

CÆSAR'S FORD: THE CLAIMS OF BATTERSEA.

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IT would require more than the fingers of both hands to enumerate the various spots, ranging from Wallingford to Westminster, which have separately been claimed as the site of Cæsar's passage across the Thames. If we were to assume that there are several fords which might conceivably satisfy the rather vague description recorded in the "Commentaries," the safest mode of examination would be the familiar "method of exhaustion." By eliminating the impossible, we might at least light upon the probable. Since, however, the present writer has only a general knowledge of the physical surroundings of certain outlying fords, but, on the other hand, has had one "reach" of the Thames—that of Chelsea—under his observation for more than a quarter of a century, he will here be wise enough to confine his remarks chiefly to an impartial survey of that specific locality. For the sake of brevity and clearness, the subject will be approached from six points of view: historical and traditional, textual, physical, physiographical (with respect to physical changes), geographical, and archæological.

I—HISTORICAL AND TRADITIONAL.

The first writer to advance the theory that Cæsar's ford was at Battersea—or Chelsea, according to the bank of the

¹ Author of "Byeways in British Archæology," "Neolithic Man in North-East Surrey," etc.

river chosen for nomenclature²—was William Maitland, who, in the first half of the eighteenth century, carefully investigated the question. He tells us, very truly, that, before the embanking of the Thames, the greatest marshes near London, on the south side of the river, lay between Wandsworth and Woolwich³, and he then proceeds thus: "I endeavour'd, by sounding the said River (at several Neap-Tides) from the first of these places to London Bridge, to discover a Ford; which, to my no small Satisfaction, I did, on the 18th September, Anno 1732, about Ninety Feet of the South-west Angle of Chelsey College [Chelsea Hospital] Garden; where, in a Right Line from North-east to South-west, I found the deepest Part of the Channel to be only Four Feet and Seven Inches Deep, and the Day before, it blowing hard from the West, my Waterman assur'd me that the Water, then, was above a Foot lower."⁴

Having noted this discovery, Maitland rightly infers that, before the river was embanked, or its course obstructed by bridges, the stream would be still shallower. Further, this ford, which he considered to be the lowermost of the Thames, agreed almost exactly with the distance stated by Cæsar. To obtain this harmony he assumed that the mileage was reckoned from Ritupis [Richborough], an assumption not quite justified, yet only slightly remote from modern theories. Moreover, Maitland, in this matter of reconciliation, only acted just as modern writers still continue to do.

The next allusion to a ford at Battersea is supplied by

² The portion of the river referred to is in Chelsea Reach, but, as the crossing was made from the south bank, it is proposed to speak of the Battersea ford.

³ Presumably Maitland refers to marshes on both banks of the river.

⁴ "Hist. of London," 1739, I, pp. 4-5.

Sir Richard Phillips, who wrote in 1820. He first describes a building, opposite the Terrace of Chelsea Hospital Gardens, known as the Red House—a celebrated “tea-drinking-house” and pleasure haunt in his day. He then asserts that, about fifty yards to the west of the Red House there existed formerly, and indeed still existed at the time of writing, a ford which he had surveyed more than once. The ford stretched from a point near the Red House on the Battersea shore (see sketch map) “to the Bank near the scite of Ranelagh”—on the Middlesex side. “At ordinary low water, a shoal of gravel, not three feet deep, and broad enough for ten men to walk abreast, extends across the river, except on the Surrey side, where it has been deepened by raising ballast. Indeed, the causeway from the south bank may yet be traced at low water.”⁵ Phillips, who was evidently impressed by the value of marshes as a defence against invasion, next observed that the tide conferred a military character to the district. In this respect, as we shall see later, he was most likely in error, but he concludes by the very pertinent inquiry why it was necessary for Cæsar to ascend the river as far as Chertsey,—a question which might aptly be put at the present day.

To anyone who is conversant with old maps of Battersea and Chelsea it will at once be manifest that Maitland and Phillips are referring to two different fords, and although the distance separating these is not relatively great, the matter will need close attention later.

We next get an echo of Maitland's theory in Faulkner's “Chelsea,” in which, after quoting Maitland, and without pledging himself in any way, the author states that there is “no little probability”⁶ of the correctness of the conjecture. There is some tangible evidence of the shallowness

⁵ Sir Richard Phillips, “A Morning's Walk from London to Kew,” 1820, pp. 34-6.

⁶ T. Faulkner, “Histor. and Topog. Description of Chelsea,” 1829, pp. 5-6.

of the river near the Draw Dock [slightly to the west of Maitland's line] within the last hundred years, for boys, we are told, used to wade into the stream at low tide "a long distance, the water scarcely reaching to their knees."⁷

There is little further allusion to the fords in later years, except by copyists, but a passing reference must be made to a statement which occurs in Mr. H. S. Simmonds's volume on Battersea. This work, while not pretending in any sense to scientific or archæological merit, bears internal evidence of the author's long experience and personal knowledge of local traditions. "Some of the old inhabitants of Battersea," says Mr. Simmonds, "have a notion that Battersea took its name originally from a great battle that was fought in shallow water knee-deep when the river was fordable, hence Battersea, Battelsea, Battlesea."⁸ This etymology is, of course, ridiculous, for Mr. Arthur Bonner, F.S.A., has proved conclusively that the true derivation is *Badrices ege*, "Badric's island (or, watery land),"⁹ yet the tale may conceivably represent a scrap of genuine folk-memory. But, as is the case with the few Battersea persons whom I have myself heard speak of the Roman ford, there is at least a suspicion that the idea has been kept alive by students of Maitland.

II—TEXTUAL.

On reading once more the text of the "Commentaries," one is struck by the facility with which definite conclusions have often been drawn from very scanty premises. At the threshold, it may be said that students of archæology and folklore have good reason for holding conservative views respecting the authenticity of Cæsar's narrative. Cæsar

⁷ A. Beaver, "Memorials of Old Chelsea," 1892, p. 12, citing Major Lambert, whose original paper I cannot discover.

⁸ "All about Battersea," 1882, p. 311.

⁹ *Trans. Lond. and M'sex Archæol. Soc.*, 1913, N.S., II, 434.

may exaggerate his numerous victories, minimise his defeats, and traduce the character of his enemies. His ideas on natural history and social economy may be sometimes crude, for they are those of his contemporaries. Yet, underlying his general information, whether this were acquired from direct acquaintance or mere hearsay, one can usually discern a basis of fact, and perceive that the writer is scrupulously candid. When he describes a British oppidum, with its rampart and ditch (l.v., c. 21), we recognise the accuracy of his terse account. When he tells us (l.vi., c. 19) that human sacrifices were offered in Gaul almost up to his own time (*paulo supra hanc memoriam*), the ethnologist knows that there is other testimony bearing in the same direction. Even when he speaks (l.vi., c. 28) of the urus or aurochs (*Bos primigenius*) as nearly rivalling the elephant in size (*magnitudine paulo infra elephantos*), we read the context carefully and find that, if he had not actually caught a glimpse of one of these beasts, he had at any rate paid fair attention to what his informants had told him. So with respect to his account of the currency bars, of the British taboo of hares, poultry and geese, of the Gaulish deities, which he correlated with the gods of Rome, we can obtain confirmatory evidence, or occasionally, even objective proof. In short, Cæsar well deserves the title of "*summus auctorum*" given to him by Tacitus,¹⁰ and his statements respecting military routine and scouts' geography may be deemed genuine approximations to the truth.

What, then, does Cæsar tell us about his pursuit of Cassivellaunus? The passages are tolerably familiar, and we will therefore quote only so much as is strictly necessary. Concerning the position of the country ruled over by Cassivellaunus, the words are: . . . "*cuius fines a maritimis*

¹⁰ "Germania," c. 28. See T. Rice Holmes, "Cæsar's Conquest of Gaul," 2nd edition, 1911, pp. 211-56; 523-9; St. George Stock, "De Bello Gallico," Bks. I-VII, Introduction, 1898, p. 12.

civitatibus flumen dividit, quod appellatur Tamesis, a mari circiter milia passum lxxx."¹¹ By some commentators this has apparently been interpreted to mean that the Thames for 80 miles of its course was the boundary between the Catuvellauni and the Atrebates.¹² But the meaning plainly seems to be that the territory of Cassivellaunus was separated from the maritime States by the river Thames at about 80 (Roman) miles from the sea. Reduced to English measurement, the distance would be approximately 73½ miles, but Cæsar does not pledge himself to exactitude, as shown by the word "*circiter.*"

Turning next to the description of the crossing of the river, we read: "*Cæsar cognito consilio eorum ad flumen Tamesim in fines Cassivellauni exercitum duxit; quod flumen uno omnino loco pedibus, atque hoc aegre, transiri potest*":¹³ Having ascertained their plans, Cæsar led his army to the river Thames to the country of Cassivellaunus, which river can be forded at one spot only, and that with difficulty. "To the country" seems better than "in" or "into"—translations given, however, by good authorities—because Cæsar had not yet forded the stream. The conjunction of *omnino* and *uno* forbids any other rendering except "one only," and this raises an important question. We know that, above London, men could have waded across the river in several places, and it has therefore been argued that the prisoners and deserters (*his rebus cognitis a captivis perfugisque*)¹⁴ had been previously instructed to say that there was but one ford, in order to entice Cæsar to a well-defended spot.¹⁵ But Cæsar was not likely to be led into a trap through neglect of verification, and it seems more

¹¹ L. v, c. 11.

