IS BURGHEAD, ON THE MORAY FIRTH, THE WINGED CAMP OF PTOLEMY? WITH REMARKS ON THE ORIGIN OF SOME POPULAR OPINIONS REGARDING THE ANCIENT GEOGRAPHY OF NORTH BRITAIN, THE VALUE TO BE ATTACHED TO PTOLEMY'S TABLES AND MAP OF ALBION, AND THE PROBABLE SOURCES OF HIS INFORMATION.[1]

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In the second book of the Geography of Claudius Ptolemaeus of Alexandria a tribe named the Οὐακομάγοι (Vacomagans) are represented as inhabiting that part of modern Scotland which, roughly speaking, stretches from the Spey on the east to the Beauly Firth on the west, and as far south as the Grampian mountains and the sources of the Tay. Of the four towns which he assigns to them, Πτερωτὸν στρατόπεδον (The Winged Camp) has attracted much more attention than the other three, or, indeed, than any town to be found in his tabular lists of North Britain. Owing to its being identified by many recent authorities with the old fort of Burghead on the Moray Firth, it has been looked upon as affording strong proof of certain statements regarding the ancient geography and history of Northern Scotland. These statements were first made towards the close of last century; and, although the evidence originally brought forward in their support is now known to be valueless, they are still widely credited, and, so far as Burghead is concerned, are even supposed by some writers of repute to be tenable, in part at least, on other grounds. The correctness of the identification and the conclusions drawn from it are consequently matters of some importance.

The Winged Camp has hitherto been best known to us as Alata Castra—the rendering into Latin of its Greek name by the first translators of the Geography. With the exception of Professor Carl Müller, who prefers

[1] Read at the Annual Meeting of the Institute, held at Edinburgh, August 13th, 1891.

Pinnata Castra, in which he recognises the Pinnatis of an independent authority, the Ravenna geographer,[1] all subsequent editors give the same Latin equivalent, which thus came into common use.

Whatever may be the origin of its Ptolemaic designation there is no foundation for Mannert's supposition that the Camp was so called because it had been "only pitched in a hurry"[2] The word πτερωτός does not appear to have been ever used in this sense, in either classical or Alexandrian Greek. Πτερόν (a wing) has, for a secondary meaning, "anything like a wing;" and in Egypt especially, where Ptolemy wrote, it was applied, like the English word, to an addition made to the side of a building. Πτερωτός (winged) was employed in a similar way. Plutarch speaks of a particular kind of tunic as χιτωνίσκος πτερωτός, *i.e.*, with some wing-like appendage. Moreover, Ptolemy distinctly states that his Winged Camp was a town (πόλις), situated, according to his method of reckoning the position of places, in long. 27° 15′ and lat. 59° 20′; and, for some reason that we cannot now determine, he brings it into special prominence in his eighth book. There, after proposing to divide the map of the world into twenty-six separate maps and naming the countries they would include, he gives in hours the length of the solstitial day and the distance west or east from Alexandria of a few selected localities in each of them. Of six such places in his first map of Europe, which comprises Hibernia and Albion, two are islands—Οὐηκτίς (Vectis, probably the Isle of Wight) and Θούλη[3] (Thule), and four are towns of the larger island—London, York,

[1] Præmatis, however, not Pinnatis, is the reading of Gronovius (Monumenta Historica Britannica, xxvi.)

[2] *Geogr. der Gr. und Romer.* II, 2, p. 198.

[3] It is still and probably will ever remain a vexed question, what is the Thule of Pytheas, said by him to be six days' sail north of Britain. Iceland, Lapland or some other part of Norway, and one of the Shetland or of the Orkney islands, have all been held to suit best the description he gave of it. Müllenhoff, in his *Deutsche Altertumskunde* (new ed. Berlin, 1890) has discussed the subject at great length, leaving it very much as he found it. If I might express an opinion, it would be that the Thule of "the Humboldt of the Olden Time," as Pytheas has been called by Brehmer, was either Iceland or Norway, but that the name was applied by others in a vague manner to whatever land the writer chose at the time to consider the most northerly part of the known world. Tacitus, for example, in his doubtfully veracious account of the exploits of Agricola's fleet, cannot be supposed when mentioning Thule to speak of land farther North than Orkney or the Shetlands. Cp. Arvedson (quoted by Elton, *Origins of English History*, pp. 420, 421) for a brief but very exhaustive notice of the controversy.

Caturactonium (which must have been somewhere in the North of England), and the Winged Camp; the last being the only one of the four in what is now Scotland. These facts leave no reasonable doubt, that at the date of Ptolemy's information about Britain this town, instead of being a camp "hurriedly pitched" and held for a brief period by a flying column of invaders, was a place that had an importance of its own and occupied a definite site.

Great difference of opinion exists among our earlier geographers and historians as to the position of the Winged Camp. Hector Boece identified it with Castle Urquhart at the northern extremity of Loch Ness; Camden, following some of the early Continental editors of Ptolemy, with Edinburgh;[1] Gordon of Straloch, with Nairn; Sir John Clerk, with Cramond (Alaterva); Horsley, first with Tain and afterwards with Inverness. Stukeley, in his analysis of the now discredited *De Situ Britanniae*, ascribed by its real author, Charles Julius Bertram, to Richard of Cirencester, a Westminster monk of the fourteenth century, assumed that the fictitious Ptoroton of that treatise was Ptolemy's Πτερωτὸν στρατόπεδον, and chose for it the second of Horsley's sites. All these positions, however, were fixed on merely by conjecture.

In 1776 Major-General William Roy, who had acquired an accurate knowledge of the country during the first Government survey of Scotland, circulated privately among his friends a "Map of North Britain as known to the Romans"—the result mainly of his own studies and observations. On this map Burghead was laid down as Ptoroton. But it was not till the publication in 1793 of his "Military Antiquities of the Romans in North Britain," which contains a commentary on those portions of the so-called "Richard" that relate to the Roman topography of Scotland, that Roy's views and the grounds on which they were advanced became generally known. Adopted by George Chalmers in the first volume of his Caledonia the belief that Burghead had been

[1] "Since Camden's times," according to Mannert, "Edinburgh is assumed by some—led away by the Scottish derivation of the name—to be Castra Alata." This is incorrect. In the 1552 Basle edition of Ptolemy we read "Alata Castra, castra puellarum, vulgo Edenburgh, Scotiæ regia;" and the *Britannia* did not appear till 1586.

fortified by the Romans and called by them Ptoroton, and that it was also the Winged Camp of Ptolemy remained for many years almost unchallenged. This is no longer the case; and so clearly can it now be shown that no such town as Ptoroton ever existed that the name must soon cease to be associated with Burghead or any other locality. The possibility, however, remains of Burghead having been the Vacomagan town. The latter had, no doubt, a real existence, and must have been situated somewhere in the North of Scotland. Accordingly several recent authors, whose opinion is entitled to much weight, continue to identify it with the old fort on the Moray Firth, some holding it to have been a Roman, and others only a native stronghold. It is to this point that I wish to direct attention in what follows. No attempt will be made to fix the exact site of the Camp. For an inquiry of this nature Ptolemy's Geography and his maps are all but useless. The longitudes and latitudes of the former are so untrustworthy and the differences between existing copies of the latter are so marked that, while both may give in most cases a correct idea of the relative position of the places he names, they do not enable us to lay down with any precision the position of those mentioned only by him. It happens, however, that, in connection with the question more particularly before us, two points of much wider interest than the site of an obscure Ptolemaic town fall to be considered. It is necessary to ascertain whether there is sufficient evidence to show that the Roman armies ever reached the Moray Firth, as well as to determine what value ought to be placed on the geography and the maps of Ptolemy for fixing the situation of places found in them but otherwise unknown. Thus treated, the question may, I venture to think, claim some attention from this Section of the Royal Archæological Institute.

The survey of Scotland, to which allusion has been made, was undertaken some time in 1748. Though conducted under the superintendence of Quartermaster-General Watson, it was chiefly executed by Major-General Roy. An antiquary as well as a soldier, Roy eagerly availed himself of the opportunities for gratifying his tastes afforded him by his official duties. Differences of

opinion regarding the scene of the battle of Mons Grampius having induced him to turn his attention to Tacitus' account of Agricola's campaigns, he was led to favour on military considerations an idea first advanced in 1754 by a brother officer, that the engagement had been fought in the neighbourhood of Stonehaven. The discovery at the same time of certain camps, which he at once set down as Roman, stimulated him to continue his researches; and in the course of the summer of 1755 his collection of plans of ancient camps was largely augmented. Soon after this, when nearly the whole of the mainland had been surveyed, the Seven Years' War, in which he greatly distinguished himself, interrupted his investigations. They were resumed on his return to England in 1764. In the interval the *De Situ Britanniae* had made its appearance. Stukeley, its English editor, supplied notes in which he pointed out "the present names of new places" in the southern part of the island, but attempted little in regard to Scotland, having left the identification of localities "to such as are acquainted with that country, and who have opportunities of making private inquiries." It was this hint that suggested to Roy the composition of the "Military Antiquities." Implicitly believing in the authenticity of "Richard," and relying on his own knowledge of the country as qualifying him for the task, he now enlarged the scope of his intended treatise so as to include an exposition of those portions of the *De Situ* that relate to the Roman geography of Scotland.

