II.

NOTE ON THE VESTIGES OF THE FOREST OF CREE IN GALLOWAY.
BY ARTHUR MITCHELL, M.D., COR. MEM. S.A. SCOT.

The author of this communication, after expressing at some length his opinion that the discovery of trees in Peat-moss is not to be held as conclusive evidence that forests existed in ancient times wherever
such trees are found, proceeds in his notice of the Forest of Cree, as follows:

Although I think that we have no good grounds for speaking broadly (as we are accustomed to do), of Scotland's having ever been, in prehistoric or in later times, covered with dense and heavy forests, yet we have good evidence that forests of considerable extent and of heavy timber did exist at a period very remote from that in which we live, in localities which are now nearly treeless. To one locality, in which the remains of such a forest are very abundant and remarkable, my attention was drawn by Mr Cosmo Innes. I refer to the moss and carse of Cree between Newton-Stewart and the Bay of Wigton. I have had several opportunities of examining these remains, and it is my intention now to describe them. In order to assist me in this, I shall first give a brief topographical account of the district, dividing it into two parts—one an upland mountainous district above or to the north of Newton-Stewart, and the other a flat carse below it, or between it and the Bay of Wigton.

The river Cree, above Newton-Stewart, flows through a succession of glens in the mountainous district between Penninghame and Minnigaff. Now and then these open up somewhat, and exhibit fertile haughs and straths. The sides of the river are in many parts richly wooded. About Garlies alone there are some five or six hundred acres under thriving plantations of oak, ash, hazel, and beech; and as we go further north we find patches of low oak wood, which is probably indigenous. The whole of this district of Scotland indeed seems to be favourable to the growth of timber, and can still furnish its share of our remarkable trees, though there are certainly none in it now at all equal to those the vestiges of which I intend to describe. The laurels in Lord Galloway's pleasure

1 Dr Mitchell gave it as his opinion, that if we are to be guided by what the peat teaches us, we shall be forced to the following conclusions:—that where wood thrives well now, wood thrived well in ancient Scotland, and vice versa; that woodless districts now, were woodless then; that there were many large tracts of low natural wood; that here and there something like a forest existed with trees of a size which we seldom see equalled now; and that Scotland never had a much larger acreage under wood than it has at present.
grounds exceed 30 feet in height, and there are probably none finer in Scotland. At Bargaly\(^1\) on the Palnure, which falls into the Cree below Newton-Stewart, there is a *Quercus sessiliflora* which rises to 60 feet, which is 10 to 11 feet in girth at two feet above the ground, and which has a trunk of 14 feet without a branch; and at the same place there is a handsome beech more than 15 feet in girth at 3 feet above the ground, and rising more than 30 feet without a branch. On the banks of the Pinkill, near the churchyard of Minnigaff, there are several stately firs 6 to 7 feet in girth, and stretching upwards for 60 feet before a branch leaves the trunk.

Below Newton-Stewart the flexures and crooks of the Cree are compared by Symson\(^2\) to those of the Forth between Stirling and Alloa, while the flat or plain through which the river pursues its tortuous and winding course has been aptly likened to the Carse of Stirling.\(^3\) This plain or carse, which lies between the road to Creetown on the one side and the road to Wigton on the other, covers an area of 10 to 12 square miles, including the part under water at full tide, and consists throughout of bluish clay silt, clayey loam, or carse clay. On the west side a large extent is still covered by peat, averaging 7 to 8 feet in depth. The mosses of Cree, Carsegown, and Borrow, cannot cover less than 1500 to 2000 acres. Formerly these peat mosses were of much greater extent, the ground having been largely reclaimed and brought under cultivation; indeed, on the east side, little peat now remains, and the next generation may see nearly as little on the west. The peat lies immediately over the clay—the line of separation being sharp and defined. Captain Thomas has pointed out\(^4\) that the peat at Callernish springs in like manner at once from the boulder clay—giving no evidence of a prior vegetation. Since reading his paper I have myself seen peat resting on

---

1 Loudon speaks of Bargaly as "the most interesting place in Scotland with respect to the introduction of foreign trees and shrubs," i. 96.
3 Macfarlane MSS., i. 517, Adv. Lib.
bare rock, on clean gravel banks, and on blue clay silt, with not an inch of soil between. This is a phenomenon which appears frequent in peat formations, which requires further examination, but which, I think, we cannot yet accept as an indication that the district was bare and lifeless before the plants grew out of which the peat is formed.