¹² Referred to, but discarded by, H. E. Malden in "A History of Surrey," 1900, p. 21.

¹³ L. v, c. 18.

¹⁴ L. v, c. 18.

¹⁵ *Jour. Brit. Archæol. Assoc.*, 1897, N.S., III, p. 102.

probable that the plain truth had been told, that there was only one ford available anywhere near the spot where he would strike the Thames; in other words, that he had not at the moment gone far enough upstream to be in the region of the easiest crossing-places.

We understand, then, that Cæsar's exploit was performed at a spot somewhere near the frontiers of Cassivellaunus, about 73 English miles from an unspecified point by the sea. Was this the Nore, as Mr. Malden suggests?¹⁶ The Nore would have no meaning for Cæsar, nor would he trouble about the precise limits of estuary and sea; that is a modern conception. Nor could the 80 miles be reckoned along the path of the tortuous stream. Cæsar did not come up the river, and, had he done so, no maps of that day would serve to indicate correct distances. Revolve the matter as we will, the natural interpretation seems to be that the distance was reckoned from Cæsar's landing-place, which Dr. Holmes has proved to have been almost certainly a little to the north of Deal Castle.¹⁷

Lastly, where was the country of Cassivellaunus? Once more our author is not very definite in his account. Certain tribes had sent envoys with a message of submission, and from these envoys he learns that "*non longe ex eo loco oppidum Cassivellauni abesse silvis paludibusque munitum.*"¹⁸ The description is vague; what can we glean from "*ex eo loco*"? The context aids us but little. It seems, however, a warrantable conclusion that the chieftain's lands extended to the Thames, and that they also lay to the west of the Lea, which was the boundary of the Trinobantes.¹⁹ The allusion to the woods and marshes which guarded the stronghold has led most archæologists to fix upon Verulam (Verulamium), or some site near that ancient town, as the

¹⁶ Op. cit., p. 21.

¹⁷ "Ancient Britain," pp. 325, 625.

¹⁸ I. v, c. 21.

¹⁹ Cf. "Ancient Britain," p. 346.

fortress of Cassivellaunus. Other spots have been suggested, such as Cassiobury, also in Hertfordshire, and even London itself. There is little real support for any of these alternative places, but Sir Laurence Gomme, while rejecting Verulam, seems disposed to favour the last-named.²⁰ The strong objection is made that Cæsar does not mention London at all, and some writers, biased, perhaps, against the theoretical antiquity of the city, have doubted whether there even existed a British settlement at Londinium.

How did Cæsar arrive at his estimate of 80 miles? If we could find an answer, it would help in solving several problems. Possibly the figures indicate an honest attempt to correlate his own judgment with the estimates furnished by the aforesaid deserters and captives. More probably, the result was obtained by computing the distances traversed day by day. But we do not even know how long the journey occupied, and estimates of the average length of a day's march vary considerably, ranging, as they do, from 20 to 30 kilometres.²¹ The pursuit from the coast to the ford could barely have been accomplished in less than a week, and if we take a mean of 25 kilometres, or, say, $15\frac{3}{4}$ English miles, as the daily march, we obtain a total of 109 miles, for the seven days, instead of the 73 recorded in the "Commentaries." In short, we can only guess at the method employed, and thus we are confronted with the danger of the procrustean plan of making the text harmonise with theories concerning Battersea, Brentford, Kingston, Halliford, Coway Stakes, or any other particular spot. We are driven back to the hypothesis that 73 miles represents a rough calculation, and that it is somewhere near the truth. We may take the reckoning from Deal, the place of disembarkation, to that ford which gave the readiest entrance into the dominions of Cassivel-

²⁰ Sir L. Gomme, "The Making of London," 1912, p. 22-23.

²¹ See "Cæsar's Conquest of Gaul," p. 635.

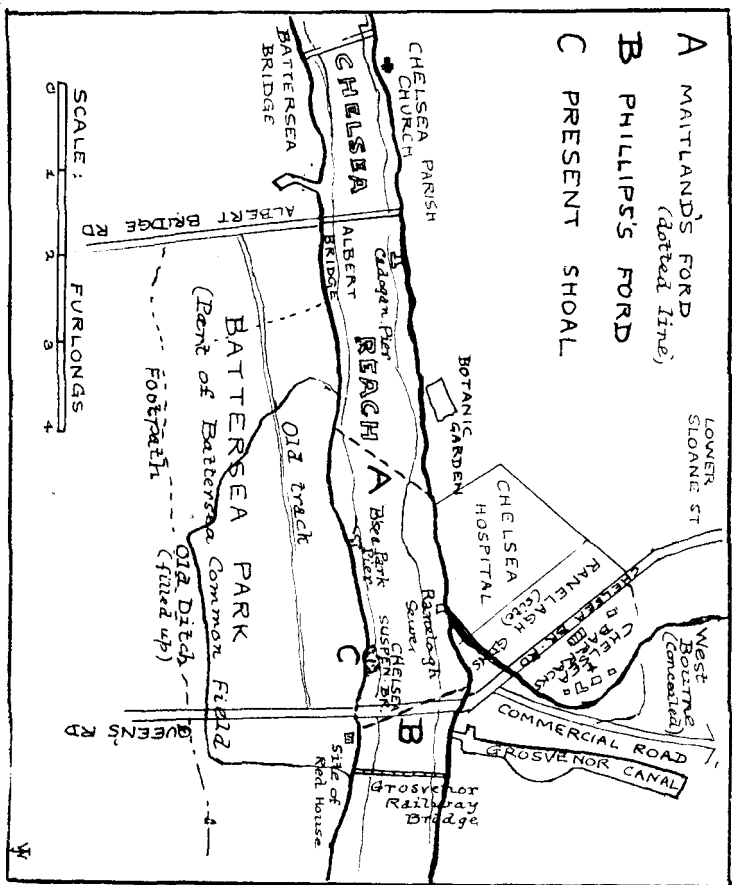
launus. It is also a reasonable assumption that the first practicable ford lay not far from London, so that, unless other objections can be successfully raised, such a ford cannot be set aside because it does not agree exactly with Cæsar's mileage.

III—PHYSICAL.

The Thames at Chelsea Reach is to-day notoriously shallow at low tide, as one finds upon making inquiry of boatmen. Owing to the modern embankments, the feature is, nevertheless, not always as obvious as one might expect. Maitland's ford is still to be detected during very low ebbs, and a little higher upstream there was formerly a fan-like mass of mud and sand projecting from the southern or Battersea side. This is clearly depicted on a plan of the "Proposed Royal Park" (c. A.D. 1843), now exhibited in the Battersea Public Library at Lavender Hill. Further light on this stretch of the river is afforded by an old print, dated 1750, to be seen in the Chelsea Public Library. In this print the Battersea shore is shown to be low and gently shelving, except where two miniature bluffs stand up above the mud-flats left bare at the ebb.

Phillips's ford, which, as we have seen, ran obliquely from the now demolished Red House to the site of Ranelagh, must have passed under the present Chelsea Suspension Bridge (see Map), a fact which will hereafter be shown to have an important bearing.

A third shoal, very marked at low tide, lies about 40 yards west of the bridge and consequently a little west also of Phillips's line (see map, C). On the Battersea shore a large semi-conical mass of gravel and sand has been piled up against the concrete wall, the apex being only a few feet below the promenade. This heap consists of well-assorted detritus, and its cap of fine sand, drying to a pale brown, is usually a conspicuous object. The mound



Sketch Map of Cheltenham Reach, roughly showing the banks of the Thames about the year 1843. The thin inner line represents the low-water mark.

slopes rather steeply towards mid-stream, and it is in part approached by a flatter tongue of material which starts from the opposite bank. In spite of continuous dredging, this shoal has persisted for many years, and I have observed little if any real change in its size and position. For a long time I surmised that this might be one of the crossing-places described by Maitland and Phillips, but closer attention to their accounts shows that the shoal really lies between the limits of those fords. Reviewing the question once more, one is constrained to associate the formation of this shoal partly with the building of the Chelsea Suspension Bridge. In the time of Phillips neither the Chelsea nor the Albert Bridge existed, and even the old Battersea Bridge came a full generation after the soundings taken by Maitland.

Since the whole of the Reach is far from being deep, it is quite likely that there were two fordable spots. The crossing-places, as was usual, slanted across the river, one line, that of Maitland, trending from S.W. to N.E., while that of Phillips ran from S.S.E. to N.N.W.

Through the courtesy of Mr. A. Harnett, the Resident Engineer to the River Department of the Port of London Authority, I have been privileged to inspect several large-scale maps on which soundings had been plotted at very short intervals measured along the river-bed. Taking the track of Maitland's ford, a recent map, prepared in the year 1898, revealed the startling fact that, notwithstanding the general shallowness of this belt, a depth of 9 feet 5 inches had at one spot been sounded at low tide. Going back, however, to an older map (1856), and following the same line, the depths, starting from the Middlesex side, began at 2 inches, and gradually increased up to 6 feet. Then 4 feet was noted, and, after several fluctuations, there appeared, beyond mid-stream, and towards the Surrey side, a kind of narrow gut, or canyon, where 8 feet 11 inches had been registered. Then variations

occurred, until the depth diminished to a foot, and ultimately, of course, to zero. One had a strong suspicion that the gut might be due to the constant removal of ballast, or at least that it had not always existed. Experts tell us that, whether the river be dredged for mud and gravel as a legitimate method of maintaining the waterway, or whether it be raided for ballast for the sake of private profit, the result is the same: an unstable condition is set up and the scour of the current constantly tends to restore the natural angle of repose.²² The dredge cuts holes in the channel, but these become filled, so that the original contours are gradually approached. The suspicion about the trough proved to be well founded, because the greatest depth plotted on a still earlier map (1823) was 6 feet 3 inches, and the groove had shifted its position. I cannot doubt that even this depth exceeded the records of the previous century.