According to this new authority the whole of Scotland east of the Great Glen, and between the Antonine Wall and the Moray Firth, had been conquered by the Romans in the reign of Domitian, and erected into a province named Vespasiana. Of this province the chief city is said to have been Ptoroton, situated at the mouth of the Varar, on the coast. Other towns of the same tribe, who dwelt "along the Varar," were Tuessis, Tamea, and Banatia, as with Ptolemy; and in the Itinerary of an unnamed Roman general appended to the treatise, all these, except Banatia, are set down as Roman stations. Two other stations are added as lying in their territories—Varis and Ad Tuessim. Vespasiana is further represented as having

been traversed by two distinct Iters, which diverged at Orrea in Perthshire, and met at Ultima Ptoroton on the Varar, the one proceeding along the coast and the other by the mountainous interior.

Unfortunately General Roy lived in an age when either the Druid or the Roman craze blinded the judgment of men otherwise able and accomplished. It was thus that, finding on the promontory of Burghead an ancient fortress, the situation of which could be made to suit the distances in the Ninth Iter of "Richard," he unhesitatingly recognised it as the Ultima Ptoroton of the latter, and at the same time as Ptolemy's Winged Camp. The antiquity and importance of the place were obvious at a glance. Across the headland from sea to sea there extended a series of formidable ramparts and ditches, which, though now swept away, were still entire in Roy's day.[1] Within them were two extensive areas of unequal shape and elevation that had been surrounded by walls of great thickness and peculiar construction.[2] As a landing-place Burghead was accessible in most states of the wind and tide; and it commanded a view of the wide Moray Firth from the mouth of the Lossie to the Ord of Caithness.[3] Had the Romans ever established themselves in the district by marching northwards, and had it been in accordance with their practice in such circumstances to fortify, for defensive or other purposes, positions on the coast of a conquered country, the headland was a most likely spot for them to occupy in force. It need not, therefore, surprise us that Roy, deceived by his guide and overlooking many considerations that would now present themselves to any intelligent inquirer, was led by his own military instincts and by modern ideas of warfare to imagine that its fortifications had been planned by some victorious Roman general, though, as he admitted, "probably altered in some degree by the Scots as well as the Danes."

It is fair to add that although the majority of succeeding writers on the early history of Scotland con-

[1] *Military Antiquities of the Romans in North Britain*, Pl. xxxiii.

[2] Dr. Joseph Anderson: *Scotland in Pagan Times*, p. 279 (Rhind Lectures, 1881).

[3] See its position on any good map of Scotland.

tinued for a long time to follow Roy more or less closely, doubts were all along entertained by a few as to the genuineness of the *De Situ Britanniae*.[1] But for more than half a century no attempts were made to prove that these doubts were well founded. In a communication made to the Society of Antiquaries of Scotland, and printed in Vol. IV of their *Proceedings*, I ventured to dispute the Roman origin of the fortifications of Burghead, and to assert that Bertram's discovery, if not a forgery, was worse than useless as a guide to the history and antiquities of these northern parts.[2] At the time I was not aware that Wex in his Prolegomena to the Agricola of Tacitus (1852) had on internal evidence declared the composition of the book to be later than the invention of printing, else I would have been emboldened to speak even more strongly than I did. A few years later Dr. J. H. Burton, in the first volume of his History of Scotland (1867) pronounced against it on the grounds stated by Wex.[3] He went, however, too far, as Dr. W. F. Skene justly observes, in saying that because the Ptoroton of Richard had no existence "the Pteroton Stratopedon must go back to Edinburgh or some of its old sites," since it is not to Bertram but to Ptolemy that we owe our knowledge of the latter.[4] At length Mr. B. B. Woodward of the Royal Library, Windsor Castle, in a series of papers in the Gentleman's Magazine,[5] subjected the text of the *De Situ Britanniae* to a critical examination, with results which conclusively proved that it was a spurious work, written at a much later date than the fourteenth century. This was followed in 1869 by a most learned and elaborate dissection of the forgery from the pen of Professor John E. B. Mayor of Cambridge, in his preface to the second volume of Richard of Cirencester's genuine work, the *Speculum Historiale de Gestis Regum Angliae*, published under the direction of

[1] The Rev. Dr. Gordon, in his account of the parish of Birnie, written for the New Statistical Account of Scotland (1835), designates Burghead, with that sagacity and caution which have made him the highest authority on the natural history and antiquities of the North of Scotland, "the great Danish stronghold."

[2] *Historical Notices of "The Broch" or Burghead, in Moray;* Proceedings Soc. of Antiq. of Scotland, Vol. iv pp. 321-369 (1862).

[3] Vol. I, pp. 61-2 (Library Edition).

[4] *Celtic Scotland*. Vol. I, p. 75.

[5] N. S., March, May, and Oct., 1866, and Oct., 1867.

the Master of the Rolls. Its credit was now gone for ever; and at the same time there disappeared the Roman province of Vespasiana with its capital Ptoroton, as well as the Roman roads, camps, and stations that, trusting to "Richard" as an authority, the too credulous antiquaries of former days had so readily discovered in north eastern Scotland.[1]

We may next turn to those authors who while repudiating or ignoring "Richard," are yet disposed to claim Burghead as having been Roman, selecting two of their ablest representatives.

Mr. E. H. Bunbury, whose History of Ancient Geography is the most complete work of the kind in the English language, writes:—"The most northern point (on the mainland of Scotland) of which Ptolemy professes to give the latitudes in his eighth book, is a place called Πτερωτὸν στρατόπεδον . . . The position of this place (the name of which is not found in a Latin author, but is obviously a mere translation of Alata Castra)[2] is wholly uncertain, and it is merely by conjecture that it is usually placed at Burghead on the Moray Firth."[3] Elsewhere when discussing the extent of Ptolemy's knowledge of Britain as compared with that of Strabo or Pliny, he remarks;—"We may surmise also that the increased knowledge of the northern parts of Britain, shortly after this time (*i.e.*, the age of the Antonines) was due in a great part to the campaigns of Lollius; and that he actually carried his arms as far north as the Moray Firth and established a fortified station on its shores,"[4] meaning clearly the Winged Camp, which he had already indicated might be Burghead. And Prof. Carl Müller, the greatest living authority on ancient Greek and especially Ptolemaic geography, expresses a similar opinion. "The Winged Camp may be placed," he says, "at the modern Burghead, or the adjoining village of Findhorn. . . . It seems to have been a naval camp formed for the

[1] Very few Continental writers take any notice of the *De Situ*. Diefenbach refers to it in his *Celtica* (1842), but only as quoted by Pinkerton.

[2] This is by no means obvious. The Greek for a camp which had become a town is τεῖχος or τείχη rather than στρατόπεδον. It has been suggested that Ptolemy may have mistranslated some Semitic (Phoenician) word. See also below, p. 384, *note*.

[3] *Hist. of Anc. Georg.* vol. ii, p. 640.

[4] *Ibid.* Vol. i, p. 514.

temporary purpose of protecting the fleet (perhaps at the time when Lollins Urbicus carried on his campaigns) and soon afterwards abandoned." And as supporting him in this conclusion Prof. Muller refers to Pausanias, Julius Capitolinus and the German geographer, Mannert.[1]

To begin with Pausanias. It is difficult to see what possible connection the words of that historian can have with the North of Scotland. They are as follows :— Antoninus "deprived the Brigantes in Britain of a great portion of their land because they had begun to overrun with their arms the territory of the Genunii who were tributary to the Romans." Now, the Brigantes were a powerful tribe inhabiting modern Lancashire and Yorkshire. Horsley is of opinion that the words of Pausanias imply that they had revolted against the Romans, whose power could no longer have extended to Hadrian's Wall, and conjectures that the country of the Genunii was south of theirs. But even if it lay to the north, it could not have extended far, if at all, into Scotland.

The passage of Capitolinus referred to, is doubtless the well-known one in which he gives us the only notice we have of the Antonine Wall that is to be found in any ancient author. Antoninus, he remarks "carried on very many wars by the agency of his generals. For he vanquished even the Britons by his lieutenant, Lollius Urbicus, and after pushing back the barbarians built another wall which was of turf." This wall as is proved by the inscriptions that have been found along its line, is unquestionably the rampart that once ran between the Forth and the Clyde; and evidently what Urbicus is said to have done was to sudbue the tribes in the south of Scotland, who seem to have quickly regained their independence after having been brought into unwilling subjection by Agricola. Having thus again extended the limits of the empire to the point that had formerly been fixed on by his great predecessor as its northern boundary, he erected there a barrier to check the attacks of the barbarians that inhabited the country beyond. How far they may have been pursued into their native wilds,

[1] *C. Ptolemæi Geographia*, vol. i, pt 1, p. 95. Paris, 1883.

when they sought from time to time, as we may be sure they did, to harass the builders or the defenders of the wall, we are not informed. But the words of Capitolinus afford no warrant whatever for the inference that Urbicus ever carried the Roman eagles beyond the Grampians.

Yet this is the inference that Mannert has drawn. Taking Horsley as his chief guide for the Ptolemaic towns of Britain, he says of Alata Castra, that it was "the farthest point of the country known to the Romans at that time, which may certainly be looked for in the neighbourhood of Inverness. Agricola's expeditions did not reach so far; accordingly it must be supposed that Lollius in his inroad came as far as this district and pitched his camp; but that without making further efforts to maintain his position, he marched away again; hence the name of a camp pitched only in a hurry."[1]

Here Mannert assumes, what Horsley certainly did not, that the Winged Camp was Roman. Having done so, he appears to have felt it necessary to show that there was some historical evidence on which the assumption might rest; and this, he thought, could be supplied by what Capitolinus records of Lollius Urbicus. It is, however, more than probable that Mannert's commentary on the historian's words is not due in the first instance to himself. Six years before the volume of his work containing Britain was published, Pinkerton in his "Enquiry into the History of Scotland" had with a similar object in view, sought to extract from them the same meaning. "About 150," he informs us, "when Ptolemy wrote, we find Vespasiana full (*sic*) of Roman towns. For these we are surely indebted to Lollius Urbicus only, who about the year 140, carried the Roman arms in Britain to a greater extent than ever, as the wall of Antoninus and the work of Ptolemy remain lasting proofs. To him, therefore, ought chiefly to be ascribed the Roman remains in Vespasiana."[2] Mannert nowhere refers to Pinkerton. But the "Enquiry" is frequently quoted by continental writers of that day, and there is every reason to suppose

[1] *Geogr. der Gr. und. Romer*, ii, 2, p. 178 (1795.)