The clay bank, or bed of clay which forms the carse, is of great and unknown depth. About two miles below Newton-Stewart, in making a bridge for the railway in 1860, piles were driven more than 40 feet down, and no bottom found. The channel of the river is a tortuous cut in this clay bed, and this cut in many places is clean and precipitous, and at low water its bottom is from 10 to 15 feet below the general level. I say at low water, for the tide comes up to within a few hundred yards of Newton-Stewart. At ebb tide, on both sides of the river we have here and there mud or clay banks, which are covered with water as the tide rises. Opposite Creetown, on the east, these are about three-fourths of a mile, and on the west, below Wigton, they are nearly two miles broad. In other places, especially at the convexities of sharp bends of the true channel, the rise and fall of the tide is noticed merely in the rise and fall of the water-level on the face of the precipitous bank, close at the foot of which the river flows. The banks, which are left dry at low water, are constantly shifting, and so also is the channel of the river. The increased value of land, and the desirability of preserving boundary lines will, in future, prevent extensive changes in the river course. These considerations, indeed, have probably operated more or less in preventing changes during the last hundred years. It is certain, however, that the tendency of such a river course must always be to change—and all the more certain that the stream is a mountain one, and subject to heavy spates. One of these changes has cut off a part of the parish of Minnigaff, just below Newton-Stewart, and left it on the Penninghame side. Before another, probably of slower operation, the town of Wigton has had to retire, for it is said once to have stood more than a mile to the east of its present site, on a place which is now covered with water. If the Earl of Galloway perseveres in his schemes, our children's children may see green fields again where old Wigton stood. When Margaret Wilson was drowned in the Bladenoch (for drowned she was, in my

opinion), and long after that time, the mouth of that river was half a mile and more to the north of its present position.\textsuperscript{1} In addition to such proofs of change, every one who examines the river has ocular evidence of the occurrence of unceasing abrasions on the one hand and depositions on the other.

The remarks I have made on the course of the Cree, may be almost literally applied to the Palnure, the Bishop Burn, and the Bladenoch. I have been somewhat minute in this description, because considerations are involved in it which affect the questions of where and when the trees grew of which I am now about to speak.

These trees, which, so far as I know, are all oak, are found in two distinct positions,—first, in the channel of the Cree, or projecting into its channel from the banks at the side, many of these last having 10 to 15 feet of sandy clay above those parts of them which are in the bank, and an unknown number of feet of clay below; and, secondly, under the peat, on the surface of the clay.

The existence of this ancient Cree forest does not rest on our finding some half-dozen trunks. You may count them by the hundred, exposed in the bed of the river, between Newton-Stewart and Barsaloch; and you may reckon roots by the score where the moss has been cleared away, near the mouth of Lime Burn. I say roots in this case, because such trunks as are discovered in peat-casting are carted off at once. Of their great abundance there is another striking evidence which meets every one's eye as he drives from Newton-Stewart to Wigton, Kirkinner, and Sorbie. The pillars of nearly every gate on the way are observed to be made of handsome logs of black oak.\textsuperscript{2} So plentiful indeed, is the wood, that some years ago a cabinetmaker in Newton-Stewart attempted to make a trade of it; and he failed in this, not from any scarcity of the timber, but probably because he did not well understand how wood, so long submerged, should be treated in the first stage of drying, in order to prepare it for use.

Not only, however, is the wood abundant, but it is of great size.

\textsuperscript{1} New Statistical Account.

\textsuperscript{2} There is no other part of Scotland in which this evidence of an ancient forest entombed in the neighbourhood is presented in such a remarkable manner.
Mr M'Culloch, of Barholm, about twenty years ago, raised an oak from the bed of the Cree which was 15 feet in girth, and 50 feet long, and which he sold for £25 to Mr Younghusband, of Whitehaven, to be used in shipbuilding.