The figures at Phillips's passage-way were strangely accordant with those already given, but the groove was not so apparent. Now, three years before the date of the map last mentioned, namely, in 1820, Phillips distinctly notes the deepening of the river by the raising of ballast. How long these private depredations had been permitted one cannot tell, but there can be no question that the dredging process had aided in gouging out the deep channel, and that the primitive embankments existing in the eighteenth century had encouraged the pent-up waters to scour out new grooves as the old ones gradually became choked. But I see no reason whatever why the records both of Phillips and Maitland should not be accepted as entirely trustworthy. Conjointly with other evidence, we shall find that their reports establish a strong case for the fordability of the Thames at the places named.

²² T. W. Barber (and others), "The Port of London and the Thames Barrage," 1907, pp. 71-3.

The key to the modern problem will partly be found, I think, in that obscure outlet, now known as the Ranelagh Sewer, which stands intermediate between the fordable passages. This sewer, which, except during storms, now pours into the river an insignificant quantity of water, is really the shrunken remnant of the concealed Westbourne, or Bayswater Brook. Springing from the heights of Hampstead, the Westbourne, in its heyday, flowed by Kilburn and Bayswater, and crossed Hyde Park, where, in later times, it was artificially widened to form the Serpentine. Thence the stream ran east of Sloane Street, passed to the rear of Chelsea Barracks, and then, swerving abruptly to the south-west, entered the Thames. Deprived of its head waters and its tributaries, the diminished Westbourne now burrows underground, while sections here and there are imprisoned in the sewer. Twenty centuries ago, matters were different. One authority, who gave unremitting attention to London's buried streams, described the Westbourne as "the most considerable of all the brooks which flowed through London."²³ Even within living memory, when the stream had already been partially tapped, it was so swollen in flood-time that it was fancifully called by Chelsea boys "the rapid Rhone."²⁴

Before passing on, a private conjecture may perhaps be allowed. Mr. Bonner has shown that the name "Chelsea" was originally *Cealc-hythe*, or "Chalk-haven" (or landing-place).²⁵ Is it hazardous too much to suggest that, when the Thames became distinctly tidal up to this point—which, as I shall endeavour to show, was not until

²³ J. G. Waller in *Trans. Lond. and M'sex. Archaeol. Soc.*, 1890, vi, p. 279.

²⁴ Rev. A. G. L'Estrange, "The Village of Palaces, or Chronicles of Chelsea," 1880, I, p. 111.

²⁵ *Trans. Lond. and M'sex. Archaeol. Soc.*, 1912, N.S., II, pp. 356-66.

the later Roman period—chalk for marling the land²⁶ was landed at this small but convenient haven? The name, Old English of course, seems to indicate a spot of this kind.

It is a commonplace with students of physical geography that, where a tributary enters the main stream it locally checks the current,—that very current the volume of which it will increase and ultimately assist in aggrading the channel.²⁷ The temporary decrease in speed and power of transportation will be proportionate to the respective volumes and velocities of the river and its affluent. We do not know the former volume of the Westbourne waters, either normally or in times of spate, but the amount would be very trivial compared with that of the Thames. Nevertheless, entering the river at a lateral angle of about 55 deg. in a south-westerly direction, and impinging upon an already shallow channel, the Westbourne of British times would alone be almost sufficient to produce, both in direction and magnitude, the two banks or bars which formed the greater portion of the hypothetical passage-ways. Before reaching the obstructing waters the Thames would be compelled to drop, first its load of gravel, and then its sand. This burden would fall on or about Maitland's line of soundings. A portion of the material might be rolled over to the Battersea shore, and gradually swirled round to the east of the tributary, where there would be slack water, and where not only the shingle and sand, but in addition most of the silt would be surrendered. Thus would be accumulated the shoal which Phillips must have examined, that is, the shoal near the Chelsea Suspension Bridge.

Under the head of physical geography it seems fitting

²⁶ On this question, see W. Johnson, "Folk-Memory," 1908, pp. 205-33.

²⁷ T. C. Chamberlin and R. D. Salisbury, "Geology," 1905, I, pp. 168 et seq.

to notice some of the present levels of the neighbouring land. Parts of the district on both banks of the Thames stand not many feet above Ordnance Datum.²⁸ The benchmarks on the large-scale maps indicate levels ranging from $10\frac{1}{2}$ feet to $33\frac{1}{2}$ feet in Battersea Park, but the greater heights certainly, and the lesser heights probably, are to some extent due to artificial causes. Battersea Park was formerly a portion of the Battersea Common Fields, and consisted of marshland intersected by drains, but traversed also by footpaths and cartroads. When the Park was laid out (1847-57) a vast quantity of soil was brought from the Extension Works at the Victoria Docks, and the surface level was raised to an extent now unascertainable, but doubtless, in places, reaching several feet.

It is both needless and unwarranted to exaggerate the marshy condition of the ground in the pre-enclosure days. So early as 1560 the men of Battersea had constructed an embankment known as the "Marsh Wall."²⁹ Once at least, in 1774, the floods burst through this wall and inundated the fields.³⁰ This phenomenon was, however, exceptional, and there is ample documentary evidence to show that the district could be easily traversed on foot. Some of the footpaths led the traveller across bridges and penstocks, but the route was not difficult. I have conversed with the late Canon Pennington, who was born near the "Plough," at Clapham, about the year of Waterloo, and who related how, in his boyhood, it was a favourite diversion to walk across the fields and market-gardens, past the solitary Longhedge Farm to the Thames bank by

²⁸ Ordnance Datum (O.D.), i.e., the assumed mean level of the sea at Liverpool, is 0.650 ft. below the mean level around the coast generally. Trinity High Water mark (T.H.W.) is 12 ft. 6 in. above O.D. Extraordinary tides sometimes rise 4 ft. above T.H.W.

²⁹ E. Hammond, "Bygone Battersea," 1897, p. 9. [Sir L. Gomme] "L.C.C. Guide to Battersea Park," 1894, p. 4.

³⁰ Hammond, loc. cit.

the Red House.³¹ On the Chelsea side the general state of the surface was even better. At the time of the Restoration, as shown by contemporary documents, the fields near the "Bloody Bridge"—which spanned the lower reach of the Westbourne, a little to the east of Sloane Square—were ploughed close to the footpath which led from that spot to Chelsea.³² Enough has perhaps been now said to guard the inquirer against overrating the swampy nature of the district within modern times. It next becomes advisable to investigate the probable condition of the area during the late British period.

IV—PHYSIOGRAPHICAL CHANGES.

Two assumptions, both erroneous, have hitherto tended to make investigators search for Cæsar's ford at places outside the London border. The first assumption is that the tide formerly reached higher up the Thames than it does to-day; and the second, that most of the alluvial land on which Thames-side London is built was, at the time of Cæsar's arrival, uninhabitable because of swamps. Both postulates demand careful scrutiny before we accept them, but we shall find that rejection of the one will involve rejection of the other, and conversely.

Most commentators have gone astray, perhaps quite naturally, on this question of tides,³³ and even such an able historian as Mr. H. E. Malden asserts that "the tide certainly flowed above Teddington in Cæsar's days. It would do so now were it not for the locks and weirs."³⁴ In the popular mind, the notion that the tide has always reached as far as Teddington has become irrevocably

³¹ Cf. A. R. Pennington, "Recollections of Persons and Events" [1895], pp. 2-3.

³² R. Davies, "Chelsea Old Church," 1904, p. 44.

³³ E.g., C. E. Moberly, "The Commentaries of Julius Cæsar," Bks. iii, iv, v," 1889, "Notes," p. 39.

³⁴ H. E. Malden, "A History of Surrey," 1900, p. 211.

fixed, partly by reason of the false etymology, "Tide-end-town."³⁵ A moment's reflection, however, will show that, even if this ingenious derivation were sound, it would be evidence extending back to the Old-English period only, not to the days of Cæsar.

The Thames, as Mr. Malden truly remarks, is now tidal up to Teddington, where a lock and weir arrest progress. There is also a half-tide weir at Richmond, a still lower point. But the range of the ordinary spring-tide, which at high water in Chelsea Reach rises to 13 feet 7 inches above O.D., and at low water sinks to 5 feet 3 inches below O.D.,³⁶ has shrunk to insignificance at Teddington. The momentum of the tidal-wave is there nearly spent. This particular fact is really immaterial to our discussion, because there is a master consideration which overrides smaller ones,—“the one factor more” which disturbs theories. This factor is the probable change of land-level since the British period.

At the close of the Palæolithic Age or the earliest dawn of the Neolithic, the Thames flowed away to its ocean outlet across land which stretched far away over the present site of the North Sea. This outward extension of the coast, which for a time created a natural bridge to the Continent, was gradually withdrawn owing to an age-long subsidence of the land, accompanied by a corresponding encroachment of the sea. With but slight pauses and minor reversals this depression lasted down to the end of the British period. The Lower Thames, as we now know it, became estuarine, and the tide crept farther and farther inland, yet for many centuries not nearly attaining its

³⁵ Mr. Arthur Bonner tells me that the earliest form recorded is *Tudintun*, in a MS. of c. A.D. 1100; that this most probably represents O.E. *Tudan tun*, i.e., Tuda's farm (or settlement), Tuda being a personal name; and that clearly it is unconnected with "tide" (O.E. *tid*).

