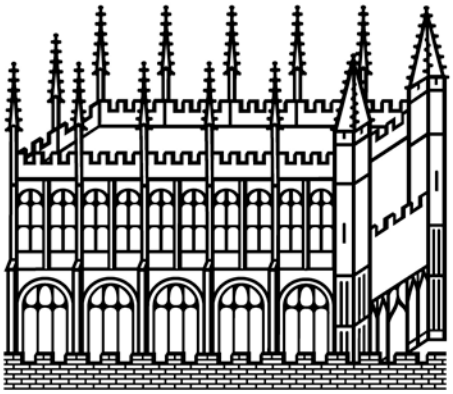

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Replies to Remarks

UPON

"THE INVASION OF BRITAIN BY JULIUS CÆSAR"

LONDON
PRINTED BY SPOTTISWOODE AND CO.
NEW-STREET SQUARE

REPLIES

TO THE

REMARKS OF THE ASTRONOMER-ROYAL

AND OF THE

LATE CAMDEN PROFESSOR OF ANCIENT HISTORY AT OXFORD

UPON

"The Invasion of Britain by Julius Cæsar"

BY

THOMAS LEWIN, ESQ.

OF TRIN. COLL. OXON. M.A.

AUTHOR OF 'THE LIFE OF ST. PAUL' 'JERUSALEM' ETC.

LONDON

LONGMAN, GREEN, LONGMAN, AND ROBERTS

1862

PREFACE.

In the original Essay and the supplement of the Replies and Notes will be found all that the author can say upon the subject. The further investigation to which he has been led has served only to confirm him in the belief that both his propositions were correct, viz.: that Cæsar embarked at Boulogne, and that he landed on Romney Marsh. Indeed, the principal objections urged against his theory have, upon inquiry, become so many arguments in his favour. Thus it was urged that Ambleteuse is only five and a half miles Roman from Boulogne, and could not therefore be the Portus Superior; but the French Ordnance map now establishes the fact that the distance of Ambleteuse from Boulogne, by the land route (to which Cæsar no doubt refers), is as nearly as possible eight miles, as Cæsar represents it. Again, it was contended that Cæsar could not have disembarked on Romney Marsh, as in that age it was a mere swamp; but the geological history of the Marsh shows conclusively that the

eastern end of the Marsh where Cæsar arrived was as much *terra firma* in his day as in our own. Not only so, but the very islands to which Valerius Maximus refers in the anecdote of Scæva have lately come to light, and were removed by the present engineer of the Marsh only five years since. The author now bids adieu to a controversy which has afforded much pleasure to himself, and has, it is hoped, given no offence (as none was intended) to those who differ from him.

February 25th, 1862.

CONTENTS.

LIST OF ILLUSTRATIONS.

PLATES.

WOODCUT.

REPLIES TO THE REMARKS

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REPLY TO THE REMARKS OF THE ASTRONOMER-ROYAL

IN the number of the "Athenæum" for 10th September, 1859, the Astronomer-Royal offered some remarks upon my theory that Cæsar sailed from Boulogne, and landed at Romney Marsh; and repeated his own conviction that Cæsar sailed from the Somme, and landed at Pevensey. I feel greatly obliged to the Astronomer-Royal for having again directed his attention to the question, as the weight of his name has invested the subject with an interest which my own labours, however just the reasoning, could not have secured to it. The delay on my part in not earlier replying to his observations, has not arisen from any want of respect towards the Astronomer-Royal, still less from any distrust of my own hypothesis, but simply from my having been unusually occupied during the interval by other engagements.

I.* The first question between the Astronomer-Royal and myself is, as to the sense of the passage

* The remarks of the Astronomer-Royal are given verbatim in the notes.

I. "Cæsar, in speaking of his march to the coast, uses the expression, 'in Morinos proficiscitur;' and in my paper in the 'Archæologia' I have maintained (supporting my opinion by some citations) that the true meaning of 'proficiscitur' is 'sets out.' Mr. Lewin

"in Morinos proficiscitur," which he interprets, that Cæsar only *set out for* the Morini without arriving there, and, "after examining a large proportion of all the instances in which Cæsar uses the inflections or derivatives of '*proficiscor*,'" he concludes that "in all, without any exception, another sentence or another clause is required to denote arrival at a journey's end." I should say, on the contrary, that there are *many* instances of Cæsar's use of the word "*proficiscor*" in the sense not only of setting out for, but also of arriving at a place. For example, in speaking of Druidism amongst the Gauls, he states that they derived it from Britain, and adds, "et nunc, qui diligentiùs eam rem cognoscere volunt, plerumque illò, discendi causâ, *proficiscuntur*," B. G. vi. 12. These words close the section, and proficiscuntur is not accompanied with "another sentence or clause," and yet necessarily signifies an arrival in Britain where only the study was to be prosecuted. Again, "Quietâ Galliâ, Cæsar, ut constituerat, in Italiam ad conventus agendos *proficiscitur:* ubi cognoscit de P. Claudii cæde," vii. 1. How could Cæsar hear in Italy of Claudius's death, unless he had arrived in Italy? Again, "Divitiacus, auxilii petendi causâ Romam ad

dissents from that translation. A question of verbal criticism cannot be settled by a single case; and I must occupy a little space in treating this.

"I have examined a large proportion of all the instances in which Cæsar uses the inflexions or derivatives of 'proficiscor,' and I find that their applications are the following:—(1.) In some they refer simply to the act of setting out. (2.) In some a purpose of setting out is mentioned. (3.) In some a direction is indicated, or a spot at which the journey is to end is named. (4.) But in all, without any exception, another sentence or another clause is required to denote arrival at the journey's end." And the Astronomer-Royal then proceeds to adduce supposed examples of the several meanings of the word suggested by him.

Senatum *profectus*, infectâ re redierat," vi. 11. How could Divitiacus have returned from Rome unless he had first arrived there? And similar examples will be found elsewhere, as in v. 25; iii. 23; vii. 90.

But in assuming that Cæsar arrived in the country of the Morini, I did not rely *merely* or even *chiefly* upon the words, in Morinos proficiscitur (for no doubt one sense of proficisci is to set out for a place), but upon the whole context, and more particularly upon the subsequent passage, dum in his locis Cæsar navium parandarum causâ moratur, which leads me to the next head; for

II.* The Astronomer-Royal parries the force of the last extract by observing, "The expression [in his locis] appears to me to be studiously indefinite. I conceive that it is rendered in English with perfect precision, 'While Cæsar was in this part of the country.'" But let me ask in *what* part of the country? Not in the part from which he had set out, for he could not go and stay (proficisci and morari) at one and the same place, at one and the same time. Nor (as he was marching from the confluence of the Moselle and the Rhine in the direction of the Morini) could he have made his sojourn (moratus) on the road, inasmuch as the reason assigned for the halt is navium parandarum causâ, and naval preparations could not have been carried on in the heart of the continent. In short, in his locis clearly points to the country of the Morini,

* II. "Mr. Lewin attaches importance to the words, 'Dum in his locis Cæsar moratur,' as if the words 'in his locis' meant that Cæsar was certainly in the country of the Morini. To me they convey no such meaning. The expression appears to me to be studiedly indefinite. I conceive that it is rendered in English with perfect precision, 'While Cæsar was in this part of the country.'"

i. e. he had gone (profectus) to the Morini, because, as he tells us expressly, thence was the shortest passage to Britain, quod inde erat brevissimus in Britanniam transjectus, iv. 21; and on his arrival there he occupied himself about what he came for, viz. the equipment of his vessels; and when he had actually sailed it was matter of congratulation that the Morini had previously tendered their submission, so that he did not leave an enemy *behind him*, which also implies that he had started from amongst the Morini. "Quod neque *post tergum* hostem relinquere volebat," iv. 22.

But the Astronomer-Royal adds, "It appears to me that the word proficisci *permits* that Cæsar did not enter the country of the Morini. It appears to me that Cæsar's reception of delegates from the Morini, when there is no account of any preceding transaction with them, renders it *probable* that he had not entered their country; and it appears to me that the order (after his second return) for legions to march from the Portus Itius, makes it *certain* that he was not in their country."

Of the meaning to be attached to the word proficisci we have spoken already. As to the second step in this argument, that "Cæsar's reception of delegates from the Morini makes it *probable* that Cæsar was not then in their country," I do not see how, admitting the fact that the Morini sent delegates, the conclusion could be fairly drawn that Cæsar was not in their country. Take the analogous case of Cæsar's passage over the Rhine. He crossed from the Treviri on the western bank (Firmo in Treviris præsidio ad pontem relicto, vi. 8), into the country of the Ubii on the eastern bank (partem ultimam pontis, quæ ripas Ubiorum contingebat, &c. vi. 28), when the Ubii despatched envoys to him:

"Ubii, . . . purgandi sui causâ, ad eum legatos mittunt," vi. 8. Here Cæsar was amongst the Ubii, when, according to the Astronomer-Royal's reasoning, his reception of the Ubian delegates would indicate his presence elsewhere. However, the statement that Cæsar was waited on by the delegates of the Morini is not quite an accurate representation of the fact. The words of Cæsar are, "ex *magnâ parte* Morinorum ad eum legati venerunt," iv. 22. The delegates came not from the Morini, as an entire state, but only from a section of them; and there is not the least inconsistency in Cæsar being in one part of Morinia and envoys arriving from another part. I observe, moreover, that whilst Cæsar is still amongst the Morini, he invariably speaks of them with some qualification. Thus, a few lines after, on quitting Gaul, he directs a part of the force which he left behind to be led not against the Morini, but "*in eos pagos* Morinorum ab quibus ad eum legati non venerant," iv. 22. And again, on his return to Gaul, he orders a detachment, not in Morinos, without qualification, but in Morinos *qui rebellionem fecerant*, iv. 38.

But how are we to deal with "the order (after his second return) for legions to march from the *Portus Itius in Morinos* which makes it *certain* that he was not in their country." If the premises were simply such, there would be some slight ground for the inference, but where does the Astronomer-Royal find that legions were ordered to march from the Portus Itius to the Morini. One would suppose from the language of the Astronomer-Royal that Cæsar, immediately on his return to the port from which he had embarked, sent off some legions "in Morinos." But here a circumstance has been omitted which entirely destroys the force of the reasoning. Cæsar tells us that on his return from

Britain the vessels were laid up in ordinary, and that he then held at Samarobriva, now Amiens, a town of the *Ambiani* and not of the *Morini*, a general council of the Gauls, and that it was not until the council broke up that he delivered over *one legion* (not legions) to C. Fabius to be marched to the Morini. "Subductis navibus, concilioque Gallorum Samarobrivæ peracto, ... unam (legionem) in Morinos ducendam C. Fabio legato dedit, v. 24. When the legion, therefore, was ordered in Morinos, Cæsar was no longer at Portus Itius, but amongst the Ambiani, and the expression in Morinos, has, therefore, not the least bearing upon the question one way or the other. It cannot even be urged that though Cæsar himself was at Amiens, yet the army had not accompanied him, but remained behind at the port; for it is said that Cæsar, who was certainly *himself* at Amiens, "unam in Morinos ducendam C. Fabio legato *dedit*," v. 24, which implies that this legion at all events was with Cæsar, and committed by him personally to the charge of his legate Fabius.

III.* The next question between us is as to the true

* III. "Mr. Lewin is at variance with me on the interpretation of the celebrated passage (referring to the Portus Itius) 'quo ex portu commodissimum in Britanniam transjectum esse cognoverat circiter millium passuum xxx à continenti.' (I purposely omit punctuation.) On this I say, and I have not the least doubt of receiving the support of any good Latinist who will repeatedly consider the sentence, first, that the 'ex portu commodissimum transjectum,' and the 'transjectum circiter millium passuum xxx à continenti,' must *refer to two different things;* and that, if Cæsar had intended to refer doubly to the same thing, *the words 'à continenti' would not have been written.* Secondly, that the form of the sentence is so bad, that I think it nearly certain that the sentence was originally terminated at 'cognoverat,' and that the rest was an interlineation. I have stated this before; but as Mr. Lewin has not alluded in detail to my reasons, I repeat them with the remark, that their force is undiminished."

interpretation of the passage, "quo ex portu (Itio) commodissimum in Britanniam transjectum esse cognoverat circiter millium passuum xxx à continenti," v. 2. According to my hypothesis the Portus Itius was Boulogne, and the place of debarcation was Romney Marsh, and the distance between the two would be thirty statute miles, and therefore upwards of thirty-two Roman miles; but, according to the Astronomer-Royal, the Portus Itius was the estuary of the Somme, and the landing-place Pevensey, and this passage would be more than twice thirty statute miles, or sixty-five miles Roman. How then was this difficulty to be met? The expression, as I had pointed out, is not mille passus xxx, which might refer to the distance of Britain generally from the Continent, but it is millium passuum xxx, and, so plainly governed by transjectum. The Astronomer-Royal, apparently assenting to this, maintains: *First*, that the "*ex portu commodissimum transjectum*, and the *transjectum circiter millium passum* xxx, must refer to two different things!" In other words, that transjectum does double duty, and signifies two passages, one from the Itian port, which was the most convenient, and the other from a different place, whence the traverse was thirty miles. This surely is putting the screw upon the sentence, and extorting a meaning which it will not justly bear. Besides, the interpretation, if admitted, would fasten upon Cæsar a most palpable error, for Cæsar would be made to say that the distance from Gaul to Britain (viz. at the nearest point) was thirty miles, whereas it is little more than twenty miles. As the two coasts were plainly visible from each other, and Cæsar crossed the channel four times, he can scarcely have fallen into the blunder of making the

traverse half as much again as it really was. The Astronomer-Royal then argues: "*Secondly*, that the form of the sentence is so bad, that he thinks it nearly certain that the sentence was originally terminated at cognoverat, and that the rest was an interlineation." But this is mere surmise, and there is not the least authority for a different reading of the text; nor (under favour), except for the purpose of giving countenance to the Astronomer-Royal's theory, is any different reading required.

IV.* The Astronomer-Royal tells me, that I "need not give myself the smallest trouble about the exact agreement of Cæsar's measure of the nautical distance [thirty miles] (an eye estimation) with that which we have now obtained from geodetic measures," meaning, as I understand him, that before "the triangulation of 1787," the reckoning was so loose that every estimate was purely conjectural, and must go for nothing. It no doubt coincides with the views of the Astronomer-Royal to hold this doctrine; but surely if Cæsar tells us that Portius Itius was thirty miles from Britain, and the distance between Boulogne and Folkestone is found to be about thirty miles, no inconsiderable weight is due to the coincidence.

* IV. "Mr. Lewin is anxious about the exact agreement of Cæsar's measure of the nautical distance (an eye-estimation) with that which we have now obtained from geodetic measures. On that point he needs not to give himself the smallest trouble. Before the triangulation of the year 1787, it was a fair and an insoluble question, whether the distance from the Continent to Britain was less than twenty or greater than forty miles. In the note to a Variorum edition of 1651 now before me, the distance from Boulogne to the nearest part of Britain is given as forty miles. Dion's measure (fifty miles) seems to me the most exact of those cited by Mr. Lewin, because I conceive it to be founded on some tradition of Cæsar's actual sea-passage from St. Valery to Pevensey."

Now the actual distance from Boulogne to Folkestone is, by the Admiralty charts, thirty statute miles + 2622 feet, so that if Roman miles and English miles were the same, the result would be very striking; but as Roman miles are somewhat less than English miles, the distance is no doubt a little beyond thirty miles Roman; but the approximation is just such as we should expect from the guarded expression of Cæsar, "of *about* thirty miles," *circiter* millium passuum xxx, v. 2.

V.* The next question is as to the meaning of the words, *infra delatæ*. On Cæsar's first return to Portus

* V. "Mr. Lewin objects to my suggested translation of 'infra delatæ.' I will beg him to remark, first, that I do not offer this translation with any strong confidence; and, secondly, that the fate of no hypothesis as to Cæsar's voyage depends on it. It is not given to reconcile any theory with Cæsar's words, but to reconcile Cæsar with himself. It appears to me that the word 'proficiscitur' *permits* that Cæsar did not enter the country of the Morini: it appears to me that Cæsar's reception of delegates from the Morini, when there is no account of any preceding transaction with them, renders it *probable* that he had not entered their country; and it appears to me that the order (after his second return) for legions to march from the Portus Itius 'in Morinos' makes it *certain* that he was not in their country. With this, I have to reconcile the statement about the drifted ships; and the conjecture which I have offered is, I think, plausible. But if any reader thinks that the reasons for excluding the Portus Itius from the land of the Morini are not sufficiently cogent, the whole is easily reconciled with the hypothesis, that the Portus Itius was the mouth of the Somme, by supposing that in the time of Cæsar the Morini stretched south-west of the Somme. In Cæsar's time, the Morini were a powerful tribe; their contingent for the Belgian association (lib. ii.) was 25,000 men, while that of the Ambiani was only 10,000, and that of the Caletes 10,000. The geography which limits their territory to the north of the Somme is 120 years later. Any one who reflects on the change of boundary of Russia, of Prussia, of Turkey, and of other European States, within a period of much less than 120 years, will find no difficulty in admitting this change in the limits of the Morini."

Itius two ships were unable to make the same port with the rest of the fleet, and paullo infra delatæ sunt. I had contended that infra signified down channel, or southward, and that, consequently, as the crews of the two ships were immediately on landing attacked by the Morini, the country of the Morini must have extended to the south of Portus Itius. This would be the case if Portus Itius were Boulogne, but not if it were the mouth of the Somme. To encounter this argument the Astronomer-Royal advances the novel idea that infra delatæ means "drifting before the wind." I need not repeat the parallel passages in Cæsar, which prove beyond doubt that infra means "down channel." The Astronomer-Royal himself almost accedes to the criticism by saying that "he does not offer this translation with any strong confidence." But he subjoins, that "the fate of no hypothesis as to Cæsar's voyage depends on it." I beg respectfully to suggest that the Astronomer-Royal's own theory hinges upon this translation. If *infra* mean down channel, and Itius Portus be the Somme, the Morini, according to the Astronomer-Royal, must have reached beyond the Somme southward; but as other authorities show that the Morini did not extend beyond the Somme, it follows that the Somme cannot be the Portus Itius. "But," observes the Astronomer-Royal, "the geography which limits their territory to the north of the Somme is 120 years later than Cæsar," and he offers, as a solution of the difficulty, that "in the time of Cæsar the Morini stretched *south-west of the Somme.*" If so, then the Somme itself, from which Cæsar sailed, and to which he returned, was, according to the Astronomer-Royal, in the country of the Morini; and yet, a few lines before, the Astronomer-Royal had stated "that the order (after

Cæsar's second return) for legions to march into the country of the Morini made it *certain* that he was *not in their country.*" Thus to avoid Scylla, it is laid down as *certain* that Cæsar did not sail from the Morini, and then to avoid Charybdis the reader is invited to assume that the place of embarcation was amongst the Morini!

VI.* Cæsar speaks of a Portus Superior to the north of Portus Itius, and eight miles from it; and assuming Boulogne to be the Portus Itius, I had pointed to

* VI. "I now come to Mr. Lewin's hypothesis, that Boulogne was the Portus Itius. I pass over the citation from Florus (who wrote in the time of Trajan) and the railway company's estimate of distance (as being unimportant when Cæsar's necessarily vague estimate is to be compared with it); and I come to the estimation of *distances along shore*, which leave no room for great uncertainty. I premise the following pretty accurate measures:—

The French *lieue de poste*	4263 yards.
The nautical mile, or minute of latitude . .	2025 yards.
The Roman mile, about	1630 yards.

Mr. Lewin learned that the distance from Boulogne to Ambleteuse is $2\frac{1}{2}$ leagues, which he concludes (I know not by what arithmetic) to be 8 Roman miles. By applying the numbers above, it will be found to be only $6\frac{1}{2}$ Roman miles. But in reality this is not much to the purpose, for the estimate, which was given by a hotel-keeper, evidently relates to the *distance by road.* On measuring, upon the beautiful Admiralty Chart, the distance between the centre of the entrance to Boulogne and the centre of the entrance to Ambleteuse, I find it to be not quite $4\frac{1}{2}$ nautical miles, or $5\frac{1}{2}$ Roman miles; instead of the 8 miles given by Cæsar.

"I conclude that Boulogne and Ambleteuse will not be cited again in conjunction, as representing the Portus Itius and Portus Superior of Cæsar.

"The ports which I have assigned (the mouth of the Somme and the mouth of the Authie) correspond very well, as regards their geographical distance, with Cæsar's estimate. Cæsar gives no fractional parts, and the measure 8 Roman miles answers better than 9, and much better than 7, for the distance between the centres of the estuaries. I should fix it at $8\frac{1}{4}$ miles."

Ambleteuse as the Portus Superior, and had represented the distance between the two as eight miles. The Astronomer-Royal takes the Admiralty chart, and measures from the centre of the entrance to Boulogne to the centre of the entrance to Ambleteuse, and finds it about "four and a half nautical miles, or five and a half Roman miles," and adds, "I conclude that Boulogne and Ambleteuse will not be cited again as representing the Portus Itius and Portus Superior of Cæsar." Here as elsewhere the question is whether the Astronomer-Royal has rightly apprehended the meaning of Cæsar. The Astronomer-Royal would have the eight miles to indicate the distance by *sea*, whereas Cæsar, as I conceive, is giving the distance by *land*. I had treated the latter interpretation before as matter of course, but as the Astronomer-Royal resorts to the sea line I must state my reasons for adopting the road line.* The mention by Cæsar of the eight miles is introduced as follows:—He is giving an account of the manner in which the fleet was distributed amongst the army. The *eighty transports* which had been collected at Portus Itius were assigned to the infantry, *i. e.* the two legions which were to constitute the expedition. The few *long ships* or *triremes* were allotted to the quæstor, legates and prefects, and then he proceeds: "Huc accedebant XVIII onerariæ naves, quæ ex eo loco millibus passuum VIII vento tenebantur, quò minùs in eundem portum pervenire possent: has equitibus distribuit," iv. 22. Thus he is explaining why the eighteen vessels were appropriated by him to the cavalry. It was quite immaterial what was the distance by sea, for the eighteen transports were wind-bound, and could not

* I observe that Mr. Dougall (see *post*, p. 97) agrees with me in taking Cæsar to mean the road line.

reach him; but as he could not dispense with the vessels, he had to consider what portion of his force could be most conveniently dispatched thither, and as the transports lay eight miles off he thought it best in order to save time to send thither his cavalry.

Assuming then that Cæsar is speaking of the road distance, we have now to ascertain what that is. Little reliance can be placed on the ordinary books of reference, as will be seen from the following table:—

Distance of Ambleteuse from Boulogne is, according to:—

Encyclopædia Metropolitana -	9	miles.
Landmann's Gazetteer - -	8	„
Johnston's General Gazetteer	6	„
Gazetteer of the World - -	5	„

In stating the distance to be just eight miles Roman, I had cited as my authority the eminent antiquary so celebrated for his recent discoveries in Egypt, Mariette, who, being a native of Boulogne, could not fail to know the exact distance, and I am glad to find on further inquiry that he is perfectly correct. I have before me the French ordnance map, the *Tableau de Guerre* for Boulogne, and measuring by the nearest road from the port of Boulogne, through Wimille and Slacq to the church at Ambleteuse, the distance is twelve kilomètres, that is, seven and a half miles English, or somewhat more than eight miles Roman, the distance which Cæsar assigns. The *Tableau de Guerre* must be regarded as a decisive authority, being the result of a Government survey, but I may add, that whenever I asked at Boulogne what was the distance of Ambleteuse from Boulogne, the answer invariably was twelve kilomètres, that is, seven and a half miles English, or eight miles Roman. To prevent mistake, the reader should be apprised that since the

Tableau de Guerre was published, and about five years ago, a new military road called Chemin Napoléon III. was made by and partly at the expense of the present Emperor, from Boulogne to Ambleteuse along the shore. This line, which does not appear upon the *Tableau de Guerre*, is of course much shorter, but can have nothing to do with the measurement of the road as it existed in ancient times.

VII.* I had argued, that if Napoleon I. found Boulogne the fittest port for equipping and assembling a fleet of invasion, Cæsar, another commander of equal military talent would probably be induced by similar motives to give the like preference. The Astronomer-Royal bids me "study the invasion of William the

* VII. "Mr. Lewin considers that Napoleon's selection of Boulogne, as a port of embarcation, is a strong argument for adopting it as Cæsar's port. I consider that it is no argument whatever, for this reason; that the dominant motive, which determined Napoleon's selection of Boulogne, was wholly wanting in the instance of Cæsar. With Napoleon, every thing depended on the quickness, and therefore on the shortness of the passage. 'Give me six hours' command of the Channel, and England is mine,' was the sentence of Napoleon. With Cæsar, any moderate delay, that did not actually starve his soldiers and sailors in their ships, was unimportant.

"But if Mr. Lewin really relies on the parallelism of instances, I can produce one which will not fail to direct his decision. What if I refer him to the history of a large armament; prepared in an age when weapons, ships, and navigation, without the compass, were similar to those in Cæsar's time; collected at the mouth of the Somme; detained for about three weeks by north-west winds (as was Cæsar's); sailing, at length, about six hours earlier in the day than Cæsar's (because the moon was a week younger, and the tides were six hours earlier); the captain of the armament reaching the English coast after a passage of ten or eleven hours, and waiting for the remainder of the fleet; and, finally, debarking, in the afternoon, on the beach of Pevensey? If Mr. Lewin is really true to his own principles, let him study the invasion of William the Norman; and he will find ample *à priori* reason for believing that Cæsar took the same course."

Norman," whose armament was "collected at the mouth of the Somme." One would suppose from this, that William had chosen the mouth of the Somme for his port of equipment and embarcation, as Napoleon did Boulogne. But William was not, like Cæsar or Napoleon, master of all France, but was merely Duke of Normandy. How happened it, then, as the mouth of the Somme, or rather the port of St. Valery, was not within his dominions that William made it his port of preparation? The fact is, that the place where the armament was fitted out and the fleet assembled and the army put on board was *not* at the mouth of the Somme but at St. Pierre de Dive, a little to the south-west of Havre, and within the limits of Normandy; and a public monument has lately been erected there in commemoration of the event. This was the general rendezvous, and hence the armament set sail for England, but encountered some violent gales and was obliged to take temporary shelter in the port of St. Valery at the mouth of the Somme. How then can putting into a port on the way from stress of weather be brought forward as a parallel case to the selection of Boulogne as the most suitable port for equipment and embarcation?

