

S.16.

HISTORY
OF THE
BERWICKSHIRE
NATURALISTS' CLUB.

INSTITUTED SEPTEMBER 22, 1831.

“MARE ET TELLUS, ET, QUOD TEGIT OMNIA, CÆLUM.”

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PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered to the Berwickshire Naturalists' Club, at Selkirk, October 11th, 1882. By the REV. JAMES FARQUHARSON, M.A., Selkirk, President.

ALLOW me, in the first place, to return you my sincere thanks for the high honour you conferred upon me twelve months ago in electing me President of the Club. I esteem it a special honour to hold office in the first year after the celebration of the Club's jubilee. At first I failed to see any good reason for selecting myself for that special honour. Neither for regularity of attendance at the meetings, nor for amount of contribution to the proceedings, could I claim distinction. But it occurred to me as a reason for my selection that I was the oldest member of your western, or Selkirkshire contingent; and that, whether accidentally or of intention, my tenure of office as President in the year after the jubilee marked the wider range of territory which the Club now claims as its own, and indicated that so far from thinking our work done after fifty years' happy labour, we simply gird ourselves afresh, and with the strength of acquired experience issue forth to explore "fresh fields and pastures new."

It is the custom of the Club to regard the President's address as the record, or minutes, of the Club for the year. Accordingly, without further preface, I shall endeavour to lay before you a short description of our excursions, and of the business transacted after the day's walk or drive was over. In preparing this record I need scarcely say

that I have been very greatly indebted to Mr Hardy, who has supplied me liberally with his own notes, and procured for me aid from other members of the Club, which I shall acknowledge in due course.

HADDINGTON MEETING.

OUR first meeting for the season was held at Haddington, on Wednesday, May 31st. The weather was very fine throughout the day, an earnest at the outset of the friendly skies with which the Club has been favoured at all the meetings of the year, with the exception of this our closing meeting. About half a dozen members put in an early appearance, and breakfasted at 9 o'clock in the George Hotel. A second and more numerous party came by a later train and breakfasted at 10.30. Several members travelling from Berwick by the express arrived at Longniddry after the departure of the Haddington train, and had to walk to the town, thus unfortunately missing the pleasant excursion to the Garleton Hills. The following members of the Club were present during the whole or part of the day:—Rev. James Farquharson, A.M., Selkirk, President; Dr. F. Douglas, Kelso, and Mr Hardy, Oldcambus, Secretaries; Emeritus Professor Balfour, F.R.S., etc.; Revs. Paton J. Gloag, D.D., Gala-shiels; Joseph Hunter, A.M., Cockburnspath; George Marjoribanks, B.D., Stenton; Thomas S. Marjoribanks, Prestonkirk; Robert Paul, F.S.A., Dollar; Joseph Hill Scott, M.A., Kelso; William Snodgrass, D.D., Canonbie; William Stobbs, A.M., Gordon; R. H. Williamson, M.A., Whickham; Lieut.-Col. Aytoun, Edinburgh; Captain Forbes, R.N., Berwick; Captain Macpherson, Melrose; Captain Norman, R.N., Berwick; Dr. John L. Crombie, North Berwick; Dr. J. Robson Scott, Edinburgh; Dr. Charles Stuart, Chirnside; Messrs Chas. Anderson, Jedburgh; James Bogie, Edinburgh; William B. Boyd, Faldon-side; Thomas Brewis, 6, Regent Terrace, Edinburgh; Thomas Darling, Berwick; Robert Douglas, Town Clerk of Berwick; Robert Gray, F.R.S.E., etc., Edinburgh; W. H. Johnson, Edinburgh; J. E. H. Kelso, Edinburgh; Alex. Leitch, Fairneyside; Peter Loney, Marchmont; A. L. Miller, Berwick; Stanley Scott, Abbey House, Kelso; George Heriot Stevens, Gullane; Charles Watson, Dunse; and William Wilson, Berwick. Apologies were received from the Rev. J. F. Bigge, Stamfordham; the Rev. Dr. Sprott, North Berwick; and the Mayor of Berwick.

The Club was joined by several members of the newly-founded East Lothian Natural History Society, and thus the day proved an occasion for the interchange of greetings between this, the youngest daughter, and our own venerable mother Field Club. The East Lothian Society was represented by the Revs. R. Nimmo Smith, John F. Grant, Alexander Thomson, and T. N. Wannop; Henry Martin, M.D., F.S.A.; Messrs Magnus Badger, John Brook, David Croal, William Davie (secretary), A. M. Main, — Martin, and James Robb, all of Haddington; and Mr Frank Muirhead, Eaglescarnie.

Soon after 11 o'clock a start was made for the Garleton Hills, some members driving, while others remained behind to make leisurely acquaintance with the antiquities of the town. The pedestrians were under the guidance of Mr Robb and Mr Badger, enthusiastic members of the local Society, and were accompanied by some lady-members of the same Society.

The line of the excursion lay along the public road past the District Lunatic Asylum to the Hopetoun Monument. Then the route was taken along the ridge of the Hills eastward to the British Camp on the Kae Heugh; from which the members of the party made their way in groups in as direct a line as possible to Haddington.

The Hopetoun Monument was the first point at which a halt was made, and there the walking and driving sections of the party reassembled. Seated on the projecting rocks, or reclining on the close, rich grass, they enjoyed the wide-spread prospect extending on all sides. Unfortunately the heat-haze was so dense that the Fife coast was entirely hid from view, and even the nearer landscape a good deal obscured; but nearly the whole of East Lothian, from the Doon Hill of Spot to Falside Hill above Tranent, could be studied as on a map, and enough was seen to fill the eye and impress the mind with the fertile nature of this richly cultivated county; while the slopes of the Lammermoors to the south spoke also of its pastoral wealth.

The next halt was made at the British Camp, which was examined with interest, but found to display no peculiar or notable features. It is irregularly circular. On three sides it is defended by a triple mound, while the precipitous Kae Heugh sufficiently protects the remaining northern side. There are no remains of hut circles, or erections of any kind, within or connected with the camp, and apparently no provision for a supply of water.

The names of many of the places in the immediate vicinity of the Hills are interesting to the antiquarian and the student of Scottish History. "Barns, Byres," I quote Mr Hardy "(both named from being parts of an ancient grange), the three Garmiltons, now Garletons, and another Barns, associated with the names of the Stewarts, the Lindsays (Sir David Lindsay of the Mount being one), the Setons, the Hepburns, the Kinlochs, and other historic names, and Kilduff and Athelstaneford, that recall the memory of the restless author of 'Douglas,' and the more venerated writer of 'The Grave,' stand at the base, or on the spurs, of these hills. Kilduff is a particularly bright white mansion, screened on the north by a wood that mantles a hill-top above it. There are Pictish, or at least Gaelic, place-names in the vicinity, such as Drem, Kilduff, and Ballenerieff, but these indicate a newer stratum of history than that characterised by the rude hill forts and their outlying burial places, with inartistic clay urns and slab cists."

The walk was not productive of much in a natural history point of view. Of the geology of the district passed over Mr Hardy says:—"The rock on the outskirts of the Garletons, as laid bare in a quarry near the public road to Aberlady, was a pale chestnut-coloured volcanic ash or claystone, accompanied by a broad mass of trap that had disrupted the claystone. In the centre of the hills the rock is porphyritic, and of deeper tints. The porphyry here is broken up into a series of separate peaked sub-conical eminences, which form from a distance a conspicuous serrated green ridge. A deep waterless valley penetrates them lengthways, and descends to a broad level flat between these hills and the hill of Kilduff. There are also a few cross ravines, as among hills projected on a more extensive scale; and on what is called the Kae Heugh the rock becomes precipitous. There is an extensive quarry near the central valley, where the stones are broken with a machine put into action by steam, to form road metal and material for garden walks. In proceeding to the Hopetoun Monument the hematite mine was passed. Some of the samples of mammillated iron ore extracted from it are very fine. It is understood that the vein is by no means exhausted, and may yet become available when there is a better demand for the ore."

Few plants worth recording were picked up. The magnificent profusion of whin blossom on the hill slopes deserves record.

Looking on it one could sympathize with the almost idolatrous enthusiasm of Linnæus, who is reported, on first seeing in this country a mass of whins in full blossom, to have fallen on his knees and thanked God that he had lived to see the gorgeous sight. *Vicia angustifolia*, var. *Bobarti*, and *Anagallis arvensis* were picked up in a grass field on the descent from the Monument. *Viola lutea* occurred on the hill pastures in abundance; and *Cerastium arvense* was found in considerable quantity in a cultivated field to the west of the British Camp. *Cynodontium Bruntoni* grew on a stone wall and on the rocks. While the party were seated at the base of the Monument, Dr. Stuart produced from his vasculum for their delectation a number of rare plants grown in his garden at Chirnside, among them specimens of the fine blue and white *Aquilegia Stuarti*. After dinner *Arum maculatum* and *Lathræa squamaria*, gathered in the neighbourhood of Haddington, were exhibited.

No rare birds were observed, but it was pleasant in the bright summer day to see and hear such old friends as the stonechat, the whinchat, the wheatear, the pipit-lark, the pied wagtail, the white-throat, the willow-wren, and the corn-crake. The Kae Heugh is so named as a haunt of the jackdaw, but its impertinent inhabitants were not visible while the visitors stood on the brink of the precipice.

After the party's return from the Garleton Hills, the town of Haddington, pleasantly situated on both banks of the Tyne, here a broad clear stream crossed by a very ancient and picturesque bridge, was inspected with much interest. Under the efficient guidance of Mr Robb, the House of the Earl of Bothwell was first visited. In the records of Haddington it is called "the town house of the Master of Hailes"; and the tradition runs that Queen Mary, who had fled from Borthwick Castle, disguised as a page, here changed her borrowed garments for feminine attire, and pursued her way to Dunbar, there to rejoin Bothwell, who had escaped earlier. It is evidently a very ancient structure—its winding staircase, its high-pitched roof, its almost obliterated coat of arms on the outer wall, distinguishing it among the surrounding buildings.

The Nungate, an ancient suburb of the town on the east side of the Tyne, now largely tenanted by Irish, was next visited. Here the chief object of interest was St. Martin's Chapel, one of the earliest ecclesiastical buildings in Scotland. Mr Hardy, in a

separate paper, will give an account of this interesting structure, now standing roofless and desolate, and not over well kept.

The reputed property of the ancestors of John Knox in the Giffordgate, near the old bridge, was pointed out. The original building has disappeared, the site being occupied by a modern dwelling. "The site of St. Catherine's Chapel, specially noticed in Knox's 'History of the Reformation' under date 1549, is ascertainable by the name of 'Katie's Garden' being still attached to it. The site of the Minorite or Franciscan Monastery is occupied by the present Episcopal Church. The church of this monastery, and not the Parish Church of St. Mary's, is the true 'Lamp of Lothian.' It was burnt by Edward III. in 1355. From the Chamberlain Rolls, we learn that it was rebuilding in 1362. It survived the Reformation, but in 1572 the east gable was granted to Thomas Cockburn of Clerkington, to be demolished and carried away; and the pavement was transported to the Parish Church (St. Mary's), and laid there. The monastery appears on record in 1281, in the reign of Alexander III., but may belong to the previous reign. Of it no vestige remains. There was an altar to St. Duthac in the Minorite Church."

The noble edifice of St Mary's Church, the western end of which is the Parish Church of Haddington, engaged the attention of the visitors for a considerable time. The church was gifted to St. Andrews by David I. before 1147, the charter being renewed by William previous to 1166. The present building belongs to the second pointed period, some portions of the tower to the third. The eastern portion is now roofless, but is well-cared for by the Department of Woods and Forests. The east window has been recently restored as a memorial of the Rev. Dr. John Cook, for many years one of the ministers of the collegiate charge of Haddington, and Principal Clerk of the General Assembly of the Church of Scotland. In the magistrates' pew in the Parish Church lie the Episcopal service books, which were in use when Episcopacy was for a brief period the established religion in Scotland, and which have never been removed. Curious old pre-Reformation alms-dishes were seen, as well as a valuable solid silver chalice, which has been in use for the last 250 years in the Parish Church. Beside the architectural attractions of this fine building, much interest was taken in the tomb of the Maitland family with its numerous monuments; and perhaps still more interest in the simple slab, with characteristic inscription, on the

grave of Mrs Carlyle, to whose remarkable character so much attention has been recently directed by the morbid "Reminiscences" of her famous husband. The inscription runs thus:—

"Here likewise now rests Jane Welsh Carlyle, Spouse of Thomas Carlyle, Chelsea, London.

She was born at Haddington, 14th January, 1801, only Daughter of the above John Welsh, and of Grace Welsh, Caplegill, Dumfriesshire.

In her bright existence she had more sorrows than are common; but also a soft invincibility, a clearness of discernment, and a noble loyalty of heart, which are rare. For forty years she was the true and everloving helpmeet of her Husband, and by act and word unweariedly forwarded him, as none else could, in all of worthy that he did or attempted.

She died at London, 21st April, 1866, suddenly snatched away from him, and the light of his life as if gone out."

There had been laid out in the Town-house some of the earlier Burgh Records and Books of its ancient Trade Corporations; and various interesting local antiquarian relics, along with a seal of the Convent of St. Mary's, Coldstream, which had been found in an old house in the town. These at various periods in the day were examined with interest by members of the Club.

Dinner was served at 4.30 p.m., and nearly 50 sat down at table. After dinner some interesting objects were shown, including extraordinary monstrosities of the Sloe gathered near Pease Bridge, which were supposed to have originated from the frost injuring the fruit, the bushes having flowered prematurely. These were sent to the Museum of the Botanic Gardens, Edinburgh. An exceedingly interesting paper was read by Mr Robt. Gray, F.R.S.E. "On the Bird Life of the Firth of Forth during the Storms of October and November, 1881." Another interesting paper was read by Mr Hardy, "On the Seals of the Burgh and Corporation of Berwick-upon-Tweed," "occasioned by the recent discovery, near Morpeth, of a leaden seal of Henry IV., with the arms of Berwick, being an impression of the great seal of the realm, as the inscription purports, for his land beyond the Tweed. A cast of this, communicated by Mr Woodman, Stobhill, Morpeth, was exhibited, also a tracing of the burgh arms in the reign of Alexander II., and impressions of the present Mayoral and Corporation seals of this ancient town." Both papers will find a place in the Transactions.

The following were proposed for membership:—Mr Alexander Bowie, Canonbie, Dumfriesshire; Mr W. Edward Kelso, 3,

Northumberland Street, Edinburgh; Colonel Alexander Murray Brown of Longformacus; Rev. Robert Nimmo Smith, first charge, Haddington.

There were laid on the table, there not being time for reading: 1, Notice of localities in Berwickshire for Adder's-Tongue fern (*Ophioglossum vulgatum*), which indicated a new habitat for it near the Pease Mill, Cockburnspath. 2, Sketch of the Life and Writings of Samuel Smiles, L.L.D.,; by Mr David Jerdan, Dalkeith, the brother-in-law of Dr. Smiles. Dr. Smiles was born at Haddington, December 23rd, 1812. This article was not intended for publication, but the Club has to thank Mr Jerdan for his kind communication.

The party broke up in time to allow of departure by the evening trains; and the members of the Club left Haddington, carrying with them pleasant memories of their visit to the ancient burgh, and of the kindness and attention shown them by the members of the youthful local sister Society.

HOUNAM MEETING.

WHEN I accepted the office of President, I resolved, if possible, to attend all the meetings of the Club during the year, although the distance of Selkirk from the ordinary field of your operations frequently necessitates a three days' absence from home, in order to allow of my attendance at a field meeting. I had made arrangements to attend the meeting at Hounam, when the death of a near relative summoned me to Aberdeen, and rendered it impossible I should be present. This I regretted very much on personal grounds, for I was most desirous of seeing the Roman Camp at Chew Green. In the previous autumn several visits to the very perfect and finely displayed Roman Camp at Saalburg, near Homburg v.d. Höhe in Germany, had given me, to quote 'The Manse Garden,' *the bite* for that kind of antiquarian remains, and I wished to compare, I fear it would have been in some respects to contrast, the German Camp with that which lurks among the bare hills at the head waters of the Coquet. In the absence of ocular inspection, I must content myself with the minute description of the district visited and of the Camp, which Mr Hardy has kindly prepared, and which I now incorporate in this address.

THE second meeting for the season was held at Hounam. The following were present:—Dr. F. Douglas and Mr Hardy,

Secretaries; Revs. Charles J. Cowan, B.D., Morebattle; David Hunter, B.D., Kelso; Joseph Hunter, Cockburnspath; Peter McKerron, Kelso; David Paul, Roxburgh; William Stobbs, Gordon; George Watson, Hounam; Dr. Jas. Denholm, Broomhill; Dr. Charles Douglas, Kelso; Dr. Edward Johnson, Kelso; Dr. Robson Scott, Belford; Messrs W. B. Boyd, Faldonside; William Crawford, Dunse; William Currie, Linthill; John S. Dudgeon, Longnewton Place; Arthur Evans and friend, Scremerston; Wm. Johnson, Edinburgh; J. B. Kerr, Kelso; Peter Loney, Marchmont; John Thomson, Kelso; Thomas Turnbull, Lilliesleaf; Charles Watson, Dunse.

In the early part of the day the company consisted of small detachments of members, some of whom had passed the evening in the neighbourhood, but all making towards Hounam as a gathering place. Having gone with one of these parties that started from Kelso at 7 o'clock in the morning, which ultimately followed out the programme, I have chiefly its adventures to detail. This consisted primarily of Mr W. B. Boyd, Rev. D. Hunter, Kelso; Dr. Johnson, Tweed House; Mr W. B. Johnson, Edinburgh; and myself. After entering the upper Kale valley, *Veronica Anagallis* was observed near some of the stagnant pools. The Foxglove accompanied us, more or less, till we reached Hounam. Dr. F. Douglas had long ago gathered *Geranium lucidum* on walls near Gateshaw, and it was said to be not uncommon near Hounam. In the lower part of the valley, wild roses bloomed profusely, one of the floral features, along with the abundance of Foxglove, of the present season.* *Sinapis arvensis* and occasionally *Raphanus Raphanistrum* reached the limits of cultivation, so far as we traced them here; at least above Chester house. After passing Gateshaw, the rising southern bank of Kale is full of *Spiræa Ulmaria* and *Geranium pratense*. There was much *Petasites vulgaris* at Chester house. Beyond Chester house, Mr Boyd noticed 3 or 4 tall plants of *Arabis Thlapsi*, on the bank of the public road near the plantation. The rising ground on the left is Heavyside, a detached portion of Morebattle parish. We crossed Kale at Heavyside bridge, and looking up the river to a wooded Crag called Heavyside Dean Crag, where *Thlapsi* was first detected in a wild state in this

*Where in consequence of recent severe seasons old shrubberies have been cut over, amidst which Foxgloves had formerly grown, large numbers of young plants of this species had sprung up, and have flowered profusely this season.

vicinity, we could observe the maiden pink (*Dianthus deltoides*) growing; and also the common rock-rose (*Helianthemum vulgare*), both being in blossom. In front of us, more or less, on the steep green slopes to the left, were the Howgate terraces, examples of a very old and now abandoned mode of cultivation, at the base of Hounam law. They are very well seen, the ground being free of brackens; and are pretty regular in their succession. There was a fine section of them, where they crossed a corner into a ravine. Some of them in this tract were no doubt effaced by a later system of laying out the ridges. The hills of considerable acclivity and height accompanied us on either side, for we passed up in a gap, till we entered Hounam. Most of the sides were cultivated pretty well up; the upper parts continuing the green of the fields, although of a different shade, without any heather; they being productive of pasture grass, and plots of brackens. The brackens in several spots had been browned by late spring frosts. At Hounam, *Chenopodium Bonus-Henricus* and *Sisymbrium officinale* grew by the river-side. At the small inn breakfast was had about 9 a.m., when the Rev. Jos. Hunter joined us; afterwards the Revs. David Paul, P. McKerron, and C. J. Cowan, were welcomed as an accession to our ranks. We then resumed the journey; the Capehope burn was passed, where some very good old ashes were noticed; and then as we drove on, we had the slopes of the Philogar heights on the right, where again culture-terraces, catch water ditches, and it may be old water-lines crossed the hill-faces, mixed with old cultivated land with winding and not straight ridges; all now under pasturage. The severe English raids of 1544-5, tradition affirms nearly depopulated Kale Water. We passed the cottar's house at Under Chatto, and the shepherd's house at Swinlaws. Chatto Craig with its fort was on the right, and the Dod Law with its twisted furrows, said to be very distinct in a slight snow storm, on our left. In three or four instances we saw, on either hand, what appeared to be ancient camps, or abandoned "sheep-rees" (circular folds) of old date. As we turned up to go to Bughtrig, the heathy height of Humblemoor was on our left, and Hangingshaw hill on our right. Beyond the slack where we turned, on the hill across the river is Pennymuir, where the trysts for sale of sheep and cattle are held; and where as late as 1848, the Cheviot Games were celebrated. *Genista tinctoria* is said to grow at Pennymuir. The road we parted from pro-

ceeds to the Hindhopes, which in our subsequent journey by the way that we chose, we were to overtop, and look across upon. In walking up the hill, and previously by the road-sides, the shepherd's pansy (*Viola lutea*) in purple, yellow, and yellow and purple varieties appeared in the pastures; and much lady's bed-straw also; and a mixture of *Stellaria holostea*, which indicated dryness. *Myosotis repens* and *Montia fontana* grew in the ditches. The pastures shewed bent (*Nardus stricta*), and also *Juncus squarrosus*. In the hollow we passed a horse-shoe shaped camp. Some blasted brackens were noticed but none afterwards; although the *Juncus squarrosus* was frost-bitten at the Black hill. Wheat-ears frequented the walls, and a grouse was started, but moor-game is not plentiful. Larks were numerous overhead, and the curlew's voice was audible. On crossing the ridge Bughtrig came into view. On porphyrite rock by the road-side, *Racomitrium heterostichum* and *Hedwigia ciliata* grew in the open, and *Bartramia pomiformis* and *Mnium hornum* on the shady side, with some common liverworts. We next cross a small feeder of the Capehope burn, and looking downwards see bare heath-covered rounded hills, with "glitters" at their bases, and yellow up-castings of soil indicating the retreats of rabbits. On the back ridges behind Bughtrig, are two plantations, in which are sycamores and ashes of about 150 years' antiquity. Many chaffinches frequented them, and were in full song. The cuckoos are also numerous here during early summer. The shepherd's pansy again enlivened the road-side, along with *Hypericum pulchrum*, the Lady's Mantle, *Stellaria graminea*, and I believe *Geranium sylvaticum* also. A bush of Hemlock grew in the plantation near the house, probably introduced there for medicinal purposes. It ascends Coquetdale to Linn-Shiels (Baker). The shepherd tries to keep bees, but the springs are too cold for apiculture.

Bughtrig is a lonely steading in the midst of the hills. The windows command a fine view of the hills in front, across the Capehope, the two tallest being the Standard and the Stanchills or Staneshiels. There is also a third notable hill, whereon the body of a Sir John Sadler, who was slain in a Border foray, is said to be interred (in his silver armour); the finding of whose forgotten tomb is an object of much solicitude and search to the shepherds, who expect that some one will yet be enriched by making the grand discovery. Fully as interesting is a much

lesser elevation called the Mote, at the base of the Standard, and close to the Capehope burn, on which there is a large Camp, situated on a level half way-up, and the steep apical portion above that is fortified with upright and cross ramparts. It is ascended by a road which is protected by standing stones, and these erect projections continue round part of the top, and strengthen most of the transverse terraces. Similar upright stones are well known to accompany British roads and walls among the Cheviots near Wooler. The Mote will be noticed in subsequent articles. The rock we had been travelling over, is a red, brown, or grey, porphyrite, or a variation of it, up to the English border. Leaving the conveyance, there now mustered a walking party of eight, under Mr Simson's guidance, which could only be extended a short way, it being the anxious season of sheep-shearing. We crossed the hay-field which contained among the pasture grasses rather a curious mixture of plants; wild and zigzag red clover (*Trifolium pratense et medium*); *Lotus corniculatus*; *Orobus tuberosus*; much yellow-rattle (*Rhinanthus crista-galli*); hop-clover (*Trifolium procumbens*); Tormentil; Milkwort; earth-nut; and in the marshy spots, Ragged Robin; *Orchis latifolia* *O. palmata*; *Lysimachia nemorum* and *Ajuga reptans*. In a rocky ravine of the Capehope, above a water-fall, a wild rose, *Teucrium scorodonia*, and the ubiquitous yellow pansy were remarked. Looking down the glen about two or three miles a slated house or houses on the right side of the stream was supposed to be Yett; a quarter mile below it is the Duke of Roxburghe's shooting lodge, Greenhill. The common trout penetrates above Bughtrig. The bed of the stream furnishes a fine sharp sand adapted for building purposes, which was being utilised when we passed; very suitable stones of grey porphyrite were also being quarried from the hill side. The day now became so extremely sultry, that we almost expected a catastrophe akin to that of the famous tramp to Yevering Bell, June 26th 1878, when so many fell out of the ranks. However, on the present occasion, although the journey extended to twice its reputed length, 6 miles instead of 3, and there was a considerable lagging behind, the labour was cheerfully undergone, and the distance accomplished. Pipits and wheat-ears were the only birds among the ferns; the whin-chat was expected, but it could not be recognised; nor even the ring-ouzel in what is known to be its summer resort. Three black-cocks were seen on the wing.

From the shooting records of the district, black game is apparently more plentiful than grouse. The yellow-hammer we heard, and the willow-wren also in a young fir plantation. The curlews were, more or less, clamorous in general. A wood-pigeon and a small flock of young starlings were also remarked.