The Rev. Dr Richardson gives the measurement of two logs, raised by the cabinetmaker of whom I have spoken. One was 58 feet long, and 14 feet 9 inches in girth; and the other 35 feet long, and no less than 17 feet in girth; and the same authority adds, that "numbers of them were 12 feet in circumference."

Dr Black (F.G.S.), in a note sent to me by Mr Innes, states that the growth rings of one "were reckoned up to about 600;" and I found a cabinetmaker in Newton-Stewart making large panels of an oak said to have been 15½ feet in circumference, and which was found in Kirrochtree Moss, in what appeared to be a mixture of clay and peat, at a depth of 8 or 9 feet.¹

In 1819, many trees were exposed in the Cree, below Machermore, and Mr Newall, the farmer there, collected all the empty casks he could find in the neighbourhood, bunged them up, and fastened them at low water by ropes to the wood in the bed of the river; and as the river rose with the tide, the casks raised the timber to which they were attached. This is not a bad indication of the size of the timber with which he had to deal. The measurements which I have given of course refer to the largest of these trees—the monarchs of this ancient forest; but the dimensions of the majority are large,—girths of 6 feet and upwards being common.²

So much for the number and size of these trees; let me now direct attention to some objects which are found with them, either alongside, or in such positions as lead to the possible conclusion that they are coeval with the trees.

In 1814, in the moss of Barnkirk, close to Newton-Stewart, a canoe

¹ Gunpowder was used to break up this tree, and the portions of it which were removed weighed about six tons. One of its branches was over 3 feet in diameter, and 12 feet long. This branch itself, therefore, represented a tree of unusual size.

² In describing the number and size of the trees, I have used such facts as are supplied by the New Stat. Account, as well as those collected by myself.
was found, made out of a single log of oak. Mr M‘Millan, who then occupied Barnkirk, made the lintel of a cart-shed door out of it. In the peat above the canoe, 6 feet below the surface, a ball of tallow or fat was found, which weighed 27 lbs.

Another canoe was found on the farm of Bents or Larg, not far from Kirrochtree, in the grounds of which I saw it. It is made of a single oak tree, and is about 11 feet long, 3 feet 2 inches wide, and 20 inches deep.

In 1819 Mr Newall found in the clay which adhered to the end of a tree, buried in the bank of the river, with at least 12 feet of clay above it, a horn 34 inches long, and 12 inches round immediately below its division into five antlers. This was sent by Mr Joseph Train to Sir Walter Scott, and was examined by Dr Barclay and pronounced to be the horn of a deer “of the largest possible size.” Along with the horn, at the same place, some human bones, said to have been of great dimensions, were found, and also sent to Sir Walter Scott. The horns of the deer, indeed, appear to be frequently found in the moss and bed of the Cree. I have placed an excellent pair in the Museum of the Society of Antiquaries, and also a large single one, which were kindly presented to me by Mr M‘Guffock of Newton-Stewart.

Several heads of the extinct Urus are said to have been found in the moss and bed of the Cree. Mr Stewart of Cairnsmuir has one which is tolerably perfect. The horns are 29 inches long, and 14 inches in circumference at the root, with a frontal space of 10 inches between them. The same gentleman has also the fragment of another.

In “Sandy’s Grotto,” or “The Howlet’s Nest,” in the grounds of Kirrochtree, I saw a quern, which is said to have been found in a bog on the farm of Larg, near the spot where the second canoe I spoke of was found.

Mr Train, the well-known antiquarian, presented to his correspondent, Sir Walter Scott, what he calls a Roman battle-axe, found in the moss of Cree, and also a stone celt found at Knockbrax in Penninghame, which weighed 7 lbs. 9 oz. Another stone celt is said to have been found in the Carse-of Bladenoch, and there is a bronze celt from the moss of Cree in the National Museum of Antiquities, Edinburgh.

It thus appears that very interesting remains are found in close association with the vestiges of this Forest. The country appears to have been
peopled when these trees were living. On the margins of this forest man paddled in his canoe, and under the shade of these mighty trees he pursued the red deer and the urus. He cultivated corn in the neighbourhood, and ground it. He was of goodly stature, and carried formidable weapons of war. These things at least are possible, if not probable inferences from the facts I have detailed.