VIII.* Cæsar remarks that Kent was the common

* VIII. "We should suppose," says Mr. Lewin, "that Cæsar followed the usual track, and made for one of the ports which then, as now, were the most frequented, viz. Dover or Folkestone." This is not the manner of attempting debarcation on a country possessed by an enemy. Sir Ralph Abercrombie's troops did not attempt to force the harbour of Alexandria, but landed on the sands of Albukeer. Sir Arthur Wellesley made no attempt at Lisbon, but put his troops on shore on the Mondego Beach. The French landing in Algeria was at a distance from Algiers. In the expedition to the Crimea, no attempt was made on Sebastopol, Balaklava, or Kamiesch, but the boats were brought all abreast to the long beach near Old Fort."

landing-place for vessels from Gaul, "quò ferè omnes ex Galliâ naves appelluntur," v. 13, and I had therefore suggested that Cæsar himself probably sailed for the same part. But the Astronomer-Royal objects that invaders do not generally make for the ordinary port, and instances Abercrombie at Aboukir, in Egypt; Wellesley at Mondego, in Spain; the French in Algeria; and the French and English in the Crimea. This, no doubt, is true in general; but in all the cases enumerated the invaders had charts and maps which gave them a perfect knowledge of the country; but Cæsar tells us that he could get no information about the coast of Britain (iv. 20), except what he gleaned from Volusenus, who was only absent from the army five days (iv. 21), and whose report, therefore, must have been meagre enough. Cæsar also, though prepared for opposition, did not expect to meet with it; for, while he was yet in Gaul, very many states of the Britons had sent over envoys, and tendered their submission, with an offer of hostages, and Commius, the partisan of Cæsar, had accompanied them back with a message from Cæsar that he would soon follow in person (iv. 21). It was not therefore to be supposed that his very landing on their shores would be disputed, and, when it was so, Cæsar complained of it as of a breach of faith: "Cæsar questus, quòd, quum ultrò in continentem legatis missis pacem a se petissent bellum sine causâ intulissent," iv. 27. However, I am satisfied that even had he anticipated resistance, he would not have altered his plans; for in his second invasion, when he could not doubt that his debarcation would be opposed, he nevertheless steered for the very place where he had disembarked the year before: "Ut eam partem insulæ caperet, quâ optimum esse egressum

superiore æstate cognoverat," v. 8. One reason, perhaps, was, that Cæsar in Britain depended for his supplies from Gaul, and he had left Labienus in Gaul for the very purpose of providing for the commissariat: "P. Sulpicium Rufum legatum cum eo præsidio, quod satis esse arbitrabatur, portum tenere jussit," iv. 22. "Labieno in continente . . . relicto, ut portus tueretur, et rei frumentariæ provideret," v. 8; "frumentum his in locis (Britain) in hyemem provisum non erat," iv. 29. It was therefore of paramount importance to secure the nearest and most convenient ports of communication between the two coasts.

IX.* I had referred to Cæsar's *montibus* (iv. 23) as agreeing better with the cliffs between Dover and Folkestone than with those at Hastings, but the Astronomer-Royal thinks otherwise, inasmuch as from the latter, which are lower, a javelin could be better aimed. Cæsar says nothing about *aiming* the javelin, but only that the sea was hemmed in by mountains, so close, adeo angustis, that a javelin could be thrown from the height to the shore, in littus adjici, iv. 23; and nothing

* IX. "In regard to Cæsar's "montibus," as I have said elsewhere, our interpretation must be guided by consideration of the character of place under which an officer would think of attempting to land. It must also depend upon the possibility of aiming a javelin from the heights. Both considerations exclude such lofty cliffs as those of Dover and Folkestone.

"I am surprised at the citation of Cicero, and the illogical inference from it. *Because* an officer who joined his regiment B.C. 54 says "there are wondrous high cliffs on the coast of Britain," *therefore* (says Mr. Lewin), Cæsar, in the year B.C. 55, attempted to land under those very cliffs. It is most probable that (assuming, as I do, that Cæsar landed at Pevensey) the precipices which Q. Cicero had in his mind were the stupendous cliffs at Beachy Head, which are within two miles of the landing-place, but which had no influence on the circumstances of landing."

can more exactly describe the bluff cliffs between Dover and Folkestone, which rise perpendicularly from the shingle, and their greater height, as giving the more force to the missile, would be an advantage. Besides, as Cæsar had gone to the Morini, the Pas de Calais, to prepare for the expedition, and sailed, as I contend, from Boulogne, he must constantly from the heights of Gaul have looked upon the inviting white cliffs of Britain between Folkestone and the South Foreland. Is it not the more natural supposition that, ignorant as he was of the British line of coast, he should make for the shore which he had daily watched, rather than for Fairlight Downs, of which it does not appear that he even knew the existence?

The Astronomer-Royal is surprised at "the citation of Cicero and the illogical inference from it. *Because* an officer who joined his regiment B.C. 54, says, "There are wondrous cliffs on the coast of Britain, *therefore* (says Mr. Lewin), Cæsar, in the year B.C. 55 attempted to land under those very cliffs." I see nothing illogical in this. I was quite aware, and particularly pointed out that Q. Cicero was "one of the generals in Cæsar's army on the *second* expedition," page 31. But as Q. Cicero was referring to the coast where the second debarcation had been effected and the second debarcation was at the same point as the first, as the Astronomer-Royal himself admits, the remark of Cicero was applicable to the first as well as to the second. I cannot give a better answer than in the very words of the Astronomer-Royal himself. "I understand," he says, "that Cæsar landed at precisely the same point in the two expeditions, and shall apply to one point indiscriminately the remarks suggested by the occurrences in both expeditions."

X.* Cæsar, on his second return from Britain, put to sea soon after 9 P.M. in a calm, and reached Gaul at

* X. "Cæsar records that, on the return from the second expedition, 'summam tranquillitatem consecutus,' he approached the coast of Gaul ('attigit' in Cæsar does not mean that he reached it) in about eight or nine hours; and Mr. Lewin, inferring from the expression describing the weather that the fleet was rowed all the way, considers that the distance of the Somme from Pevensey was too great to be passed over by rowing in eight or nine hours. The reply to this will require some consideration of the character of ancient navigation.

"We are so much struck with the importance of the oars in ancient nautical battles, and in other critical circumstances, that we almost forget that, in general navigation, sails played a much more important part. Yet, if we look in the Iliad (which I cite without hesitation as accurately describing the realities of the age), we find that the galleys at that time were borne along by sails on the open sea; but that, on entering a port, the sails were furled, and then only were the oars used to bring the vessels to their moorings. In what may be called the trireme period, though oars were used exclusively in the shock of battle, yet the exploit by which Conon hoped to cripple the victorious Spartan fleet after the affair of Ægospotami was the carrying off their mainsails. For the Roman times, we find little information in Cæsar (though in contrasting the ships of the Veneti with his own, he adverts to the difference of the materials of which the sails were constructed); and the notices in other authors are very much scattered. On the whole, I am inclined to refer to Virgil, in his account of the voyages of Æneas, as giving a better account of navigation in Cæsar's time than is to be found elsewhere. Several remarks in the Æneid convince me that Virgil was a practical sailor. So far as his poetical bent would carry him, he would, I suppose, incline to the row-boat side."

The Astronomer-Royal then adduces some supposed illustrations of his views from Virgil, and then proceeds thus:

"Mr. Lewin has been led to the supposition of rowing by interpreting 'summam tranquillitatem' to mean 'dead calm.' But there are two elements to which 'tranquillitas' can apply, the air and the sea,—and if we consider which of these elements alone, in a disturbed state, is more likely to be injurious, we shall soon arrive at

break of day, or 5 A.M. "summam tranquillitatem consecutus secundâ initâ quum solvisset vigiliâ, primâ luce terram attigit," v. 23. From this I had drawn the inference that as it was a calm the vessels were rowed, and that as the voyage occupied eight hours only, it could not have been from Pevensey to the Somme, a distance of more than sixty statute miles. To meet this argument the Astronomer-Royal answers that the vessels were *under sail*, for that in the most ancient navigation, as exemplified in the Iliad, oars were used only "on entering a port;" that in the trireme period "oars were used exclusively in the shock of battle," and that "for the Roman times we find little information in Cæsar, and the notices in the other authors are very much scattered," but he refers more particularly to Virgil, whom he calls a "practical sailor." But the testimony of all the poets in the world would not weigh against the narrative of Cæsar himself, who tells us first of all that *these very vessels* had been specially made for rowing (actuariæ); and in the next place that they were not only *made* for rowing, but that they were also *used* for rowing. Thus, in Cæsar's second voyage

a conclusion. If, as frequently happens after a heavy gale, there had been a high swell without a breath of wind, the over-loaded fleet would have been in great danger. On the other hand, if with smooth water there had been a brisk breeze, the steerage would have been good, the course would have been held well, the voyage would have been easy,—and, the fresher the breeze blew, the better would everybody have been pleased. Now for this we have only to suppose a *stiff north-west wind*, capable of carrying the ships seven or eight miles an hour; for several miles after leaving Pevensey the water would be smooth as a mill-pond; after that, there would be a little sea, but with the easy motion of a vessel going nearly before the wind it would scarcely be felt; and the voyage would be most tranquil and pleasant. This, I believe, is exactly what happened."

to Britain, he was drifted by the tide out of his course, and at daybreak, or a little before 4 A.M. they rowed the fleet to the former landing-place, which they reached at noon: "Ortâ luce, sub sinistrâ Britanniam relictam conspexit. Tum rursus æstûs commutationem secutus, *remis contendit*, ut eam partem insulæ caperet, quâ optimum esse egressum superiore æstate cognoverat. Accessum est ad Britanniam omnibus navibus meridiano ferè tempore," v. 8. Here, then, we have these vessels rowed for eight hours together in one direction, and if so, they could surely be rowed for eight hours together in the opposite direction. If poets are to be cited as authorities, why does not the Astronomer-Royal refer to Lucan, who addressing himself not loosely to the practice of navigation in general, but to this very expedition of Cæsar, speaks of the fleet not as under sail but as impelled by oars.

"Hæc manus ut victum post terga relinqueret orbem,
Oceani tumidas *remo* compescuit undas."—*Phars.* lib. i. v. 369.

But let me concede, for argument's sake, that the vessels were not rowed, but were under sail, could they even then have run from Pevensey to the Somme in eight hours? Captain Beechy remarks that "seven miles per hour would be reckoned a good rate of sailing for ships of the present day (Smith's Voyage and Shipwreck of St. Paul, p. 179); and the Astronomer-Royal had observed, in his original essay, that "the distance from the mouth of the Somme to Hastings, is about fifty-two nautical miles, and that to Dover about fifty-five. These are such distances as may fairly be traversed in *ten hours* with *idonea tempestas*." How then, I ask, could the voyage have been made in *eight*

hours without the *idonea tempestas*, and in a calm. We must also bear in mind the defective state of ancient navigation, and that Cæsar's vessels were, to use the Astronomer-Royal's own expression, "flat-built," *i. e.* not constructed for fast going, but broad and barge-like: "Ad onera, et ad multitudinem jumentorum transportandam, paullò latiores, quàm quibus in reliquis utimur maribus," v. 1; "vectoriis gravibusque navigiis," v. 8: not only so, but Cæsar, having been disappointed of the additional transports expected from the Continent, was obliged to crowd the vessels he had to the great inconvenience of the troops on board? How then could these flat-built, overloaded transports have accomplished the distance of sixty miles (statute) in eight hours? The Astronomer-Royal says they could, for "we have only to suppose *a stiff, north-west wind.*" But this is the very thing that cannot be supposed, unless the Astronomer-Royal would translate *summa tranquillitas* by "a stiff, north-west wind!"

XI.* I had asked how it happened, if Cæsar landed at Pevensey which was out of the common course, that the Britons, nevertheless, were there to oppose him?

* XI. "Mr. Lewin raises the question, How it could happen that the Britons expected the landing at Pevensey. To this I reply, that Pevensey is known now, and probably was known for many generations before Cæsar's time, as the weakest point in the whole circuit of Britain. In the great war of the beginning of this century there were erected for its defence thirty-six martello towers. (Upon the edge of Romney Marsh, to which Mr. Lewin calls particular attention, there are only sixteen.) Cæsar, who never made a step in ignorance, steered, as I conceive, for Pevensey Beach, but was drifted (as in the following year) by the tide under the Hastings cliffs. The Britons had probably expected him at Pevensey; but, on seeing him approach towards Hastings or Bexhill, immediately moved in that direction."

The Astronomer-Royal answers that, "Pevensey was the weakest point of Britain," and therefore that Cæsar, "who never made a step in ignorance, steered for Pevensey Beach;" and that the "Britons had probably expected him at Pevensey." Now this assumes several things which are unsustainable: viz. that Pevensey was at *that* time the weakest point, whereas, being backed by the Andred Forest, it was less favourable for a landing than Romney Marsh, just out of the Andred Forest; and further, the argument implies that Cæsar *knew* the nature of the southern coast, whereas he was probably acquainted only with the part between Romney Marsh and Deal, for he could procure no information whatever (iv. 20), except what had been gathered by Volusenus during a five days' absence. Again, how, if Cæsar fixed on Pevensey, could the *Britons* have known his intentions? for it is very unlikely that he should have published them abroad, more particularly as he did not communicate his plans, in part, even to his own officers until the last moment, on arriving in Britain (iv. 23). But supposing, as must have been the case, that the Britons were ignorant of Cæsar's intended movements, they would naturally conclude that he would land (not in Sussex, but) in Kent, for the reasons, 1. that this part of the coast was the nearest to Gaul; 2. that Kent was the part almost universally frequented by ships from Gaul (v. 13); 3. that Cæsar's naval preparations had been made amongst the Morini (iv. 22), the people just opposite to Kent; 4. that, even if Cæsar had equipped his fleet, as the Astronomer-Royal conjectures, at the mouth of the Somme, Romney Marsh would be nearer than Pevensey to the Somme, and was in itself more favourable for landing, as not shut in by the Andred Forest.

XII.* I had made it an objection to the theory of Pevensey, that Cæsar in that case must have landed in the heart of the Andred Forest. The Astronomer-Royal answers that William the Conqueror disembarked at Pevensey, and if William did, why not Cæsar? The why not, is that from Cæsar to William was an interval of 1000 years and upwards, and it cannot be conceded that the forest remained at the end of that period in the same condition as at the commencement. The Romans, a highly civilised people, had been in possession of this part of Britain more than 360 years, and clearances must have been made during their occupation. The Saxons, also, who followed them, must have contributed something to the same end. Had Pevensey Marsh been the *only* practicable landing-place, Cæsar might have been willing to encounter the difficulties; but Romney Marsh was more favourable, and nearer to the port of embarkation, even assuming it to have been the Somme.

* XII. "Mr. Lewin says, 'Is it not also strange and unaccountable that Cæsar should have landed in the heart of the dense forest of Anderida?' I reply by the question, 'Is it not strange and unaccountable that William of Normandy should have landed in the heart of the dense forest of Anderida?' I assign the same road to both. As far as we know, the character of the forest had not sensibly altered in the interval. In my paper, I have sufficiently recognised the woody character of the ground east of the Robertsbridge road, and Mr. Lewin, if he reads the account of the conflict of Battle, will find abundant mention of the woods. But this is different from forest, where there are no roads or habitations, and where wood grows neglected upon soils so barren that they will rarely pay for the trouble of clearing. Such is the character of the elevated ground in which the Rother, the Cuckmere, and other small rivers, have their sources. At the present time, that region is called by the people of the country 'The Forest,' but I believe that the same term is never applied to the country east of the road."

XIII.* To prove that the camp of Cæsar was in Kent I had appealed to the fact that the orders of Cassivelaunus to assault the camp were sent to the four kings of *Kent* (v. 22). The Astronomer-Royal accounts for it by saying that "the greater part of Sussex was occupied by the Andred Forest" (which is what I had been contending for), "and the population of Kent was probably many times as numerous as that of Sussex." The latter fact does not appear from Cæsar, who remarks only that Britain in general was densely peopled (v. 12), and as the Astronomer-Royal thinks that even in Cæsar's time the Andred Forest did not extend eastward beyond Robertsbridge, there is no reason why that part of Sussex should not have been at least sufficiently populous to furnish a contingent to the British force. As the men of Kent were distinct from the Regni, or men of Sussex (which is not disputed), the natural inference to be drawn from the assault of the camp by the *men of Kent* surely is that *the camp was in Kent.*

XIV.† Cæsar, on his second voyage to Britain, started

* XIII. "Mr. Lewin thinks it a capital objection to the landing at Pevensey that the chieftains of Kent (instead of Sussex) were directed to attack the naval camp. The distance of that camp at Pevensey from the boundary of Kent is perhaps, in a straight line, 13 miles, no very great march for a patriot. The reason for calling on the men of Kent instead of those of Sussex is obvious: the greater part of Sussex was occupied by the Andred Forest, and the population of Kent was probably many times as numerous as that of Sussex."

† XIV. "When Cæsar was drifted eastwardly by the tidal current, he remarks that he found the coast of Britain on his left hand. And Mr. Lewin actually interprets this as if Cæsar had kept his ships' heads strictly in the same azimuth, and that the 'left hand' had relation to the larboard side of the ship, and therefore that he had passed the Straits of Dover. I cannot conceive that the expression refers to any direction but to that of the drift; it asserts that, in reference

at midnight, and being drifted by the tide, he, when morning broke, beheld Britain on his left hand. This to me (as before to the learned D'Anville) was a convincing proof that the vessel with her head towards Britain had been carried by the current off the South Foreland. In that case the sea only would be visible on the right hand, and Britain would be observed on the left. The Astronomer-Royal answers that "left" in this passage has reference to the tidal current, — in other words, that Cæsar having remarked the current, and turning his face in the same direction saw Britain on his left hand. The truth, of course, is, that Cæsar did not first discover the drift, and then take the bearings of the land, but seeing Britain on his left hand, discovered the drift. The head of the vessel must have been turned towards Britain in any case, for Cæsar was sailing for that coast; and the vessel, even if committed to the action of the current only, would drift broadside to the stream, *i. e.* with the head towards Britain. Besides what a truism is otherwise fastened upon Cæsar, viz. that a person going up Channel, and looking in the same direction with the tide, would have Britain on his *left* hand, as if by any possibility he could have Britain on the *right!*

XV.* The only remaining question is this :—Accord-

to the direction of tidal current, the coast was on the left hand. It is therefore indecisive as to the place."

* XV. "Mr. Lewin has fixed upon Challock Wood as the post defended by the Britons in their battle at the second invasion, and the Wye (here a very petty rivulet) as the river concerned in the defence. It is perfectly evident in Cæsar's account that the river was the important part of the defence; and I have no hesitation in saying that the Wye here presents no aptitude for military defence, no singularity of any kind, which could give it the most trifling value in the struggle with Cæsar. In this respect it differs very widely from

ing to my hypothesis Cæsar, on his second invasion, landed in Romney Marsh, opposite Limne, marched inland to Wye on the Stour, and then crossing the river, drove the Britons from their stockade in the wood, at Challock, on the opposite hill. Not a few arguments in support of this are conceded by the Astronomer-Royal, for he admits that Romney Marsh is "very favourable" for a debarcation; that Wye is twelve miles from the sea-shore at Limne; and that Canterbury was then in existence, so that the Britons would naturally, on retiring from Romney Marsh, pursue the road to their capital, and stockade the wood which commanded the defile leading to it. (I may here add that the circular hill at the end of the wood towards Godmersham is remarkably streaked by several successive tiers of lines, and is itself free from wood. This may have been the position of the British war-chariots, and the streaks referred to may have been at the same time ramparts against assault and roads for descent to the cars). To this theory the Astronomer-Royal offers two objections. In the first place, he says, that "in Cæsar's account the river was the important part of the defence," and that the Stour (which, in his original Essay was a "*small river*," and is now a "*very pretty rivulet*," could not have had "the most trifling value in the struggle with Cæsar." I have repeatedly seen the Stour at Wye, and I have more than once

the place which I have assigned (Robertsbridge), where a comparatively narrow ford crosses a river that spreads on both sides of the road into broad soft marshes (probably river in that age), and where the hill-banks of the marshes are generally steep. The existence of such a place, on the road which Cæsar must have taken (as coming from Pevensey), and at the distance which Cæsar has specified, presents one of the strongest evidences for deciding on locality that I have ever seen."

seen the Rother at Robertsbridge, and I have no hesitation in saying that the Stour always appeared to myself of at least twice the magnitude of the Rother. The quantity of water at Wye may be judged of in some degree by the fact, that in the month of September 1861, when I last visited it, the mill had constantly at work four pairs of stones from 5.30 A.M. till 8 P.M., except for a short time at noon. However, I do not consider the relative magnitudes of the two rivers very material, because Cæsar, as I conceive, does *not* make the river "the important part of the defence." On his debarcation he first learned from some captives where the enemy had posted themselves, "quo in loco hostium copiæ consedissent," v. 9. He then, after a twelve miles' march, and at break of day, came in sight of their position, which Cæsar describes as a stockaded wood. Upon Cæsar's approach the Britons did not march down in force to the river, but only sent the *cavalry and war chariots* to harass the enemy in crossing the stream and ascending the hill: "Illi *equitatu atque essedis* ad flumen progressi, ex loco superiore nostros prohibere, et prœlium committere cœperunt," v. 9. And on the Roman side, not the legions, but the cavalry only, were engaged: "Repulsi (the Britons) ab equitatu," v. 9. In the same way, after Cæsar had been recalled to his fleet, and when he again returned to Wye, the Britons harassed him along his whole march with their *cavalry and war chariots*: "*Equites hostium essedariique* acriter prœlio cum equitatu nostro in itinere conflixerunt," v. 15. It would therefore appear that the Britons, though they sent down their skirmishers to the river, meant to make their final stand, as they did, in the stockade; and it was not until after a desperate struggle that the Romans were able to dislodge them.

In the next place the Astronomer-Royal insists that the river referred to by Cæsar was the Rother, inasmuch as at Robertsbridge, "a comparatively *narrow ford* crosses a river that spreads on both sides of the road into *broad soft marshes* (probably river in that age), and where the hill banks of the marshes are generally steep;" and in the "Archæologia" he remarks that Cæsar, in advancing from Pevensey to Robertsbridge, would have on his left the forest of Andred, and on his right "a partially wooded country, terminated by the impassable marshes of the Rother," and that at Robertsbridge only, where "the sound grounds on the north side and on the south side approach nearer than anywhere else," could Cæsar have advanced — that Robertsbridge was in short "the gate of Britain." In order to form a judgment myself of the capabilities of Robertsbridge as a defensive post, I visited it at about the same season that Cæsar was in Britain, that is, in August. As to the forest which Cæsar would have on his left, *i. e.* to the west, there is no observable difference at present between the west and east; and I may add by the way that even in the days of the Saxons the Andred Forest extended as far as Romney Marsh, as we learn from the Saxon Chronicle, A.D. 893. As to the "impassable marshes" on Cæsar's right, it is true that at Robertsbridge, a corruption of Rotherbridge, there are no less than seven bridges, from which the place takes its name; but at four of them only was any water at all. At the other three the channels were perfectly dry. Where water was running so far from any "embankment," preventing its overflow, it ran along the bottom, many feet below the natural surface of the ground. As when Cæsar was in Britain the second time it was an unusually dry summer (v. 24),

any marsh (to judge from present appearances) would be quite out of the question. The streams, such as they are, unite at a point about half way between Robertsbridge and Salehurst, and even below the confluence at Salehurst, I walked across the Rother, without wetting more than the soles of my shoes.* As to the nearer approach of the sound grounds at Robertsbridge than elsewhere, I observed no ground that was not *sound*, but if the *high* grounds as opposed to the *flats* be referred to, they are in much greater propinquity at Salehurst than at Robertsbridge. The "narrow ford" at Robertsbridge and the "broad soft marshes" on each side were not to be seen. In short, an inspection of the ground at Robertsbridge dissipated at once the theory which the Astronomer-Royal had suggested to my imagination. Robertsbridge, so far as I am capable of forming a judgment, does not possess the military advantages attributed to it.

Having answered all the objections of the Astronomer-Royal, I shall now advert to some facts which escaped my notice when I wrote my Essay, but which, I think, materially affect the Astronomer-Royal's theory. According to the Astronomer-Royal, Cæsar first anchored off the Hastings cliffs, and then sailed eight miles to Pevensey Marsh. The nature of this part of the coast is as follows: — From Hastings *eastward* to Cliffs End, a distance of five miles, are the Fairlight Downs, and these, rising to a maximum height of 240 feet, are sufficiently imposing to answer the description of "montibus angustis." From Hastings *westward* to

* I was also there on one occasion in midwinter, and the stream was only ankle deep, and there was a cart-road across it in constant use. There are, of course, occasional floods, and then the scene is very different.

the flat of Pevensey Marsh (say at Pevensey Sluice) is a distance of about eight miles English, or nearly nine miles Roman. The intervening space has occasionally low cliffs, as at Bexhill, but would not at all answer to the "montibus angustis," so that Cæsar could not have *anchored* opposite them. Neither, on the other hand, as this part is undulating, can it be considered the planum or flat shore on which Cæsar *landed.* If, therefore, Cæsar approached this coast at all, he must have anchored, in the first instance, somewhere off the high cliffs between Hastings and Cliffs End; but if so, eight Roman miles would not carry him so far as Pevensey Marsh. The line of coast, therefore, does not, to my apprehension, tally in this respect with Cæsar's account.

However, the matter to which I wish more particularly to draw attention is the nature of the tidal currents at Hastings. The argument of the Astronomer-Royal is this: first, that Cæsar arrived off the Hastings Cliffs, which he says, "in my judgment, appear to suit Cæsar's account better than those of Dover or Hythe"; secondly, that Cæsar reached Britain on the third day before the full moon, *i.e.* (as full moon was on the night of the 30th August, B.C. 55), on the 27th August, B.C. 55. "The day of Cæsar's landing," he says, "may be the second, third, or fourth day before the full moon. I will consider it as the third"; and then, thirdly, after laying down that the turn of the tide on that third day would be "two and half hours earlier than on the day of the full moon, he cites the authority of Sir F. W. Beechey as to the turn of the tide off Hastings on the day of full moon, who states that "*close in shore* off Hastings the stream turns to the west at 11.0, but the turn becomes later as the distance off shore increases, and at *five miles' distance* the stream turns to the west at 1.0."

