



On Excavations in the Earthwork Called Dane's Dyke at Flamborough in October, 1879; and on the Earthworks of the Yorkshire Wolds

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- From the SOCIETY.—Journal of the North China Branch of the Royal Asiatic Society, 1880.
- Journal of the Asiatic Society of Bengal. Vol. L, No. 244.
- Proceedings of the Royal Society. No. 216.
- Proceedings of the Royal Geographical Society. January, 1882.
- Bulletin de la Société de Borda, Dax, 1881, Part 4.
- Verhandlungen des Naturhistorisch-medicinischen Vereins zu Heidelberg. N.S. III, Part 1.
- From the CLUB.—Transactions of the Epping Forest and County of Essex Naturalists' Field Club, October, 1881.
- From the EDITOR.—“Nature.” Nos. 633–636.
- Revue Scientifique. T. XXVIII, Nos. 25–27; T. XXIX, No. 1.
- Knowledge. No. 5.
- The American Antiquarian. Vol. IV, No. 1.
- Matériaux pour l'histoire de l'homme. T. XII, 10^e and 11^e liv.

It was announced that Mrs. BATHOE and HUGH FALVEY, Esq., had been elected members.

Mr. BRYCE M. WRIGHT exhibited a set of sixteen portraits of the Incas, copied from the native Indian drawings in the temple of the Sun.

Mr. WORTHINGTON G. SMITH exhibited some stone implements from the north-east of London.

The following paper was read by the President:—

On EXCAVATIONS in the EARTHWORK called DANE'S DYKE at FLAMBOROUGH in October, 1879; and on the EARTHWORKS of the YORKSHIRE WOLDS. By Major-General PITT RIVERS, F.R.S., P.A.I.

[WITH PLATES XXXVII TO XXXIX.]

FLAMBOROUGH HEAD, as most persons are aware, is a promontory on the Yorkshire coast immediately to the north of Bridlington, in lat. 54° 6' N. and long. 0° 12' E., and as this paper has to deal with an entrenchment thrown up on it obviously for warlike purposes, and with other entrenchments apparently connected with it further inland, it may be useful to consider briefly the topography of the neighbourhood in reference to military operations and more especially to the landing of a considerable force in this place in pre-historic times or the retreat of such a force by this place to the sea. (*See* Map, Plate XXXVII).

This promontory is triangular in form, its base on a north and

MAP OF THE
SHOWING



MAP OF THE COUNTRY NEAR FLAMBOROUGH HEAD SHOWING THE POSITIONS OF THE DYKES.



Stanfords Geogr. Estab. London.

south line commencing at Sewerby Rocks, north of Bridlington, and ending at the Crab Rocks to the north of that, is $3\frac{1}{2}$ miles; the perpendicular drawn from the point of the head to this base is about the same distance.

The ground comprised within this triangle and for some distance inland to the west is high, being composed of chalk hills cut up into valleys and ravines of greater or less width and affording numerous positions for defensive purposes.

The promontory itself is bounded on the two sea sides by high and inaccessible cliffs with the exception of two gaps, one on the north and the other on the south side formed by narrow and deep ravines running down into the sea and called the North Sea Haven and South Sea Bay. At Sewerby Rocks the southern coast-line turns and runs southwards passing by Bridlington Quay and Hornsey, but the character of the coast-line changes; leaving the high chalk cliffs at Sewerby Rocks, the shore southward is low and composed of boulder clay and alluvium. The southern boundary of the chalk hills, instead of conforming to the line of the coast, runs on inland in prolongation of the south side of the promontory extending in a direct line west by south towards Burton Agnes and Driffild, and the whole of the country between these hills and the sea southward is low and marshy, intersected with watercourses, and probably in pre-historic times a swamp inaccessible for warlike purposes. It is important to bear this fact in view when considering the direction and uses of the entrenchments on the high ground, that the flanks of the entrenchments which rest upon the edge of the hills on this side would probably be protected by an impassable morass.

On the north side of the promontory as you go westward from the point, the coast line does not turn northward until you come to Speeton, a distance of 7 miles, the whole of this distance being high cliff. Here the coast-line leaves the hills and runs up along a low shore to Filey, but the edge of the hills runs on in continuation of the line of the cliff 3 miles further westward to beyond Righton, affording strong ground as a protection from the north.

If we now turn southward and place ourselves on the site of the ancient village of Argam with our backs to the point of the promontory looking westward over North Burton in the valley below, and survey the whole of the wide extent of country which presents itself to the eye from this point, the whole of the ground appears as if it had been scooped out by nature for the defence of an army facing inland and westward, and having its centre in the place on which we stand. Immediately in front is a large and broad valley running north and south and protecting

the front of the position which runs along the hills on the east side of it. The right of this position is guarded by the steep declivity at Righton and the left by the valley of the Gipsej near the village of Rudstone, celebrated for its monolith. In our front westward, beyond the north and south valley I have spoken of, runs the Wold valley in the direction of Weaverthorpe, exposed to view for miles from the position at Argam, and on our right and left front, also beyond the valley, are the chalk hills known as the Yorkshire Wolds which bound the Wold valley on both sides. We shall see when we come to describe the entrenchments, that the advantages of this position were not lost sight of by the people of pre-historic times.

Passing now out of this region to the north-west into the valley of the Derwent and the neighbouring hills, all of which country is occupied by the entrenchments of the pre-historic people, we find that the river running southward from Hackness to near Willerby here turns to the west, and runs along the broad flat-bottomed valley of the Derwent, which is some four miles in width, and probably in pre-historic times, like so many other valleys in this country, an impassable jungle traversed by narrow paths and openings through a thick growth of under-wood, inaccessible for warlike purposes to any but a force with a narrow front penetrating through it in file. The valley is bounded on the south by the long and nearly straight escarpment of the chalk hills rising to 400 feet above, and commanding the whole extent of it in a line generally parallel to the river. On the north the valley is bounded by hills of the oolite formation nearly equal in height, but intersected by numerous long ravines running southward into the valley, and affording several positions of great strength for the defence of an army advancing inland to the west, or retreating eastward to the sea. The highest part of these hills are towards the north, along the head of the ravines above-mentioned, and the whole of this range of hills is bounded on the north by a deep winding valley formed by Troutsdale Beck, a bend of the Derwent, and a continuation of the same valley, passing by Hackness and Scalby to the sea north of Scarborough.

Reviewing the whole district under consideration, we find that it consists of four patches of high ground separated from each other, and bounded by five principal valleys, viz.: the triangular patch of hills to the east with Flamborough Head for its apex, separated from the wolds by the north and south valley of the Gipsej Race before Argam, and bounded on the south by the Gipsej valley, and further on by the lowland south of Burton Agnes. Next we have the two parallel patches of the north and south wolds, separated from one another by the wold

valley, and bounded on the north by the Derwent valley, and lastly the oolite hills, bounded on the south by the Derwent valley, and on the north by the valley running in a winding direction from the Troutsdale Beck to the sea at Scalby.

Assuming most of the low ground to have been occupied in pre-historic times by marsh and jungle, there would remain only the plateau lands on the hills for the inhabitants to live upon, and here, as might be expected, we find the ground covered with their remains, consisting of tumuli, pits, camps, and entrenchments, which are, perhaps, more abundant here than in any part of England, owing to the wolds having only recently been brought under cultivation. Much of these have already been destroyed by the plough, but they have been well delineated on the ordnance maps, and it is important to consider the condition of things implied by the direction of the intrenchments before they have entirely disappeared.

Flamborough Head and promontory must of course have formed the base of operations for warlike purposes in any case, whether we are dealing with an invading or retreating force; in the former case it would be the first, in the latter the last point occupied by any people at war with the inhabitants of the interior. Its high cliffs precluding all possibility of attack from the sea, and leaving only the land side to be attended to, and the two landing places above described affording such access to the sea as might be necessary, we should naturally expect to find an entrenchment facing westward and occupying the first suitable position westward as you go from the point towards the interior, covering also the two landing places in such a way as to leave them available for the people within the work, the two flanks resting on the high cliffs before they leave the sea-coast owing to the turn of the shore, and the front covered by such low ground and declivities as might present themselves in the parts most suitable for the position of the flanks. Such an entrenchment we do find commonly known as the Dane's Dyke, a misnomer as will subsequently appear, but not more erroneously named than others which are attributed to those pirates and ravagers of the sea coast of England in other places, or those which go by the name of Cæsar elsewhere.