[2] *Enquiry into the Hist. of Scot.*, vol. i, p. 215 (1789).

that it was Mannert's authority on the point.[1] If so we are brought back to that source of so much confusion—the *De Situ Britanniæ*, in the genuineness of which Pinkerton believed. Mannert's statement is copied with due acknowledgement by Forbiger.[2] Bertram has thus indirectly influenced not only Mannert but through him Forbiger, Bunbury and Prof. Carl. Muller.

Roy's "Military Antiquities" was not published till some time after the "Enquiry." But it was lying in MS. in the King's Library, and Pinkerton had access to it and made, as he admits, much use of it. He did not, however, slavishly follow Roy who had ascribed the conquest of the north to Agricola and the "establishment" of Ptoroton to that general's fleet. He further retained Alata Castra near where Horsley had placed it, "at Inverness or Fort George." George Chalmers adopted Pinkerton's view of the operations of Urbicus, while preferring that of Roy as to the site of Ptoroton; and in "Caledonia" the brief statement of Capitolinus was, with the aid of "Richard," expanded into a chapter of 68 quarto pages, entitled "The Actions of Lollius Urbicus." Thus is history sometimes written!

It must, of course, be conceded that the silence of those ancient writers that have come down to us, would not justify us in rejecting the supposition that the Romans had made a raid into northern Albion and held some positions there for a time, did any traces remain of their presence. But it is not too much to say that of such evidence there is not even a shred. Except a few so-called Roman camps, which may possibly mark the steps of Severus during his hurried inroad into Caledonia A.D. 209, and a few easily transported articles, such as coins, nothing has been met with north of the Antonine Wall bearing the impress of Roman hands. The supposed Roman roads are mediæval causeways of varying age. Burghead had evidently been a native stronghold, which, as we learn from the Sagas, was more than once in possession of the Norsemen during the days when their galleys

1 In his Preface Maunert says:—"I have to thank the University of Gottingen and particularly Herr Hofrath Heine for kindly assisting me with English works and maps." This is all but conclusive. At the time Mannert wrote, the "Enquiry" was the most recent and best known work on the ancient history and geography of Scotland.

2 *Handbuch der alten Geographie*, vol. iii, p. 304, *note*.

were the terror of our coasts. In their latest form its fortifications were partly of Pictish, partly of Scandinavian origin. A cistern cut out of the solid rock, and containing water of a depth of three or four feet, which has been described sometimes as a Roman well, and sometimes as a Roman bath, and the existence of which has done more, perhaps, than anything else to confirm the idea of a Roman occupation in the popular mind, is almost beyond doubt an ancient baptistery. In very early times a Christian church had stood on the headland, and with it this basin was evidently connected.[1]

It is now possible for us to deal with the question, Is Burghead the Winged Camp of Ptolemy? free from those extraneous considerations with which it has so long been complicated.

In the Geography the Vacomagans and their towns are thus noticed:—

"Below (*i.e.* east of) the Caledonians are the Vacomagans, whose towns are[2]

		Long.	Lat.
Βαννατία	Bannatia	24°	59° 30′
Ταμία	Tamia	25°	59° 20′
Πτερωτὸν στρατοπεδον	Winged Camp	27° 15′	59° 20′
Τούεσις	Tuesis	36° 45°	59° 10′

It adds greatly to the difficulty of getting any definite information as to the situation of the places mentioned in the Ptolemaic map as being in northern Albion, that the whole of Scotland is made to trend to the east. Owing to this the Vacomagans are spoken of in the text as lying 'below' or south of, instead of east of, the Caledonians. Various explanations have been offered of this strange mistake. The true one is simple enough, and was first given by Gosselin in a letter to Pinkerton, dated, Paris, April 30th, 1803, a translation of which from the French is printed in the second edition of the "Enquiry." It is in substance as follows:—Having fixed 63° as the latitude of Thule—a position which Ptolemy evidently held to have been settled by observation—and having

[1] *Burghead as the site of an Early Christian Church*, &c., in Transactions of the Glasgow Archaeological Society, vol. ii, pt. 1, pp, 63-115 (New Series).

[2] In this table as well as the one given afterwards, the text of Prof. C. Müller, has been followed. (Paris, 1883.)

through miscalculations of his own brought Νοουαντῶν χερσόνησος[1] (the Mull of Galloway) as far north as 61° 40°, only one degree and twenty minutes south of it, the cartographer was obliged to turn Scotland to the east, else it would have stretched beyond that island, which was supposed to be the extreme northern limit of the known world.

Had the Vacomagans been subdued by the Romans, all the towns noted in the preceding Table might have been at one time Roman, as Pinkerton actually supposes they were. But this opinion is, as we have seen, untenable. Even the Camp, however its name may be accounted for, must, in the entire absence of either historical or archæological evidence to the contrary, be put down as a native stronghold. Was it then Burghead?

Dr. W. F Skene, whose researches into the history of Celtic Scotland are so well known and so highly valued, thinks the two are one and the same. "It is of course," he writes, "absurd to recognise Burghead as a Roman station; but it was certainly one of the positions of the Vacomagans, on which they had a town named Πτερωτὸν στρατόπεδον or the Winged Camp."[2]

It will be observed that there is one important particular on which Dr. Skene and all our authorities since Roy's time, and even before it are agreed, however they differ in others; they place the Winged Camp on the sea coast. If they are right in so doing, it may be admitted that as good a claim can be made out for Burghead as for any other locality. But if they are wrong, then the claim of Burghead falls to the ground. This consideration has, so far as I am aware, never hitherto been taken into account. Our historians have assumed not only that we are entitled to neglect it but that the town may properly be looked for on the coast. If, however, it can be shown that the Camp must have been situated inland, we have a decisive reply to the only question that has to be answered. And in order to be able to estimate aright the nature of the evidence Ptolemy supplies for our purpose, some preliminary observations are necessary on the

[1] Gosselin selects the mouth of the Vedra (?Wear) to illustrate his argument. The Mull of Galloway makes its force still clearer.

[2] *Celtic Scotland*, vol. i, pp. 74, 75.

plan of his Geography as well as on the chief errors and defects both of the text and of the accompanying maps.

Of Ptolemy almost nothing is known except that he lived and wrote at Alexandria in the middle of the second century A.D. Astronomy rather than geography was the study of his life. Even his treatise on the latter was not called by himself a geography but merely a "Geographical Guide," (Γεωγραφικὴ Ὑφήγησις), and consists for the most part of Tables giving the longitudes and latitudes of the more striking features of the sea coasts as well as those of the chief towns belonging to the peoples inhabiting the various countries of the globe. The maps are usually twenty seven in number, one being a general map of the world, followed by ten devoted to Europe, twelve to Asia, and four to Africa. Though wanting in some MSS. they are clearly a necessary supplement to the text. In fact it would seem as if the Tables were meant either to be a kind of Index to the Atlas or else to enable cartographers to construct for themselves a map of the world or of any part of it.

The Geography is divided into eight books. The first is introductory, the next five and the greater part of the seventh are made up of the Tables referred to, while the rest of the seventh and the whole of the eighth contain some mathematical and astronomical information bearing on the subject matter of the work. The first book contains three sections. In chapters one to five, Ptolemy explains the difference between geography as he understands the term, and chorography, the proper method of collecting materials for the construction of maps; and the necessity, in the absence of a sufficient number of astronomical observations, of having recourse to the journals of explorers or voyagers for the calculation of distances between different places. Chapters six to twenty are occupied with a criticism of the writings of his immediate predecessor Marinus of Tyre, to whom he owns himself very largely indebted. The third and last section, chapters twenty-one to twenty-four, treats of the difficulty of delineating a spherical on a plain surface and of the best devices for overcoming this difficulty. In the Geography itself Ptolemy usually begins his description of the map of a country by noting in succession the chief natural and some-

times the artificial features of the coast and then gives the names and relative situations of the maritime and inland tribes with their more important towns, never omitting to mention any island or groups of islands that may lie off its shores. If the country does not touch the sea, some well known river or mountain range is selected either as a starting point or as a guide to the position of the different tribes. Descriptive notices are few and far between; and it is only occasionally and in the case of well-known provinces, such as the Peloponnesus, that the mountains are mentioned, all the information given regarding the interior of a country being for the most part only the names of its tribes and their chief towns. Assuming the earth to be spherical, Ptolemy in computing latitude started from the equator, and, as had been done by Hipparchus long before, divided its circumference and all other circles that could be drawn round it into 360 equal parts or degrees, each of which was again subdivided into 60 minutes. As the western limits of its land surface and his own first meridian of longitude, he adopted, following probably Marinus, the Fortunate or Canary Islands. Thus the outlines of his system were scientifically accurate. During the Middle Ages, when his maps were almost unknown or forgotten, the inferiority of those then constructed is very marked. This may be seen by examining the attempts at map-drawing of our own countrymen as shown by Gough,[1] the maps of the Arab geographers,[2] or the fifteenth and sixteenth century maps lately reproduced by Professor Nordenskiold.[3] When by means of the invention of printing and of copper plate and wood engraving, copies of Ptolemy were multiplied, his instructions for map-drawing and his method of denoting the boundaries between countries, together with many of his other geographical expedients, were speedily adopted. His maps, or maps made in accordance with his directions, thus became the prototypes of all our modern ones.[4]

[1] *British Topography*, 2 vols, 4to. (London, 1780).