In other words, as I understand it, for a mile off shore the stream turns at 11.0 ; at two miles off shore at 11.30; at three miles off shore at 12.0 ; at four miles off shore at 12.30 ; at five miles off shore at 1.0 ; and at six miles off shore at 1.30. On the third day before the full, this turn of the tide would be, according to the Astronomer-Royal, two and a half hours earlier, *i.e.* close in shore at 8.30 ; at five miles off at 10.30 ; and, consequently, at six miles off at 11.0 : and the Astronomer-Royal concludes that, " If we suppose Cæsar to have first attempted the neighbourhood of St. Leonards, the tide, which *a few miles* from shore had turned to the west *at* 1.10, was, at 3.0, running in full stream to the west." Now, by assuming the tide, on the third day before the full moon, to be at 11.0, the Astronomer-Royal places Cæsar's anchorage at no less than six nautical or nearly seven statute miles from the shore. But who can believe that Cæsar was at this distance? He says that he had *reached Britain*, and that he *saw* the forces of the enemy *arrayed* upon the heights, and he describes the *very spot* with great minuteness. " Britanniam *attigit*, atque ibi in omnibus collibus *expositas* hostium copias armatas *conspexit.* Cujus *loci* hæc erat natura," &c. iv. 23, and then, not finding that point a suitable landing-place (" Hunc ad egrediendum nequaquam idoneum arbitratus *locum*," *ib.*), he weighed anchor and advanced, evidently along the shore, eight miles further, until he reached an open level ; circiter millia passuum viii *ab eo loco* progressus," &c. *ib.* Is not all this at variance with the Astronomer-Royal's assumption that Cæsar anchored " a few miles from shore," *i.e.* as appears from the context six or seven miles from the shore ?

The late Camden Professor of Ancient History at Oxford, Dr. Cardwell, in his article on the subject in the third volume of the " Archæologia Cantiana," makes

Cæsar anchor (and I agree with him) about half a mile from the shore. I will concede, however, that Cæsar's moorings were a mile from the shore; and what, then, are the facts? When last at Hastings I made very particular inquiry as to the tidal currents there, and was surprised to find how materially they differed from those off Dover or Folkstone. At the latter places the stream continues to run *east* for about three and a half hours after high water; but at Hastings the current turns *west* about the *very same time* with high water, and (including slack water) runs west for about six and a half hours, and then runs east for about six hours. At what time, then, was it high water on the day of Cæsar's landing? The full moon was at 3 A.M. on 31st August, and according to the tide-tables, high water at Hastings at the full of the moon is at 10.53. We may assume, therefore, that the high water next preceding the full moon, viz. in the evening of 30th August, would be about that time. But high water in the morning of 27th August would be seven tides earlier, *i.e.* 2.48 earlier, or about 8 A.M. At this time, therefore, the current off Hastings would turn west, and would run so for the next six and a half hours, or until 2.30 P.M., and would then turn east. At 3 P.M. therefore, Cæsar, if he went with the tide, must have proceeded, not *westward* towards Pevensey Marsh, but in exactly the *opposite direction.* To guard myself as much as possible against error, I wrote to Captain Fennings, a resident at Hastings, who possesses great nautical experience, and, as professor of navigation, combines with it the advantage of science, and he was courteous enough to give me the information I desired, and for which I beg to offer my best thanks. The questions and answers were *verbatim* as follows:—

Questions.	Answers.
1. "At what time does the current turn west a mile from the shore between the Hook" (near the eastern end of the Hastings Cliffs) "and Pevensey? Before high-water? or after it? or at the same time with it?	1. "The tide turns *west* about high-water a mile from the shore between the Hook and Pevensey.
2. "How long usually is it slack-water?	2. "In spring-tides it is slack-water half an hour, and one hour in neap-tides.
3. "When does the current turn *east* and how long does it usually run in that direction?	3. "The flood or current begins to run *eastward* up Channel when it is low-water on shore and runs six hours, between the Hook point and Pevensey a mile from the shore.
4. "Is there any and what difference between the currents west of the Hook and the currents between the Hook and the Ness?	4. "The tide runs three hours later between the Hook and Dungeness than it does to the westward of the Hook.
5. "Many years ago some transports lay off the cliffs between the Hook and Hastings about a mile from the shore. It was high-water about 8 A.M. They started at 3 P.M. and went in the same direction as the tide. Which way did they go? Up Channel or down Channel? East or west?"	5. "If it was high-water at 8 A.M. about a mile from the shore between the Hook and Hastings, it would be low-water, slack, or say the young flood at 3 o'clock P.M. Therefore, when the ships weighed anchor at 3 P.M. they proceeded with the flood up Channel to the *eastward*."

Among these questions I had omitted to ask how long the current continued to run *west*, and though the fact might be collected from the answers to the other queries, I again troubled Captain Fennings by requesting to be informed, as each high water is twelve hours twenty-four minutes later than the preceding, how the interval of twelve hours twenty-four minutes was to be

distributed as between the current westward and the current eastward? and his reply was as follows: "In reference to dividing the tides, I have consulted the oldest fishermen, also Captain William Phillips, the oldest shipmaster in Hastings. They agree with me that the flood a mile off shore runs eastward six hours, and the ebb runs west six hours twenty-five minutes." This made no allowance for slack water between the two currents, and as to this he writes, "In spring tides it is slack water about half an hour, and in neap tides about one hour. We have four slack waters in twenty-four hours. Therefore we must take half an hour from each eastern or western current in spring tides, and one hour from each eastern or western tide in neaps." In other words, the eastern current (including slack water) runs six hours, and the western current (including slack water) runs six hours twenty-five minutes. But at every change of the current from east to west, or from west to east, there is slack water, during which there is no positive current. This interval, amounting to half an hour in springs, and one hour in neaps, is to be deducted. Thus, supposing it to be high water at the springs at 11 A. M, the current at 11 A. M. turns west and runs so till 4.55 P. M. It is then slack water till 5.25 P.M. and then turns east and runs so till 10.55 P.M. and then it is slack water again till 11.25 P.M.

If this information, so kindly communicated by Captain Fennings, be correct, it is clear that upon the footing of the tidal current alone, independently of other objections, the theory that Cæsar anchored off the Hastings Cliffs and then sailed to Pevensey Marsh, cannot be maintained.

REPLY TO THE REMARKS OF THE LATE CAMDEN PROFESSOR OF ANCIENT HISTORY AT OXFORD.

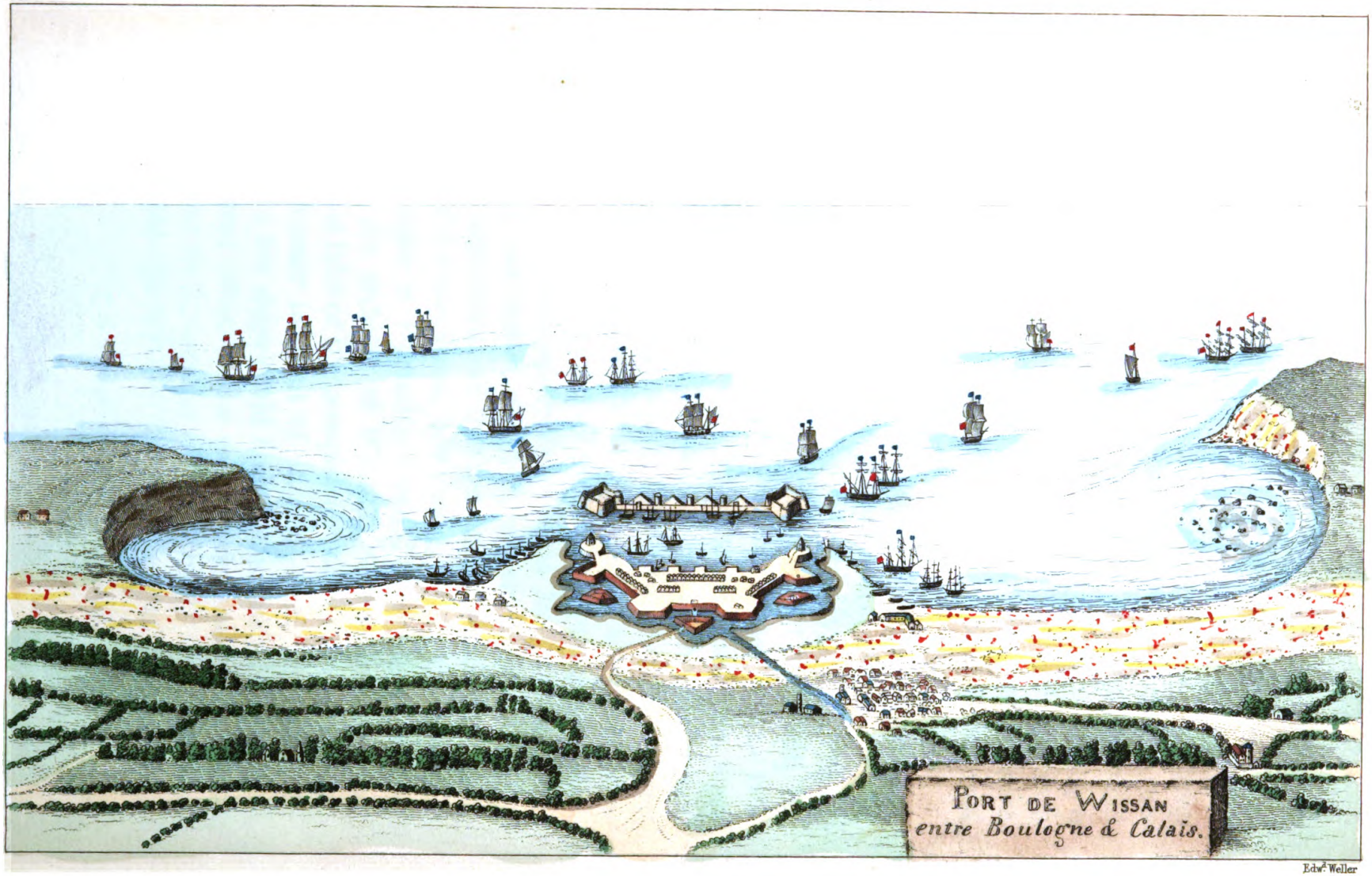
IN the third volume of the "Archæologia Cantiana," a distinguished scholar, the late Camden Professor of Ancient History at Oxford, Dr. Cardwell, advanced some objections to my theory that Cæsar, upon his invasion of Britain, embarked at Boulogne, and landed on Romney Marsh. The opinions of one who occupied so prominent a position in the world of letters cannot be passed over in silence, and as, though withdrawn from us, he still lives in his works, I now proceed to a reply.

The embarcation is assigned by the Professor to Wissant; but he does not enter upon any formal argument upon this head, nor shall I here contend at length to the contrary. But as Wissant is somewhat out of the way, and seldom visited, I may take the opportunity of stating the result of my own personal observation. In the Bay of Wissant the sea is continually throwing up a quantity of fine white sand, whence the name of Witsand (Dutch), corrupted into Wissant. When the sea retires the sand dries, and

the wind lifts it upon the ledge of the seaboard. Wherever there is any cleft or fissure, the increased force of the wind in the gully carries up the sand, and lodges it in a heap on the upper surface. This heap soon becomes a hill, and in the course of time a succession of sand hills forms a kind of rampart round the bay. It is a mistake to suppose that this part is a gently sloping shore upon which ships could be drawn up in safety, for they could not be transported over the belt of sand, and, lying before it, they would be exposed to the inclemency of the sea.

The village of Wissant stands on a little eminence about half way along the bay, and between it and the sand ridge is the old port now quite dry, and half filled with sand, but the configuration of it may still be traced. I was informed by a native that it was two kilometres, or one mile and a quarter long from west to east, and half a kilometre, or two furlongs and a half broad from north to south. A stream which has water enough to turn a mill runs through the village into the port, and thence forces its way through an opening into the sea. First appearances would lead one to suppose that the belt of sand has been the bulwark of the port on the north, and that the only entrance had been where the watercourse now runs; but in the Museum at Boulogne is a painting (copied from one preserved among the archives of Wissant) representing the port as a little inlet or bay scooped out of the shore, having a breakwater in front of it, and open at each end, so that a few ships could find shelter behind the breakwater, and others at the east or west end of the port, according to the quarter of the wind.* The tradition is that the old town of Wissant stood at the east end

* A copy of the plan is annexed.



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of the port, and that it did so, at least in part, is evident, for an excavation had been recently made when I was there, and the walls of houses were visible at the depth of twelve feet. About a quarter of a mile to the south of the village is what is called Cæsar's camp, seated on a chalk hill (though there are no traces of chalk between it and the sea), and consisting of four successive tiers of ramparts. They were all earth-works, and no remains of masonry were traceable. The inmost and most elevated circle was, speaking from recollection, about thirty yards across. The impression which the whole leaves is not that of a Roman camp, but of a mediæval fortress. A plan of the camp and other military works will be found in M. Henry's "Essay on Boulogne."

The port of Wissant was never heard of until seven or eight centuries ago, and flourished only for a very brief period.* In fact, the line of shore, consisting of those ever-moving heaps of sand, does not admit of any permanent celebrity. I should doubt whether in the time of Cæsar Wissant was a port at all; but, supposing its existence, it never could have contained the fleet with which Cæsar sailed on his second expedition. As Cæsar certainly started from *a port*, and not from *a bay*, and the port of Wissant was of such narrow dimensions, it could not have been the Portus Itius. There are also the two following objections to Wissant:—First. Cæsar tells us that the passage from Portus Itius to Britain was about thirty miles: "transjectum circiter millium passuum xxx." Bell. Gall. iv. 30, whereas the distance of Wissant from Britain is only about twenty miles. Secondly. When Cæsar returned from Britain the first time, two of his transports were drifted a little

* Somner's "Roman Ports," p. 33.

to the south of Portus Itius: "Paullo infra delatæ sunt," iv. 37; and when the troops were put on shore, and were making their way back to Portus Itius, they were attacked by the Morini, and only saved after a four hours' fight by the arrival of some cavalry, and these Morini were chastised the next day, because it is said they could not take refuge as they had done the year before in the *marshes which were then dry*. Supposing Wissant to be Portus Itius, where are these marshes, as none are to be found at present between Wissant and Boulogne? But assuming, not Wissant, but Boulogne to be the Portus Itius, we meet with the marshes where they should be, viz. a little to the south of Boulogne. I visited that part in the month of September 1861, in a dry season, and the marshes were still very distinguishable between Camiers and Dannes. There were several large pools of stagnant water, with a low flat tract many miles in length, which would clearly be a marsh in a rainy season. In fact, the whole country, from Etaples to Hardelot, consists, where there are no marshes, of the dunes or drifted sea sand, and the probability is, as history states, that anciently this was one continuous marsh.

The point to which Dr. Cardwell directed his chief attention was Cæsar's place of *landing*, which he considered to be Deal. In maintaining that the debarcation was on Romney Marsh, I had relied on the Tide Tables published by the Admiralty, which, if correct, are decisive, that at three o'clock on the 27th August, B.C. 55, the day of the debarcation, the tide, which Cæsar says he followed (ventum et æstum uno tempore nactus secundum, iv. 23), was running, not eastward, towards Deal, but westward, towards Romney Marsh. The Professor of course felt the weight of this

argument, and makes some very candid admissions. "A basis," he says, "resting on such authority as the directions issued from the Admiralty, is *primâ facie* beyond the reach of cavil or objection: it is only when the problem is worked out, and found to terminate in incongruities and contradictions, that the inquirer feels his confidence shaken, and considers himself at liberty to examine for himself;" and he then proceeds to point out some supposed contrarieties in my hypothesis, and which he classes under four heads.

The first and main objection urged by him* is as

* The Professor makes the following prefatory remarks, "Besides his war vessels, Cæsar had collected eighty transports to convey the two legions, consisting probably of about eight thousand men, whom he appointed to accompany him. Eighteen other transports were detained at a haven eight miles further north ('portus ulterior, superior,' Bell. Gall. iv. 23 and 28), being prevented by contrary winds from joining him. So that the wind was blowing steadily and strongly from the south-west, and the eighteen transports were detained on the coast near Calais. These vessels did not leave the harbour till the fourth day after Cæsar's arrival in Britain; and we may thence infer (and this is a point of importance) that the wind continued blowing from the same quarter. That they were detained by some such difficulty is evident from the fact that Cæsar had ordered all his cavalry, consisting probably of about eight hundred men, to go thither and to put to sea as soon as possible." And he then states his first objection thus: —

"First, then, I have already stated that the wind during the whole of the 27th of August was probably blowing up the Channel. That it was so for some time previously is evident from the fact that the eighteen transports were detained by the wind in a harbour eight miles further north than Cæsar's starting-place, and the only words connected with this matter on the day of departure are, 'nactus idoneam ad navigandum tempestatem,' which merely say that the wind had moderated. It is true that three days afterwards the wind blew furiously from the north-east, and drove the eighteen transports, when they were on the point of joining Cæsar, to a considerable distance down the Channel: but there is no evidence of any change

follows:—that Cæsar set sail with a south-west wind; that the same wind continued to blow for the next four days; that Cæsar, when he weighed anchor off Dover cliffs, and sailed eight miles, had the wind in his favour, and, therefore, as the wind was south-west, he must have steered to the north-east, which would bring him to Deal. To take the argument by steps, what evidence, in the first place, is there that Cæsar sailed with a south-west wind? In the *second* invasion, it is no doubt mentioned expressly that the wind was Africus, or south-west, "leni Africo," v. 8; but we are now upon the *first* invasion, and the only circumstances from which the quarter of the wind can be collected are the two following, viz. that it was "idonea tempestas," a wind suitable to a passage from Gaul to Britain, which would place it south-east; and again, that the eighteen vessels at a port eight miles to the north of Boulogne were prevented by the wind from reaching Boulogne, a fact which would point to a south wind. What objection, then, is there to the supposition of a south-east, instead of a south-west wind? A breeze from the south-east would be more

during the interval, and the expression, 'ventum et æstum uno tempore nactus secundum,' which, according to Mr. Lewin, implies, by the meaning of the word 'nactus,' that the *wind* had undergone a change when Cæsar left his anchorage, may, for anything that we know at present, denote a change in the tide and not in the wind. In another part of his argument (p. 58) Mr. Lewin says, 'The day after the transport of the infantry the wind had shifted from the south-west to the north-east;' and if he means that the shifting took place on the 28th of August, although I see no intimation of it, I am not required to gainsay it, being only concerned with the direction of the wind on the afternoon of the 27th. If then the wind was still blowing up the Channel when Cæsar quitted his anchorage off Dover, we have already an incongruity in the supposition that he was carried westward by tide and wind together."

favourable for a voyage from Boulogne to Folkestone than one from the south-west; and if the wind blew from the south-east, Cæsar, on arriving off the coast of Britain, would have the wind more suitable for a tack westward towards Romney Marsh, than eastward towards Deal. If, as is equally probable, the wind was direct south, it would then make little difference whether, on reaching Britain, he tacked east or west. As Cæsar sailed from Gaul to Britain on his second invasion with a south-west wind, he would find no difficulty, when he moored his ships off Britain on his first invasion, in tacking westward with a south wind. Even assuming with the Professor, but which is not necessary, that the wind was from the south-west, Cæsar, on quitting his moorings at the distance of half a mile or a mile from the shore, might very well have proceeded westward for a debarcation. However, the question from which quarter the wind blew when Cæsar set sail the first time is, after all, unimportant, as, in fact, the wind shifted, as we shall see, not long after his embarkation at the Portus Itius.

The next step in the argument is the assertion that the wind with which Cæsar sailed continued for the next four days. The only ground suggested by the Professor for this is, that the eighteen transports were detained for that length of time in the port eight miles to the north of the Portus Itius. "Those vessels," he says, "did not *leave the harbour* till the fourth day after Cæsar's arrival, and we may thence infer (and this is a point of importance) that the wind continued blowing from the same quarter." But what are the facts? Cæsar set sail himself from Portus Itius at midnight with a favourable wind for Britain, and the cavalry which he had despatched to the haven eight

miles to the north, was to have embarked with the same wind. There was some unaccountable delay at the latter port, and Cæsar, after waiting for the eighteen transports in vain for some time in the offing, was obliged, after all, to pursue his voyage alone, and reached Britain at 10 A.M. Now, whatever was the real cause of this tardiness at the northern port, it is clear that the wind, if it continued blowing from the same quarter, was not in fault; for, unless the eighteen transports could have left the port with the same wind with which Cæsar sailed, he would not have sent the cavalry thither for embarkation, and have waited for them in the offing. Besides, it is manifest, as the two ports were only eight miles apart, that a wind favourable to a passage to Britain from the one, would be almost equally so from the other.

Instead, however, of a *continuance* of the same wind for four days, it is quite plain from the whole narrative that, very shortly after Cæsar's departure from Gaul, the wind veered about. Cæsar and his officers in the triremes were no less than ten hours on the passage, and if we allow an hour, or even two, for Cæsar's waiting off the coast of Gaul for the eighteen transports, and take into consideration the deflections caused by the currents, the length of time is still inexplicable if the wind was favourable. The entire fleet did not reach Britain until *three o'clock in the afternoon of the next day* (iv. 23), and therefore consumed no less than fifteen hours on the passage, being at the rate of only two miles an hour. The Professor was much struck by this himself. "Observe," he says, "the slowness of their movements, for the transports had not all reached the ground where Cæsar anchored until five hours after his arrival." How then can these facts be reconciled with

the hypothesis, that Cæsar sailed with a fair wind, and that it so continued during the whole voyage. Is it not manifest that, though, when the fleet started, the breeze was in their favour, it afterwards shifted, and they were obliged while in mid channel to beat up against a contrary wind.

Look again at the account given of the eighteen transports. Dr. Cardwell states that "those vessels did not leave the harbour till the fourth day after Cæsar's arrival in Britain." But the words of Cæsar are "equites *cursum tenere atque insulam capere* non potuerant, iv. 26, that is, the eighteen transports carrying the cavalry, set sail, according to orders, but had been forced to put back by stress of weather.

There is also another circumstance. When Cæsar weighed anchor at 3 P.M., it is said that he had "*got* both wind and tide in his favour" (iv. 23); and as the word *nactus* implies a change either in the *wind* or the *tide;* and, as we shall show conclusively hereafter, that the tide had been running westward for some time before, and continued to run westward for some time after 3 P.M. on the day of Cæsar's arrival, it follows that the change alluded to must have been in the wind. For these reasons, even admitting the wind to have been south-west when Cæsar started, I cannot assent to the proposition that it continued to blow from that quarter for the next four days.

11. The second inconsistency* imputed to me is

* "Secondly, Cæsar landed, as he says, at the distance of seven miles from the place where he lay at anchor. At that distance going westward you stand beneath the church at Folkestone; and neither there nor as you pass onward to Sandgate, with reefs on the one side, and a lofty ridge of rock and clay on the other, do you see any ground more favourable for a landing than the shore beneath the

this. The Professor suggests that Cæsar cast anchor off Dover, and "landed at the distance of seven" (according to other MSS., eight miles) "from the place where he lay at anchor;" and that Romney Marsh is "not at the distance of seven, but of nearly fourteen miles from the place of anchorage." This assumes that, according to my hypothesis, Cæsar anchored off Dover; but my theory was that Cæsar anchored not off Dover, but off Folkestone, which would be the natural port from Boulogne, as we learn from the quaint language of Leland, "Folkestan," he says, "by al gesse stondeth very directly upon Boleyn." Now, from Folkestone to the seashore, off Limne, is just eight miles. All that Cæsar relates of his first anchorage is, that the coast which he approached was hemmed in by steep cliffs, "montibus angustis continebatur," iv. 23; and this description answers equally well to any part between Sandgate and the South Foreland. It must be confessed that in my Essay I had spoken in rather unguarded language of Cæsar's fleet being off Dover, and a cursory reader might easily mistake my meaning, but the whole context showed clearly that the anchorage was placed by me not off Dover, but off Folkestone; and, accordingly, in the chart prefixed to the work, the lines of both voyages were drawn by me from Boulogne to Folkestone. The second objection of the Professor, therefore, falls to the ground, as based upon a misapprehension of my theory, though, of course, I take no small blame to myself for not having employed more definite language.

cliffs at Dover. In short, the nearest point at which Mr. Lewin is contented to place the landing is in Romney Marsh, at the distance, not of seven, but of nearly fourteen Roman miles from the place of anchorage."

I may here observe, that although the landing was placed by me on the part of Romney Marsh which lies opposite Limne, it is impossible, in my opinion, to point out with any certainty the precise spot. The debarcation may, perhaps, have been at Hythe, which is also twelve miles from the Stour at Wye, and agrees in every particular with Cæsar's description. At whatever point the debarcation was effected, the first arrival and anchorage must be fixed eight miles to the east of it, and therefore somewhere between Folkestone and Dover.

The third alleged inconsistency* is of a more com-

* "Thirdly, Cæsar drew to land, 'aperto ac plano littore,' iv. 23, or, as elsewhere described, 'in littore molli atque aperto,' v. 9, that is, on a gently sloping coast, free from rocks and overhanging hills. The shore of the present Romney Marsh, and a considerable part of the Marsh itself, are evidently of recent formation. The deposits from the river by land, and shingle from the sea, appear to have employed themselves in past ages in converting a shallow bay into what is now a drained and cultivated level, but was in mediæval times a trackless swamp. Beyond Hythe, the low ground, together with the promontory beyond it, is still advancing into the sea, and the line of shore turns towards the south, leaving the ridge of hill, which accompanied us from Folkestone, to continue in its westward direction and to run inland. Here, doubtless, in the days of the Romans, was a considerable creek, the northern shore of which was bounded and overlooked by the same ridge of which we have been speaking, and the other sides would probably be swamp. That the ridge was the boundary on the north may be inferred from the fact that on this same ridge, at the distance of about three miles from the present shore, stands the village of Lympne, the ancient *Portus Lemanis*, one of the three principal harbours on this coast resorted to by the Romans in later times, and recorded in the Itineraries of Antoninus. Would such a creek, either on its northern rocky margin or elsewhere, afford such a landing-place as Cæsar describes in the words 'aperto ac plano littore'? Mr. Hussey says of it, 'At Hythe, or rather at Lympne, a reasonably good harbour pro-

plex character. The Professor states the requirements of Cæsar's landing-place to be, that it should have "a gently sloping coast, *free from rocks and overhanging hills;*"— that "a considerable part of the Marsh itself (Romney) is evidently of recent formation;"— that at Hythe, "doubtless, in the days of the Romans, was a considerable creek, the northern shore of which was bounded and overlooked by the same *ridge* (viz. the line of cliffs running from Folkestone), and the other sides would probably be *swamp;*"— and then he asks, "would such a creek, either on its *northern rocky margin* or elsewhere, afford such a landing-place as Cæsar describes in the words '*aperto ac plano littore*'? and in the Marsh itself," he says, "it is impossible to suppose that Cæsar would have disembarked." The upshot of the argument, then, appears to be, that Cæsar could not have landed in the creek, because the northern margin was rocky, with an overhanging hill; and that he could not have landed on the Marsh itself, because it was a swamp. Let me first speak of the rocks. The Professor had apparently not visited Limne, and he has therefore fallen into the not unnatural error of supposing that the ridge of rock from Folkestone to Hythe was continued to Limne, whereas just before Limne the formation changes, and at Limne itself, instead of the supposed rocks, there is a soluble clay. I may mention, as a curious instance of the softness of the

bably existed; but the ground abutting upon it does not in any degree possess, or appear to have possessed, the requisite peculiarities; and a movement from hence would have brought the Roman fleet to the shore of Romney Marsh, where it is impossible to suppose that Cæsar would have disembarked. Neither is it credible that he could in the first instance have steered to Romney or any other spot within the limits of the Marsh.' (Archæol. Cant. vol. i. p. 101.) I assent to these observations of Mr. Hussey."