³⁶ Information supplied by Mr. A. Harnett.

present limits. The eastern portion of the area sank relatively more than the western, as if the land, not for the first time, had pivoted over eastwards from some point on the western margin of the London district. A regular sequence of beds, indicative of subsidence, is traceable when docks and drainage trenches are excavated, especially below London. Coarse gravel lies lowest in the series, then fine gravel, followed by fine sand, and sometimes marsh-clay. The succession is then continued by layers of peat, with occasional intercalations of fine mud. The peat beds, which are thickest towards the east, *where the subsidence was first manifested, represent stages* when the depression had either stopped, or had indeed been temporarily reversed for a time. The sub-fossil remains show that the peaty surface at that period supported forests of birch, elm, hazel, and yew, the last-named tree being notoriously intolerant of salt water. At such a time, therefore, the tides were well held back from their modern limits.

The net result of the recorded observations is that, at the very commencement of the Roman period, or, for our present purpose, let us say at the date of Cæsar's arrival, the land in the London area, which had long been gently sinking, was comparatively stable, and still remained several feet higher than it does to-day. In other words, Roman relics, which obviously are of later date than the year of Cæsar's pursuit of Cassivellaunus, are found lying several feet beneath the line 'where they would now be constantly washed by the tides. These relics are indeed often disinterred from one of the peat beds, which, during that era, must have represented a habitable surface. The usual method of building on the more marshy sites during the Roman period seems to have been to drive piles through the peat into the gravel below, and to rear the house on a platform thus supported. The piles not only provided a secure foundation, but also kept the tessellated

floors in their proper position. These conditions were well observed in discoveries made during excavations at Southwark.

Let us here clearly understand that the testimony with respect to London itself does not depend upon the discovery of Roman remains beneath great depths of "made soil." This "made" material has been accumulating ever since those relics were entombed, and unless the height of the present surface above O.D. be recorded by the finder, the observations are valueless for our particular inquiry. Thus, in Warwick Square³⁷ the bottom of the Roman stratum lay as much as 19 feet 8 inches below the surface, but since the level of that surface is 58 feet O.D., it is clear that a hummock of ground suitable for occupation existed there in Roman times. The best evidence, therefore, comes from "floors" the levels of which have been accurately noted, or, preferably, from marshlands which are several feet below the level of the river at ordinary spring tides, and which, before embankments were constructed, were periodically subject to flooding. In such cases it is not a question of "made earth" but of silt having been afterwards deposited on a surface which had sunk and thus been made ready to receive it.

Mr. F. C. J. Spurrell, whose classic paper on early embankments³⁸ will be frequently cited, has shown that, below Purfleet, there are no banks surviving from the Roman period; that, above that spot, none, or only the very slightest, would be needed; and that, finally, with one exception, we have no embankments of earlier date than the thirteenth century.³⁹ The first embankments must have been of a trivial kind, and the modern ones have

³⁷ *Archæologia*, 1885, xlvi, p. 223.

³⁸ F. C. J. Spurrell, "Early Sites and Embankments on the Margins of the Thames Estuary," in *Archæol. Jour.*, 1885, xlii, pp. 269-303. Other contributions by Mr. Spurrell will be quoted.

³⁹ *Op. cit.*, pp. 286, 302.

grown from them by slow accretions. In short, it has never been proved, though it has been frequently postulated, that the Romans built the first Thames embankments, and at all events it seems fairly certain that Cæsar found none in existence on his arrival here. Yet, without such protection, the land near the Thames estuary, as we know it to-day, could not have been habitable.

A few examples will make matters plainer. At Thorney, on the spot where Westminster Abbey now stands, the sections showed that there existed, during the Roman period, an island of sand, fringed with peat and marshland. The Roman surface at this spot was only 5 feet, and in one place 4 feet, above O.D.,⁴⁰ so that, were the river unembanked and the land at its present level, the site would have been overwhelmed by 8 or 9 feet of water at high water of the ordinary spring tide.⁴¹ At Southwark, where the peat was from 3 to 4 feet thick, Roman pottery was found at all depths in the formation, at, or just about the O.D. line.⁴² The peat at Southwark and Westminster, it may be observed, represents only the uppermost layer of the beds in the Essex marshes, for the London district was the last to sink.⁴³ At Guy's Hospital, Roman refuse was found at about 2 feet 6 inches in peaty soil which had never been covered with tidal mud.⁴⁴ In the peat were pine cones, hazel nuts, and moss, all indicative of a firm land surface. Again, at the Royal Albert Dock, the Roman layer was 8 or 9 feet below the surface, or only a few feet above

⁴⁰ *Op. cit.*, p. 271. Cf. R. A. Smith, in "Vict. Hist. of London," 1904, p. 29.

⁴¹ This tide reaches about 13 feet above O.D.

⁴² W. Whitaker, "Geol. of London" (Mem. Geol. Survey), 1889, I, p. 459; R. A. Smith, *op. cit.*, p. 43; Spurrell, *op. cit.*, pp. 274-6.

⁴³ Spurrell, *op. cit.*, pp. 270-1.

⁴⁴ *Ibid.*, pp. 274-5.

O.D.⁴⁵ Four years ago, when the London Geologists' Association visited the Extension Works at this dock, I was able to observe the level of the Roman floor, and to form an idea of the sinkage which has occurred since its formation. It is true that the relics were confined to a little Samian ware, but the section supplied us with an unmistakable picture of Thames history from the Bronze Age onwards. Two more sections only need be noted here,⁴⁶ one at Crossness, where Roman tiles, pottery, and mortar were found 9 feet beneath the present surface, and the other at Tilbury, where the Roman floor was covered by 7 feet of accumulated material. In the last-named case, Mr. Spurrell considered that the Roman occupation was coincident with a renewed depression of the land.⁴⁷

It would not be honest to withhold the opinion of the veteran geologist, Mr. William Whitaker, F.R.S., that the surface of the marshland has been partly lowered by shrinkage of the intercalated alluvial mud.⁴⁸ The contention is quite just, and Mr. Whitaker might perhaps have included the effects caused by the loss of water and the leaching out of the silt by modern drainage. But, at most, a foot or two of the depression might thus be accounted for. Diminution of bulk would barely affect the gravel and sand upon which the peat bed, with its relics, firmly reposes. The peat itself would undergo some shrinkage, but its relation to the O.D. line would be only a little altered. The beds above, which in the aggregate are much thicker, would shrink most, but since, from the nature of the case, they are later accumulations,

⁴⁵ *Ibid.*, pp. 275-6; Whitaker, *op. cit.*, p. 463.

⁴⁶ Many more instances are given by T. Codrington in *Surrey Archaeol. Coll.*, 1915, xxviii, pp. 138-147.

⁴⁷ Spurrell, *op. cit.*, pp. 275-6.

⁴⁸ "Geol. of London," I, pp. 456-7.

they could only act on the peat by pressure and thus force it down somewhat with respect to the O.D. line.

In conversation, Mr. Whitaker has told me that he thinks the land stood a few feet higher during the Roman period, premising always that the river was not then embanked. Two modern geological workers of high reputation—Mr. A. Santer Kennard, F.G.S., and Mr. S. Hazzeldine Warren, F.G.S.—have put the case to me much more strongly. They believe that the London district was decidedly more elevated in pre-Roman times than it is at present. Mr. Kennard considers that a well-marked subsidence occurred about the middle of the Roman occupation. Since the departure of the Romans, Mr. Spurrell tells us, the Thames, from Lambeth to Tilbury, has retained almost the exact relative position to the earthland foot and the firm banks, as well as to the more important hard and landing-places, that it presents at this moment.⁴⁹

It may fairly be concluded, then, that during the early Roman period the land stood 10 or 12 feet higher than it does to-day. But the earliest Roman relics manifestly cannot synchronise with Cæsar's passage of the Thames in B.C. 54, and as the sinkage had been more or less continuous, the figures given might perhaps be slightly increased. The first corollary to this conclusion is that the Thames borderland in Cæsar's time was neither a series of lagoons nor an impassable swamp, and the second, that the tides could not, in the first century B.C., have extended to Teddington. It is extremely doubtful, in short, whether Chelsea Reach was affected by the tides at all. Mr. Spurrell goes much further and declares that, at the time of the Roman invasion, the Thames joined the sea,

⁴⁹ Spurrell, *op. cit.*, p. 302. Cf. his articles in *Proc. Geol. Assoc.*, 1889-90, xi, pp. 210-28; *Archæol. Jour.*, 1890, xlvi, pp. 43-7, 170, and 1889, xlvi, p. 75-6.

or became truly estuarine, at a point as low as East Tilbury or Gravesend. Above that point there was fresh water.⁵⁰ We are not concerned in proving this wider thesis, but with respect to Mr. Spurrell's theory as a whole, I am not aware that any direct attempt has been made to refute it.