As applicable to the Zoology of this and the neighbouring hill district of Roxburghshire, I may here introduce a notice, dated July 6th, from Mr Adam Elliot, Samieston, in reply to some inquiries. "As to the birds, the Golden Eagle and the Peregrine have been shot among the hills you passed over; the former of course a chance visitor, but the other from Henhole. I fired a shot at a Peregrine this spring among these hills, but out of range. I have at different times started the fox among the heather on the hill-sides; and the stoat-weasel in his pure white winter coat sometime hunts the hill-sides in the day-time. The adder I believe is pretty common. I found a large skin of one on Bughtrig about a month since. I got also one or two Microlepidoptera that I had not seen before, and saw the Emperor moth on the wing. I have no doubt that the Badger inhabits the hills also, and probably the Polecat. Mr Douglas, a few years since at Swinside, came on a Badger one morning at the sheep corn-boxes on the hill, which he killed with his colley. In a small lochlet between this and Hounam, I have shot the Gossander, Pochard, Golden Eye, Blue-winged Shoveller, Tufted Duck, and Red-throated Diver; also two Wild Geese on one occasion; as likewise the Pintail Duck and the Merlin-falcon near the same locality. Snipes and woodcocks are generally distributed, but scarce and uncertain in appearance. The woodcocks I have frequently seen late in the year among the Border-hills; they generally lie among the fern near to springs on the hill-sides." Mr Thomson, Towford, also furnishes some local notes. Peregrines have been shot in the vicinity of Hindhope; "corbies" are numerous; and ravens are now and then present; dotterels are occasional visitants; and ring-ouzels breed there in summer. Water-ouzels frequent the streams; whin and stone chats are to be seen; larks and meadow pipits abound; and there are plenty of plovers. "Hérons are plentiful on the Kale," he says, "and I have counted six at a time in front of Towford School. They frequently roost in the wood at the back of the school here, but never build. The late Mr Ord told me that he remembered a Heronry in this wood, but they have now deserted it as far as

breeding is concerned. Herons frequently visit Bughtrig." Adders he accounts rare and none have been seen lately. There are still recollections of badgers having been hunted on the Kale. Mr Simson, Oxnam Row, who also farms Bughtrig, writes, "It is ten years since I captured a badger in Oxnam Water on my hill, and I have his skin in the house."

Yellow Pansies continued to flourish till we gained Watling Street, which in many places we found little better than a grass-grown track, so seldom is it now travelled. It proceeds here along a depression of the hills—a natural pass. Black-hall Hill (1573 feet) fronted us on the left; its sides were seamed with lengthways parallel ridges, as if the result of a series of landslips. We were now skirting on the left, part of Woden or Wooden Law (1388 feet), where the triple rings of the camp on the brow were manifest; only one of the company visited it. The next hill to it is called Luden. Passing beyond it, we had a fine opening out of the view to the main part of Roxburghshire, but a mist blurred the distant country. The remarkable twin Broundenlaws—Elfingshope and Edelshope—which as seen from Ruberslaw appear two dusky eminences emerging from a land of twilight, were here close at hand, and not black and heathery as was expected but green and grassy. Dunion and Ruberslaw rose unveiled above the haze. Carter Fell and the intermediate junction ridge, here and there swollen into partial prominences, sharply define the boundaries of the sister countries. As we skirted the rock-faced hill on our left, we looked down on sheer descending steeps, here and there fissured by rugged cleughs, and naked scaurs; at others clad with verdurous ferns and dwarf grasses, with more vivid green of rushes and moistened herbage margining the little runlets; while grazing sheep appeared to hang from the declivities. The dark green bordered brooks, in these gulleys, are the tributaries of the infant Kale, whose glittering waters appeared on the lower ground beneath, where Upper and Nether Hindhope stand near the single or collected streams. These rivulets descend in ravines from a succession of steep concavities scooped out from the north side of the range, which here unite to form a hollow enclosure. They are supplied by upland peat-mosses that overhang the sharp edges of the ridges, and maintain a continuous trickling of moisture.

One of the cleughs whose head we crossed is called Skerryburghope [perhaps Scauryburnhope]. Two of the places over-

hanging Hindhope from the pass are called Kelso Steps. Previous to the reign of Edward I., the Kelso monks would necessarily have intercourse by this pass with Redesdale to remove their tithe two year old colts and fillies from the *haras* or stud of the Umfravilles in Redesdale and Cotteneshope forests (see Proc. ix. p. 458); and they may have caused stones for steps to be placed on broken or swampy portions of the way. Nay more, by this passage they would traverse the Kale at Towford, which may have obtained its name from the ticklish operation of transferring haltered young animals, or animals led with 'tows' (ropes), from bank to bank across. I do not say that this was so, but this is an apt way of accounting for the derivation of both words, for both circumstances may have happened. There were two fords mentioned in 1542 on the Tyne called respectively "Towes bank," and "Towes forde," perhaps of identical significance, in the first part with the ford on the Kale.*

"At Hindhope," remarks Professor James Geikie, in a letter, with which he has favoured me, "the Roman road at the hill-top runs upon a highly altered volcanic ash, which immediately overlies Silurian. The porphyrite above the ash is generally a purplish or reddish blue rock—often coarsely crystalline. At the head of the Coquet you get Carboniferous Sandstones, etc., resting on nearly vertical Silurian. In the neighbourhood of Hindhope the Silurians are here and there fossiliferous—the fossils shew that the rocks belong to the Upper Silurian. The porphyrites and ashes are seen again and again lying abruptly on the upturned edges of the Silurian."

The road has, at this pass, been so diminished by land-slips that it must be dangerous to take in a snow storm. We observed as we wound along, that *Poa annua* occupied a great proportion of the foot tracks beaten by sheep. The other grasses were *Scirpi* (deer's hair), *Nardus*, and especially *Juncus Squarrosus*, (rose-bent or stool-bent). This *Juncus*, although when in seed rejected by sheep, affords an early bite, much relished by them in spring; and is not profitless as many suppose. (See Walker's "Essay on Natural History," p. 524; Johnston's "Flora of the Eastern Borders," p. 200; "God's Treasure House in Scotland," p. 227). *Festuca ovina* was the next most profuse grass, and as we came among the flow-mosses, the hoary cotton-grass, or moss crops, whose recuperative virtues in amending

* Hodgson's Hist. of Northumberland, Part III., vol. II., p. 239.

pinning stock, the shepherds universally coincide in lauding, became conspicuous. Becoming clear of the pass, the road conducts us along the crest of the Black Hoss, a sort of slack or lower level, whence we obtain our first, and by no means cheering, view of English ground. For that is the desolate and secluded tract of Kidland, which extends in a sort of triangle, at a modified elevation, lumpy, confused, and tumultuous; here and there heathery, or peat rifted, but mostly green; in short a medley of bogs and moors and dry hillocks, up to the base of the great Cheviot (2658 and 2676 feet), whose vast bulk combined with the tall heights of Hedgehope (2348 feet) and Dunmore (1860) constitute its mighty eastern barrier. Most of its eminences, which are intersected by winding streams, are scarcely decided hills; but Cushet Law (2020 feet), Shill-Moor (1734 feet), and Shill-hope Law (1642 feet), are bulky heights. The most massive lay in front, viz. Thirlmoor (1833 feet) a long-backed unbending ridge, that shut out an expected view of Redesdale; somewhat heathy, but mostly green, rutted here and there with earth-slips and open fissures, and dimpled and unequal on its broad sides; and shewing rock precipices and sections where its base is washed and limited by the upper waters of the Coquet. The adjacent western portion is Harden Edge (1500 feet), and not far from its upper end is the head of the river. At very wide distances is a sprinkling of slated shepherd's houses, and we see distinctly as marks of occupancy, the roads and beaten tracks that keep up intercourse with the low country, or conduct to the nearest peat-moss. These diminutive dwellings are almost swallowed up in the surging wilderness. Buckham's Walls (1341 feet) on a slope in the open, and Makendon, Phillip, i.e. Fullhope, and Blindburn on the Coquet were those within a moderate distance of us. It is still as of old in 1542, that there is "but one house or two at the most in one of the valleys, for the ground yrof wyll serve none otherwyse"; there not being "such great parcelles of medowe or pasture together that are able to fynde above one household in one place."

But meantime we are still upon the waste with the sun beating hot upon us, and the Roman Camp of Chew-Green, that we are in search of, seems ever to be moving away from us instead of becoming nigher, as we compass one long stretch after another, till at length the illusion terminates on turning round the base of the Brown Hart Law (1664 feet) where we began the descent

towards the isolated low broad capped hillock, with the Coquet winding round its southern base, and the green camp surmounting its northern end, and thus were mocked no longer. Most, I daresay, were disappointed with its insignificance, for it requires to be excavated to unfold its teachings. It occupies a dry platform on a humble eminence of the native greywacke rock, almost surrounded by marshy ground. It is an earthen-ramparted camp and has been disturbed by innovations or re-occupations. Recent attempts have been made to explore it, but nothing except ashes was found. I am told that some drainers found a bronze sword here, which the shepherd's children at Makendon lost. There is a plan of the Camp in Mackenzie's "Hist. of Northumberland," vol. II., p. 437; and a map with an account of it in Jeffrey's "Roxburghshire," vol. I., pp. 218-220, which all can consult. I shall afterwards refer to Mr H. Maclauchlan's Survey in 1850-51. But it is not so well known that its possession once formed a subject of controversy between the English and Scots Borderers, who each laid claim to it, or its precincts. This we ascertain from "A Book of the State of the Frontiers and Marches betwixt England and Scotland, written by Sir Robert Bowes, Knight, at the Request of the Lord Marquis Dorsett, the Warden General, 1550"; Printed in Hodgson's "Hist. of Northumberland," Part III., vol II., pp. 208-211. "The meates or boundes of the Middle Marchies," it says, "from the Hanging Stone south and westward keepeth always the highte of the edge or fell to Heppeth gate hede, an usuall place of metinge at Dayes of trefce betweene the Wardeynes of England and Scotland. And lykewise from thence to Kemylpethe [an old name of Chew Green and the Watling Street adjoining] another place where meetinge hath bene at dayes of trefce where there is a litle parcell of ground, in which there hath bene howses builded in tymes past called Kemylpethe Walles claymed both by the Englishe borderers to be of England and by the Scottes to be of Scotland. Insoemuch as within the remembraunce of man there was lyke to have byne a great fraye betweene the Englishmen and Scottes at a day of trefce holden at Kemylpethe walls clayming the same to be parcell of Scotland before the assurance taken. And the Scottes were forced to retyre from thence agayne into Scotland ground before the officers of England would graunt any assurance or meete with the Scottes. And ever synce that tyme y^e Riddesdall men make their sheales neare unto y^t ground in controuersy.

And likewise the lard of Farnehurst and his tenants upon the other side north and west neare unto the same. And soe wth their Cattell in Common they doe pasture and eate the said ground in traverse in the sommer tyme but neither parte builded thereupon." In this outlandish place, duels appear also to have been fought, in lawless times. Robert Snowdon, born at Hepple, in Rothbury parish, we are told, "in the 16th year of his age, fought and slew John Grieve, a celebrated Scotch champion, in a pitched battle, with small swords, upon Gamble path, on the borders." This is said to have happened before the Union. (Mackenzie, vol. II., p. 76, Note).

It was most interesting to alight upon Greywacke at Chewgreen, and to have its accompanying slates laid bare in the deep foot drains; the grey clay resulting from their decay forming the subsoil. This had not been overlooked by one to whom the Club owes much, the late Mr George Tate. In his memoir prefixed to the "New Flora of Northumberland and Durham" pp. 3-4, he says, "Cambro-Silurian strata are highly inclined against the porphyry, in the bed of the Coquet a little above Philip, and extend beyond the source of that river into Scotland. In a deep ravine, eastward of Makendon, they are well exposed; and the Roman camp at Chew Green is formed out of them; for some of the rampiers are natural walls of Greywacke *in situ*, the rock having been removed on both sides. Southward of the Coquet they extend for some distance along Watling Street." In his "Outlines of the Geology of Northumberland," p. 46, Professor Lebour also refers to this junction on the Coquet, : "between Philip and Makendon, the porphyrites which form the main mass of the Cheviot range are seen in a beautifully clear section abutting against grits of the Silurian age or Greywacke. The latter are bent up on end by the intrusion of the former, thus giving a limit of age to that event." On this point as bearing on the age of the Cheviots, Professor Lebour thus recently writes me: "I used to regard the whole mass of Cheviot rocks much in the same way as George Tate did, i.e., as being a huge boss which had been pushed through the old Silurian, and possibly other pre-Carboniferous rocks bodily. The recent researches of the Scotch survey, however, as well as those of Messrs Gunn and Clough of the English survey, incline me to think that I was wrong, and that although undoubtedly, *somewhere* or *other*, the porphyrites, etc., do pierce through the Silurian rocks of Makendon, etc., yet the

great mass of them overlies these old rocks, having in fact been poured out over their denuded edges as lava flows and ash beds long after the Silurian beds had been overturned and worn down, but before the deposition of the lowest Carboniferous deposits, which, I take it, must be made to include the *Upper* Old Red Sandstone. This does not alter my previous view of the age of the main mass of the Cheviot rocks which I still regard as being probably Devonian."

The party rested for a time in the hollow of the camp, which is well screened. Watling Street climbed Thirlmoor hill opposite, the track much disfigured at places, by attempts made by travellers to eschew the poached ground. The sheep were thinly scattered over the hill-faces, and the shepherds and their dogs were wending across the slopes among their flocks, or disappearing down the slacks; their steady progression forming subject of remark. After leaving a record of the visit, in a bottle under a cairn, and enjoying the quiet of the moorland solitude, dreary no doubt at most times, but now enlivened by the bright sunshine, we resumed the backward journey.

There were many Curlews on the waste; and fragments of their eggs were picked up. Young pipits were flying round the camp at *Ad Fines*. Rooks, at certain seasons visit these uplands in great flocks, and are said to make depredations on the moor-fowl eggs. Lapwings frequented the summit of the Brown Hart Law.

The mossy ground near the camp yielded much of *Sedum villosum* in fine flower; also *Dicranum crispum*; *Polytrichum alpinum*; *Myosotis repens*; large-flowered *Cerastium vulgatum*; *Luzula multiflora*; *Carex ovalis* and *binervis*. The Rev. W. Stobbs, whom we encountered on the fell, found much of *Scilla nutans* on the banks of the Coquet near Blindburn. The Rev. David Paul communicates: "the only Fungi I observed in our walk between Bughtrig and the Makendon camps were three (this being the worst season for the larger Fungi, lying between the spring and autumn growths) viz. *Agaricus pascuus*; *Ag. semiorbicularis*, and *Ag. campanulatus*. The sedges I found on the hills were *Carex ovalis*; *C. curta*; *C. præcox*; *C. binervis*; *C. panicea*; and *C. vulgaris*."

On regaining Hounam we found the rest of the company either promenading the road leading from the village, or gathered in picturesque groups on a grassy meadow by the Capehope burn;

—ground where formerly a statute fair had been wont to be held. The tent in which the Club dined was pitched here, by the side of the stream among shady ashes and lime trees; and opposite rose a steep hill face, prolific we are told of the universal shepherd's pansy, yellow when grown on peaks, but inclined to be variegated at humbler altitudes. Some of the members during the day had ascended Hounam Law; others had explored the sides of the Capehope Burn. *Sedum villosum* had been collected in quantity. The Club previously visited the "Rings" and "Shearers," in July, 1865: see "Proceedings," vol. v., p. 191.

At dinner Dr Robson-Scott occupied the chair. The following were proposed as members: The Most Honourable the Marquis of Lothian; Mr John Walker Logan, Avenue, Berwick; Mr Richd. Stephenson, Chapel, Dunse. Dr Stuart of Chirnside sent a collection of *Violas* of his own raising; and a new variety of fox-glove of a pale rose colour, from seed picked in a glen in the Highlands. Dr Robson-Scott said that the Herony of Swindean of which he gave an account in 1865, was now deserted, and he was requested to contribute his statement to the "Proceedings." Mr John Thomson spoke of a case of the nidification of the Water Ouzel on Hindhope burn, where a receptacle for sheltering the cock-bird, accompanied the ordinary breeding nest. He also exhibited a silver coin obtained during recent excavations in the neighbourhood of the site of Old Roxburgh, supposed to be a silver coin of Robert II. or III., but the inscriptions were very defective. On the obverse within the encircling outline of a rose, like that on David II's coins, was a profile looking to the left, of a crowned king, with an upright sceptre in front; the inscription effaced except SCOT. R. + RO. . . . Reverse, a long-limbed cross from side to side of the coin: in the centre: VILLA EDINBURGH, surrounding 4 mullets, one in each angle of the cross. The outer legend imperfect, which had been originally: DNS PROTECTOR. MS. ET. LIBERATOR. MS. Dr Robson-Scott mentioned his having found *Epilobium angustifolium* in some of the cleughs on Carter Fell. The Rev. David Paul communicated that he had found *Valeriana dioica* on Roxburgh moor; and that *Radiola millegrana*, both this year and last, grew in a pot from peaty soil brought from Sunlaws. He also had an unrecorded station for *Botrychium Lunaria* half-way between Roxburgh and Fairnington, on the grassy margin of the road. Rain began to fall from a local thunderstorm that had been gathering among the hills, but most

of the company obtained shelter in the hospitable manse till it was over, and the rest rapidly drove out of it.

LONGFORMACUS MEETING.

The third meeting of the Club was held on Wednesday, July 26th. The principal object of the meeting was to visit Longformacus, a point in the Lammermoors farther than the Club had previously penetrated. The place of assembly was Dunse, whither several members made their way on the previous evening, the trains both for arrival and departure not being very convenient for making the journey to and fro on one day. Most of the members in attendance breakfasted in the White Swan Inn, and the following were present during the whole or part of the day—Rev. Jas. Farquharson, M.A., Selkirk, President; the two Secretaries, Dr. Douglas and Mr Hardy; Revs. Paton J. Gloag, D.D., Galashiels; George Gunn, Stitchill; Joseph Hunter, Cockburnspath; Peter M'Kerron, Kelso; William Snodgrass, D.D., Canonbie; and William Stobbs, Gordon; Dr. Denholm of Broomhill; Messrs John S. Bertram, Cranshaws; James Bogie, Edinburgh; T. Craig-Brown, Selkirk; William Crawford, Dunse; William Currie of Linthill; William Gunn, Chief Magistrate of Dunse; James Heatley, Alnwick; Andrew Ker, Newtown St Boswells; Peter Loney, Marchmont; J. S. Mack of Coveyhaugh; George Muirhead, Paxton; Richard Stephenson, Chapel, Dunse; Charles Watson, Dunse; Joseph Wilson, Dunse; Mr Williamson, Dunse; James Wood, Galashiels.

It had been arranged that those, who were disinclined for the longer journey to Longformacus, should visit Langton House, which had been kindly thrown open to the Club by the Hon. R. Baillie Hamilton. Two parties were therefore formed, and I append to my record of the day's proceedings a short note by Dr. Douglas concerning the doings of those who visited Langton House. Having accompanied the party which went to Longformacus, I confine my observations to their portion of the day's work. I omit all reference to historical and antiquarian points, as I understand Mr Hardy is to deal with these in a separate paper.

The party, occupying two waggonettes, left Dunse about 11 o'clock. The general direction of the road to Longformacus is north west, and the distance upwards of seven miles. Amid much that is featureless and uninteresting in the surrounding scenery, several points deserve notice. First and chief of all is

the view from Langton Edge. Seldom could this celebrated view have been more "glorious," to use Burns's enthusiastic epithet, than as it presented itself when the party, chiefly on foot for the horses' sake, had slowly climbed to the top of the long ascent. The weather was magnificent; the atmosphere clear; the sun's rays tempered by a thin veil of cloud. The splendid panorama lay under the eye, its bounding line on the horizon stretching from the Farne Isles and Bamborough Castle on the east, along the Cheviots and Liddesdale Hills to the west, where it was closed by Ruberslaw and the Eildon Hills in the middle distance; while within this wide environment of hill expanded the rich and wooded Merse and lower Teviotdale in all the fulness of summer prime. The view, both in the clear air of the forenoon, and in the afternoon on the return journey when a slight haze added a new charm to the landscape, commanded the admiration of every member of the party. With reluctance they turned their backs upon it, and re-entering the conveyances proceeded on their journey. Soon another horizon opened up. The ridge of Langton Edge being surmounted, the eye could range in one direction far over the Selkirkshire hills to the mountains which rise around "dark Loch Skene," among which Whitecombe and Loch Craig were distinguishable; while in another the two Diringtons, Great and Little, rose close at hand, with Twinlaw Cairns beyond. After this not much occurred in the few fields, and among the moory and swampy ground, and young fir plantations which bordered the road, to attract the eye of a naturalist. Several wheat-ears jerked their short flights along some stone walls, and a few pipits were seen. In a long plantation just before the road descends into the valley of the Dye, a spotted fly-catcher was observed. Afterwards the whin-chat, the white-throat, the wren, the grey and pied wagtail occurred at different places; but bird-life was not abundant along the line of excursion. In the long plantation referred to, many prostrate trunks gave evidence of the severity of the gale of the 14th October, 1881, which here, as elsewhere throughout Berwickshire, had worked havoc among woods.

At Longformacus the party were met by Captain Brown, the Rev. George Cook, minister of the parish, and the Rev. George Wilson, of Glenluce, a gentleman whose geological and antiquarian knowledge of the locality contributed greatly to the pleasure of the visit. Of the place itself Mr Hardy, who with his usual

minute thoroughness has made himself acquainted with its place-names and antiquities, writes:—"Longformacus lies in a sheltered hollow, well screened with plantations. A well-defined basin of rising ground stretches beyond it, and far round it on either hand, which is terminated on the north by the heights above Cranshaws, and the detached bulk of Spartleton, with the green fields of Bothal spread out on its eastern slopes, which here closes up the vale of Whitadder. Below these ridges lie Cranshaws Castle, environed in trees, and the kirk and farm nearer the river, and opposite to them Harehead and Western Windshiel, and, higher still, Crichness. The lands of Fellecleugh and Ellemford and Smiddyhill are lower down the Whitadder. In the flatter space between Whitadder and Dye, Redpath stands lone and bleak." After the rather cheerless country through which we had been driving, and under the light of a bright summer day, Longformacus presented itself as a most attractive spot—a wooded and sheltered oasis dropped among the bare uplands of the Lammermoors.

Some of the party remained to inspect the village, and visit the mansion-house and its grounds; but the majority proceeded up the valley under the guidance of Captain Brown and Mr Wilson. Above the village the Dye forms a succession of deep pools, which by some are believed to have a connection with the singular name, Longformacus. "The British *Llwyher*, according to Chalmers, signifies a place of pools, or a stream that stagnates into pools. The popular name of the place is 'Lochrie'." Proceeding along the south side of the stream, its tributary, the Watch, was soon crossed by a rather frail wooden bridge. The party then dispersed to hunt for objects of interest in a natural birchwood which stretched for some distance along the Dye. One good plant, *Crepis succisifolia*, was found in considerable quantity; but beyond this, and a profusion of *Polypodium Dryopteris*, no plant was met with deserving special mention. At a point where the stream makes an abrupt turn at right angles to its former course, and where some shaly rock is exposed, Mr Wilson showed those who accompanied him numerous specimens of worm-tracks and casts. Similar vestiges of early Silurian annelid life were found in a small disused quarry just as the party, quitting the wood, struck across a narrow haugh, and by aid of extemporised stepping stones, which Captain Brown had sent a man on to lay down, passed to the north side of the Dye.

It may be mentioned here that Mr Wilson has found Graptolites in the Silurian shales of Longformacus in more than one spot, specimens of which he exhibited; and also that a report he mentioned has been confirmed, that *Rubus Chamæmoris* is a native of the Lammermoors, a new plant being thus added to the Flora of Berwickshire.

Our object in crossing the Dye was to visit an Ancient British camp, locally known as Runklie. It lies about a mile and a half above Longformacus, where the flanks of the hill Wrinklaw drop abruptly down on Dye Water. The spot is naturally capable of defence, being a kind of promontory projecting into the valley, towards which it is protected by precipitous slopes. On the other sides the fortification has been defended in the usual way by walls or mounds, the outline of which is distinctly to be traced. On two sides, in addition to that towards the valley, the ground falls away abruptly into short ravines. Altogether the spot was well chosen for a camp. In comparatively recent times Runklie was the site of a farm-house and buildings, and also of a mill, the ruins of all of which still appear within the limits of the more ancient remains. The place deserves fuller description than can now be given, and might reward excavation. The name is somewhat puzzling. I suggest that it may simply be a corruption of the name of the hill, Wrinklaw; which again resolves itself into the familiar Rink.

At Runklie we were among the haunts of the Curlew, which was both seen and heard. A moor blackbird, *Turdus torquatus*, startled by our approach, flew, clamouring, down one of the bounding ravines, and disappeared under the abrupt face of the camp. This bird is said to be not uncommon in these upland valleys.

From Runklie we returned by a path along the elevated ground north of the Dye. Arrived at the Manse, attention was directed to a ruin of which nothing definite could be ascertained. It forms the western boundary of the Manse garden, and consists of the gable end of a dwelling whose walls were four feet thick. It is said to have been at one time the Manse; but more probably it was a mansion built with a view to defence, when these Border lands were less peaceable than they happily are now. *Symphytum tuberosum* grows along the margin of the deserted garden of this building without a history; and some aged ash trees, survivors of a more numerous group, stand near at hand.

At the Manse the party were hospitably entertained at lunch, and Mr Cook exhibited two handsome silver Communion Cups, the inscription on which bears that they were GIVEN BY SR ROBERT SINCLAIR OF LAMFORMACVS TO THE KIRK THEROF * 1674.

The Church was afterwards visited, of which Mr Hardy says :—“The church was built ‘upwards of a century ago,’ says the Statistical Account, apparently on old foundations. A stone introduced into the south wall preserves on a shield the engrailed cross of the Sinclairs, with the initials “I. S.” There are tombstones in the churchyard—throughs—to the Rev. Robert Monteith and the Rev. George Bell, and to the Rev. Selby Orde. The first was the friend of the Rev. Alexander Carlyle of Inveresk, and of John Home, author of ‘Douglas;’ and his name will long survive in Skirving’s ballad of ‘Tranent Moor,’ for his conduct, or alleged conduct, in the runaway battle of Prestonpans. In the interior of the church are tablets to the memory of Mrs Raitt and the Rev. Walter Weir.” The Church occupies a very sheltered spot among wood, and not far off is the mansion-house, which, as already stated, was visited by some of the party who preferred a quiet saunter to the longer and rougher walk up the Dye and to Runklie. Of the mansion-house Mr Hardy says :—“It was in the year 1715 that the present mansion-house was erected, as was ascertained by an inscription on a stone observed when the present re-edification of it took place. New walks and flower borders have been laid out; the garden has been renovated also, a promising herbaceous border being one of the additions. *Pyrola minor* grows wild in the wood within the policies across the Dye. This year and last the foliage of the beeches here has been much blotched and mined, and punctured with small openings, by the larvæ and imagos of *Orchestes Fagi*, a small leaping dusky black beetle. There are numerous ornamental coniferæ here, mostly juvenile. The shoots of *Pinus nobilis* were hurt by summer frosts in 1881. *Picea Nordmanniana* is found to be the hardiest of the pines; the height of the tallest is at present 38 feet. Besides these there are here silver firs; stone pines and black Austrian pines; also *Picea Cephalonica* (40 ft. high); *Abies Douglassi* (47 feet high); *Sequoia Wellingtonia*, of a height of 32 feet, and diameter at one foot from the ground 7 feet; and *Cedrus Deodara*. As regards the heights, &c., there are others of the same kinds nearly as high. The sizes are very good con-

sidering the elevation of the place. A large ash tree, blown down in 1879 in the park behind the house, had a circumference at 1 foot from the ground of 18 feet 6 inches; its diameter being 6 feet 6 inches. A wire railing crossing it has grown into the trunk since 1850, to a depth of 1 foot and for a length of 5 feet 6 inches. A plane tree at present standing in the churchyard has a circumference at 3 feet from the ground of 12 feet 6 inches. A beech tree in the park has a circumference at 3 feet from the ground of 13 feet 8 inches. Fearful havoc was committed in the woods on the estate by the autumnal gales. Near the mansion-house is a large rookery. Since many of the tall trees have been prostrated by the winds of October and November several of the rooks have this year selected very humble trees to nest in. A heronry once existed here, but is now deserted."