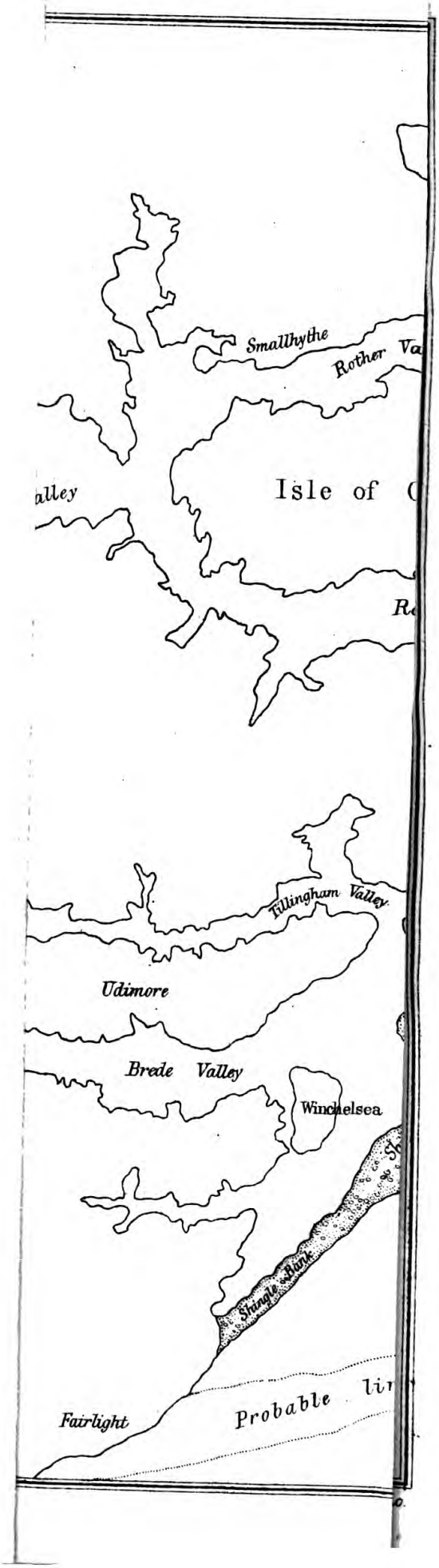
soil, that the Romans erected on the slope at the north of the supposed creek an extensive fortress, now known as Stuttfall, and from the repeated slips of ground carrying along with them houses and trees, the walls of Stuttfall are now so dislocated that the original form of the castrum can scarcely be traced. It is even a current tradition that Stuttfall once stood on the *summit* of the hill, and has slid halfway down; but, although this is a vain imagination, no one can look upon the ruin without acknowledging the loose character of the soil. So much for the *rocks* at Limne, which do not exist. But as to an "overhanging hill," the Professor is quite correct, and I agree with him that a descent from ships at the foot of such a hill would have been unfavourable; but I had never asserted that Cæsar *did* land there. My theory was that Cæsar landed on the sea-shore opposite Limne, and a mile and a half from it. The debarcation of an army would require a long line of open shore, and such was that which presented itself upon Romney Marsh.

But here is interposed the objection, rather implied than directly asserted by the Professor, that although Romney Marsh is now *terra firma*, it was in Cæsar's time a mere swamp. This difficulty suggested by the Professor has given me some trouble, as I could not return a suitable answer without thoroughly investigating the formation of the level. By good luck, my friend Mr. Briggs, of the Chancery bar, who is fortunate enough to own an estate in the Marsh, introduced me to Mr. Elliott, who has been the engineer of the Marsh for the last twenty-five years, and his local knowledge, with other aids, has enabled me to arrive at, I hope, a satisfactory conclusion. I cannot here refrain from expressing the great obli-

gations I am under to Mr. Elliott for his extreme courtesy and kindness in transferring to me the fruits of his long experience, and without which I should have been quite unable to unravel the history of the Marsh.*

It is now certain, though it was long doubted, that the Marsh is absolutely and exclusively a sea deposit. This is evident from the marine shells which pervade the whole mass. The sea along this coast is commonly, and more particularly in the spring, charged with a quantity of earthy matter stirred up by the tide from the mudbanks along the shore. Occasionally the water is so foul from this cause that to bathe in it would scarcely be deemed an act of cleanliness, still less of pleasure. The sluices from the Marsh into the sea have invariably an intervening basin to break the force of the waves against the lock-gates, and in one of these basins, excavated only twenty years since, the deposit

* A stranger without local knowledge would fall into the greatest mistakes. Thus he sees west of Hythe a field in the Marsh clothed with verdure, and, observing the depression of the ground, imagines that here must have been the port of Limne, and begins to calculate how many centuries would suffice for the formation of the soil. In fact, the field was excavated many feet in depth very recently, the shingle being carried away along the canal to repair the roads; and the site of the shingle quarry was then purchased by a Mr. Marshall, who covered it with soil at a great expense, and on his death it was sold for one half what it had cost. Again, there is seen, running along the southern border of the triangular level to the south and east of Hythe, a long bank of earth, apparently for shutting out extraordinary tides; but, if so, how could the bank end, as it does, at the Elm Avenue, so that to the west of the avenue the sea would have ready entrance? The answer is that the bank originally was continued to the high shingle bed which formed the western lip of the port, and which is seen at the end of the avenue on the west; but a few years ago the bank was levelled in this part to fill up some hollows; and the mayor of Hythe, in consequence, found one day to his surprise ten inches of water in his drawing-room.


Smallhythe
Rother Va
alley
Isle of
Tillingham Valley
Udimore
Brede Valley
Winchelsea
Stangate Shark
Fairlight
Probable

from the sea has been no less than ten feet, or an average of half a foot per annum! This is under extraordinary circumstances, where the water being inclosed has time to settle; but as a general average the deposit may be taken as at least one-tenth of an inch annually. It has been ascertained, by boring at the west end of the Marsh, that the depth of the deposit is ninety feet, so that the length of time required for its elevation to the present level would, if this rate were assumed, be upwards of 10,000 years. But, in fact, such a rate is inadmissible, as the amount of deposit depends on the quantity of superincumbent water, and (the sea level being always the same) as the surface of the deposit below rose higher, the measure of water above it would become proportionably less. Besides, the precipitation of the silt is variable according to the force of current; and, from the configuration of the Marsh, the waters at a considerable depth might have been comparatively much more quiescent, and therefore less capable of holding the silt in suspension.* Had the sea not been excluded artificially,

* On the subject of sea deposit, the following extracts from Captain Washington's Report to the Commissioners for inquiring into the State of the Tidal Harbours, furnish some valuable information:—"The *maximum* quantity of suspended matter in Dover *Bay* was found at high water spring-tides, in a strong off-shore wind at west-north-west, when as much as 473 grains per cubic foot were carried along by a tide stream running at the rate of $2\frac{1}{2}$ knots an hour. The *minimum* quantity observed was on a calm day, at slack water, when 11 grains only were found. The *average* quantity of matter borne by the stream, if we include these extreme cases, amounts to $51\frac{1}{2}$ grains, and, rejecting the extreme cases (which, I have no doubt, is nearer the truth), to $33\frac{8}{10}$. . . . Although this amount of suspended matter seems large, there is reason to believe that an equal or greater quantity will be found along the whole of this coast. In Ramsgate Harbour, to the eastward, with an area of

the deposit would in the course of time have risen to the sea level; but at present the surface of the Marsh (with the exception of Lydd and Romney, which are three or four feet above high-water mark) is on an average from eight to ten feet below it.

In walking along the sea-shore from Sandgate to Dungeness, a person will observe for the first three miles a continuous bed of shingle, then Dymchurch Wall reaching to the neighbourhood of Romney, and then again a bed of shingle running out eastward to Dungeness Point. All this shingle has been laid on the top of the marine deposit which constitutes the Marsh. The accumulation of shingle along this line may be thus accounted for. The rocky cliffs to the west, at Fairlight and further down Channel, are from year to year worn away by the action of the sea, and the debris by the roll of the water is rounded into pebbles. The run of the shingle in this part of the Channel is from south-west to north-east*, and as Lydd and

42 acres, the deposit is 2 feet in depth a year; at Folkestone, to the west, with an area of 14 acres, it is the same. In Dover *Harbour*, with an area of 28 acres, there is every reason to believe it is quite as much. . . . With respect to the *rate* of stream that bears a certain quantity of matter in suspension, . . . a stream of 2½ knots an hour held the largest amount of silt yet taken up (viz. 473 grains per cubic foot) in suspension. But we find also that a tide stream of half a knot carried 30 grains (the average amount) in suspension; and even in slack water, on the surface, we found from 20 to 30 grains suspended in a cubic foot of water. There was probably, however, an undercurrent in motion. . . . With respect to the *time* required to deposit, . . . from some trials in tall glass jars, I found that, in still water, full one half of the particles (all the sand) dropped to the bottom in a few seconds."—*Report to the Commissioners for inquiring into the State of Tidal Harbours.* Appendix, p. 196.

* At Romney Hoy there is at present an eddy of the sea from the

Romney were always either islands or a submarine ridge, the shingle from the west struck upon this bank and there accumulated. Lydd and its Rhypes were probably above the sea in the times of the Romans, for both Lydd and Rhypes betray a Latin origin, the former being the corruption of Littus, or shore, and the latter of Ripæ, or banks, both words corresponding very exactly to the facts. Much of the shingle, rounding Dungeness, travelled further on in a north-east direction, and formed a spit across the front of the Marsh. Ever and anon, however, as violent winds set in from the south-east, the head of the shingle spit was turned, and branches of the shingle called "fulls" were thrown out from time to time into the Marsh to the north. Thus, in ordinary weather the spit advanced north-east, and during adverse winds was wrenched aside into the Marsh. As the spit approached the hills to the east, the entrance into the estuary became contracted, and the current of the tides in and out of the estuary became stronger, and the violence of the south-eastern gales, combined with the increased force of the currents, produced corresponding effects upon the shingle spit in its progress eastward. Thus, from Dymchurch to West Hythe we find the fulls, or offshoots from the spit, running further and further into the Marsh; and what is most remarkable is, that all these deviations of the shingle are curvilinear, and bend *westwards*, showing that they were acted upon and swept round by the current into the

projection of Dungeness Point; and, in consequence of this eddy, the eastern horn of the Hoy, called Little Stone End, advances gradually *westward*, i. e. just in the opposite direction to the run of the shingle elsewhere. The existence of the eddy is proved by the fact that fragments of wrecks which occur on the west of Dungeness Point are carried round to the bay on the east of the point.

estuary. At West Hythe Oaks (about halfway between Hythe and Limne) the shingle fulls were in time thrown up to the very foot of the hills, and thus the mouth of the estuary was closed. Had this been the only outlet, the river Limen and other streams that flowed into the Marsh would have found a vent and forced the bar; but there was another break in the shingle spit between Lydd and Romney, and when the estuary was closed at the eastern end, the waters from the hills poured themselves southward by Wainway Creek to Promehill, and thence to Romney Hoy. Along this line are still pools of stagnant water, which are never dry, called Fleets. There was probably no opening in the shingle bank between Lydd and Rye, the harbour of Rye being formed not by any stream from the east, but by the Brede and Udamore Channels from the west. The hypothesis that when the mouth of the estuary was closed towards the east, the sea for many centuries still flowed into the Marsh, and found an entrance and issue towards the west, is proved incontestably by this remarkable phenomenon. While Romney Marsh Proper slopes northward towards the hills, it also slopes westward towards the Rhee Wall, the surface at West Hythe Oaks being highest, and gradually descending towards the Dowles, which is the lowest. So long as the eastern mouth of the estuary was open, the current from the inset and outset of the tides would prevent the deposit of silt, and keep the parts adjacent lower than those more distant. The greater elevation of the soil towards the east of Romney Marsh Proper can, therefore, be only accounted for by the fact that when the shingle "full" had been thrown quite across the Marsh at Westoaks, and so closed the mouth of the estuary at that end, the sea still entered from the west,

and that, thenceforth, the process of silting went on for many centuries in usual course, viz. most rapidly towards the east, where the water was tranquil, and less rapidly towards the Rhee Wall, in which direction was the scour of the current.

At West Hythe Oaks, where the shingle has touched the hills, the fertile soil of the Marsh ends towards the east, and the jurisdiction of Romney Marsh Proper extends no further. To the west of this, the Marsh is a rich mould deposited by the sea, while all to the east, as far as Sandgate, is (with the exception of a narrow strip to the south and east of Hythe, between the sea-beach and the hills) one vast bed of shingle. The military canal runs round the whole Marsh, and it will be seen that the spoil thrown up to the west of West Hythe Oaks is Marsh mould, while that thrown up to the east is almost all shingle. Another circumstance which must not escape observation is this:—Up to West Hythe Oaks all the shingle fulls curve, as we have said, westward, as bent round in that direction by the inset of the tides; but from West Hythe Oaks to Sandgate all the shingle fulls curve eastward; that is, the mouth of the estuary, when they were formed, had been closed, and the fulls therefore lie in ridges as they would be deposited by the action of the sea, uninfluenced by any stream inwards.

While Romney Marsh, to the west of West Hythe Oaks, is considerably below high-water mark, all this shingle bed from West Hythe Oaks to Sandgate is above high-water mark, and the latter area is so extensive that it cannot have been cast up since the days of Cæsar. The supply of shingle from the sea, at the ordinary rate, would not yield anything like so much. Besides, we know that, at least for many centuries past,

the sea, instead of accumulating shingle in this part, has, from the growth of Dungeness Point, which intercepts any new supply, been yearly carrying away the shingle eastward, and so wasting the beach between Dymchurch and Hythe.

The narrow strip to which we alluded as lying at Hythe, between the shingle spit and the hills and an exception out of the shingle bed, is a low tract of sea deposit kept free from shingle by the action of the three streams which descend down the three valleys at the back of Hythe. As the waters must always have run to the sea, they prevented the shingle spit in front from closing upon them, and the tide, of course, entered by the same channel by which the streams discharged themselves, and thus along the foot of the hills at Hythe, there was, behind the shingle spit, a narrow gut which served as a port. Two islands were anciently formed by the channels of the streams on their way to the sea, and the traces of them have only recently disappeared (see post). The mouth of the gut, that is of the port, was at the end of the present Elm Avenue, which connects Hythe with the seaside, and on the right hand, or west. A few years since, the corporation, at a great expense, filled up the hollow to nearly a level with the adjoining ground, but the channel, with a high shingle bank on each side, is still very distinguishable. In the sixteenth century, Leland describes the haven accurately as "crooking so by the shore along, and so backed from the main by shingle, that small ships may come up a large mile as in a sure gut." Eventually the streams were found insufficient to keep the harbour scoured, and it was silted up, and so became useless. West Hythe suffered first, as the silt at the extremity of the gut, where there was the least scour, accumulated at the

greatest rate. Hythe, in the course of a few centuries, was also consigned to its fate, and when the military canal was cut, the three streams were turned into it, and all between the canal and the sea then became, as it still is, dry ground.

That the great shingle spit which we have been describing once reached all along the border of the Marsh, from Lydd on the west to Sandgate on the east, but with a break between Lydd and Romney, and another at Hythe, at the harbour mouth, cannot be doubted. It still stretches across Lydd and Romney (which are both built on it), and runs as far as to the *western* end of Dymchurch Wall. From the *eastern* end of Dymchurch Wall to Hythe it spreads itself out as far as the hills, a breadth from two miles on the west to half a mile on the east; and then, shutting in a miniature Romney Marsh to the east of Hythe, continues on to Sandgate. The only interruption at present of the shingle spit is along the course of Dymchurch Wall; but that it anciently existed along this tract also is evident; for "where Dymchurch Wall is now erected, there are shingle banks under and inland of the present wall, throughout the whole length, nearly at right angles to the line of coast, exactly in the position into which they would be thrown by an adverse wind and strong current on the end of the 'full,' while in a state of formation."* The cause of interruption of the shingle spit along Dymchurch Wall was this:—At the same time that the shingle spit extended itself longitudinally towards Hythe, it also, at Dungeness, advanced laterally to the south. At the present day, it has elongated itself as far as Dungeness Point, and is still pro-

* Elliott's paper on Romney Marsh in sixth vol. of Transactions of Civ. Eng.

gressing in the same direction at the rate of two or three yards per annum.* The consequence of this gradual projection of Dungeness Point was, that the headland thus thrown out intercepted more and more the run of the shingle from the west to the eastern parts of the Marsh; and while the shingle in the centre of the Marsh continued moving on eastward, and accumulating towards Hythe, there arrived no new supply of shingle from the west; and thus the shingle bank about Dymchurch, which had originally been a high and sufficient rampart against the sea, became weaker and weaker. The diminution of the shingle about Dymchurch was at first remedied by what are called "insett walls," *i. e.* subsidiary walls behind the shingle

* "It appears that since the erection of Dungeness Lighthouse, in 1792, the Ness has advanced seaward about 121 yards, or at the rate of seven feet a year. . . Dungeness Lighthouse was rebuilt, in 1792, at 600 yards nearer the shore than its old site (as we learn from an inscription in the lighthouse), at 100 yards' distance from the sea (whether at high or low water is not stated, but we will assume the latter). The date of the erection of the old building is not known; but from Jeake's Charter of the Cinque Ports, written in 1678 (p. 124), it is conjectured that it was built in the time of James I., say 1603. Supposing that the old lighthouse was erected at the same distance from the sea as the present one, that is 100 yards, it would give us 7 ft. 10 in. as the annual rate of increase of the Point during 190 years. Now, from actual survey of Dungeness Point made in Her Majesty's ship 'Blazer' in November 1844, we find that the distance from the centre of the lighthouse to low-water mark of ordinary spring-tides is 221 yards. Consequently, if, as stated above, the present lighthouse was built, in 1792, at 100 yards from the sea, it is manifest that the Ness has advanced seaward 121 yards, or at the rate of seven feet a year. This is certainly a remarkable coincidence."—*Extract from Captain Washington's Report to the Commissioners for inquiring into the State of Tidal Harbours.* Appendix, p. 196.

spit, for the purpose of preventing any extraordinary floods from the sea. Then "groynes," or "knocks," were employed to check the run of the shingle eastward. Then, as the natural barrier still diminished, recourse was had to brushwood piles and overlaths, called "arming." Then, stronger timbers, brought from the hills surrounding the Marsh, were introduced. But still the mischief grew until about a quarter of a century ago, when the present wall was constructed of stone under the superintendence of Mr. Elliott, the eminent Marsh engineer. Such is the power of the sea that the repair of the wall still costs annually about 5000*l.* The time may perhaps come when the pressure of the ocean can no longer be resisted, and the Marsh, which was formerly reclaimed from the waste of waters, may again be submerged.

By whom, or at what time, Romney Marsh (all of which, *within the shingle spit*, is under high-water mark) was reclaimed, we have no historical record, except as to the western portions. We have, however, materials for forming a judgment. The Marsh is distributed into two grand divisions by what is called the Rhee Wall, running from Appledore to Romney. All on the east is Romney Marsh Proper, and the western portion consists of Denge Marsh to the south, Guildeford Marsh to the west, and Walland Marsh to the west of Romney Marsh and the north of Guildeford Marsh. Romney Marsh Proper was certainly inclosed the first, and, what is very observable, the whole of it must have been reclaimed at once, for there are no internal walls or fencings on the eastern, as there are on the western side of Rhee Wall. The exclusion of the sea from Romney Marsh Proper was a grand work, and the general, and probably the correct, belief is, that the enterprise was

undertaken and carried out by the Romans.* It is certain that, during the time of the Romans, this part of the Marsh was long under cultivation, as Roman remains are found over the whole. At Dymchurch, for instance, was an extensive Roman pottery. The sea there had thrown up a fine white putty-like clay, and also a clean sharp sand, and these two materials offered peculiar facilities. Even at the present day the area of the manufactory is easily traceable, and fragments of the art are found scattered about in great abundance, many of them as fresh as if they had only just parted from the fingers of the potter. At Ivychurch also, in the very centre of the Marsh, the plough has very recently turned up considerable quantities of Roman pottery, relics of the former occupiers.

The mode of reclaiming Romney Marsh Proper was this:— On the *south*, the shingle spit was of itself, at that time, a sufficient rampart against the sea; as regards the *east*, we have seen that the shingle spit, in its progress from Lydd eastward, had been ultimately thrown quite across the Marsh at West Hythe, up to the foot of the hills, and thus closed the mouth of the estuary at this end. But though the shingle field reached here to the foot of the hills, yet as the bed of shingle in this part, for about sixty yards from the hill, was, from the streams descending from the uplands, kept lower than elsewhere, there was danger lest extraordinary floods might sweep over the shingle into the Marsh. In order, therefore, to guard against any mishap of the kind, a wall was carried across

* Mr. Smiles, in the "Lives of the Engineers," expresses an opinion that the Marsh was reclaimed before the invasion of Cæsar by the Belgæ, who had brought the art of embanking with them from the Netherlands.

as a barrier against sudden irruptions: at least, opposite West Hythe Oaks, at the end of the jurisdiction of Romney Marsh Proper, is a bank of earth at right angles to the hill, and running out southward till it joins the shingle of a higher level. On the *west* it was necessary, for shutting out the sea from Romney Marsh Proper, to carry a wall from Appledore to Romney. The Marsh also, when inclosed, would require to be drained by numerous sluices, and the main channel in which they terminated could only be kept open and free from silt by constant scouring. These objects were attained by one remarkable piece of engineering. The river Limen, now called the Rother*, was the drain of the Audred Forest, and in its course eastward divided itself at the Isle of Oxney into two branches: one, the smaller, flowing along the *south* of the island into the estuary, and thence into the sea, between Lydd and Romney; and the other, the main channel, flowing along the *north* of the island into the estuary, a little below Appledore, towards Snargate. The old bed of the Limen, along the north of Oxney Island, can still be distinctly traced to near Snargate, where its course abruptly ends. The reason is, that here was the mouth of the river into the estuary. This is no vague surmise, but can be proved to demonstration. Thus, to the south of Appledore, is the very lowest part of the Marsh, either excavated by the torrent from the river, or exempted, by the current, from the process

* Ravennas (in the seventh century) mentions, amongst the rivers of Britain, Durbis (Dover), Lemana, Rovia. The Lemana was the Limen, which then discharged itself along the Rhee Wall at Romney, and the Rovia was the river at Rye, consisting of the Brede and Udamore streams, which scoured the harbour there until the time of Edward I., when the Limen also fell into the same channel.

of silting, which was continually raising the level in the neighbourhood. Not only so, but we now find the whole country about the mouth of the river, near Appledore, in the circuit of about a mile (and at no other part) replete with trees of oak, alder, and birch, some of great size, and evidently, from their position, drifted from a distance, and deposited where now found.* The presence of *oak trees* is remarkable, and decides at once that the trees are not *in situ*, for, singularly enough, there is something in the Marsh mould uncongenial to the oak, so that not a single specimen of it can be discovered throughout the whole level, with the exception of one or two, at the spot called West Hythe Oaks, and so named from this unusual phenomenon.

The plan pursued by the Romans was the excavation of a deep channel, with high banks or walls on each side, and nearly in a straight line across the Marsh, from the mouth of the Limen, near Appledore, to Romney. The width was from eighty to one hundred feet, and the height of the walls varied according to the level of the land, being highest towards Appledore and lowest towards Romney. The Marsh, also, was at the same time intersected by sluices, which emptied themselves into the new cut; and the latter was scoured by the river Limen, which was at least partially diverted into it, and so conducted to Romney.

By these means, nearly 24,000 acres of rich fertile ground, now called Romney Marsh Proper, were at once reclaimed, and the possession of them must have amply repaid the labour and expense of the bold adventurers. The new Marsh, from those who had

* Report of Roman Castrum at Lympne, by C. R. Smith and J. Elliott.

reclaimed it, was called the Roman, or Romney Marsh, and the cut from Appledore to Romney was called, in the language of the Romans, "Rivi Vallum," or Rhee Wall. This new inclosure, intersected by countless sluices, is perhaps what is referred to in the inflated account of Nennius, who wrote A.D. 858. In his "Catalogue of British Wonders," he says, "The first marvel is the Lommon (lege Limen) Marsh, for in it are 340 islands, with men living in them! It is girt in by 340 rocks! and in every rock is an eagle's nest!! and 340 rivers flow in it! and there goes out of it into the sea but one river, which is called the Lemn (lege Limen)!" *

The changes introduced by this diversion of the river, and the exclusion of the sea, were striking. The issue of the Rother at Romney formed a bay, offering safe anchorage to vessels; and, at the same time, the bed of the river served as an inner haven, and masts of ships might be seen in long array, stretching across the Marsh to Appledore. Ptolemy the geographer, A.D. 120, in describing the southern coast of Britain from west to east, speaks of καινὸς λιμήν, or New Port, as lying at about equal distances between the Arun and North Foreland; and we may hazard the conjecture that the port intended was the one newly formed at Romney. It was probably up this channel called the Limen Mouth that the Danes sailed in the ninth century. The Saxon Chronicle relates (A.D. 893) that they embarked at Boulogne, and "came to land at Limen Mouth with 250 ships. . . . On this river they *tugged* up their ships as far as the Weald, *four miles* from the *outward harbour* . . . then, soon after that, Hasten, with eighty ships, landed at the mouth of

* Nennius, c. 80.

the Thames, and wrought himself a fortress at Middleton, and the other army did the like at Appledore." The distance of Appledore from Romney is no doubt somewhat more than four miles, viz. about five miles; but great exactness is not to be expected from a record of the mediæval times. The remains of the fortress erected by the Danes at Appledore are still to be seen about a quarter of a mile to the west of the church.