[2] Cp. Lelewel, *Géographie du Moyen Age, accompagnee d'Atlas*; Tom i. ii. (Bruxelles, 1852).

[3] A. E Nordenskiold, *Facsimile Atlas to the Early History of Cartography*, fol. (Stockholm, 1889).

[4] It cannot be positively asserted that Ptolemy constructed maps himself. But what he undertook was "to reform the map of the world:" and by his definition

It may he well to give here Ptolemy's own account of his work and the methods he followed, as summarized in the nineteenth chapter of his first book. That chapter translated as literally as the somewhat involved construction of his Greek sentences will permit, reads thus . "We have undertaken a twofold task—that of upholding the views of Marinus throughout the entire work, except in those particulars that require some correction, and of inserting (in our map) in their proper positions, as far as that is practicable, the places that have not been distinctly noted by him. (This last improvement we shall make) either in accordance with information received from people who have visited the different localities or with their positions on the more accurate maps. Further, we have taken care to make our method easy of use by arranging in order in each province, one after another, its boundaries, its extent, its longitude and latitude, and the relative situations of its principal tribes, as well as those of its more remarkable towns, rivers, bays, mountains and other objects that ought to find a place in the map of the world. These situations we have indicated by giving their exact distances, that is to say, the number of degrees—of which a great circle contains 360—the meridian of any place is distant from the western extremity (of the land surface of the globe), the degrees being reckoned upon the equator. We also give (for the same purpose) the distance in degrees from the equator, reckoned upon the meridian, of the parallel of latitude that runs through each of these situations. In this way we shall at once be able to ascertain not only the position of each place, but from the accuracy with which they are severally laid down, the relative situations of the different provinces to one another and to the rest of the habitable world."

But with all it merits, the errors and defects of the atlas and consequently of the Geography are serious. The latitudes except in a few instances are not the result of astronomical observations but of guesses derived

of geography he almost limits it to the art of drawing such a map. "Ptolemée," remarks Letronne, "prend le mot géographie dans le sens graphique et non descriptif. Pour Ptolemée, la géographie est l'art de dresser des cartes générales de la terre." *Examen Critique des Prolégomènes de la Géographiede Ptolemée*, Par M. Letronne (Paris, 1831), p. 5 note.

from the time said to be occupied in journeying and sailing from a place whose position was supposed to be already known to another, whose position had to be laid down. This we learn from Ptolemy's own admissions. For determining longitude the ancients had no correct appliances, and recourse was had in every case to the same unreliable mode of reckoning. Ptolemy's first meridian, which he assumed to be $2\frac{1}{2}$ degrees west of Cape St. Vincent, is really $9\frac{1}{2}$. The length of a degree both of longitude and latitude he estimated at fifty instead of sixty geographical miles; and, contrary to the directions given in his introductory remarks, he made when drawing lines of longitude no sufficient allowance for graduation, except in his map of the world. In commenting on the vague and indefinite nature of much of the information given us by Ptolemy and the impossibility of attaining accuracy in his day, Mr. Bunbury observes :—"Under these circumstances the attempt to clothe his imperfect materials in a scientific garb, was only to mislead his readers by concealing the poverty of his real knowledge: and unfortunately it had that effect in a most unprecedented degree. Owing to the definite and positive form in which his results were presented it was assumed without further inquiry that they were based on sound and sufficient data. His great astronomical reputation also contributed to the same effect. . . . Few read or cared to remember his first introductory book. . . . The problem which he proposed to himself was a noble scientific conception, but it was one which it was in his day utterly impossible to realize. The scientific framework was in reality a delusion, but its outward form was so regular and symmetrical that it imposed upon almost all observers; and the authority of Ptolemy became established in geography in a position nearly as paramount as that which for many centuries it occupied in astronomy. Even at the present day there still remains a lingering desire to prove him in the right if possible, and to believe in the accuracy of geographical positions which could not possibly have been founded on actual observations."[1]

[1] *Hist. of Anc. Geography*, vol. ii, p: 634, 635.

From these remarks, the truth of which every student of Ptolemy will readily acknowledge, it is evident that little or no dependence can be placed on the longitudes and latitudes of the Geography as marking accurately the positions of the places to which they are attached in the Tables. When the more prominent features of a coast are laid down on one of his maps with a fair approach to correctness, they may lend themselves to identification, and others may be fixed within certain limits. In the case of inland localities this does not hold good, since he has very seldom associated them with any material object, such as a river. Thus nearly all that we can infer with certainty from the Tables as to any town is its position relative to the coast or to other towns enumerated along with it. But with some necessary reservations we are entitled to use them as evidence on this particular point.

Regarding the codex maps, as well as those of the earliest editions of the Geography, a very pertinent question is put by Prof. Nordenskiold :—"To what extent can they claim to be faithful reproductions of Ptolemy's own maps?" One thing is certain, the copyists made no attempt at improvement or correction. Nor do the maps show the slightest trace of the influence of the church, so evident in most mediæval maps. The differences found in copies of the same map are due either to carelessness or to the map-maker having taken the longitudes and latitudes of the Geography as his guide rather than an earlier map.

In some of the Codices the construction of the maps is attributed to a certain Agathodaemon said to be "an artist of Alexandria."[1] But, as Heeren remarks, this comprehends all that we certainly know of him. The common opinion that he lived in the fifth century, rests upon the bare assumption of his being the same individual as a grammarian named Agathodæmon, some epistles to whom written by Isidore of Pelusium are still extant. This supposition, however, is not only without foundation, but is even extremely improbable from the unlikely cir-

[1] At the end of the St. Mark's (Venice) Codex there is written :—Εκ των κλαυδιόυ πτολεμαιόυ γεωγραφικῶν βιβλίων οκτώ, την οἰκουμένην πᾶσαν ἀγαθὸς δαίμων ἀλεξα δρεὺς μηχανικὸς ὑπετύπωσε.

cumstance that an artist should be at the same time also a grammarian. On the other hand he might very possibly have been contemporary with Ptolemy and have assisted him in the construction of his charts.[1]

The oldest manuscript of the Geography with maps attached is that preserved at the Convent Vatopedi on Mount Athos, which has been reproduced in photo-lithography. According to its editor, its date is between the beginning of the twelfth and the end of the thirteenth century. Several of the maps have been torn out or lost, among them that of Albion. Carelessly executed at first, they have been very badly preserved, and are much inferior to those of the later Codices. On the geographical worth of these and other Ptolemaic maps Prof. Müller, who must have given more time to the comparison of them than any other living scholar, thus writes :—" With the methods customary in the oldest maps of indicating positions, not by points or small circles, but by large squares and other drawings, we are seldom able to fix accurately the situation of a place. Examples of this are the almost useless oldest maps of the lithographed Mount Athos Codex. Further, with reference to the codex maps in general, they have by no means the value one is often inclined to attach to them. The view, that independently of the written text of the Geography, there has been produced since the time of Agathodæmon a succession of maps, so that, in consequence of the changes introduced by copyists, the oldest maps are also the most valuable, cannot, in my opinion, be maintained. I should rather say that all the maps, so far as we know them, have been to some extent adapted to written texts, as these were understood by the map makers."[2] Prof. Nordenskiold, however, puts their value higher. After noticing the poor execution and worn condition of the Vatopedi maps, he says :—"But an opportunity is supplied to the inquirer by this edition of convincing himself in his own study, how exactly and minutely the fine maps which were published in Ptolemy's name at the end of the 15th

[1] A. H. L. Heeren, *De Fontibus Geographicorum Ptolemæi Tabularumque iis annexarum*, &c., Praelecta, 17 Jul. 1824. Comment. Reg. Soc. Gotting, vol. vi, Cp. Appendix c. to vol. iii, of Heeren's *Historical Researches* (Eng. Trans.)

[2] Letter to Mr. H. A. Grueber (8th May, 1891).

century correspond with the maps from the beginning of the 12th, as regards the main geographical features and the legends."[1]

According to either view the evidence of the maps on the particular question before us also deserves to be heard equally with that of the Tables. To what effect, then, is the evidence of both Tables and maps?