The party re-assembled at the Church, and parting, with warm thanks, from our kind and hospitable friends who had done so much to make our visit pleasant and profitable for the work of the Club, we turned our faces southward. On the return journey no incident worthy of note occurred, beyond a fresh feast of the eye from Langton Edge, and the party reached Dunse in time for dinner at 4 o'clock, the Langton House detachment having already returned.

In the course of the day some members of the Club visited Dunse Castle gardens, where what is said to be the oldest myrtle in Scotland was pointed out. Mr Watson's rock-garden at Dunse also attracted much attention.

The following is Dr Douglas's account of the visit to Langton House. "About 14 or 15 members of the Club accepted the polite invitation of the Hon. R. Baillie Hamilton to visit Langton, and see the treasures of art which it contained. The members were most courteously received by Mr Hamilton, who kindly explained the subjects of the numerous objects of interest which the Mansion House contained. The pictures, most of which were left by the late Marquis of Breadalbane to his sister Lady Elizabeth Pringle, were numerous and many of great value; chiefly were to be remarked a magnificent work of Rubens—John Baptist's head brought on a charger to Herod; Landseer's grand picture of the Stag at Bay, familiar to all by its numerous engravings; three other pictures of Landseer illustrating scenes near Taymouth; paintings by Guido, Carlo Dolci, Raffaele, Titian, Murillo, Velasquez, Weenix, and many other

distinguished painters. Portraits by Gainsborough, Sir T. Lawrence, &c. Several fine busts: one of the Emperor William of Germany presented by him to Lord Breadalbane, and another of a young Prince of Prussia modelled by the Crown Princess, Princess Royal of England. Mr Hamilton also showed some beautiful specimens of Roman and Florentine Mosaics, and several valuable ornamental vases brought by himself from the Imperial Palace at Pekin and other places in China. The above form but a small portion of the numerous objects of interest displayed. The party afterwards visited the gardens and grounds, which are laid out with much taste, and inspected *inter alia* some Alpine plants brought from the Pyrenees by Mr and Mrs Baillie Hamilton; and before their departure were hospitably entertained in the Grand Dining-room of the Mansion, which of itself is a fine specimen of Elizabethan architecture, erected about twenty years ago, from designs of Bryce, by the late Marquis of Breadalbane. The views in the park have been much shorn of their beauty by the wreck caused amongst the trees by the memorable gale of 14th October, 1881."

At dinner the number of the party was greatly reduced owing to the necessity laid upon many to leave early in order to catch the only available train going west. After dinner a number of objects of interest was exhibited and examined. Of these many were the property of Mr Charles Watson, who gave the following list of his exhibits:—"1. Armlet of Bronze, found near Greenlaw many years ago. 2. Sun-ring, found at Polwarth Mill in 1801. 3. Glass Linen-smoother, used by my grandmother in the end of last century. Vide Trans. Soc. of Ant. Scot. 1879-80, pp. 63, 64. 4. Snuff-box, presented by Prince Charles Edward Stuart in 1746 to Lady Seaforth, and by her to her cousin, Mrs Mackenzie, of Muirton, Invernessshire, (my grandmother), circa 1770. 5. Snuff-box, which belonged to Robert Watson, tenant of Nethermains, Chirside, my great-great-grandfather, 1705. 6. Intaglio; belonged to John, Duke of Lauderdale, circa 1670. 7. Mezzotint of John Duns Scotus, by John Faber, the elder, 1690-1721. 8. Seals. (The Nos. refer to Laing's Catalogue of Scottish Seals.) 63. Mary, A.D. 1564. "Regina Scotorum dotariaque Francie." —67. James VI. Rex. Scot. 1567-1625.—429. Patrick Hepburn, Earl of Bothwell. "Sl. Patricii comitis de Bothuel et dñi de Halis." A.D. 1520.—790. Alex. Stuart, Duke of Albany, 2nd son of Jas. II. A.D. 1473. "Sigillum p̄ncipis Alexri ducis Alban.

Comit. March. dñi vall. Anad. Ma. Admiram.”—1076. Melros, Chapter of the Monastery of St Mary’s. “S’ comune capituli Monasterii de Melrose.” A.D. 1422.—1091. Monastery of Nth Berwick. “Sigillum commune Monasterii de North Berwick.”—1124. Priory of St. Bothan’s (f.s.) “Ave Maria graciæ plena.” A.D. 1557.—Duke of Buccleuch. 1674.—A smaller seal of Nth Berwick.—Four unknown.”

A painting, hung on the wall of the room, bore the inscription, “John Duns Scotus, Doctor Subtilis. Born at Duns, A.D. 1274. Died at Cologne, Nov. 8, 1308. Presented by Mr James Watson to the Feuars of Duns, A.D. 1811.” Along with this portrait, and also belonging to the town of Dunse, was shown a copy of the works of Duns Scotus, in black-letter, double-columns, printed at Venice in 1490.

Dr James Denholm, Broomhill, showed some valuable manuscripts and papers, of which the following is a list:—

1. Unpublished poem, holograph, of the Ettrick Shepherd. Dated Mount Benger, Apr. 6th, 1827.
2. Prize Power signed by Lord Nelson, 8 July, 1803, and witnessed by Captain Hardy of the Victory.
3. Crimean Despatch signed by Lord Raglan, 1855.
4. King’s Constitution signed by Wm. Pitt, in favour of Andw. Miller, to be Commissary of Stores at the intended settlement in New South Wales, 1786.
5. Printed circular soliciting subns. for National Monument on Calton Hill, signed by Scott, Jeffrey, Alison, Cockburn, “Grecian” Williams and others, 1821.
6. Pass to Gally Ho. of Commons, written and signed by Wm. Cobbett, Ap. 3rd, 1823.
7. Signature of Ld. Brougham—Letter of Sir E. Brydges—Signature of Sir S. Romilly.

The Rev. George Gunn exhibited a fine entirely polished celt of greenish Silurian slate from Stichill; Mr Leitch, Fairneyside, a socket of Silurian slate, with a hole in it, for a spindle to revolve in; Mr Loney, a pair of fine red deer antlers, both broken below the branches, found six feet beneath the surface, in a drain near Dogden Moss; the Rev. Joseph Hunter, a small old hand-bell, from Cockburnspath, said to have been rung before funerals. This bell is encircled by three lines of inscription:—GIFTED·BE·IOHN·HENRIE·BOWER·IN·EDINBVRGH·TO·THE·SESSIONE·AND·KIRKE·OF·COCKBVRNSPETH·1650. A drawing of a curious double-spouted, snake-headed, brass vessel, like a coffee-pot, found in taking down an old house on the

Langton Estate, was handed round.

Mrs Essex Thompson sent specimens of *Anagallis tenella*, from East Bolton, near Alnwick; and it was reported that Dr Stuart, Chirnside, had found *Torilis nodosa*, a plant new to Berwickshire, on a bridge at Bogend. In the morning Mr Muirhead had exhibited a vasculum full of beautiful rarities from his garden at Paxton, conspicuous among which was a fine spike of *Epipactis palustris* in full flower.

A copy of the Club's "Proceedings" for 1881 was laid on the table.

The following papers were read:—

1. On the Effects of Lightning in Smelting and Altering Gravel at Chapelhill, Cockburnspath, 10th July, 1882. By Mr Hardy.

2. On Marine Shells and Fragments of Bones found at the Base of Hutton-Hall Cliff, opposite Edington Mill. By the Rev. George Wilson, Glenluce, Corr. Mem. of the Scottish Society of Antiquaries.

3. On examples of the Wood-Ant (*Formica rufa*), sent by Mr Arkle from Yardhope Wood-foot, Northumberland.

4. Analysis of a "Black Rain" which fell on the farm of Blackadder West Mains, by Dr Stevenson Macadam, with a letter from Mr Young, Dunse, relating the circumstances.

5. List of Hill Forts, Intrenched Camps, Standing Stones and Tumuli on the Scotch side of the Cheviots. By Professor James Geikie, LL.D.

Interesting discussions followed the reading of some of these papers, most of which will find a place in the "Proceedings" for 1882.

The following were proposed for members:—Rev. William D. Herald, Dunse; Mr Robert Robertson, Ladyrig, Roxburgh; Mr John S. Bertram, Cranshaws; Mr William Gunn, Dunse; Mr Andrew Ker, St Boswells; Rev. Arthur Gordon, Greenlaw; and Mr J. P. Simpson, Alnwick.

The party broke up about seven o'clock, after a long and pleasant day, most of it spent on ground new to the Club.

CORBRIDGE MEETING.

Corbridge, the scene of the fourth meeting of the Club, is a village, or rather small town, with a population in 1881 of 1187, on the north bank of the river Tyne, about seventeen miles west from Newcastle. It is a place of great antiquity, and its own

history possesses much interest, as it was at one time a burgh, the site of considerable ecclesiastical establishments, and comes frequently into notice in connection with the numerous invasions and forays of the Scots previous to the union of the kingdoms. It also stands in a district notable for the number of Roman remains found in it. The Roman Wall is only two miles and a half to the north; and less than half a mile to the west of the town, Corchester, the site of *Corstopitum*, the first station on Watling Street to the north of the Tyne, has been productive of many vestiges of the greatest of ancient military empires. Some of these Roman remains have been transferred to museums at Newcastle and elsewhere; but others are preserved in the neighbourhood, and several inscribed and sculptured stones have been built into the walls of houses and gardens in Corbridge itself. One lighting on these relics of a bygone age, while sauntering about the little town, is transported in thought to the era of a great but now vanished civilisation, and confesses himself in the presence of a hoar antiquity. To add to the attraction of Corbridge for the Club, it is situated in a fertile and beautiful reach of the valley of the Tyne, and in the vicinity of several ancient fortified places, two of which, Aydon Castle and Dilston Castle, were visited by the party, which assembled at the Angel Inn in Corbridge on Wednesday, August 30th.

The following gentlemen were present at this meeting:—Rev. James Farquharson, M.A., Selkirk, President; Dr F. Douglas and Mr Hardy, Secretaries; Sir Walter Elliot, F.R.S., etc.; Col. J. Barras, of the East Indian Army; Revs. J. E. Elliot-Bates of Milburn Hall; J. F. Bigge, Stamfordham; Henry B. Carr, Whickham Rectory; A. Johnson, Healey Vicarage; David Paul, Roxburgh; William Snodgrass, D.D., Canonbie; John Walker, Whalton; R. H. Williamson, Whickham; — Wilson, Hexham; Dr Charles Douglas, Kelso; Dr Main, Alnwick; Messrs Thomas Arkle, Highlaws, Morpeth; John Balden, Dilston; H. H. Blair, Alnwick; John B. Boyd, Cherrytrees; W. B. Boyd, Faldonside; J. Bulman, Corbridge; J. W. Collingwood, Glanton Pyke; M. H. Dand, Hauxley Cottage; J. T. S. Elliot, yr. of Wolfelee; Robt. Forster, Corbridge; E. B. Gibson, Alnwick; James Heatley, Alnwick; W. T. Hindmarsh, Alnwick; J. L. Newbigin, Alnwick; Robert Reed, Newcastle; Robert Renton, Fans; Adam Robertson, Alnwick; John Turnbull, Abbey St Bathans; W. Willoby, Berwick.

Many of the visitors arrived by train from Newcastle, and as they walked across the level ground which lies between the railway and the river, the little town presented an attractive appearance in the bright morning light. Immediately under Corbridge the ground falls in rapid descent to the Tyne, and the steep slope is divided into long parallel gardens, admirably placed to catch the sun, and on this side giving quite a picturesque character to the place. On farther acquaintance we found that Corbridge had thoroughly mended its ways since 1776, when a writer says it "was dirty and disagreeable." Now the streets are well kept; many modern villas have been erected; gardens and shrubberies are seen on all sides; and signs of comfort and prosperity are prominent. If old industries such as flax-spinning and weaving, shoemaking, lime-burning, and market-gardening for the supply of Newcastle, have died out, obviously the labouring population have found other profitable outlets for their industry, while not a little money must be made by the letting of houses and lodgings, the place having become a favourite resort for summer visitors.

From the low haugh-land on the south side of the river the town is entered by a bridge of seven arches, built in 1674, remarkable as the only bridge which withstood a high and destructive flood in 1771. The bridge, the widening of which was finished in April, 1881, is a substantial structure; and the views from it, both eastward and westward, interested the party. Downward, to the east, it could be seen that an enormous deposit of drift, running from S.W. to N.E., had at one time quite closed up the valley, and must have held back the water of the river to form a lake along the wide and level space four miles westward to Hexham. On this level ground, once the bottom of the lake, the soil is rich and many feet deep, and in the neighbourhood of Hexham is appropriated to market gardens, which are very productive. The great ridge of drift has been cleft by the action of the river, the opposing scours corresponding to each other at the point where the stream has cut its way through the obstacle, about a mile below Corbridge, and allowed the waters of the lake to drain off. Upward and westward from the bridge the eye ranged over a varied and beautiful prospect. On the north bank of the river the ground rising rather rapidly displayed much cultivated land, with the mansions of Beaufront Castle, Sandhoe, and Stagshaw, surrounded by their parks and

extensive plantations. On the south side beyond the haugh-land the ruins of Dilston Castle were just visible amid stately trees; while between, and closing the view westward, appeared the ancient town of Hexham with its wooded environs.

After breakfast the party started for the day's walk under the guidance of Mr Robert Forster, a resident in the town and author of a "History of Corbridge and its Antiquities, &c." Attention was first directed to a Peel Tower at the north-east corner of the Market Place, and adjoining the churchyard. It is said to have been built early in the fourteenth century, and was formerly the residence of the vicars of Corbridge. Erected for defence, and of great strength, it no doubt served as a refuge for successive ecclesiastics in former troublous times; especially when in their reprisals on the English, bands of Scotch marauders invaded Northumberland, carrying death to such inhabitants as they found unprotected, and driving away their cattle as booty to the north of the border. The Parish Church, dedicated to St. Andrew, is the most interesting object in Corbridge, and even our cursory visit of it, which was all that the other work of the day permitted, occupied a considerable time. It is impossible here to give a full account of this structure, the greater part of which dates probably from the thirteenth century, and which in its earlier days was repeatedly reduced to ruins by the invading Scots; but the part which attracted most attention during our brief visit was the square tower which rises at the west end, and is undoubtedly more ancient than the rest of the church. It is reckoned by some to be of Saxon architecture, and the quarry whence its materials were taken was the old Roman Station of Corstopitum close to the town. The blocks of stone are massive and bear the characteristic marks of Roman workmanship. The base of the tower is used as a baptistery, and is entered by a semicircular archway of the unusual proportions of eight feet in width by sixteen in height. All the stones visible in this archway, and the mouldings from which the arch itself springs, are Roman, and were probably transferred directly from the Roman Station to the Christian Church. Much of the floor of the Church consists of tomb-stones, many of them bearing inscriptions. On one is a floriated cross in relief, and alongside of this is sculptured a pastoral staff or crook, supposed to be the insignia of an ancient ecclesiastic. I am indebted to Mr Hardy for the following interesting and elaborate note on one of the monumental

inscriptions in the Church. "An ancient tomb under an arch beneath the window of the north transept, bears in old letters the following inscription: *hic IACET. INTERRIS. ASLINI: FILIVS. HVGO.* i.e. here lies underground, Hugh fitz Aseline. Hutchinson (View of Northumberland, i., p. 145) conjectured that this was the tomb of one of the founders of the church, and in this he has been followed by others. But we can now say something about this personage so highly honoured, and the period when he lived. He was a small landholder at Corbridge of the time of Edward I., and possessed a couple or more of dwelling-houses in the town. In 6 Edward III. (1331-2) Robert son of Hugh fitz Aselin de Corbrigg died, seized at Corbrigg of two messuages and thirty acres of land. (Cal. Inq. post Mort. ii., p. 51.) In some old documents concerning Corbridge preserved in vols i. and ii. of the "Archæologia Æliana," N. S., we have a few correspondent references to this Hugh. In 1316, 9 Edward II., he is spoken of as no longer alive, and we learn that one of his messuages was situated in the Market Place. In 1329, a toft in Prenestrete is noticed, as having once belonged to Hugh fitz Aseline. In the time of Edward I., he witnesses two separate conveyances of tofts in Corbridge. William de Tynedale, who in 1289 succeeded his cousin Sir Thomas de Dyveleston, in "Diveleston maner, Colbrig boscus," etc., signs along with him. John fitz John de Corebrigg held a messuage in Corbridge in the street of the Fishers' Market, that he had by infettment of Agnes once the wife of Hugh fitz Asseline of Corebrigg. In the Inquisitiones of 1331-2, the peculiar surname of Asseline or Asselyn is found in Berkshire in a certain "William Asselyn de Upledecombe." It may also enter into the composition of the place-name Eslington, North Northumberland, sometimes spelled Esselington and Astlington. The inscription is a hexameter verse. The style of lettering is a sort of climax, commencing with small letters and terminating with large capitals. Hugh left behind him a wife and son to attend to the ordering of his sepulchre, who in this followed the example of similar constructions at Hexham. Doubtless also he had secured the concurrence of the ecclesiastical powers, by good works done in his life, to be allowed to occupy as his monument a niche which is part of the sacred edifice, and it may really have happened that his means helped forward certain re-edifications. Corbridge was once a "borough-town," and sent members to parliament. Whether it had a mayor, with a popular occupant

such as Hugh, is by no means obvious; but he had certainly achieved the honour of being a chief citizen."

The Wall-rue (*Asplenium Ruta-muraria*) grows luxuriantly on the walls of the Church and on other old edifices about the place.

Leaving the Church the party, still under the guidance of Mr Forster, started for Aydon Castle, a fortified mansion about a mile and a half N.E. from Corbridge, which, dating from the 13th century, has been recently repaired, and is now inhabited by the tenant of the farm attached to it. As we issued from the town we passed on the left hand several garden allotments, granted by the late Algernon, Duke of Northumberland, to the inhabitants of Corbridge, and believed to occupy the site of one of the three churches once existing in Corbridge, in addition to the Church of St. Andrew which we had just quitted. We soon left the public road, and followed a narrower path along Wain-House Lane, the route followed by waggons, or wains, in conveying limestone from some now disused quarries to the kiln. The lane is sunk between high banks clothed with a luxuriant growth of bramble, honeysuckle, and wild rose. The botanists of the party picked up along the road and lane, going and returning, *Chenopodium Bonus Henricus*, *Ballota nigra*, *Plantago media*, *Galium Mollugo*, *Tragopogon minor*, *Betonica officinalis*, *Origanum vulgare*, *Cynoglossum officinale*, *Reseda Luteola*, *Hypericum perforatum*, and *pulchrum*, and *Hieracium subaudum*, which last is very conspicuous, and at this season a characteristic flower of the district. It was afterwards found in perfection at Dilston, and by a detachment of the party on the following day on the banks of the Tyne at Chollerford. Leaving the lane we followed a bridle-path through some fields to the lower part of the dean on the west bank of which stands the Castle. In one of the fields grew an amazing profusion of the wild carrot, *Daucus Carota*. The plant stood as thick as if it had been sown for a crop, although we learned that it was regarded by the farmer as a troublesome weed. The path wound through the finely-wooded dean—where we observed *Prunus Padus* growing—and crossing the rivulet in the bottom, rose by a steep ascent and brought us abruptly in view of the ancient mansion. For a building more than half a thousand years old it presents a wonderfully fresh appearance, having been carefully repaired by the present proprietor, Sir Edward Blackett, Bart., of Matfen. We were most courteously received by Mr and Mrs Rowell, and conducted over the house, where

modern furniture and all the domestic appliances of the nineteenth century appeared in quaint and comfortable contrast with the thick walls, small windows, deep recessed window seats, wide fire places, narrow passages and tortuous stairs, which spoke of other manners and customs among the dwellers within, and of the dangers to be warded off from hostile visitants without. Those of the party who scrambled through a trap-door and reached the roof, were rewarded by a wide panoramic view to the south and west over the valley of the Tyne, and the hollow in which Hexham stands, rich in woods, away to the heights of Allendale and Alston Moor.

On the walls of the Castle, and at their base, overhanging the dean, were observed Wallflower (*Cheiranthus Cheiri*), and Pellitory, (*Parietaria officinalis*), *Malva sylvestris*, and *Companula latifolia*—the last in profusion, and splendid flower. In the inner court-yard grew in the crevices and on the cope of the wall, *Chelidonium majus*, *Linaria Cymbalaria*, *Arenaria trinervis*, *Galium Mollugo*, *Asplenium Adiantum-nigrum*, and *Cytisus Scoparius*, (Common Broom.)

I am indebted to Mr Hardy for the following valuable information regarding this most interesting house. "The latest account of the place, in Mr J. Hudson Turner's "Domestic Architecture in England from the Conquest to the end of the 13th Century," is not readily to be met with, and may be given here. The account is illustrated with engravings of the exterior of the castle, and the most of its architectural peculiarities outside and inside:—

"Although this building is now, and has been for some time, called a castle, it was known in the 13th and 14th centuries by the name of 'Aydon Halle,' as was also its dependent manor. It is indeed only a Border house carefully fortified. The general plan is a long irregular line with two rather extensive enclosures or courts formed by walls, besides one smaller within. On two sides is a steep ravine, on the others the outer wall has a kind of ditch, but very shallow. The original chief entrance is yet by an external flight of steps, which has a covered roof to the upper story, and so far partaking of the features of the earlier houses of the preceding century; it contains at least four original fire-places. Some of the windows are square-headed, with two lights. The stable is remarkable for the total absence of wood in its construction, the mangers being of stone, and as Hutchinson

remarks, was evidently constructed for the preservation of cattle during an assault. The windows of the stable are small oblong apertures in the wall, widely splayed internally and secured by iron bars. Among other details worthy of notice is a good example of a drain. The number of fire-places in this building may be attributed to its situation in a district where coal was dug and easily procured, at the time of its construction.

“The manor of Aydon belonged, in the early part of the 13th century, to a family which derived its name from the place. The male line of the Aydons failed in the time of Edward the First, who gave Emma de Aydon, the heiress of her family, in marriage to Peter de Vallibus. At a later time a moiety of the manor of Aydon was held by Richard de Grosbeke, in right of his wife, by whom it is probable the present building was erected. It has been already observed that its date is late in the 13th century, and the period of the acquisition of the property by de Vallibus may be certainly placed after the year 1280. The subsequent descent of this estate is not very clear. In a list of the names of all the castles and towers in the county of Northumberland, with the names of their proprietors, made about the year 1460, it is called ‘the castle of Aydon,’ and is described as being the joint property of Robert Raymese, and Ralph de Grey. The Raymeses are said to have had a joint interest in it with the family of Carnaby until the time of Charles the First.”

On the way to Corbridge a young redstart tempted some of the party into a short chase, but it proved too strong on the wing for its pursuers. As no zoological facts of interest fell to be recorded during the day, I may here insert a note on some of the wild quadrupeds and birds of the neighbourhood, which has been furnished by Mr Forster, to whose guidance we were so much indebted both at Corbridge and Aydon Castle.

“The Glede, Fulmart, Wild Cat, and Badger have during the last 40 years been extinct in this neighbourhood; but within the last two years I have heard that there are some Badgers in Dip-ton Wood, about two miles south of Dilston Castle. The Stoat, Weasel, and Fulmart, were in some parts of the neighbourhood, when I was a youth, pretty numerous. Weasels are now nearly extinct; so are Jays, Hawks, and Magpies, all (I think foolishly, if not wickedly,) destroyed by gamekeepers. There are not now more than one fourth of the Swallows and Swifts there were in my youth. The Sandpiper, which I often saw in those days

when I fished in the river, is not now seen. The Kingfisher, then plentiful, is not now to be seen in the neighbourhood. There are yet a few Herons. I saw three about three miles east of Corbridge about six weeks ago."

In passing through Corbridge the party took shelter from a shower in the Inn; but they were soon again on foot, making now for Dilston Castle, about a mile distant, on the south side of the valley of the Tyne. On traversing the level ground beyond the river, notice was taken of the progress of the harvest, which this year was later than usual. Wheat, oats, and barley in the neighbourhood were almost all in stook, but only a field here and there was cleared, and its produce secured in rick. By a gentle ascent along a tree-shaded road the entrance to the grounds of Dilston was reached. Entering between two massive stone pillars, probably the remains of the original gateway, the first objects to attract the eye were some lofty and umbrageous Horse Chestnuts, this season displaying little fruit. Mr Balden, the agent at Dilston, here kindly met the party, and acted as guide to the ruins of this mansion of melancholy memories. The present proprietor has done much both for the discovery of the original plan of the building by uncovering foundations, and for the preservation of those walls which are still standing. The Castle had been of great extent, and the enormous thickness of the walls in the older portions gives token of its great strength as a place of defence. A mere fragment of the lordly pile now remains, and the rooms and vaults in this portion were examined with interest, as was also the small detached domestic Chapel close to the Castle. The dimensions of the Chapel within are 32 feet by 15, the height 18 feet. It is a plain and unadorned structure. Below the floor of the Chapel is the vault which contained the remains of several members of the Derwentwater family down to the year 1874, when most of them, on the sale of the estate, were removed to the Roman Catholic Chapel at Hexham. The body of the last Earl, however, who was beheaded in 1716, was transferred to the burial-place of his descendant, Lord Petre, at Thorndon in Essex. On the east gable of the Chapel there has recently been discovered a sculptured stone bearing a coat-of-arms, which had been concealed for a length of time by a thick growth of ivy. The owner of this heraldic emblem has not yet been determined.