This dyke runs north and south a distance of $2\frac{1}{2}$ miles from sea cliff to sea cliff and at a distance of 3 miles from the centre of it to the point of the promontory. It has a ditch on the west or inland side, showing that the enemy was expected from that quarter. Its position appears to have been determined by a deep but not very broad ravine which runs from the interior southward into the sea, and protects the left

end of the entrenchment for 7 furlongs, or about one-third of its entire length. The rest of the line of the dyke is well chosen for defence, following the slope of the ground so as to command a good view of the land on the outside, but like many pre-historic entrenchments, especially dykes, it does not follow closely the sinuosities of the ground, but cuts across the spurs of the hills where the turns of the latter are abrupt. This is particularly the case near Dyke House, where the entrenchment instead of bending to see down into the ravine as a modern fortification would do, cuts across two spurs and rejoins the main ravine further on, a defect in the system of fortification common to pre-historic and early times, and in no work more conspicuous than in the great Roman wall near Carlisle, the engineer of which allowed dead ground to run up in some places close outside the fortification. In like manner the dyke omits to take advantage of Cockerill Hill, as it should have done, but it is nowhere commanded from the outside; it is judiciously chosen, and on the whole commands an extensive view of the country for some distance to the westward. There are twelve gaps through it, some of which are no doubt modern, one is on the extreme right flank of the dyke, between it and the sea cliff—a position not unusual for the entrance of a pre-historic work; another near the Dyke's Plantation, in the right centre of the dyke, is admirably constructed in a re-entering angle, evidently intentionally formed to give a cross-fire on the outside. The gap through which the road from Bempton to Flamborough passes in the centre of the position appears also to be an old entrance, because the road here turns as if it had been diverted in order to pass through the gap. A small stream coming from the north also runs through the entrenchment here passing into the inside of the dyke, and affording a supply of water to the defenders, running out again further on to the south.

The entrenchment is of nearly uniform height all along, being about 18 feet above the level of the ground, and having a ditch 60 feet wide on the outside. Of the defensive character of this entrenchment there cannot be the slightest doubt; it is a work of great strength, probably surmounted originally by a pallisade on the top of it and implying a large and well disciplined force for the construction and defence of it.

With the exception of two entrenchments between the north end of Dane's Dyke and Speeton, which run from the edge of the cliff southward and the ends of which have been ploughed out by cultivation, nothing of any consequence occurs in the way of military defence until we come to the great position at Argam before alluded to. Here we find the remains of the great earthwork known as the Argam Dyke running along the

edge of the hills in the precise position which I have indicated as forming the first position for defence as we go inland from the Dane's Dyke. Immediately to the west of Righton upon ground which naturally forms the shoulder and key of the position on that side, we find the entrenchments running round the hill with a ditch to the westward and abutting upon the steep declivity on which the flank of the position rests. From that point southward to the west of the Doterel Inn the line of entrenchments has been destroyed by cultivation. This must have been the weakest part of the position, but the banks reappear immediately to the east of the Bartingdale plantation and run in a direction south-by-west towards Argam. The line here does not follow the curves of the hills but always commands the ground to the west, whilst from Argam to the hills immediately above and to the east of Rudston the position is such as any general of modern times might have chosen for the defence of the ground, the entrenchments conforming to the lines of the hills and commanding a gentle glacis slope to the westward. A great part of the dyke has been destroyed in the formation of a modern road which runs along it, but here and there parts in more perfect preservation show that it consisted of three banks and two ditches contained within a width of about thirty-five paces. It is noteworthy that the entrenchment does not run down to the village of Rudston but rests on the high ground above and to the east of it, running towards the valley of the Gipsey which guarded the left flank of the position. Beyond the Gipsey to the south there is a long hill running north-east by south-west called Wold Gate, which if not occupied would have facilitated the turning of the left flank of the position, and accordingly we find that entrenchments were thrown up on the top of it exactly in prolongation of the Argam Dyke. What the nature of these entrenchments were it is difficult to say now, as they are mostly destroyed by cultivation, but they evidently guarded the space between Rudston and the low ground already referred to beyond Burton Agnes. The front of the position from Righton to Rudston is 5 miles, which was fortified by a continuous dyke. The extension from Rudston to Burton Agnes is 3 miles more. A combination of circumstances, including its generally strong position on the side of the valley, the fact of its being the first position inland from Flamborough Dyke, the position of the ditch, its strong flanks, and general direction, unite in favouring the opinion that the Argam Dyke is in reality a defensive work and not a mere road from Filey to Rudston, though it may undoubtedly have served both purposes, both being places of great antiquity.

Passing now to the north wolds we find that an entrenchment

runs along the top of the escarpment of the Derwent valley. It appears originally to have extended from Hunmanby on the east, to above Heslerton on the west, and guarded the north wold hills from an attack from the Derwent valley. A branch from this dyke runs in a south-westerly direction from the high ground above Sherburn to the high ground at Linton, and there turns to the west along the hills to Thorpe Basset Wold. This line defends the wold hill from any attack by the north-west up the valley at Wintringham. I have followed this line, and though complicated in some places, it is everywhere consistent with the idea of a defence against the north-west.* Behind, and parallel to this, two miles in rear, are double dykes running between Kirby-Grindalythe and Butterwick, also occupying a strong position on the hills towards the north-west; behind this again, $1\frac{1}{2}$ mile in rear, are other dykes parallel to the last, running between Sledmere and the hills west of Thwing, also occupying a position for defence against the north-west. Besides these, the north wolds are covered with numerous smaller entrenchments running more or less in a north and south line. It would unnecessarily occupy the attention of the audience to record here the minute observations on which alone a satisfactory judgment can be formed. I have examined them carefully, and they all appear to me consistent with a defence against an inland enemy. They appear for the most part to be fortified boundaries of lands. The villages having mostly been situated on the slopes of the hills near the springs between the wooded bottoms of the valleys and the open downs, the dykes run over the chalk hills behind, and probably mark the extent of the pasture lands, view being always had to an attack from the west. I have found no well-defined example in this part of Yorkshire of a dyke which appeared to have been thrown up as a defence against the east side.

But the most instructive portion of the whole district is the oolite range to the north of the Derwent valley; these hills, as I have already said, are cut up by deep ravines running from the highest ridge on the north to the valley on the south, and affording numerous strong positions for defence. Givendale is a ravine which runs into these hills to the north of Allerston, it is there about 1,000 feet wide and 200 feet deep, with very steep sides. A single line of entrenchment runs along the eastern brow of it; higher up the ravine becomes shallower,

* When this paper was read at the York meeting of the British Association, Mr. Isaac Taylor, who lives near Wintringham, made some remarks tending to show that an entrenched camp existed on the west flank of this dyke, which he conjectured to be of later date than I assume for the majority of the entrenchments. Excavations alone can prove whether this is the case.—A. P. R.

and less formidable as a natural defence, and the entrenchment on the brow is doubled. It has here two banks and two ditches, each 6 feet deep, within a width of 80 feet; and the eastern bank commands the western. Within 2,000 feet of the brow of the Troutsdale Ravine the Givendale Ravine shallows out to nothing, leaving a ridge of ground between the two ravines entirely devoid of any natural defence, and here the entrenchments are increased to four ramparts and four ditches across the weak ground. The ends are thrown back on the brow of the Troutsdale Ravine so as to cover the right flank. This is the system of defence persistently adopted in all pre-historic works in this country, whether camps or dykes. The number of ramparts are proportionate to the natural strength of the ground in front, and as the latter diminishes the former are increased, thereby affording, what the engineers of that time appear to have considered, a fortification of equal strength throughout, it being a principle of defence at all times that a chain is no stronger than its weakest link. A fortification is no stronger than its weakest point. This part of the defences are covered on the west again by lines of pits of very remarkable construction, some being from 17 to 24 paces apart, others touching one another 12 feet wide, and at the present time about $2\frac{1}{2}$ feet deep below the surface ground excavated and thrown up around them. These pits are marked on the ordnance map as ancient, if so, they are well worthy of careful examination. Can they be lines of pitfalls dug outside the entrenchments as an additional defence on their weakest side? About a mile to the rear of this Givendale line eastward we find another ravine parallel to it called Scameridge Slack, fortified in precisely the same manner, a single entrenchment runs along the east brow of the deepest part, and this increases to six trenches across the neck of high ground adjoining the Troutsdale Beck. This appears to have formed a second line of defence. Further to the east again another and third ravine called Wydale is fortified in the same manner, except that the number of ramparts on the weak point extends to twenty in all, and covers the whole of the western slope of the hill; it might be supposed from their number that they could hardly be entrenchments, but no other interpretation can be put upon them. Two small tumuli are seen in the centre of these banks which appear to me worthy of the attention of local archaeologists, for by careful examination of the stratification of the soil in the banks and in the tumuli it might be possible to ascertain which of the two are the earlier structures. To the east of this in the direction of Scarborough numerous other entrenchments occur. I have examined them and they all appear to me in harmony with the

general idea of westerly defence, allowance being made for the shifts and vicissitudes of a protracted war. I assume that an invading force having landed at Flamborough, a portion crossed the Derwent and occupied the hills to the north, fortifying each successive strong point as they advanced, or else that a retiring body has chosen these positions whilst retreating towards the sea. I should mention that all the dykes are ploughed out by cultivation on the south, and that on the north they all rest on the steep and almost inaccessible slope of the Troutsdale Ravine.