Taking the Tables first, we find the features of the coast of Northern Scotland thus laid down;—

		Lat.	Long.
Οὐιρουεδρουὶμ ἄκρον	Cape Virvedrum	31°	60°
Οὐερουβίουμ ἄκρον	Cape Verubium	30° 30′	59° 40′
Ἴλα ποταμοῦ ἐκβολαί	Mouths of the Ila	30°	59° 40′
Ὄχθη ὑψηλή	The Lofty Bank	29°	59° 40′
Οὐάραμ εἴσχυσις	Estuary of the Varar	27°	59° 40′
Λόξα ποταμοῦ ἐκβολαί	Mouths of the Loxa	27° 30′	59° 40′
Τούεσις εἴσχυσις	Estuary of the Tuesis	27°	59°
Ταιζάλων ἄκρον	The Tæzalan Cape	27° 30′	58° 30′
Καιλεος ποταμοῦ ἐκβολαί	Mouths of the Cælis	27°	58° 45′

If we regard these degrees as the best readings—for the MSS. vary—and assume that the order in which the promontories and bays are laid down is correct—for here too the MSS. differ, one at least placing the Mouths of the Loxa before, and not after, the Estuary of the Varar, as do several of the maps—we may, I think, identify with considerable probability Cape Virvedrum with Duncansbay Head and the Tæzalan Cape with Kinnaird's Head, the northern and southern extremities of the triangular area occupied on a modern map by the Moray Firth. The sudden change in the latitudes (properly the longitudes) seems also to indicate that the apex of this triangle lies somewhere between the "Lofty Bank," and either the estuary of the Varar or the mouths of the Loxa. Nearer the truth than this it is impossible, I believe, to come, and we can do little more than conjecture what are the modern equivalents of these last and the other names in the Table. To identify the Estuary of the Varar with the Moray Firth, as is usually done, is clearly wrong. Every one of the features named belongs to that broad arm of the sea, of which the Varar is merely

[1] *Facsimile Atlas*, Introduction, p. 31.

a smaller arm thrown out after it has become greatly narrowed—its termination it may be, though if we take some of the maps into account that cannot be held as certain. It is probable, however, that the copyists may have made greater changes on the details of this map than on the text of the Geography, and that the latter is the more trustworthy.

It will be observed that the Winged Camp is not in the Table. Some may be disposed to say that Ptolemy, intending to give afterwards a Table of the Vacomagan towns, omitted it purposely. But such is not his usual mode of procedure. For example, on the west coast of Ireland he names along with the river mouths and promontories a town which he calls Magnata; and though he afterwards gives the Magnatæ as one of the tribes dwelling in that part of the Island, he assigns them no town, deeming it enough to have mentioned it once. In the same way on the east coast, we have the towns of Menapia and Eblana (Dublin) in the description of the seaboard. When, however, he comes to enumerate the Eblani and the Menapii as native tribes, he does not think it necessary to assign them any town. His account of Latium is still more to the point. In his description of the coast the only natural features noted are—the mouth of the Tiber and the promontory of Circe, while the names are given of Ostia, Antium and four other Latin towns. On the other hand Rome, Tibur, Præneste, Tusculum and no fewer than seventeen others are given in a separate Table of inland Latin towns, in which none of those appear that are in the Table of places on the coast. Nor is it towns alone of the artificial features of the coast that he enumerates. He notices, for instance, on the southern shores of Spain a temple of Hera that stood on a promontory near the Straits of Gibraltar, and elsewhere, temples of Aphrodite, Zeus and other deities. More than this: striking features of the coast are not left unnoticed though their names are unknown to him. Twice at least on the Spanish coast, and once on that of the Cimbrian Chersonese an eminence is named simply ἐξοχή; a promontory is sometimes marked as such without being named; and a height on the eastern shore of the Moray Firth has no other designation than the 'Lofty Bank.'

Ptolemy does perhaps place inland certain towns, Rutupiae (Richborough) for example, that at the time he wrote were on the coast, or at all events, on a navigable inlet; and it may be admitted that when one has sufficient reason, independently of Ptolemy, for seeking a town either on the coast or inland, as may happen, this must be allowed to outweigh anything to the contrary in his Tables or his maps. In that case we must suppose that Ptolemy has made a mistake, or that the information on which he went was of a much older date than his own day. But of the site of the Winged Camp, we have no means of judging apart from Ptolemy; and since it is absent from his coast Table, we are bound to conclude on this branch of the evidence that it must have been an inland town.

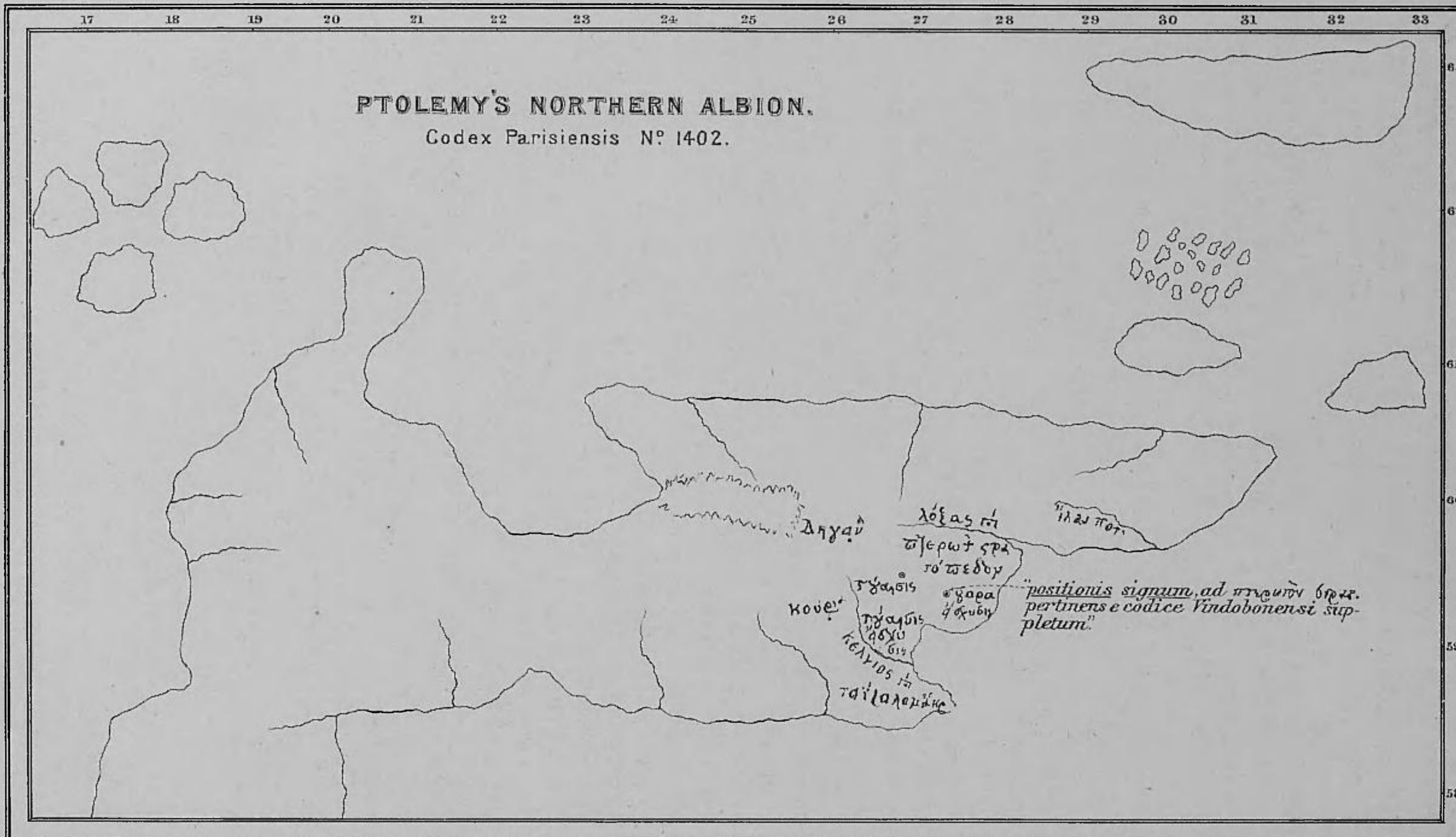
Owing to various circumstances already indicated—the turning of Scotland to the east instead of the north, the haphazard method used by Ptolemy in his calculations of distances and his having represented large portions of the sea coast, to use the words of Gosselin, by "straight lines without attention to the intervening sinuosities," the longitudes and latitudes of the geography give us no satisfactory aid in determining the position of the Winged Camp. I have, therefore, thought it unnecessary to waste time in trying to use them for that purpose.[1]

In dealing with the maps we must take into account not only those of existing Codices, but the maps of the earlier editions of Ptolemy, which are supposed to be more or less faithful reproductions of the codex maps from which they were taken. Through the great kindness of friends[2] I have been supplied with tracings of the more important of the former as well as enabled to examine a

[1] Capt. F. W. L. Thomas, R.N., (*Proceedings, Soc. of Antiq. of Scottand*, vol. xi, pp. 198-225), has reconstructed the Ptolemaic map of Scotland solely from these longitudes and latitudes, connecting with straight lines the different places on the coast. Among these places he includes, in accordance with the prevailing opinion, though not wth Ptolemy's text, the Winged Camp. What he has produced is interesting as shewing that Ptolemy must have had a very large amount of correct information as to the general outline and features of northern Albion. But his two maps have no other value.

[2] Among those who have most obligingly aided me in this and some other particulars I may be permitted to mention Mr. Hellier Gosselin, Prof. Carl Müller (through Mr. H. A. Grueber, Brit. Museum), Herr G. Maag, Carls Gymnasium, Stuttgart, Mr. J. W. Mackail, Mr. J. A. Smith and Mr. G. Macdonald, Balliol College, Oxford, Rev. Alexander Robertson, Venice, and the Librarians of the Universities of Glasgow and Edinburgh.

MAP I.



PTOLEMY'S NORTHERN ALBION.
Codex Parisiensis N° 1402.
"positionis signum ad ... pertinens e codice Vindobonensi suppletum."
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
63 62 61 60 59 58

much larger number of the many editions of the Geography than I was likely to have seen without such aid. The results of this inspection of both codex and early maps I shall now give.

1. *Codex Vind.* 1. This, which Raidel pronounces to be the finest of existing MSS. of Ptolemy, is in the Imperial Library, Vienna.[1] It has richly coloured maps and is said to be very old. At present it seems to be guarded with somewhat jealous care. In its map of Albion the Winged Camp is placed well inland.