Two years ago, however, a most valuable paper, crowded with records of observations, was written by Mr. T. Codrington, M.Inst.C.E., dealing with South London in early times.⁵¹ Mr. Codrington has prepared an instructive map showing the South London limits to which the high tides would reach to-day were the river unembanked. He gives also a vast amount of detail concerning the levels of Roman floors and the thickness of the made earth, and argues that the level of the land has been raised by the accretions of rubbish with which we are so familiar. His main conclusion is that, since places like Southwark and Bermondsey would have been uninhabitable unless the river were embanked, we must infer that the Romans constructed embankments. I think that this brief summary fairly represents Mr. Codrington's views. Granting the great merits of his investigations, one cannot yet admit that Mr. Spurrell's theory is thereby shaken.

That the Romans, had they found the neighbouring land much below the level of high tides, would set to work to construct durable embankments is a proposition fairly arguable. Supposing that the land required embankments, and that the newcomers thought the task profitable, skill and labour would not be lacking. But we have no direct proof that the Romans did build strong and extensive river-walls on the Thames, least of all in the early part of the occupation. Such banks as might later be erected would perhaps be confined to the shores bordering the Roman city proper, where there was a selvage

⁵⁰ *Archæol. Jour.*, 1889, xlvii, pp. 75-6.

⁵¹ *Surrey Archæol. Coll.*, 1915, xxviii, pp. III-64.

of marshland, and to those of Southwark on the opposite side. To protect these small areas at all effectively would need an extension of the restraining wall two or three miles in each direction, and even then, the waters, on the low-level hypothesis, would constantly creep round and frequently inundate much of the "protected" area. Even when river walls had been built, it would be many years before the hypothetical swamp could be made ready for permanent settlement.

Our modern embankments reach an average height of 16 feet above the O.D. line, so that unembanked land which to-day has a lower elevation than 15 feet O.D. would be subject to the periodical wash of the tides.⁵² But Mr. Codrington himself records the discovery, in Southwark, sometimes in made ground, and sometimes in peat-like material, of Roman remains lying from 15 to 17 feet below T.H.W., that is, from 2 feet 6 inches to 4 feet 6 inches below O.D.⁵³ The pottery in the lowest layer belonged to the first century. Again, a "perplexing" causeway, composed of squared chalk and secured by oak piles, was found to run from Kent Road, in the parish of Camberwell, to the Thames at Rotherhithe, and this causeway must, in Mr. Codrington's opinion, have lain at 7 or 8 feet below T.H.W.⁵⁴ Shall we conclude that the Romans thought it worth while to prepare such a forbidding tract for settlement by rearing high and massive embankments, or shall we look for a simpler interpretation?

Such an interpretation is afforded by the geological evidence. Below the bridges, and partly within the limits of London itself, we have, as before stated, the familiar succession of graded deposits: coarse gravel, fine gravel, sand, mud, and peat. This series points to a gentle, but

⁵² Spurrell, *Archæol. Jour.*, xlii, p. 271.

⁵³ *Op. cit.*, p. 146.

⁵⁴ *Op. cit.*, p. 150.

long-continued subsidence, with well-marked pauses, and the closing stages seem not to have been attained until the Roman period was fairly advanced. One of these distinct pauses is represented by the Roman relic bed of peat. In this peat vast numbers of trees lie buried—trees which must have required two or three human generations for growth, and which, therefore, indicate stable conditions. The buried timber, as a whole, certainly lies confusedly together, but some observers affirm that they have found trees in their natural upright positions, and not merely in a composite tangle of moorlog. Indeed, on the occasion of the before-mentioned visit to the Royal Albert Dock Extension, some members of the party expressed a decided opinion that a few of the trees stood rooted as they had grown. To this extent, then, there was evidence of after subsidence, as well as of floods and spates which carried down driftwood.

We must again emphasize the fact that the records largely concern marshland and dock sections, where the "made soil" is all but negligible, its place being occupied by silt laid down by tidal waters within historic times. There we get signs that the old pre-Roman and early Roman surface, with its trees and peat moors, was, if not habitable, at least easily traversable. Saxon relics seem to be notably lacking where they might be expected to occur, and this absence must imply a change in the physical conditions unfavourable to human occupation. To suppose that we can separate London proper from the general downward movement thus indicated, or that river-walls of imposing size and strength had to be constructed to protect landward hollows, does not appear so legitimate as to infer that there was going on a slow subsidence, which made room for tidal deposits, and which, in post-Roman times, necessitated the use of embankments to remedy the mischief.

We may here repeat and lay stress upon the argument.

If the contention that the land stood at a higher level in B.C. 54 be taken as proved, then it follows that the tides, as before hinted, were correspondingly held back. And since the fall from Teddington to London Bridge is fairly uniform, and averages about one foot per mile,⁵⁵ the pre-Roman tides would be scarcely, if at all, felt in Chelsea Reach, and there would be virtually a non-tidal ford.

The facts which, as I think, refute the error concerning the tides, also destroy the "lagoon theory," so sedulously taught by Dr. Guest, and later by Sir Laurence Gomme. Dr. Guest's school was successively reinforced from the literary side by Mr. J. R. Green, Mr. W. J. Loftie, and Sir Walter Besant. But if Mr. Spurrell be right, this idea of a London morass, and certainly that of an expanded lake or "lagoon," must be frankly abandoned. The lake or swamp, says Mr. Spurrell, "resolves itself into the supposition of a few inches of water rising over the saltings [above Erith, and therefore, presumably, not at all above London Bridge] for a few minutes in the day during a few days in the month, and even the last reduced to a still smaller number of days in the summer months."⁵⁶ Turning back to Sir Richard Phillips for a moment, we take note that his theory of the military advantage of a swamp is proportionately weakened as the swamp becomes reduced to habitable marshland, but for our purpose very little hinges on this subsidiary theory.

Whatever decision be reached with regard to embankments, unanimity will prevail concerning the non-existence of locks and weirs in the Roman period. No one has even suggested the presence of these in the Thames at that time. Locks seem to have been invented no earlier than

⁵⁵ H. B. Woodward, "Geol. of London District," 1909, p. 104; T. H. Huxley, "Physiography," 1885, p. 15. Cf. T. W. Barber, *op. cit.*, p. 26.

⁵⁶ *Archæol. Jour.*, xlii, pp. 301-2.

the fourteenth or fifteenth century,⁵⁷ while weirs constructed for trapping fish are believed to go back to Saxon times only.⁵⁸

The changes brought about by the introduction of locks and weirs can only be surmised, not estimated, but the broad result has been to pond back the waters, to regularise the flow of the stream, and to give freer scope to the tides. The construction of bridges, of which there are now, below the weirs, 17 of a substantial character, with 10 railway bridges and footbridges, has also brought about vast alterations. Conceive the effects of removing these bridges. We may enumerate them thus: free access to the flowing tide, succeeded by a lower, though somewhat retarded ebb, and thirdly, an unhindered course for the river downwards to the sea. The removal of Old London Bridge alone, with its associated shoals, caused the high water line to be raised one foot, and the low water line to be correspondingly lowered one foot, while at the same time the flood tide was accelerated, and the ebb tide retarded.⁵⁹ When to the effect of the construction of bridges we add that of the numberless jetties, piers, quays, wharves, and groynes, to say nothing of moored shipping and sunken vessels, we can imagine how the flow of the stream has been obstructed.

Directing our thoughts backward to the first century B.C., we must picture to ourselves the Thames running through London uninterruptedly to the sea. As the tide ebbs there is nothing to impede the onward current save the eyots and shoals which the river has itself built up. For, although there is an increase of elevation to be pictured in the mind, the grade or base-level of the river has been already so nearly attained that the erosive and

⁵⁷ *Ency. Brit.*, 11th edition, 1911, Art. "Canals."

⁵⁸ *Op. cit.*, Art. "Weir."

⁵⁹ T. W. Barber, *op. cit.*, p. 30.

scouring action is very slight. The effective channel is narrower, but the waters are more extended laterally. The stream repeatedly bifurcates and re-converges. Reed beds and clumps of sedges again break up the minor currents; decaying vegetation, snags, and driftwood partially block up the backwaters and cause further divergences. All the time, the freshwater brooks which intersect the marshland are paying tribute to the main stream.

We have thus obtained at Chelsea a shallower river, having its waters more outspread, not imprisoned as in a canal. The river is practically, if not entirely, destitute of tides. It will perhaps be objected, quite naturally, that we are proving too much, for if the river was non-tidal, and therefore serviceable as a ford at Chelsea Reach, it was, *à fortiori*, non-tidal at Putney, at Brentford, at Kingston. This is true, but the objection, though lawful, is not pertinent. Our immediate contention is that the river was fordable at Battersea, and if that be granted, the rest follows more easily, for *this ford lay nearest to the advancing army.*

One additional factor remains to be reckoned with—the effect of winds. Ansted states that, during the prevalence of west winds, the tide has sometimes ebbed so low that persons could walk across the river bed at Old London Bridge.⁶⁰ This phenomenon was witnessed in the year 1777, and at earlier dates,⁶¹ nor does it appear to have been confined to the neighbourhood of London Bridge. Supposing that there had been a high wind at the time of low tide, Cæsar's passage might conceivably have been made at numerous spots; it would certainly have been possible at Battersea. We recall Maitland's assertion that the deepest part of his ford was 4 feet 7 inches

⁶⁰ D. T. Ansted, "Water and Water Supply, Surface Waters," 1878, p. 150.