The romantic story of Dilston, and its successive owners, has

been often told, and need not to be here repeated at length. It begins far back, for it is alleged that the domain was in possession of a family of the name of D'Eivill soon after the Norman Conquest. From this family, it is assumed, was derived the name of the place, Dyvelstoun, afterwards contracted into Dilston. From the same family name is derived the designation of the stream, on the precipitous bank of which the castle stands,—Devil's Water,—certainly a fitter parentage for the title of this beautiful little river than the inappropriate one which the modern spelling of the name suggests. From the lords of Dyvelstoun the castle and lands passed, in default of direct issue, into the hands of various kindred families in succession, until, through marriage, they became in the end of the 15th century the property of the Radcliffes of Derwentwater. It is with the Radcliffes that the romance of Dilston is associated, and chiefly with James, Earl of Derwentwater, the last of the race who bore the title. Few histories are so sad as that of this young and popular nobleman,—the bright promise of his morning quenched in blood on a scaffold ere the noon of life was reached,—his splendid home left to the mercy of rapacious strangers and underlings, by whom the costly furniture was scattered far and wide in the neighbourhood, either sold or given away,—his lordly halls and chambers seized and tenanted by homeless vagrants, until at last it was deemed necessary to lay the building in ruins in order to disperse “the rookery.” The Commissioners of Greenwich Hospital, to whom the Government made a grant of the forfeited lands of the Radcliffes, by the studied neglect with which they treated Dilston Castle, would appear to have wished to wipe out all association of the name of Radcliffe and the title of Derwentwater with the district. Better days, however, were in store for the place. Under the care of the late Mr John Grey, the resident representative of the Commissioners, great alterations were made on the grounds around the Castle; the surface was cleared of unsightly rubbish, and care was taken to preserve the ruins from wanton destruction. A commodious and elegant house, for the use of the Commissioners' representative, was erected at a short distance from the old mansion, commanding a beautiful view up the Devil's Water. The gardens, walks, and shrubberies connected with this house now give a finish and richness to the grounds, a contrast to the desolation which prevailed a hundred years ago. In the year 1874, the possessions of Greenwich

Hospital in this neighbourhood were put up to auction, and Dilston Castle and estate were purchased by W. B. Beaumont, Esq., M.P., who has added to the modern house, and makes it occasionally his residence; and who, as has been already mentioned, has done much for the preservation of the old walls of the Castle and the Chapel. If there must still be melancholy associated with Dilston Castle, it is the romantic sadness of a tragedy in the distant past, no more the irritating sadness of modern neglect.

Dilston and the glen of the Devil's Water are good botanizing ground. Among the grass between the ruin and the brink of the precipitous descent into the glen *Viola odorata* was found growing in profusion. Half a dozen of the party walked up the east side of the stream, crossed by stepping-stones, and returned by the west side. It was late in the season, but such good plants as *Prenanthes muralis*, *Stellaria nemorum*, *Veronica montana*, *Equisetum hyemale*, *Circæa Lutetiana*, *Melica uniflora*, *Prunus Padus*, *Sanicula Europæa*, *Asperula odorata*, *Betonica officinalis*, &c., were recognised. *Ribes alpinum* and *Aquilegia vulgaris* were also noticed, but could scarcely be considered indigenous. The course of the Devil's Water above Dilston is very picturesque. Steep banks, occasionally breaking into rocky scaurs, but for the most part covered with brushwood, and well-grown trees, now closely gird the stream, now recede and leave room for sheltered grassy haughs. The view is constantly varying, and always pleasing, certainly never suggestive of aught connected with the prince of darkness. On emerging from the wooded valley at a cottage a short distance from Dilston Mill, we found by the wayside a profusion of *Malva moschata*, *Linaria vulgaris*, *Barbarea vulgaris*, *Hypericum perforatum*, and *Rubus cæsius*. Near the new Cemetery *Convolvulus arvensis* was observed growing in abundance along the margin of the road.

The scattered groups into which the party had broken up were all assembled in the Angel Inn soon after 4 o'clock, when 29 sat down to dinner. After dinner Dr Allen Wilson, Alnwick, was proposed as a member. The following two papers were read:—1. On Temple Thornton Farm Accounts in 1308, communicated by Mr William Woodman, Morpeth. Temple Thornton was the only Preceptory of the Knight Templars in Northumberland; this they farmed; all their other property in the county was in the hands of tenants. The return, here translated

and annotated, was rendered to the Sheriff of Northumberland, on the suppression of the order. 2. Brief Notes on the Geology of Corbridge, Northumberland, by G. A. Lebour, M.A., F.G.S., Professor of Geology in the University of Durham College of Physical Science, Newcastle-on-Tyne. Thanks were voted to the contributors of the papers.

In the course of the conversation which followed the reading of these papers Sir Walter Elliot mentioned that *Neottia Nidusavis* had lately been found near Branzholm in Teviotdale; and the President gave an account of an old vine, which he had seen at Wickham the previous day, when he was the guest of the Rev. R. H. Williamson. This vine is believed to have been planted about the year 1735. It covers the whole of the sloping roof of a vinery, 28 feet long by 12 wide. The stem before sending off the horizontal branches is 15 inches in girth; and 40 principal lateral branches spring from the horizontal ones. It is of the Black Hamburgh variety, a steady bearer, and this year had produced 239 good bunches of grapes. Mr Williamson had stated that the vine was always carefully tended, and as far as he could remember had always produced, during the last sixty years, pretty much the same crop both in quantity and quality. This vine was not to be set in comparison with the famous Hampton Court vine, and other known patriarchs of the vinery, but it was worthy of a short notice in the Proceedings.

Sir Walter Elliot gave notice that he would propose at the business meeting of the Club in October, that in future only one copy of the Proceedings be issued to each member; and also that he would call attention to the subject of the organization of the work of the Club, which had been remitted to a Committee to report upon.

The meeting broke up about 7 o'clock, a delightful day having been spent in a district new to many of those present, and in more favourable weather than the gloomy and wet character of several preceding days had promised.

A small detachment of the party spent the next day in visiting Hexham, and the Roman Camp at Chesters. At the latter place they found excavations going on at the charge of the venerable proprietor, Mr Clayton, and saw the labourers engaged in uncovering a short row of columns, which had belonged to a building within the camp, and opposite the south gate. This little appendix to the Corbridge meeting, however, is recorded with

the view of directing attention to a remarkable sculptured stone, discovered in 1881 during excavations made under the porch of Hexham Abbey Church. The stone when found was 10 feet 5 inches in length, about $3\frac{1}{2}$ feet in breadth, and a foot in thickness. It weighs about 2 tons. The lower end was rounded, but some inches have been cut off to make it straight and give it a more secure rest, where it now stands against the west wall of the south transept of the Church. The figures on the stone are rough but spirited, and represent a Roman soldier on horseback, bearing a standard, and trampling under foot an ancient Briton, whose head is shown in a singularly contorted position. The lower portion of the stone is occupied by an inscription, the greater part of which is in excellent preservation, but some letters are obscure. Dr. Collingwood Bruce reads the inscription as follows:—

DIS MANIBVS FLAVINVS
EQ ALÆ PETR SIGNIFER
TVR CANDIDI AN XXV
STIP VII H S

which he says may be expanded thus:—*Dis manibus. Flavinus eques ala Petrianae, signifer turmae Candidi, annorum viginti quinque, stipendiorum septem, hic situs [est].* The following may be accepted as a translation:—“To the gods of the lower world. Flavinus a horse-soldier of the ala Petriana, standard-bearer of the troop of Candidus, twenty five years old, and of seven terms of service, [or, campaigns] lies here.”

JEDBURGH MEETING.

The fifth meeting of the Club was held at Jedburgh on Wednesday, September 27th. The morning was most unpromising, and the majority of those who attended the meeting left home under a heavy downpour of rain, and with little hope of brighter weather. The Club's usual good fortune, however, did not desert it; for by the time Jedburgh was reached, rain had ceased to fall, and the sun was beginning to assert his power. It was afterwards learned that to the north and south severe thunderstorms prevailed at various times during the day; but the Club enjoyed bright skies along the whole route traversed, and were under cover at the Hotel in time to escape heavy rain, which again began to fall about 4 o'clock.

The members, and friends of members, present were—Rev.

James Farpuharson, M.A., Selkirk, President; Dr. F. Douglas, Kelso, and Mr Hardy, Oldcambus, Hon. Secretaries; Revs. T. S. Anderson, Crailing; J. E. Elliot Bates, of Milburn Hall; John F. Bigge, Stamfordham; J. Hill Scott, Kelso; John Walker, Whalton; Geo. P. Wilkinson, Harperley Park; R. H. Williamson, Whickham; Sheriff Russell, Jedburgh; Dr. H. S. Anderson, Selkirk; Dr. William Blair, Jedburgh; Dr. Alex. J. Main, Alnwick; Dr. J. Robson Scott, Belford; Dr. M. J. Turnbull, Coldstream; Messrs James Bogie, Edinburgh; A. Hay Borthwick, Melrose; Fred. J. W. Collingwood, of Glanton Pyke; James Cumming, Jedburgh; Jas. T. S. Elliot, yr. of Wolfelee; Wm. Elliot, Sheriff Clerk, Jedburgh; John Freer, Melrose; Douglas Govan, Fife; Wm. T. Hindmarsh, Alnwick; W. H. Johnson, Edinburgh; R. D. Ker, Edinburgh; John McDougall, Jedburgh; Frederick L. Roy, of Nenthorn; Thos. Robson Scott, of Newton; David M. B. Watson, Hawick; and James Watson, Jedburgh.

After breakfast at the Royal Hotel all turned towards the Abbey. It is not necessary to describe this stately ruin. Details concerning it may be found in many easily accessible publications; and the Proceedings of the Club in former years record much concerning it. What calls for notice now is that, since the Club last visited Jedburgh, by the munificent liberality of the Marquis of Lothian, to whom the Abbey now belongs, it has been put in a condition more worthy of the noble architecture it exhibits. The old Parish Church which encumbered and disfigured the interior of the nave has been entirely removed; portions of the fabric which threatened to give way have received support; and when it could be done judiciously, decayed stones and fragments have been removed, and new stones, fac-similes of of the old, have been substituted. The accomplished architect, Mr Rowan Anderson, to whom the work of restoration, or rather of preservation, was entrusted, has also erected in the old entrance from the cloisters a copy of the famous west doorway, which in its sharp freshness gives an idea of what the whole Abbey Church must have been when it rose under the hammer and chisel of those wonder-working mediæval masons, and stood in untarnished richness, a goodly house of God. The visitors, besides enjoying the impressive view of the interior now obtainable from the site of the grand altar, inspected with interest various objects brought to light during the process of restoration.

In the roof of the turret stair to the north of the west entrance a stone is imbedded, on which lettering, believed to be Roman, occurs. We were informed that the words "Julius Cæsar" are found in the inscription, but no member succeeded in deciphering the name of "great Cæsar." Monograms and coats of arms of several bishops have been found on pillars of the central tower; and three fragments of crosses, which had been found inserted as lintels, attracted much interest. They display old Celtic ornamentation. One of them is especially rich—from a central stem spring three branches on each side, which curve into circles, supporting within their circumference figures of animals. A ram, a dog, two eagles, and two more obscure winged figures occupy the compartments, which are also ornamented by foliage of various kinds, and what seem intended for bunches of grapes. The fragment presents an unusually rich appearance, and makes us regret that the rudeness of a former age has left us but a fragment of what must have been a splendid monument.

The party then proceeded through one of the side doors to the Abbey Gardens, which occupy the site of the old Manse and Manse Garden, and what was at a more remote date the site of the monastic buildings and cloisters. Here a profusion of herbaceous plants were displaying their beauty, and manifestly revelling in the rich soil and sunny shelter of this choice spot. The keeper of the Abbey and Gardens, Mr Turnbull, is an enthusiastic florist, and it was with difficulty we tore ourselves away from the treasures it was his delight to show. We certainly did not leave without violation of the tenth commandment, although I believe we kept within the bounds of the eighth.

Queen Mary's House, with its chambers so narrow and comfortless, and to our modern eyes so unworthy of royalty, and with its tapestry, said to have been worked by her Court ladies while they waited for the recovery of their sovereign from the fever brought on by her rapid ride to visit Bothwell at Hermitage Castle, received a brief visit; as did also the Museum with its numerous interesting but not well assorted contents. On one of the walls of the Museum hung a banner bearing an inscription in letters stitched on the silk, which asserted that it was taken from the English at the Battle of Bannockburn. I notice this article because I observed attached to the old silk a piece of cloth in the form of a shuttle, very similar to the shuttle-shaped patches on

the Flodden Flag at Selkirk. Probably both flags, whatever their origin, were similarly ornamented, because both at one time belonged to Corporations of Weavers.

It had been intended to arrange for a botanical excursion up the Jed, but the rain of the previous night had so saturated soil and herbage that the idea was abandoned. On the suggestion of Sheriff Russell it was therefore agreed to drive to Edgerston, in the belief that the proprietor, Mr Oliver Rutherford, although the Club came upon him without warning, would make us welcome to visit his grounds. About half-past twelve o'clock the party in two well-filled conveyances left the town by the Bridge near the new Parish Church, and drove up the valley of the Jed for Edgerston. "Sylvan Jed" wore its fairest garments in honour of our visit, the clear light bringing out all the beauty of the scenery, and the balmy air allowing us to enjoy each successive picture of wood-crowned red cliff and scaur, and tower, and gleaming water, and distant hill. Since autumn had touched the woods with his magical finger, no high wind had occurred to strip the trees of their leaves, and the landscape in umbrageous richness and variety of tint baffled description. It must be left to the memory of those who had the good fortune to see it on that fair September day, and to the imagination of those who did not. Every variety of tint was presented to the ravished eye, green and yellow of every hue, gold, and crimson, and scarlet, and rich russet, with here and there dark masses of pine. The long perpendicular cliffs of red sandstone springing boldly from the margin of the river served as a foil to the gorgeous colours, and down the runnels which broke their surface at intervals, drooped festoons and fringes of foliage from the rich woods above, graceful ornaments softening but not weakening the commanding features of the rocks. One maple as we drove up the steep end of the Edgerston avenue next the house attracted the eyes of all,—a brilliant flaming flower amid sober surrounding green.

Nor was the interest of history, legend, and story, aroused by each well-known Border name as we wound our way upwards, less intense than the enthusiasm excited by the lovely autumn scenery. The old Burgh we had left, Jedburgh itself,—Inchbonnie,—the Capon tree,—Lintalee, stronghold of the Douglasses,—Ferniehirst, the home of the Kerrs,—Mossburnford, at one time the residence of a valued member of the Club, the late Mr

Archibald Jerdan,—Old Jedward,—these are names to conjure with, and the full story of any one of them would occupy more than the whole space devoted to this address. Besides, is not their chronicle written in Jeffrey's "Roxburghshire," in whose pages one may read, and learn that the peace-loving members of the Berwickshire Club were that day driving over scenes, where almost every field had witnessed the shedding of blood in hot strife, and every name recalled a deed of heroic or of lawless daring. As the elevation increased the umbrageousness of the woods became less marked, and the country more open, while it was also evident that we had passed from the warm red sandstone to the harsher greywacke. Distant prospects also opened up from the higher reaches of the road, the toll bar on the ridge of Carter Fell, among other landmarks, being discernible.

The geological character of the upper Jedwater district being comparatively unknown, I gladly avail myself of the following particulars from Professor James Geikie, contained in a letter from him to Mr Hardy,—being the results of the Government Survey under his charge. The Ordnance geological map of Roxburghshire is now, it is understood, in the engraver's hands—and Dr. Geikie has written the accompanying memoir, so that by and bye the members of the Club will have access to an adequate guide-book for prosecuting inquiries of this description.

"On going up the Jed above Jedburgh you pass first over the red sandstones and crumbling shales and clays, which are too well known for me to add any notes here. You will remember the classical unconformabilities of these beds upon the upturned Silurians in the neighbourhood of Jedburgh itself. There is even a finer section than that at Allars Mill, to be seen in Woodfield Burn and Willowford Burn—two little streams which unite just before they enter the Jed a little below Mossburnford. The best section is in the Woodfield Burn—one of the clearest I ever saw anywhere. Close to Dovesford (Camptown) the Lower Silurian comes out from under the Old Red Sandstone and forms the bed of the Kaim burn up to Edgerston House, where conglomerates and grits overlie sometimes the Silurian, sometimes the Old Red igneous rock (Porphyrites). Dod Hill (977 ft.) is a cap of coarse red sandstone resting partly on Silurian and partly on Porphyrite, which last forms Stotfield Hill (967 ft.), and the other hills overlooking Edgerston House on the east. This mass of Porphyrite is an outlier nearly entirely surrounded by

conglomerate. In the bed of the Kaim Burn, however, below Edgerston Loch, the conglomerate has been denuded away, and the porphyrite is there seen overlying the Silurian. Following up the Kaim Burn you find it heading in a chain of conspicuous hills running west and east. These are all composed of varieties of porphyrite. Silurian re-appears along the base of these hills on their southern margin, but it is immediately overlaid with sandstones and shales, clays, etc. which continue to the top of the Cheviots in the Carter Fell district. Catscleugh Shin (1742 ft.) on the north-east of Carter Fell is a great sheet of Basalt or Dolerite resting upon a bed of Volcanic Tuff and Ash. The sandstones, clays, shales, cement-stones, and limestones which lie along the tops of the Cheviots here, and stretch down their slopes towards the north, are the equivalents of our Lower Carboniferous of Middle Scotland.

“In the district you traversed you have fine examples of unconformability, overlap, etc. The Silurian consists of Lower and Upper divisions, but the junction between the two is concealed below the Porphyrites. The Porphyrites rest unconformably upon the Silurian, and had been highly denuded—worn into hill and dale—before the Old Red Conglomerates were laid down. These last indicate shallow water, possibly lacustrine, with torrents coming down from a hilly region. The “Jed-beds” of soft red sandstones and shale, etc. are the somewhat deeper water equivalents of these shore-beds. The overlying Carboniferous strata indicate a gradual depression of the area and the accumulation of sediment in an inland sea or lake, which now and again had more or less open connection with the ocean. But to make all this intelligible would require a map, and much detailed description.”

The valley of the Jed was left at Camptown, and the party turned into the long and pleasant avenue, which skirts the brawling Edgerston or Kaim Burn, and after a course of a mile and a half, the last part very steep, leads to the mansion-house. Mr Oliver Rutherford welcomed us most kindly, and invited inspection of the house and grounds by the members of the party. The house, which has been enlarged by additions to the ancient tower, suiting it to modern requirements, occupies a commanding situation, from which, in the intervals between the fine old trees which stand around it, pleasant views are obtained of the hills to the east and south. In the dining-room were seen full

length portraits of George II., and Queen Caroline, and of George III., said to be by Gainsborough; and reported to have been brought from Government House in America, during or at the close of the war of Independence. The gardens are extensive, and in this upland region each spring must prove how wisely they have been laid out on

“slopes that, slanting south,
“Breathe off the snow, and show a warming green.”

A beautiful double-flowering variety of *Pyrethrum inodorum* attracted notice in the garden; and among the shrubs beside the house a Golden-Crested Wren was seen by some of the party.

Bidding farewell, with thanks, to the proprietor, the representative of an ancient Border race, on whom we had so unceremoniously intruded, we drove back to Jedburgh, and reached the Hotel at 4 o'clock, after paying a short visit to the handsome new Parish Church, erected by Lord Lothian in lieu of the old structure, which had been removed from the nave of the ruined Abbey Church.

Thirty-two sat down to dinner, and after dinner the following objects were exhibited and examined.

A fine specimen of the Wild Cat, showing the abrupt tail and other marks of the genuine *Felis Catus*, shot a few years ago at Wolfelee, and brought for exhibition by Mr J. T. S. Elliot; who also showed a massive upper-stone of a Quern, found recently on Bonchester Hill, and remarkable as having the hole for insertion of the driving handle in the side, instead of in the usual place on the upper surface.

Mr Cumming, Jedburgh, exhibited a fine specimen of *Acherontia Atropos*, (Death's-Head Moth) found this summer on Lanton Moor; a Mecca Peggum, a roll of narrow parchment, 18 feet long, beautifully covered with Arabic characters in red, black, and gold; the intention of the quotations from the Koran being to incite Mahommedans of the fanatical Wahabee sect to a religious war against Great Britain; and a leaflet 7 inches by $4\frac{3}{4}$, being a handbill of the Kelso Races run on Oct. 12th, 1781. A very large Fungus, probably *Lycoperdon giganteus*, was also laid on the table; it measured 3 feet in circumference, and weighed $4\frac{1}{2}$ lbs, and was found by Sheriff Russell growing near Timpendean Castle on Sept. 25th. Rev. G. P. Wilkinson exhibited the beautiful Jet ring, of which he had previously shown a gold facsimile, as noticed in the Proceedings, vol. VIII., p. 28.

Papers were read "On the Lepidoptera of Roxburghshire," by Mr A. Elliot, Samieston; and "On the disappearance of Herons from a breeding-station on Bowmont Water," by Dr. Robson Scott. The authors of both papers received the thanks of the Club, and it was agreed to print the papers in this year's Proceedings.

There were proposed as members—The Right Hon. the Earl of Home; the Rev. Robert Stewart, The Manse, Jedburgh; and Mr George Bulman, Corbridge-on-Tyne.

After this long narrative, I need not detain you by lengthened closing remarks of a general nature. Our Club has now completed its first period of fifty years, and taken the first step into a new period. Will it live to celebrate its centenary? Some appear to have their misgivings and to suspect that, having exhausted its territory, the Club must decay and perish through sheer want of fresh sustenance. To this timorous suspicion I would suggest a threefold reply.

1. In the first place, while it is true that to several of the older members the region explored by the Club must be very familiar, it must not be forgotten that there is always a new generation rising up to whom these familiar scenes are not known; and that it is the delight of the older members to introduce these newer men to what is so well known to themselves, and to call forth and guide their enthusiasm while they make acquaintance with the fauna and flora of the district, or read the ever interesting story associated with ruin, and relic, and family tradition of which our beautiful Border country is so productive. This younger generation, ever renewed, renews the life of the Club.

2. Then they who dread atrophy for the Club, through dearth of suitable fresh food, forget the boundless fertility of nature. We are pre-eminently a Natural History Society; and it must never be forgotten that Natural History is a science of observation. Nature is an unfailling mother, and her offspring is as varied as unfailling. Every year produces its own crop of new facts, which, like the harvest of the farmer, must be gathered in and garnered. These facts are invaluable; and it is the province of a Society such as ours to see that none of them escape accurate observation and intelligent record. They are not only the delight of the specialist and systematist; but they are the raw material out of which the wider theories of life and organisation must be constructed, let the theoriser be evolutionist, or

anti-evolutionist; and by his ability to absorb, harmonise, and explain these facts satisfactorily, must his theories stand or fall. There is no fear of a dearth of facts, nor of a fall in their value. Even from Berwick, the cradle of the Club, the Proceedings are every year enriched by interesting notes. We are not reduced to the gleanings of the fields: the harvest is not yet half-reaped.

3. And as a last consideration, I urge that the Club should give free scope to the instinct which has been guiding its wanderings of late years, and go farther afield. It is easier now, thanks to railways, to travel in numbers a hundred miles, than it was fifty years ago to gather a score of people to one point within a radius of twenty miles of Berwick. I do not see why we should not claim as our territory the whole valley of the Tweed from Berwick to that distant height beyond Tweedsmuir, where

“The Tweed, the Annan, and the Clyde
They a’ rise in ae hill side.”

Here, to say nothing of Northern Northumberland, and East Lothian close at hand, there is scope enough for the exercise of the Club’s energies for generations, without a too frequent return to favourite localities.

Let us not then dream of exhaustion, but pledge ourselves to work in a manner worthy of our fifty years’ history. Then, with no half-hearted wish but with a confident hope, may we say of the Club, *Floreat in sempiternum*; and let me add, in the pious spirit of our founder and of successive presidents, *in majorem Dei gloriam*.

SELKIRK MEETING.

The last meeting of the Club for the season was held at Selkirk on Wednesday, October 11th. The good fortune in weather, which we had enjoyed at the previous meetings of the year, now forsook us. The day proved dull and gloomy throughout; mists trailed along the hill summits, and hid the distant views; and in the afternoon occasional drizzling showers marred the comfort of the party. The unfavourable weather, however, did not interfere with the accomplishment of the day’s programme, nor hinder the members present from enjoying this their second visit to “Ettrick Forest.”

A considerable number appeared at breakfast at 9 o’clock in the County Hotel, and were afterwards conducted by the President over the grounds of the Haining, which had been kindly

thrown open to the Club by Mr Pringle Pattison. On passing the Manse gate attention was directed to the unusual size of many of the leaves of the Ivy covering the garden wall. The Ivy is of the common variety, and hitherto had not presented any peculiarity. This year, however, while all the leaves were large and vigorous, a number grew to an enormous size. Four taken at random, measured as follows:—Greatest breadth, $8\frac{2}{5}$, $7\frac{4}{5}$, $8\frac{4}{5}$, $8\frac{6}{5}$ inches; circumference, measured from tip to tip of the lobes, 23, $23\frac{1}{2}$, 26, and $25\frac{1}{2}$ in. The plants as usual had been stripped of leaves during mild weather in March; immediately after, such young leaves as escaped the pruning-knife expanded and made some progress, thus getting ahead of the rest which were but beginning to escape from the bud. Then followed two or three weeks of cold weather, when growth was arrested. On the return of mild weather the leaves which were ready to take advantage of it shot ahead of their neighbours, and proved conspicuous for size throughout the whole season.

