deptford are concerned, Roman-era Watling Street could have continued its straight line towards Westminster.

This logic relies on the modern tidal range near Greenwich of 6 to 8 metres, but also on a very uncertain figure of 3 to 4 metres rise in sea levels relative to land since Roman times. It ought to be possible to reduce that uncertainty, and improve upon the guess by Waddelove and Waddelove (1990). They relied particularly upon an assumption that a structure found underground at Dover was a harbour mole with its top above the high-tide mark in Roman times, whereas it might have been an underwater sill-dam of the type described by Selkirk (1995). North of the Thames, the Roman-era land surface of Canvey Island and other Essex marshland is now buried under as much as 15 feet of alluvium (Cracknell 1959).

The Roman temple in Greenwich Park is where an ancient traveller would have caught his first glimpse of the Thames and *Londinium* in the distance. It is one of many candidates suggested for *Noviomago* (presumably a grammatical case of **Noviomagus*) mentioned in the Antonine Itinerary of about AD 300. The location of that place has long been a puzzle because it lay 10 Roman miles out of *Londinium* on *Iter* 2 (Roman army marching route 2) towards Dover, whereas Crayford, the candidate preferred by Rivet and Smith (1979), lies about 13 Roman miles from London Bridge.

Distance discrepancies, such as the 3 miles needed to put **Noviomagus* at Crayford, are generally explained as caused by itinerary distances being measured from the edge of a settlement, not its centre, and/or by manuscript copying errors. However, there is an additional puzzle in that the Antonine Itinerary mentions a section of route from London to Canterbury three times over, in *Iters* 2, 3, and 4. Is it possible that *Iter* 2 did not wholly follow Watling Street?

In order to place *Noviomago* at Crayford, Rivet and Smith (1979) needed to assume another copying error in the distance to the next place along *Iter* 2, *Vagniacis*. This can be identified fairly confidently with the Roman-era settlement at Spring Head (near the proposed new town of Ebbsfleet), because it is the right distance away from the next place, *Durobrovis*, which was almost certainly at Rochester.

The likely meaning of *Vagniacis* is neatly supplied by the modern name Quaggy of a little river through Greenwich and Lewisham that is notorious for its flood risk. *Vagniacis* had the Latin adjective ending *–iacus* after a root meaning 'quagmire' most directly shown by *Wagene* in Domesday Book, now Wawne near Hull, which Ekwall (1964) recognised as a 'quaking bog', from Old English *wagian* 'to wag, to move back and forwards', itself descended from the Indo-European root **wegh-* 'to go'.

One place does indeed lie 11 Roman miles from London Bridge (or about 10 from the edge of the settled area of ancient *Londinium*) and 17 Roman miles (as the crow flies) from *Vagniacis*. This is West Wickham (to be discussed below), which was picked out by Arias (1987), with a suggestion that **Noviomago* marked a junction where a road branched off towards the known *Noviomagus* at Fishbourne, near Chichester. Arias had noticed in Spain that Roman army marching routes often bypassed named places, sometimes at considerable distances, and road junctions were indicated by a Latin case ending, which was not always correctly transmitted by medieval copyists.

In fact, a substantial Roman-era settlement at West Wickham had already been found by archaeologists, beginning in 1966 but not published until much later

(Philp 2002). There are also signs of a Roman road heading there from *Vagniacis*, passing through Fordcroft and Darenth, in a relatively affluent landscape, since at least a dozen Roman villas have been found strung out along the rivers Darent and Cray. The villa at Lullingstone might even have been the country residence of Pertinax, governor of *Britannia* around 186. If that road continued to the west, roughly on the route of the modern A232 towards Bagshot, it would join a known Roman road towards *Calleva* (Silchester).