⁶¹ H. B. Woodward, *op. cit.*, p. 109.

at ordinary neap tides, and a foot less during a strong westerly wind. Now, Hyde tells us that for the passage of infantry a ford should not exceed 3 feet in depth, nor 4 feet for cavalry.⁶² One seems to remember that our soldiers have crossed fords exceeding this limit during the present war, especially when aided by ropes or other simple contrivances. At all events, streams more rapid than the Thames have been successfully crossed. Cæsar's cavalry, as we know, swam the Thames first, but the legions followed with such speed and impetuosity that the men were immersed up to their shoulders (*cum capite solo ex aqua exstant*).⁶³ Making some allowance for Cæsar's enthusiasm and pride, there is still ample reason to believe that Maitland's ford would have proved entirely suitable, more particularly in its early condition.

NOTE.—Strange to say, some of the objectors to the practicability of a tidal ford forget that such fords were only used at the lowest ebb. To take a modern example, though of a littoral character, we may cite the custom of waiting for low tide to cross from the mainland to St. Michael's Mount. The present writer, as a member of a large party, once crossed from Beal Sands, on the Northumberland coast, to Holy Island, some two miles away, taking advantage of the slack tide both going and returning. On the return journey, which was made prematurely in order to catch the train, the water at one spot was waist-deep, and the current strong, but there was really no danger. There can be little question that a tidal ford can be safely utilised, given the opportunity of catching the ebb at the proper time. But, as already shown, tides scarcely touch the subject of ancient fords in Chelsea Reach.

V—GEOGRAPHICAL.

Under this heading we may conveniently include all matters respecting communications with the fords. The

⁶² J. T. Hyde, "Elem. Principles of Fortification," 1860, p. 180.

⁶³ L. v, c. 18. Cf. French Official War Report, 26 Oct., 1917: "Our troops crossing the Saint Jansbeck and Coverbeck [Belgium], with water up to their shoulders, made important progress."

question of British roads, with their general direction, comes first. That the Britons possessed a series of roads and trackways is well known, and the routes of some of these have been determined by archæologists. The British chariots were at need perhaps accommodated to the broad tracks of close turf which still run along the shoulders of our downs and the foothills below.⁶⁴ One must not, however, press the importance of British chariot roads, because both the chariots and the horses by which they were drawn have already been magnified too much by tradition and belief. Rough trackways and hollow lanes were mostly sufficient for pack-horses and foot traffic, yet, as Cæsar incidentally tells us, there existed better roads also. He definitely notes that, when he was chasing the Britons into the country of the Catuvellauni, the charioteers of the British chieftain beset his troops, approaching these by all the well-known roads (*viae*) and bypaths (*semitae*).⁶⁵ The choice of the word *via* seems to suggest that a "made" road was intended. Since it is commonly admitted that the Romans made use of British tracks, straightening and paving them to form their splendid highways, the known direction of some of the Roman roads aids our investigation. In particular, the familiar Watling Street, which runs from the Kentish seaports to London, is supposed to be an adaptation of an earlier British way.

But what routes leading from Deal, by way of Canterbury,—or, to save controversy respecting the landing-place, let us say from Canterbury simply,—were available for Cæsar's advance? Two routes only have been proposed by responsible writers.⁶⁶ The first track, roughly

⁶⁴ See *Archæologia*, 1885, xlvi, p. 234; E. Conybeare, "Roman Britain," 1903, pp. 117-8.

⁶⁵ L. v, c. 19. "*Omnibus viis semitisque essedarios ex silvis mittebat.*"

⁶⁶ See, for example, Rice Holmes, "Anc. Brit.," p. 344; W. Page and E. M. Keate, in "Vict. Hist. of Surrey," iv, p. 343.

coinciding with the later Watling Street, led from Canterbury to Rochester, and thence by Dartford to Shooters Hill and Blackheath, heading, as is supposed, either for London Bridge or Thorney (Westminster). Mr. Reginald Smith argues that the Roman road originally led to Westminster, where there was a passage-way, and that the alternative route to London Bridge, or thereabout, was a later adaptation.⁶⁷ From Westminster, Mr. Smith would trace the route by the southern end of the Mall to Hyde Park Corner, where it intersected, and made an elbow with a road leading from Silchester to Colchester, touching Staines and Brentford on its way. The continuation from Hyde Park Corner ran to the west of Park Lane up to the Marble Arch, and then followed the Edgware Road to Stanmore, Elstree, and Verulam, and ultimately to Chester.

The second hypothesis is that Cæsar made use of that series of primitive tracks collectively known as the Pilgrims' Way, which ran on the southern slope of the Chalk escarpment through Kent and Surrey. This route from Canterbury would take him near Aylesford, and he would strike the Surrey border near Titsey. The Pilgrims' Way runs thence through Merstham and Gatton to Box Hill and Dorking, but assuming this to be the real route, Cæsar would break away at some unknown point. This would be possible at Titsey, whence the route lay by Croydon and Mitcham. Or he might have struck out for Ewell, and thence made his way to the ford, whether this were at Battersea, Brentford, Kingston, or elsewhere. Or, leaving the Pilgrims' Way at White Hill, he could have passed by Chaldon, Coulsdon, Carshalton, and Mitcham, to Merton, where an ancillary road would be reached.

This last-named road is the Stane or Ermine Street, which, starting at Chichester, ran through Dorking and

⁶⁷ "Vict. Hist. of London," i, p. 30.

Leatherhead, by North Cheam and Merton Abbey, to High Street, Tooting. It then proceeded by Balham, Clapham Common, and Clapham Road to Newington Causeway, where it crossed Watling Street. After this, the course trended to a point a little to the east of the present London Bridge.⁶⁸

We will here pause awhile, to consider the respective claims of London Bridge and Thorney as Cæsar's crossing-place. Seeing that a Roman road led towards each of those spots, strong advocates have pleaded that they were likely passage-ways. Near the present London Bridge, Mr. Hilaire Belloc supposes that the Stane Street approached a bridge over the Thames.⁶⁹ The Rev. E. Conybeare considers that, in Cæsar's time, there existed an eyot which rendered the crossing easy, and that there was "possibly even a bridge of some sort."⁷⁰ There may indeed have been an eyot in mid-stream, but I think that the tradition of its existence is due to the known presence of material which accumulated later around the masonry of Old London Bridge. If Cæsar crossed at this point it is strange that he mentions no British "location" on the site of old London. Yet one would have expected to find a settlement had a ford or bridge existed, because the elevated situation on the left bank was eminently suitable.

Mr. Reginald Smith thinks that the Thames was already bridged at Thorney in A.D. 43.⁷¹ He seems, however, to rely upon the doubtful authority of Dion Cassius, whose description is both ambiguous and derivative. Whether any bridges had been built by that time is a matter of argument and speculation, but we can have little doubt that the Britons had raised no such structures

⁶⁸ H. Belloc, "The Stane Street," 1913, pp. 53-6, 280-2, and Map, p. 205; "Vict. Hist. of Surrey," iv, p. 349.

⁶⁹ "The Stane Street," pp. 53-6.

⁷⁰ "Roman Britain," pp. 117-8.

⁷¹ "Vict. Hist. of London," i, pp. 31, 36.

a century earlier. During the century that elapsed between the Julian invasion and that of Aulus Plautius, Britain, and especially Britain of the south-east, had greatly advanced,⁷² and a bridge might possibly have been erected. The more probable theory, however, is that there was a ferry⁷³ or a ford.⁷⁴ A ferry would be of little use to an advancing army, but a ford is a different matter, and cannot be so lightly dismissed. Before examining this question, however, we must gather up our threads.

We have, as already indicated, two routes by which Cæsar could approach London. So far as Kent is concerned, Roman remains are found only in places near these routes.⁷⁵ In Surrey, too, vestiges of the Roman and Early Iron Ages cling mainly to extension of the same roads, although two or more lines marked by early sites can be detected running northwards from the Pilgrims' Way.

Balancing carefully the choice of roads, I am disposed to think that the fleeing Britons selected the Watling Street for their retreat. There is, doubtless, stronger evidence that the Pilgrims' Way, at its inception, was a British track, but anyone who knows this route will admit that it would not be eminently adapted for a retreating army. Charioteers, in particular, would find its deeply cut hollows very troublesome, and the uneven surfaces a hindrance. One is driven to accept the Watling Street route as being more direct and easier to traverse, yet, fortunately, the case for a given ford does not rest solely on this choice.

⁷² F. J. Haverfield, "The Romanization of Roman Britain," 3rd edition, 1915, pp. 43, 74-5.

⁷³ F. W. Reader, in "Vict. Hist. of London," i, p. 82.

⁷⁴ T. Codrington, "Roman Roads in Britain," 2nd edition, 1905, p. 62.

⁷⁵ "Anc. Britain," p. 344.

It will be remembered that Cæsar's estimate of the distance from his landing-place to the ford was, roughly, 73 English miles. Now it is a curious coincidence that, if we measure the route on the Ordnance Survey map from Deal, through Canterbury to the Battersea fords, assuming for this purpose that the Romans left the road at Blackheath and followed the high ground by the Hilly Fields, Brockley, by Tulse Hill and Clapham Common before descending to the river, then we shall find that the distance is 74 English miles. More than this; if, with Mr. Malden⁷⁶ and others, we decide that Cæsar disembarked at Romney Marsh, and proceeded by Canterbury, the distance still tallies almost exactly. Remembering what has been previously said respecting Cæsar's calculations, and deprecating any attempt to make the figures agree with the hypothesis, it will still be admitted that the coincidence is noteworthy.