I think I have shown conclusively that a notable forest existed here, but the interesting question now presents itself, Were the trees all of one age, and what extent of ground did they cover? My answer to this is, that it appears probable that they all grew at one epoch, above the clay and below the peat, and that the carse land which I have described represents the extent of the forest.

We cannot suppose that hard wood of such vast dimensions could have been floated down to the carse from the upper districts, by such streams as the Cree and Palnure, without involving changes in the country's face, which would be purely fanciful and without collateral support. I must not be understood, however, to say, that in equally remote times, gigantic trees had no existence in these upper districts, for the opposite we know to be the case. In the Macfarlane MSS. (I. 517, P. Adv. Lib.) it is stated that in the Loch of Troul a prodigious number of large oak trees were then to be seen, lying across one another at the bottom, and I am told that these can still be seen. Indeed all over Galloway, especially along the shores of the Solway, there are vestiges of clumps of forest trees, belonging, in all probability, to the same age as those in the Carse and Moss of Cree, but there is no good reason for believing that any of them have been transported from a distance to the place they now occupy.

I have said that I believe they all grew above the clay and below the peat. Very many of them must have done so, for they are found in the very position they occupied when growing. These are short stumps, the roots of which spread out and seize the ground, and the peat about them contains the leaves, and twigs, and fruit of the trees in question.

But if all these trees grew above the clay, how does it happen that many of them are below it, or in it, at all depths up to 15 feet or more?

The remarks I offered on the topography of the Carse of Cree will assist
us in solving this difficulty. It will be remembered that I described the channel of the river as a tortuous and changing one, a winding and shifting cut in the large clay bed which forms the Carse. At every turn of the river the current is directed against the opposite bank, which it eats away, and the clay silt, mechanically suspended in the water, is carried down till it meets the up-coming tide, which carries it back; and in the pause, when there is little movement up or down, it is again deposited in the quieter waters. Banks are thus continually cut down in one place and deposited in another, while it is evident that there is no lessening of the clay bank of the Carse as a whole. This process is going on now, and can be seen; but for reasons already given, it is, and has been for a century or more, under control and direction. In centuries further back, however, it would go on without interference.

Now if we suppose a tree lying at the top of the clay bank, which the river is eating away, it will fall into the bed of the river when the bank falls. And this fallen mass, or this and others following it, will turn the force of the stream against the opposite side, and in a short time the river may begin to deposit clay over the very tree which it had recently undermined, till by and by the bank over it is nearly of the average level of the Carse with the river's course at some distance. An interval then elapses, it may be of centuries, and the river's course oscillates back to the old channel, and exposes the trees it had previously buried. It is thus we find them at all depths, lying at all conceivable angles, some of them having slipped down perpendicularly (almost in the position in which they grew), others going in head first, and others root first, the clay being exactly the same in character both above and below them. This theory has the merit of a prima facie probability, but it is confirmed by what we see actually taking place on the spot, and by what is known usually to take place in similar circumstances. It must be remembered that these trunks are found in a clay bank at various depths, with 6 to 15 feet of clay above them and as many at least below. This position is most certainly not that of their growth; and if this theory, simple and gradual in its nature, is insufficient and fails, nothing short of some gigantic commotion can explain what is found. But the theory is not without collateral support. One morning as I was examining the banks of the river, I observed at one point that three or four
dark lines, from 4 to 8 inches deep, ran along the bluish face of the bank, with 1 to 5 feet of clay between them. On examining these bands I found them to consist almost entirely of the twigs and leaves of the oak and birch, which were in such preservation that I was able to identify them. Now this phenomenon appears to me of easy explanation. When autumn comes, the trees along the Upper Cree shed their leaves, many of which are borne by the wind into the river and carried down by it towards the sea. Their course is steadily downwards till they pass Newton-Stewart and meet an up-coming tide, when they are floated back, driven out of the more disturbed waters over the true river channel where the opposite currents meet, accumulate in the stiller waters and eddies at the side, and are deposited there when the tide recedes, while the clay, which falls with them in the way already stated, binds the leaves and twigs together, so that few rise. But autumn ends, and with it the supply of leaves, and clay alone is then deposited. What I describe I think I have seen taking place, and I have myself no hesitation in receiving this as a true explanation. Yet if so, we are in the curious position of regarding vegetable deposits at the same depth in the same bank, sometimes as possibly not a century old, and sometimes as belonging to prehistoric times. Such, however, I regard as the fact. They do belong to different ages, and it would not surprise me if tomorrow I heard that in the bank of the Cree, 15 feet below the surface, the skull of the urus had been found with a Sheffield axe or a Brummagem bracelet by its side.