If *Noviomagus* did indeed lie at West Wickham it joins *Leucomagus* (near Andover) and *Sitomagus* (Ixworth) in lying at important Roman road junctions. The place-name element *magus* is usually explained as coming from a Celtic word for 'field' or 'plain', which then perhaps developed a sense of 'market' across the Roman Empire. However, this theory is a bad fit to the local situations of other *magus* places such as *Caesaromagus* (Chelmsford) or other instances of *Noviomagus*, such as at Nijmegen. A better explanation comes from words for 'power', which survive for example in English 'may' and 'might' (Old English *mægen*) and German *Macht*. If so, *Noviomagus* was a 'new control point' on the ancient highways leading into London.

Recently, a Germanic adjective **magad-* 'great' has been recognised in about 70 modern place names, such as Magdeburg in Germany and Maidstone in England, that were not named from dancing maidens (Udolph 2012). Greenwich has one example in Maidenstone Hill, a street that runs around a magnificent lookout point over London, where presumably there used to be a standing stone.

Discussing ancient names and Roman roads like this serves to highlight how little is known for certain. One should never assume that all the ancient travel routes of south-east London and Kent have already been identified. Margary (1973) stressed that his list of Roman roads was inherently incomplete, and many researchers have identified other ancient roads.

This article pays particular attention to ancient transport by water. Its central focus, Greenwich, used to have wharves for ocean-going ships and boatyards for repairing small craft, but nowadays tourists are its main waterborne traffic. However, what most truly represents its maritime past lies tucked away inside Deptford Creek, where there is still an untidy straggle of industrial units and a wharf for receiving sand and gravel. How far up the river Ravensbourne did ancient cargo boats travel and what did they carry?

Gelling's *wichams*

Margaret Gelling specialised in explaining the names of places by their situations in the landscape. She was particularly intrigued by names derived from Old English *wicham*, finding over 28 examples across Britain that existed before 1066 (Gelling 1967; 1978). Because they occurred close to Roman roads or Roman-era settlements, she wondered if *wicham* preserved a memory of the Latin word *vicus*. Five of these places lie in Kent:

West Wickham lies due south of Greenwich, where the river Ravensbourne rises as several branches of The Beck, running from Spring Park beside one of the three Roman roads running south out of London. It had a substantial, but unfortified,

Roman-era settlement (Cook and McCarthy 1933; Philp 2002) in an ancient landscape that was probably wetter than nowadays. West Wickham exemplifies a question that will recur repeatedly: if someone wished to transport a heavy cargo (say 500kg of grain) for sale (or to pay taxes) in a city, would it be more cost-effective to take it by wagon or by boat? Several lines of evidence favour the boat. Around AD 500, a flat-bottomed boat with half a tonne of cargo could certainly have travelled far up the Ravensbourne. In 1801, the Grand Surrey Canal was dug into the hinterland of south-east London, just one example of a phenomenon all over Britain: canals after the Industrial Revolution often reprised river routes that may have been used in Roman or Anglo-Saxon times, before rivers silted up or became blocked by water-mills.

East Wickham is a district just outside Greenwich borough, north of Watling Street, on the side of Shooter's Hill, where the lead coffin of a wealthy Romano-Briton was found (Payne 1887). There is now no obvious sign of any significant river nearby, but boats from the Thames and Woolwich could formerly reach quite close to East Wickham, in much the same way as West Wickham was accessible from Greenwich. A former river Wogebourne (*http://e-shootershill.co.uk/wogebourne*), shown on early Ordnance Survey maps and also detectable as alluvial sediments, ran downhill beside modern Woodbrook Road, then flowed through marshes to the Thames, leaving modern traces in several canals plus Thamesmere Lake, Birchmere, and Southmere. Also, Wickham Lane is a strong candidate for a very ancient road.

Wickham Reach describes part of the river Medway where it is crossed by Watling Street in modern Rochester, close to the site of Roman-era *Durobrivae*/*Durobrovis*.

Wickhambreaux lies where the Roman road from Canterbury to *Rutupiae* crosses the Little Stour river. That river was still navigable near Wickhambreaux in the 1800s.

