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## Castle-Dykes

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of Wath

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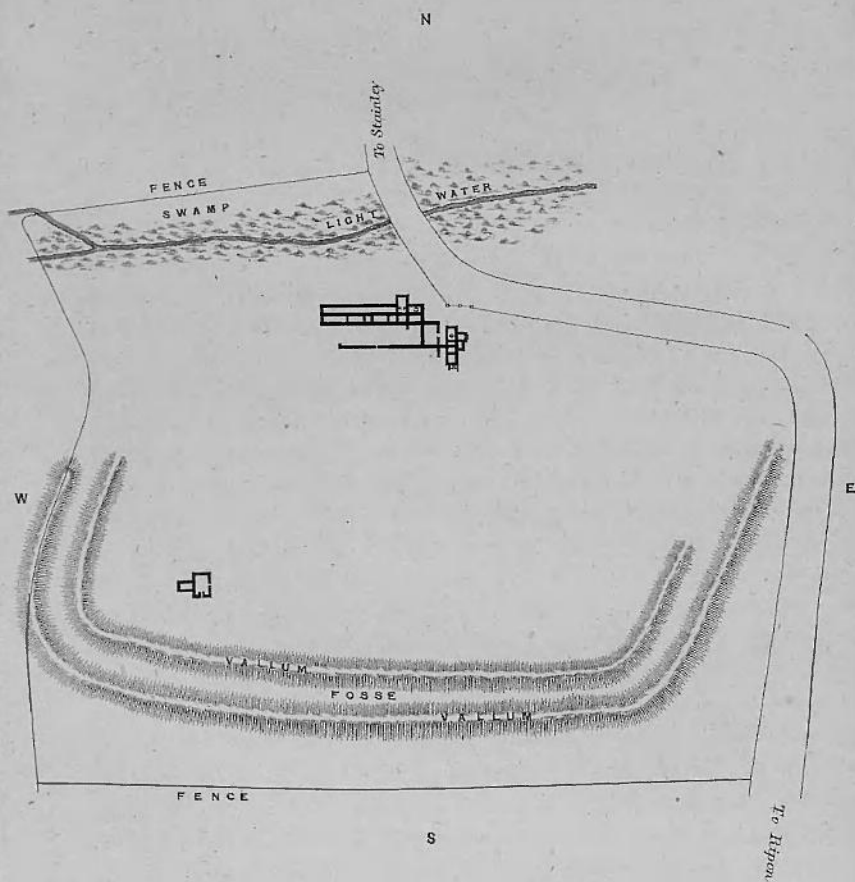
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# PLAN I.



CASTLE-DYKES.

SCALE 200 FEET TO THE INCH.

Partridge & Co., Litho. London, E.C.

## The Archaeological Journal.

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JUNE, 1875.

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### CASTLE-DYKES.

By the Rev. W. C. LUKIS, M.A., F.S.A., Rector of Wath.

CASTLE-DYKES is distant about  $3\frac{1}{2}$  miles from Ripon, on the road to North Stainley. The field which bears this name is nearly quadrangular in form, and is situated on the northern slope of a gentle elevation, and entrenched with a fosse and double vallum on the east, south, and west sides. The north side is bounded partly by the present road, and partly by a swamp, through which a rivulet called "the Light Water" flows, which swamp was, without a doubt, in Roman days and before the construction of the present road, a sufficient defence along the whole of that side. The peculiarity of the site of this entrenchment leads to the inquiry why it should have been selected for a fortification. It is commanded and overlooked by higher ground on the west and north sides, and that on the south-west side is slightly above it. No distant view can be obtained from it, and no trace exists of an ancient road through it. The question is not easy of solution, because the spot has no history or record, and there are no traditions connected with it. If, however, we consider its position with respect to Roman roads and towns in the neighbourhood, I think we shall find one or two things which may lead us to a conclusion which, if not altogether convincing, may be fairly presumable. The principal roads of this part of the country are Watling Street, or the great north road, which after passing through Isurium (Aldborough) went on to Cataractonium (Catterick); and the road, connecting Olicana (Ilkley) with Isurium, which passed near to Ripley. It is supposed that vicinal ways, as short cuts, maintained a rapid communication between these great diverging roads; and the existence of

villas and other constructions in certain places within the angle sustained by these roads seems not only to confirm this idea, but to point out the directions of these subordinate ways.

Before entering upon a consideration of this question, it will be desirable that the foundations and some of the objects which have been found should be described.

Down to the year 1866, when the excavations were commenced, nothing was known of the place further than that a certain entrenched field, situated in the parish of North Stainley, and lying by the roadside between the village of that name and Ripon, was called "Castle-Dykes," but of the existence of solid foundations and of tessellated pavements beneath the turf there was no suspicion. The accompanying plans will render the following account easy of comprehension, and after several matters of interest connected with them have been pointed out, I shall say what I consider was the purpose of a fortification which is so peculiarly placed.

The first is a general plan of the field, on which the positions of the buildings are marked; and the second represents, upon a larger scale, the foundations which have been uncovered—the second showing the older works with the newer works super-imposed upon them. Our latest explorations have revealed a truth which at an early period of our diggings we had no reason to suspect. We have discovered that an old set of buildings have been destroyed by fire and violence, and that a new set has been erected upon the same site, though not always upon exactly the same foundations.

That which led to the exploration was the discovery, in 1866, of a rare coin, a second brass of Manlia Scantilla,<sup>1</sup> in a field on the north side of the swamp, of fragments of flanged roofing tiles in another field on the same side, and within the entrenched enclosure itself of a tessera on a mole-heap in the south-west angle.