As to the portion of the Marsh to the *west of Rhee Wall*, the whole of it is a complete network of seawalls and sluices, without any uniform or systematic plan, thus showing that it has been reclaimed by piecemeal at different times, and by private enterprise. As no Roman remains are found in this part, the drainage of it was, presumptively, after the time of the Romans. Denge Marsh was probably the first reclaimed. Yet, even as late as the eighth century, it is said that Lydd was exposed to the sea, not only on the east, but also on the north*; and the hollow of an arm of the sea may be traced to the present day in this direction. Walland (or more properly Wall-end Marsh, *i. e.* the marsh at the end of the old Rhee Wall) was the next to be reclaimed; and the last to be inclosed was Guildeford Marsh. The innings of Walland Marsh tell some of them their own tale. Thus, there is St. Thomas's Innings, so called as inclosed by Thomas à Becket †, about

* In A.D. 774 King Offa made a grant of land, "in occidentali parte regionis quæ dicitur Mersware ubi nominatur ad Lyden. Et hujus terræ sunt hæc territoria: mare in oriente in (qu. lege et) aquilone; et ab austro terræ Regis Edwy (nominant Dungmere) usque ad lapidem oppositum in ultimo terræ (Stone End); et in occidente et aquilone confinia regni ad Bleechinge."—*Somner's Roman Ports*, 50.

† "A very large portion of Walland Marsh did belong to the Church, but this is not the case now to any great extent."—*Note by Mr. Elliott.*

A.D. 1162; Baldwyn's Innings, so called from Baldwyn, another Archbishop of Canterbury, who flourished A.D. 1184; Peckham's Innings, from another archbishop who flourished A.D. 1229; Boniface's Innings, from another archbishop who flourished A.D. 1250. The Low tract from Snargate to Appledore, and running thence towards the south-west, was inclosed A.D. 1447, by Sir John Elrington. The more recent reclamation of the part to the west of Rhee Wall, as compared with that to the east of Rhee Wall, is evinced also by this circumstance, that while in very early times, viz. A.D. 1257, Romney Marsh Proper is stated to have been "governed time out of mind by ancient and approved customs," the portion to the west of Rhee Wall had no law until A.D. 1288, when a commission was issued directing proceedings to be taken according to the customs of Romney Marsh Proper.*

It was in the reign of Edward I. that the western portion of the Marsh experienced a complete metamorphosis. At that time an extraordinary irruption of the sea occurred, destroying whole villages, and breaking down the artificial banks of the Limen. The river being thus set free, poured itself into Walland and Guildeford Marshes, and found its way through the shingle bank into the sea towards Rye, and so fell into the same channel with the Rother, which had previously consisted only of the Brede and Udamore streams, but now absorbed the Limen also, which thenceforth lost its ancient name. The old bed of the Limen from Appledore to Romney still exists, and the dry channel in the Marsh, when I saw it, was a long extended corn-field, shut in between high banks covered with verdure. The bed of the

* Somner's Ports and Forts, p. 55.

channel was actually higher than the level ground on either side, but whether from the silt of the sea in ancient times or from the falling in of the banks may be left to conjecture.

Now that we have sketched the early history of the Marsh, we can picture to ourselves with some confidence, what were the features of the coast at the time of Cæsar's arrival. From Dungeness to the eastern end of Dymchurch Wall, extended a long spit of shingle, intersected only by a channel between Lydd and Romney, being the mouth of the estuary which lay behind the shingle spit. From the end of Dymchurch Wall began a broad shingle field, reaching in width in an irregular line to West Hythe Oaks, halfway between Hythe and Limne, and stretching in length from the end of Dymchurch Wall to Sandgate, but broken at Hythe by an opening, which led to a narrow gut which ran along the foot of the hills and was fed by the three streams which descended from the heights at the back of Hythe. All this shingle field from the end of Dymchurch Wall to Sandgate was perfectly flat and *above high-water mark.* The devious courses of the streams from the hills formed, by their tortuous channels through the shingle, two or three small islands. This narrow gut was the port afterwards known as "Portus Limanis." Hythe, in Saxon, is nothing more than the translation of the Latin Portus, and was substituted for it by the Saxons. The notion that Portus Limanis was at the foot of Limne Hill is wholly untenable. *The sea could not have flowed to the foot of Limne Hill without inundating the whole Marsh.* There could not, therefore, have been a port at Limne after the inclosure of the Marsh. On the one hand, from the remains found scattered over Romney Marsh Proper, it must evidently have been long under

cultivation in Roman times; and, on the other hand, the Portus Limanis must have continued such until the abandonment of Britain by the Romans, or nearly so, as we find mention made of Portus Limanis in the Antonine Itinerary, and by the name of Limanis, in the Notitia, and in Ravennas. The inclosure of the Marsh, and the Portus Limanis were, therefore, co-existent; that is, the Portus could not have been at the foot of Limne Hill, as in that case the sea would at the same time have covered the whole Marsh. It is observable that the straight line of Stone Street, the old Roman road from Canterbury to the coast, strikes West Hythe, and not Limne. As to the great Roman castrum of Stuttfall, which stands on Limne Hill, it was for the protection, not of the port, but of Saxonicum littus, *i.e.* to guard the coast against the Saxon buccaneers, who, in the latter days of the Roman domination, had commenced their incursions, and might land equally well upon any point along the great level of the Marsh.

The breadth of the Marsh at present is, at the end of Dymchurch Wall, about two miles, and at Hythe about half a mile. But in the time of Cæsar the shingle field must have been considerably wider. The supply of shingle from the west has been cut off by the gradual elongation of Dungeness Point, while the movement of the shingle eastward along Romney Marsh still continues, and the spit about Hythe, no longer replenished from the west, has for some centuries been losing ground. On comparing a map of the Marsh, in A.D. 1617, with the present state, it would appear that, during the last 250 years, the sea has carried away the shingle at Hythe to the extent of about a quarter of a mile.* At the same rate the shingle, in the time of

* See the map in sixth vol. of Transactions of Civil Engineers.

Cæsar, would have extended out to sea a mile and three-quarters further than at present. However, according to Mr. Elliott, Dungeness Point now advances about seven feet annually, but, in ancient times, it advanced, in Mr. Elliott's opinion, much more rapidly—say three yards annually—and he estimates that the projection from Lydd to the existing point has been the work of about 1900 years. As the abstraction of the shingle at Hythe would be constant, but the new supplies of shingle from the west would be less and less as the point of Dungeness was pushed forward, we should not be justified in assuming the present rate of abrasion at Hythe as the measure of abrasion for the whole period since the age of Cæsar. If we assume that the triangular level, from the end of Dymchurch Wall to Shorncliffe, has been wasted to the extent not of one mile and three-quarters, but of at least half a mile, we shall probably be within the mark.

It is plain from the foregoing facts that the probable state of the Marsh in the time of Cæsar, so far from offering any objection to the hypothesis that he landed there, furnishes the strongest argument in support of the theory. Let us follow the account of the commentaries step by step. Cæsar tells us that at the place of debarcation was a flat and open beach, "aperto ac plano littore," iv. 23, and what can answer better to this description than the perfectly level and bare shingle field between Sandgate on the east, and the end of Dymchurch Wall on the west? But the shore was also "open and *soft*" ("molli atque aperto," v. 9), which I take to mean free from rocks, and all along the Marsh not a rock or reef is to be seen. Again, when the Romans reached the shore, they stood "in arido," iv. 26, and drew up their ships "in aridum," iv. 29, and this shingle field is

sound and dry, without any mixture of ooze; though where the streams from the hills formed the port, there was no doubt marshy ground, as is also required by the accounts of Lucan, Plutarch, and others. It is a circumstance not to be passed over, though slight, that Cæsar, in his first expedition, and when he scarcely moved from his camp, describes the British *esseda* or war-cars as running down steep and precipitous places, "declivi ac præcipiti loco," iv. 33, and just such declivities are in this part of the Marsh on the north. Again, what is Cæsar's account of the debarcation itself? We read that the shore sloped so gradually into the sea, that the heavy transports could not approach the seabord, and that the Britons, partly on horseback and partly on foot, rushed into the water towards the ships, and, pouring in a volley of darts and javelins, so cowed the Romans that they were afraid to leap overboard (iv. 24). As the triremes drew much less water, and could come nearer to the beach, Cæsar ordered them to retire far enough back to get their full impetus, and then to charge, beyond the transports, on the flanks of the Britons. This movement had the desired effect, and the Britons, startled by the novel and formidable appearance of the triremes, and scared at their rush through the water, and receiving a storm of stones, arrows, and javelins from the military engines on board, were fain to give ground; when the standard-bearer of the famous tenth legion seized the favourable moment, and throwing himself into the sea made for shore, and his own men and the troops from the other ships were obliged from shame to follow his example (iv. 25). That there was some little space between the transports and the beach is evident from the expression that the Romans, after leaping into the water, "hostibus appro-

pinquârunt," iv. 25. As the Romans struggled to land in detached parties, they were sorely pressed here and there by superior numbers, and Cæsar sent succour in small boats where it was most wanted. As soon as the legions stood firmly on the beach, and formed in rank, they drove the enemy before them. This descent was made between 5 and 6 P.M., with high water at 8½ P.M., and, therefore, at the commencement of the flood, *i. e.* when the tide began to rise; and at this time there would be off Hythe just such a gradually shelving shore as Cæsar depicts. The heavier vessels would not be able to near the shore, and only small boats could advance to the water's edge. To this day the colliers which come to Hythe, and which may be taken to represent very fairly the transports of Cæsar, cannot approach the shore near enough to unload, except at spring-tides. It was this flatness of the shore which induced Cæsar, when preparing for his second expedition, to construct his vessels of greater breadth and of less draught of water, that the difficulty which had attended his former debarcation might not be repeated.*

Again, Cæsar, after landing, pitched his camp on the sea shore, and Valerius Maximus relates an anecdote that Scæva, with four others, was posted as a picquet on an ait for observing the enemy who were in occupation of a neighbouring island separated only from the ait by a channel subject to the flux and reflux of the tide. When the sea had sufficiently receded, the Britons, who were familiar with the localities, rushed across the channel to capture the detachment; but Scæva, after prodigies of valour, swam back to the camp (Val. Max. lib. iii. c. 2), and presented himself before Cæsar,

* "Ad celeritatem onerandi *subductionesque* paullo facit humiliores," v. 1.

who is said to have personally witnessed the exploit (Plut. Cæs. 16). On the assumption that Cæsar landed at Hythe, the islands thus referred to would be those formed by the streams from the hills in this part and only lately effaced, and as the camp was close at hand, Cæsar could very well have been a spectator.

Again, the triremes which Cæsar had drawn up upon the beach, "in aridum subduxerat," iv. 29, were filled with water by the spring-tide, increased by a violent gale, "tempestas afflictabat," iv. 29; and this is just what would occur at Hythe, where the shingle bank keeps out the ordinary tides; but if there be a strong south-east wind at high tide, the sea pours over the shingle, so that vessels lying on their sides upon the flat beach would be filled with water.

About a fortnight or three weeks after Cæsar's arrival on the first invasion, the Britons, taking heart, formed the design of storming the camp, when Cæsar, thinking it better policy to deliver rather than to sustain the assault, drew out his army in battle array, and a fierce engagement followed. Roman discipline prevailed, and the Britons were routed with considerable slaughter (iv. 35). No traces of the camp itself can be found, as it was probably pitched by the water's edge, and this part of the coast has for centuries been abraded by the action of the sea. But it is at least a singular coincidence that, wherever you dig in the field to the south and east of Hythe, on the triangular level there, human bones, and unquestionably of men slain in battle, are brought to light. They are exclusively the bones of grown men, buried only a few feet below the surface, and without any care, in all conceivable positions.* I do not affirm that these are

* I am indebted for this information to Mr. Elliott.

the remains of the Britons who fell in the conflict with Cæsar, for they may be the bones of either Saxons or Danes who afterwards landed at the same place; but, even on the latter supposition, we may fairly draw the conclusion, that if Saxons or Danes chose this spot as favorable for a debarcation, Cæsar, ages before, may have made a similar descent. It may be objected that the field to the south of Hythe is distinct from the great shingle bed, and below high-water mark, and must, therefore, have formed part of the port, or have been an estuary; but as the port continued until Leland's time, in the sixteenth century, and no battle has been fought there since, the field must, at all events, have been dry ground contemporaneously with the existence of the port. Why may it not have been so even in the time of Cæsar? It was certainly dry at low water, and if the Britons in his day could send a navy to aid the Veneti in Gaul *, they could unquestionably have possessed the skill to embank the port and drain the land in the immediate neighbourhood.

I cannot help thinking that this port of Hythe, the old Portus Limanis, was amongst the inducements which led Cæsar to disembark on this part of the coast. If the survey made by Volusenus was worth anything, it must have contained a notice of the haven just opposite Boulogne. Besides, we read that Cæsar consulted the merchants who traded with Britain, and to whom the port of Hythe was familiar, and what was the result? Cæsar writes that he could not learn from them "what ports were adapted to the reception of a multitude of vessels of the *larger sort*."†

* B. G. iii. 9.

† "Qui essent ad majorum navium multitudinem idonei portus," iv. 20.

that is, what ports there where in which a fleet of war vessels could anchor without being left aground by the ebbing tide. Does not this imply that Cæsar was well enough informed of the smaller havens on the British coast, such as that at Hythe? The narrow and winding gut which constituted the port was, of course, little capable of receiving a fleet. Indeed, as it was a tidal harbour, and could only be entered and quitted at high-water, and as its banks were lined by a hostile population, the mooring of the Roman vessels within it would have been certain destruction. On both invasions, the Britons assaulted the very camp of Cæsar, (iv. 34, v. 22); and had his fleet entered the haven, it must infallibly have been burnt, and perhaps the Roman Empire had not been founded on the plains of Pharsalia. Cæsar's ships were his fortunes and his life, and, accordingly, the wary commander first stationed them in the offing; and then, when the elements were found irresistible, he drew them up on shore, and united them to his camp by strong lines of fortification. But though the narrow and winding harbour of Hythe was no asylum for his fleet, it would be highly useful for keeping up his communication with the Continent, from which all, or the greater part of his supplies, were to be drawn, and Hythe and Boulogne must, from their situations, have always been the most convenient ports of passage between the two countries.

4. The fourth objection* of the Professor presents

* "Fourthly, in his second expedition, Cæsar departed from the same harbour, and landed on the same shore, as in the former instance. He put off at sunset, 'leni Africo provectus' (v. 8), and if he sailed in the direction of the wind, he went up the Channel. He was carried onward by the wind until midnight, when, the wind dropping, he allowed himself to float with the tide. The tide

no difficulty. He argues that Cæsar, on his second expedition, set sail with a south-west wind, "*leni Africo*," and, therefore, up Channel; that at midnight the wind dropped, when "*he allowed himself* to float with the tide," which "carried him *so far* out of his course that, at daylight, he found himself leaving England in the distance, on the left hand;" and then he asks, "Is this consistent with the intention of sailing from France to Romney Marsh, a place nearly due west, and for which he must make *across* the stream instead of *floating along with it?*". The meaning of the Professor, I understand to be, that Cæsar *intended to go along* with the tide, but that it carried him *too far* in that direction. But who can assent to this construction? Cæsar tells us plainly that the tide drifted him from the first *out of his course*, "*cursum non tenuit*," v. 8, and that, when he discovered the drift, he followed the change of tide back again, "tum rursus æstûs commutationem secutus," v. 8. The drift, therefore, eastward, and Cæsar's resumption of his former course by rowing back, prove that the landing-place for which he was making was some point to the west. Besides, how could the drift of one tide, by any possibility, have carried him through the straits of Dover so far beyond Deal, that he should consume eight hours in rowing to Deal, though the tide is said to have been in his favour?

These are all the supposed inconsistencies pointed out by the Professor, and, unless I deceive myself, they have been satisfactorily explained. We have now to

carried him so far out of his course, that, at daylight, he found himself leaving England in the distance, on his left hand. Is this consistent with the intention of sailing from France to Romney Marsh, a place nearly due west, and for which he must make across the stream, instead of floating along with it?"

follow him into a much wider field, viz. the currents of the Channel. I had argued that on 27th August, B.C. 55 (being the fourth day inclusive before the full moon on the night of 30th August, iv. 28, 29), the tide, at 3 P.M., was running, off the coast between Dover and Folkestone, towards the *west*, and that Cæsar consequently sailed in that direction; towards Romney Marsh, and not towards Deal.

The Professor* admits the *primâ facie* credibility of

* "I am well acquainted with Folkestone and its harbour; and there are there shrewd and sensible men whose business lies upon the water, and is constantly impeded or promoted by its currents. To men of this description I put several questions, and received from them deliberate answers. I give the two following, merely observing that the questions were given and the answers returned in writing: —

"How soon after high-water does the stream begin to run down Channel? Answer: In two hours.

"How long afterwards does it continue to run down Channel? Answer: Five hours.

"This information differs materially from the notices of the tide-tables. It gives two hours less for the turning of the stream after high-water, and again two hours less for the continuance of the stream down Channel afterwards.

"We will take as our basis, for the moment, the information obtained from Folkestone, and see what effect it would have upon the solution of the problem. There can be no difference of opinion as to the time of high-water. On the 27th of August, 55 B.C., it was 7.31 A.M. In two hours, that is at 9.31, the stream began to run down Channel. It continued so to run for five hours longer, that is, until 2.31 P.M. It was then slack-water for about a quarter of an hour, and at 3 o'clock P.M. the stream had turned, and was running up the Channel.

"But in the course of the inquiries made at Folkestone, I met with certain distinctions which appeared to be of great importance in the determination of this question. I found that there was a difference, and in some cases a great difference, between the times of the stream in-shore and in mid-channel. I had reason to believe that though the tide in mid-channel turned four hours after the Folkestone high-water, the tide in-shore turned two hours and a half after that time.

the Admiralty Tables, which I had made the basis of my argument, but informs us that, being well acquainted

Is it not possible that the basis obtained from the tide-tables expresses the rule which prevails in the open Channel, and that Cæsar having anchored off Dover, and probably within a short distance from the land, was governed by the exceptionable tide which prevailed in-shore?

"It is evident that the rule which holds generally in the Channel is the one which it was the express business of the tide-tables to record. But it is indispensable for the purposes of an inquiry connected with Cæsar's departure from his anchorage, that the circumstances of the in-shore tides should be known and taken into account. Captain Beechey, who made the survey of the Channel, under the direction of the Admiralty, was applied to on this point by the Astronomer-Royal, and gave him the following answer:— 'At full and change of the moon, the stream makes to the westward, off Dover, at the distance of a mile and a half from the shore, about three hours ten minutes; and there does not appear to be much difference, in this part of the Channel, between the turn of the stream in-shore and in the centre' (Archæol. vol. xxxiv. p. 239). In this answer, the latter portion, which bears upon our present point, cannot, I think, be considered as conclusive, although the Astronomer-Royal was induced by it to disregard the amount of the in-shore difference. The language employed by Captain Beechey appears to state that he was not aware of any noteworthy difference, rather than that he had ascertained that no such difference existed. Knowing, then, that an important difference of the kind was acknowledged to exist at Folkestone, I could not accept Captain Beechey's evidence as conclusive against the existence of a corresponding difference at Dover.

"How, then, was this problem to be solved? There is one person above all others at Dover, on whose judgment reliance would be placed in a disputed question of this nature. Accustomed to cross the Channel in command of an important service, he has a personal knowledge of its currents, and much responsibility attaching to that knowledge; connected by long experience with the harbour and the offing at Dover, he is locally acquainted with the times and directions of the stream in-shore. His authority is more valuable than that of the tide-tables, because it embraces the exception as well as the rule, and can be brought to bear upon the question not merely as a general principle, but as a direct answer to an individual case.

with Folkestone, he submitted "*several* questions" to the seafaring people there, and put and received the "*two*" following questions and answers:—Question: "How soon after high water does the stream begin to run down Channel?" Answer: "In *two hours.*" Question: "How long afterwards does it continue to run down Channel." Answer: "*Five hours.*" The statements in the answers selected (for we evidently have not the whole) are entirely at variance with the actual observations which will be laid before the reader presently; and it would seem that the Professor himself placed no great faith on the answer that the stream began to run

"I have had the good fortune to obtain the information I desired from this authority. I learn that the tides at Dover are very complicated; that the stream begins to run down Channel at half-ebb, that is, about three hours after high-water, and that it continues to run down Channel until half flood; that the stream begins in-shore about an hour sooner than in mid-channel, with spring-tides, and with neap-tides is often two hours earlier in changing. From this statement it follows that from the nine hours intervening between the time of high water and the return of the flood up the Channel we must deduct, under common circumstances, one hour and a half to satisfy the in-shore difference. The interval remaining is seven hours and a half, the exact interval which passed between high water and the three o'clock when Cæsar started. May not the state of the tide have been one of the reasons which made him remain so long and no longer at his anchorage?

"But the matter was brought to a crisis by the following question:—

"Many years ago some transports lay off Dover, say, half a mile from the shore; on that day it was high water at 7.31 A.M.; the transports lay off till 3 P.M., and then sailed with the tide: which way would they go, up the Channel, or down the Channel?

"The answer was as follows:—

"On the day in question the transports, if started with the tide in their favour at 3 P.M., with a 7.31 A.M. tide, must have gone up Channel on the first of the flood, and proceeded to the eastward."

down Channel "*two hours*" after high water; for he remarks himself, directly afterwards, "I had reason to believe that, though the tide in mid-channel turned four hours after the Folkestone high-water, the tide in-shore turned two *hours and a half* after that time." However, two hours and a half is much under the mark. But further, he acquaints us (and this is the main anchor by which he holds) that "there is one person above all others, at Dover, on whose judgment reliance would be placed"—"accustomed to cross the Channel"—having "a personal knowledge of the currents," and "connected by long experience with the harbour and offing of Dover," &c., and that the matter was brought to a crisis by the following question:—

"Many years ago some transports lay off Dover, say half a mile from the shore; on that day it was high-water at 7.31 A.M.; the transports lay off Dover till 3 P.M., and then sailed with the tide. Which way would they go—up the Channel or down the Channel?"

The answer was as follows:—

"On the day in question, the transports, if started with the tide in their favour at 3 P.M., with a 7.31 A.M. tide, must have gone up Channel on the first of the flood, and proceeded to the eastward."

I confess that this question and the answer to it greatly surprised me, and made me think that, after all, the local information obtained by myself, and even the statements of the Admiralty Tables*, might be

* "I have for years directed my attention to the turn of the tide, and have tested the time of it by noting when a vessel, brought to in the offing and waiting for the stream, would swing at her anchor, and I never knew it vary half an hour from the time given in the Admiralty Tables. There is but very little difference in the stream in-shore and in mid-channel between Sandgate and Dover."—*Note by Mr. Elliott, of Dymchurch, the Engineer of Romney Marsh.*

wrong. I had no alternative, therefore, but to test the assertion by actual observation. For this purpose, I wrote to my kind friend, Mr. Barton, of Dover, who has so repeatedly lent his assistance, to employ some experienced pilot or fisherman to note for me the time of high water at Dover, with the turn of the current, for a month, and the following table was forwarded to me* :—

Date.	Wind.	High Water at .	Direction of current.	Continued.
1860.				
Nov. 28.	East.	10.55	East.	3½ hours.
„ 29.	East.	11.30	East.	3½ „
„ 30.	S. by E.	12.10	East.	3½ „
Dec. 1.	S. by W.	12.40	East.	3½ „
„ 2.	E.S.E.	1.20	East.	3½ „
„ 3.	E.S.E.	2.10	East.	3½ „
„ 4.	S.E.	3.10	East.	3½ „
„ 5.	W.	4. 0	East.	3½ „
„ 6.	S.S.W.	5. 0	East.	3½ „
„ 7.	S.S.W.	5.50	East.	3½ „
„ 8.	S.S.W.	6.50	East.	3½ „
„ 9.	S.W.	7.30	East	3⅚ „
„ 10.	N.N.W.	8.30	East.	3¼ „
„ 11.	N.	9.30	East.	3 „
„ 12.	N.N.E.	10.20	East.	3 „
„ 13.	E.	11.15	East.	3⅔ „
„ 14.	E.	12. 0	East.	3⅔ „
„ 15.	E.N.E.	12.45	East.	3½ „
„ 16.	N.E.	1.25	East.	3½ „
„ 17.	E.N.E.	2.10	East.	3½ „
„ 18.	N.	3. 0	East.	3⅓ „
„ 19.	S.E.	3.50	East.	3½ „
„ 20.	N.E.	4.35	East.	3½ „
„ 21.	N.E.	5.20	East.	3½ „
„ 22.	N.E.	6.10	East.	3½ „
„ 23.	N.	6.40	East.	3⅓ „
„ 24.	N.	7.40	East.	3⅓ „
„ 25.	E.	8.30	East.	3½ „

* One column, relating to the *fall*, and not to the *current* of the tide, has been omitted as irrelative, and tending only to confuse.

It will be seen from this table that, at the time of high water, the tide is running eastward, and continues usually to run so for three and a half hours, so that if it was high water at 7.31 A.M. the tide would run east till eleven, and then would turn west, and continue to run so (even according to the Professor) for *five* hours, but in reality much more, so that at 3 o'clock P.M., with high water at 7.30 A.M., the tide could not, as he supposes, be running *east*, but would be running west.

The preceding table was, in some respects, defective, as not showing the duration of the current westward. I had also omitted to give any specific direction as to the distance from the shore at which the observations were to be made. I therefore forwarded another table to be filled up from actual observation, and the result was as follows* :—

Date.	Wind.	Time of High Water at Dover Pier.	Time when Tide turned west, half-a-mile from shore.	How long continued west.	Time when Tide turned east, half-a-mile from shore.
1861.					
July 1.	W.	5.30	9. 0	2.10	2.30
„ 2.	S.W.	6.30	10. 0	3.15	3.30
„ 3.	N.N.W.	7.15	10.30	4.15	4.30
„ 4.	S.S.W.	8. 5	11.10	5. 0	5.20
I	II	III	V	VI	IV

* The table was returned, with the columns as I had arranged them, in the order of the numbers at the foot; but, for the sake of clearness, the columns have been printed as they ought to have been arranged, viz. so as to show the successive changes seriatim as they occurred.