These observations were made in 1867 whilst accompanying Canon Greenwell during his excavations in the tumuli which cover this district, and I for some years contemplated an excavation in the Dane's Dyke to ascertain if possible the period to which it belonged. I cannot say that I received much encouragement from my archæological friends, most of whom thought, and with much reason, that the chance of finding anything in the small portion excavated was too remote to warrant the undertaking; but in the meantime I had acquired some experience in the excavation of earthworks in other parts of the country, and the results of those diggings led me to form a more hopeful view of the prospect. Although objects of value rarely turn up in the bodies of ramparts, they almost invariably produce reliable evidence of the time of their construction. A cutting through a rampart affords the only reliable evidence of the date of a work. Entrenchments were often occupied in after times by other people who left traces of their occupation upon them, but any object found on the old surface line beneath a rampart must be as old as the rampart or older, whilst any object found in the rampart itself must very probably be the date of its construction.

With the kind permission of Mrs. Dormer, to whom the ground belongs, I at last commenced cutting a section through the Dane's Dyke, on the 13th October, 1879. I selected the spot close to the Bempton and Flamborough Road, at which the stream which runs from the northward passes to the inside of the dyke, thinking that as this was a spot from which a water supply had been obtained by the defenders, they would probably have congregated on the rampart and dropped their utensils about in this place.

The cutting was made by a succession of trenches 20 feet in length, and 8 to 10 feet wide, side by side (*see* Section, Plate XXXVIII), commencing the first trench near the foot of the interior slope, and throwing the earth towards the inside of the rampart; the second trench was then dug above and parallel to it, throwing the earth into the first trench, and so on; by this

means a section 20 feet wide through the rampart was obtained. The objects found were noted hour by hour as the work went on and the position of anything of importance was at once taken with a spirit level. Each trench was dug down until the line of the old surface beneath the rampart was reached, and this process was continued into the body of the rampart until it was thought that sufficient evidence had been obtained.

By cutting a rampart in this way I have found that a cleaner section can be taken, and the position of the objects marked with greater accuracy than by cutting a continuous section through. A wall of earth about 1 foot wide was left between each trench.

The following are the several seams of earth forming the portion of the rampart excavated, commencing from the top:—

1st. Silting consisting of a deposit of brown mould commencing at a point on the top of the rampart and thickening gradually to 3 feet at the foot of the interior slope; it had been formed on the top by the growth of gorse and vegetable soil subsequently to the construction of the rampart and the lower part of it by silting from the top during subsequent ages. All the objects contained in this silting must be subsequent to the construction of the rampart, or of the period of its occupation.

2nd. A seam of light yellow and blue clay also commencing at a point on the top, and to the west of the former, and thickening to 3 feet at the foot of the interior slope; this seam formed the upper part of the original body of the rampart, and consisted of the last portion of soil excavated from the ditch and thrown down the slope from the top.

3rd. An irregular seam of blue, dark-brown, and peaty earth, stratified in seams of dark-brown and yellow under the crest of the rampart.

4th. Gravelly clay, $2\frac{1}{2}$ to 3 feet, being deposits thrown up on the rampart from the lower parts of the ditch.

5th. Black peaty earth reached in the fourth trench only, being the surface soil of the ditch first thrown up to form the rampart.

6th. A nearly horizontal dark seam about 1 foot thick, marking the old turf and surface soil before the earth was thrown up on to it to form the rampart. All objects found on or beneath this line must be older than the formation of the rampart. This was very clearly marked everywhere; it sloped up here slightly towards the outside, owing to this being the part in which the watercourse having passed to the inside, the ground on that side was slightly lower than on the outside.

The following were the objects brought to light by the excavations:—

1st. A fragment of brown smooth pottery with a hole (Fig. 1, Plate XXXIX), evidently intended to suspend the pot by means of a cord; such a piece might be of various periods. Suspension holes of this kind were not unfrequent in the pottery of the bronze age: it was found at the bottom of the silting at the foot of the interior slope, and belonged to the period of the first occupation of the rampart. (See Plate XXXVIII, 1.)

2nd. A cluster of flint flakes, 6 feet 7 inches beneath the surface in the third trench in the blue seam in the body of the rampart; they must have been deposited during the formation of the rampart. (Plate XXXVIII, 2.)

3rd. A flint scraper, 4 feet 7 inches beneath the surface in the third trench in the light yellow clay of the body of the rampart (Fig. 2, Plate XXXIX, Plate XXXVIII, 3). It is of the kind commonly found on the surface of the Yorkshire Wolds.

4th. A flint scraper, 13 feet 2 inches beneath the surface in the fourth trench, just beneath the old surface line (Fig. 3, Plate XXXIX, and Plate XXXVIII, 4); it must have laid there before the rampart was erected.

5th. Close to the last, a well formed flint arrow-head (Fig. 4, Plate XXXIX, and Plate XXXVIII, 5), also on the old surface line, which like the last must have laid on the ground before the rampart was thrown over it.

6th. A small flint axe-head (Fig. 5, Plate XXXIX, and Plate XXXVIII, 6), 1 foot 6 inches beneath the surface in the fifth trench, just beneath the silting, with numerous flint flakes; it must have been put there after the rampart had been formed, and during the occupation of it by the defenders. It appears to be a natural fragment chipped to an edge at the broad end.

7th. A flint scraper (Fig. 6, Plate XXXIX, Plate XXXVIII, 7), 3 feet beneath the surface, and 1 foot 3 inches beneath the last; it must either have worked down from the surface of the top of the rampart, or have been deposited during the construction of it.

8th. A small chipped flint celt (Fig. 7, Plate XXXIX), close to No. 6 (Plate XXXVIII, 8) in the middle of a thick deposit of flint flakes which must have been placed on the top of the rampart after it was formed, the 1 foot 3 inches of superincumbent earth having been formed by surface vegetation which had grown over it.

9th. A half-formed flint arrow-head (Fig. 8, Plate XXXIX, Plate XXXVIII, 9), 3 feet 6 inches beneath the crest of the rampart which had either worked down from the top or been deposited during the formation of the rampart.

Besides these the whole of the interior slope of the rampart beneath the silting, and to within 2 feet of the top of the body

of the rampart, was strewed from top to bottom with flint flakes and artificially formed chips, no less than 827 of which were counted either on the top or on the slope and just beneath or in the bottom of the silting of the rampart. Below this as we dug down into the body of the rampart they died out, not more than 36 being counted in the middle of the rampart, and they became more abundant again on the old surface line, where 71 were counted in the bottom of the trenches on the same level as the scraper and arrow-head above mentioned. We see from this that the flakes must have been formed on the top of the rampart and washed down the slope with the silting during subsequent ages. But whilst excavating the top of the rampart just beneath the crest an important observation was made by the workmen. About 4 o'clock on the 23rd October, three of the men digging into the rampart at about 2 feet beneath the crest, viz., Robson, Gilbank, and Jordan-Bilton, drew my attention to the fact that all the flakes they were finding lay horizontally in the earth. I immediately went to the spot and shortly picked out 10 flakes with my own hands all lying perfectly horizontally in the earth, and unless it can be shown that such flakes have a tendency to become stratified by pressure in the earth of a rampart in after ages they were evidently in the position in which they had fallen on the surface of the rampart as they were thrown down by the people who made them. In order further to verify this important observation an extension of the trench was made along the dyke to the south, I myself observing the position of every flint flake as it lay in the earth; 57 more flakes were here found, every one of which lay horizontally in the ground. Had these flakes belonged to the soil and been brought up and thrown down with it, they would have laid in various positions as the clods of earth containing them chanced to have fallen from the skin or basket of the pre-historic workman. Besides which the fact of finding them on the top of the rampart is alone good evidence on this point, for had they been originally strewed upon the surface of the ground and thrown up with the soil, they would have been found amongst the peaty earth at the bottom of the rampart instead of at the top, the surface soil having been the first removed to form the rampart. Another important observation was made at this time. The flakes, as I have said, were strewed along the old top and interior slope of the rampart, but on extending the cutting beyond the crest towards the outside of the rampart no more flakes were found. This I attribute to the fact of there having been a stockade on the top of the rampart, and the defenders naturally moved about and performed their ordinary avocations behind and not in front of it. It was behind the stockade, therefore, that they carried on

their flint workshops, forming axes and arrow-heads, vestiges of which were found in the deposit of flakes, and throwing down the chips on the surface as they fell off the cores, which flakes in after ages were washed down the inner side of the rampart and not the outside.

We have evidence from this that the defenders of the earthwork used flint, and consequently that the work itself is not later than the bronze period ; it is, in fact, of the same age as the tumuli of the Yorkshire Wolds. The considerations of military defence to which I have referred in the former part of this paper, afford reasonable grounds for supposing that all the entrenchments of the wolds may be of the same period, as they certainly are associated with the dyke in a similar method of defence.