The property of Haining lies for the most part in the parish of Selkirk, but extends southward into the parish of Ashkirk, in Roxburghshire. The mansion-house is in the immediate vicinity of the town of Selkirk, the park-wall forming the boundary of some of the streets. It occupies an elevated situation, about 600 feet above sea level, and is well sheltered by finely grown trees. The principal front has a southerly aspect, and looks out on a small sheet of water, Haining Loch, which is oblong in form, about a third of a mile in length from N. to S., and less than half that in breadth. The banks of the Loch are beautifully wooded, the trees being of various kinds, and admirably disposed to suit the varied and broken surface of the ground. The style of the house is Italian, with porticoes on the two principal elevations; but the full design was never carried into effect, and the building is somewhat disfigured by a portion of the old house, of very plain architecture, which was never taken down, but remains attached to the west side, and contains the kitchen and servants' apartments. The terrace between the front of the house and the Loch is ornamented by a row of marble statues representing various mythological personages. These were brought from the Italian quarries by the late Mr John Pringle, who in this way, and by utilising experience acquired in extensive continental travel, gave to the buildings and grounds of The Haining a unique character for which they were long distinguished. The

grounds, indeed, are of a charming description. Naturally very undulated, and showing many broken outlines, successive proprietors during last century, and the early part of the present, were at great cost, and displayed good taste in beautifying them. In spring, when the trees around the Loch present their varied tints of green, or in autumn, when rich browns and golden yellows pervade the masses of foliage, the house makes a pretty picture with its row of white statues on the terrace gleaming in the sun, and numberless water-fowl, wild and tame, disporting themselves on the green slopes, and on the surface of the water. On occasion of our visit the weather was not of a nature to bring out all the charms of The Haining. The sun refused to shine; the clouds lowered, if they did not send down their contents on our forenoon walk; and passing gusts brought showers of leaves to our feet, reminding us that the glory of the woods was past. Enough was seen, however, to call forth the admiration of the party, and to make them wish their visit had been paid at an earlier period of the year, and that they had formed acquaintance with Haining in its full summer or autumn beauty.

When Haining first comes within the range of documentary evidence, it appears as a demesne attached to the Castle of Selkirk, the site of which is on a wooded knoll between the present house and the highest part of old Selkirk, now known as Castle Street. No vestige of the Castle remains. *At a very early period Haining was granted by the King in tack to the Constable of the Castle. In the end of the 15th century it was in the possession of a Scott, a member of the Buccleuch family. Then in succession it appears to have become the property of the Murrays of Falahill and Philiphaugh; again of the Scotts; and then of the Riddells of Riddell. The last proprietor of the name of Riddell was notable as a persecutor of the Covenanters. After his death Haining passed by purchase to the Pringles of Clifton, of whom the present proprietress, Mrs Pringle Pattison, is the representative. The Pringles of Clifton and Haining, a branch of the Pringles of Galashiels and Smailholm, were a family which produced many men of ability and public spirit. For several generations the head of the family represented Selkirkshire in Parliament; and during last century two of the lairds of Haining

*For many of the antiquarian details in this report I am indebted to T. Craig-Brown, Esq., Selkirk, who has a County History of Selkirkshire nearly ready for publication.

occupied places on the bench in the Court of Session. These were Lord Haining, who passed advocate in 1691, was elevated to the bench in 1729, and died in 1754; and Lord Alemoor, who took his seat as judge in 1748, and died in 1776. On the death in 1842 of Mr Robert Pringle, the last male representative of the Pringles in the direct line, the property of Clifton passed out of the family to Mr Elliot, of Harwood, Haining remaining in possession of Mr Robert Pringle's sister, who had married Mr Archibald Douglas of Edderstone, and Midshiels. Mrs Pringle Douglas's only daughter married Mr John Pattison, and to them the property now belongs.

The principal approach to The Haining was formerly from Castle Street; but now a handsome arched gateway on the road from the Railway Station to the town opens on an avenue, which conducts by a steep ascent to the north side of the house, in which the entrance-door is placed. On passing into the grounds the first object noticed by the party was a large Oak in a slight hollow to the left. The trunk is short, but the horizontal branches into which it divides at a height of about 7 feet, cover a wide space. The girth of the tree 2 feet from the ground is 12 feet 3 inches; and the branches extend from side to side in one direction 80 feet, and in another 75 feet. In contour the tree is hemispherical, but its symmetry has been a little injured by the loss of a branch on one side.

At the House a Black Swan, standing on the grass leisurely preening itself, served as an introduction to the great company of water-fowl which attracted our notice as soon as we reached the banks of the Loch, after passing round the stables, which lie to the west of the House, and are separated from it by a little wooded ravine. These birds form quite a feature of the place, and are carefully protected by Mr Pattison. It was interesting to see the mixture of wild and tame creatures, the generally shy and hidling Water Hen walking fearlessly about and coming close to the House, while the Coot was but less bold, and even the Wild Duck did not take to flight, although it kept well out of reach. Mr Pattison has favoured me with the following list of the water-fowl which are either kept on the Loch, being domesticated, or frequent it, being wild.

“ White Swans.	Rouen Ducks.
Black Do.	White Call Do.
Swan Geese.	Brown Call Do.

White Chinese Geese.	Shieldrakes.
Brown Do. Do.	Black Indian Ducks.
Canada Geese.	Tufted Pochard.
Bean Do.	Red-headed Pochard.
Laughing Do.	Teal.
Egyptian Do.	Grebe.
Brent Do.	Bald-coots.
American Runner Ducks.	Water-Hens.
Pekin Ducks.	Water-Rail.
Cayuga Do.	Hérons.
Aylesbury Do.	Wild Duck, or Mallard."

At the date of our visit the water of the Loch was of a dirty brown colour. It was mentioned that this is invariably the appearance of the water during the summer months, this disagreeable characteristic, which greatly detracts from the pleasantness of the scene, disappearing on the advent of frost. It is difficult to account for the phenomenon. Microscopic examination of the water does not cast much light upon it; for although that reveals the presence in summer of a great quantity of a cateniform conferva, the muddy colour remains unexplained. This conferva multiplies to such an extent as to form a thick yeasty scum in corners into which the wind has drifted it; but it does not seem probable that it can tinge the water brown throughout the whole extent of the loch. It has been suggested that eels, which abound, may stir up the muddy bottom, and thus foul the water; but this seems improbable. The phenomenon invites investigation, and meantime remains of unknown origin. Perch are found in the Loch; but Trout are wanting.

Both the White and the Yellow Water Lily, *Nymphaea alba* and *Nuphar lutea* grow in the Loch, the latter in great abundance. *Typha latifolia* is also found, but certainly introduced. The reeds along the margin are for the most part *Arundo Phragmites*. *Listera ovata* in great quantity, and very vigorous, occupies a damp and shady corner on the S.W. margin. *Polygonum amphibium* grows to an unusual size in shallow water at the N.W. corner, and deserves here to be accounted an ornamental plant, its innumerable dense spikes of pink blossom quite brightening the spot which it frequents, while its broad floating green leaves hide the turbid water from sight.

In other localities within the grounds are found *Trollius Europæus*, *Habenaria viridis*, and *H. chlorantha*, *Carex paniculata*,

C. teretiusecula, and *C. paludosa*, *Botrychium Lunaria*, and *Ophioglossum vulgatum*. A streamlet falling into the Loch on the west side issues from a small sheet of water, the Picmaw Moss, which is a breeding place of the Black-headed Gull, *Larus ridibundus*. In spring this part of the grounds is lively with the vociferous cries of these birds; but our visit was made at a season when not a solitary gull was to be seen, and when it would have been vain to hunt for even a withered remnant of the plants enumerated.

The party, after observing for a time the water-fowl congregated near the House, walked round the Loch, going by the west side under the long limbs of fine beeches which stretch overhead across the path, and dip down to the surface of the water; and returning by the east side where the ground rises more abruptly and to a greater height than on the opposite side, and the path runs among Scotch Firs, Beeches, Planes, Birches, &c., admirably mingled for effect of foliage. Near the N.E. corner of the Loch, and almost on a level with it, is an old well* of fine clear water, to which, and to the water of the Loch the townspeople had at one time a right of access, the ground bordering on the Loch here having been burghal property, and approached by a narrow lane along-side the present garden. This ground, with a small neighbouring field, was purchased from the burgh in 1819 by Mr John Pringle; the lane was shut up, and the citizens lost their right of access to Haining Loch, except on occasions of fire. A more questionable right was but recently in possession of the town of Selkirk, that of running part of its sewage into Haining Loch! The advantage of this arrangement was more than doubtful; for not 200 yards from the end of the sewer was the mouth of the pipe which led a supply of water from the Loch to the Pant-well in the Market Place, the principal public well in the town! We have changed all that. The town is now well supplied with water from another source, and a complete system of drainage renders it unnecessary to send to Haining Loch one drop of that water when it has been converted by use into sewage.

After a brief visit to the Garden, which is close to the N.E. corner of the Loch, the party left The Haining by the upper gate, and passing along Castle Street and down Back Row, reached Dovecot, the residence of one of our number, Dr. Henry Scott

* This Well is sometimes mistaken for St. Mungo's Well, which is a few hundred yards distant, in the Deer Park, and is at present the source of water-supply to the House.

Anderson. Here was pointed out a large Horse-Chestnut, said to have been planted by Mungo Park, who married an aunt of Dr. Anderson. Whether the great traveller planted the tree or not, it goes by his name, and serves, with his statue close by, to keep alive the memory of his connection with Selkirk, in which parish he was born, and where he served his apprenticeship as a surgeon with Dr. Anderson's grandfather.

While a few of the party remained at Dovecot to inspect some interesting relics of Mungo Park, others walked on to examine two trees which had been struck by lightning during a severe and prolonged thunder-storm, which passed over the town on Saturday, June 24th. The trees are within the grounds of Knowepark, a villa belonging to Mr Richard Turnbull, manufacturer, and close to a low hawthorn hedge separating Knowepark from Parkend, the house of Mr Scott, Rector of the Grammar School. The tree which has been most injured is a Willow, probably *Salix Russelliana*, overhanging the public road, and at the end of the hedge, which slopes upward to the other tree, an Ash, about 56 feet distant. The rise of the ground between the two trees is 6 or 7 feet, so that although the Willow is 45 feet in height and the Ash only 35, their summits are nearly on a level. The Willow measures 7 feet 6 in. in girth, and at 8½ feet from the ground divides into four principal branches, one of them continuing the trunk upwards, the other three sloping outwards at various angles. All the branches were injured, but the chief injury was done to the upright one. The leaves on its upper twigs were blackened and destroyed, the wood in several places split to the heart, and great sheets of the bark torn off, and scattered to a considerable distance. At the root under the main branch a large hole was scooped in the ground. But the feature of chief interest is connected with the other tree. This is an Ash of two trunks springing from one root, one of the trunks, 4 ft. 4 in. in girth, touching the hedge. It showed, immediately after the storm, a narrow slit as if cut with a knife on the trunk next the hedge. The cut began at the height of the hedge 3½ feet from the ground, and ran in a straight line for five feet to the point where the first branch projected from the main trunk. There it stopped, and neither on bark nor foliage above, nor on any other part of the tree was there mark of lightning. It was suggested that while the principal downward force of the lightning had expended itself on the Willow, shattering

and blighting it, an upward current, intense enough at starting to cut the bark, had flowed up the Ash, but had divided among its branches, and passed off through the twigs and foilage without leaving trace of its dangerous presence. By the time we visited the trees the bark of the Ash had become slightly detached from the wood so that the wound gaped a little, instead of presenting the sharp clean cut which at first attracted notice.

On re-assembling at the Hotel at 12 o'clock the party was reinforced by several members, who had arrived by the midday train. Notwithstanding the threatening aspect of the weather it was resolved to proceed with the remainder of the day's programme; and by half-past twelve almost all the members present were seated in two large waggonettes, and left the town for a drive up Yarrow as far as Hangingshaw. The route was for the most part the same with that traversed during the former visit of the Club, on June 28th, 1876. A pleasant account of that day's proceedings is given by the President of the year, Mr Campbell Swinton (*Proc. of B.N.C. vol. VIII. pp. 12-17.*), and it is unnecessary to narrate here what is well told by his flowing pen. We drove past Philiphaugh House, up the north-east bank of the Yarrow by Foulshiels (the birthplace of Mungo Park), and Broadmeadows, to Hangingshaw. Leaving the grounds of Hangingshaw by the upper gate, we returned under the dark shadow of Blackandro, whose wooded steep was shrouded in trailing mist, and entered the Bowhill grounds at the West Lodge. Newark Castle was passed on the way to Bowhill House, from which the drive through the old wood was followed to Colin's Bridge, where the Ettrick road was reached, and whence the three miles down the valley to Selkirk were soon traversed—Carterhaugh, with its fairy legend of Tamlane, and Philiphaugh, with its memories of triumphant Covenanters, and a ruined cause in the fugitive Marquis of Montrose, lying in full view on the opposite side of the river. Even under the gloomy sky overhead, which threatened every moment to discharge a deluge of rain, the drive was enjoyed; but in but in a bright summer day this is one of the most delightful drives in the south of Scotland, presenting many charming views along the narrow wooded valleys, and overflowing with romantic associations. It traverses the scenes so tunefully sung by Sir Walter Scott in the closing lines of the "*Lay of the Last Minstrel*," in which he tells how the advent of summer rekindled the poetic

fire in the heart of "the aged Harper." The wand of the enchanter has touched the vales of Ettrick and Yarrow, and not least those spots whose names he has made familiar when he sings :—

"But still

When summer smiled on sweet Bowhill,
And July's eve with balmy breath,
Waved the blue-bells on Newark-heath ;
When throstles sung in Harehead-shaw,
And corn was green on Carterhaugh,
And flourished, broad, Blackandro's oak,
The aged Harper's soul awoke !
Then would he sing achievements high,
And circumstance of chivalry,
Till the rapt traveller would stay,
Forgetful of the closing day ;
And noble youths, the strain to hear,
Forsook the hunting of the deer ;
And Yarrow, as he rolled along,
Bore burden to the Minstrel song."

During our drive frequent halts were made that the many historical and romantic associations connected with the ground traversed and the places seen might be explained. In connection with the battle of Philiphaugh, fought in 1645, and in which the troops commanded by Montrose were routed with great slaughter by the covenanting general, Leslie, it was stated on the authority of Mr Craig Brown that the principal struggle must have taken place about a mile from Selkirk on the haugh where now stands the house called Lauriston Villa, and where formerly stood the mansion-house of Philiphaugh. The monument near Philiphaugh House, generally accepted by tourists as on the site of the battle, was erected by Sir John Murray simply in commemoration of the fight, and no more marks the site of the battle than does the monument on Peniel Heugh the field of Waterloo. On the day after the battle a number of prisoners were executed in cold blood by the victorious Covenanters, and the scene of this cruel and unworthy sequel to the battle has been designated "Slain men's Lee." Mr Craig Brown believes that the spot is to be found within the Bowhill grounds close to the present School at Newark.

On passing the farm of Harehead, a dry bank by the roadside was pointed out, where the glow-worm, (*Lampyr's noctiluca*), has been frequently seen.

Hangingshaw had not been previously visited by the Club. It is now a small, but comfortable and snugly situated country

house; but the Hangingshaw of last century is described as having been the finest mansion in the south of Scotland, full of costly furniture and valuable curiosities. It did not occupy the site of the present house, and was accidentally burned to the ground between 1764 and 1779,—the exact date I have been unable to ascertain. Hangingshaw was the ancestral seat of the Murrays of Philiphaugh, their possession of the property dating almost from the period when it ceased to be, like the other lands in the "Forest," in the immediate possession of the King. The property passed by purchase into the hands of the father of the present owner, James Johnstone, Esq., of Alva, Stirlingshire. The avenue leading to the house is of great length, and presents some of the finest trees in the district, two rows of lofty beeches being especially worthy of notice. Across the Yarrow, right opposite Hangingshaw, Newark Hill, which is embraced within the Bowhill policies, falls with an abrupt descent into the valley. The portion of the Hill facing the Yarrow is known as Blackandro', and is densely clothed with fine trees, Oak, Scotch Fir, Beech, Birch, Larch, &c. The steep slope behind Hangingshaw, covered with Oaks, answers to Blackandro'; and this part of the vale of Yarrow is not unworthy to be compared with the narrow valleys and pine clad heights of the Black Forest in south-western Germany.

In the course of our drive localities were pointed out where several rare plants are found. On the haugh by the Ettrick about two miles above Selkirk a *Hieracium* was picked up during an excursion of Professor Balfour's class in June, 1868. It was figured and described by the Professor under the name of *H. collinum* in the Trans. of the Ed. Bot. Soc. vol. x., part 1., p. 17. The rough ground where it grew has now been brought under the plough, and the plant has disappeared. *Scolopendrium vulgare* has also ceased to be a plant of the district, the few tufts which grew on Selkirk Bridge having been destroyed in the process of widening the bridge. *Lathræa squamaria* grows plentifully under an old Ash at Foulshiels, and among Poplars at the lower end of Howden haugh. *Chrysosplenium alternifolium*, very uncommon in the district, is found on the steep banks of the Yarrow below Broadmeadows Lodge. *Campanula latifolia*, *Carduus heterophyllus*, *Circea Lutetiana*, *Adoxa moschatellina*, *Scilla nutans*, *Melica uniflora*, &c., are abundant by the Yarrow along "the Duchess' Walk." *Trientalis Europæa* grows freely on "Nathan's Knowe," a spot

denuded of trees on the height behind Bowhill, which stands out conspicuous like the tonsure-baldness of a priest. *Neottia Nidus-Avis* is found occasionally under trees in the Bowhill grounds; where also in suitable localities grow *Pyrola minor*, *Listera ovata* and *cordata*, *Ophioglossum vulgatum*, and *Botrychium Lunaria*. *Blysmus compressus* was picked up many years ago in a marshy spot between the farms of Middlestead and Hartwoodmyres, and near the site of an ancient camp which was pointed out on our drive down the Ettrick. Attention was called in passing to the Mote hill on the farm of Howden. Its summit is encircled by an entrenchment.

The only zoological fact worth recording during the day was the occurrence of a flock of Siskins, (*Carduelis Spinus*), which rose from an Alder thicket on the left side of the road, when we were within half a mile of Howden Farm. They were seen but a few moments as we drove past rapidly, and some doubt remained as to their being Siskins. The Haining gamekeeper, however, whom I had asked to look out for the flock, brought me in a few days a pretty specimen of a young bird, one of a flock which he found frequenting the Alders where we had seen them. It is worth recording that Macgillivray, who speaks of the bird as rare in Scotland, mentions having found it in Selkirkshire. "On the 5th September, 1832," he says, "I saw a considerable number in a fir-wood, in Ettrickdale, in Selkirkshire. They were in the tops of the trees, accompanied by Grey Flycatchers, Golden-crested Wrens, and Black Titmice; but I succeeded in shooting three individuals. But in no other part of Scotland have I ever seen this species, which I must consequently infer to be rare in that country." (Macgillivray's British Birds, Vol. III., p. 402.)

The Hotel was reached in time to constitute the annual business meeting at 3 o'clock. In terms of the motion, of which he had given notice at the Corbridge meeting, Sir Walter Elliot proposed that in future only sufficient copies of the Proceedings should be printed to give one copy to each member, and a few extra copies, to be sold at the rate of 2s. to members, and 4s. to non-members. This motion having been seconded, Mr Turnbull moved that the printing of the Proceedings continue as at present; which motion was also seconded. On a vote 10 supported Sir Walter Elliot's motion, and 9 Mr Turnbull's. When the result was declared, several members stated that they had abstained

from voting through a misunderstanding as to the effect of the first motion, and it was agreed that another vote should be taken, Yes or No. for a change on the present system, when the negative was carried by a large majority.*

Sir Walter Elliot also moved that Mr. W. B. Boyd, and Mr. Muirhead be added to the Committee on the organization of the work of the Club; and that the Committee be requested to prepare a Report, to be printed and circulated among the members, with the view of coming to a decision on the subject. The motion having been seconded by Mr. Bigge, was unanimously agreed to.

New members to the number of 23, who had been proposed during the year, inclusive of those nominated at Selkirk, were now elected, and their names were added to the list of the Club.

George P. Hughes, Esq., of Middleton Hall, Wooler, was elected President for next year. Mr Hughes is a member of the Club of 26 years' standing, and has on several occasions been the Club's representative at the meetings of the British Association.

The meetings of the Club for next year were fixed for Leitholm and Eccles, Holy Island, Aberlady, St. Mary's Loch, Wooler and Cheviots, and Berwick.

The President's Address was then delivered. There was time for the reading only of part of the Haddington Meeting, the whole of the Jedburgh meeting, and the conclusion.

In the morning, and in the afternoon when members were assembling for the business meeting, numerous objects of interest laid out on tables in the room, were examined and explained.

With the permission of the Town Council of Selkirk, Mr Rodger, the Senior Town Clerk, exhibited a bundle of Charters granted by James V., confirming the privileges of the Town. The older Charters, granted by David I., had been destroyed during an invasion of the English. The documents exhibited were:—

1. Charter by King James V. to the Burgesses and Community of the Burgh of Selkirk, confirming to them the said Burgh, with

*It has been ascertained that restricting the printing of copies to one number for each member, copies for Societies, etc., being prepared as usual, would effect a saving of £20 per annum. Some arrangement of this sort is required to be made. More papers have been received for the three past years than the funds admit of printing. It is necessary also to supply illustrations for valuable articles that have been offered. Several drawings have been presented by friends of the Club, but for want of means only a few of them can be engraved at one time.—J. H.

all the lands, rents, possessions, commonities, liberties, and privileges formerly enjoyed and possessed by them. 4th March, 1535.

2. Charter by King James V. to the Burgesses and Community of the Burgh of Selkirk, confirming *verbatim* to them Charter of the said Burgh, 4th March, 1535; Licence to till yearly 1000 acres of their common lands, 20th June, 1536; and Grant of an yearly Fair, 2nd September, 1536. 8th April, 1538.

3. Charter by James V. to the Bailies and Community of the Burgh of Selkirk, empowering them to elect a Provost yearly, and conferring upon the said Provost and Bailies the office of Sheriff within the said Burgh. 2nd October, 1540.

4. Copy of an Act of Parliament, 28th June, 1633, confirming the above three Charters.

Mr Rodger also exhibited the Silver Cup of the Burgh of Selkirk, used now on the rare occasions when distinguished public men are received as freemen of the Town, and installed in all the privileges of its Burgesses by the quaint ceremony of "licking the birse." The Cup was presented to the town by the fourth Duke of Buccleugh after the famous "Carterhaugh Ba'," played on Monday, 4th Dec., 1815. After describing the "Ba'," which had nearly ended in a serious melee between the contending parties, the towns-folk of Selkirk and the men of Ettrick and Yarrow, Lockhart says in his "Life of Scott,"—

"The good Duke of Buccleugh's solitary exemption from these heats of Carterhaugh, might read a significant lesson to minor politicians of all parties on more important scenes. In pursuance of the same peace-making spirit, he appears to have been desirous of doing something gratifying to the men of the town of Selkirk, who had on this occasion taken the field against his Yarrow tenantry. His Grace consulted Scott about the design of a piece of plate to be presented to their community; and his letter on this weighty subject must not be omitted in the memoirs of a Sheriff of Selkirkshire:—

"To His Grace the Duke of Buccleugh, &c., Bowhill.

"Edinburgh, Thursday (Dec. 1815).

"My dear Lord,

"I have proceeded in my commission about the cup. It will be a very handsome one; but I am still puzzled to dispose of the birse in a becoming manner. It is a most unmanageable decoration. I tried it upright on the top of the cup; it looked like a shaving-brush, and the goblet might be intended to make the lather. Then I thought I had a brilliant idea. The arms of Selkirk are a female seated on a sarcophagus, decorated with the arms of Scotland, which will make a beautiful top to the cup. So I thought of putting the birse into the lady's other hand; but, alas! it looked so precisely like the rod of chastisement uplifted over the poor child, that I laughed at the drawing for half-an-hour. Next, I tried to take off the castigatory appearance by inserting the bristles in a kind of handle; but then it looked as if the poor woman had been engaged in the capacities of housemaid and child-keeper at once,

and, fatigued with her double duty, had sat down on the wine-cooler, with the broom in one hand and the bairn in the other. At length, after some conference with Charles Sharpe, I have hit on a plan, which, I think, will look very well if tolerably executed, namely to have the lady seated in due form on the top of the lid (which will look handsome and will be well taken), and to have a thistle wreathed around the sarcophagus and rising above her head, and from the top of the thistle shall proceed the birse. I will bring a drawing with me, and they shall get the cup ready in the meantime. I hope to be at Abbotsford on Monday night, to stay for a week."

In a postscript he adds:—"Your Grace will be so good as understand that the thistle—the top of which is garnished with the bristle—is entirely detached in working from the figure, and slips into a socket. The following lines are humbly suggested for a motto, being taken from an ancient Scottish canzonetta, unless the Yarrow committee can find any better:—

'The souter gae the sow a kiss;
Grumph! quo' the sow, it's a' for my birse.'"

Mr James B. Brown, Thornfield, Selkirk, exhibited the "Flodden Flag;" and an old volume of the Weavers' Incorporation of the Town. The story of the Flag is told by Mr Campbell Swinton at p. 15 of the volume of the Proceedings already referred to; as well as that of another object exhibited, an Andrew Ferrara sword, now in the possession of Mr W. H. Brydone, manufacturer, Selkirk, which is said to have been borne by an ancestor of Mr Brydone in the disastrous Battle of Flodden.

Mr T. Craig-Brown exhibited the Deacon's Staff of the Corporation of Shoemakers, and the curious old Halberd carried in former days in holiday processions, and which bears the inscription, "God bless the King and the gentil treed"; and also a volume of the Minutes of the Corporation,—the "Sutors of Selkirk."

Dr. Anderson shewed an interesting relic,—a small volume containing a metrical version of the Psalms, with Watts' Hymns appended, which had belonged to his uncle, Dr. Alex. Anderson, who accompanied Mungo Park in his last and fatal expedition to Africa. Anderson was cut off by fever before Park reached the Niger, but the little volume had been preserved by Park. On the traveller's death it fell into the hands of the natives, one of whom was wearing it as an amulet, when Richard Lander recovered it, and brought it back to England.

From the Haining Mr Pattison sent a pair of Horns of the Red Deer, which had been found in Linton Moss, Roxburghshire; and a Skull of *Bos primigenius*. In length each Deer Horn is 3 feet 8 inches, and carries 7 points, one of them forked. The brow-antler is 15 inches in length; the girth immediately above the

brow-antler $7\frac{1}{2}$ inches; and the spread of the horns from point to point 4 feet 1 inch. The tips of the cores on the Ox skull are broken off; still they show a spread of 2 feet, 6 inches. The length of the skull is 1 foot 10 inches, and the girth of the core, above the corrugations at the base, 12 inches.