Wickham Bushes lies near Lydden and the Roman road from Canterbury to Dover, with no sign of navigable water nearby, though it is actually at one limit of the alluvial deposits of the river that runs into Dover (*www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html*). Its name (from *busshopes* 'bishops') possibly hints at other *wichams* nearby, and there is indeed a cluster of *wic* places on the other side of the Roman road.

It is hard to tell whether any link between *wicham* and Roman roads (across the whole of Britain) is statistically significant because the data sets are so fuzzy. And any link could have arisen long after AD 400, while Roman roads were still the main transport arteries on land.

Other *wic* places

Woolwich is another river port on the Thames, like a little sister to Greenwich, though slightly more boxed in by high ground and marshes, and further from London. Much evidence of early settlement has been discovered there.

Sandwich, which succeeded *Rutupiae* (Richborough) as a major departure port towards the Continent, is on the river Stour.

Fordwich, a little north-east of Sandwich, seems to have been the medieval port for Canterbury. A medieval moated site called *The Wyke*, near the Canterbury–Sandwich Roman road, was owned in 1236 by Stephen de Wyke, who perhaps came from Fordwich.

Woolage Green (also known as Woolwich Green), *Woolwich Wood*, *Wick Wood*, and *Wick Lane* cluster by the Canterbury-Dover Roman road, about 2km from the course of the river Little Stour and its modern source during dry weather. Packe (1743) commented how the 'capillary extremities' of that river 'expanded all over the hills', so perhaps in Roman or Anglo-Saxon times a significant watercourse ran closer to the *wic*-named places.

Wick Farm and two more instances of *Wick Wood* are near Elham, in the valley of the Nailbourne, which comes alive in wet weather as the upper reaches of the Little Stour.

Sarre, without *wic* in its name but with archaeological remains of a *wic* trading centre (Hill and Cowie 2001), is where the Stour met the old Wantsum Channel.

Wix's Farm lies near the limit of the Stour, beyond the key Roman road junction at Ashford.

Harwich Street in Whitstable preserves the name of an AD 864 *Herewic*, probably lost to the sea near Seasalter, and engaged in producing salt for trade inland towards Canterbury.

Sheldwich lies in a farmland valley at the ancient limit of Faversham Creek. Ekwall (1964) wrote that it 'cannot have been a port or harbour', but an ancient watercourse might have silted up there over the centuries as has happened elsewhere in Kent, notably in Romney Marsh, under modern Dover, and where the Wantsum Channel has disappeared.

Burntwick Island, in the mouth of the Medway estuary, was probably a Romano-British salt-making site. Upstream on the Medway lies Wickham Reach, mentioned above.

Hardwick, by Hilden Brook, *Markwicks* and *Markwick Wood* between Lamberhurst and Bewl Water, *Wickhurst* and *Wickhurst Manor* near Wickhurst Brook, and *Wickens*, plus *Holywich Farm* over the Sussex border near Kent Water, all lie near the limits of tributaries of the Medway. (Spellings of many *wic* names differ from one map to another.)

A *Wick Farm* and a *Wick Hill*, near Headcorn, lie near another Medway tributary, the Beult. This river, with a name akin to modern 'boiled', often overflows into a wide floodplain, which acts like a huge clay-lined pond. Breeze (2010) proposed a Celtic etymology, but the Old English interpretation as 'swollen' by Drayton (1612) is better.

Fulwich is where Watling Street crosses the river Darent.

Wickham Field is where a ridgeway crosses the Darent, near the site of the battle of Otford.

Stonewick Bridge was on the Thames and Medway Canal, near Shorne Marshes.

Red Wick was a farm on the Isle of Grain, by the north bank of the river Medway, in an area of probable ancient salt-making.

Upper and *Lower Woolwich* are now far inland, but they lie beside the old course of the river Rother (which ran north of the Isle of Oxney until about 1635) and were therefore river ports, much like Smallhythe or Appledore (Chantler 2010). Part of the Rother called the Newmill Channel was navigable well to the north of these two Woolwiches, all the way from the sea up to Tenterden, an important centre of the wool industry in the Middle Ages.