The first operation (March 13, 1866) was the cutting of a trench through the inner vallum and fosse near this angle, in order to ascertain their formation. It was discovered that the fosse had been quarried to a depth of 7 ft. out of the solid limestone, and the materials employed in the construction of the house walls which were subsequently met with.

<sup>1</sup> Wife of Didius Julianus, a wealthy but worthless merchant, who purchased

the Imperial purple, and after a reign of sixty-six days was put to death A.D. 193.

The total depth from the summit of the vallum to the bottom of the fosse was 17 ft. 6 in., and the width from inner to outer vallum, measuring from their highest points, was 46 ft. It does not appear that any wall had been erected upon the inner vallum, which probably was only palisaded. Within this angle, where a slight depression in the surface of the field was observed, the next operation was conducted, and the foundations of two rooms were exposed to view, both of which rooms had been heated below their tessellated pavements. The larger room measures 25 ft. by 21 ft. 6 in.; the other 16 ft. 6 in. by 14 ft. 6 in. In the south wall of the lesser room is the furnace flue, by means of which the heat was conveyed beneath its pavement, and a flue in the division wall conducted it to the adjoining room. The foundations of both rooms have suffered partial eradication, probably at the hands of husbandmen, who found them obstructing the plough; and it is not unlikely that to the same cause may be attributed the destruction of the beautiful tessellated designs which adorned the floors. Two small fragments of a pavement of minute tesserae indicate the elegance and delicacy of the pattern. A few of the grit-stone pillars which had supported the floors remained in place, and their upper surfaces had been scored by the plough. Thick grey flags, which had rested on the pillars and supported the concrete floor-bed, were found; and some good pieces of the pavement, chiefly of the pattern which formed the border, were secured. One or two facts of considerable interest were here brought to our notice. We learnt that the interior surfaces of the walls had been lined with bundles of straw reeds, upon which the plaster had been spread. Many pieces of stucco were found to be sharply impressed by the reeds, so as to exhibit the method of tying the reeds together in narrow bands of 2 in. wide, which had probably been nailed side by side to the walls. Does this use of straw bands indicate that the superstructure of this villa was composed of wood? or were they employed for the purpose of allowing the heat from the hypocaust below to permeate behind the stucco, and thus diffuse genial warmth from all sides of the apartment, as has been suggested by one of my active fellow-workers? It is possible that the latter supposition may be true, but it appears to me to be a method too full of risk to have been adopted by

practical and experienced Romans. It is more probable that this villa had wooden walls above the ground-level—a mode of construction which has been supposed to have been not uncommon in other parts of Britain. The stucco was richly coloured in a variety of beautiful patterns, and some of it was decorated with stripes, and belonged to the border of a large panel or compartment. Other fragments had stars or flowers of twelve petals of a deep chocolate colour on a white ground, and also the same device with the colours counter-changed.

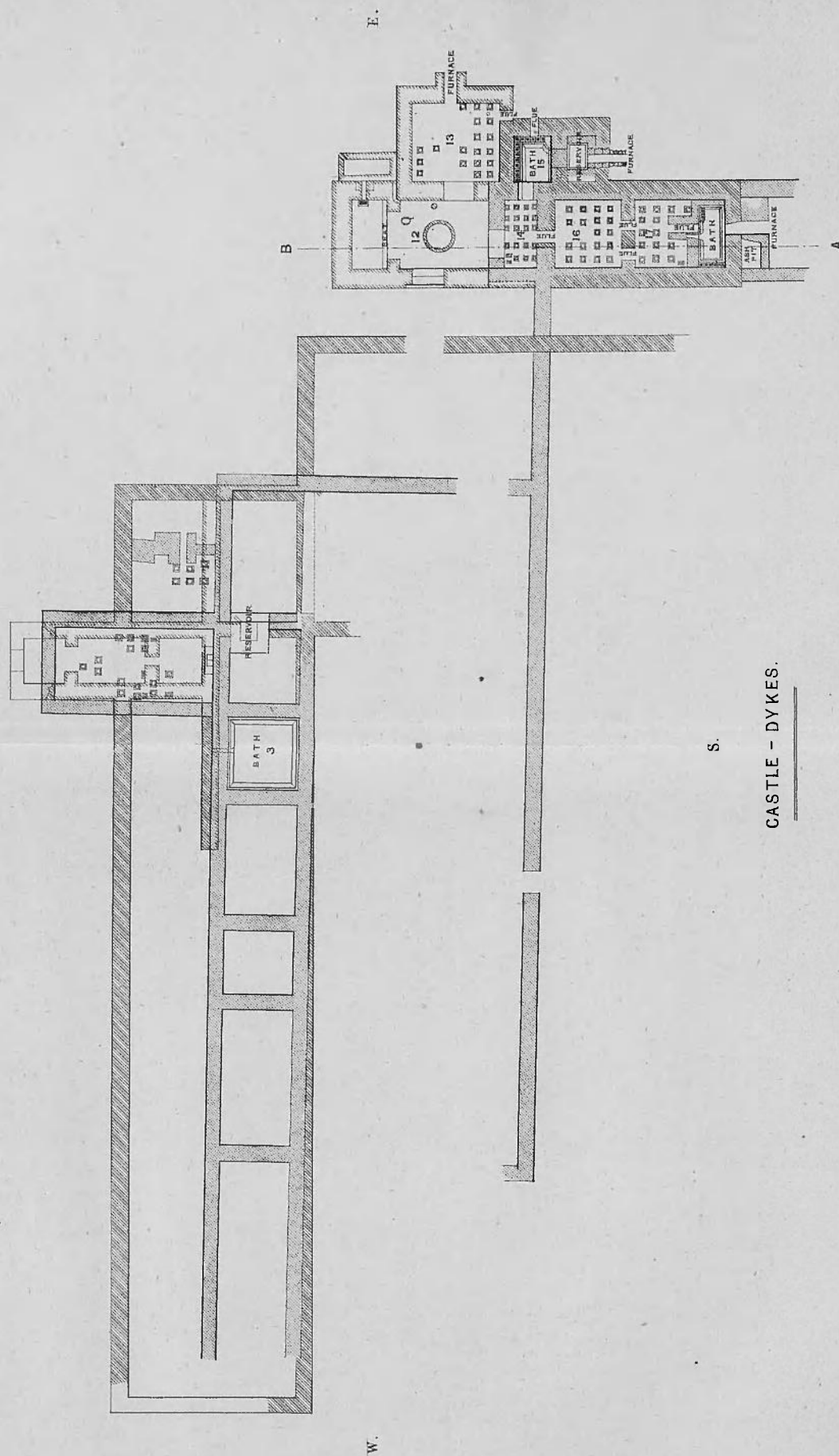
Within the larger room, and near to the foot of the south wall, two human skulls were found, also some bone pins; together with thin grey slates, some with the nail holes, and others with rusty nails still remaining in them, which had covered the roofs. Here also were tiles bearing the impression of a dog's feet and of a child's hand, and part of the lower stone of a quern. On the 6th of April, 1866, the excavations ceased, and were not resumed in earnest until the spring of 1874.