The President exhibited a Black-letter Bible, bearing on the New Testament title-page to have been printed at London in 1583 by Christopher Barker. He stated that the volume, which is in excellent preservation, at one time belonged to Dr. John Barclay, the celebrated lecturer on Anatomy in Edinburgh; and that he had reason to believe it was the Bible used in the Church of Crail, when Archbishop Sharp was minister of that Parish. He also showed a copy of Macgillivray's Natural History of Deeside, a finely printed work, of which a limited number of copies had been printed by command of the Queen, and presented to public bodies and a few private individuals by the late Prince Consort. Several volumes on Ornithology, and Botany, and copies of Geological and Meteorological Reports, issued by the Government of New Zealand, under the editorial care of Dr. Hector, Director of the Geological Survey in that country, were laid on the table, in illustration of the enlightened zeal displayed by the Colony in the promotion of Science. It would rejoice the heart of every scientific man if the Government of this country did as much in proportion to its resources for the promotion of science as the Government of New Zealand.

A box containing specimens of Fungi from the Pistol Plantations, Blackadder, had been sent by post by Dr. Stuart, Chirnside, who was himself unable to be present. The specimens had been considerably injured in transit, but were submitted to Mr Paul, who identified the following:—1. *Agaricus laccatus*, var. *amethystinus*; 2. *Ag. fascicularis*; 3. *Ag. melleus*; 4. *Leotia lubrica*; 5. *Peziza onotica*; 6. *Cantharellus tubæformis*. Dr. Stuart reported that he had sent a collection from the same locality to Mr Worthington G. Smith, F.L.S., who had detected among them, 1. *Agaricus maculatus*,—a beautiful pure ivory-white mushroom, supposed to be poisonous. It becomes spotted with blue when decaying; 2. *Ag. melleus*; 3. *Ag. laccatus*; 4. *Ag. laccatus*, var. *amethystinus*; 5. *Ag. æruginosus*; 6. *Ag. butyraceus*; 7. *Ag. strangulatus*; 8. *Ag. epipterygius*; 9. *Rassula emetica*; 10. *Peziza leporina*, a great rarity, found on two occasions, on sides of ditches; 11. *Leotia lubrica*; 12. *Marasmius peronatus*; 13.

Cantharellus tubæformis, Fries. This last Mr Paul has found at Loch Awe. During the day's excursion, *Coprinus comatus*, which is edible, was seen in great perfection and abundance between Haining Loch and the garden wall; *Hygrophorus chlorophanus*, Fries, was found at Bowhill, on the lawn, close by the house.

Soon after 4 o'clock dinner was announced, and the following 27 gentlemen sat down at table:—Rev. James Farquharson, M.A., Selkirk, President; Dr. F. Douglas, and Mr Hardy, Secretaries; Sir Walter Elliott, F.R.S., etc.; Revs. John F. Bigge, Stamfordham; Paton J. Gloag, D.D., Galashiels; D. Maclean, Allanton; D. Paul, Roxburgh; W. Snodgrass, D.D., Canonbie; R. H. Williamson, Whickham; H. S. Anderson, M.D., Selkirk; Messrs Charles Anderson, Jedburgh; George Anderson, Heatherlie Hill, Selkirk; Wm. L. Blaikie, Holydean; James Bogie, Edinburgh; A. H. Borthwick, Melrose; John B. Boyd, Cherrytrees; Wm. B. Boyd, Faldonside; James B. Brown, Selkirk; T. Craig Brown, Selkirk; Wm. Currie, Linthill; W. H. Johnson, Edinburgh; George Muirhead, Paxton; Robert Renton, Fans; Peter Rodger, Senior Town Clerk, Selkirk; John Turnbull, Abbey St. Bathans; and James Wood, Galashiels.

After dinner a most interesting paper on the "Sutors of Selkirk" was read by Mr T. Craig Brown, for which he received the thanks of the Club. He suggested the probability of the trade being a survival from the time before the death of Alexander III., when all the skins from Ettrick Forest were brought to Selkirk to be tanned by the king's tanner. This was confirmed by the mention in a papal letter (recorded in the "Liber de Calchou") of a portion of the lands of Selkirk called "Sutorcroft." Although there was no reason to believe that the trade reached great dimensions, the fact that there were 26 masters when the Corporation was formed in 1609, pointed to a considerable sale of shoes and boots outside the burgh. Mention was made of the heavy requisition of shoes from the sutors of Selkirk by the rebel armies in 1715, and in 1745. After reading copious extracts from the Records of the craft, which are still for the most part extant, Mr Craig Brown traced its gradual decay until 1832, when the Reform Bill, by depriving it of its votes in the election of a member of Parliament, dealt it a fatal blow.

The party broke up in time to allow of the members taking tea at Dovecot and the Manse, before those from a distance left for home by the 7.25 train.

Obituary Notices. By JAMES HARDY.

NINE of the Club's Members have passed away during the past year; among them several men of acknowledged ability and reputation in science and literature; and two of them active participators in the Club's researches, known to every one, and generally lamented. Within a very limited space, I can do little more than enumerate them, with only meagre allusions to their biographies culled from a variety of sources. 1. Mr Thomas Robertson, died at Thornhill, Alnwick, Feb. 22nd, 1882, in his 77th year. Mr T. Robertson filled no small space in the annals of his native town. In his early years, London was selected as a field for improvement. While there he assisted his fellow townsman, "Jemmy Catnach," in the production of the Seven Dials literature which was so plentifully scattered over the land. Returning to Alnwick, his energies were devoted to the formation of a business in which his innate taste and perception of the beautiful found full play. The mansions of the county gentry are filled with specimens of his skill; and Alnwick Castle, rich in the glories of Italian art, owes not a few of its treasures to him. With "Algernon the Magnificent," he was an especial favourite, his inventive genius and ready resources being available in all emergencies. With his native town and its institutions he was all along closely identified. He was an early, if not one of the oldest members of the Mechanics' Institute, founded in 1824; of the Common Council of the Borough; and also of the old Town Commission. To these, as also to the Infirmary, the Savings' Bank, and to the Burial Board his services were at all times freely rendered. His ready wit, his humour, and unflinching tact, made him an especial favourite. He was buried in Alnwick Cemetery, his body being accompanied to the grave by the Common Council, and a great number of the tradesmen of the town. Mr Robertson became a member of the Club, Sept. 29th, 1875. 2. Mr Algernon Freire-Marreco, M.A., F.C.S., Professor of Chemistry in the University of Durham College of Physical Science, Newcastle-upon-Tyne; born at North Shields in 1837; died 28th February, 1882; became a member, Sept. 25th, 1873. Professor Lebour's friendly commemoration of his late colleague will be read with much interest. 2. Lord Henry Francis Charles Kerr, Huntly-burn, Melrose, died 7th March, 1882, in his 82nd year, having been born on the 17th August, 1800. He was the

third son of the sixth, and uncle of the late as well as the present Marquis of Lothian. He became a member, July 30th, 1863. Meetings of the Club near Melrose received the cordial welcome of Lord Henry Kerr. 4. Mr John Forster Baird of Bowmont Hill, Northumberland, Barrister, died at Hampstead, London, March 15th, 1882, aged 59. He was the son of the late John Forster Baird, Newcastle-upon-Tyne. He became a member, Sept. 29th, 1875. 5. Mr James Aitchison, bailiff to his Grace the Duke of Northumberland, died at Alnwick, May 6th, 1882, aged 62 years. Mr Aitchison was long manager to the Rev. R. W. Bosanquet of Rock Hall, in the breeding of Leicester sheep. He was much respected by the tenantry on the Alnwick estate. He became a member, Oct. 31st, 1877. 6. Colville Brown, M.D., formerly of Berwick, died at Winnipeg, Manitoba, Canada, 6th May, 1882, aged 43. He was gold medallist in surgery in the University of Edinburgh. He had practised for about 20 years very successfully in Berwick, when he left on account of his health, for Winnipeg. As a keen sportsman and naturalist he had many friends, and on one occasion had the dignity of Sheriff of Berwick conferred on him. He was a frequent and popular contributor to "The Lancet." His death created deep sorrow throughout the Borders, his kindly genial disposition and high abilities having greatly endeared him. He became a member, May 25th, 1865. We have only one short notice from his pen; "On the Change of Colour in the Feathers of the head of the Black-headed Gull," in Proc. vol. VIII. p. 531. Dr. Paxton informs me that Dr. Brown was born at Yetholm, and was taken to Gatherick, a farm on the Ford estate, when ten months old, where he was brought up in the house of his grandfather, Mr Lockie, the tenant, and there he resided, with intervals in Edinburgh, until he settled in Tweedmouth as a medical man. When Dr. Brown was a student, he frequently came over to Norham, and saw a little practice with Dr. Paxton, and got a little experience in making up medicines from his prescriptions. After settling in Tweedmouth, Dr. Brown married the youngest daughter of the late Mr Robert Carr, farmer of Felkington, a near neighbour, and then crossed the water to Berwick. The family has now quitted Gatherick, his brother James having entered to a lease of Spindleston. 7. Mr John Sadler, Curator of the Royal Botanic Gardens, Edinburgh, died 9th December, 1882, aged 46. Mr Sadler was an acute practical botanist, an

able writer, and a good lecturer, and was greatly esteemed for his amiable qualities. His sudden removal excited a widely spread feeling of regret. His membership only dates from Oct. 13th, 1880. His friends Dr. William Craig and Dr. Charles Stuart have given commemorative notices, which will be valued by the Berwickshire, as well as by the Alpine Club, of which he was "the life and soul." 8. Mr William Hugh Logan, formerly banker at Berwick-upon-Tweed, and joint lessee of the Theatre Royal, Edinburgh, died 23rd Dec., 1882, at 2 Leopold Place, Edinburgh, aged 66. Mr Logan was a successful dramatic writer. He also wrote two professional works—"The Scottish Banker"—and a volume on the law and practice of Bills of Exchange. His principal work is entitled "Pedlar's Pack of Ballads and Songs, with Illustrative Notes," Edinburgh, 1869, 480 pages, which is of value to collectors. The preface of this is dated, Berwick-on-Tweed, 31st Dec., 1868. It had been intended to form one of the Abbotsford Club series of publications. Along with Mr James Maidment he edited "Works of the Dramatists of the Restoration," 14 vols; and Mr Maidment likewise had his co-operation in re-producing numerous rare tractates of antiquarian value. Both he and Mr Maidment were correspondents to "Notes and Queries," and both also participated in the authorship of "Wilson's Tales of the Borders." For this universally known work, Mr Logan wrote tales which filled fifteen numbers; and his friends Mr Maidment and Theodore (afterwards Sir Theodore) Martin filled two numbers each. He was also a frequent contributor to periodical literature. When resident at Berwick, Mr Logan was twice elected Mayor, served the office of Sheriff, and was a Justice of the Peace for the Borough. He became a member of the Club, May 1st, 1850. 9. Mr William Stevenson, Accountant, Dunse, died at 6 Moss Street, Paisley, 20th January, 1883, aged 62. Mr Stevenson was an accomplished self-taught geologist, archæologist, and meteorologist. He had thoroughly studied the rock formations and the physical geography of Berwickshire, and as is well known, had completed a work on the geology of the district. His geological map of Berwickshire, which had lent its aid to the Ordnance Survey, he had professed his willingness to allow the Club to publish. He became a member, Sept. 7th, 1853; was President in 1864; and contributed several valuable papers to the "Proceedings"; but unfortunately these are fewer than might have

been anticipated. He was a very constant attendant on meetings, and was a general favourite among the members. Personally he was of a most genial disposition and unassuming manners, and these qualities, no less than the vivacity of his conversation, and the accuracy of his scientific information rendered him one of the most agreeable of friends. It is to be hoped that an account of the life-work of this modest and not fully appreciated cultivator of science will appear in next number of the "Proceedings" of the Club to which he was so much attached.

J. H.

IN MEMORIAM.

The late Professor Algernon Freire-Marreco, M.A., F.C.S.

THE lives of scientific men are seldom eventful, and that of the eminent chemist whose name stands at the head of this notice was no exception to the rule. Born at North Shields in 1837, Professor Marreco may be said to have spent his whole life in the North Country, if we except a few early years sojourn in the Peninsula—the native land of his father, who was a distinguished member of the Marreco branch of the old Portuguese family of Freire. From infancy almost Mr Freire-Marreco showed a predilection for solid reading, and at the *Escola Polytechnica*, of Lisbon, his love of the physical sciences was fostered in a manner which, at that time, would have been impossible in any English school. The effect of this foreign training was marked through life. To it he owed an almost colloquial knowledge of the classical languages, and equally sound knowledge of the chief modern European tongues, a wonderful drilling in mental arithmetic which an abnormally retentive memory enabled him to profit by to the utmost, and lastly a passion for Chemistry.

On returning to England, when still quite a youth, he was for a short time in the well-known Newcastle school then conducted by Dr. Collingwood Bruce, the historian of the Roman Wall. Here he anglicized and enlarged the knowledge he had acquired abroad, and preserving the taste for science which had come to him as a child, he entered the laboratories of the late Dr. Richardson, who was in those days the leading analyst in the North of England. It is clear that Dr. Richardson knew a good man when he got one, for we soon find the young chemist engaged in the most responsible work, and entrusted with investi-

gations of the utmost importance not only as to certain points connected with the great industries of the district, but often also as to judicial cases involving questions of life and death. As early as 1859, Dr. Richardson, who till his death held the position of Reader in Chemistry in the University of Durham, appointed Mr Marreco to act as his deputy in that office, as well as in those of Lecturer in Chemistry and Demonstrator in Practical Chemistry in the Newcastle College of Medicine. In time Mr Marreco entered into partnership with Dr. Richardson, and at the death of the latter, in 1867, was formally appointed to fill the posts of which he had been *de facto* the holder for more than eight years.

Between the years 1859 and 1871, there was probably no branch of applied chemistry in which Mr Marreco was not consulted, and he was—had money-making been his object—in a fair way to obtain the largest and most lucrative practice as a consulting analyst in the North of England. But in the last-named year, 1871, the University of Durham College of Science was founded, and Mr Marreco, throwing business to the winds, became a candidate for, and obtained against an honourable array of well-known chemists, the Chair of Chemistry in that Institution. From that moment Professor Freire-Marreco's true life-work may be said to have begun. He had the most exalted views as to the aims and objects of the great science colleges of which that at Newcastle was one of the first, and to the last day of his life he acted unflinchingly up to his ideal. A professor, he thought, should give himself up entirely to his teaching, and accordingly from the day of his election to the new Professorship he never accepted remuneration for any work unconnected with the College curriculum. Rightly or wrongly, he held that the whole time of a professor belonged to his College. Even time spent in original work he regarded as, to some extent, stolen time which could be better employed in the services of his post. To this view of his, consistently held to the end, must be ascribed the limited number of *published* records of researches which Professor Marreco has left behind him. Nevertheless among those papers which he did consent to write, are some of the highest value, such, for instance, as those in which are detailed the results of an elaborate series of experiments conducted by him, to investigate the influence of coal-dust on colliery explosions.

But if Professor Marreco did not print much, he *did* much to redeem the country from the charge of being forced to go to Ger-

many for men competent to manage our large chemical works. Every year young men left his laboratories fully equipped for real work, and with nothing to fear from foreign competition; and in the world of industrial chemistry his well-weighed recommendations became time after time passports to positions of commercial and scientific eminence. Indeed one of Professor Marreco's chief characteristics was his love for his students. All old students of his will bear us out when we say, that in the late Professor of Chemistry at the Newcastle College, they found not only a teacher of singular patience, energy, and ability, but also a friend whose interest in their welfare went with them far beyond the College walls.

But it was not only as a teacher, or as a thoughtful friend in after life that Professor Marreco will be remembered. No one could keep order in a lecture room more effectively than he, but no one, at the same time could sympathize more thoroughly with the vagaries of students. Students, we all know, are apt to get into scrapes—no one was more ready to help them out of them than the Chemical Professor. Students cannot be always working. Though no longer school-boys they still require a little play, and the play of "men" is apt to be more costly than the play of boys. Hence subscriptions for cricket and football clubs, soirées, athletic sports, etc. In all these things the late Professor was ever foremost with purse and experience. His enthusiasm in all connected with the success of "his men," in examination or in races, in the cricket field or in the hard battle of life, was indeed something to see and remember.

In furthering the local interests of his own branches of science he was always active. He may be said to have founded the Newcastle Chemical Society, of which, after having steered it through the dangers of its early years as Secretary, he became President in 1876. He was likewise one of the founders of the Northern Photographic Association. For many years he was Secretary of the Natural History Society of Northumberland and Durham. He was a member of the first Council of the Chemical Institute of Great Britain, and had much to do with its formation; he was a Fellow of the Chemical Society of Great Britain and of that of Berlin, and an Honorary Member of the North of England Institute of Mining Engineers, to whose Transactions he contributed some of his more important papers. He was an honorary Master of Arts of Durham. But honours were of small account to

him, and it was but rarely that he allowed the prefix "Professor" to which he was entitled, to be used before his name. He was a staunch Conservative in politics, but his conservatism was as liberal as possible on many questions. Thus in the matter of the education of women, Professor Marreco was a regular correspondent of Miss Jex-Blake, and practically sympathized both in money and influence with her efforts to place women on an equality with men, as to the attainment of medical and other degrees. He had taught more than one lady-student himself, and was always most proud of the academic honours which they earned.

To close this brief notice of a remarkable man without mentioning some of the personal characteristics which endeared him to his friends, would be to leave it imperfect indeed, but these cannot be fully dwelt upon here. Those who knew him will not need to be reminded of the bright searching eye, the quick repartee, and everflowing humour, which were his when in health, nor of the scathing words of sarcasm which any sham or mean action brought, quick as thought, to his lips. But these things must be spoken of to those who never saw him and who never heard his admirably terse sentences full of sense and wit, pouring forth in choicest English even in the most careless talk.

For though the son of a foreigner, Professor Marreco was in most things a thorough Englishman, a fact not to be wondered at when we remember his almost constant residence in this country, and the fact that, on his mother's side, he belonged to the great engineering North Country family of the Harrisons.

Professor Marreco died on the 28th of February, 1882, of a painful and protracted internal disease, borne with a patience which surprised those acquaintances who knew only the quick temper which distinguished him, but which scarcely surprised those friends who also knew the depth of character and strength of will which were his in an equally eminent degree. In accordance with his directions no one was asked to his funeral, but notwithstanding this the cortege which accompanied his remains to the grave was one, we believe, by reason of the number and standing of those of whom it was composed, unparalleled in the annals of Newcastle.

It is gratifying to know that a medal to be called the "Freire-Marreco Medal," with an accompanying valuable prize of books, will be given annually to the best chemical student in the College

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of Physical Science, and that thus the name of one whose whole heart was in the success of that College will be linked in perpetuity with its progress. G. A. LEBOUR.

The late Mr John Sadler, Curator of the Royal Botanic Garden and Royal Arboretum, Edinburgh. By WILLIAM CRAIG, M.D., F.R.S.E., &c.

By the death of Mr John Sadler, Curator of the Royal Botanic Garden, Edinburgh, the Club has lost one of its most distinguished as well as one of its most esteemed members.

John Sadler was born at Gibleston, Carnbee, Fifeshire, on 3rd February, 1837. His parents removed before he was two years of age to Moncrieffe House, near Perth, where his early years were spent. His father was gardener to the late Sir Thomas Moncrieffe, Bart. of Moncrieffe House. John received his education partly at the parish school of Dunbarnie, and partly at the Perth Academy, at both of which seminaries he proved himself a distinguished pupil.

After finishing his school education he assisted his father for some years in the garden at Moncrieffe House, and thus became practically acquainted with the cultivation of plants and their best mode of propagation, knowledge which he turned to good account many years afterwards when he was appointed Curator of the Royal Botanic Garden at Edinburgh.

From his earliest years he appears to have been an ardent student of botanical science. Endowed with talents of a very high order, and possessing excellent opportunities for prosecuting his favourite study, he soon became distinguished for a knowledge of native plants. There is abundant evidence in his writings that the flora of Perthshire was with him a favourite study from his earliest years. His innate love of native plants found ample scope for development, in studying the wild flowers of Moncrieffe Hill and the surrounding country. To use his own words written twenty years ago: "In the very words Wild Flowers methinks there is something peculiarly charming, which carries us back to pleasant memories and associations." "These were the days when the heart knew but little care, and when our purest daily delight was with the blue violets and silvery daisies on the green, or the golden primroses and dandelions on the

bank." It is difficult to conceive of a Botanist being reared in more favoured circumstances for prosecuting his favourite study. Moncrieffe Hill, "the Glory of Scotland," afforded ample opportunities for an ardent and zealous young botanist. In the immediate neighbourhood were also Kinnoull Hill, Glen Farg, the banks of the Tay and the Earn, Invermay, and other places all rich in botanical specimens, and young Sadler from his earliest years was well acquainted with their "Wild Flowers." To use his own words:—"This highly interesting district, as well might be expected, forms a grand field for the pursuit of natural history in all its branches, but perhaps more especially for that of botany, or the studying of plants."

In 1854, John Sadler removed to Edinburgh to become Assistant to Professor Balfour, at that time Professor of Botany in the University of Edinburgh, and from this time dates his connection with the Royal Botanic Garden. He was then only seventeen years of age, and no doubt was attracted to Edinburgh by the fame of Professor Balfour, then in the zenith of his popularity and attracting students from all parts of the world. This step marked a new era in Sadler's history. That innate love of botanical study which distinguished him from his earliest years found a new and wider field for development, and subsequent events showed that it was fortunate for botanical science that John Sadler became assistant to so distinguished and zealous a botanist. He was a diligent and successful student, and performed the duties of assistant to the entire satisfaction of the Professor. Professor Balfour from the very first took a deep interest in this young assistant. He found in him all that a professor could desire in a student. There soon arose a friendship between Professor Balfour and his assistant which existed to the very last, and which subsequent years only deepened and strengthened. The Professor loved him as a member of his own family, and John Sadler on his part had a profound love and admiration for his distinguished master. This mutual love and esteem ripened into a friendship which was deep and lasting.

Shortly after removing to Edinburgh he took up his residence in Experimental Cottage, situated within that part of the Royal Botanic Garden which was then used as the Experimental Gardens, and from this time to his death he resided within the Garden.

From being junior assistant he gradually rose to be principal

assistant, and for nearly a quarter of a century John Sadler was known as the accomplished assistant to the Professor of Botany. During these years he rendered valuable assistance to Professor Balfour in the work of the class. For many years he had the principal share in conducting the work of the microscopic class. He also rendered valuable assistance at the weekly Saturday excursions, excursions which were largely attended by students and greatly enjoyed. He also assisted in revising the proofs of Professor Balfour's numerous and valuable publications; and in the second edition of Balfour's *Flora of Edinburgh*, Sadler appears as joint author.

Few Professors had such a power of infusing enthusiasm into their students as Professor Balfour, and undoubtedly much of this power lay in the way he conducted his weekly Saturday excursions. Saturday after Saturday the Professor accompanied by a band of students proceeded to the country to examine the flora of some district, often travelling many miles by rail to reach the destined ground. There was something about these excursions which it is difficult to describe, but which tended to inspire the young mind with a love for botanical study, and there can be no doubt that these weekly excursions were not only greatly enjoyed by John Sadler, but also tended in no small degree to make him the distinguished botanist he ultimately became.

He, like the Professor, was always present at these Saturday excursions, and thus had an opportunity of becoming well acquainted with the flora of the country around Edinburgh. Few men were so zealous in the field as Professor Balfour, and undoubtedly young Sadler caught much of his fire and ardent love of his favourite science. He also, like his master, became a keen observer, and few men ever possessed in a greater degree the faculty of distinguishing plants than John Sadler. This was a marked feature in his character. He would often astonish his scientific friends by the quickness with which he could discriminate between species of plants closely resembling each other. His knowledge in this respect was remarkable, and it was a knowledge he was ever ready to communicate to others.

After removing to Edinburgh he generally spent his holidays in botanical rambles in the Scottish Highlands, his favourite resort being the Breadalbane Mountains. The flora of the Perthshire Highlands especially that of the Breadalbane Mountains, is beyond all question the richest in Scotland and of these

Ben Lawers is not only the highest but the richest in Alpine plants. Sadler spent many of his holidays at the foot of this mountain, staying at the Old Mill near Lawers Inn. Day after day he made excursions to this famous mountain, one of the loftiest in Britain, and surpassed by none in its interest to the botanist. On several occasions when staying at the foot of Ben Lawers young Sadler walked to Corry Ghalair in Glen Lochay, a distance of nearly 20 miles and back the same evening, after botanizing the rocks in that famous Corry. I believe there were only two plants of any consequence known to grow on Ben Lawers that Sadler did not gather on that Mountain—*Saxifraga rivularis* and *Cystopteris montana*. He, however, on one occasion at least gathered a fine specimen of *Woodsia ilvensis* on the rocks near Lochan a' Chait. Sometimes Sadler spent his holidays on the north side of Ben Lawers, in Glen Lyon, and it was while staying in Glen Lyon that he first examined the rocks on the north side of Meall Ghaorgdie, a mountain 3407 feet in height. On these rocks he gathered some rare plants including *Cystopteris montana* and *Bartsia alpina*.

Tirai in Glen Lochay at the foot of Meall Ghaorgdie was also the abode of Sadler during his holiday rambles, and his reminiscences of his abode in the old farm house at Tirai, and of his fishing for salmon in the Lyon, must be fresh in the minds of his many botanical friends.

In those days Sadler was an excellent walker and frequently went great distances to explore some mountain or glen. He had an excellent knowledge of the habitat of Alpine plants. He believed that the geological formation as well as the direction of a corry had much to do with the flora of a mountain. He maintained that the elevation of the rocks above sea level had not much to do with the flora of a district, provided you had a large high mass of mountains behind to keep these rocks always cool and moist. Whatever may be said about the views Sadler entertained on these questions, it is well known to all his botanical friends that few men had a better knowledge of the kind of ledges and corries in which to seek for rare alpine plants than Sadler had, and in our excursions there was no one who surpassed him as a searcher for plants. He was moreover an excellent cragsman, creeping along on his hands and knees, venturing often where few dared to follow, and some of his rarest finds were made when so engaged.

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On the death of Mr McNab in December, 1878, John Sadler was appointed Curator of the Royal Botanical Garden, and on the acquisition of the Grounds around Inverleith House for the purpose of an Arboretum, he was also appointed Curator. As Curator of the Royal Botanic Garden he was ever anxious to maintain it in a high state of cultivation, and at the same time to make it as available to the public as possible. He had only begun to lay out the grounds of the Royal Arboretum, when he was so suddenly cut off in the very prime of life, but what little he had accomplished showed that he was pre-eminently well qualified to make these grounds attractive, alike as a place of resort and for the purposes of the scientific study of forestry. In 1867 he was appointed Lecturer on Botany in the Royal High School of Edinburgh. He was a popular and successful teacher, but resigned this situation as well as the Assistantship to the Professor of Botany, on his appointment to the Curatorship of the Royal Botanic Garden.