It will be observed that, in the last column but one, the seven first items indicate the *hour* when the current *ceased* to run west, while all the other items in the same column indicate the *duration* of the current west. Both exhibit the same result under different forms.

Date.	Wind.	Time of High Water at Dover Pier.	Time when Tide turned west, half-a-mile from shore.	How long continued west.	Time when Tide turned east, half-a-mile from shore.
1861.					
July 5.	S.W.	9. 0	12. 0	5.50	6.20
„ 6.	S.W.	9.50	1. 0	6.50	7.20
„ 7.	W.S.W.	10.30	1.40	7.40	8. 0
„ 8.	S.W.	11.10	2.15	5½ hours.	8.40
„ 9.	N. by W.	11.50	3. 0	6¼ „	9.40
„ 10.	S.W.	12.30	4. 0	5½ „	10.10
„ 11.	W.S.W.	1.10	4.40	5½ „	10.40
„ 12.	S.W.	1.50	5.20	5½ „	11.15
„ 13.	S.S.W.	2.35	6. 0	5⅙ „	12. 0
„ 14.	S.S.W.	3.25	6.45	5⅙ „	12.40
„ 15.	W.S.W.	4.20	7.40	5½ „	1.30
„ 16.	W.S.W.	5.10	8.30	5½ „	2.20
„ 17.	W.S.W.	6.10	9.30	5½ „	3.20
„ 18.	S.W.	7. 0	10.30	5 „	4.10
„ 19.	S.W.	8. 0	11.30	5 „	5. 0
„ 20.	S.W.	9.20	12.30	5 „	6.20
„ 21.	S.S.W.	10.20	1.15	5 „	7.15
„ 22.	S.W.	11. 0	2.10	5⅙ „	8. 0
„ 23.	W.S.W.	11.40	3. 0	5⅓ „	8.40
„ 24.	S.W. by S.	12.30	3.45	5⅓ „	9.40
„ 25.	S.W.	1.15	4.40	5⅓ „	10.20
„ 26.	W.	1.50	5.20	5½ „	11.10
„ 27.	W.	2.30	6. 0	5½ „	11.50
„ 28.	W.N.W.	3. 5	6.35	5⅔ „	12.25
„ 29.	W.	3.50	7.10	5½ „	1. 0
„ 30.	W.	4.30	7.50	5½ „	1.40
„ 31.	W. by S.	5.20	8.35	5½ „	2.30
I	II	III	V	VI	IV

From this table it appears that, at the time of high water, the tide, at half a mile from the shore off Dover, is running east, and continues to run so from three hours to three hours and a half, say three and a quarter, and that it then runs west from five to six hours, say five and a half, so that if it were high tide at 7.31, it would run east till about 10.46, and then run west till about 4.16. Again, the shortest interval at which the tide,

according to the table, turns east after high water, is 8h. 55m., and the longest 9h. 50m. With high water, therefore, at 7.31 A.M., the tide could not turn east at the earliest until 4.26 P.M., and at the latest not until 5.21 P.M. Clearly, therefore, at 3 P.M. the tide would be running west towards Romney, and not east towards Deal.

At the same time that I forwarded the last table to be filled up, I thought it right to check these limited observations by general experience, and I therefore requested my friend to put the necessary questions to some one upon whose nautical and scientific knowledge he could safely rely ; and Mr. Druce, the resident engineer, on being applied to for the purpose, has been kind enough to furnish the following information ; and I beg here to return my grateful acknowledgments for the very careful and precise manner in which he has answered the queries.

Harbour of Refuge, Dover, Aug. 1, 1861.

QUESTIONS.	ANSWERS.
1. Many years ago some transports lay off Dover, say half a mile from the shore. On that day it was high water at 7.31 a.m. The transports lay off till 3 o'clock p.m., and then sailed with the tide. Which way did they go : up the Channel or down the Channel ?	1. High water at 7.31. Consequently the tide ran *eastwards* till a little after 11, and then to the *westward* till about 5. The transports would therefore go to the *west* at 3 P.M., or down Channel.
2. How soon (usually) after high water at Dover Pier does the tide, at *half a mile from the shore*, turn at *springs*, and in which direction ? and how long does it run in that direction ?	2. At 3.40, after high water *at the springs*, the tide begins to run downwards, or to the *west*, and flows in that direction for rather more than six hours.

3. Same question at *neaps.*	3. At neap tides the ebb stream begins about ten minutes sooner after the time of high water than at the springs, the direction of the stream being, in ordinary cases, the same (see No. 6).
4. How soon (usually) after *low water* at Dover Pier does the tide, at *half a mile from the shore,* turn at springs, and in which direction? and how long does it run in that direction?	4. At 2h. 45m. after low water the stream begins to run eastward, and runs in that direction for about 6h. 20m.
5. Same question at neaps.	5. At neap tides the stream begins about the same time, and flows for about six hours.
6. How much may the turn of the tide be retarded or hastened by accidental causes, as wind, &c.?	6. The tides in the Channel are influenced to a very great degree by the weather outside the Channel, and especially by the wind and its direction. The effect is felt considerably more at the neap than the spring tides, half an hour being, perhaps, the difference at the spring tides; but at the neap tides very strong wind will almost neutralise the stream at the surface.
7. What difference is there between the turn of the tide inshore, and the turn of the tide half a mile from the shore, and the turn of the tide in mid-channel?	7. In mid-channel the flood stream turns about 1½h. later than near the shore.
8. Is there any difference between the turn of the tide off Dover and the turn of the tide off Folkestone? and what is the difference?	8. The stream turns at Folkestone about five minutes before it does at Dover.

EDWARD DRUCE, Resident Engineer.

Thus, rejecting minute differences, we find the two

series of actual observations and the answers of Mr. Druce in harmony with each other, and they establish in general terms these facts, that the tide sets east for about three hours and a half after high water, and then after slack water for a quarter of an hour sets west for five hours and a half; and then after slack water for a quarter of an hour turns east. If so, on the assumption that high water was at 7.31, the tide would not turn east until about 5 P.M. Under any circumstances we could not allow less than three hours for the run eastward after high water, or less than five hours for the run westward, and then, between the two would be slack water for a quarter of an hour, and again, after the run westward, would be slack water for another quarter of an hour, before the turn eastward. Thus, even by this computation, the turn eastward in the afternoon with 7.31 high tide would not take place till 4 o'clock. It will be observed that Mr. Druce allows somewhat more than three and a half hours after high water* for the stream eastward, and then somewhat more than six hours for the stream westward. These I believe to be the most correct estimates; and with these data, with a 7.31 high tide, the stream would not turn west until after 5 P.M.

Hitherto I have assumed that it was high water at Dover on 27th August, B.C. 54 (the fourth day before the full), at 7.31 A.M., and my reason for adopting this time

* Captain Washington, in his Report to the Commissioners appointed to inquire into the state of Tidal Harbours, states that "the stream of tide runs for *four* hours to the N.E., after it is high water at Dover Pier." The observation appears to have been made "at about three quarters of a mile off shore," and he adds the rate of the tide — "on springs three miles and a half, on neaps two miles; and it sets fairly along shore both on the flood and on the ebb."—See *Report of Commissioners, Appendix*, pp. 196, 198.

was that in August of the year when I wrote my essay it was high water at Dover on the fourth day before full moon in August (Cæsar's month), at 7.31 A.M. The Professor followed me in this, observing: "There can be no difference of opinion as to the time of high water. On the 27th of August, 55 B.C., it was 7.31 A.M." However, this requires some qualification. High water at any place at the full of the moon, or on any particular day of the moon's age, is not the same in different months of the same year, and is not the same in the same month of different years. As the tides are regulated by the joint action of the sun and moon, they vary according as the moon is in the same plane with the earth, or is above or below it. In the former case the full force of the joint attraction is exerted; in the latter, it is proportionally weaker. Again, it is material to consider in what part of her orbit the earth is, as the earth and her satellite are at one period of the year much nearer to the sun than at another. In short, the exact time of high water at a particular place on a particular day is matter of abstruse calculation. At the same time, as the sun, moon, and earth resume as nearly as possible their relative positions, after a cycle of nineteen years, called the Metonic cycle, if we can ascertain the variations in the time of high water in August for every year during that interval, we shall see the maximum and minimum amount of variation, and thence collect the mean. The following table represents the time of high water at Dover on the day of the full moon in the month of August for nineteen years, viz. from 1842 to 1860, both inclusive.*

* For this table I am indebted to Mr. Hastings Parker, of the Admiralty.

Year.	Date of Full Moon in August.	Time of Full Moon.	Time of High Water. a.m.
1860.	31.	8.57 a.m.	11. 5
1859.	13.	4.34 p.m.	11. 2
1858.	24.	2.12 p.m.	11. 0
1857.	5.	6.28 p.m.	10.50
1856.	16.	5.55 p.m.	11. 4
1855.	27.	1.21 p.m.	10.41
1854.	8.	1.17 p.m.	10.32
1853.	18.	10.55 p.m.	10.30
1852.	29.	3. 6 p.m.	10.58
1851.	11.	9.43 p.m.	10.48
1850.	22.	9.12 p.m.	10.50
1849.	4.	3.52 a.m.	11.15
1848.	14.	8.16 p.m.	10.35
1847.	26.	6. 9 a.m.	10.47
1846.	7.	6. 0 a.m.	10.46
1845.	17.	1.17 p.m.	10.33
1844.	28.	0.34 a.m.	11. 6
1843.	25.	2.35 p.m.	10.37
1842.	21.	2.14 a.m.	11.18

From this table it will be seen that the earliest time of high water at Dover at the full is 10.30, and the latest is 11.18, giving a difference of 48 minutes, and the mean time of high water at Dover at the full is 10 hours 51 minutes. As it was full moon in August, B.C. 55, on 31st August at 3 A.M., the nearest high water, viz., in the evening or night of 30th August would be at the earliest 10.30 P.M., and at the latest 11.18 P.M., and, if we take the mean, at 10.51. High water on the morning of 27th August would be seven tides previously, or 2h. 48m. earlier, that is at 7h. 42m. A.M. at the earliest*, and 8.30 at the latest, and at 8.3 for the mean.

* In August 1859 it was high water at Dover on the 9th of August (the full being on the 13th of August) at 7.31 A.M., the time adopted in my essay. This is still earlier than 7.42, and the reason is that the full moon on the 13th of August 1859 was at 4.34

Assuming that the tide ran east for 3½ hours after high water, and then, after a quarter of an hour's slack water, ran west for 5½ hours, the tide on 27th August would, at the earliest, run east till 11.12, and then after slack water would run west till 4.57 P.M., and at the latest would run east till 12 at noon, and then after slack water would run west till 5¾ P.M., and as a mean would run east till 11.33, and then after slack water would run west till 5.18, so that in no case could Cæsar, if he went with the tide at 3 P.M., have gone eastward. Even if we allow half an hour's difference for the effect of the wind, he still at 3 P.M. could not have sailed, with the tide, towards Deal.

All the arguments in favour of a debarcation at Hythe are, of course, so many objections to a debarcation at Deal, but the latter theory is open to some difficulties peculiar to itself, and to which they who support this hypothesis should direct their attention.

1. Supposing Cæsar, when in Gaul, to have made himself *acquainted* with the coast immediately opposite, either from the survey of Volusenus, or from the interview which he had with the merchants, what advantage, in the first place, could Cæsar have discovered in Deal over Hythe? If, indeed, he sailed from Wissant, the distance to Deal and to Hythe would be about equal, but, if, as is the general opinion, and, I think, correctly, he embarked at Boulogne, Hythe would be much nearer than Deal, and was the natural port for vessels from Boulogne. Besides, Hythe possessed a

in the afternoon, whereas on the 31st of August, B.C. 55, it was full moon at 3 A.M. In my essay, therefore, I had assumed against myself that high water on the 27th of August, B.C. 55, was earlier than it could possibly have been.

haven, but Deal did not; and though the winding harbour at Hythe was quite unequal to the accommodation or even reception of a numerous war-fleet (ad *majorum navium* multitudinem, iv. 20), yet it could not fail to be extremely useful for keeping up a constant communication with the continent from which Cæsar's supplies were to be drawn.

2. If we assume that Cæsar was wholly *ignorant* of the British coast (which is somewhat countenanced by the fact that he made for the cliffs which were visible from Boulogne, though when he arrived they presented no convenient place of debarcation), in this case it becomes almost impossible that he should have sailed to Deal and not to Hythe, for on approaching the coast, and as he lay at anchor off Folkestone or Dover, he could not have discerned the level at Deal, so that if he sailed in that direction he must have done so at a venture upon speculation. How improbable this is when the favourable landing-place of Hythe was distinctly visible from his moorings, and lay within an easy distance! How could he have neglected a shore which suited his purpose, and was near at hand, to go in search of one the very existence of which was problematical?

3. I think it established beyond all controversy that if Cæsar sailed with the tide at 3 P.M. he must have proceeded not eastward, but westward. If, therefore, it be contended that he sailed towards Deal, a new interpretation must be given to the Commentaries, viz. it must be insisted that Cæsar not only waited till 3 P.M. for the arrival of the whole fleet, but that the words "His dimissis, et ventum et æstum uno tempore nactus secundum" (iv. 23), imply a further interval of about two hours, that is until about 5 P.M., at which time the

current *might* have turned eastward. This interpretation, so far as I am aware, has never been before suggested, and is certainly not the natural one. He waited, we read, till 3 P.M., and employed the *interim* in giving instructions to his officers, and then — His dimissis, &c. Thus the dismissal of the officers was unquestionably at 3 P.M., and the direction of the wind and tide is spoken of in one breath as contemporaneous with it. Had another interval of two hours occurred, Cæsar could not fail to have mentioned it.

4. In the next place the chalk cliffs reach all the way from Dover to Walmer, though between Kingsdown and Walmer they are comparatively low. From Walmer to Deal there are no cliffs, but the land is neither flat nor open, and therefore not in accordance with Cæsar's description of the landing-place. If, therefore, Cæsar sailed eastward, he must have *passed* Deal, and consequently the moorings from which he started, and which were eight miles off, must have been, not, as commonly supposed, at Dover, but considerably to the east of it.

5. On his second expedition, Cæsar set sail at sunset (about 8 P.M.), with a gentle south-west wind, and held on his course till midnight. The wind then dropped, and the tide drifted him so far up Channel, that when morning broke he descried Britain on his left hand. The tide then turned, and he followed it back with oars to his former place of landing (æstûs commutationem secutus, v. 8.) Assuming that Cæsar sailed from Boulogne (and the argument applies almost equally to an embarcation from Wissant), a gentle south-west wind, from 8 P.M. to 12 at night, would carry him, if he steered for Deal, nearly halfway across. He was then borne out of his course by

the tide, the set of which in this part is from S.W. to N.E., and the greatest velocity of the tide is, according to the Tidal Tables, 3·3 knots an hour, or about three miles and three quarters an hour. The drift would, of course, be less than the velocity, and we may allow for this about three miles an hour. From midnight till daybreak, at 4 A.M., would, therefore, give a drift of twelve miles. To find then the position of the vessel at 4 A.M., we must draw a straight line from Boulogne to Deal, and then another line twelve miles long, from about the middle of the Channel, at right angles, in a north-eastern direction. The end of the latter line will represent the extreme limit of the drift. Now, if we look at the bearings of this point with reference to Deal, I very much doubt whether, when the tide turned, the fleet, with a tide running south-west at the rate of three miles and three quarters an hour, *could*, by rowing only, without any wind, have reached Deal at all; but, certainly, if they made for Deal, they could not be said to *follow* the tide which was running south-west. Their course must have been north-west, and across, if not actually against, the current. This is the argument which induced the learned D'Anville to consider the landing of Cæsar at Deal untenable.

6. Again, if Cæsar from the extreme point of his drift made for Deal, how could his fleet have crossed the Goodwin Sands, which lay between him and Deal? What was the state of the tide as regards flood or ebb? This we can ascertain from the remark that Cæsar availed himself of the turn of the current back, *i. e.* the turn of the current westward. This takes place, as we know from the Admiralty Tables and the preceding observations, at about three hours and a half after

high water. Cæsar, therefore, began his course towards the old landing-place at three hours and a half after high water, and as the passage must have occupied some hours, and he arrived at noon, low water must have occurred by the way. How then could a fleet of eight hundred vessels, either at low water or just before or after it, have crossed the Goodwins without a single wreck? If, on the contrary, as we suppose, Cæsar "followed the tide" in the proper sense of the word, *i. e.* in a south-west direction towards Hythe, he would altogether avoid the Goodwins. This may have been one reason, in addition to the convenience of Hythe in itself, why under the circumstances he preferred the locality of his former debarcation.

7. The shore where Cæsar landed, shelved so gradually into the sea, that with even a three hours' flood (viz. at 5 P.M., with high water at 8 A.M.) the transports could not approach terra firma; and though the triremes could advance nearer, the boats only could touch the beach (iv. 24). There is also mention made in Valerius Maximus (iii. 2, 23) of some islets close at hand, and almost all the writers refer to the marshes; and the British esseda, or war-cars, are described in the first invasion, when Cæsar did not move from his camp, as running down steep precipitous places. We have seen that all these facts agree remarkably with the shore at Hythe, but at Deal, the beach, instead of sloping gradually, descends so steeply that with a three hours' flood transports can come up to the water's edge; and as for any islets, or marshes, or declivities in that quarter, I am not aware that the existence of them has ever been suggested.

8. Cæsar marched twelve miles from his camp on the sea shore, and then came to a river. The common

idea of those who support the hypothesis of Deal is, I believe, that the river referred to was the Stour. This can never be, for the Stour at Canterbury is distant eighteen miles English, or nearly twenty miles Roman. The Stour does not come within the compass of twelve miles until it approaches Stourmouth; and in the days of Cæsar the sea flowed up to Stourmouth (as the name implies), and round the Isle of Thanet.* It is inconceivable that the Britons could have marched in this direction, as they would, of course, retreat upon Canterbury, their capital; and this is confirmed by the expression of the Commentaries, that they retired from the shore into the interior, se in superiora loca abdiderant (v. 8). The only river, therefore, that would at all answer the requisites is the Little Stour, which runs by Patricksbourne, Beakesbourne, and Littlebourne, and of these three places I should give the preference (if to any) to the last, as lying on the high road from Deal to Canterbury. The Little Stour, however, is, after all, but a brook, and too insignificant to have been designated by Cæsar as a river.†

* At the end of the sixth century (A.D. 597), this strait, called the Wantsom, was three furlongs across, and only fordable in two places. "Tanatos insula . . . quam a continenti terrâ secernit fluvius Vantsumu qui est latitudinis trium stadiorum, et duobus tantum in locis est transmeabilis."—*Bede*, lib. i. c. 25.

† My note of the above places, on a visit in September 1861, is this:—

Littlebourne.—The stream at the Priory, where, apparently, it is ornamental water, and made to assume the most imposing aspect, is about twelve paces wide and a foot deep, and creeps along at the rate of less than half a mile an hour. The ground rises from it both east and west; and on the west, at the distance of less than half a mile, is a wood called Pine wood, lying on the north side of the road. I observed no signs of entrenchments there, unless the deep ditch between the road and the wood can be classed under that category.

The ground from the wood to the river is a gentle slope, and tolerably clear and open.

Beakesbourne.—The road from the west descends to it down a deep hollow road, and there is a thick wood on the north side at about half a mile distance from the stream. As the wood is not noticed in the Ordnance map, it is probably very small. The space between the wood and the river is remarkably clear and open. The stream at the bridge is only four paces wide and half a foot deep, and runs less than half a mile an hour.

Patricksbourne.—Stream somewhat less, but swifter. No high ground on the west side. Much wood in the neighbourhood, and reaching to the stream itself.

N.B.—The notion of some is that Cæsar and the Britons met at *Kingston*. This is quite untenable, as at Kingston, in summer, so far from there being a river, there is no running water at all,—a mere dry channel serving to convey the winter floods to the Little Stour.

NOTES.

Page 2.

That Cæsar expected to meet with gold in Britain may be inferred from the language of Cicero: "They have found that there is not a scrap of gold in the whole island." (Cic. Ep. Attic. iv. 16.) And again, "I hear that in Britain is neither silver nor gold." (Cic. Ep. Div. xxvii. 7.) Cæsar himself attests that their coinage was not silver or gold, but either copper or stamped iron. "Utuntur aut *ære*, aut taleis *ferreis* ad certum pondus examinatis, pro nummo." (Bell. Gall. v. 12.) However, silver has been obtained in Britain from very ancient times, and a gold mine is now in operation at Llanaber, in Merionethshire, and yields a considerable profit to the adventurers.

Page 13.

There is another conclusive argument against Dunkirk and Gravelines, and even Calais, which I cannot state better than by an extract from a little book placed in my hands by a zealous antiquary, Mr. Nathaniel Gould, written by the late John Dougall, and intituled, "Observations on the Port of Gaul from which Cæsar sailed on his Expedition against Britain." The tract was never published, but was printed and circulated after his death by his widow. "Allowing," Mr. Dougall writes, "that turning up to windward had been occasionally practised by the Romans with their lee-boards as now, and long in use among the Dutch, still no commander of a numerous fleet of transports, destined for a hazardous expedition, would ever have gone to sea with a contrary

wind." . . . "From the Liane (Boulogne) to the South Foreland the true, not the magnetic course, is about N.N.W., or two points to the westward of north. Had the wind been on the beam, as it is called, or perpendicularly to the course of the fleet, it must have blown from W.S.W. But such a wind could not be regarded by Cæsar as quite 'fair, favorable, and proper for him.' We may, therefore, allow it to have blown from a quarter or two points still further to the southward, or from S.W. With this last wind, and lug, or, perhaps, latine sails and oars, the Roman fleet might have easily run from the Liane to the South Foreland, or even to the ancient inlet of Dover. . . . The south-westerly winds blow in the British Channel on an average 120 days, or for one third part of the year. . . . From Calais to Dover the course is nearly W.N.W., or within six points of the wind from the S.W. . . . No ancient fleet of transports, or even of war-galleys, departing from the port of Calais, had it existed in Cæsar's time, could ever have arrived at Dover, or indeed at any point whatever of the coast of Kent. If this be true with respect to Calais, the objection becomes proportionally stronger if applied to any other point of the Morinian coast still further eastward from the narrow pass between Grisnez and Dover cliffs."

Page 15.

As to the similarity of sound between Portus Itius and Wissant, the argument cannot carry the least weight, as it is well known that Wissant is not derived from Itius, but is a corruption of the Dutch Wit-sand, or white sand, which is there so conspicuous.

Page 20.

According to the Admiralty charts, the exact distance from the mouth of Folkestone Harbour to the mouth of Boulogne Harbour is thirty statute miles and 2622 feet, or thirty and a half statute miles. This measurement has been kindly furnished to me by Mr. Hastings Parker of the Admiralty.

Page 21.

As to the exact distance of Ambleteuse (see ante, p. xv.), Mr. J. Dougall makes the following just observations upon the relative positions of the Portus Itius and the Portus Superior: "From the Liane to Grisnez the coast lies from S. to N. When the S.W wind blew, therefore, no ancient ship could possibly sail along it from N. to S. Had that farther place or port been capable of receiving a numerous fleet, at the same time that a voyage from it must have been eight miles shorter than that from the port where Cæsar embarked, he would unquestionably have selected it. That he did not select it is therefore a proof that the farther port was quite unfit for his purpose. The bold cliffs of the Morinian coast continue for two miles to the northward of the Liane or of the harbour of Boulogne. Then the shore lowers down to the mouth of the little river of Wimereux, at which the sandy downs re-appear. They extend beyond Ambleteuse at the mouth of the Slacq, and terminate at Andreselles, a fishing village seven miles from the entrance of the Liane: seven English miles are about seven and three quarters Roman; but this is the direct lineal distance along the beach. By the land road the distance from Boulogne to Andreselles is nine English, or nearly ten Roman miles. Besides the excess of the distance the stream at Andreselles is a mere brook. The Slacq is much better adapted to form a small port accessible by ancient ships, for at high tides the water rises in it to thirteen feet. . . . In front of the entrance extends St. John's roadstead, which affords good anchorage in winds from the N.E., E., and S.E. At the entrance is situate Ambleteuse, six and a half Roman miles along the coast, but nearly eight by the road. The lowness of the shore and the depth of the water in the river, made it peculiarly proper for embarcation of cavalry."

Page 23.

On the subject of the estuary of the Liane, the late Mr J. Dougall, writes: "The whole course of the Liane, from the

village of the same name, where its branches are collected into one bed, is in right lines between seventeen and eighteen English miles, or a little more than seven post leagues of France, flowing everywhere through a hilly country. The Liane is confined in a narrow hollow until near its first angle; then the first angle gradually widens by the retreat of the rising grounds on towards St. Leonards, and from that village to the sea the course of the river presents the form of a spacious well-sheltered haven. The haven, however, now unites with the sea sooner than in ancient times. . . . How much the Channel has gained on the land since the days of Julius Cæsar is a matter wholly conjectural. But if we compute on the result of the experiment made at Tréport on the coast of Picardy, we may, perhaps, arrive at something near the truth. It appears from that experiment that the waves consumed seventeen feet of solid building stone in thirty years, or more than half a foot yearly. At that rate the encroachment would, in 2000 years, exceed 1100 feet. But if we consider that the waves and winds act almost perpendicularly against the cliffs of Boulogne, while they act but very obliquely on those of Tréport; that the cliff of Tréport is of a nature much more compact than those of Boulogne; when it is recollected that no vestige now remains of the projecting cliff which supported the Pharos of Boulogne, although 170 years only have elapsed since its fall, less than a quarter of a mile cannot well be allowed for the advance of the waters at the entrance of the Liane. By so much, therefore, has the small bay which received the river now lost of the depth it possessed when Cæsar sailed from it in his voyage to the British shore; by so much is that bay less adapted for the sheltering or anchoring a numerous fleet of such vessels as he employed. . . . The extent of the road or bay of Boulogne, from S.W. to N.E., is about three miles, and the tide, at low ebbs of new and full moon, falls back from the land about half a mile. . . . From the preceding observations, the valley of the Liane must, in ancient times, have formed an inlet or haven accessible to all tides, and consequently extremely commodious and secure for ships of anti-

quity which required but three or four feet in depth of water. The length of the haven was three miles, and its breadth gradually increased from 300 to 900 yards. With such dimensions the area of the haven would be 3,168,000 square yards, or somewhat more than an English square mile, which contains 3,097,600 square yards. If now we allow for each transport in the second fleet of Cæsar a space of thirty yards long and ten yards broad, the haven of the Liane would contain 1000 of such vessels. . . . A fleet of 600 flat-bottomed vessels, all moved by oars, must have employed several successive tides, after the troops and necessaries were embarked, to be able to get out of port. When all had quitted the haven they must have done as transports on any expedition now do. They must have anchored in the road at convenient distances, to keep clear of one another, to be in readiness to set sail and ply their oars together when the signal was displayed. Stationed in this way, Cæsar's fleet must have covered the shore all the way from towards the promontory, now Cape Alprech, on S.W., to the northern boundary of the bay in front of the Liane, a space of three miles."