In July, 1870, it was suggested that search should be prosecuted near the northern boundary of the field, where the land presents a level appearance, with the intention of carrying on a vigorous exploration, should success attend us. We were immediately rewarded by the discovery of the bath-room, marked No. 3 in Plan II., and to this fortuitous incident we are indebted for all those subsequent remarkable and interesting discoveries which have been made in the course of 1874. It was not possible to pursue the work in July, 1870, and it is not improbable that but for the selection of Ripon for the Royal Archaeological Institute Congress, the examination of the field would have been still further suspended. Making this bath-room our starting-point, we followed the course of foundation and cross walls in every direction, until we had developed that remarkable plan of once existing buildings of great comfort and splendour, which many of the Institute members, under the leadership of their noble President, had an opportunity of inspecting in July last.

The Plan, No. II., shows that there have been two blocks of building, separated by a narrow street, passage, or road-way, which runs nearly north and south. On the west side of the street, in a direction westwards, there was a long range of rooms, which have been reduced to such a state



PLAN II.



S.

CASTLE - DYKES.

SCALE, 20 FEET TO THE INCH.



of ruin that it is hardly possible to divine the uses to which they have been applied; but on the east side we have met with a series which are so well defined that their uses are palpable. So many alterations, however, have been made in the original arrangements during the lengthened period of the Roman occupation, that it has required some discriminating care and very close observation, as the excavations have proceeded, to analyse and unravel their history. Three alterations are traceable, and these probably took place after no considerable intervals of time. The first room (No. 12) to which we were led appears to have been at one time a kind of entrance hall, 18 ft. by 9 ft., which was paved with coarse black and red tesserae, the only attempt at ornamentation being a circle or ring, 2 ft. in diameter and 4 in. wide, composed of black cubes, in the centre of the room. At the north end of this apartment is a recess, the purpose of which was not apparent until the mutilated floor was broken through by us more from curiosity than any other motive. It was then ascertained that this floor belonged to the period of the second occupation, and that a cemented bath, having a seat  $7\frac{1}{2}$  in. wide, running along the entire length of the south side, and a flue tile for a drain at the east end, had been filled up and paved with black and red tesserae indiscriminately put together to match the rest of the apartment. This alteration took place at a time when, it is probable, more ample and luxurious bath-rooms were provided elsewhere. To what use the large apartment was applied when the bath in the recess existed, it is not easy to determine. It may have been an ante-chamber in which the bathers walked and dried themselves, and as there appears to have been no means for warming the bath and the apartment, it is possible that the later Romans may have discontinued the use of the cold, and adopted the more luxurious warm bath, as being better suited to the climate of North Yorkshire.

In the north-east angle of the apartment at Q was found beneath the secondary floor, an ancient drain which passed through the external wall to a large well-constructed tank on the outside of the bath, and below its level. Into this tank the bath was also drained, and it appears to be probable that when the use of the cold bath was discontinued, the tank was filled in. It is difficult to understand the em-

ployment of a tank for a draining purpose, because the situation of the bath, close to the running stream, rendered such an adjunct unnecessary.

The notable discovery of a skeleton in this large apartment, in an attitude indicating that no disturbance of the spot had occurred since the individual was slain, proves in the clearest manner the periods to which the bath and the pavement respectively belong. An account of this discovery will be given presently.