He was a member of many learned Societies, and took a warm interest in their proceedings. He was for many years a Fellow of the Botanical Society of Edinburgh. He contributed many valuable papers to its Transactions, and after his appointment as Curator of the Royal Botanic Garden, he gave regular reports on the state of open air vegetation at the Garden, reports which were always fully printed in the various papers and journals, and read with great interest by the general public as well as by scientific botanists. For 21 years he was the acting secretary of this society, and as an appreciation of the excellent way in which he discharged the duties of the office, he was presented with a handsome timepiece and a purse containing 71 sovereigns. The clock bore the following inscription written by the late Sir Robert Christison: "Joanni Sadler, in re botanica peretissimo, scientia insigni, Soc. Bot. a secretis, comitatem propter ac plurima officia D. D. D. que Societas Botanica Edinensis, 1880." On the same occasion Mrs Sadler was presented with an elegant gold bracelet set with corals and pearls, bearing the following inscription: "Presented to Mrs Sadler by the Botanical Society of Edinburgh, in token of their gratitude to her husband for his manifold services, 1880."

He was a vice-president of the Scottish Arboricultural Society, and for 19 years discharged the duties of secretary. When he retired from the secretaryship, the Society presented him with a

handsome gold watch and appendages and a purse of 100 sovereigns. The watch besides a suitable inscription had the following motto : "Ye may be aye stickin' in a tree ; it will be growin' when ye're sleepin'." The manner in which he discharged the duties of secretary to this Society, and the valuable services he rendered to it, can be best learned by quoting the words of the then President, Mr Robert Hutchison of Carlowrie. In making the presentation Mr Hutchison stated that Mr Sadler "undertook the office of secretary at a time when the very existence of the Society was flickering in the balance between life and utter extinction, having battled sore for life for seven years previous. The advent of Mr Sadler seemed to infuse new energy and life into it, and it had gone on ever since increasing and flourishing under his fostering care ; and instead of being, as it was nineteen years ago, a mere name, it was now one of the most important institutions of the country. This state of things was due in every respect to the energy and indomitable perseverance of their secretary."

He was also a Councillor of the Royal Caledonian Horticultural Society, of the Royal Physical Society, the Edinburgh Naturalists' Field Club, and a corresponding member of many local learned Societies throughout the country. He was one of the original members of the Scottish Alpine Botanical Club, filled for some time the offices of its Secretary and Treasurer, and at his death was a member of the Executive Committee. His loss to this Club will be very great. He took a deep interest in its annual excursions, having only been absent from two excursions since its formation in 1870, and it was while on an excursion with this Club at Braemar that he discovered in Corry Ceann-mór the willow which bears his name *Salix Sadleri*, a willow new to science; and the same day he discovered in the same Corry *Carex frigida*, a plant new to the flora of Britain. He was present at the last meeting of the Club at Loch Awe and Killin, but on account of the state of his health was unable to go any of the excursions. The last excursion of the Club, to a Corry near the head of Glen Lochay, was one Sadler was specially anxious to make. Ever since he visited Glen Lochay in his early rambles he had often looked towards this Corry with a wistful eye, and his desire to accompany us was very great. The day however was boisterous in the extreme and after walking a few miles Sadler was forced to turn, not however without a sad heart.

78 *The late Mr John Sadler.* By William Craig, M.D.

This was the last time that Sadler attempted a botanical excursion.

He was elected a member of the Berwickshire Naturalists' Club 13th October, 1880, and on several occasions was present at the excursions of the Club. He took great pleasure in attending these meetings and was always present when his numerous duties permitted.

For many years he was a member of, and took a deep interest in, the High Constables and Guard of Honour of Holyrood House, and at the time of his death was Moderator of that ancient body.

Besides contributing many valuable papers to the Transactions of the Societies of which he was such a distinguished member, and furnishing many contributions to scientific periodicals, he published two books, one "Rambles amongst the Moffat Hills," and another "Wild Flowers and Ferns of Bridge of Earn, including a complete List of the Perthshire Ferns." Both of these works are out of print, but they are both written in a racy stile and full of valuable information. At his death he was engaged writing a Flora of Forfarshire, a work he had nearly completed and one containing information not to be had elsewhere. When this work is published it will form a valuable contribution to Botanical Science.

For the past year he had not been in robust health, yet he was able to attend to his duties till the severe snowstorm of the beginning of December. On Monday, 4th December, Mr Sadler attended to his duties in the Arboretum. On Tuesday and Wednesday he felt colded and remained within doors busy writing, but nothing serious was apprehended. On Thursday he took seriously ill, evidently suffering from the effects of a chill caught while in the discharge of his duties on the Monday, and despite the skill and attention of his medical attendant, aided by the professional advice of Professor Maclagan, he gradually sank and died calmly on the early morning of Saturday, the 9th December, 1882. On the following Wednesday his mortal remains were laid in the tomb in Warriston Cemetery, there to await the resurrection of the just. His funeral was attended by many true and loving friends, some of whom had come from great distances, but all sorrowing much because they would see his face no more. He died at the comparatively early age of 45

years. He was twice married, and has left a widow and seven children to mourn his untimely end.

It is impossible in any obituary notice to convey a true idea of all that John Sadler was. He was a man of genius, and a most eminent botanist. In 1869 the Royal Caledonian Horticultural Society awarded him the Neill Prize of £50 in recognition of his many eminent services to science. His was a kind of universal knowledge. There was no department of Botanical Science in which he was not well versed. He was an eminent fungologist and at the time of his death was president of the Fungus Club. One of the Fungi was named after him. He was particularly well skilled in the flora of Scotland, and it may be questioned if any man knew it so well.

However great he was in science, he was even greater in social life. John Sadler was one of the most genial of men. He had a warm heart and was one of the truest friends I ever met. Those who knew him best loved him most. He was ever obliging to his friends and few men were more widely known or more highly esteemed. In him were concentrated many excellencies, excellencies such as are rarely met with in one individual. His death has caused a blank in our scientific societies and in our social life which no one man will be able to fill. You may find many friends and many scientific geniuses but you will find few John Sadlers.

“ Search the land of living men
Where wilt thou find his like agen ?”

IN MEMORIAM.

Mr John Sadler.

THE sudden and lamented death of Mr John Sadler, Curator of the Royal Botanic Garden, Edinburgh, caused a pang of deep sorrow to his numerous friends. Although for some time back his health was far from strong, the fatal termination of his illness came unexpectedly upon those who knew him best. Taken away almost in his prime, the loss to his own family is irreparable. But after their sorrow, he is sincerely mourned by the members of many scientific societies with which he was connected, and by none more so than by the members of the Scottish Alpine Botanical Club, with which society he was associated

from its commencement.* His loss to this club, of which he was "the heart and soul," can never be properly estimated. One of the best practical botanists in Scotland, he well knew the habitats of all the rare plants, both in the Highlands and Lowlands. He was an original genius, with a keen apprehension of every subject he inquired into; and no one brought in contact with him could ever forget the penetrating glance of his bright black eye. His varied knowledge charmed every one, so delightfully was it flavoured with the sly "Scots wut" which formed part of the man. A most delightful companion on the mountain-side, his inimitable manner of relating, in language bubbling over with humour, the extraordinary adventures he had met with in his plant hunting expeditions helped to while away the time on many a steep ascent, and can never be forgotten. In illustration of his graphic power in description I here append a specimen of his address at the opening of The New Institute, Berwick, on 30th May, 1882.

"THE GERMINATION OF THE SEED.

If we took a seed we would find that it was a little mansion house, beautifully built up with the finest bricks, all fitting together in the most perfect manner. Then you would find an inhabitant, a little baby plant. This lay in a cradle which was beautifully prepared, sometimes in the garret, sometimes in the drawing room, sometimes in the parlour, and sometimes in the kitchen. But it was always in one place, in each particular species. For instance if you examined the seed of the pea and bean, either in Great Britain, or Australia, or America, you would find the embryo in the same position in each specimen. It was wrapped up in the finest muslin, in the form of starchy matter which was provided for its food. You put the seed into the soil, where it was provided with a certain amount of moisture, heat and air. It might be necessary also to keep it partly in the dark. Through the walls of the dwelling house, a certain amount of moisture penetrated, and the starch by the action of heat in a beautiful chemical process, was converted into sugar, or the finest kind of wine, so that a plant was not a teetotaller in its infancy! The little baby then began to grow and push its foot out of the door of its mansion house. Afterwards it went down into the soil in the form of a root, which was just like a sponge. It then cautiously sent up its little stem, then the branches, leaves and flowers. The last had certain organs which produced fruit, and in these was found the seed in which you get, the little baby plant again, so that the whole vegetable life went round and round. It occurred just the same in the most minute plant, as in

* Professors Balfour and Dickson, Mr W. B. Boyd, Capt. Norman, R.N., Drs. Craig, Aitken, and Charles Stuart, members of the Berwickshire Naturalists' Club, are also members of the Scottish Alpine Botanical Club.

the largest tree in the forest. It was in such matters as this, that he wanted his audience to take an interest. And he trusted the next time he came to Berwick he would be able to bring some diagrams to illustrate the remarks he had made. It was such subjects as these that the great and good had studied, and had found in them sources of some of their purest enjoyment."

There was a charming freshness and originality in his descriptions, even of the commonest objects, which never failed to rivet the attention, and which constituted him perhaps the most successful exponent of popular botany who ever lectured. Intimately acquainted with the mountain flora of Scotland, his name is associated with one of the Alpine willows, which he discovered at as wild a spot as exists in the kingdom, Corry Ceanmor, Glen Callater, near Braemar. In August, 1874, the writer was near him when, on high grassy ledges on the north side of the lake, he discovered this willow.

We had almost crept along the precipitous ledges running from the Break-neck Waterfall, at the head of Glen Callater, which extends towards the weird-looking inky tarn, gathering *Carex rupestris*, and other rarities. The day was grey and very windy, and our footing on such steep ground was far from secure. John Sadler took to the steep grassy ledges facing the north-east side of the lake, and ascended for about 1000 feet from one ledge to another. The climbing was not so difficult, but the getting down was another matter, especially as the way was obscure, and not without risk did he make the descent, bringing with him cuttings of the willow, and also a *Carex* never before gathered nearer than the Swiss Alps, and named *Carex frigida*. Both were submitted to Dr. Boswell Syme, LL.D., who pronounced the willow new to Britain, and named it *Salix Sadleri*, after the discoverer;* and the *Carex* also proved a species new for Britain. A plant of the willow is growing on the Rock-Garden, Botanic Gardens, Edinburgh, and the *Carex* has also been cultivated with success.

The favourite quarter of our departed friend in the north was Bridge of Lochay Inn, half-a-mile from Killin, on the road to Kenmore. Picturesquely situated on the river Lochay, and overshadowed by the Finlarig woods and the everlasting hills, this quiet retreat has been a welcome sight to many a weary botanist; and Mr and Mrs Cameron have ever a kindly welcome

* A living plant of this rarity is growing on my rock garden at Chirnside.

for the whole brotherhood. Ben Lawers, Maol-na-Ptarmachan, Cam-a-Creag, Maol Ghirdy, Craig Mohr, &c., are within reach, and their Alpine flora is the richest in the kingdom. Here Mr Sadler has conducted many a happy party, and introduced many an ardent botanist to the beauties of Flora in this classic region. No one can ever forget the pleasure of a first excursion to Cam-a-Creag and Maol-na-Ptarmachan, and the delight with which he saw growing the snowy gentian, the mountain forget-me-not, the "himmel" blue of the mountain Veronica, the green of the spleenworts which fringe the moist crevices, the Alpine willows and mountain saxifrages, the rare *Woodsia hyperborea*, &c., &c. Here, on the Mica Schist, in a state of disintegration, there is a growth observed and a vigour attained by these Alpines seen nowhere else. Wherever our party began operations, even in the far North, the finish to the excursion was generally at Bridge of Lochay; for whether at Ben Lawers, Cam-a-Creag, or Craig Mohr, there is always, if the weather proves favourable, a grand excursion to be had. It would be difficult to relate how often Mr Sadler made returns to his favourite ground; at all events, he never tired of renewing his acquaintance with the Alpine flora of the district. In the year 1876 we visited the West Highlands, and ascended Ben Nevis on a very stormy day. Botanically we did little. On the following day the precipices under the peak were examined, *Saxifraga rivularis* and *Juncus castaneus* being the best plants obtained, close to the melting snow. Mr Sadler did not like Ben Nevis much, so we returned through Glencoe, and got to Tyndrum early next day, proceeding to Bridge of Lochay partly by rail. In the evening we hired a vehicle and drove up Glen Lochay to a deserted farm-house named Chirrai. Climbing up the grassy bank, covered with sweet-scented *Gymnadenias* (*G. conopsea* and *G. albida*) and butterfly orchises, we came to the roofless dwelling. Our friend, ten years before when botanising, had lived here among the herds, and, looking down, began in his humorous strain to describe his experiences. In the big kitchen lived the master and mistress, with half-a-dozen herds, and a number of lasses to mind the dairy work. Our friend occupied the other end, and pointed out the remains of a wall press where he kept his plants. At night the herds retired up a ladder or "trap" to one side of the loft, followed by about half-a-dozen collies; the lasses retired up the same "trap" to the other side of the loft. Shortly

the snoring of the sleepers was appalling, but worst of all, the dogs first commenced to snarl and then to fight in earnest; clouds of dust descended through seams in the boarding upon the devoted head of our friend, who was only too delighted when day broke, and he was able to extricate himself from his difficulties, and breath the pure air of Maol Ghirdy. I feel how vain on my part it is to describe the recollections of the scene as related at the time, but I have endeavoured to give a sketch of an actual adventure which our friend had, and he had many such to relate. We returned down Glen Lochay on a lovely summer night to our hostelry; and it is difficult to realise that the man who had kept us all amused has passed away from among us, almost in his prime.

His popularity among the students attending the botanical class is too well known to require to be noticed. At the weekly excursions he was their genial companion, and did everything to inspire them with a love of nature and the interesting science they were studying. It is sad to think that the bright career that was before him, as Curator of the Botanic Gardens and Arboretum—work so congenial to his nature—should have been so suddenly closed by his untimely death. Providence has so ordered it; but his memory will ever remain green in the hearts of many true friends, who have spent happy days in his company, in climbing most of the Scottish mountains in pursuit of their favourite science.

“Fell star of fate! thou never canst employ
A torment teeming with severer smart,
Than that which memory pours upon the heart,
While clinging round the sepulchre of joy.”

C. STUART, M.D.

Note on the Fungi of Roxburghshire.

REV. D. PAUL reports from Roxburgh the occurrence this year (1882) of the following species hitherto not recorded within the limits of the Club:—*Ag. (Clitocybe) cerussatus* Fr. var. *difformis* Schum, Pine wood, Oct.; *Ag. (Mycena) sanguinolentus* A. and S., among fir leaves, July; *Ag. (Volvaria) gloiocephalus*, Fr., Cowpasture, Roxburgh Glebe, Oct., a rare and handsome fungus; *Polyporus destructor*, Schrad., on fallen fir, Oct.; *P. adustus*, Fr., frequent; *P. fumosus*, Fr., on stump, Nov.; *Trametes mollis*, Smrft., on fallen apple tree, Janry.

On the Bird Life of the Firth of Forth during the Storms of October and November, 1881. By ROBERT GRAY, V.P.R.S.E., F.S.A., Scot.

[Read at the Meeting of the Club at Haddington, 31st May, 1882.]

AT a meeting of this Club held in Dunbar about a year ago, I read a communication on the effects of the preceding winter [1880-81] upon birds and other animals—the protracted frosts and snowfalls having been unprecedentedly severe. Some of you may remember that I then expressed a hope, that many years might pass before another occasion would arise for any of us to chronicle so much suffering among our feathered friends. The records of that memorable winter showed an amount of distress among birds that had almost no parallel; but it was to a great extent confined to what are called soft-billed birds, and our sympathies therefore lay almost wholly with

“The various vocal quires

That harmonize fair Scotia’s streamy vales.”

The observations which I have now to make mostly refer to the sea birds of the Firth of Forth during the disastrous storms of October and November, 1881. For some time previously there had been nothing of unusual interest to take note of, unless we except a rush of migrants to our shores, which took place on 22nd September, and will no doubt be fitly recorded in due time and in the proper place by my friend Mr Harvie Brown, whose attention has for some years past been closely occupied by tabulating certain returns from the lighthouses and similar posts of observation along the coast line of Scotland. I may only mention, in passing, that among other interesting birds taken in the lantern of the lighthouse on the Island of May, at the time referred to, there was a specimen of *Cyanecula Wolfsi*—a form of blue throated warblers, which has only occurred twice before in the British Islands. On the 24th of the same month the fulmar petrel appeared at North Berwick, and one specimen at least was obtained; while ten days later an unusual number of spotted crakes (*Crex porzana*) made their appearance in various parts of Scotland, but notably the eastern counties. There were besides the usual flights of tawny and short-eared owls, rough-legged buzzards, snowflakes, siskins, bramblings, and grey shrikes, among land birds, and grebes, divers, and goosanders among those that had come by sea. Up to Friday, the 14th October, the weather had been such as is usually experienced at the close

of autumn and commencement of winter ; but on the morning of that day the south-eastern shores of Scotland were visited by an awful storm—the disastrous effects of which among our seafaring people will be long remembered. During its continuance many boats were wrecked, and nearly 200 fishermen were drowned on the coasts of Berwickshire and East Lothian alone. Great northern divers, red-throated divers, grebes, guillemots, and other sea birds were quite unable to withstand the fury of the gale ; and in the midst of a sea lashed into a state of commotion which fairly overpowered every living creature, they sought shelter in some numbers in the harbours at Dunbar and other seaports between Burntisland and Berwick-on-Tweed. Their presence in such circumstances attracted a good deal of attention, and showed that the birds had instinctively betaken themselves to these places of refuge before the storm had reached its height, as it is believed by all who witnessed the appalling effects of the hurricane that no living thing, bird or beast, could have existed either in the air or in the water. Such birds, indeed, as were unable to seek the shelter of harbours owing to their having been far from the land when they were overtaken by the storm must have been utterly destroyed. The storm was as unexpected as it was destructive ; it came on without further warning than a sudden and heavy fall of the barometer—a sign which, so far as the fishermen were concerned, was unfortunately to a great extent disregarded, and hence its calamitous effects. I may add that the appearance of great northern divers and grebes in tidal harbours in Scotland is in my experience without parallel.

The first oceanic birds that came shorewards, by which I mean those species that are known to congregate and feed together at considerable distances from land, were the pomarine skuas—a flock of which made their appearance at Prestonpans while the gale lasted. They were in a state of great exhaustion, and about half-a-dozen specimens were obtained there, and one or two more at other parts of the coast, one having been secured as far up the Firth as Queensferry. The stomachs of all the birds examined were empty, with the exception of one, which contained the remains of a wading bird, probably a ruff. Simultaneously there appeared large numbers of storm petrels, many of which were blown some distance inland, where they were captured—records of the birds having been caught or otherwise dispersed having reached me from Dunbar and the Lammer-

moors. The main body, however, remained in the Firth eight or ten days, during which time the birds frequented for the most part the lee side of Inchkeith, quite near to the anchored ships that had been forced there for shelter. On the 22nd October, while crossing from Granton to Burntisland in a stiff gale of wind, I observed upwards of a dozen storm petrels following the big waves, rising and falling in their flight with their customary ease; and two days afterwards, on the return journey, when the ferry steamboat was, to the great discomfiture of the passengers on board, obliged to run as far as Inchkeith in its passage across, I had an excellent opportunity of seeing the birds in increased numbers enjoying their shelter on the lee side of the island, where, surrounded by large steamboats and other windbound vessels, they crowded together, and fed upon the refuse thrown overboard by the ships' cooks. It was an extremely interesting sight, and I was informed that the birds had been there from the date of the great storm. A lesson, indeed, might have been derived from their presence by the captains of ocean-going steamers, several of whom, impatient at the delay, had set sail, in some cases oftener than once, only, however, to return partially disabled to their former anchorage. The petrels, actuated no doubt by an unerring instinct, wisely remained under shelter; and I would venture to say that in any future case, when these birds are seen under such circumstances, much expense might be saved by the masters of wind-bound vessels, if they quietly remained at their anchorage until the petrels let them know when it was time to leave. I commend this observation to the attention of my friend Mr Buchan, the excellent secretary of the Scottish Meteorological Society, as a means of increasing the interest, if not the importance, of future weather forecasts.

On the 21st November there occurred a tremendous storm of wind and rain, which affected the whole of the western coasts of Scotland, including the inner and outer Hebrides. This was accompanied by very high tides, which flooded many of the towns even in sheltered places, such as Fort William, Oban, and Tobermory, where great damage was done to property. During the continuance of the gale, several flocks of petrels were observed, and many birds of the two commoner species—the storm petrel and the fork-tailed or Leach's petrel—were captured in the town of Oban and elsewhere. There can be no doubt that while the storm prevailed small flocks of both species

were wafted across the country to the eastern side of our island, and I have records in my note-books of having seen and examined a number of Leach's petrels from various localities in the Firth of Forth, among which instances I may mention one that was picked up alive on the 26th November on the shore at Granton, where it had been washed up among the sea-weed; another that was taken in the lantern of the lighthouse on the Isle of May on the day following; and a third that was discovered a day later in an exhausted state on the beach west of Dunbar. Many of these birds must have been blown eastwards and been drowned; for although their presence is associated at times with storms of the most dangerous character, they do not appear to be able to resist such sudden outbreaks as those to which I have referred. The numbers of drowned birds that are cast up occasionally upon our sands and rocky shores are but painful proofs of their fatal effects, and I have no hesitation in concluding, from what has come to my knowledge, that in the memorable storms of October and November, 1881, hundreds, if not thousands, of sea birds of all kinds—gulls, guillemots, divers, ducks, puffins, and petrels—were, without distinction, literally blown into the sea, and overwhelmed by the pitiless waves.

Notice of the deserted Heronry at Swinden, Bowmont Water. By J. ROBSON-SCOTT, M.D.

WITH reference to a notice that I read before this Club, 16 or 18 years ago, relating to the heronry situated at the farm of Swinden in Bowmont Water, belonging to his Grace the Duke of Roxburghe, I have now to state that the herons have deserted the place. The trees upon which they built their nests were alders, remnants of the primeval woods, which formerly clothed the valleys and low grounds of this country. The trees had been failing from the effects of age, and doubtless the birds were sagacious enough to observe this, and taking timely warning departed to a more secure retreat. In the spring of 1880 it was reported to me that there were no nests built that year, and that the birds appeared to be leaving the place altogether, and on visiting the lonely glen the following year I found that such was the case, and that most of the old nests were blown down, thus rapidly obliterating all record of what had been a scene of activ-

ity and interest to all lovers of nature. On my last visit, a few weeks since, I found one solitary solemn looking bird, perched on the summit of one of the old trees, apparently surveying the deserted spot; at my approach he rose deliberately and flying to a short distance, settled on a rising ground, in full view of his former abode. "Dulcis reminiscitur Argos." Soon after the notice above alluded to appeared in our Proceedings, His Grace the Duke of Roxburghe determined on planting some suitable trees that the herons might take possession of, to rectify the progressive decay of the old forest, but, as I have said above, the birds took flight before the time the young trees had attained the requisite size and strength.

On Marine Shells and Fragments of Bones found at the base of Hutton-hall Cliff, opposite Edington Mill. By the REV. GEORGE WILSON, Glenluce; Corr. Mem. of the Scottish Society of Antiquaries.

Foulden West Mains, 13th July, 1882: On the 11th July I was at Edington Mill. At the foot of the Hutton-hall cliff opposite the Mill, just above the stepping-stones, I picked out of the clay three fragments of bone, and three specimens of the common shell *Littorina littorea*. About 40 years ago I got at the same place a lot of charred embers, shells, and charred bones, including what I took for pig and deer bones. A medical student who took charge of them for the Edinburgh Museum, lost them. The sandstone cliff has always been more or less overhanging, and the place seems to have been a cave or rock-shelter. I never saw any tool. [At Edington Mains somewhat further up the river on the other side of it, Mr John Wilson, at the foot of the bank below his house, came upon a collection of cockle-shells, fish-bones, and pieces of charcoal. This was conjectured to have been a family feasting place of the ancient Britons. Club's Proc. VII. p. 23-4.]

Notes on some Historical and Literary Matter bearing on the Works called the Catrail. By MISS RUSSELL of Ashiesteel.

It was perhaps an omission that the photographs of the portion of the Catrail remaining at the Rink, and of the adjoining fort of similar construction, presented to the Club in the summer of 1880, were not accompanied by some notes about the locality where the line seems to have crossed the Tweed. The most important circumstance about the Catrail on the Tweed, or indeed anywhere, is this: that the early church of Melrose was undoubtedly in the diocese of Lindisfarne, and therefore in Northumbria, or at least on territory belonging to Bernicia; while Traquair is known from the document called the Inquest of David, printed in the Chartulary of Glasgow, to have been in the early diocese of Glasgow, which is further known, in connection with the history of Kentigern, to have been co-extensive with Cumbria; to have *been* Cumbria, in fact. If these latter authorities should not be thought conclusive as to a state of things which was obsolete long before their date, it may be added, that they are borne out by the name of Traquair; the form Travercoir seems to be the Cornish (rather than Welsh) church-town or church-lands; the *choir* being the old monastic church, where, if the numbers allowed of it, there was probably some sort of service being chanted day and night. It is the word which formed Bennchor or Bangor, the high or head choir, both in Wales and Ireland. And the same word appears in Duchoir, the spelling given in Pont's maps for Dewchar, the locality where the church of Yarrow stands; the Black Choir; the adjective being in the Welsh, not the Gaelic form.