Page 26.

The words of Cæsar are: "Eâdem nocte accidit, ut esset luna plena, quæ dies maritimos æstus maximos in oceano efficere consuevit." (Bell. Gall. iv. 29.) The Astronomer-Royal suggests that Cæsar may have had no almanack to indicate the day of full moon, and that as "the spring-tide is a day and a half later than the full moon," the day referred to may have been that of the spring-tide. This would be 1st Aug., B.C. 54; and the fourth day before it, or day of Cæsar's arrival, would then be the 28th August, and not, as we have supposed in the text, the 27th August. The only consequence would be, that on the day of Cæsar's arrival (28th August) it would be high tide about an hour later than on 27th August, *i. e.* about 9 A.M. instead of 8 A.M., and then, *à fortiori*, the tide would be running west at 3 P.M. I cannot,

however, assent for a moment to the notion that Cæsar did not know the actual day of full moon, or that he refers to the day of the spring-tide. The words are not "luna plena, quæ maritimos," &c.; but "luna plena, quæ *dies* maritimos," &c.

Page 33.

The length of the passage from Boulogne to Folkestone, viz. ten hours for the triremes and fifteen for the transports, was no doubt owing in great measure to the deflections in their route, caused by the set of the currents in the Channel. From midnight, when they started, till 6 A.M., the tide would be running west, and for the next six hours it would carry them east. Some time also must have been lost while they waited in the offing for the eighteen transports to join them from Ambleteuse, but which they never did.

Page 35.

The following rules for ascertaining the time of high water at any particular place may be useful:

When the time of high water is given for any particular place in Tide tables, it is understood to be the time of high water at that place on the days of the syzygies, or of new and full moon, when the sun and moon pass the meridian of the place at the same time.

To find the time of *high water* at any place on any other day than at new or full moon, find the time of the moon's *southing* on the given day, and then add the time which the moon has passed the meridian on the full and change days (or the time given in the Tide tables for high water at the place on full and change days, when the sun and moon pass the meridian of the place at 12 o'clock) to make high water at that place, and the sum shows the time of high water on the given day.

e. g. At what time was it high water at London Bridge on the 25th December, 1784? The moon southed at 9h. 36m., to which add 3h. (the time of high water at London Bridge

on full and change days), and the sum shows it was high water at 0h. 36m.

To find the moon's *southing* or being in the meridian, multiply her age by four, and divide the product by five. The quotient gives the *hour*, and the remainder, multiplied by twelve, the *minutes*.

The *meridian* of a place is the great circle in the heavens of which the plane passes through the zenith and nadir of the place and the poles of the earth, and is called the meridian because when the sun is in this circle it is noon.

Page 42.

The author has since obtained more accurate information as to the early state of Romney Marsh, for which see ante, p. lii. A valuable paper upon this subject was contributed by Mr. Elliott, the engineer of the Marsh, to the sixth volume of the "Minutes of Proceedings of Institution of Civil Engineers," from which the following extracts are taken:

"No satisfactory account exists of when, or by whom, the Marsh was reclaimed from the sea; the Romans, however, have, in popular opinion, the credit of this great work; at all events, it is evident from recent discoveries, that they occupied a considerable portion of the country between Dymchurch and Romney, and there is reason for believing that it was in a habitable state at that early period. The remains alluded to, which were discovered whilst making some alterations in the line of the sea wall, extended over a space of several acres; they consisted of an enormous mass of pottery, from the coarsest unbaked kind to the finest Samian ware; much of it in a perfect state of preservation. The presence at this spot, of beds of very fine white clay and layers of clean sharp sand, would lead to the inference that it was the site of an extensive manufactory of pottery, particularly as the effects of fire are evident in all directions.

"These remains, taken in connection with the ancient Roman fort at the foot of Lympne Hill, on the borders of the Marsh, within a distance of five miles, and the Stone-street

Road, another Roman work, leading from thence to Canterbury, may fairly lead to the inference that the Romans were the originators of the work. But it is not quite so clear where this work was commenced, or how it was executed. It is probable that the sea was not absolutely excluded by the erection of Dymchurch Wall, but that, where the wall now stands, a natural barrier of shingle and sand was formed in the first instance, the sea still flowing over the land at the back, and that it was gradually restrained by the erection of cross walls or embankments stretching from this natural barrier up to the base of the hills.

"This natural barrier commenced at the chalk hills to the westward, and, before the waters of the Rother discharged themselves at Rye, formed a continuous 'full' of shingle from thence to Hythe, and also formed (prior to the extension of Dungeness Point) nearly a straight line of coast, from Hastings to Dover; a considerable line of this ancient coast may be plainly traced at the present day, extending a distance of eight or ten miles, from the eastward of New Romney to the westward of the town of Lydd, which was built about half a mile in advance of the first formed 'full.' That this line was formerly kept up across the bay of Rye Harbour, may be fairly inferred from the fact, that the old town of Winchelsea, which was destroyed by a great inundation in the reign of Edward I. (1250 to 1287), formerly stood about the centre of this bay, and most probably on the then line of coast.

"There is reason to believe that the shingle at Hythe was connected with that at Romney, on the line where Dymchurch Wall is now erected, as there are shingle banks running under and inland of the present wall, throughout its whole length, nearly at right angles to the line of coast, exactly in the position into which they would be thrown by an adverse wind and strong current on the end of the 'full,' while in a state of formation. The vast accumulation of not less than two square miles of shingle, between the eastern end of the wall and the town of Hythe, is worthy of attentive observation, as it is evident, from the position of the

'fulls,' or ridges of shingle, which all lie at right angles to the line of coast, that a very strong current of water must have been passing in and out of the great estuary which now forms the Marsh, as many of these 'fulls' are carried upwards of three quarters of a mile inland, in a continuous curve. It is also evident that the extension eastward of the main 'full' was very slow, as those inland, or right-angled 'fulls,' are formed close upon each other, with but just ridge and valley sufficient to define the course of formation. . .

"This accumulation must have been the work of ages, and whilst it was going on, the sea was gradually raising the surface of the Marsh, behind the 'full.' It is also worthy of notice that the land gradually falls from the line of coast, towards the hills forming the northern boundary of the Marsh, and near the foot of which are all the low lands. On the ebb of the tide, all the waters were, by this natural inclination of the surface, directed to this part, thus forming what was supposed to be the river Lymene, but which was in fact only the lowest part of the great estuary. . . . .

"Such was most probably the state of Romney Marsh when the Romans took possession of this country, or, at all events, it was fast progressing towards it; and it must have offered a strong inducement to that enterprising people to obtain possession of so large a tract of open country, when it is considered how slight would be the labour of bringing such lands into cultivation, and that all around was an extensive forest.

"Presuming this opinion of the origin and state of Romney Marsh to be correct, all the artificial works that would be necessary to shut out the sea, would be to erect walls running from the 'full' to the hills, and evidence exists to show that it was by such means the object was attained.

"The Rhee Wall, running nearly in a straight line from Romney to Appledore, bears strong evidence of being a Roman work; and it is, probably, at this spot that the main work for excluding the sea was performed. It is evident that in the construction of this work two objects were kept in view; one to exclude the sea, the other to provide an easy

exit for the hill waters, and also a drain for the reclaimed land; these objects were attained by a cutting about 80 feet or 100 feet wide, running the whole length of Rhee Wall, the parallel banks of which can still be plainly traced, and it was this cutting that, in the course of time, formed the haven and port of Romney.

"It is further evident that Romney Marsh was reclaimed at once, from the fact that there is not a single internal wall of any description between Rhee Wall and Lympne, where it would appear that the eastern wall was built, although it is not so clearly defined as the other.

"In the construction of Rhee Wall comparatively little labour was required, that part next the sea, by Romney, demanding little beyond cutting the dyke, the natural surface of the land being higher than most other parts of the Marsh; indeed, a considerable extent of land about Romney is considerably above high-water mark, and has always been exempt from the 'Wall Scott,' paying for the drainage only. This high land is rather a remarkable feature, as it bears strong evidence of its being composed of the natural strata, the 'Hastings sand,' consisting of sand of various shades of colour, from yellow to grey, interspersed with layers of ironstone. It can be traced over a very considerable space, extending westward to Lydd, and northward towards St. Mary's, and probably is the remains of an island in the bay between Hythe and Fairlight.

"From Brenzett the Marsh gradually falls towards the hills, and in this part considerable labour was required in the construction of the walls, which are in many places from twelve feet to fifteen feet high; this is particularly the case towards Appledore. This part, called 'Appledore Dowles,' is at the present time the lowest part of the Marsh, and it can only be effectually drained by artificial means, which have from time immemorial been used for that purpose.

"The course of the mass of shingle, on that part of the coast, appears to be invariably to the eastward, which is the direction of the flood-tide and of the prevailing wind. A considerable amount has been lost, both east and west of

Dymchurch, since the date of the survey (made A.D. 1617), while Dungeness Point has been extended considerably within the same time.

"Under what circumstances and at what period that extraordinary formation took place, is a difficult problem to solve. It is very evident that at some period the line of coast was inland of the town of Lydd, which is now upwards of three miles from the sea.

"It is worthy of remark, that the timbers, &c., from any wreck on the west coast, are generally carried round and landed on the east of Dungeness Point, proving that a very considerable eddy exists in that direction; the impetus given by the current in the main channel being evidently lost, and the force, or rather the loss of force in this eddy, causes the accumulation of shingle at, and round, the point to the eastward. No certain record has ever been kept of the increase of the coast line; but, from the best existing data, it appears to be about two yards annually, and allowing the accumulation to have been rather more rapid at first, say three yards per annum, a period of about 1900 years will have elapsed since the sea first left the original 'full' at Lydd. This would be about the time of the first landing of the Romans in this country, and it is not improbable that some of their works at the then Port of New Romney formed the nucleus of what is now Dungeness Point."

Mr. Elliott has since been kind enough to furnish me with the accompanying maps of the Marsh, and also with the following well-digested notes explanatory of the times at which the different parts of the Marsh were inclosed. It will be observed, that subsequent investigation, through a period of fifteen years, has induced him to qualify some of his former statements. I cannot thank him too much for the time and extraordinary pains that he has bestowed upon this "labor of love." As regards the subject immediately on hand (The Invasion of Britain by Cæsar), it would be sufficient for me to elucidate the eastern end of the Marsh only; but the information which Mr. Elliott has supplied from the local records under his control and his own long experience is so

valuable, that I shall be doing a service as well to geology as history, by laying it before the public.

"The first step towards the inclosure of the Marsh was the work of the elements, viz. the natural barrier formed by the shingle spit, which was gradually pushed along the southern edge of the Marsh from Romney to Hythe. As soon as the spit touched the hills at West Hythe Oaks, all entrance from the sea was barred, from Romney to Hythe, and the only opening was on the west. The exclusion of the sea on that side also was effected by the Rhee Wall from Appledore to Romney. 24,000 acres, now known as Romney Marsh Proper, were thus inclosed. This was most probably the work of the Romans, who were certainly long in the occupation of the Marsh, as is evident from the remains of Roman pottery found in all directions. It is particularly mentioned by Tacitus that the Britons were compelled by the Romans to labour in the embankment of the marshes. (Tac. Agric. cited by Dugdale.)

"Recent investigations in taking a series of levels over the whole of Romney Marsh have established the fact, that the estuary must have been closed at the eastern extremity (where the Portus Lemanis is commonly looked for) many centuries before the sea was shut out from the area of Romney Marsh Proper; for at the extreme eastern end of Romney Marsh, by Hythe Oaks, the surface of the land is 18 inches higher than it is a mile westward, a state of things that could not have existed had there been any outlet towards the east *after* the closing of the Marsh westward. The inset and outset of the tides twice a day to and from the estuary would have counteracted the silting, and produced not an elevation, but a depression of the surface. There is found to be a regular and continuous fall of the land next the hills, from Hythe Oaks into Appledore Dowles, which was, and is to this day, the lowest part of the Marsh, being 6 feet 6 inches lower than the land at Hythe Oaks. There could have been no silting after the inclosure of the Marsh, and the present level is such as it was when the Marsh was reclaimed. For centuries, therefore, before this event, the eastern channel, from the estuary

to the sea, had been blocked up. The barrier which sealed up the eastern mouth of the estuary was the accumulation of shingle from the west, and which long before the historic period had reached the hills at Hythe Oaks.

"Stuttfall Castle, at Lymne, is usually taken for the garrison of the Portus Lemanis, but was probably one of the castra referred to by Gildas as built in the reign of Theodosius the younger for the protection of the Saxon shore. If Romney Marsh, at the foot of the castrum, was dry land at that time, and occupied by the Romans (as we know to have been the case), Stuttfall could not have been the 'Portus Lemanis' of Roman times, as it was not accessible from the sea, and lay a mile and a half at least from it. The sea could not have flowed there without putting the whole of Romney Marsh Proper under water to the depth of eight or ten feet every spring-tide, a state of things that could not have existed without leaving some traces behind which could be seen at the present day. A.D 395–450.

"Lydd at this time was bounded on the north and east by the sea, as appears by the grant of King Offa to the Archbishop Janibert (see Somner's 'Roman Ports and Forts'), which proves that there was an opening to the sea from the estuary west of the Rhee Wall, between Lydd and Romney, and which the present surface of the land shows to have been the case. This is the opening probably to which Holinshed refers in speaking of the shortest route from England to the Main. After naming Dover and Sandwich, he says, 'or some other places of the coast more to the west, as between Hide and Lid, to wit Romneie Marsh, which in old time was called Romania, or Romanorum Insula.' There would have been probably from 15 to 20 feet water spring-tides at this opening, when the sea had full run over the Marsh and up the valleys into the Weald. There is at the present day a succession of 'fleets,' cut off from each other by a series of embankments for innings, but sufficiently continuous and connected to show that at one time they formed the bed of the then channel of the river from Appledore to Fairfield and Midley, and thence to the haven at Romney. These 'fleets,' A.D. 774.

which can now be traced several miles, are on an average 13 feet below high-water mark. They lie west of the Great Wall, shutting in Peckham's, St. Thomas's, Baldwin's, and Boniface's Innings.

A. D. 866–892. "It was probably up this estuary that the Danes sailed when they destroyed Stone and Newenden, and it may have been up this estuary that the Danes tugged their 250 ships to Appledore.

A.D. 895. "In this year, Somner says ('Roman Ports and Forts'), 'I find the first mention of Romney in a grant of land by Plegmond, archbishop of Canterbury, called Wesing-marsh, beside the river called Rumenia.' This Hasted takes to be the manor of Aghonie, which was given in A.D. 791 by King Offa to Christ Church, Canterbury. If this was so, all this refers to Old Romney, in which parish, about half a mile west of the church, Aghonie Court stands, where, in A.D. 1495, Thomas Goldstone, the prior, built a new hall and other apartments. It is evident that at this time (A.D. 895) neither Old nor New Romney was of much note, as no mention is made of the Danes having committed any mischief at either place, when passing to Stone and Appledore, only a few years before.

"Somner, speaking of Old and New Romney, assumes them to be the Old and New Lamport of more recent times. But this is a mistake: the manor of Old Langport (as it came to be spelt) lies near New Romney, but on the other side the estuary, which was then open to the sea (Hasted says near Belgar), whilst New Langport was west of Lydd, at Septvans Court, on the Beach Full opposite Scotney, where, Hasted says, Roger de Septvans died in 37 Henry III.

"Leland writes (A.D. 1509) of New Romney, 'The very town of Romney, and two miles about it, was always by likelihood dry land, and once, as it is supposed, the sea came about her, or the greatest part of her.' Romney, at high water, must have been on an island not more than 5 feet above high-water mark spring-tides, with a considerable strip of land about level with high-water mark, and extending towards Hope, being a tongue of land carried in by the stream entering the great estuary in very early times. It is

evident that *before* the erection of Rhee Wall the great run of the sea out and in was to the westward, towards Lydd. The small opening east of Romney was, at the time of building Rhee Wall, nearly swarved up, but it was necessary to exclude the sea by erecting an earth wall for about 40 rods, which is to be seen at this time.

"Romney, during the last 100 years, had become a place of some note, as may be gathered from Domesday Book; but it is very doubtful whether *Old* Romney was ever anything more than at present, as no disturbance of the soil exists as at other places where buildings had stood, and all to the west of Rhee Wall was under water at spring-tides up to the fifteenth century. A D. 1086.

"The first innings of land west of Rhee Wall were made by the ecclesiastics. The famous Thomas à Becket, archbishop of Canterbury, led the way, and his innings are still known as 'St. Thomas's Innings.' They lie immediately north and west of Old Romney. To show his connection and acquaintance with this part, in A.D. 1168, 'He took boat secretly at Romney, minding to have escaped over, but he was driven back by a contrarie winde, and so compelled to land against his will.' (Lambarde.) A D. 1162–1174.

"Baldwin was archbishop A.D. 1184 to 1190, and his innings are called Baldwin's Innings, unless, as is not improbable, these innings were made by Baldwin Scadeway, to whom 'Wibert, a prior, gave, about A.D. 1150, as much land,' Somner says, 'about Mistelham, in the Marsh, as he could inne at his own cost against the sea.' Somner says, 'This Mistleham I take to be about Ebeney.' But it is more likely to have been at Brookland, where the Innings of Baldwin lie, as in the early records of Walland Marsh, A.D. 1549, constant reference is made to land lying at Mistleham Street and Mistleham Lane, at Brookland. A.D. 1184–1190.

"Peckham was archbishop at this time, and he probably inned the small marsh near Midley. In the records of Walland Marsh, A.D. 1549, reference is made to this as Peckham's Wall. A.D. 1229.

"Boniface, archbishop, probably inned the marsh adjoin- A D. 1240–1270.

ing Baldwin's about this period. It was now that the first great inundations took place referred to by all the early historians, and which stopped the entrance of the Rother at Romney, and opened another at Rhee. That the sea was not now entirely excluded is evident from two facts — first, from the wording of the inquisition of Nicholas de Hanlou (see infra); and, secondly, from the circumstance, that if it were not for the artificial walls erected, probably in the fourteenth century, across the mouth of the estuary from Romney westward to Belgar, the sea would still flow over and cover the whole of Walland Marsh. So far from the haven of Romney having been blocked up, as supposed, with shingle and sand by the sea itself, there would at present, but for the sea walls, be from seven to eight feet water in the haven to the north of Lydd at high-water spring-tides.

A. D. 1257. "Henry III. issued his precept to Nicholas de Hanlou (who, Hasted says, lived at Court at Street Lyme) to inquire as to the best plan to restore the haven at Romney, then much injured by the great storm and inundation of the year before, recorded by Somner from an old French chronicle belonging to the church at Canterbury. Nicholas de Hanlou in his answer to this precept states that the haven could not be restored unless certain works were carried out. The words of Nicholas de Hanlou are, 'that certain obstructions which were in the old course of the river of Newendene should be removed, and that a new channel should be made *near to the same old course*, viz. from a certain cross belonging to the hospital of infirm people at Rumenale (standing by Aghenepende) unto Effetone, and from Effetone to the house of William le Byll, and so to Melepend, and thence descending unto the said port; so that a sluice be made under the town of Apeltre for reception of the salt water entering into the said river by the inundation of the sea from the parts of Winchelsea, and for retaining thereof in its passage and recourse to the sea, to the intent that the same water might come together with the fresh water of that river by the ancient course unto the before-specified new course, and so by that passage directly to descend and fall into the said haven; and that

another sluice should be made at Sneregate, and another near to the said port, where that water might descend into the sea, for restraint only of the sea-tide on that part that it enter not into the said course, but reserving the ancient and oblique course from the said cross to the before-specified haven.' (Dugdale's 'Imbanking,' p. 20.)

"In the early records of Walland Marsh, A.D. 1549, constant reference is made to repairs of certain pindes or pendes (for it is there spelt both ways) in the common sewers. These are now known as pinnocks, or under-drains for conveying water under roads, &c. Aghenepend would therefore be Aghenepinnock. This pinnock would be the one shown in Poker's map of the Marsh, A.D. 1617, as lying under the wall between *Aghonie Marsh* and All Soul's College land, north-west of Lydd. The channel was to go from Aghenepend to Effetone. In Domesday map the manor of Effetone is shown as lying east of Lydd. The next point that can be at all fixed is Melepend, probably a pinnock at the extreme end of Millwatering Sewer, still further east of Lydd, towards the haven of Romney. From Melepend or pinnock it was to descend *obliquely* into the said haven. This would give a course from south-west to north-east from Aghenepend to Romney, and would pass obliquely into the haven of Romney.

"The object was to bring a vast body of water to bear upon the old channel and port to scour them. For this purpose a sluice, with folding-doors to open and close with the tide, was to be made at Appledore, to receive the salt waters from Winchelsea, and prevent their regress; and the waters thus accumulated, with those from the valley of the Rother towards Newenden, were to be conducted to the port by the following means: — In the first place, the old channel, from Appledore to the cross at Agheniepend, was to be cleared of the obstructions, and then a new cut was to be made from the cross to the port, through the mass of silt, which had no doubt been collected by a succession of storms during the previous years. In order that the water from Appledore might scour this channel and the port with the greatest effect, all other vents were to be stopped. A sluice, there-

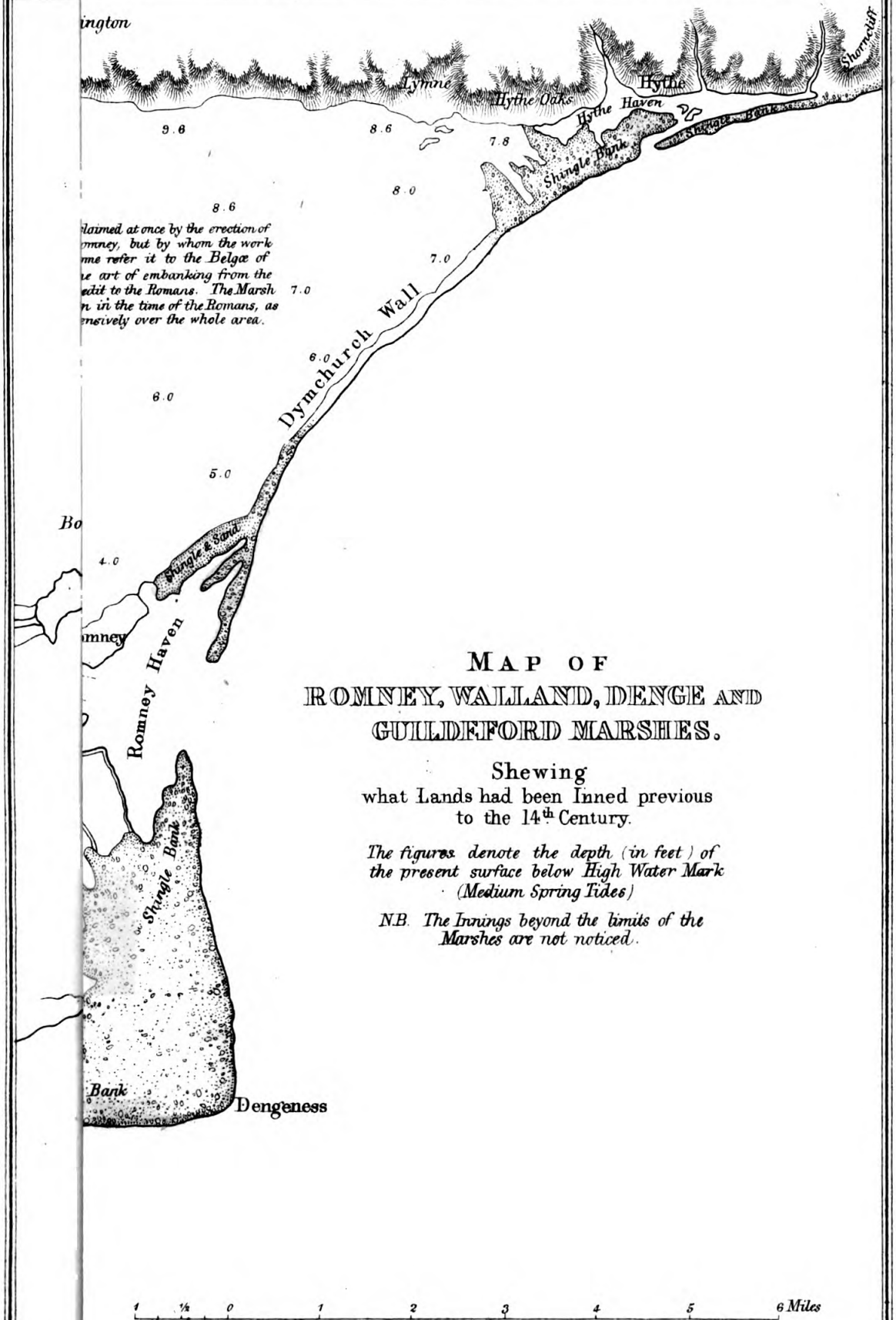
fore, with folding-doors, was to be made at Snargate, to prevent the water from running at the *ebb* along the trench of the Rhee Wall, and another sluice at Romney, to prevent the water from passing up the trench of the Rhee Wall, at the *flow* of the tide; and thus all the water, both at ebb and flow, would be compelled into the new cut and the port.

A.D 1288. "A commission was issued to John de Lovetot, 16 Edw. I., to oversee the banks within the county of Kent, and it is shown that 'there had been no certain law of the Marsh existing beyond the course of the water of that port (Romney) running from Snargate towards Rumenale, on the west part of the same port, till it come to the county of Sussex.' In this commission the trench of Rhee Wall, between Snargate and Romney, is not called or treated as the river Limen or Rother, but as the *course of the water* running from Snargate to Romney.

A.D. 1325. "Great complaints were made, 18 Edward II., and a commission appointed to inquire as to the cutting a trench between Appledore and the port of Rumenale.