On the street side, and close to the recess, a blocked-up doorway was found; and in the south, as well as at the south end of the east walls, there is a doorway. The latter opens into a room, No. 13, 10 ft. 8 in. square, in the south-east corner of which, (where a skeleton of a young person was found,) there is an ancient walled-up hot-air flue, and in the centre of the east wall, a more recent flue. This alteration of the flues was perhaps effected when the adjoining room (12) was altered. The bases and portions of the hypocaust pillars remained *in situ*, and a large fragment (6 ft. 6 in. by 4 ft.) of the stone vault, with which this room had been covered, was found, in falling, to have crushed and overturned some of the pillars, and wholly obscured the flue. For some undefined purpose, a step down from the doorway had been added. In the south jamb of this doorway, near the floor level, we found two small square recesses separated from each other by a thin partition of cement. They were about 6 in. at the openings, and 8 in. deep, and looked as though they might have been places for secreting objects of value.

The second doorway, mentioned above, opens into a passage marked 14 in plan, paved with coarse tesserae, which to the left conducted to a steam bath-room, No. 15, to which a small reservoir was attached, and also to two rooms, Nos. 16 and 17, southwards, at the further extremity of which was another steam-bath, with a small seat near the eastern end for the occupant.

Outside the south wall of this second bath is the furnace, which had a walled ash-pit on its west side. The tiles covering this furnace were supported on two stout iron bars. It was from hence that the two adjoining rooms, as well as the passage beyond, were heated. The first steam bath had its own furnace. The successive alterations, or three periods

of occupation of these apartments, are very clearly indicated. That which I have designated a passage (No. 14), and which when serving as a passage belonged to the third period, was previously a bath, whose floor was supported on hypocaust pillars. It was found to be in a perfect state of preservation when the mutilated tessellated pavement which concealed it was removed. Bath-room No. 15, was in the first period a small apartment 7 ft. long by 5 ft. 3 in. wide, whose walls were coated with a coarse stucco of a faint pink colour, and it had a large doorway, 3 ft. 9 in. wide on the south side, and another small room beyond. It was afterwards (second period) converted into a hot-water bath, resting on hypocaust pillars, and having an open drain across the sill of the doorway on the west side, which conducted the water into the adjoining bath, and a hot-air flue through the east wall. At a later date (third period), a sweating-bath was constructed upon it, and a service reservoir or cistern was placed over the furnace which occupied the site of the ancient doorway and second small room.

Again, room No. 16 was first of all a hot-water bath supported on pillars, and had a broad seat, large fragments of which were found among the pillars, and it was afterwards (third period) made into a dressing-room.

Room No. 17 appears to have been in the first instance a dressing-room, and to have served later as an ante-room to the bath which was made at the end of it. This bath was constructed with old materials, viz., fragments of flanged roofing tiles, flue tiles, and square and round tiles, such as were used in the hypocaust pillars. The evidence of the three periods is further strengthened by the wall-plaster, which consists of three layers, each being coloured with a different pattern. The first or lowest layer is of a rich maroon ground, with a broad border of yellow, green, white, and ultramarine stripes. The second layer is of a pea-green colour, with a border of yellow, white, and maroon stripes. The third has a white ground, with black and scarlet stripes for its border. We have also found other patterns, such as a light slate ground with white and black, yellow and red splashes, a white ground with a brown chequered pattern; and a dark slate ground, on which is a conventional leaf design of a bluish colour, &c.

The amount of wall-plaster we have found is excep-

tionally large, and the successive layers a fact of some importance. The Rev. Prebendary Scarth, Rector of Wrington, near Bristol, and a member of the Institute, who has had much experience as an explorer of ancient Roman dwellings, wrote to me in June last in these terms respecting the layers of plaster at Castle-Dykes:—"It is a very interesting discovery, and shows that the villa must have been long inhabited. I am not aware of any instance of it in those I have explored, nor have I heard that anyone else has observed it. It would be well to communicate with Mr. Joyce, of Stratfieldsaye, and inquire if he has noticed any similar instance. He has found many examples of wall-plaster at Silchester." From Mr. Joyce, to whom I wrote, I received the following reply:—"The amount of wall-plaster, as compared with the number and area of rooms uncovered at Silchester, is smaller than might have been expected. Very little has been found adhering to the walls, and the pieces dug up have mostly broken away in alterations by the Romans themselves, and been shot with other rubbish to level up for the preparation before laying the floor in cement. I can recall one clear example of such a piece showing on fracture a layer upon layer, (surface a pale turquoise blue upon a deep red,) but there is hardly any pattern upon the fragments we have found, and such as there is appears to be very simple lines or sprinkled dots. I am not aware whether you know how curiously one of the Silchester houses illustrates the carrying on of ancient works over others more ancient. We have there in one instance a series of three distinct dates of alterations, one over the other, and each perfectly separable from the rest. I refer to mason work in walls, not plaster. Our work at Silchester rarely has any squared or dressed stone in it; and if any it is apparently chopped into shape with an axe."

In the walled-up flue of room No. 13, was found an iron tool which would be well adapted for roughing the wall plaster to prepare it for receiving a fresh layer. It is in the form of a short pick-hammer, which has one end pointed, and the other end broad and sharp.