2. *Codex Ven.* 388. This Codex is also described by Raidel. It is a beautiful MS. with coloured maps, all according to him of the 13th century.[2] In Northern Albion the sites of towns are marked simply by their names. On comparing, however, the position of the name of the Camp with that given it in other codex maps of a closely related type, there can be no doubt whatever that it is represented as being inland.

3. *Codex Par.* 1402. (See Map I.) The Catalogue makes this a 14th century Codex, but Prof. C. Müller, is of opinion that it belongs rather to the 15th. It contains, he states, only two maps—Spain and Britain—the latter not quite completed. Among the blanks is the name of the Camp. This he has no hesitation in supplying from the Codex Vind. 1, to which this Paris map bears so close a resemblance that they must have been taken from the same archetype.

4. *Codex Laur. Flor.* 2380. Prof. Müller says that all the maps of this Codex are of the same shape and have the same map drawing as those of the last.

5. *Codex Constant.* "This" writes Prof. Muller, "is a MS. of the fifteenth century. Nearly related to its maps are those of the Codex Laur. Flor. xxviii, 49 and Codex Med. D, 527; and in all of them the usual

[1] *Commentatio Critico-Literaria de Claudii Ptolemaei Geographia*, p. 10 (Norimbergae 1737).

[2] *Op. Cit.*, pp. 10-113.

[3] The names in the original being in contracted Greek characters, it has been thought best for the sake of clearness to insert only a few in this small map; and the latitudes and longitudes are given in figures instead of letters. Beginning at the left hand the names read:—Δηούανα (Devana), λοξας ποταμός (River Loxas), ἴλας ποταμός (River Ilas), πτερωτὸν στρατόπεδον (the Winged Camp), κούρια (Curia), τούαισις (Tuæsis), οὐάρα (ρ) εἴσχυσις (estuary of the Varar), τουαισός (estuary of the Tuæsis), κελνίος ποταμός (River Celnius), ταίζαλον ἄκρον (the Taezalan Cape). The Rhinns of Galloway are seen jutting northwards, and the position of the Caledonian Forest is distinctly marked. Away to the north in lat. 63° is Thule. Ireland (not shown) lies to the left.

division into twenty-six maps has been departed from The codices are only of medium size, and this has necessitated the giving a map of each single province, instead of a set of large maps." In consequence, the maps though adapted to the Tables can hardly be claimed as Ptolemaic in the same sense as those of the other codices. In Codex Const. the towns are represented by castles or by large squares. The place of the camp is marked by a castle with two wings, one of which touches the sea-shore, while the other reaches far inland.[1] It may be argued that one is thus at liberty to place the site of the town at the extremity of the castle next the sea. This may be so, but we are just as free to place it at the other extremity. Common sense seems to say that, looking to the size of the building as compared with that of the map, we must hold the centre of the castle to mark the true position of the Camp. It thus stands inland.

6 *Codex Par.* 1401. The catalogue ascribes this splendid Codex to the 14th Century. Prof. Muller, however, to whom I owe so much of what I know of these codices, thinks so early a date an error, and assigns it to the beginning of the 16th. Most of the names in it are Latinised, the Camp being among the few exceptions in the map of northern Albion, where it is placed well inland. This map in its style of execution has a more modern look than any of the others, but seems derived from purely Ptolemaic sources.

The evidence of the maps in those early editions of the Geography which represent most faithfully the Greek originals, is very decidedly to the same effect; they all, without exception, place the Winged Camp inland. The editions are four in number, viz. :—

1. The Florence edition, undated, but probably 1478. This edition appears to be rare. There is no copy of it in the British Museum.

2. The Bologna edition, 1462 according to the colophon, but more probably 1472, if not 1482.

3. The beautiful Rome edition, 1478, quickly followed

[1] Prof. Muller conjectures that on the map before him Ptolemy may have found such a castle marked without any designation attached, and that the Winged Camp is, therefore, not a proper name at all, any more than Ὄχθη ὑψηλή (the Lofty Bank). This conjecture may or may not be well founded. But it is not likely that a more satisfactory explanation will ever be offered of the origin of the name.

by others, with the maps apparently all from the same plates.

4. The Ulm edition, 1582,[1] succeeded also by others printed at the same place.

In the Florence edition (See Map II),[2] the maps appear to be exact reproductions of those of some codex, except as regards the names of places, which are mostly in Italian.

The maps of the Bologna edition have been redrawn on a kind of conical projection, and those of the Rome edition as well as of that printed at Ulm, have been taken from a set that had been prepared some time before by Nicolaus Germanus (Donis) "with rectilineal converging meridians,"[3] but otherwise they are copies of the original

[1] In this edition the camp is called, no doubt through a blunder, "peteron vel alata castra." Can Peteron have suggested Bertram's Ptoroton ?

[2] The map is reduced, with the omission of some names, from the map of the Florence (Berlinghieri's) Edition in the copy now in the Royal Library, Berlin. In the original, the lines of latitude and longitude are, of course, completely filled in. The printing of these and of the coast-line, as well as in some cases of the names, had been at first faint. An unskilful hand has gone over the more indistinct portions with ink. Among the names thus treated are "Galedonii," "Vacomagi," "Loxa Fl," and "Alata Casta." To this circumstance is owing the G instead of C in Caledonii and the mis-spelling Casta. Apparently the T and R of Castra had been originally run into one, like the initial T and E, and the A and L of Texali (mis-placed here as also in some codex maps); and this has been overlooked by the emendator, who seems to have done his work without much knowledge of what he was about, for in his hands "Victoria" has become "Victona." A few of the other maps in this copy have undergone similar treatment, but none to such an extent as this one. It should be noted that everything named —promontories, estuaries, &c., as well as towns—is marked by a circle. "Par. 18," &c., are not, as might be supposed at first sight, parallels of latitude, but mark climates.

On the title-page of the work itself, Berlinghieri claims the Geography and the maps as his own, indicating, however, that he had followed Ptolemy. He further endeavours to belittle Ptolemy by printing his own name in the largest capitals and Ptolemy's in very small type. The Geography is "in terza rima and the Tuscan tongue;" and, while it is evidently based upon Ptolemy, cannot with any degree of correctness be called a translation. It is divided into books, which are again subdivided into cantos. The Vacomagans and their towns are thus described :—

"Et sotto acaledoni inmen deserte
rive son Vacomagi appresso aquali
vedrai queste citta chiare & aperte
Bannatia e quella & Tamia e laltra & tali
Alata castra son Tuesi e questa."

"And beneath the Caledonians in less deserted districts are the Vacomagi among whom you will see these cities clear and plain : that is Bannatia, and the other is Tamia, and there is Alata castra, and this other is Tuesis." So far there is nothing but Ptolemy. A few lines further down, however,—just after the Texali and Devana—there are mentioned "Drumbane, Abrodone and Catana in the province called Saint Andrew, Rossmachine and Rossena and Rossimana." "Brechina" and "Moranea" (*sic*) appear also as well as "Elgiui" (*sic*); in the last two cases the "u" and "n" have evidently been reversed by mistake. In the map, on the other hand, the names are all Ptolemaic. and there is no doubt Professor Nordenskiöld is right in saying that the maps of this edition represent more faithfully than those of any other the old codex maps.

[3] A. E. Nordenskiold. *Fac-simile Atlas*, p. 31.

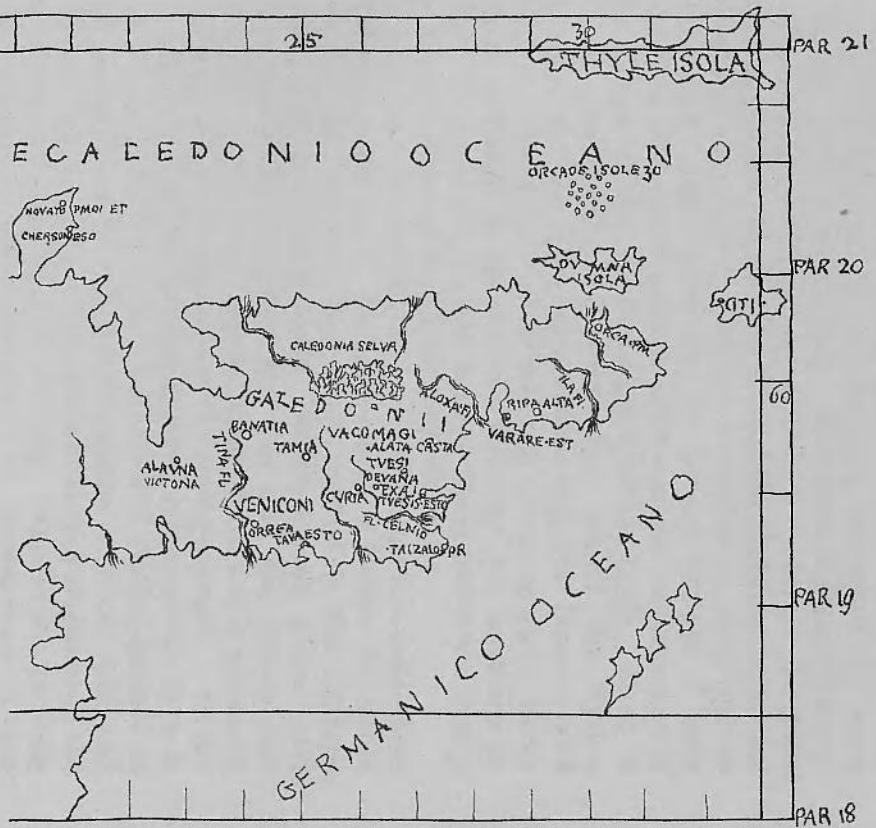
Greek maps. In redrawing the maps on these projections the editors followed Ptolemy's instructions rather than his example.