And now comes the question, from whence did the people come who invaded the coast at this place? The dykes of Norfolk, Suffolk, and the southern counties of England, all or most of which, I believe, will be found on examination to face inland, have been attributed to the Belgæ. They are at any rate the work of a people coming from the east of France, but it is somewhat high up upon the coast for the invaders of Yorkshire to have come by sea from so great a distance. Flamborough Head being the nearest point to the Danish coast, it is to that quarter we should naturally look for the enemy who made this point his base of operations. But Canon Greenwell, to whom we are indebted for his long and painstaking enquiry into the tumuli of the wolds, has established the fact that the people who buried their dead there were in the early bronze phase of civilisation, nothing but small triangular bronze knife-daggers and celts of the simplest form having been found in their graves. But the archæologists of Denmark have shown that the early bronze age did not exist in Denmark; the art of working in bronze was full-blown when it first entered Denmark, having been nurtured in regions further to the south. If the invaders of Flamborough came from Denmark and were, as we suppose them to be, a bronze-using people, they would have brought with them weapons and implements of a more advanced type than those found in the tumuli of the wolds. It is hardly possible that we should not somewhere or other have found weapons ornamented with the spirals and other patterns which are so universally characteristic of the bronze age of Denmark instead of the simple axe heads and daggers, which in Denmark are rarely found. We are narrowed, therefore, to the opinion that the invaders of Flamborough, if invaders they were, were the same people who landed on the south and south-east coasts of England, or else that these dykes belong to the people of the country, who having imported

the bronze culture from elsewhere, were driven to the coast by another and more powerful race who occupied the interior, and that the defences we are considering were associated with their last occupation of the soil of Yorkshire. Further than this I do not venture to particularise. The excavations and observations I have here recorded have, I trust, it will be admitted, landed us somewhat further on the road to knowledge than we were before. We have seen that, notwithstanding the traditions which connect this place with the Danes, and notwithstanding the prevalence of a Danish element in the population of this country, the traces of which have been so well brought out by Mr. Atkinson in his history of Cleveland, this ground was the scene of military operations of a much earlier people, a people who though ruder in their culture were much their superiors in the art of war, formidable in their means of offence and defence, and in the discipline necessary to construct the great works we have been speaking of.

Description of Plates XXXVII to XXXIX.

PLATE XXXVII.

Map of the country near Flamborough Head showing the position of the dykes.

Dykes are marked red. Their position can only be shown approximately on so small a scale.

The site of the excavation is marked with a cross.

PLATE XXXVIII.

Section of cutting through the Dane's Dyke, showing the position of the various seams, and of the implements, fragment of pottery, and flakes found in the rampart.

PLATE XXXIX.

Fragment of pottery and flint implements found in and about the section of the Dane's Dyke, Flamborough.

Fig. 1. Piece of pot with hole or handle found in Trench 1 at bottom, on old surface line in silting of interior slope.

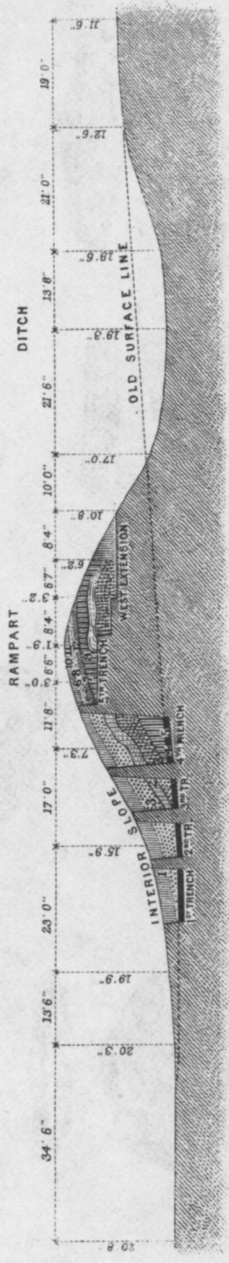
Fig. 2. Scraper or strike-a-light. Found 4 feet 7 inches beneath surface in body of rampart, Trench 3.

Fig. 3. Scraper found 8 inches beneath old surface line, and 13 feet 2 inches beneath surface in Trench 4.

Fig. 4. Arrow-head (broken point) found just below old surface line, Trench 4, south half.

Fig. 5. Hatchet-shaped flint, chipped to an edge at the top.

SECTION OF EARTHWORK COMMONLY CALLED DANE'S DYKE, FLAMBOROUGH.

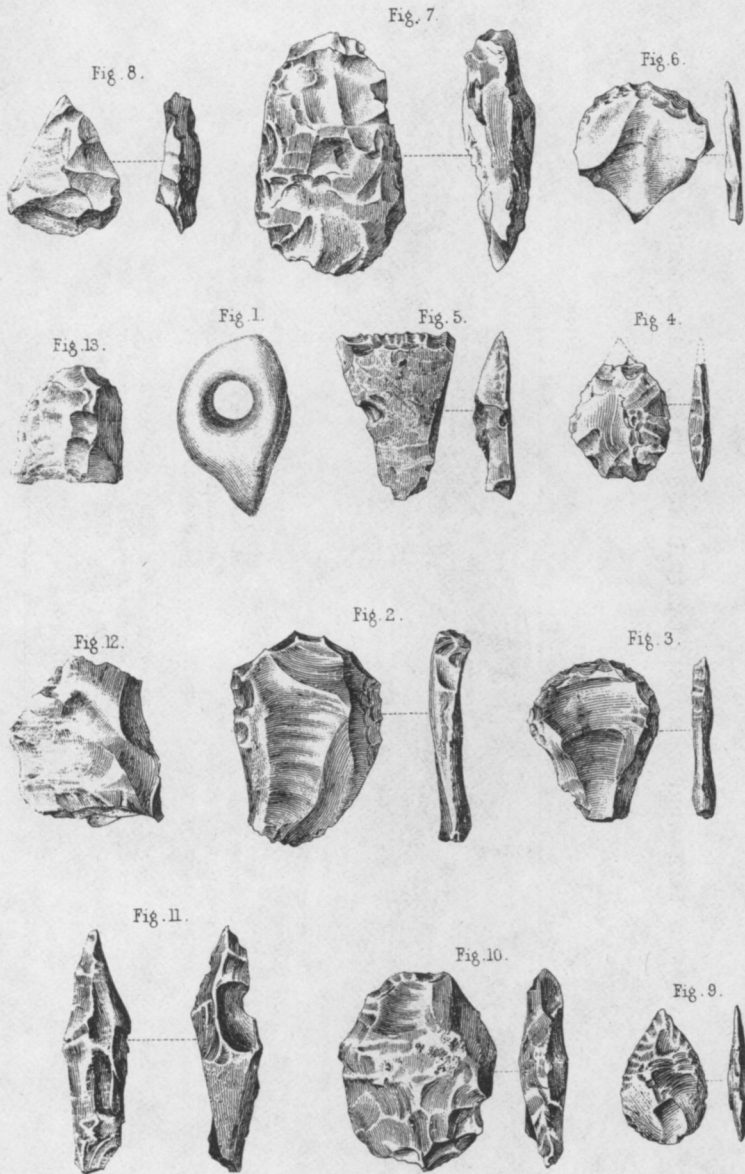


- 1, FRAGMENT OF POTTERY. Fig. 1, Plate 39.
- 2, CLUSTER OF FLAKES.
- 3, SCRAPER. Fig. 2, Plate 39.
- 4, SCRAPER. Fig. 3, Plate 39.
- 5, ARROW-HEAD. Fig. 4, Plate 39.
- 6, HATCHET SHAPED FLINT. Fig. 5, Plate 39.
- 7, SCRAPER. Fig. 6, Plate 39.
- 8, CHIPPED CELT. Fig. 7, Plate 39.
- 9, HALF-FORMED ARROW-HEAD. Fig. 8, Plate 39.
- 10, FLINT WORKED TO A POINT. Fig. 11, Plate 39.
- 11, WORKED FLINT. Fig. 12, Plate 39.
- 12, WORKED FLINT. Fig. 13, Plate 39.

SILTING
 DARK BROWN CLAY
 DARK CLAY AND BLUE SEAM
 LIGHT BLUE CLAY
 BLACK PEATY EARTH
 GRAVELLY CLAY
 OLD SURFACE LINE
 UNDISTURBED CHALK

Scale of Feet
 0 10 20 30 40 50

J.P. & W.E. F. Maile, lith.



Half size.

J.F. & W.R. Embley. lit.

**FRAGMENT OF POTTERY AND STONE IMPLEMENTS
FOUND IN AND ABOUT THE SECTION OF THE DANE'S DYKE,
FLAMBOROUGH.**

- Found in Trench 5, in body of rampart, 1 foot 6 inches beneath surface.
- Fig. 6. Scraper found with the deposit of flakes on the top of body of rampart, in Trench 5, 3 feet beneath surface.
- Fig. 7. Chipped celt found at top of Trench 5, 1 foot 3 inches beneath surface.
- Fig. 8. Half-formed arrow-head top of Trench 5, 3 feet 6 inches beneath surface.
- Fig. 9. Flint arrow-head found close to foot of interior slope of dyke on surface.
- Fig. 10. Spear-head found on the surface near foot of interior slope.
- Fig. 11. Flint worked to a point. Found at top of Trench 5, 1 foot 3 inches beneath the surface.
- Fig. 12. Worked flint found in top clay of body of rampart in Trench 5, 1 foot 2 inches beneath surface.
- Fig. 13. Worked flint found with numerous flakes at top of body of rampart in Trench 5, 1 foot 4 inches beneath surface.

APPENDIX.