Plan No. II. shows the foundations just described, and in a lighter tint those of a newer set of buildings which exhibit a different arrangement of rooms. For some reason, at present unexplained, the narrow street was stopped, which

may have been done at the time when the fresh system of bath-rooms was adopted.<sup>2</sup>

It was only by degrees, and as the excavations advanced, that we came to learn that a new set of buildings had been erected; for although I have described the eastern block of apartments first, where the alterations are very manifest, it was our most recent discovery. In that series of rooms the walls had probably been nearly all left standing, whereas in the western range they must have been wholly demolished, or, if constructed of wood, as is not unlikely, entirely consumed by fire. That portion of the eastern block, which alone was thrown down, and *never rebuilt*, consists of rooms 12 and 13. And we gradually acquired this knowledge in this way. We first noticed that there were foundations which were laid upon a mass of rubbish, and that under them were wood-ashes, pieces of wall-plaster, roofing tiles, animal bones, potsherds, oyster-shells, and other refuse, clearly indicating a previous occupation of the site. As our work proceeded, we observed that the foundations were not all at the same level, and that some crossed over older ones. We discovered that these later foundations were sometimes built upon old floors, and that the level of the new floor-line was one foot above that of the old. To this may be attributed the preservation of the older floors, and the destruction of the newer, which unfortunately came within reach of the plough. There is also a marked difference in the character of the masonry. The newer walls are less solid, are laid upon a layer of cobbles, and built in irregular courses, the stones not being always carefully squared; whereas the older walls are thicker, have a foundation course of red sandstone, and are built with squared stones. We perceived everywhere traces of burning in discoloured stones, charcoal, stained wall-plaster, &c., and were thus led to the conclusion that the first buildings had been destroyed by fire and violence. But in no part were these tokens more apparent than in the room in which the skeleton of the unfortunate Roman was found. As the work of excavating progressed, a picture of violence, conflagration, and at length of bloodshed, vividly arose before us. The first indications were presented by the large quan-

<sup>2</sup> It is not improbable that at this period the main entrance to the baths was by the door on the north side.

tities of wood ashes which over-laid the mosaic pavement. Then the stucco still adhering to the walls was found to be not only discoloured on the surface by smoke, but the effects of the conflagration had penetrated into it to a depth of half an inch. In many places the pavement had been destroyed by the falling of heavy stones. But when we uncovered the human remains, their remarkable position, encased in the *debris* of a wall which had been battered about his ears, told the story of the young man's last moments in the clearest language. It was plain that he had rushed out of one of the adjoining rooms, when the place was assaulted, and was seeking concealment and safety when he received his death-blow. Perhaps he was feeling the effects of the blinding smoke which was filling the house, and was staggering along the wall side. Whatever was the mental misery and horror of his condition at that moment, it is evident that an arrow from the hand of an unseen enemy struck him on the left side of the head, and he dropped upon one knee, with his hands raised to defend his head. In this position he has been found after a lapse of sixteen or seventeen centuries.

It is almost always the case, when human remains are found at a distance from consecrated ground, that traditions of murders are immediately recalled to mind by gossips who recount the horrible details with circumstantial minuteness, as though they had been eye-witnesses of the bloody deed. Castle-Dykes has now its gossips and a murder, the illusion of which not even the bronze armlet which was discovered under the bones will serve to dispel. I do not know what they will invent when they come to learn that in the adjoining room the skeleton of a young person, about thirteen years of age, was also found ; that in the larger of the two rooms discovered in the south-west angle of the field in 1866, two human skulls were exhumed ; that the skull-bones of an infant were met with in another place ; and that the entire skeleton of a second infant was found outside the north wall of room No. 12. In addition to these, we have disinterred two collections of burnt human bones in the part of the field which is west of the building.

It is not unusual to find human remains and entire skeletons among the *debris* of Roman houses in Britain. At Uriconium (Wroxeter) three skeletons were found in a hypo-



caust, one being that of an old man who had died crouched up in a corner. They were probably fugitives who had crept into this place of concealment (*Brit. Archæol. Assoc. Journal*, Sept. 1859). In another hypocaust were portions of the skeletons of two young persons, and Mr. Wright, who describes their discovery, supposes that these terrified inhabitants must have been stifled by the remains of the hot air in the flues, or by the effects of the conflagration of the houses. Here, at Castle-Dykes, we found in the hypocausts the entire skeletons of two lambs or goat kids, who had no doubt sought a place of refuge when terrified by the din of war and the blazing houses, and had rushed into the furnace openings. The poor little animals penetrated the flues to their extreme limits, in one case to the far corner of a third room.

The unusually large number of bath-rooms is remarkable, but it must be borne in mind that they do not all belong to the same date. As many as seven have been uncovered, of which number not more than three probably were in use at one time. No channel for conducting the water into them has been discovered, so that buckets or other vessels must have been used for filling them. The walls and floors of all the baths were coated with red stucco, and in three instances there ran round the floors a moulding of plaster for rendering them water-tight. In two instances flue-tiles were used to convey the heat behind the wall-plaster; and in five instances we have found drains in connection with the baths. Two are formed of stucco, one is of lead, a fourth is an ordinary flue-tile fixed vertically in the floor, and the fifth is formed of inverted ridge-tiles.