Orgarswick, *Court-at-Wick*, and *Wick Bridge* also were probably once close to navigable water, because they lie inside Romney Marsh, downstream of Oxney but inland from the modern coast.

Whitewick Wood lies at the end of Shirley Moor and Romney Marsh.

The Wicks, *Wick Petty Sewer*, and *Wickmaryholm Pit* are near the south coast of the Dungeness headland. They may have existed near the coast even before shingle banks built up further east and the river Rother shifted to entering the sea at Rye.

Wickham Manor is just inside Sussex, beyond Rye and close to Winchelsea.

Berwick is one of many places named from Old English *berewic*, from *bere* 'barley' (or corn more generally). It lies on the inland side of Lympne and was possibly linked to the Stour river system, not the ancient Limen Creek. Near Lympne lies the site of Roman-era *Portus Lemanis* ('muddy port') and its Saxon Shore fort, from where activity shifted a short distance to Anglo-Saxon *Sandtun*, where salt was produced and international trade was conducted.

Wiwarawic plus 'the other *wiwarawic*' have not been precisely located but a charter of 858 puts them beside marshes west of the river Great Stour and north of Ashford, with its complex river confluence. An ancient settlement, possibly *Mutuantonis* of the Ravenna Cosmography (Clewley 2011), was nearby at the Roman road junction by Westhawk Farm.

Wye, and possibly other names such as *Whiligh* just outside Kent, were seen by Ekwall (1964) and others as derived from Old English *wih* or *weoh*, which is usually translated as 'idol', though 'sanctuary' might be better. *Wih* is cognate with *wic* and derived from the same ultimate root meaning 'set apart', but evidently had diverged far enough that *wiwarawic* (presumably 'the *wic* of the Wye-valley people') did not strike Anglo-Saxons as tautological.

Places mentioned in ancient charters that cannot be definitely located, but were

probably near water, include *berdelhames wicum, bioscopes uuic*, and *hremping wiic*. The word *wicgerefa* '*wic* reeve' in Old English texts is glossed with a Latin expression for 'toll collector' and perhaps suggests an estate manager, a port customs officer, or the person who comes round a modern boot fair collecting fees from stallholders.

Wigmore lies near Watling Street east of the Medway, but may not be a *wic* place because its 1275 name of *Wydemere* suggests (not totally convincingly) 'broad pool'.

What did *wic* mean?

About 36 *wic* places can be located in Kent, and 3 more just outside the historic county are mentioned here. (Exact numbers depend on how one regards clusters of names.) None of the main meanings currently suggested for *wic* fits more than a fraction of these places.

What leaps out of a map of *wic* places (**Fig. 2**) is their association with transport routes. This is not inherently surprising, because almost all the world's great cities are beside water that is not just drinkable but also navigable, and every transport planner knows that building a new road or other transport link causes houses to spring up.

In Kent, the main sense of *wic* seems to have been 'emporium' or 'trading post'. It must have been a fairly ordinary Old English word (much like shop today), because it could couple with such a diverse range of other elements in place names, including commodities (wool, barley), landscape features (sand, gravel, hurst), and personal names (Orgar).

This is approximately how archaeologists use *wic* for a class of post-Roman sites originally defined by grave-goods of distant origin (Hill and Cowie 2001). Such places may include Seasalter/*Herewic* and Berwick/*Sandtun* in Kent, plus *Lundenwic* (Aldwych, 'old *wic*' in London), *Hamwic* (near Southampton), *Jorvik* (York), *Quentovic* (La Calotterie, France), *Wijk bij Duurstede* (Netherlands), and *Paviken* (Sweden). These settlements lived by commerce more than by farming, and were generally accessible by ship but not fortified. It is arguable, but unproven, that their inhabitants were free (not slaves or feudal vassals) and often foreign to the locality.