THE following is a return of the measurements of 90 Flamborough men and women. Flamborough is purely a fishing village, and the race has bred in and in as shown by the returns in which "very pure Flamborough" means a person whose father and mother, and at least two or three grandparents are known to have been Flamborough people; "pure Flamborough" is where the father and mother only are known to be Flamborough people; and "Flamborough" means where one parent only is from Flamborough. None who are not bred in Flamborough are returned. The return includes some men in the village who have either retired from the fishing life or have been employed in selling or collecting fish; had it been confined exclusively to the seafaring portion of the community, or had it included a larger number of those who were at sea at the time, the size of these people would no doubt have been shown larger. As it is they exceed in size the population of the neighbourhood.* The hair of the head, it will be seen, is usually dark, and where not dark it is red; little or no fair hair is returned; the hair of the beard is also dark as a rule. So completely isolated have these people been in past times that it is said before the wolds were cultivated, within the memory of man, when a space of downland intervened between them and the rest of the world, it

* On comparing the average height of these Flamborough fishermen with the returns obtained by the Anthropometric Committee of the British Association, I find that they stand at the top of the list, exceeding all the counties of England hitherto returned, except Yorkshire, which has the same average stature of 5 feet 9 inches.

was even a matter of danger to approach their village; this, of course, is altered now, but still the villagers keep apart. These people show little or no trace of the fair-haired element, which is generally observable in the population of this part of Yorkshire.

I may add that the whole of the measurements were taken by myself personally. The frequent repetition of the same names will be noticed.

1st April, 1882.

The reading of General Pitt Rivers' paper was followed by a discussion, in which the Rev. Canon GREENWELL, Professor BOYD DAWKINS, Mr. WOOD, and Mr. PARK HARRISON took part.

FLAMBOROUGH MEN (CHIEFLY FISHERMEN). OC

MEASURED BY MAJOR-GENERAL PITT RIVERS, F.R.S., P.A.I.

No.	Name.	Age.	Profession or Calling.	Race.	Height.	Chest.	Weight.	Width and height of Shoulders.	Head.			Voice.	Carriage.	No.
									Greatest length.	Greatest breadth.	Cephalic index.			
1	John Mainprize ...	64	Fisherman	V.P. Flamborough	ft. in. 5 8	Inches. 40½	St. lb. 12 6	broad, high.	8·0	5·9	73·7	deep	erect	stra
2	W. Puckley ...	59	Fisherman	V.P. Flamborough	5 10	42	13 9	broad, high.	8·0	6·2	77·5	deep	medium	straight
3	R. Major ...	45	Fisherman	V.P. Flamborough	5 9½	40	14 1	broad, high.	7·7	6·2	80·5	deep	erect	stra
4	S. Wareup ...	44	Fisherman	V.P. Flamborough	5 10½	40	13 11	broad, medium.	8·0	6·4	80·0	deep	erect	stra
5	J. Wareup ...	30	Fisherman	V.P. Flamborough	5 5½	40½	10 11	broad, medium.	7·6	6·1	80·2	deep	erect	stra
6	R. Cross ...	45	Fisherman	V.P. Flamborough	5 7½	40½	11 13	broad, high.	7·2	5·8	80·5	deep	erect	hooked
7	J. Woodhouse ...	54	Fisherman	V.P. Flamborough	5 6½	40½	10 12	broad, medium.	7·5	6·0	80·0	deep	medium	straight
8	W. Cross ...	39	Fisherman	V.P. Flamborough	5 7½	38	11 0	broad, medium.	7·2	5·9	81·9	deep	erect	hooked
9	P. Edmond ...	42	Fisherman	V.P. Flamborough	5 9½	39½	12 6	broad, medium.	7·6	6·0	79·0	deep	medium	stra
10	E. Duke ...	29	Fisherman	V.P. Flamborough	5 6½	38	10 7	broad, medium.	7·6	5·8	76·3	deep	medium	straight
11	J. Duke ...	20	Fisherman	V.P. Flamborough	6 0	41½	14 4	broad, medium.	7·7	6·2	80·5	deep	medium	straight
12	J. Knaggs ...	23	Fisherman	V.P. Flamborough	5 7½	39	12 7	broad, medium.	7·7	6·1	79·2	deep	medium	straight
13	B. Woodhouse ...	21	Fisherman	V.P. Flamborough	5 7½	37	10 1	broad, low.	7·5	6·0	80·0	deep	stooping	stra
14	J. Cross ...	54	Fisherman	P. Flamborough	5 5	37½	10 0	broad, round.	7·1	6·0	84·5	deep	medium	stra
15	R. Cross ...	19	Fisherman	V.P. Flamborough	5 7	38	11 6	broad, medium.	7·6	6·1	80·2	deep	erect	stra
16	W. Mainprize ...	34	Fisherman	P. Flamborough	5 10	37½	11 0	broad, medium.	7·4	5·9	79·7	deep	medium	hooked
17	W. Major ...	38	Fisherman	V.P. Flamborough	5 5½	40	13 5	broad, round.	7·5	6·3	84·0	deep	stooping	stra
18	G. Wareup ...	36	Fisherman	V.P. Flamborough	5 7½	40	11 5	broad, medium.	7·8	6·2	79·0	deep	medium	stra
19	S. Chadwick ...	22	Fisherman	V.P. Flamborough	5 10½	39	11 10	broad, medium.	7·9	6·3	79·7	deep	erect	stra
20	J. Mainprize ...	23	Fisherman	V.P. Flamborough	5 7	37	11 4	broad, medium.	8·0	6·1	76·2	deep	medium	slightly
21	G. Salvidge ...	24	Fisherman	P. Flamborough	5 11½	36	11 0	medium, falling.	7·6	5·7	75·0	deep	erect	hooked
22	G. Duke ...	18	Fisherman	V.P. Flamborough	5 6½	37	11 0	broad, medium.	7·6	5·4	71·0	deep	erect	stra
23	G. Stork ...	32	Fisherman	V.P. Flamborough	5 8½	41	11 11	broad, medium.	7·6	6·4	84·2	deep	medium	stra
24	T. Fell ...	43	Fisherman	V.P. Flamborough	5 8½	41	11 4	broad, high.	7·7	6·3	81·8	deep	medium	stra
25	G. Colley ...	32	Fisherman	P. Flamborough	5 8	39½	11 10	broad, medium.	7·6	6·2	81·5	deep	medium	stra
26	T. Woodhouse ...	60	Fisherman	V.P. Flamborough	5 9½	42½	13 2	broad, medium.	7·7	6·3	81·8	deep	erect	stra
27	J. Duke ...	48	Fisherman	V.P. Flamborough	5 8½	42½	13 12	broad, medium.	7·6	6·4	84·2	deep	medium	stra
28	R. Chadwick ...	59	Fisherman	V.P. Flamborough	5 6	39½	10 4	medium	7·8	6·0	76·9	deep	medium	slight
29	W. Chadwick ...	27	Fisherman	V.P. Flamborough	5 8	41	13 4	broad, medium.	7·7	6·3	81·8	deep	medium	stra
30	J. Turniciff ...	43	Fisherman	P. Flamborough	5 9½	40	11 3	broad, medium.	7·6	6·0	78·0	deep	erect	slight
31	R. Bayes ...	29	Fisherman	Flamborough	5 9½	41½	12 1	broad, medium.	8·0	6·3	78·7	deep	erect	stra
32	T. Turniciff ...	36	Fisherman	P. Flamborough	5 11½	38½	11 1½	broad, falling.	7·3	5·6	76·7	deep	medium	slight
33	G. Gibbon ...	32	Fisherman	V.P. Flamborough	5 10½	37½	11 2½	broad, falling.	8·2	6·4	78·0	deep	stooping	stra
34	R. Pockley ...	50	Fisherman	V.P. Flamborough	5 9½	39½	12 0	broad, medium.	7·6	6·0	78·9	deep	medium	stra
35	T. Traves ...	18	Bus driver	V.P. Flamborough	5 7½	37	10 12	medium, high.	7·4	5·8	78·3	medium	medium	stra
36	J. Bayes ...	25	Fishmonger	V.P. Flamborough	5 11½	44	15 1	broad, high.	7·8	6·2	79·5	deep	stooping	stra
37	J. Knaggs ...	34	Fisherman	V.P. Flamborough	5 10½	41	13 6	broad, medium.	7·4	6·0	81·0	deep	medium	slight
38	Joseph Oldfield ...	76	Fisherman	Flamborough	5 10½	41½	11 8	broad, high.	8·0	5·8	72·5	deep	medium	straight
39	W. Beilly ...	43	Fisherman	Flamborough	5 9	41½	13 1½	broad, medium.	7·6	6·0	79·0	deep	erect	stra
40	George Cross ...	34	Fisherman	V.P. Flamborough	5 11	43	14 9	broad, medium.	7·8	6·3	80·7	deep	medium	slight
41	T. Lang ...	63	Fisherman	V.P. Flamborough	5 10½	39½	12 6	broad, high.	7·5	6·2	82·6	deep	medium	hooked
42	M. Bailey ...	44	Tailor	V.P. Flamborough	5 9	39	12 0	broad, medium.	7·8	6·0	76·9	deep	erect	stra
43	W. Stork ...	61	Fisherman	V.P. Flamborough	6 0½	39	14 0	broad, medium.	8·0	6·3	78·7	medium	erect	hooked
44	George Duke ...	66	Fisherman	V.P. Flamborough	6 1½	37½	12 1½	broad, medium.	7·6	6·3	82·9	deep	erect	hooked
45	Ben Cross ...	26	Fisherman	V.P. Flamborough	5 11½	40½	13 8	broad, high.	7·8	6·2	79·0	deep	stooping	stra
46	John Major ...	31	Fisherman	Flamborough	5 7½	36	11 0½	broad, medium.	7·4	6·0	81·0	deep	erect	stra
47	Leonard Mainprize ...	33	Fisherman	V.P. Flamborough	5 8½	38	11 5	broad, medium.	7·7	6·1	79·2	deep	medium	stra
48	W. Gibbon ...	43	Fisherman	V.P. Flamborough	5 6½	38	11 8½	broad, medium.	7·6	6·2	81·5	deep	medium	stra
49	G. Lang ...	42	Fisherman	V.P. Flamborough	5 6½	40	12 12	broad, high.	8·0	6·3	78·7	deep	stooping	stra
50	G. Emerson ...	31	Fisherman	V.P. Flamborough	5 7½	36	10 11	broad, medium.	7·5	5·9	78·6	medium	erect	straight, hooked