In a short time the modernizing of the maps began, with the view of making them serve as an Atlas that represented the geographical knowledge of the day. Gerard Mercator produced a set with reformed projections, some being filled in from those of Ptolemy, others being new. Bertius used these for his edition of the Geography (Lugd. 1618), which remained the standard one for many years. The maps of Albion in Horsley, Roy, &c., in which, it may be noted, the Camp is placed far inland, are copies of Mercator's, *not* of any codex maps.[1]

It remains to make some observations on the probable sources and date of Ptolemy's knowledge of the coasts of Britain—a subject which has a closer bearing on the main question with which we have been occupied, than appears at first sight.

Writing with the resources of the Alexandrian library at his command, Ptolemy must have had access to almost all the geographical information that had been gathered by the voyagers and travellers of every civilized nation. It is no surprise, therefore, to find that his work is much richer in place-names than that of any previous Greek or Roman geographer whose writings we possess. But we cannot tell what the extent of those resources was, what use he actually made of them when editing Marinus, or whether that use was always a discriminating one. In justice to him we must not forget the principal object for which he compiled his geography. This, as has already been remarked, was to produce a work founded on methods scientifically correct rather than filled with details that were strictly accurate. Ptolemy was a scientific rather than a practical man. He laid down with wonderful sagacity the lines on which a map or maps of the world ought to be constructed; but it was of greater importance from his point of view to fill up blanks in countries as yet unexplored by Greek or Roman, so as to present an imposing whole, than to waste time over subordinate matters.

[1] In the edition of Ptolemy, Argentenorati (Strassburg) 1522, Castra alata stands on the seashore.



PTOLEMY'S NORTHERN ALBION. Ed. Flor. (? 1478).

While this fact may lessen our respect for him as a geographer, it in no way dims the lustre of his name as an original thinker and observer. For the great bulk of his materials Ptolemy frankly acknowledges his obligations to Marinus. Indeed, he gives us plainly to understand that his own Geography is little more than an edition of that of his predecessor, corrected in some respects and better arranged. The work of Marinus being unfortunately lost, we are unable to compare it with Ptolemy's, and are also deprived of the light its numerous disquisitions, which Ptolemy censures as marring its symmetry, might have thrown on the labours of both writers. We can, however, infer from his criticisms on it the nature of the chief changes Ptolemy made. Most of them deal with the errors into which the Tyrian geographer had fallen when estimating the breadth and length of the Inhabited World (τῆς οἰκουμένης γῆς). Some space is certainly devoted to pointing out mistakes in the position of places; but none of these places are in any of the countries of North-Western Europe.

Marinus, we are told, had issued in his life-time three different editions of his geography. Before he could supply the last one with maps suited to the changes and additions he had made, his death took place;[1] and Ptolemy hints that but for this and the errors just alluded to, he himself would hardly have felt it necessary to undertake the preparation of a new geography. Of the sources from which Marinus derived his materials little is said by his editor, except that he had availed himself as far as he could of the investigations of those who had worked before him in the same field, not neglecting the accounts of military and trading expeditions recently undertaken by the Romans. In consequence it has hitherto been the prevailing opinion that the superior knowledge of distant lands shewn by Ptolemy was obtained either by himself or by Marinus from Roman sources, and was mainly due to the discoveries made through the extension of the Roman Empire that took

[1] There is a difference of opinion as to whether even the earlier editions of Marinus had maps or not. Letronne, Wilberg, and Müllenhoff think that he published no maps—only facts for the correction of existing atlases. Bunbury holds that their having been accompanied with maps is clearly implied in Ptolemy's statement (Bk. i, c. 17); and such seems to be the natural meaning of the words Ptolemy employs.

place between the accession of Domitian and the death of Marcus Aurelius—a period undoubtedly of great warlike and commercial activity on the part of the Romans. Gatterer was among the first to suspect a Tyrian or Phoenician origin for that knowledge. But the somewhat inconclusive statements with which he supported the supposition were believed to have been refuted soon after by Mannert. The hypothesis was adopted by Gosselin and developed more fully by Dr. N. H. Brehmer, of Lübeck, in his "Entdeckungen im Alterthum," (1822), both maintaining that Marinus must have founded his geographical descriptions and maps on an ancient Tyrian atlas, the fruit of the numerous voyages for trading purposes undertaken by the Phœnicians. Brehmer's arguments which are not laid down with much clearness or precision may be summarized as follows:—

1. The extraordinary number of place-names known to Ptolemy in countries with which the Greeks and Romans were very imperfectly acquainted, requires some such explanation. This is especially true of Ceylon—hitherto *nominis umbra*,—India,[1] Northern Asia, Northern Europe, Scotland and Ireland. Even in Roman provinces he sometimes gives names quite unknown to Roman geographers; and the spelling of many names in Roman territory is peculiar. Nor could Alexandria have supplied him with the necessary information. The trade of that city was chiefly carried on by sea to the coast of India, to Italy, and to the towns of the Mediterranean.

2. In Ptolemy's Tables of the coasts of different countries the names of places occur in the order in which they lie; in those of the interior, from left to right, according to each degree of latitude. Names of peoples, on the other hand, are generally enumerated from above downwards.

3. The Canary Islands would not have been chosen in Alexandria as the starting point for determining longitude. Eratosthenes and Strabo took Spain to be the most westerly part of the earth. Among the Greeks and Romans the Fortunate Islands belonged rather to the domain of poetry and myth.

[1] For a very full account of the Ptolemaic geography of India, see *Ancient India as described by Ptolemy*, &c. By J. W. McCrindle, M.A., M.R.A.S., Calcutta and London 1885).

4, Ptolemy's frequent use of Ch for C, which seems to have been a custom peculiar to the Phœnicians, is another important link in the chain of evidence as to his authorities.

5. Though Ptolemy says nothing about caravan routes they appear frequently and distinctly, if his place-names be marked out on a map according to his directions. This knowledge could not have reached him from the Romans whose acquaintance with foreign lands was acquired in the course of their numerous wars, nor from the Greeks, who owed their information to individual travellers. It must have come to him through the commerce that flowed from Tyre and its colonies over all the known world.

6 No less significant is the absence of any trace of the Alexandrian trade routes to the East, from Coptus on the Nile and Bernice on the Red Sea. These were unimportant for Phoenicia. The non-Roman origin of the map of Italy is indicated by its undue prolongation eastwards and the absence of tributaries to the Tiber.

7. In Ptolemy's Tables as well as in his Maps the coasts are much more carefully marked than the interior, and the knowledge shewn of bays and small rivers would be invaluable for navigators.

8. It seems clear from Ptolemy's own explicit statements in Bk. I, c. 6, c. 7, c. 17, and c. 18, that both he and Marinus used maps; and if so they must have been Tyrian. A geographer drawing from Roman sources would never have assigned twelve maps to Asia, of which the Romans knew so little, and only ten to Europe. Ptolemy seems to speak of only one map; but eight thousand names with lines of longitude and latitude could not have been crowded into one small map. The purpose for which the maps were evidently intended is an additional proof of their origin: they must have been meant for the use of traders. It is only on this supposition that all their peculiarities can be explained.

9. Ptolemy's maps could not have been constructed without models. We may be sure that there were cartographers in Tyre long before Marinus. Anaximander (circa B.C. 530) is said by Strabo to have invented map making; more probably he only introduced it into Greece

from Phoenicia as Cadmus did letters. At all events if there were maps in Greece there is much more likelihood of there having been charts in Phoenicia, as the commercial enterprise of its people would naturally lead to their construction and indeed render them indispensable.[1]

Two years after the publication of the "Entdeckungen," Brehmer found an opponent in Prof. A. H. Heeren, who made the sources of Ptolemy's information the subject of an Essay read before the Royal Society of Gottingen, in which he maintained the older opinion.[2] It will be found however, that only one of Brehmer's arguments is really grappled with; the others, some of which are quite as strong, being either lightly touched on or altogether passed over. Unfortunately Brehmer had meantime died and Heeren was thus left in possession of the field. From the position the latter deservedly held as an authority on the history of Eastern nations and from the Essay having been allowed in consequence of Brehmer's too early death to remain unanswered, he was very generally considered in France and England as well as in Germany, to be the safer guide of the two. Letronne, who probably knew what Brehmer had written, only at second hand, dismisses his arguments with the almost contemptuous remark:—"L'opinion de Brehmer, qui prétendait que Marin avait travaillé sur d'anciennes cartes tyriennes, n'a aucun fondement solide, et M. de Heeren l'a combattue par des argumens sans réplique."—*Examen Critique*, p. 14.

The hypothesis was also rejected with equal decision by one whose opinion must be received with much respect, F. A. Ukert. In a dissertation on the geographies of Marinus and Ptolemy in the "Rheinisches Museum für Philologie" (1839), he asserts that Ptolemy had in Alexandria abundant materials for improving Marinus first in the Library there, and next in his intercourse with the travellers, merchants, and seamen of what was then the first commercial city in the world. Moreover, he blames Brehmer, and with some justice, for looking upon the maps in editions of Ptolemy that had been copied from those prepared by Nicolaus (Donis), as

[1] *Endeckungen im Alterthum*; Part i, chap. i to iii.