Margaret Gelling (and most other linguists) believed that Old English *wic* was a loan-word from Latin *vicus*. In fact it is more likely that *wic* and *vicus* descended independently from a shared Indo-European root. The linguistic issues will be tackled in detail in a later article once an ongoing study of all 1500-plus traceable *wic* places across Great Britain is complete (Anthony Durham and Gavin Smith forthcoming).

In brief, *wic* has a huge range of relatives, from Greek οικος and the Isle of Wight to German *Weihnachten* 'Christmas'. Particularly interesting is the word *weihs* in Gothic, the earliest attested Germanic language. In about AD 350 Bishop Ulfilas' translation of the New Testament into Gothic used the word *weihs* in two senses: as a noun meaning 'unwalled village' and as an adjective meaning 'sacred' or 'set apart'.

The deep root of *wic* and *vicus* meant something close to 'outlying', from which all the other senses evolved: mercantile, industrial, administrative, religious,

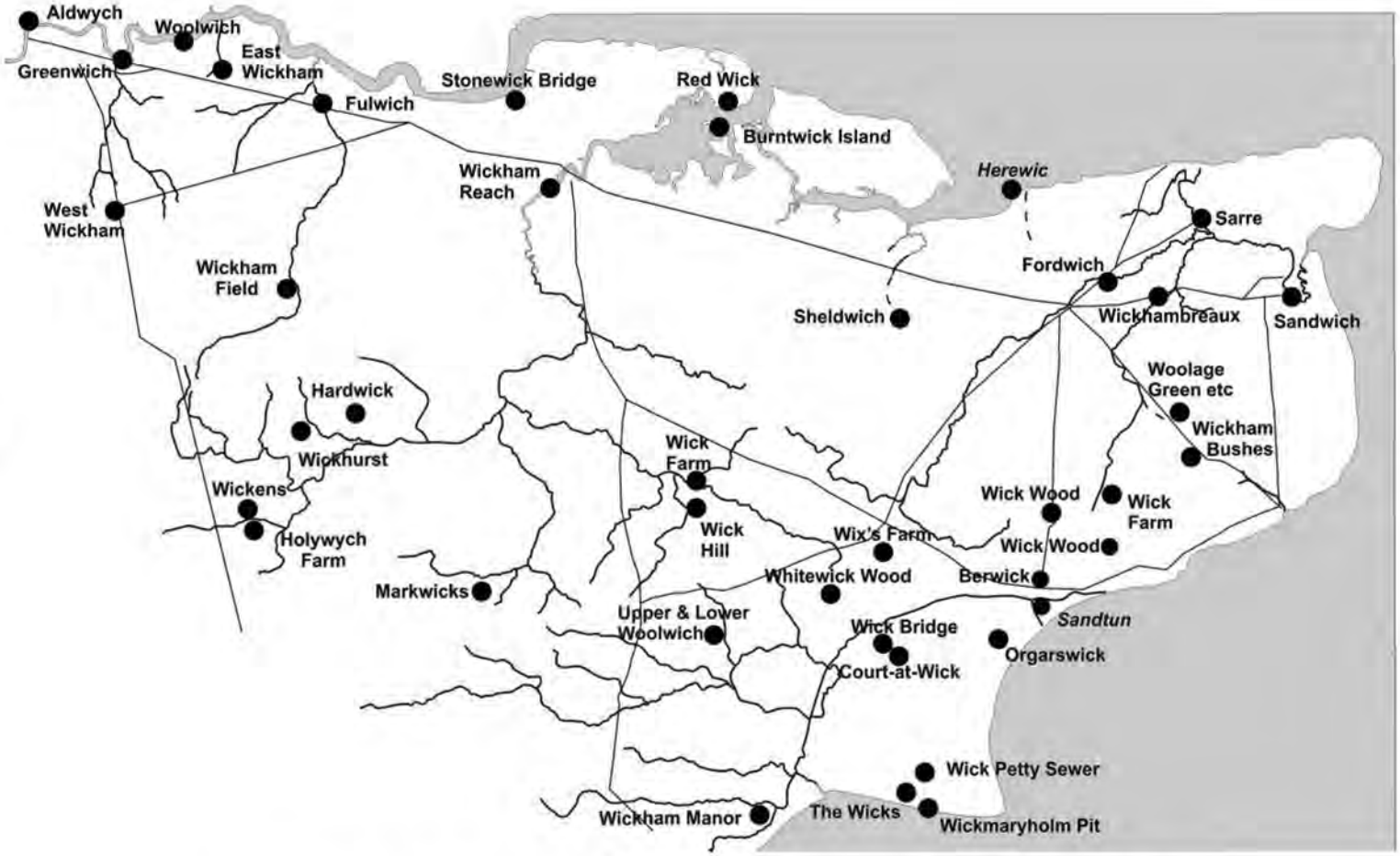

Fig. 2 Map showing the locations of *wic*-named places, plus Roman roads and the main rivers.

military, geographical, etc. *Wic* and *vicus* must have cross-fertilised over the centuries, while Latin was the dominant language and an increasing fraction of the Roman army was Germanic. Inscriptions on Frankish coins show that around AD 800 people understood *wic* and *vicus* as fundamentally the same word, but what about AD 0 to 400?

Much of the vast amount written about *vicus* is subtly wrong. For a start, Romans did not use *vicus* for a civilian settlement outside a fort as modern archaeologists do. Tarpin (2002) and Stek (2009) deduced, from thorough examination of ancient sources, that *vici* were clusters of self-consciously Romanised and self-governing people in places that were strategically important for Rome to control, such as along roads or in mining districts. It is arguable, but unproven, that *vici* were founded after the army left any particular place, and that they were more democratic than rich aristocrats' estates.