MEASURED BY MAJOR-GENERAL PITT RIVERS, F.R.S., P.A.I.

Weight.	Width and height of Shoulders.	Head.			Voice.	Carriage.	Nose.	Eyebrows.	Cheek bones.	Chin.	Hair of head.	Beard.	Eyes.
		Greatest length.	Greatest breadth.	Cephalic index.									
12 6	broad, high.	8·0	5·9	73·7	deep	erect	straight, prominent	medium	medium	prominent, pointed	black, brown	...	grey
13 9	broad, high.	8·0	6·2	77·5	deep	medium	straight, thick	medium	medium	prominent, pointed	brown	...	grey
14 1	broad, high.	7·7	6·2	80·5	deep	erect	straight	medium	medium	medium	black	black, brown	blue
13 11	broad, medium.	8·0	6·4	80·0	deep	erect	straight	straight	medium	beard	black	black, brown	grey
10 11	broad, medium.	7·6	6·1	80·2	deep	erect	straight	straight	medium	medium	black	black, brown	dark grey
1 13	broad, high.	7·2	5·8	80·5	deep	erect	hooked pointed	medium	medium	prominent	dark brown	black, brown	light grey
10 12	broad, medium.	7·5	6·0	80·0	deep	medium	straight	arched	medium	medium	black, brown	black	brown
1 0	broad, medium.	7·2	5·9	81·9	deep	erect	hooked, long	straight	medium	medium	black	black	grey
2 6	broad, medium.	7·6	6·0	79·0	deep	medium	straight	arched	medium	beard	black	black	brown
0 7	broad, medium.	7·6	5·8	76·3	deep	medium	straight, thick at point	medium	rather broad	medium	red, brown	red	grey
4 4	broad, medium.	7·7	6·2	80·5	deep	medium	straight	straight	rather broad	medium	red, brown	red, brown	light brown
2 7	broad, medium.	7·7	6·1	79·2	deep	medium	straight, thick	straight	medium	receding	dark brown	brown	grey
0 1	broad, low.	7·5	6·0	80·0	deep	stooping	straight	arched	medium	prominent	fair	fair	blue
0 0	broad, round.	7·1	6·0	84·5	deep	medium	straight	straight	medium	prominent	formerly brown	formerly brown	blue
1 6	broad, medium.	7·6	6·1	80·2	deep	erect	straight	medium	rather broad	medium	dark brown	...	light brown
1 0	broad, medium.	7·4	5·9	79·7	deep	medium	hooked	arched	medium	medium	black	black	brown
3 5	broad, round.	7·5	6·3	84·0	deep	stooping	straight	arched	medium	medium	dark brown	red	brown
1 5	broad, medium.	7·8	6·2	79·0	deep	medium	straight	arched	rather broad	beard	brown	brown	grey
1 10	broad, medium.	7·9	6·3	79·7	deep	erect	straight	straight	medium	medium	black	...	light brown
1 4	broad, medium.	8·0	6·1	76·2	deep	medium	slightly hooked	straight	rather broad	pointed	black	black	brown
1 0	medium, falling.	7·6	5·7	75·0	deep	erect	hooked, long	straight	narrow	medium	dark brown	...	grey
1 0	broad, medium.	7·6	5·4	71·0	deep	erect	straight	straight	rather broad	medium	black	...	brown
1 11	broad, medium.	7·6	6·4	84·2	deep	medium	straight	straight	medium	beard	red	red brown	grey
1 4	broad, high.	7·7	6·3	81·8	deep	medium	straight	prominent	medium	beard	black, brown	black, brown	grey
1 10	broad, medium.	7·6	6·2	81·5	deep	medium	straight	straight	medium	beard	brown	red	brown
3 2	broad, medium.	7·7	6·3	81·8	deep	erect	straight	medium	medium	medium	formerly dark brown	formerly dark brown	grey
3 12	broad, medium.	7·6	6·4	84·2	deep	medium	straight	medium	medium	beard	red	red	grey
0 4	medium	7·8	6·0	76·9	deep	medium	slightly hooked	medium	medium	beard	formerly dark brown	formerly dark brown	brown
3 4	broad, medium.	7·7	6·3	81·8	deep	medium	straight	prominent, straight	medium	beard	brown	dark brown	grey
1 3	broad, medium.	7·6	6·0	78·0	deep	erect	slightly hooked	straight	medium	medium	brown	light brown	grey
2 1	broad, medium.	8·0	6·3	78·7	deep	erect	straight	arched	medium	medium	black brown	red	brown
1 1½	broad, falling.	7·3	5·6	76·7	deep	medium	slightly hooked	medium	medium	medium	light brown	red	blue
1 2½	broad, falling.	8·2	6·4	78·0	deep	stooping	straight	medium	medium	receding	black	black	grey
2 0	broad, medium.	7·6	6·0	78·9	deep	medium	straight	straight	medium	receding	formerly brown	formerly brown	brown
0 12	medium, high.	7·4	5·8	78·3	medium	medium	straight	straight	medium	medium	formerly brown	...	blue
5 1	broad, high.	7·8	6·2	79·5	deep	stooping	straight	slightly arched	medium	medium	fair	fair	grey
3 6	broad, medium.	7·4	6·0	81·0	deep	medium	slightly turned up	medium	medium	beard	brown	brown	grey
1 8	broad, high.	8·0	5·8	72·5	deep	medium	straight, long	medium	medium	medium	formerly black	...	brown
3 1½	broad, medium.	7·6	6·0	79·0	deep	erect	straight	prominent	medium	beard	light brown	red	grey
4 9	broad, medium.	7·8	6·3	80·7	deep	medium	slightly turned up	prominent	rather broad	medium	brown	fair	brown
2 6	broad, high.	7·5	6·2	82·6	deep	medium	hooked	prominent	medium	medium	formerly dark brown	...	grey
2 0	broad, medium.	7·8	6·0	76·9	deep	erect	straight	prominent	medium	medium	light brown	red, brown	grey
4 0	broad, medium.	8·0	6·3	78·7	medium	erect	hooked	prominent	medium	beard	formerly fair	formerly fair	grey
2 1½	broad, medium.	7·6	6·3	82·9	deep	erect	hooked	medium	rather prominent	prominent	black	black	brown
3 8	broad, high.	7·8	6·2	79·0	deep	stooping	straight	arched	medium	medium	brown	brown	brown*
1 0½	broad, medium.	7·4	6·0	81·0	deep	erect	straight	medium	medium	medium	brown	black	grey†
1 5	broad, medium.	7·7	6·1	79·2	deep	medium	straight	prominent	medium	medium	brown	dark brown	brown
1 8½	broad, medium.	7·6	6·2	81·5	deep	medium	straight	medium	medium	medium	black	black	green
2 12	broad, high.	8·0	6·3	78·7	deep	stooping	straight	medium	medium	medium	fair	red	light brown†
0 11	broad, medium.	7·5	5·9	78·6	medium	erect	straight, slightly hooked in centre	medium	medium	medium	brown	red	grey