The manufacture of tiles for various purposes appears to have been brought to great perfection by the Romans. In whatever part of the country they are met with, they are equally good. The samples from Castle-Dykes are no exception to this rule. There are square tiles of many different sizes, as well as round ones, which were used in the construction of the hypocausts; and there are others which were made for flues, roofs and ridges. Some of the square tiles are of a large size, and one in particular which supported a cistern is 24 in. square. The cemented floors rest upon tiles which are generally about 20 in. square. The tile-maker, besides leaving other marks, which shall be



mentioned presently, has let us know what sort of tool he employed in the manufacture of the flue-tiles ; almost every one bears the impression of such a tool on the inside, and in such a manner as to indicate the way in which it was used. The impression closely resembles that which a laundress's flat-iron would make if it were studded with nails. It was no doubt made of wood, and perhaps was very like a flat-iron ; with it the moist clay was held down while the edges were turned over into the required form. The small tiles (7 or 8 in. square) employed in the pillars, were specially manufactured for this purpose, and at each angle there is a depression made with the palm of the hand to receive a dab of soft clay to enable the tile to lie evenly and firmly in its place. We found the intervening clay in most cases still moist and soft. We have searched in vain hitherto for a tile inscribed with the Legion whose soldiers were quartered here. If one had been found, it would unquestionably have given us much satisfaction ; and yet I do not think that a tile stamped with the Ninth Spanish Legion, such as was found at Isurium (Aldborough), would yield so lively an interest as certain tiles we have met with which have been accidentally stamped by other hands and other feet. These tiles open out a picture of the domestic surroundings of a Roman tile-maker which is intensely interesting ; we now know the size of the feet of some members of his household, and the arrangement of the nails on the soles of their shoes or sandals. We know also that they took off their shoes and laid them on the newly-made tiles, and walked bare-footed. It may be that the clay was kneaded with naked feet. We have found six separate impressions of shoes, three while on the foot and three when taken off. We learn further that his little child of five or six years old (foot measures  $6\frac{1}{2}$  in.) played in the drying-ground of the tile-yard, and left the impressions of its hand and bare feet on the soft clay. On one occasion it was accompanied by its mother or elder sister (the foot-mark measures  $8\frac{1}{4}$  in.). The manufacturer owned an old sow and a litter of pigs, as well as sheep or goats with lambs or kids, and they too strayed into the same yard and have immortalized themselves. It is probable that the dismayed tile-maker dispersed the motley crew with the help of his dogs, for they have not omitted to follow the example of the others. There are evidences of

more than one kind of dog, and the rapidity of the flight of pigs and sheep and of the pursuing dogs is distinctly indicated. To crown all, another member of the household, during an amatory excursion under cover of night, was unable to distinguish soft from hard tiles until it was too late, and so pussey has also left the prints of two feet. One more fact has to be mentioned, viz., that the weather in the spring of the year when these tiles were made was showery, and that heavy rain-drops were falling when the old sow and her litter were at large on that ground.

In London excavations, and in the Thames, shoes have been found, so that their true form has been ascertained from actual examples. They were formed of four layers of leather held together, as Mr. Roach Smith, in his "Roman London," describes them, without any appearance of stitching, by nails, clenched on the inside of the sole. The nails have broad heads, and are placed in a single row round the edge, five rows in the broadest part and three at the heel; and sometimes they are more thickly set. The upper part of the shoe was formed out of one piece of leather, which was cut or punched into elegant patterns, and looped to receive strings for drawing it tight over the foot. Most of the London shoes are of small size, and appear to have belonged to youths or women. Some are from eleven to thirteen inches in length, and were men's; and all appear to have been nailed. Mr. Roach Smith likewise says that in every instance the shoes were made right and left. The discoveries at Castle-Dykes illustrate his description in two particulars. 1stly, in the fact that they were made right and left, and, 2dly, that they were well studded with nails. Two of our tiles show a right and left shoe, a third is too fragmentary to show the form; and in two other instances where the sandals have been taken off and laid on the soft clay, the form of the left foot is traceable. The arrangement of the nails is very well marked. Round the edge of the sole there is generally a double row, strengthened by a third row in the broadest part, where there is also a diamond-shaped pattern with one nail in the centre, and a similar device at the heel. It is to be observed, however, that the nail heads are not of a large size, except in the case of one shoe, and their size and irregularity and the general clumsy form of sole, seem to show that it was worn by a common labourer.

The tile-impressions are instructive in another particular, as supplying us with information respecting the breed of animals kept by the Romans. The sheep must have been of the moor breed, such as we are familiar with in North Yorkshire, small and horned. A farmer, who resides in Melmerby, one of the townships of the parish, where he has a brick-field, does not appear to have been more able to prevent his sheep from straying into the drying ground, than the Roman tile-maker. When a load of bricks was brought from thence to my church, in October last, I spied a brick bearing the impressions of the foot of a sheep; and it is curious that they resemble some from Castle-Dykes, as closely, both in size and position, as if they had been made by the same animal. I have not been able to ascertain if this gentleman of Wath parish had any moor sheep when these bricks were in making, but it is not unlikely that he had. He informs me that the bricks were made three years ago, and he has forgotten, but he says that he has known lambs to stray into the ground and walk over the soft bricks. At all events, the Roman sheep cannot have been of a large kind, because, though turnips were known to the Romans, sheep did not then derive as much benefit from that vegetable as they do now-a-days; and in default of turnip-feeding no doubt our sheep would soon degenerate.

As regards the dogs, I have already remarked that there are impressions made by more than one kind. There are some clean marks which denote a foot not covered with much hair, and there are others which are hairy. The former are larger than the latter. Professor Rolleston, of Oxford, informs me that the skulls of dogs of the Roman period in his possession are generally those of small animals; and we have found two or three such skulls which are small. I do not think that the dogs whose feet marks we have found were of a large kind.

The older buildings were covered with flanged tiles, and the newer with Pateley flags.

The window openings were probably small, and it is not unlikely that they were glazed. We have picked up several fragments of flat glass, which seems to have been used in windows. It is Mr. Wright's opinion that the windows at Uriconium were glazed.