Evidence survives for 14 *vici* in Roman Britain. Eight of them lie on the eastern, lowland, North Sea-facing side of Britain, studded along or near the strategically important Roman route from the Channel to the Antonine Wall: Richborough – London – Peterborough – Lincoln – Brough-on-Humber – Lanchester – *Vindolanda* – Bo'ness. It came as a surprise that Kent's five *wichams* could fit neatly into that pattern, along the Roman route inland from the Channel ports.

Furthermore, Kent's *vici*, *wichams*, and *wic* places have good parallels on the Continent, especially in the northern parts of the Roman Empire, such as around Metz and Mainz. One good example was *vicus canabarum*, 2.5 km from the Roman fort at *Argentoratum* (Strasbourg). It seems to have been a river port and agricultural centre, which possibly traded in silver and other metals from the Vosges mountains and lay on the main road towards the massive salt-boiling industry at Vic-sur-Seille.

In short, *vicus* looks almost as Germanic as *wic*. However, political correctness distorts thinking about the cultural origins of early names. Thus, because Strasbourg is on the French side of the Rhine, most books liken the ending of *Argentorate* to Irish *rath* 'earthwork' rather than to German *Rathaus* 'town hall' or to Latin *ratis* 'raft, boat'. Similarly, books interpret *Durovernum* (Canterbury) as Celtic for 'fort on the alder swamp' and ignore Germanic parallels (Dutch *doorvaren*, German *durchfahren*, English thoroughfare) that would make it the more logical 'pass-through place'.

It used to be generally believed that all the indigenous people of Roman Britain spoke home languages closer to early Welsh than to early English. Keeping faith with that idea, despite the near total absence of *wic* place names from Celtic-speaking areas, was what led Margaret Gelling to invoke Latin speakers at *wicham* places. This is inherently unlikely, though not quite as absurd (now that so many Bronze Age boats have been discovered) as suggesting that northern peoples (Belgic, English, Frankish, Frisian, German, etc.) were not serious traders until the Romans taught them.

It makes best sense to interpret *wic* places in terms of cultural (and linguistic) continuity. No *wic* places lie in the centres of modern major towns (Maidstone, Canterbury, Tonbridge, Dover, etc.) or of Roman towns or forts (London, Reculver, Dover, etc.). Presumably this reflects the core meaning of *wic* as 'outlying' combined with the way that economic patterns changed after Roman rule.