To some extent the problem now resolves itself into a choice between Westminster and Battersea as crossing-places. The prime fact to be seized upon, as with a vice, is that an early ford almost inevitably implies some means of approach for travellers. That there existed one, and most likely two fords over the shallows of Chelsea Reach has become practically a truism. On the other hand, advocates of Westminster vigorously urge the importance of the direction of the early Watling Street, which road, they consider, bore towards that spot. What mode of crossing the Thames would be available in 54 B.C.? The idea of a bridge spanning the river at that time cannot, as before stated, be wisely entertained. The feasibility of fording the Thames at this point has also been severely questioned. Mr. Sharpe, who, it is true, has his own ford (Brentford) to defend, insists that, before the Roman

⁷⁶ *Jour. of Philology*, xvii, pp. 163-78; xix, pp. 193-9; xx, pp. 63-4.

causeway was constructed as an approach, the Thorney crossing was difficult and dangerous. He asserts that it was called "*locus terribilis*" in Saxon times,⁷⁷—a telling argument up to a certain limit. He further submits that the British hosts and their pursuers would have to traverse two miles of bog before reaching the southern shore, and would afterwards have to cross a large stretch of swampy ground on the Middlesex side.⁷⁸

To the present writer it seems that too much has all along been made of the early swamps and marshes of the Thames region. Unless his belief has been well driven home, much of the preceding discussion has been useless. Holding this opinion, one must therefore make large allowances for the celebrated "purple patch" in which Sir Walter Besant describes the horrors which beset those daring folk who braved the ford during the Saxon period.⁷⁹ We have, of course, seen that the existence of a swamp at the time of Cæsar's invasion cannot be inferred from the known presence of a swamp in Saxon days. The British swamp would, in fact, seem to be mostly a myth. None the less, Thorney was probably more difficult of access than Battersea. The unembanked Thames, as shown on large-scale maps (early 19th century) which Mr. Harnett kindly allowed me to inspect, was 1,130 feet wide at high-water at Westminster. It was, doubtless, much wider than this formerly, because the buildings which abut on the river seem to rest on artificial foundations for a considerable distance to the rear of the lines depicted on the map. Just below the bridge a breadth of 1,300 feet was reached. Against this, the Battersea fords showed only 950 feet. Similarly, the silty flats around Thorney Isle might present more diffi-

⁷⁷ "Antiqs. of Middlesex," p. 13.

⁷⁸ *Archæol. Jour.*, 1906, lxiii, p. 26.

⁷⁹ "London South of the Thames," *Surr. A.C.*, 1912, p. 340.

culties than those to the east of Chelsea. On the whole, I think that Mr. F. W. Reader's theory of the existence of a ferry at Westminster⁸⁰ is nearest the truth. We know that the Britons possessed dug-out canoes of considerable capacity; we have no evidence that they built large bridges. The existence of a Westminster ford, moreover, has not yet been made good.

The strongest case against Thorney, oddly enough, is implied in the old-world investigations of Maitland, for it will be remembered that he had no prepossessions in the matter, except that a suitable ford could be discovered in the London reaches of the Thames. This ford he ultimately fixed at Battersea; presumably he would have been quite satisfied to decide for Westminster had the soundings been equally favourable. At the time when these soundings were taken, the only bridge to impede the free flow of the current was that of Old London, massive though that structure undoubtedly was. There was as fair an opportunity for the Thames to exhibit its shallowness at Westminster as at Battersea. Fairer, indeed, for in that neighbourhood, some sixty or seventy years earlier, and presumably also at the time of Maitland's inquiries, the river abounded in shoals which tended to choke up the stream. These "shelves" of material had been noted and discussed by the all-curious Pepys, who decided that they were produced by "the running out of causeways into the River at every wood-wharfe."⁸¹

Recalling the principle that a ford betokens the presence of a road, we must now ask how the Roman army would fare after the passage had been made. Something was indicated on this score under Section III., but a few more facts should be noted. Just at the north end of Chelsea Bridge

⁸⁰ "Vict. Hist. of London," p. 82.

⁸¹ S. Pepys, "Diary," ed. by Lord Braybrooke, 1906, p. 369. The same causes, though partly operative to-day, are counteracted by dredging.

the land reaches 34 feet O.D.—mainly, one supposes, a natural level. From this point the pursuers would doubtless keep to the left bank of the Westbourne, though well away from the stream. The old twelve-inch Ordnance map of 1873, prepared before the district became quite obscured by houses, gives 12.9 feet as the lowest level along this bank. The path would lead by Chelsea Barracks and along the present Commercial Road, where a bench-mark shows 17 feet 3 inches O.D. It is manifestly difficult to outline an exact route through the existing wilderness of houses, but by keeping Victoria Station to the right, a level of 20 feet 7 inches is found. Thence, passing up Grosvenor Place (28 feet 8 inches), and avoiding the low ground of Belgravia, the Roman road would be struck at Hyde Park Corner (56 feet 6 inches). There are some depressions on the way, and allowance must be granted for “made earth,” notably in Belgravia; but against these must be set the uplift produced by reinstating the pre-Roman levels.

VI—ARCHÆOLOGICAL.

Leaving behind considerations which are largely of an *à priori* character, we come to the archæological evidence, which is both concrete and valuable.

When the foundations of the Chelsea Suspension Bridge were being excavated in 1854-5, a series of remarkable discoveries came to light. They consisted of objects belonging both to the British (Bronze and Early Iron) and the Roman periods. The Roman relics included an iron spearhead, the head of a dart or javelin, a triangular piece of limestone which had been perforated for use, and the sole of a particular kind of shoe worn by the rank and file of the Roman army. Among the British objects dredged up were a sword, a spear, and a dagger, all of bronze,⁸² besides

⁸² *Jour. Brit. Archæol. Assoc.*, 1858, xiv, pp. 326-30; *Surrey Archæol. Coll.*, 1891, x, p. 208; “*Vict. Hist. of Surrey*,” 1902, i, p. 224.

numerous human skulls. These crania, which were found mingled with the weapons and other objects, were of exceeding interest, because experts considered that they represented two distinct types, British and Roman.⁸³ The occurrence of a single skull might have been fortuitous, but not so a collection of skulls. Nor have we any proof that the finds were exhaustive. The remains generally were found lying together confusedly, the greater quantity occurring from the Middlesex shore up to the middle of the river.⁸⁴ The majority of the objects have been described in detail more than once, and it is here unnecessary to go beyond a bare catalogue. But it is noteworthy that those who recorded the discoveries supposed that a sanguinary encounter must have taken place in the river at that spot, which, let us remember, is crossed by the ford which Phillips had sounded more than thirty years previously.

The famous enamelled bronze shield which is known to most visitors to the British Museum is said to have come from the same place in the year 1856.⁸⁵ This shield was attributed by Sir A. Evans to a date within a few years of the birth of Christ.⁸⁶ Towards the west end of Battersea Park—that is, at some unspecified point near the two alleged fords—another group of relics was unearthed in 1862-3. These comprised a seal of lead, bearing the impression of a stamp and the name Syagrius—probably that of a Roman official—a fragment of lead or pewter exhibiting the Christian monogram, a pear-shaped piece of lead, a black Roman vase, and a terra-cotta urn.⁸⁷

Somewhere in close proximity to the place where these

⁸³ *Jour. Brit. Archaeol. Assoc.*, 1857, xiii, pp. 237-40.

⁸⁴ *Ibid.*, p. 208.

⁸⁵ "Memorials of Old Chelsea," p. 13.

⁸⁶ "Guide to the Antiqs. of the Early Iron Age (Brit. Mus.)," 1905, p. 94 and frontispiece.

⁸⁷ "Vict. Hist. of Surrey," 1912, iv, pp. 357-8. [Sir I. Gomme] "L.C.C. Guide to Battersea Park," 1904, p. 3.

discoveries were made, while the Park was yet unthought of, and the site was still a portion of the Battersea Common Field, there were dug up, about the year 1794 or 1795, four skeletons, one of which was enclosed in a leaden coffin believed to be of Roman workmanship.⁸⁸ The lid of this coffin was decorated with scallop shells, and an illustration of it is fortunately extant.⁸⁹

From the river-bed at Chelsea Reach, but at points not now definitely ascertainable, other weapons and utensils have been recorded, such as an iron dagger sheath, a sword scabbard, and a bronze cauldron.⁹⁰

Making due allowance for the shifting of objects in the river-bed, this collocation of relics most strongly suggests the existence of a busy crossing-place at this part of the Reach. And we may be sure that the reported discoveries form but a fraction of those which, little valued at the time of their detection, were either thrown away or sold to private collectors. These relics are often met with, but the present possessors cannot usually assign their exact provenance or date of discovery.

It was only a passage-way in its decline which greeted the eyes of the Romans, for long before their epoch, when the region lay at a still greater elevation, Neolithic flint implements had been dropped into the stream. The so-called flint sickle, a beautiful specimen of the tool-wright's craft, now in the Jermyn Street Museum, deserves special mention. Many flint celts, chipped and polished, have passed into private hands, and their history has been lost. A large chipped celt, dredged from the Reach a few years ago, and

⁸⁸ O. Manning and W. Bray, "Hist. of Surrey," 1814, II, p. 328; "Vict. Hist. of London," p. 20.

⁸⁹ *Jour. Brit. Archæol. Assoc.*, 1847, II, p. 300.

⁹⁰ *Archæologia*, 1880, xlv, p. 254. "Guide to Early Iron Age," p. 97; "Guide to the Antiqs. of the Bronze Age (Brit. Mus.)," 1904, p. 84.

now in the writer's possession, measures eight inches by four. Its very counterpart was found in the vicinity a little while afterwards.