That the buildings must have been of considerable import-

ance is evident from what has been stated, but the presence of bases of stone columns, resembling those which have been used at Aldborough, and other places, to adorn the façades of temples and the porticos of public buildings strengthens the opinion that Castle-Dykes was a station of no mean importance.

And now I come to the question why this particular site was selected for a fortified post. There were, as I have before stated, two great military roads within a short march of the place, viz., Watling Street, at a distance of about 4 miles east; and at about 9 miles south, the road which united the towns of Isurium and Olicana, and passed near to Ripley. Cohorts of the legion occupying Olicana having to be moved northwards to Cataractonium, must have had to undergo a fatiguing march of 23 miles to Isurium in order to get on the great north road, if a vicinal way or cross road had not been provided. The Roman generals, in the midst of so warlike and powerful a people as the Brigantes, were not the men to waste precious time, and to harass their soldiers with long marches; and we may therefore conclude that a means of communication was opened with Catterick by a nearer way than by Isurium. The Royal Archaeological Institute appears to have anticipated in some measure the supposition I wish to advance—that a short cut was obtained by a road which came in this direction from a point near Ripley.

Under the auspices of the Institute, a map of British and Roman Yorkshire was published some years ago, on which such a road is marked; but as Castle-Dykes was not then supposed to be of much consequence, this vicinal way, after having been brought by the authors of the map as far as Aldfield, west of Studley, was made to take a north-westerly course over Nutwith Common (where camps exist), past Masham, and thence to join another vicinal way about 4 miles east of Middleham. In favour of the existence of such a road from Ripley to Aldfield there is the evidence of suggestive names along its course, viz., Thornton, Watling Carr, and Hardgate; but I am of opinion that this vicinal way should have been extended to Castle-Dykes, and thence carried forward through Stainley to Well, where there are remains of a Roman settlement, and so, avoiding Bedale, in a straight line to Catterick. If any one will examine for himself the Ordnance map, he will see an existing road which

follows this line. Another branch of this road took an easterly course to a ford across the River Yore, in the direction of Norton Conyers, then through Wath (Vada) to meet the Watling Street at a point a little beyond Middleton Quernhow. The great importance of the fortified position of Castle-Dykes consists in its being at the edge of a marsh, the ford across which it protected; and it is a fact, known to very few persons, that at Wath there are the remains of a fortification which is similarly situated, and which was clearly constructed for the purpose of defending a ford across a very extensive marsh. The remains of a fosse and double vallum may be seen on the north side of the churchyard. There may have been, and there most probably was, a further reason for so strong a position, and so solidly constructed a station as the one we have been considering. The Yore is a very fordable river, especially in the summer; and it must have been necessary, as well for strategical purposes as for drawing supplies of corn and meat, for Olicana and Isurium, from the fertile alluvial banks of the river along a considerable line of its course, that there should be a series of camps on both sides of it, which camps, in fact, do exist, and that there should be no impediment to easy and rapid communication, arising from swamps, such as the one which existed here.

With regard to the date of the construction of this post, it seems to me that the evidence presented by foundations belonging to three distinct periods, and by the three layers of wall decorations, betokens a long occupation; and that we may fairly presume that the importance of this line of road and especially of this site would be perceived as soon as the military settlement of Olicana was effected. It is also conjectured that the early Roman forts had no wall, but were merely strengthened with stockades, and we have found no trace of a wall on any part of the embankment. As then Isurium, Cataractonium, and Olicana were already Roman towns, when Ptolemy wrote, A.D. 120, Castle-Dykes probably sprung into existence soon after this date, if not at an earlier period.

I wish to seize the present opportunity to express the cordial thanks of the Committee of the Ripon Scientific Society for the material assistance and encouragement which have been given to their explorations of this site by a

generous donation of 20*l*. from the Royal Archaeological Institute. This sum, added to that which was then in hand, enabled us to carry on our work of discovery until the severity of the weather at the commencement of the winter of 1874 compelled us to cease. There is still a balance at our command, and it is our intention to resume the work as soon as there is a fair prospect of a continuance of open weather. We are confident that there is a great deal of unexplored ground which promises to reward our researches. There are foundations which require tracing out in several directions; and there is the question to be solved to what building the stone columns, whose bases we have found, belonged. We have yet to ascertain the exact site of the entrance into the fortification, and its guard-rooms; and to find the cemetery, for no doubt, during the long occupation of buildings of such extent and importance, there must have been many burials, probably of persons of distinction, as well as of those in a lower social rank. There is likewise good reason to expect that buildings may be discovered on the rising ground on the north side, without the camp, where we have met with fragments of flanged tiles.

HUMAN AND OTHER BONES FROM CASTLE-DYKES, described by GEO. ROLLESTON, M.D., Professor of Physiology, Oxford.

“The skull is less perfect than one could desire, but having received such re-construction as it was capable of, it can be described as follows:—Taken together with its lower jaw, and with, or indeed without, the long and other bones of the trunk sent with it, it can be confidently affirmed to have belonged to a young strong man in possession of the comforts and also of the culture of civilised life. The brain case is well filled out and globose, in all its outlines; the upper jaw is orthognathous, the lower well and decisively formed; the teeth, none of which were lost before death, are little worn, showing that their owner enjoyed the advantages of good cookery, and of bread ground with good mill-stones.

“In technical language this skull would be called platycephalic, and dolichocephalic; as a matter of fact, in looking at such a skull on living shoulders, one remarks its length and width, but notes that its height is not so remarkable.