[2] *Op. cit.*

facsimiles of the codex maps; and points out that the great map of the Roman Empire to which frequent reference is made by some old chroniclers was no doubt at Ptolemy's disposal. But all this may be true, and yet much of what Brehmer has said may be true also.[1] Forbiger and Mr. Philip Smith, in brief allusions to the same subject take a similar view, both following Heeren.[2]

On the other hand, Dr. R. G. Latham in his singularly suggestive article "Britannicae Insulae[3] (1869), writing without any reference to Brehmer's hypothesis, called attention to the importance of Ptolemy's notices of Great Britain as indicating that he spoke on the strength of Phoenician authorities. "His account of our island," he says, "both in respect of what it contains and what it omits, stands in contrast to those of all the Roman authors; and, besides this, Ptolemy is as minute in the geography of Hibernia as in that of Britannia and Caledonia. Now Ireland was a country that, so far as it was known at all, was known through the Greeks, the Iberians, and the Phoenicians (Punic or Proper Phoenician as the case might be) rather than through the Britons, Gauls, and Romans." And very recently Prof. Nordenskiold has thus expressed himself:—"Heeren has made an attempt to prove that the atlases of Marinus and Ptolemy rest not upon old Tyrian sources, but upon Greek and Roman writings and itineraries. But the arguments of Heeren are not convincing, and I do not hesitate to adopt the opinion of Brehmer, with regard to this question, which is of such importance to the history of geography."[4]

In discussing any question, the answer to which lies hidden in the obscurities of the past, assumptions must necessarily be made at first on both sides. Unless this is done not much progress is likely to be made in the direction of the truth. What an impartial critic has to decide

[1] *Handbuch der alten Geographie erster Band*, p. 411, *note*, and Dr. Wm. Smith, *Dictionary of Grk. and Roman Biography and Mythology*: art., Ptolemæus.

[2] Once "there went out a decree from Caesar Augustus that all the world should be taxed." But it does not follow that the populations of Northern Albion were numbered and classified according to their tribes and the results sent to Rome to be pigeon-holed there. It is surely significant, as against Ukert, that there is not in Ptolemy the slightest trace either of the Antonine or of Hadrian's Wall.

[3] Dr. William Smith's *Dictionary of Greek and Roman Geography*.

[4] *Facsimile Atlas* p. 22.

is not whether all or any of these assumptions are true or the reverse, but on which side on the whole are the probabilities the stronger.

Our first glimpses of the Phoenicians are got from the Old Testament and the Homeric poems. The prophets Isaiah and Ezekiel, while predicting the downfall of Tyre, draw striking pictures of its greatness, its commerce, and its riches. In the Iliad the excellency of the Phœnician manufactures and the enterprize of the people themselves are frequently referred to. They had abundant supplies of gold, copper, and electrum. Their textile fabrics and glass ornaments were everywhere prized. Some of the myths in the Odyssey show traces of Phœnician influence. The floating Aeolian isle where—

πάσαν δέ τε μιν περι τεῖχος
χάλκεον ἄρρηκτον, λισσὴ ἀναδέδρομε πετρη,[1]

has been supposed to be "a poetical reproduction of the story of some Phœnician sailors who had voyaged far enough to the north to fall in with an iceberg," and the city of the Laestrygones where—

ἐγγὺς γαρ νυκτός τε καὶ ἤματός εἰσι κελευθοι,[2]

may be a reminiscence of the long nights of the northern regions, that had reached the shores of the Aegean Sea in the same way. As far back as 1100 B.C., the coasts of the Mediterranean were dotted with Phœnician colonies. Their mariners had even sailed through the Pillars of Hercules and founded the city of Gadira (Cadiz). Thence they and their kinsmen of Carthage voyaged to the countries of the north for tin, electrum[3] and other articles of commerce, concealing from selfish motives the course and destination of their voyage. Various conjectures have been formed as to the limits of their progress northward. Heeren, while rejecting Brehmer's hypothesis, believes it probable that they reached the Baltic Sea and the coasts of Prussia. The difficulties of the navigation would not, in his view, keep them back. They

[1] All round the island stretched a lucid belt,
Based on the sheer rock, a long mount of brass. (Worsley) Od. x, 3, 4.

[2] Night with the day doth move and measure equal stage (Worsley) Od. x, 86. See Merry and Riddell on both passages.

[3] It has been doubted if the electrum of the Homeric poems is amber; but the word certainly has this meaning in Herodotus and later writers.

held no voyage impossible which the practice of maritime art at that time would allow. "It lay in the very spirit of that people," he tells us, "to penetrate along a coast by repeated attempts, as far as was possible for man to reach."[1] On the other hand, Müllenhoff would restrict them to Cornwall, which he takes to be the κασσιτερίδες νῆσοι (Tin Islands) of Herodotus, and to the opposite shores of North Germany, to which he supposes electrum may have been brought from the Baltic overland. But his reason for this belief is founded entirely on the "Ora Maritima" of Festus Avienus. This poem, he is almost satisfied, was translated from Phœnician into Greek by a Massiliot and by Avienus into Latin, and thus reveals to us all that the Phœnicians knew of the shores of the west and the north. The Oestrymnides of his author, beyond which no more northerly locality is mentioned, and which he identifies with the κασσιτερίδες, mark in his opinion the north-west limit of Phœnician enterprise.[2] But there are good grounds for doubting the value Mullenhoff places on Avienus as a guide. The late Prof. Wm. Ramsay, of Glasgow University, whose critical judgment on such a subject carries great weight, characterised it as a confused, desultory and withal an unfinished production, unworthy of almost any credit.[3] The incidental notices it gives may be of much value; but it cannot be accepted as conclusive evidence on disputed points.

To enter fully into the debatable statements that might be made on either side of the question would lead us altogether beyond the scope of this paper. It must suffice to inquire, as shortly as possible, whether the date of Ptolemy's information, be this derived from Roman or from Phoenician sources, affords any support to the conclusions already drawn from his Tables and maps as to the situation of the Winged Camp relative to the coast.

It is a remark of the historian Thucydides that the primitive Greek towns were not built on the sea coast, as, if situated there, they would have fallen an easy

[1] *Asiatic Researches* vol. ii, pp. 68, 69.
[2] *Deutsche Altertumskunde.* Erster Band, pp. 92, ff. (1890).
[3] Dr. Wm. Smith's *Dictionary of Gk. and Roman Biography and Mythology*: art. Avienus.

prey to pirates. They were placed at some distance inland on a rock or elevation not easily accessible, and were, in fact, hill-villages. Fortifications, except of the rudest kind, mark a distinct stage of progress towards civilization when hill-villages are succeeded by hill-forts. The practice of other ancient tribes in this respect would not differ from that of the Greeks. Cæsar, in fact, tells us that in his day the towns of the Southern Britons, scattered over the level plains of their country, were but collections of huts erected in some strong position in the woods and surrounded by stockaded defences. It accords with this statement that in Ptolemy's description of the coasts of Albion there is not a single town mentioned. His Rerigonium may or may not have occupied the site of the modern Stranraer, but, even if it did, being at the head of Loch Ryan it was hardly an exception. The same may be said of Rutupiæ (Richborough), which as the chief town of the Rutupi was probably removed from an inland site to the coast after the country fell under the power of the Romans; and Ptolemy may either not have known this or not have troubled himself to make any change on what he found in the authority he consulted. Over wide tracts of Northern Albion with its mountains and hills of treeless gneiss, such towns as the natives had would be similar collections of huts protected in earliest times merely by their site, but later, in addition, by a surrounding wall built of uncemented stones. Recent investigations by Dr. Christison have shown how common these hill forts once were in Peebleshire, the Upper Ward of Lanarkshire, Ayrshire, and the sheltered bays of the more fertile parts of the western coasts. All over the land of the old Vacomagans and other Northern tribes, they are still to be found. The purpose they served is clear, though the age of those that now remain may be uncertain. It was to protect a pastoral people against plunder by their neighbours. Exposed promontories along the seaboard of a stormy ocean, situated like Burghead at some distance from land fit for pasturage or for cultivation, would be first occupied either by the natives

1 *Proc. Soc. of Antiq. of Scotland*, N.S. vol. xii, pp. 281-352. vol. ix, pp. 13-82; vol. xi, pp. 265-432;

when they began to combine commercial with pastoral and agricultural pursuits under a system of settled government, or else by some intrusive race like the Norsemen. But these daring mariners did not reach our shores till after Ptolemy's day; and we know of no similar race who made hostile descents on them earlier. It will hardly be affirmed that the Vacomagans, if such they were still called, had begun as early as the second century, to establish themselves in defensive positions on exposed parts of the coasts when so shortly before, and until brought under Roman influence, the Southern Britons, who certainly carried on some kind of trade with the Gauls across the channel, were still dwelling in their forest strongholds. And, if it be granted that there is inherent probability in Brehmer's opinion or even in the modified form of the hypothesis given by Dr. Latham, it becomes still more impossible to make such an assertion. For, if the "traffickers" of Tyre were the sources of Ptolemy's information, they would assuredly find our shores destitute of towns exactly as he has represented them. In those distant ages and long after, the towns of the Vacomagans and other northern tribes, must have been like those northern hill-forts the remains of which are still so numerous that, if one is not very exacting in his demands for evidence of the remote antiquity of the ruins, he may find a Bannatia, a Tamia, a Winged Camp, or a Tuesis on almost any suitable height where he chooses to look for it. But to locate any of them on the sea coast is not only to set aside Ptolemy, our sole authority for its former existence, but also to contradict the teachings of archaeology on the history of human progress.