In general, Kent's *wic* places lay close to navigable water: at least 15 could have been reached by a ship big enough to sail to France (on a fine day in AD 500), while at least another 8 could be reached by a river barge of reasonable size. That leaves maybe 15 *wic* places where cargo would have needed to travel in quite a small boat, high up a river system into progressively smaller tributaries, and maybe go only the last few hundred metres by wagon or human portage.

There are plenty of historical parallels for this kind of operation, from Viking traders, to north American *voyageurs*, to Greenwich's own shipments of lime up to London after the Great Fire. Daniel Defoe (1724) described chalk being shipped from Kent 'to all the ports and creeks' in Essex and beyond. Kent's natural trading partners across the Channel in Flanders inhabited a land that was flat and originally very wet, so that boating was part of the culture.

Some *wics* still look amazingly far upstream. Even allowing for all the changes in rivers since Anglo-Saxon times (due to silting, urbanisation, and lowered water tables) plus the need for settlements to avoid flood plains, there must have been a powerful economic motive to push some *wics* so far inland. One driving force may have been the salt trade. Inland salt-working places in Britain (Droitwich, Nantwich, etc) might have acquired their –wich names by analogy with coastal salterns (Allen 1889).

Salt was hugely important in ancient pastoral agriculture. It was the key to making cheese and butter, and in an age without refrigeration it allowed meat and some vegetables to be preserved, thereby becoming one limiting resource for survival over winter. Salt was made at numerous sites around the British coast, including six or so *wics* in Kent, and maybe inland *wics* functioned as its distribution centres. This does not imply that salt was the only product sold, but it might have functioned like the anchor store of a modern shopping mall.

Common salt, NaCl, is a limiting nutrient for cattle living on grass in Britain, and salt licks are a useful tool for persuading cows where to graze and thus for optimising the use of pasture. Ancient farmers would have known that giving extra dietary salt to cattle increases yields of milk and beef. Modern science recommends about 10kg of salt per cow per year.

Ancient Kent probably had at least 100,000 cattle (plus sheep, horses, and pigs), so even the most basic peasant economy felt an economic driving force to move over a thousand tons per year of salt substantial distances inland from the coast. This works out at around 30 tons per *wic* – more than enough to make any ancient salt merchant think carefully about the most efficient way to move heavy loads, and also about other saleable goods to travel along the same routes. One obvious cargo to travel in the other direction would be firewood, needed to complete the evaporation of sea water.

Most *wic* places have remained tiny into modern times, with two big exceptions. *Lundenwic* was near Charing Cross, London's traditional centre, but that was well outside the original Roman city. And Rome itself is thought to have begun life as a trading place where road met river and salt traders from the coast met farmers from inland. The commercial heart of its empire, the *forum*, was originally a marsh, below a ridge along which the original traders' stalls were probably strung out along a street later called the *vicus iugarius*.

Economic logic suggests that Anglo-Saxon farmers transported heavy cargoes as

much as possible in boats. Did they use substantial rivers that have since vanished, and/or wait for seasonal floods, and/or dig channels and build dams much as Selkirk (1995) described for Roman army logistics? Or were river valleys simply the best routes for men and horses to walk?

Some Kent *wics* seem to match up in pairs, one at the mouth of a river and one (or more) far upstream. Maybe they were trading partners, exchanging agricultural products from inland farms for goods available downstream that had been imported from further afield. One potential pair raises an intriguing question. How hard would it be nowadays to shift cargo in a boat from Greenwich to West Wickham? Despite what landowners often assert, an ancient public right still exists to navigate on all rivers that are physically usable but not specifically regulated (Caffyn 2011). Yet how often would concrete culverts or lack of water oblige a boatman to get out and carry the cargo? It would surely have been much easier back in the days of *Gronewic*.

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