If we look once more at Cæsar's account of his exploit (l. v., c. 18) we shall find that the northern bank of the Thames had been fortified by sharpened stakes of wood, and that similar stakes, concealed by the river, had been placed so as to oppose the invaders. (*Ripa autem erat acutis sudibus præfixis munita, eisdemque generis sub aqua defixæ sudes flumine tegebantur.*) Since piles, or stakes of presumed evidential value, have been discovered at Brentford and at Coway Stakes, near Shepperton, no survey of the question would be either fair or properly adjusted unless it took these into account.

The stakes at Coway have long been known, and quite probably were those referred to by Bede. Camden, at a later date, was a great advocate of the claims of Coway. The stakes, however, were found to be disposed at right angles to the banks of the river, and they are now generally believed either to have marked a passage for cattle or to have formed a primitive kind of fishing-weir. It has even been vaguely conjectured that they may have supported some kind of British bridge,⁹¹ but British bridges across the Thames, as before hinted, belong to the imagination. At Brentford the arrangements were different. The stakes, of which 266 have at various times been removed, were found both driven into the foreshore and arranged in double rows obliquely downstream from the Middlesex side to that of Surrey.⁹²

There is, of course, no antecedent impossibility that the lower portions of piles or stakes may have been preserved in clay or silt since the Roman period, but there are several

⁹¹ M. Sharpe, "Antiqs. of Middlesex," 1905, pp. 14-16.

⁹² M. Sharpe, op. cit., p. 25, also in *Archæol. Jour.*, 1906, lxxiii, pp. 25-39.

considerations to be weighed before we accept them as genuine evidence. First, we find that Mr. Sharpe, while asserting upon good authority that no stakes are known to have been dragged up from other parts of the river, candidly notes two striking historical facts. In 1774 the Corporation of London ordered two rows of piles to be driven at Richmond—whether into the bed or the foreshore is not stated—to preserve the channel. Again, at Teddington, on the Middlesex side, in 1775, three rows were driven for the same purpose. Of these stakes Mr. Sharpe says, no traces are left,⁹³ but the reader will quickly perceive the possible implications.

Is it not probable that the Brentford stakes are survivors of similar protective palisades? That, unlike the specimens fixed by the Corporation, they may be much older than the eighteenth century is beside the point, yet one doubts whether the upper portions of the stakes would be preserved in the water for many centuries. I had long speculated whether the Coway Stakes did not represent some primitive weir or groyne-work to hold back the water in dry seasons, and now that idea is, perforce, transferred to the Brentford relics also. The stakes found on the bank may well have been put there as camp-sheathing, for this method of protection is still practised almost everywhere. Indeed, there is every appearance that the banks have constantly been thus preserved near Brentford Ferry, and this impression is strengthened by the existence of scraps of modern sheath-work at this spot. Mr. Sharpe says that some of the stakes crossed each other at an angle of 45 degrees, so as to form a kind of wattle-work, and this corroborates the campshot theory.⁹⁴ On the other hand, Cæsar's narrative does not speak of "interlaced" stakes. The statement is that they were covered or concealed by the

⁹³ "Antiqs. of Middlesex," p. 21.

⁹⁴ *Archæol. Jour.*, lxiii, pp. 30, 31. (Diagram given.)

river (*tegebantur*).⁹⁵ Nor does it seem legitimate to construe *defixæ* as "fixed outwards." The meaning is rather "fastened down" or "fixed in"—referring to the stakes which were concealed, but yet firmly thrust into the bed of the river.

That the palisade in the river-bed stretched more or less continuously for two miles is an argument against the ford, but in favour of the groyne theory. As the river gnawed away its banks, or swung back from its former course, one can readily believe that successive attempts would be made to guard the channel or dam back the current when needed, and that, as the barrage was beaten down or the campshot left derelict, the stakes would remain as silent witnesses of man's struggle against natural forces.

Again, Dr. Rice Holmes has pertinently argued that Cæsar's men would at once remove the stakes from the bed of the river except at the particular parts of the shallows where there were no stakes to remove.⁹⁶ Had this been done thoroughly, it is manifest that the specimens described by Mr. Sharpe could not be of British origin, unless indeed they had escaped the eye of the general. Some might naturally be left through haste or oversight, but Mr. Sharpe's numbers are too great to meet Dr. Holmes's objection. Further, we may assume that any stakes allowed to remain in the bed of the river at any time must have served some useful purpose, or they would have been taken up by boatmen.

Once more we have to reckon with the likelihood that the Thames has repeatedly shifted its course at Brentford. At Coway such alterations are notoriously evident. An old deserted channel of the Thames lies a quarter of a mile from the modern river, and there is even evidence of the obliteration of parish boundaries. Something of this kind may

⁹⁵ Contrast the word *contexo*, used to describe basket-work; l. vi, c. 16, "*contexta viminibus membra.*"

⁹⁶ "Anc. Britain," pp. 34, 694-5.

have occurred, on a smaller scale perhaps, at Brentford, because the river well above London has constantly abandoned its channels and formed what geologists term "ox-bows" or "aigues-morts" (dead-waters). The re-cutting of these loops, with the formation of new ones, is the usual sequence in the life of a river. If I read aright the history of riparian Brentford, the banks of the river in the neighbourhood of the Ferry have for ages been undergoing dilapidation and reconstruction. Lest it should be thought that I am acting as a special pleader for the Battersea fords, it must be observed that the contention is simply directed against the theory that the Brentford stakes, even if ancient, can be definitely associated with the Thames channel as it existed in Cæsar's day.⁹⁷ There may have been similar variations in the course of the river at Chelsea Reach, but there are no certain signs of such changes. The eroding and abrasive powers of the current would be feebler at Battersea—but this is not the point. The objection does not vitally concern the existence of a ford, but only the evidential value of the stakes. The first post-Roman embankment in London, though perhaps insignificant, would doubtless precede those higher up the stream, and any traces of deserted channels might be afterwards removed by human agency. At any rate there is no clear evidence of deserted channels now visible.

We have no record of the discovery of stakes in Chelsea Reach, but it will be recalled that Phillips mentions the existence of a causeway on the south shore of the river at the approach to his alleged ford. From the Red House, on the Surrey bank, to the White House on the opposite side, a ferry ran across the river.⁹⁸ Could Phillips, by any means, have mistaken a paved gangway for an ancient relic? Hardly, because he would know the ferry well. It

⁹⁷ Cf. "Vict. Hist. of Surrey," iv, p. 344.

⁹⁸ In 1843, and probably long before.

started from the east side of the Red House, and trended north-east, while the ford commenced fifty yards to the west and crossed to the north-north-west. Besides, he expressly states that the causeway was traceable at low water. Whatever may have been the age of the causeway, it is therefore fair to conclude that it led to a crossing-place at some early date when the water was shallower than we now find it.

The bearing of this causeway on the present argument is very direct, for the provision of a firm floor on the muddy portion of the river-bed would be quite as essential to the safety of travellers as the erection of protective screen of timber to check the current. A breastwork of sharpened stakes would represent only a temporary device, which would tend to disappear with the military necessity which provoked its employment. On the other hand, a causeway would long remain as evidence of a well-used ford.

VII—CONCLUSIONS.

From amid the welter of speculation and theory there emerge several probabilities of distinct value to the inquirer. We may, without bias, state the main positions thus:—

(1) That, even within recent times, the Thames might have been forded in at least two parts of Chelsea Reach, and that fordage was rendered more practicable during low ebbs and westerly or south-westerly winds.

(2) That, in earlier periods, when dredging of the river-bed was unknown, and when no artificial structures impeded the uninterrupted flow of the river, the channel was much shallower and the waters were more outspread, so that natural passage-ways were provided at favourable spots.

(3) That the level of the pre-Roman terrain near London was higher than it is to-day, and, as a consequence, the river, if not actually non-tidal in Chelsea Reach, was affected by tides only to a slight extent.

(4) That this region, though properly classed as marsh-land, permitted free communication with the Thames

by tracks and pathways, while pile-dwellings, if not other habitations, were reared close to the margin of the river.

(5) That, since a ford almost necessarily implies an approach by means of a well-known track, and, since the condition of the land-surface was not inimical, the Battersea fords could have been easily reached by troops on the march.

(6) That Roman roads, presumably following the line of the earlier British trackways, led within three miles and one and a half miles respectively of the above-mentioned fords.

(7) That these Battersea fords seem to have been almost the first, if not the very first, crossing-places for Cæsar's army, in which case there was no need to go farther upstream.

(8) That the mileage given by Cæsar, though admittedly only an approximation, agrees very well with the theory of a ford at Battersea, and this without undue straining either of the arithmetic or the geography.

(9) That at one of the fords British and Roman relics, including skulls and weapons, have been discovered in abundance, while a causeway of unknown age existed at the same spot.

It may be that a sound verdict will be for ever unattainable. Some might declare that the quest is vain and the goal an illusion,

"That, like the circle bounding earth and skies,
Allures from far, yet, as I follow, flies."

The truth lies somewhere within a group of competing and, to some extent, conflicting probabilities, and indeed occupies, as it were, the centre of gravity between them. I began this investigation with no fixed belief, and while still feeling that an indisputable solution has not yet been found, I am convinced that the claims of Battersea, if not actually approved, cannot safely be ignored by future students.