As regards the extent of the forest, the topography of the district shows that it has very probably been limited by the rising grounds on each side of the roads from Newton-Stewart to Creetown and to Wigton, but extending somewhat up the glens of the Cree and of the rivulets which fall into it. These rising grounds are rocky in their character. A further argument for the accuracy of this limitation is derived from the fact that the remains of the forest are confined to the Carse and Moss of Cree. It would thus cover an area of 8 or 9 square miles, or rather more than \( \frac{1}{6} \)th part of the small county of Wigton.
MONDAY, 9th February 1863.

JOSEPH ROBERTSON, Esq., Vice-President, in the Chair.

On a Ballot, the following gentlemen were elected Fellows of the Society, viz.:—

GEORGE VERE IRVING, of Newton, Esq., Lanarkshire, Vice-President
British Archæological Association.
ALEXANDER MACLEAN, of Haremere Hall, Esq., Hurst Green, Sussex.
DAVID MACGIBBON, Esq., Architect, Edinburgh.
DAVID DICKSON, Esq., Wholesale Stationer, Edinburgh.

The following Donations were laid on the table, and thanks were voted to the Donors:—

(1.) By the Right Rev. the Bishop of Brechin.
Large-sized Finger Ring of Silver, gilt, with rudely-cut letters, inscribed on its two faces.

(2.) By George Maxwell, Esq., Canonbie.
Upper and Lower Stone of a Quern of Quartz or Mill Stone Grit, measuring 20 inches in diameter, with three sockets for handle on its upper surface; it was discovered in a peat bog at Canonbie, Dumfriesshire.

Broken portion of a Squared Block of Red Sandstone, the upper part roughly chiselled into the form of a basin; the sides sculptured with the letters T.A.; a tankard and drinking cup or glass; a rose; part of an ornament, and the date 1660; it was found in the bed of a stream at Canonbie.

(3.) By Mr John Glennie, Cot Town, Strathdon, Aberdeenshire.
Stone Cup or Lamp, with handle projecting from the side, and partially broken; the diameter across the mouth is 4½ inches. Discovered under a large stone in a field near Castle Newe, Strathdon.

(4.) By Mr John Laing, Castle Newe, Strathdon, Aberdeenshire.
Bronze Flanged Celt or Palstave, measuring 4½ inches in length, and 1¼ inches across face. Found on the top of a hill called Lord Arthur’s Cairn, in the parish of Tullynessle, Aberdeenshire.
(5.) By Mr William Stuart, Boggach.
Iron Chain of seven links, which increase in length from 4 to 7½ inches, with an iron hook at the end. Each link is made of a piece of iron welded in the middle, leaving an open loop at each extremity. It was dug up on the farm of Boggach, Strathdon.
Penny of King William I. of Scotland, found in a cairn in Strathdon.

(6.) By Mr Alexander Dunbar, Boggach.
Iron Padlock and Hasp, found close by the spot where the Chain and Hook mentioned above were dug up at Boggach, Strathdon.

(7.) By Mr Alexander Lawson, Mill of Newe, Strathdon.
Penny of King Henry III. of England, found with many others in a cairn at the Mill of Garochy, Aberdeenshire.

(8.) By Mr F. Stewart.
Farthing of King George II., found in the garden of Castle Newe, Strathdon.
The donations from Nos. 4 to 8 inclusive were presented through Mr Alexander Walker, gardener, Castle Newe, Aberdeenshire.

(9.) By John Alex. Smith, M.D., Secretary S.A. Scot.
Small Stone Mould, found near Jedburgh, Roxburghshire (see Communication, page 53.)

(10.) By James T. Gibson Craig, Esq., V.P.S.A. Scot.
View of Edinburgh Castle from the North-East, painted by Alexander Runciman about the year 1771, 4 feet by 3 feet 6 inches.