"This complaint was between the commonalty of Romney Marsh Proper and the barons of the Cinque Ports, and was probably a question of drainage of Romney Marsh by Appledore Dowles, from which, as the lowest part of the Marsh, there must have existed an outlet for the fresh waters of Romney Marsh from very early times. The cutting the trench was, no doubt, the work of the barons of the Cinque Port of New Romney, and in some way interfered with the drainage of the lands in Romney Marsh. Dugdale, from whom this account is taken, observes, that the contention ran so high, that each party were preparing to fight it out; but that, as the king wanted both parties to fight for him just then, the inquisition was withdrawn.

A.D. 1339. "12 Edward III. Upon a writ of *ad quod damnum* the jury certify, 'That it would not be prejudicial to the king, or any other, if licence were given to John, archbishop of Canterbury, and the Prior of Christchurch, Canterbury, to suffer an ancient trench, leading from an arm of the sea, called Apuldre, towards the town of Romeney, which passed through the proper soil of the said archbishop and prior, and which was then newly obstructed by the sea sands that ships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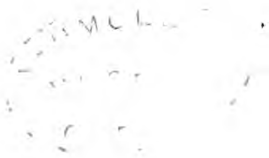
MAP OF
ROMNEY, WALLAND, DENGE AND
GUILDFORD MARSHES.
Shewing
what Lands had been Inned previous
to the 14th Century.
The figures denote the depth (in feet) of
the present surface below High Water Mark
(Medium Spring Tides)
N.B. The Innings beyond the limits of the
Marshes are not noticed.
1 ½ 0 1 2 3 4 5 6 Miles
E. Weller, Litho.



could not pass that way as they had used to do, to be wholly stopped up and filled, so that they, the said archbishop and prior, might make their benefit thereof as they thought fit, in regard that there was a certain other trench, leading from the said arm unto Romeney, lately made by *the force of the sea*, by which the boats and ships might pass as they had wont to do by the other, before it was filled up.' (Dugdale's 'Imbanking,' p. 43.)

"This change was probably caused or completed by the great storm referred to by Lambarde as occurring in A.D. 1334, three years before. Somner takes this trench to be that by Rhee Wall; but it must be noticed that Somner, in reciting the grant of the trench, says, 'One part passed through the lands of Margurite de Passele.' Now Margurite de Passele, according to Hasted, was daughter and heir of Sir Thomas de Normanville, of Kenardington, who died 11 Edward I., possessed of the manors of Palestrie and Kenardington. Margaret, his daughter and heir, married Sir William de Basing, who died sheriff of Kent, 1315. The manor of Palestrie lay in the Isle of Oxney, and extended from Smallhythe to Eboney. As this manor of Passelie, or Palestrie, belonged to Margurite de Basing in her own right, in the grant she is styled Margurite de Passele, and not Margurite de Basing. South of Eboney lay the lands of the Archbishop and the Prior of Christ Church, as can be seen from the dispute at the innings of the Becard in A.D. 1339 (Dugdale's 'Imbanking,' p. 86); this would fix the limits of the lands of Margaret de Basing at Eboney. In giving the direction of the new trench lately 'made by the force of the sea,' Dugdale adds the name of the Abbot of Robertsbridge, as concerned in the new trench, *but not in the old.* The Abbot of Robertsbridge's lands lay about Fairfield Church and the Becard (now Becket), as is shown in the dispute before referred to at the innings of the Becard in 1339. This shows pretty clearly the direction of the new trench made 'by the force of the sea.' Taking Eboney as one point, and Fairfield Church as the other, we have the course of the stream south-eastward, which would be the direction of the chain of fleets before re-

ferred to, just outside (west) of the innings of Baldwin, Boniface, and St. Thomas to Agheniepend, and so by the course appointed by Nicholas de Hanlou in A.D. 1257, about eighty years previous, into the haven at Romney. It is worthy of note, that when the trench by Rhee Wall was given to the corporation of New Romney, 5 Elizabeth, 1562, it was not called the bed of the river Rother, but simply 'all and singular those lands called the land between the walls, extending from Romney to Redhill between two walls, one of which is called Romney Marsh Wall, and the other Walland Wall, which said land, lying between the said two walls, is in manner of a creek or waterway swarved or dried up.'

A.D. 1384. "In 7 Richard II. a commission was granted to examine the state of the sea walls at 'Lyd, Promhill, Midelea, and Old Romeney.' These must have been the walls of Aghonie Marsh, the innings of Peckham and St. Thomas, and the Rhee Wall from Old to New Romney. It is a great mistake to take the Midelea of Domesday for modern Midley, as in A.D. 1086 the site of Midley must have been all sea at high water spring-tides, and there could not have existed any place to find pannage for ten hogs. The position also in Domesday will not answer, for Midelea, if the bearings of the different manors are to be at all depended on (and the others in the Marsh are tolerably correct), would be at Brookland, and even there, where the pannage for ten hogs could be found is a mystery.

A.D. 1389. "1 Henry IV. The land called the Becard, lying about Fairfield and between that and the Isle of Oxney and Appledore, was inclosed about this time, and is now known as the Becket Land.

A.D. 1447. "Sir John Elrington inclosed another large tract of land, thrusting the river Rother, as it was then called, from the Becard and the Appledore Channel, towards the Guildeford Level, Wainway Creek, and Rye Harbour. Sir John Guildeford was probably inning, or had inned, a portion of Guildeford Marsh at this time.

A.D. 1479. "18 Edward IV. Commission granted to Sir John Fogge, where the bounds of Walland Marsh, as now existing, are

stated. The whole of Walland Marsh was then inclosed, except the district now known as Wainway Watering, Wainway Creek, and other creeks leading in, as shown in M. Poker's or Cole's map of A.D. 1617. At this time (A.D. 1479) the land lying between Kent Pen and Jury's Gut Wall was open to the sea from Wainway Creek. Dugdale, in his map, marks Wainway as New Innings of Wainway, probably about A.D. 1600.

"From the accounts of the innings in Guildeford Marsh, in Holloway's 'History of Romney Marsh,' it appears that large grants of land to Sir John Guildeford were inned between 1478 and 1534. A.D. 1534.

"From the records of Walland Marsh, A.D. 1560, we collect that the sea still flowed up the Wainway Creek to Aghonie Marsh Walls, as a view was then ordered to be taken of the sea wall there, and certain repairs directed to be made. A.D. 1560.

"An inquisition taken at Rye before Edward Lord Clinton proves that Sir John Guildeford had then inned the land about Wainway Creek. A.D. 1562.

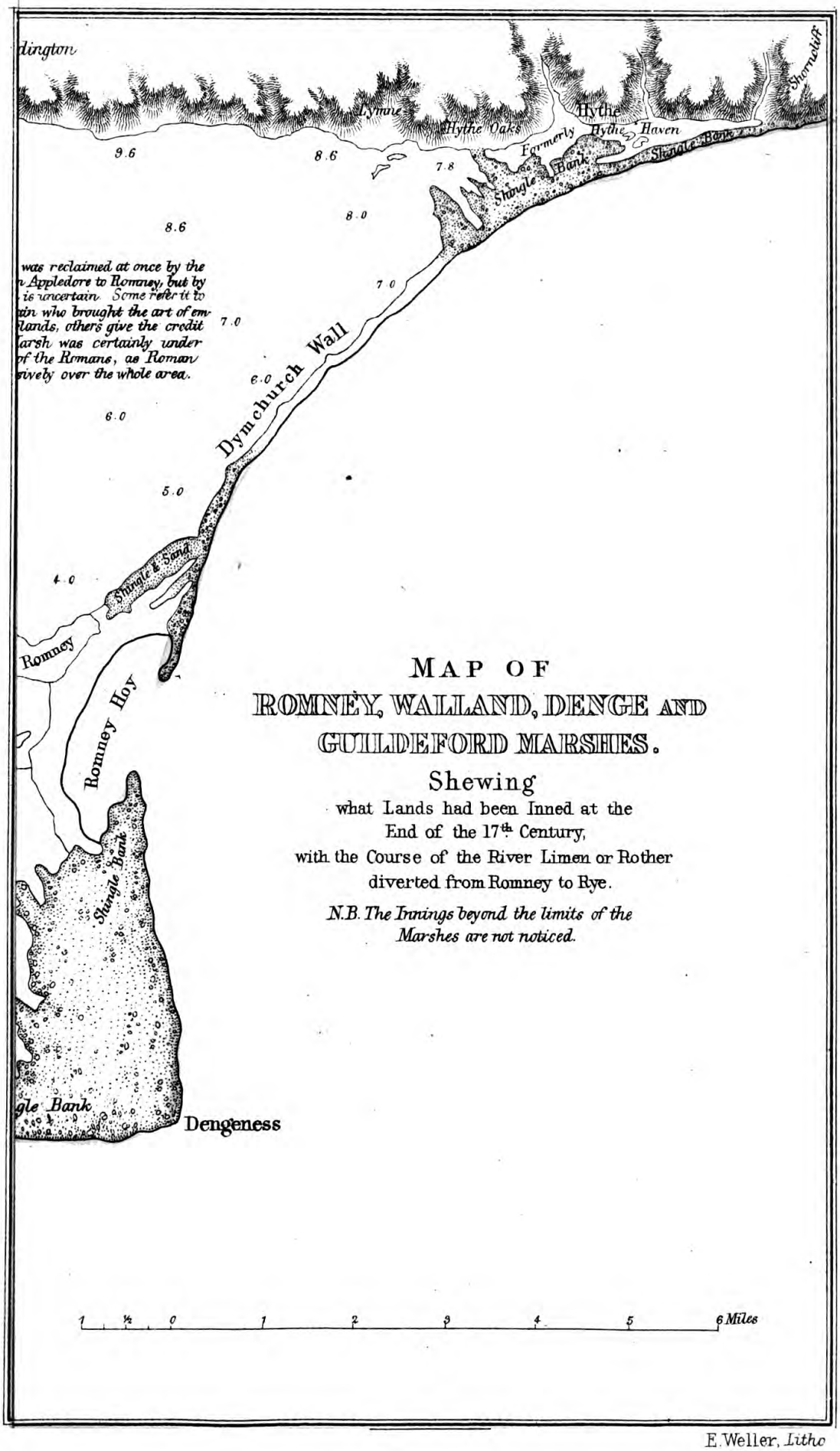
"Wainway Creek itself was shut in under a grant from Charles II., 1661; and thus the final stroke was given to the innings of the whole of Romney Marsh, including Walland Denge, and Guildeford Marshes, to the mouth of Rye Harbour. A.D. 1661.

"In the case of the owners of the upper levels (about Newenden and Bodiam), in a Bill depending in Parliament about the harbour of Rye, it is stated that the lands were sewed, and always had been sewed, into the Rother, which anciently passed into the sea through Romney Marsh, several miles distant from Rye, towards the north-east; but that, having lost its passage about the year 1610, it was turned into the channel of Appledore, *which channel had at that time* no communication with the ancient or present harbour of Rye, but passed into the sea through Guildeford Marsh, at the distance of two miles from Rye to the north-east, and in the year 1623 was turned over from the Guildeford side into a small channel on the Rye side; that the true and natural harbour of Rye, in the year 1644, and always before, lay on the south-west side of the town of Rye, towards Winchelsea. A.D. 1701.

"This requires a little explanation. When the petitioners

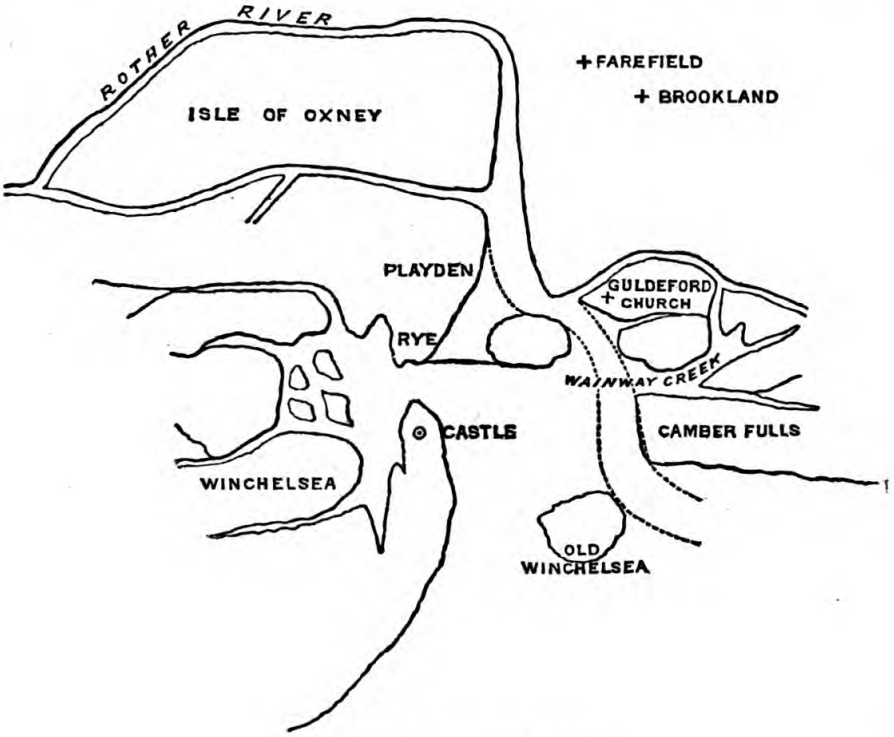
speak of Romney Marsh, it must be taken in the general sense. The time when the waters of the Rother were turned into the Appledore Channel was at the inning of the Becard by Fairfield, in 1389. The innings of Sir John Elrington, 1447, would force the Rother still further westward by Appledore Channel. About the same time Sir J. Guildeford was inning land in the vicinity of Guildeford Church (1478 to 1534); this carried the Appledore Channel to Wainway Creek, so that the only course the Rother could have had from 1389 to 1534, and of course to 1610 (the date of this petition), must have been by the Appledore Channel into Wainway Creek. The outlet by the Appledore Channel and Wainway Creek was probably close to the north end of the sand hills at the Camber, between that and the present lighthouses. This would be where it is shown in the map of Sussex, in Camden's 'Britannia,' if the channel between the land at Rye and Playden were closed, and there was no channel between Playden and Rye until 1787. 'In 1623 (the petitioners say) the channel of Appledore passed *into the sea* through Guildeford Marsh, two miles from Rye,' which would be the point at the sand hills before referred to, and would run thence by the Wainway Creek to Appledore Channel, a short distance west of Guildeford Church, a tract which the sea flowed over up to 1833.

"It is evident that very great changes must have occurred in the coast from Fairlight to Promhill. Norden, in his preface to the 'History of Cornwall,' says of Winchelsea, 'The ruins thereof now lie under the waves three miles within the high sea.' Tradition, he goes on to say, gave the same site in 1330. The bounds of Winchelsea, as stated by Cooper in his 'History of Winchelsea,' were on the Camber (Wainway Creek) side to 'a point on the coast where a man can see Beachey Head by Bourne, past Fairlight Head.' Allowing for waste of Fairlight Head, which would be considerable in 500 years, we should draw the line of ancient shingle spit, as shown in the map at p. liii., and this would also be the extent which Norden describes, when he says, 'the ruins thereof (that is, Old Winchelsea) now



E. Weller, Litho

lie under the waves three miles within the sea." It is highly probable that both Old Winchelsea and Promhill stood, as Lydd does, on an ancient shingle spit, and not higher above high-water mark than three to four feet, and that they



A PLAN OF RYE HARBOUR
(From Camden's Britannia).

The dotted lines show the course of the Rother at this time, there being no opening between Playden and Rye.

were destroyed by some great storms for want of the foreshore which protected Lydd and Romney, viz. Dungeness Point. The sea probably, at some early period of which we have no record, severed the spit somewhere between Old Winchelsea and Promhill. There cannot be much doubt that at one period this shingle spit formed a communication across the bay, part of the parish of Winchelsea being still on the east of Rye Bay, and extending to a point on the coast where a man can see Beachy Head. Holloway, in his 'History of Romney Marsh,' speaking of Camber Castle in 1540,

observes that the sea flowed very close to the walls of the castle, on the south, east, and north sides. In 1626, only eighty-six years after, it is stated in a commission granted to Lord Tufton and others, 2 Charles I., that the castle of Camber, in Sussex, was grown into great decay, being forsaken by the sea, and left distant from the water *two miles* at the least. (Cooper's 'History of Winchelsea.')

"On the old map of the Marsh in the Cottonian collection at the British Museum (see ante, p. 44), the coast line is shown as it then existed. There is no scale to this map, but on comparing fixed points with the Ordnance Survey I find the scale to be five furlongs to the inch. If so, it appears that the coast line has come inland about two furlongs, or eighty rods. The Ordnance Survey was executed 1817, and assuming that the old map in the British Museum was made about A.D. 1550, we have in 267 years a loss of eighty rods in the breadth of the shingle, or about thirty rods in a century. At this rate the shore, B.C. 55, would have been a mile and a half further seaward than at the present time. It is probable, however, that the alteration of this part of the coast was not so rapid before, as since the growth of Dungeness Point. It is pretty certain that the coast line has retreated inland ten rods in fifty years, which would give nine furlongs loss in 1800 years. But this probably is too much, as the line of coast to the westward would continue to feed Hythe with shingle for many years, after the great supply from Dungeness had been cut off. It is within the limit of probability that B.C. 55 the coast line at Hythe was nearly a mile wide from the hills.

"In the old map above referred to, the channels of the haven are represented as forming two small islands. The traces of them were not obliterated until about ten years since, when I was engaged in levelling the land at the south of Hythe. On that occasion, for the purpose of filling up the ditches, I removed and carted away two knolls or eminences which were no doubt anciently the two islands in question. The knolls were pretty close together, about halfway between the military canal and the shingle fall, and about thirty rods to

the east of the Elm Avenue leading from Hythe to the sea. The larger one was oval, thirty yards by twenty and about five feet above the general level. The smaller one was not more than half the size of the other, and a foot and a half lower, and lay to the north-west of the other. I had no conception at the time that I was annihilating two important ancient landmarks.

"I may add that in excavating for a drain at the east end of Hythe, we came to the foundations of a Roman building in the main road, about two feet under the surface, and turned up at the same time a great quantity of broken Roman pottery."

Page 50.

Of the writers who allude to the Marshes, at the part where Cæsar landed, no one, perhaps, uses more pointed language than Lucan, in a passage which was accidentally omitted by the author:

> "Oceanumque vocans incerti stagna profundi,
> Territa quæsitis ostendit terga Britannis."
>
> LUCAN, *Phars.* lib. ii. v. 571.

Page 51.

It has since occurred to me that another argument, though slight, may be urged in favour of Deal, viz. that Cæsar, having come from Boulogne, and anchored off the cliffs between Sandgate and the South Foreland, "*went forward*," ab eo loco *progressus* (iv. 23), which may be thought to mean, that he went up Channel towards Deal. But to this it may be answered, in the first place, that if Cæsar sailed from Boulogne he would approach Folkestone nearly at right angles to the shore, and that if he anchored half a mile or farther from the shore he would be said to go forward, whether he turned to the right hand or the left. In the next place, though the coast towards Dover might in reality be somewhat more remote than the coast in the opposite direction, yet, as a person approaches Britain from Boulogne, the line of shore towards Dover, from the greater height and whiteness of the cliffs, presents the appearance of being nearer

than the line of shore westward, where the cliffs trend inland and the low level of Romney Marsh succeeds. Again, the word "progressus" has reference to the object in view, viz. the island of Britain; and this, to a person arriving from Boulogne, would lie on the left and not on the right. When Cæsar, on his second expedition, was drifted through the strait, he no sooner discovered his error than he tacked back again, *i. e.* the Britain which he was seeking lay to the west.

Page 70.

It is here assumed that the two ships which missed the Portus Itius put into another *port* more to the south, but on referring again to the Commentaries, I am satisfied that Cæsar's meaning is, that the two ships, without reaching any port, put the soldiers on shore either by boats or by running the vessel aground. This also was the understanding of the late Mr. J. Dougall, whose observations are well worth transcribing: "When they arrived," he says, "under the lee shore at Grisnez, the fleet would keep as close as possible to the land. Two of the transports, however, the farthest off the shore, and probably in very bad condition, unable to stand in for the Liane with the others, were forced to run before the wind southward. The high rocky shore extends for above four miles south from the Liane to the commencement of the sandy downs, which reach for nine miles more to the river Canche. On any part of that sandy beach the two transports, flat-bottomed, and in smooth water, with the wind obliquely from the land, might easily run aground and set the troops on shore. . . . While the troops were busied in landing within the haven of the Liane, the fate of the two transports could not be discovered, and might not attract immediate attention; nor could Cæsar's cavalry proceed to their assistance without going up some miles above the haven to find a ford near the Liane."

Page 79.

Corus is generally considered as identical with Caurus, but Vitruvius distinguishes them, and dividing the compass into

twenty-four (not, as we do, into thirty-two) points, makes Caurus the N.W. and Septentrio the N., and between them places Corus next Caurus, and Thrascias next Septentrio. Corus, therefore, would be nearly N.N.W. "Ad latera Cauri Circius et Corus: circa Septentrionem Thrascias et Gallicus." —*Vitruv.* lib. i. c. 6.

Page 86.

I assumed in my essay that the camp which Cæsar pitched, immediately on his second landing, was the camp, but with increased dimensions, in which, on returning from Wye, he drew up his fleet. But, on further reflection, I doubt whether there were not two successive and distinct camps. On his second landing he selected a *suitable* spot, "loco castris *idoneo* capto" (v. 7); and the word "idoneo" leads to the inference that the camp was as usual on high, and naturally strong ground; and if so, what is called Cæsar's camp, at the edge of Shorncliffe, and overlooking the Marsh at Hythe, if ancient, would exactly answer the description. The language, as to the subduction of the ships, is that he decided "omnes naves subduci, et cum castris unâ munitione conjungi" (v. 11); not that they should be hauled into *the camp* before chosen, but that both ships and men should be collected into *one camp*, and protected by the same ramparts. This united camp he calls, by way of contra-distinction, the "castra navalia" (v. 22); and, from the nature of the case, it must have stood on the sea shore. As for many centuries the action of the sea has been wasting this part of the coast, the site of the camp, if originally at the seaside, must long since have disappeared.

Page 94.

I have since examined more closely the mounds in the Marsh near to, and just opposite, Stuttfall, and I find that they are not artificial, but banks of sand; and, in the opinion of Mr. Elliott, were not thrown up by the sea, but drifted

thither by the wind. They lie north and south, increasing in height towards the south, and reach, say sixty yards. They are quite isolated, and not connected with the Shingle Falls, but rest on the ordinary mould of the Marsh.

THE END.

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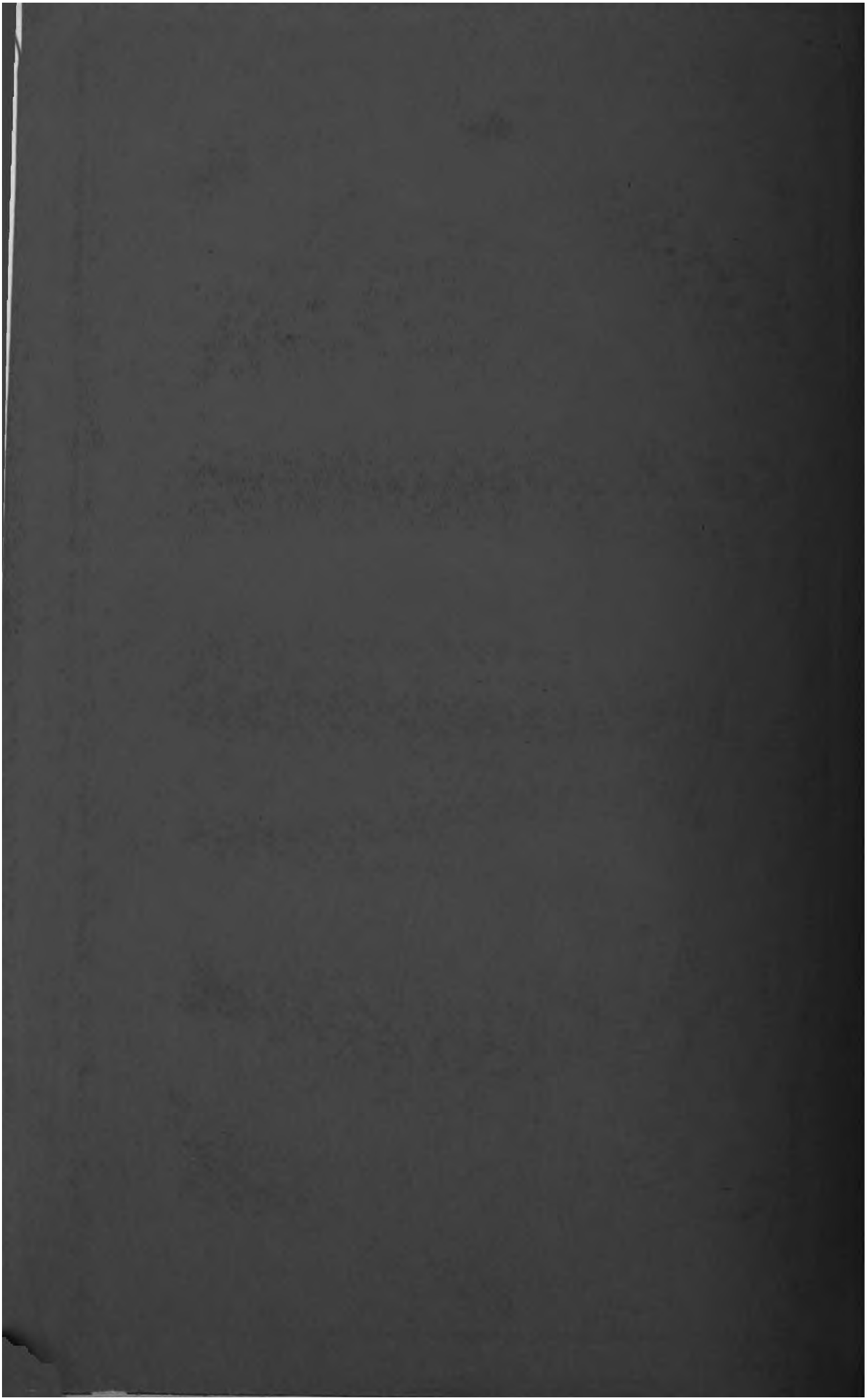
See GB Airy Archaeologia xxxiv
GB Airy, T. Lewin + Admiralty Archaeol. xxxix
pp. 277–314



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