It is not an uncommon form amongst ourselves at the present day—statesmen and scholars often have such heads; and if I may, to save you the trouble of reading more MSS., refer to my own paper on ‘Frilford and its Cemetery,’ I would say that it is a typical example of a form of cranium very abundant in that cemetery, and in other Romano-British cemeteries, and identical with the form called ‘Cimbric,’ by Retzius, as cited at p. 38 of that memoir.

“The stature of the owner of these bones was 5 ft. 5 in., about the same as an average of modern men of similar strength.

“The wound still plainly visible on the left parietal must have caused death rapidly, by the severance or puncture of one of the chief branches of the middle meningeal artery, if death was not caused otherwise even more speedily. The outer table of the skull let the sharp weapon pass through it without doing more than make a hole sufficiently large to pass by, but the inner table splintered away before the point of what may have been an arrow, and cannot have been any thing much larger. There is on the same bone a curious raised porcellaneous patch near the sagittal suture; this was due to some trifling morbid alteration of the scalp, probably.”

The Professor thus describes one of the skulls found in a room in the south-west angle of the field:—“Frontal, molar, upper maxillary, and temporal bones of an aged male subject. The frontal is broad and capacious, having had the median suture persistent, as is rarely the case except in well developed skulls belonging to civilised races. Many teeth had been lost from the upper jaw during life. I doubt whether the temporal bone sent herewith, really belonged to the same individual as the frontal. Some bones of an infant have been sent together with the rest.

“Of brute bones we have those of pig and ox, burnt and unburnt, bones of sheep, young and old, of horse, of dog, and of red-deer an antler sawn with a good saw. We have bones of the common fowl, and the goose, and, most interesting of all, the *cat*—*felis catus domesticus*—an animal unknown to the ancient Greeks in their classical days, except as used by the Egyptians, but used by the Romans in Italy and France as early as the commencement of our era.”



LIST OF OBJECTS CONNECTED WITH THE ARRANGEMENT AND CONSTRUCTION OF THE HOUSES AND OTHER BUILDINGS, IN POSSESSION OF THE RIPON SCIENTIFIC SOCIETY.

1. Roofing flags of micaceous sandstone, "Pateley flags," of two forms.
2. Roofing flanged tiles and ridge tiles.
3. Square tiles of four sizes for the hypocaust pillars. The smallest, 8 in., for the shafts ; the next size 1 ft., for the bases and capitals ; the third size 15 in., placed on the cap ; and the fourth size 21 in., upon which the concrete floor was laid. Round tiles for pillars ; flue tiles.
4. Specimens of the concrete floors.
5. Specimens of the tessellated pavements.
6. Stones of peculiar shape employed for the floors or hypocaust flues.
7. Stone bases of columns.
8. Coloured stucco from the walls, some specimens showing three successive decorations of the rooms ; and some bearing the impressions of the reed or straw bands upon which the plaster had been spread.
9. Iron nails and T-shaped stanchions or hold-fasts for fixing roof tiles, and flue pipes.
10. Sixty tiles of various sizes, which had been used in the hypocausts, on which are impressions of naked feet of adults and children, and of shoes or sandals showing patterns of the nails on the soles ; also impressions of the feet of dogs, sheep, lambs, pigs, and cats.
11. Piece of lead drain pipe.

OBJECTS FOR DOMESTIC PURPOSES.

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| <p>A.—Pottery.</p> <ol style="list-style-type: none"> <li>1. Samian ware—mortaria of Samian and coarse buff-coloured ware.</li> <li>2. Upchurch ware.</li> <li>3. Castor ware.</li> <li>4. Red ware.</li> <li>5. Black ware.</li> </ol> <p>B.—Glass.</p> <ol style="list-style-type: none"> <li>1. Flat or window glass.</li> <li>2. Portions of bottles.</li> </ol> | <ol style="list-style-type: none"> <li>3. Fragment of bracelet.</li> </ol> <p>C.—Bronze.</p> <ol style="list-style-type: none"> <li>1. Fragments of unknown use.</li> <li>2. Ring.</li> <li>3. Handle of a casket.</li> </ol> <p>D.—Iron.</p> <ol style="list-style-type: none"> <li>1. Horse-shoes.</li> <li>2. Link of a chain.</li> <li>3. Axe-head (mason's).</li> <li>4. Hinged object.</li> </ol> |
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PERSONAL ORNAMENTS.

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| <ol style="list-style-type: none"> <li>1. Hair-pins of bone.</li> <li>2. Bone bodkins or needles.</li> <li>3. Bronze ring fibula.</li> </ol> | <ol style="list-style-type: none"> <li>4. Bronze armlet (fragment).</li> <li>5. Bronze tag-end, with leather or piece of skin attached.</li> </ol> |
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COINS.

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| <p>Volusianus, 3<i>d.</i> brass.<br/>Postumus.</p> | <p>Constantius Chlorus, 2<i>d.</i> brass.<br/>Gallus.</p> |
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MISCELLANEOUS OBJECTS.

1. Oyster-shells in abundance.
2. Cockle-shells, mussels, whelk, &c.

3. Bones of ox (*Bos longifrons*), horse, pig, sheep, lambs, goose, fowls, dog. The crania of the ox sometimes bear marks of the fatal axe.
4. Portions of horns of red deer and roe.
5. Portions of bone showing marks of saw and other tools.
6. Legs of fighting cock, with natural spurs.
7. Stone roundels or discs (some pierced) ; others made of pottery.
8. Touchstone.
9. Querns.
10. Human skeletons of adults, young persons, and infants.