(11.) By Horace Marryat, Esq., author of "A Residence in Jutland, &c., 1862."
Painting by Otto Bache in 1861, of the Head of the Mummy Corpse of James Hepburn, Earl of Bothwell, from his tomb in the Church of Faareville, Jutland.

(12.) By Robert Gairdner, Esq., Northumberland Street.
Creese, with Flame-shaped Blade, enriched with gold, the handle ornamented next the blade, with a silver band in filigree and enamel. The wooden sheath is covered with a plate of gold, which has on one side a rich embossed pattern. From Sumatra.
(13.) By Robert Reid, Esq., Merchant, Shanghae, China.
Collection of Articles of Native Manufacture from Japan, viz.:

Full-dress Costume of an Official of the Court of Japan, consisting of Crape Shirt, Black Silk, Robe, a silk band for fastening round the waist above the robe, and used as a sword-belt. Slate-coloured Silk Jacket, and Shoulder Scarf which hangs over the back; Stockings, Sandals, and Leggings (the latter being only worn in full dress). Two Swords, the handles richly ornamented with gold, and japanned sheaths. A Hat of japanned papier-mache (seldom worn). Also an Umbrella, Fan, Tobacco Pipe, Pipe Case, and Pouch. Note-Book and Pen and Ink Case. The tobacco pipe and case are suspended from the waist belt, the pen and ink case are carried in the deep sleeve of the robe, which forms a large pocket on each side of the dress.

Two Crape Robes or Dresses worn by Ladies, one scarlet, the other dark green, richly embroidered with gold and various coloured silks.

Cup, Saucer, and Cover, of the finest egg-shell porcelain, covered with pattern in colours.

Two Egg Cups of the same material; small Porcelain Bowl painted with a landscape, in blue colour.

Two small Porcelain Cups, with very fine wicker work covering them on the outside.

Small Cup, made of an egg-shell, gilt inside.

Cooking Stove, with Ash-Pan; and Teapot,—all of common pottery ware. Pair of Ornaments, Birds (Hawks) made of shells.

Multiform Baskets of Bamboo; a Telescope, the tube made of Papier-maché.

Bronze Prick Candlestick, which folds up into very small compass.

Small Cooking Apparatus of mixed metal, consisting of stove, stew-pans, &c. &c., which can be packed into the largest sauce-pan; Iron Kettle.

Specimens of Printed Books; Coloured Pictures, &c.; Three Cigar Cases, &c. &c.

Brick from the Porcelain Tower or Pagoda at Nankin, which was blown up by the rebels a few years ago.

(14.) By Alexander Bryson, Esq., F.S.A. Scot.
Warrant for a Commission, for Inquiring into the Slaughter of the
M'Donalds of Glencoe, April 1695, with autograph of King William III. MS. [See this printed, infra, p. 57.]

(15.) By David R. Robertson, M.D., F.S.A. Scot.
Charter of Confirmation by Patrick (Lindsay) Bishop of Ross, of a Charter of Alienation of Church Lands in Inverness, on vellum, with two seals attached. Dated at the Castle of the Chanonry of Ross, 8th February 1630, signed by Pa. Eps. Rossen, and the members of the Chapter.
Warrant by the Magistrates for apprehending Alexander Haig, skipper, and Euphame Weir, for their Irregular Marriage, at Leith, 30th October 1712. MS.
Warrant by the Lords of Justiciary for putting in Execution the Sentence of Scourging against Jean Ramsay. Signed (by the Lords) James Erskine, W. Calderwood, and Ja. Hamilton, 25th March 1713. MS.
Contract of Marriage between Robert Burnett, tutor of Glenbervie, and Lady Ann, sister to John, Viscount of Arbuthnot, 1717. MS.
Proceedings at the Old Bailey, London, against Anthony, Earl of Shaftesbury, for High Treason. 4to, pp. 44. Edinb. 1687.

(16.) By the British Archaeological Association.

(17.) By the Kilkenny and South-East of Ireland Archaeological Society.
Proceedings of the Kilkenny and South-East of Ireland Archaeological Society, for the year 1862. 8vo. Vol. IV. Dublin, 1861.

The following Communications were read:—