24	T. Fell ...	43	Fisherman	V.P. Flamborough	5 8½	41	11 4	medium, high.	7·7	6·3	81·8	deep	medium	strai
25	G. Colley ...	32	Fisherman	P. Flamborough	5 8	39½	11 10	broad, medium.	7·6	6·2	81·5	deep	medium	strai
26	T. Woodhouse ...	60	Fisherman	V.P. Flamborough	5 9½	42½	13 2	broad, medium.	7·7	6·3	81·8	deep	erect	strai
27	J. Duke ...	48	Fisherman	V.P. Flamborough	5 8½	42½	13 12	broad, medium.	7·6	6·4	84·2	deep	medium	strai
28	R. Chadwick ...	59	Fisherman	V.P. Flamborough	5 6	39½	10 4	medium.	7·8	6·0	76·9	deep	medium	sligh
29	W. Chadwick ...	27	Fisherman	V.P. Flamborough	5 8	41	13 4	broad, medium.	7·7	6·3	81·8	deep	medium	strai
30	J. Turniciff ...	43	Fisherman	P. Flamborough	5 9½	40	11 3	broad, medium.	7·6	6·0	78·0	deep	erect	sligh
31	R. Bayes ...	29	Fisherman	Flamborough	5 9½	41½	12 1	broad, medium.	8·0	6·3	78·7	deep	erect	strai
32	T. Turniciff ...	36	Fisherman	P. Flamborough	5 11½	38½	11 1½	broad, falling.	7·3	5·6	76·7	deep	medium	sligh
33	G. Gibbon ...	32	Fisherman	V.P. Flamborough	5 10½	37½	11 2½	broad, falling.	8·2	6·4	78·0	deep	stooping	strai
34	R. Pockley ...	50	Fisherman	V.P. Flamborough	5 9½	39½	12 0	broad, medium.	7·6	6·0	78·9	deep	medium	strai
35	T. Traves ...	18	Bus driver	V.P. Flamborough	5 7½	37	10 12	medium, high.	7·4	5·8	78·3	medium	medium	strai
36	J. Bayes ...	25	Fishmonger	V.P. Flamborough	5 11½	44	15 1	broad, high.	7·8	6·2	79·5	deep	stooping	strai
37	J. Knaggs ...	34	Fisherman	V.P. Flamborough	5 10½	41	13 6	broad, medium.	7·4	6·0	81·0	deep	medium	sligh
38	Joseph Oldfield ...	76	Fisherman	Flamborough	5 10½	41½	11 8	broad, high.	8·0	5·8	72·5	deep	medium	strai
39	W. Beilly...	43	Fisherman	Flamborough	5 9	41½	13 1½	broad, medium.	7·6	6·0	79·0	deep	erect	strai
40	George Cross ...	34	Fisherman	V.P. Flamborough	5 11	43	14 9	broad, medium.	7·8	6·3	80·7	deep	medium	sligh
41	T. Lang ...	63	Fisherman	V.P. Flamborough	5 10½	39½	12 6	broad, high.	7·5	6·2	82·6	deep	medium	turne
42	M. Bailey...	44	Tailor	V.P. Flamborough	5 9	39	12 0	broad, medium.	7·8	6·0	76·9	deep	erect	strai
43	W. Stork ...	61	Fisherman	V.P. Flamborough	6 0½	39	14 0	broad, medium.	8·0	6·3	78·7	medium	erect	hoo
44	George Duke ...	66	Fisherman	V.P. Flamborough	6 1¼	37½	12 1½	broad, medium.	7·6	6·3	82·9	deep	erect	hoo
45	Ben Cross ...	26	Fisherman	V.P. Flamborough	5 11¼	40½	13 8	broad, high.	7·8	6·2	79·0	deep	stooping	strai
46	John Major ...	31	Fisherman	Flamborough	5 7½	36	11 0½	broad, medium.	7·4	6·0	81·0	deep	erect	strai
47	Leonard Main-prize	33	Fisherman	V.P. Flamborough	5 8½	38	11 5	broad, medium.	7·7	6·1	79·2	deep	medium	strai
48	W. Gibbon ...	43	Fisherman	V.P. Flamborough	5 6½	38	11 8½	broad, medium.	7·6	6·2	81·5	deep	medium	strai
49	G. Lang ...	42	Fisherman	V.P. Flamborough	5 6½	40	12 12	broad, high.	8·0	6·3	78·7	deep	stooping	strai
50	G. Emerson ...	31	Fisherman	V.P. Flamborough	5 7½	36	10 11	broad, medium.	7·5	5·9	78·6	medium	erect	strai
51	John F. Bayes ...	27	Fishmonger	P. Flamborough	5 10½	39½	11 12	broad, medium.	8·0	6·3	78·7	deep	erect	hooked i
52	Bolton Duke ...	44	Fishmonger	Flamborough	5 10	36	10 8	broad, high.	7·6	6·3	82·8	rather high	erect	rat
53	Mat. Oldfield ...	38	Fisherman	Flamborough	5 11¼	37	11 11	broad, high.	7·7	5·8	75·3	deep	erect	turne
54	Joseph Salvidge...	55	Fishmonger	V.P. Flamborough	5 7	37	11 9	broad, high.	7·7	6·2	80·5	deep	stooping	strai
55	James Traves ...	45	Landlord "Dog and Duck Inn" Blacksmith	V.P. Flamborough	5 7	36	12 7	broad, medium.	7·7	6·2	80·5	deep	medium	strai
56	Warcup Traves ...	43	Fisherman	V.P. Flamborough	5 7	37	10 10	medium, high.	8·1	6·4	79·0	deep	medium	strai
57	John Pockley ...	55	Fisherman	V.P. Flamborough	5 8	38½	11 0	broad, medium.	7·7	6·3	81·8	deep	medium	sligh
58	James Wood-house	42	Postmaster	V.P. Flamborough	5 9½	39	12 12	broad, high.	8·3	6·4	77·1	deep	erect	hoo
59	George Stork ...	67	Fisherman	V.P. Flamborough	6 2½	43	17 6½	very broad, high.	8·1	6·4	79·0	deep	erect	sligh
60	John Bailey ...	69	Tailor	P. Flamborough	5 5	38½	13 2	broad, medium.	7·8	6·1	78·2	deep	medium	strai
61	John Pockley ...	40	Fisherman	V.P. Flamborough	6 1	41½	13 1	broad, high.	7·8	6·2	79·0	deep	erect	strai
62	Peter Jameson ...	65	Fisherman	Flamborough	5 7½	40	11 5	broad, medium.	7·6	6·0	79·0	deep	medium	hoo
63	Joseph Oldfield ...	27	Fisherman	V.P. Flamborough	5 9½	37	11 0	medium.	8·1	6·1	75·3	deep	stooping	strai
64	Robson Jeffreson	63	Fisherman	Flamborough	5 8½	46½	16 0	broad, medium.	7·7	6·1	79·2	deep	medium	strai
65	Carter Wood-house	67	Wheelwright	Flamborough	5 7½	38½	10 11	medium.	7·5	6·1	81·3	deep	medium	strai
66	George Wood-house	30	Fishmonger	Flamborough	5 4½	39	10 4	medium.	7·5	5·8	77·3	deep	medium	strai
67	George Jameson...	27	Fisherman	P. Flamborough	5 4½	38½	10 4	low.	7·6	6·0	79·0	deep	medium	strai
68	Wilson Naggs ...	43	Fisherman	Flamborough	5 7½	37	10 10	medium.	7·5	5·9	78·6	deep	medium	strai
69	Robert Pockley ...	46	Fisherman	Flamborough	5 6	39½	12 3	broad, high.	7·6	6·3	82·9	deep	erect	strai
70	John Colley ...	66	Fisherman	P. Flamborough	5 5½	40½	13 12	broad, medium.	7·4	6·1	82·4	deep	medium	hoo
71	Richard Tyndale	32	Ag. labourer	Flamborough	5 9½	39	11 0	broad, high.	7·4	5·7	77·0	deep	erect	strai
72	T. T. Woodhouse	34	Ag. labourer	P. Flamborough	5 7½	37½	10 13	broad, medium.	7·8	6·3	80·7	deep	medium	strai
73	Jordan Bilton ...	40	Ag. labourer	P. Flamborough	5 5½	37½	11 5	round, medium.	8·2	6·4	78·0	deep	erect	strai
	Totals ...	3,009			420·5	2,868	879 8½	...	561·5	4,458	56,947	...	...	...
	Average ...	41·2			5 9	39·28	12 0½	...	7·69	6·10	78·0	...	...	...

* Face rather triangular.

† Mother from Filey.

‡ Very long face and low head.

§ Mother from neigh

1 4	medium.	7·7	6·3	81·8	deep	medium	straight	prominent	medium	beard	black, brown	black, brown	grey
1 10	broad, high.	7·6	6·2	81·5	deep	medium	straight	straight	medium	beard	black, brown	black, brown	brown
3 2	medium.	7·7	6·3	81·8	deep	erect	straight	medium	medium	medium	formerly dark brown	formerly dark brown	grey
3 12	medium.	7·6	6·4	84·2	deep	medium	straight	medium	medium	beard	dark brown	dark brown	grey
0 4	medium.	7·8	6·0	76·9	deep	medium	slightly hooked	medium	medium	beard	formerly dark brown	formerly dark brown	brown
3 4	broad, medium.	7·7	6·3	81·8	deep	medium	hooked straight	prominent, straight	medium	beard	dark brown	dark brown	grey
1 3	broad, medium.	7·6	6·0	78·0	deep	erect	slightly hooked	straight	medium	medium	brown	light brown	grey
2 1	broad, medium.	8·0	6·3	78·7	deep	erect	hooked straight	arched	medium	medium	black	red	brown
1 1½	broad, falling.	7·3	5·6	76·7	deep	medium	slightly hooked	medium	medium	medium	brown	light brown	blue
1 2½	broad, falling.	8·2	6·4	78·0	deep	stooping	hooked straight	medium	medium	receding	black	black	grey
2 0	broad, medium.	7·6	6·0	78·9	deep	medium	straight	straight	medium	receding	formerly brown	formerly brown	brown
0 12	medium, high.	7·4	5·3	78·3	medium	medium	straight	straight	medium	medium	brown	...	blue
5 1	broad, high.	7·8	6·2	79·5	deep	stooping	straight	slightly arched	medium	medium	fair	fair	grey
3 6	broad, medium.	7·4	6·0	81·0	deep	medium	slightly turned up	medium	medium	beard	brown	brown	grey
1 8	broad, high.	8·0	5·8	72·5	deep	medium	straight, long	medium	medium	medium	formerly black	...	brown
3 1½	broad, medium.	7·6	6·0	79·0	deep	erect	straight	prominent	medium	beard	black	red	grey
4 9	broad, medium.	7·8	6·3	80·7	deep	medium	slightly turned up	prominent	rather broad	medium	light brown	fair	brown
2 6	broad, high.	7·5	6·2	82·6	deep	medium	hooked	prominent	medium	medium	formerly dark brown	...	grey
2 0	broad, medium.	7·8	6·0	76·9	deep	erect	straight	prominent	medium	medium	light brown	red, brown	grey
4 0	broad, medium.	8·0	6·3	78·7	medium	erect	hooked	prominent	medium	beard	formerly fair	formerly fair	grey
2 1½	broad, medium.	7·6	6·3	82·9	deep	erect	hooked	medium	rather prominent	prominent	fair	fair	brown
3 8	broad, high.	7·8	6·2	79·0	deep	stooping	straight	arched	medium	medium	brown	brown	brown*
1 0½	broad, medium.	7·4	6·0	81·0	deep	erect	straight	medium	medium	medium	brown	black	grey†
1 5	broad, medium.	7·7	6·1	79·2	deep	medium	straight	prominent	medium	medium	brown	dark brown	brown
1 8½	broad, medium.	7·6	6·2	81·5	deep	medium	straight	medium	medium	medium	black	black	green
2 12	broad, high.	8·0	6·3	78·7	deep	stooping	straight	medium	medium	medium	fair	red	light brown‡
0 11	broad, medium.	7·5	5·9	78·6	medium	erect	straight, slightly hooked in centre	medium	medium	medium	brown	red	grey
1 12	broad, medium.	8·0	6·3	78·7	deep	erect	straight	prominent	medium	medium	dark brown	dark brown	brown
0 8	broad, high.	7·6	6·3	82·8	rather high	erect	rather turned-up	straight, prominent	medium	medium	dark brown	dark brown	green
1 11	broad, high.	7·7	5·8	75·3	deep	erect	straight	medium	medium	medium	black	black	grey§
1 9	broad, medium.	7·7	6·2	80·5	deep	stooping	straight	arched	medium	medium	black, brown	red	grey
2 7	broad, medium.	7·7	6·2	80·5	deep	medium	straight	arched	medium	beard	black, brown	red	blue
0 10	medium, high.	8·1	6·4	79·0	deep	medium	straight	arched	medium	receding	red	red	blue||
1 0	broad, medium.	7·7	6·3	81·8	deep	medium	slightly hooked	prominent	medium	beard	black	black	brown
2 12	broad, high.	8·3	6·4	77·1	deep	erect	straight	prominent	medium	beard	dark brown	red, brown	grey
7 6½	very broad, high.	8·1	6·4	79·0	deep	erect	slightly hooked	medium	medium	medium	formerly fair	formerly fair	grey
3 2	broad, medium.	7·8	6·1	78·2	deep	medium	hooked straight	medium	medium	prominent	formerly light brown	formerly light brown	grey
3 1	broad, high.	7·8	6·2	79·0	deep	erect	straight	straight, prominent	medium	beard	black	black	brown
1 5	broad, medium.	7·6	6·0	79·0	deep	medium	hooked	prominent	medium	medium	black	black	grey
1 0	medium.	8·1	6·1	75·3	deep	stooping	straight	prominent	medium	medium	black	dark brown	brown
5 0	broad, medium.	7·7	6·1	79·2	deep	medium	straight	arched	medium	medium	red	red	blue
0 11	medium.	7·5	6·1	81·3	deep	medium	straight	straight	medium	medium	formerly brown	formerly brown	blue
0 4	medium.	7·5	5·8	77·3	deep	medium	straight	medium	medium	beard	dark brown	dark brown	brown
0 4	low.	7·6	6·0	79·0	deep	medium	straight	medium	medium	medium	dark brown	dark brown	brown
0 10	broad, high.	7·5	5·9	78·6	deep	medium	straight	medium	medium	medium	black	black	brown
2 3	broad, medium.	7·6	6·3	82·9	deep	erect	straight	medium	prominent	beard	dark brown	dark brown	grey
3 12	broad, high.	7·4	6·1	82·4	deep	medium	hooked	prominent	medium	prominent	formerly light brown	red	blue
1 0	broad, medium.	7·4	5·7	77·0	deep	erect	straight	prominent	medium	rather prominent	black	brown	grey
0 13	broad, round.	7·8	6·3	80·7	deep	medium	straight	medium	medium	beard	dark brown	dark brown	grey
1 5	broad, medium.	8·2	6·4	78·0	deep	erect	straight	medium	medium	beard	fair	fair	grey
0 8½	...	561·5	4,458	56,947	...	...	...	...	...	...	...	...	...
2 0½	...	7·69	6·10	78·0	...	...	...	...	...	...	...	...	...

from File. † Very long face and low head. § Mother from neighbourhood. || Brother of the last.

FLAMBOROUGH WOMEN, OCTOBER, 1879.

MEASURED BY MAJOR-GENERAL PITT-RIVERS, F.R.S., F.A.I.

No.	Name.	Age.	Profession or Calling.	Race.	Height.	Chest.	Weight.	Shoulders.	Head.			Hair.	Eyes.
									Length.	Breadth.	Cephalic Index.		
1	Anne Nicholson ..	59	Fishwoman	P. Flamborough	Ft. in. 5 1	Ft. in. 3 5	St. lb. 13 10	broad high	7-3	5-7	73-0	Black	Blue
2	Mary Cross ...	49	Fishwoman	V.P. Flamborough	5 2	3 5	11 0½	broad high	7-3	5-8	79-4	Black	Brown
3	Mary Chadwick ...	55	Fishwoman	P. Flamborough	5 6½	3 2	12 11½	high	7-4	5-9	79-7	Black	Grey
4	Jane Woodhouse ..	48	Fishwoman	Flamborough	5 5½	3 1½	12 0	medium	7-5	5-8	77-3	Light Brown	Blue
5	Anne Oldfield ...	38	Fishwoman	V.P. Flamborough	5 5½	3 2	12 1	broad	7-4	5-8	78-3	Dark Brown	Dark Blue
6	Anne Chadwick ...	53	Fishwoman	Flamborough	5 2	2 11	10 8	broad	7-1	5-5	77-4	Red Brown	Grey
7	Mary Ann Traver ...	35	Fishwoman	V.P. Flamborough	5 7½	3 1	11 8	broad	7-6	6-0	79-0	Brown Black	Brown
8	Anne Beilby ...	42	Fishwoman	V.P. Flamborough	5 8½	2 9	10 8½	medium	7-3	6-0	82-2	Black	Brown
9	Anne Gwin ...	66	Fishwoman	V.P. Flamborough	5 6	3 0	10 8	medium	7-5	5-9	78-6	Dark Brown	Blue
10	Mary White ...	34	Wife of Labourer.	V.P. Flamborough	5 6¼	3 1	12 13	broad	7-4	6-1	82-4	Black	Brown
11	Sarah Colley ...	20	Fishwoman	V.P. Flamborough	5 2¼	2 9½	9 9½	...	7-3	5-5	75-1	Red	Brown
12	Mary Cross ...	20	Fishwoman	V.P. Flamborough	5 4	2 10	10 10½	...	7-8	6-0	77-0	Brown	Grey
13	Anne Naggs ...	27	Fishwoman	V.P. Flamborough	5 3¼	3 2	12 12½	...	7-8	6-1	78-2	Black	Brown
14	Anne Edison ...	67	Wife of Agricultural Labourer.	V.P. Flamborough	5 3	3 3	13 0	...	7-4	5-7	77-0	Formerly Black	Blue
15	Anne Major ...	33	Fishwoman	V.P. Flamborough	5 1	3 1	11 0	...	7-2	5-7	79-1	Dark Brown	Dark Blue
16	F. Sawden ...	41	Wife of a Labourer	V.P. Flamborough	5 0	3 1	11 3½	...	7-1	6-0	84-5	Brown Dark	Blue Grey
17	M. Anne Cross ...	30	Fishwoman	V.P. Flamborough	5 3¼	3 1	12 3½	...	7-3	6-1	83-6	Brown	Grey
	Totals ...	714	...	...	90 9	52 5	198-10	...	...	99-6	134-70	...	...
	Average* ...	42	...	...	5 4	3 1	11-9½	...	...	5-85	79-2	...	...