All these circumstances have been long in print, if not altogether accessible to the general public; but it does not seem ever to have been distinctly observed, that as Traquair and Melrose are both in the valley of the Tweed, and both on the south side of the river, the frontier between Cumbria and Bernicia must have crossed the river somewhere between them: or that it is therefore in reality beyond doubt, that the works called the Catrail, as suggested by Whitaker in England, and believed by Sir Walter Scott in Scotland, mark the frontier; and on the Tweed, with the Saxons of Bernicia as near as Old Melrose, must have been seriously intended to defend it, where the rivers

Ettrick and Gala make a natural frontier. I have only lately been aware that Mr Cosmo Innes had suggested this line of research about Cumbria, as long ago as when he edited the Kelso charters; but I do not think any one could have made much of the bishoprics, if the course of the Catrail had not been recorded. As to the large size and defensive character of certain parts of the Catrail, it is to be noted that Alexander Gordon, who must have perambulated the line about 1725, and who, as far as the literary world is concerned, was the discover of it, was so entirely convinced of its being the fortifications of a frontier, that to account for it, he, not knowing much about Scottish Cumbria, formed the odd conjecture—very odd when the history and purpose of the Roman walls are considered—that it might have been constructed by the Caledonians to keep out the Romans, after the peace made with Severus. (What really happened on that occasion seems, from the inscriptions, to have been that Severus re-constructed the northern Roman wall, in Stirlingshire, to keep out the Caledonians. The only difference of opinion among authorities is, as to whether it was not rather that in the north of England; but the evidence is in favour of the former.)

Gordon's own observations are generally so accurate and painstaking, that this queer theory is another example that one must not expect a man who is good in one line to be necessarily good in another. (His miles are nearly all two, "lang Scots miles" in fact, but that measure does as well as any other for long distances.)

I am speaking, it must be observed, of the defensive character of the Selkirkshire and Midlothian parts, properly the Picts' Work Ditch and the Gala Water forts. As to the Roxburghshire part, the Catrail proper, I was much struck by the way in which two letters, signed respectively N. E. and W. McK., which appeared in *The Scotsman* of October 13th and 16th, 1880, on this part of the line, confirmed the opinion of the highest authorities, formed on purely historical grounds, as to the old population of Teviotdale. The letters agreed in saying, from what was unmistakeably fresh observation, that the Catrail proper never can have been a work of any great strength, (I believe that is the case with the part that still forms a boundary between two estates), having no forts near it in some places, and being, where the measurements were taken, only about twelve feet wide in

all; and also having no appearance of having been everywhere continuous. The conclusion of one of the writers is, that it might have been a boundary-line between two friendly tribes. And it was on seeing this, that I saw for the first time that Mr Skene and the late Mr E. W. Robertson were right in regarding Teviotdale as having been inhabited by a Welsh or Cymric population, as well as Selkirkshire. Mr Skene's reason for thinking so is that at the battle of the Standard, long after the final conquest of Cumbria, the Tevidalenses and Cumbrenses formed one body in the Scotch army; besides that in the sixth century, which is the period we are more especially concerned with, Kelso seems to have been a Welsh possession, under the name of Calchvynydd or Chalkhill, nearly the equivalent of Chalkheugh or Calchow. The "mey and tey" dialect of Teviotdale has a very much more Celtic character than the accent of the country to the westward; it seems always to have been regarded as a very strange sound in Galashiels.

Towards the English border it appears as if the works of the Catrail must assume the character of fortifications again; I have not the reference, but the Statistical Account says in one place it was twenty-five feet high. Mr Skene points out, in the first volume of his history, "Celtic Scotland," that it occurs at Dawson, which he identifies with Degsastane, the scene of a great historical battle, the result of which was the crushing of a combined effort, on a large scale, of the Cumbrian Britons and Scots of the West Highlands, to drive back the Saxons of Northumbria. Mr Skene regards the stones on the Ninestane Rig, and others in the neighbourhood, as connected with the battle and pursuit; and such memorials certainly seem in many cases to have been records of violent death, in battle or otherwise. But he does not mention there, that he had already placed the battle of Degsastane at Dawson, on philological grounds, rather than at Dalston in Cumberland, in a work published in 1867, the least known of his publications, but one treating mainly of Scottish Cumbria. It is an edition of the much-disputed poems of the Welsh bards of the sixth century, and apparently the first there has ever been in which they were really printed exactly as they stand in the oldest manuscripts. (The oldest existing collection seems to have been made in the half-century after Geoffrey of Monmouth's fictitious history appeared, and has quite the air of an attempt to preserve the real antiquities

of the Cymri.) The literal translations are executed by distinguished Welsh scholars, and Mr Skene did not in any way interfere in them himself, which was no doubt judicious in the circumstances, his theory as editor being, that much of the obscurity of the poems is owing to its having been forgotten that many of them relate to Scottish Cumbria, not to Wales or Cornwall. This seems probable enough when so stated, and I do not know that it has ever been seriously disputed; but it is so opposed to the received legends—real traditions they are not—that it has never attracted much general attention, though it has had its effect on literature; and the title “The Four Ancient Books of Wales” though I do not know exactly what other could have replaced it, does not attract Scotch readers. The hardest part of it is, that while the Arthurian legends—for the theory in great part concerns what may be called the historical foundations of the Arthurian romance—have been given up with great reluctance in the west of England, or not given up at all, even on the alleged localities being shown to be impossible; nobody in the south of Scotland wants them at all; on the Yarrow in particular they would be considered altogether superfluous. I rather imagine that after the final conquest of Cumbria, the consciousness that *something* was lost gradually suggested the myth of the Lyonesse, the region between Cornwall and the Scilly Isles, in which Arthur’s last battle is said to have been fought, though there was no such land in the time of the Romans, and Sir Charles Lyell pronounced any recent invasion of the sea there to be geologically very improbable. And the same explanation applies to a similar mythical submerged district off the coast of Wales, in Cardigan Bay. It is conjectured, in one of the notes to the Welsh poems, that the name of the supposed district, Gwaelod, or the Sunken, may be a transposition of the letters Gwaedol, or Wedale, the old name of the district between the Gala and the Leader in Scotland.

It is of importance to observe that Arthur’s campaigns in Scotland (he being apparently a Cornish Briton, and holding the office of Guledic, or Imperator, or leader against the Saxons, a remains of Roman organization which has been completely forgotten, unless it is what the romances mean by the Pendragon; Pendragon in reality being the name of a castle, which Uthyr may have had as his stronghold) Arthur’s campaigns in Scotland do not seem to have been forgotten till the fallacies of the

southern topography, and the observation of the numerous Scandinavian legends in the romances, which must have come through the close connection of Normandy and Brittany, caused the whole history of the sixth century, as popularly known, to be set down as mythical, together with the important circumstance that Arthur was never king of England.

There is all the difference in this respect between the sixteenth century and the eighteenth; the illustrious Camden, who had learnt Welsh that he might understand British history, says without hesitation that Agned, the scene of one of Arthur's battles, is Edinburgh; while Alexander Gordon is much puzzled by the little Roman building called Arthur's O'en; the engraving of which we owe to him. In fact till the regular business of criticism began in the seventeenth century, the real traditions remained, without its being thought necessary to account for them. In the district under consideration, and in the valley which contains what I should say was now the most satisfactory part of the Catrail, the Gala Water forts, it has never, indeed, been altogether forgotten that Arthur is said to have founded the Church of Stow; the statement occurs in some copies of "Nennius" which there seems no more reason to doubt, as to the historical part, than any other brief chronicle; and the tradition was known to Hollinshed in the sixteenth century.

The famous *Morte d' Arthur*, by Sir Thomas Mallory, is full of allusions to the Marches of Scotland (if there is any old allusion to the Catrail, it is as included in this), and the king of Scotland, who is sometimes Caradoc of Galloway, sometimes Angus or Arawn, the brother of Urien and Loth, (he is called Lleinawy or Lennox in the Welsh poems.)—N.B. A Sir Herve le Reule appears among the Knights, and the early name of Abbotsrule was Rule Hervey.

As to the narrative which goes by the name of Geoffrey of Monmouth, its authority, such as it is, is in favour of the northern localities of Arthur's battles. Geoffrey or his authority was unwilling to lose the wonders of Loch Lomond, and the imposing fortress of Alclyde or Dumbarton; and he transports Arthur and his army there to the conventional "Lincoln" and "Bath" in a way nothing short of railways could have effected. He has also placed the wood of Celidon in Lincolnshire. I imagine "Lindocolinum" in this case is the extinct village of *Lincum*, on the upper part of the Tweed, above Drummelzier, which was in

the wood of Celydon; Lincum must have been on the old main road between Edinburgh and Carlisle. Lindocolinum was also called Kaerliudcoit; and curiously there is a town of this name in the ancient list of cities attached to Nennius. Further, it somewhat strengthens Mr Skene's theory, that the Mons Badonicus was the great stronghold of Buden Hill, near Linlithgow, to observe that Urien does double duty in Geoffrey, first as king of Mureif, that is, the region of the Roman wall, and secondly as Urbgenius of Bath.

Again in the quaint proceedings drawn up to be sent to Rome, about the independence or otherwise of Scotland, Arthur actually appears as an English invader, and Llew or Loth, and his son Medrawd, as patriotic Scotch Cymri.

It is to be observed, that the name of the Catrail having been preserved at the part of the line which is not a regular fortification, affords a presumption that it originally applied to the whole line, at least as far as the ditch extended, and was retained in Teviotdale by there being a Cymric population on both sides. *Cat* or *Cad* has here no doubt the secondary meaning of "defence" not of battle. *Cadar* is defence in modern Welsh; *Rail* a good deal the same word in Welsh as in English. Gordon, to whom we owe nearly all our earlier information about the Catrail, found that name in use from the English border to the Borthwick Water, and that thence northwards to Galashiels the works were called the Picts' Work Ditch, which is, beyond a doubt, the correct name, in the same sense as that of the Mahratta Ditch of Calcutta. It is certain from Bede that the Picts, whoever they were, occupied the south-east of Scotland, and the country up to the southern Roman wall, after the Romans, or rather the legions, left the country. And I find that part of that wall is known as the Picts' Wall. Taking Mr Skene's dates, which are no doubt the most correct obtainable, the legions left Britain for the last time in A.D. 409; Arthur, who seems to have done a good deal to check Saxon invasion in his own day, comes just about a century after that time, as the last great battle of his recorded victories, that of Badon Hill, was fought in 516; his final battle of Camlan in 537; and Edwin of Deira and Bernicia, who seems to have obtained possession of Edinburgh before his death, comes about a century after Arthur; he adopted Christianity in 627.

It must be understood, I am taking Mr Skene's view, and re-

garding the Picts as the old Gael of the country, who, within historical times, occupied the whole country north of the Forth and Galloway and Lothian; that is, all Scotland except Cumbria; and eventually became *Scots* in the ninth century, more through a political change than anything else. The present Lowland Scotch may have more Gaelic and Welsh blood than has been generally supposed; it has only been fully demonstrated of late years that all the Celts and Gauls known to antiquity were fair, and that the dark race of the western coasts must be descendants of the Iberians or Basques, a few words of whose language remain in the names of places. The two hill-names of Pen-Christ and the Dun-Ian or Hill of St John, in Roxburghshire, show Welsh and Gaelic side by side in Christian times. I mention these names only as a matter of local interest; however speaking generally, the Gaelic theory of the Picts is the only one which will really work at all in the east of Scotland; if they were either Goths or Cymri, the Gaelic names all over Fife and Forfarshire are altogether unaccounted for; the Scots (when the dates are severely rectified) come in much too late and in too small numbers to do it; while south of the Forth, where Gaelic names are tolerably numerous, especially in Lothian and Berwickshire, they *must* have been left by the Picts or the Otadeni, who appear to have been in reality the same people, though the latter had probably left off tattooing under Roman rule. Manau Guotodin, apparently meaning Slamannan, was distinctly peopled by the Picts down to comparatively late times; and Guotodin, as was recognised by the Welsh Stephens, is clearly Otadeni with the Welsh *digamma*; the incessant use of that unsatisfactory element of speech is one of the difficulties of the Celtic languages. (In ordinary Gaelic, words beginning with F are classed with those beginning with vowels). The well-known form Gododin appears to me to show that the names Gadeni and Otadeni, which Ptolemy seems to use indifferently for the same people, have been originally the same word; the sound of broad A comes very near to that of O. And the form Gadeni suggests further what the word was; *goddan* means shrubbery in modern Welsh, and *goden* is used for trees in the poems; so I infer that Godeni, or people of the woods, was what the Britons called the inhabitants of Roxburghshire, &c. And in this light the name is nearly the equivalent of Caledonii, the people of the brown wood, (descriptive of the native oak and hazel). The Welsh

and Gaelic name of the Coed Celydon shows there were Gael in Peebleshire before the Welsh, who did not understand their language. The name of the Attacotti, who could only be subdued by drawing off their men for the Roman Army, was probably rather Ota-catti, and meant warriors of the woods.

The name of Manau or Mannan, and variations of it, occur in so many places connected with the Picts, that I have a theory that the Picts, and Otadeni alike, must have called themselves something like *man* as their original national name. The word *man*, which pervades so many languages, is not used in the Celtic, as far as I know, for either the species or the individual, and it does seem to have been a proper name in Ireland, Scotland, and also in Wales. Captain Thomas' observation, that the Cree or Minnoth in Galloway was formerly called the Manach, has an interest in this way besides identifying the Abravannus of the Roman geography. The half-dozen names by which the Picts are called in early history all mean much the same as Picti, coloured or spotted. Their Gaelic name in historical times was something like Cruiney, attributed to a mythical ancestor; but then it *meant* colour. Even the name of Agned, for their great stronghold of Edinburgh, Mr Skene suggests is derived from "agneaw," an obsolete Celtic word for painted or spotted. The rock is sometimes gay enough with the rock-wallflower and other plants, but I do not suppose the name refers to that. That the Picts were still tattooed in Roman times seems certain, but nevertheless the name of Cathbregion, applied to the people about Agned or Edinburgh, suggests another idea about them. It seems to be Cathbreacan, and to be an old Celtic form for spotted warriors; *cateran* is really warrior in modern Gaelic. And in one of the Welsh poems, a warrior called first Palach, and then the Cath Palug, is killed by Cai (Fordun seems to connect this legend with Dunbar). So that I imagine the English *cad* and the more honourable Scotch *cadie*, are degraded Celtic words for a warrior. Now "breacan" in the modern Gaelic not only means spotted, but is the regular word for tartan or a plaid; and as there does not appear any evidence that tartan was worn in Ireland by the Scots; on the contrary, it is very distinctly recorded that at the time of Strongbow's invasion the Irish wore but little woollen, and that chiefly of the black or dark colour of the sheep; it is not improbable that tartan both in the Highlands and Lowlands is a Pictish inheritance, and that the many-coloured *breacan*

had something to do with all these names meaning colour. The word *maud* for the shepherd's plaid of uncleaned wool, is even of importance to the history of Scotland, for it is obviously the old Gaelic *maudal* or *maundal* for mantle, only used in poetical Gaelic. *Plaidie*, on the other hand, is the regular Gaelic word for a blanket. The shepherd's plaid in Dumfriesshire is sometimes woven of red and white. It is sometimes called the Johnstone tartan, and I believe it has as much to do with the Johnstones as many of the tartans have to do with the clans, *as* clans. The regimental tartans seem to be the truest representatives of the old dress, in so far as they are supposed to mark the men who go out to battle from a particular district. The use of the gray plaid, as one would have expected, extends into Northumberland; its southern limit, to speak botanically, would be an interesting subject of enquiry.

It will be observed, the theory of an original Gaelic population in Lothian and Berwickshire (though I do not know that any of us in the south of Scotland have ever doubted it) is of great consequence to the nationality of Scotland, and shows that it is not merely a result of the welding of the English wars; for one thing, it explains how Scotland came to extend to its present limits, for it accounts for the incessant attempts of the Scoto-Pictish kings on Lothian and Northumberland. Mr Skene remarks upon the extreme persistency, and sometimes unaccountableness, of these attempts; but he has latterly seen that the true explanation is, that the districts in question had been old Gaelic territory. See page 135 of the 3rd volume of "Celtic Scotland," "Land and People." He also mentions the Highland tradition to that effect.

I cannot say much of the remains of the Catrail from personal observation: the southern half I do not know, and as to the northern part, as far as my experience goes, there is not a great deal to be seen. After it enters Selkirkshire, the mouth of Rankilburn is one place where lines are marked by the map, parallel to the Ettrick; but I can hardly say they are visible. The bank does not look as if it had been ploughed of late years. But on the west side of the Ettrick the map gives a significant name which Gordon has not got—the Ramper Knowe—though the rampart is a scarcely perceptible rise in a ploughed field at the foot of the steep Gilmanacleuch Law. There is no appearance of any line ascending the hill, and it is impossible to see what use

it would have been of, as the object must have been to defend the road up the open valley; from the head of Ettrick, a good moor road goes over Ettrick Pen into Dumfriesshire; the valley of the Tima leads towards Lockerbie; and about two miles above the Ramper Knowe, the road into Dumfriesshire by the lochs turns off at Tushielaw. This road eventually crosses the short length of river connecting the two lochs; and in connection with it, I am inclined to make the Herman Law, or Hill of St Germanus, above Chapelhope, the scene of the missionary saint's famous rout of the invading Picts and Saxons, just twenty years after the Romans left Britain. The road through the hills into Annandale supplies the essentially requisite feature for that interesting story. And the Picts make a difficulty about any southern locality. As no one has ever seen the Catrail on the hills between Ettrick and Yarrow, I do not suppose it was ever made on that high ground. The idea that the Catrail had been a continuous work may probably have originated with George Chalmers, who knew quite enough of history to know that the Cumbrian frontier must have occurred somewhere near this, but no more pretended to any personal knowledge of the works themselves, or the district, than in the case of any other of his Scotch antiquities. He spent sixty years of a long life out of Scotland. In the valley of the Yarrow the Catrail decidedly re-appears, but not of any great size; it was described to me by a proprietor in the valley as being at the Catslack—"and whatever it was meant for, part of it is now in use as a road." This seems to be the part on the east side of the Yarrow; but on the other side it was lately traced for a mile and half or more, by Professor Veitch and Dr. Russell of Yarrow, ascending Minchmoor and running north-east. Nearly at the spot where Pont gives the name of Carfood, they detected three forts near each other, each with its spring of water. The name might be the Gaelic Carfad, long fort; while *fod* means earth or soil. The Blackgrain Rig, mentioned by Gordon, is marked by the map on this line.

But I consider the names the real relics of the Cymri on Minchmoor. On the moor in the Yarrow valley retaining the name of Annan Street, the road into Annandale, was found in 1807 the stone with a rude inscription which is read as containing, in the epitaph of his two sons, the name of Nudd Hael, or the generous, Chief of the Dumnojeni. It is a matter of much local interest at least, that Dr. J. A. Smith's paper, containing this reading of

the inscription, must have been printed almost simultaneously with the "Four Ancient Books of Wales," in which Mr Skene places the cousins of Rhydderch Hael, of whom Nudd was one, in this district, Yarrow being named. The two seem to have been entirely independent. The Dumnogeni would be Ptolemy's Scotch Damnonii, and certainly Cymri. Secondly, one of the hills behind Yarrow church is actually called the Welshie Law; this might be a family name, but it seems significant here. Thirdly, the same thing applies to Wallace's Trench:--the name may be that of the Guardian of Scotland, or anybody else, but it is what the Cymri are called throughout Saxon history, or nearly so. I do not know the lower end of Wallace's Trench, but the object of the upper part seems evident enough; to defend, or partly intercept, the road coming along the ridge from the eastward, at the point where the old high road crossing Minchmoor from the Tweed at Traquair, turns steeply down to the Yarrow. It is a long earthen wall, about five feet high in parts, running up the hill. Near the top of the ridge is a wide gap or opening, defended by a separate piece of wall to the westward; the upper part of the wall, which has been broken down, but not cut away, where the track goes over it, stops abruptly at the top of the hill; but I do not know that any one would notice who had not happened to get into it, that the north side of the ridge here is a deep bog. It is a mere suggestion, but it is possible that when Gordon says of the Catrail somewhere hereabouts, that it "mounts the hill called Henhillhope, and is very distinct for a quarter of a mile," he refers to Wallace's Trench. All the known portions of the Catrail run, roughly, north and south. I have no doubt the name of Wanders Knowe, for the top of Lewinshope Rig, opposite Wallace's Trench, records some former tradition of the name of Gwenever; she seems remembered as the Queen Wanders of Meigle in Perthshire. [Since the above was written, I find on inspecting Wallace's Trench from below, that is from the south, that it is considerably shorter and higher than I was aware of. It is a very respectable earth work still, but there are only two distinct divisions; both the roads along the hill must have passed through the gap between the two. I find the Minchmoor causeway is said to be a Roman road.]

The only other bit of earthwork I have ever been able to see on Minchmoor is a low wall, perhaps two feet high, at Penmanscore "the head of the great wood" where the road from the

Tweed by the Peel burn comes up a dry and firm hillside. It is at Penmanscore that the king (in the ballad) appoints the Outlaw Murray to meet him.

A fourth name which may stand for the Britons occurs on the south side of the hill here; the Cameron Burn, which I take to be "Cambrian." I think I detect some faint indications that the clan-name may mean Cambrian rather than Crooked Nose; the analogy of Galbraith, the British Stranger, for one thing.

A fifth is recorded at Williamhope, of which the old name was Galeswood, that is Waleswood. Sixthly, the conspicuous summit now (and in the Act of Parliament of 1681) called the Three Brethern Cairn, is marked by Pont about 1620 as the Brethwen Hill. This can hardly be a misprint of the longer name, which I believe to be an attempt to get a meaning out of an old name which was the southern equivalent of Dunbreatan or Dumbar-ton. Pont has a Three Brethren Hill, three summits near the head of the Black Esk. A beacon on the Brethren Hill would communicate at once with High Cheviot and the Dumfriesshire hills, besides the nearer ones. To the east of this hill are some low earthworks, nearly level with the ground; but further east, on the Peat Law, and what is now called the Linglee Hill, I believe is one of the most distinct portions of the Catrail, and visible to the naked eye. I have always looked for it too far west. The Saxons being as near as Old Melrose in the seventh century, accounts for the work being stronger and more recent here than among the higher hills. I find that Lessedwyn, the old name of Lesudden, has long been recognised as meaning Edwin's Court, or something of the kind, in Welsh; while the Eildon Hills are called Edwin's Cliffe in the Saxon Chronicle. The original frontier of the Romanized Britons would certainly extend to the important Roman station at the Eildons; and there is an Arthurshiels to the south-east; but the dedication to St Helena at Lindean, on the Ettrick below Selkirk, and her name connected with a well at Melrose, rather give the idea, in connection with some interesting observations about the Saxon kings elsewhere, that Edwin of Deira had pushed his frontier to the Ettrick.

The Yair Crib's Hill, mentioned by Gordon, I find is a considerable part of the hill, and no doubt the Catrail does go over some part of it. The name of Linglee is now only used for the farm to the town of Selkirk, while Gordon apparently uses it for

the whole slope to the Ettrick, as far as the Tweed, which would naturally be the original meaning:—the Long Lee. There is now no road, that can be called such, on this hill, to the east of the bridle-path from Yair to Broadmeadows, but the Act of 1681 mentions “the high street to the east of the Peat Law” and a “green rod” there. Gordon implies that the Catrail went by the fort on Sunderland Hall ground, of which a few stones still remain, at a place where four fields meet.

A former map of Selkirkshire has confused matters much by laying down as the Catrail a double line of old fail-dyke along the march of Yair and Sunderland Hall, chiefly, now, on the Yair side. It was only after devoting four days to it in different seasons, and in fact taking a great deal of trouble about it, that I became convinced it was nowhere much larger than an ant hill, and had no appearance of ever having been larger; I then recollected a story of there having been a strip of plantation along the march which was *neutral*; by no means probable, but showing there had been such a strip, and of course fenced.

On the bank of the Tweed, just east of the march, where the Sunderland Hall woods begin, the 6-inch Ordnance map marks a small work turning at an angle, which I have never seen. But on the north bank of the river I have lately detected what must be the Catrail, a long raised bank, as large as a natural ridge, which is the foundation of a hedge running straight down to the river; there is hardly any haugh or flat ground at this point. The Catrail can be traced above the road running in this direction. It is certainly not to be seen where the Ordnance map brings it down, opposite the Howden Pot Burn.

I do not see any reason to suppose that either the fragment of the Catrail remaining on a steep bank west of the Rink, or the fort there, have ever been very different from what they are now, a barbarous imitation of the Roman rampart in the material at hand, loose stones of moderate size, which would be available as missiles at close quarters. The foot or so of dry stone Roman wall remaining at Castlecary is a neat and solid construction still. I remember a woman telling me she had seen a great many instruments of torture which came out of it (the Rink fort), “and they gaed down to the Shirra,” by whom it appeared she meant Sir Walter Scott. That he made no catalogue of his collection has often been regretted. Mr Hardy suggests that the old name of the farm, Langrink, refers to the great ditch and

bank which certainly ran across it till the last century. In the sense of boundary, it *may* be old enough to refer to the national frontier. There is no spring in the neighbourhood of the Rink fort, or fortified village; but it only struck me lately, the supply of water must have been from the small Mossend loch, drained within the last ten or twelve years. A line of rampart can still be traced running down from near the entrance towards the loch, alongside one of the field dykes. The loch seems to have been part of the line of defence; a faint line is or was visible running down to it at right angles from the work above Hollinbush. This part is like a good sized cart-road cut along the hill for thirty or forty yards. North of Hollinbush, two faint lines are traceable where the trench has been long ago destroyed by old cultivation. Gordon, who begins at the Rink, had evidently not seen the part remaining, I believe perfect, on Mossilee; I have never succeeded in seeing it either; in fact the sequestered situation of both this and the part on Sunderland Hall hill, may have tended to preserve them; but they seem both well-known, as earthen ramparts and ditches. Of the fort at Mossilee I believe nothing but the site remains. The name of Wallace's Putting Stane on Meigle hill doubtless indicates a confused tradition of the Cymri. Hut-circles of early habitation have been found on Mossilee, and interments in stone cists have been disclosed during the recent great extension of the streets of Gala-shiels.

I doubt whether the Catrail ever extended into the valley of the Gala; the trenches on the top of the steep bank north-west of Kiluknowe seem rather those of a fort; and a narrow line above the road, now nearly obliterated, stops nearly at the Torwoodlee march, so was probably a fence. If the Catrail ever ran up to the fort at the Harrigait Head, above Torwoodlee, it must have been obliterated by the road made in 1780—that Pennant must have travelled by. The fort is perfect except that the ditch has been filled up with the stones of the rampart. There was a small village just below till within the present century. North of Torwoodlee, there is a fort of straight lines at Caitha, on the east side of the valley; and I notice similar lines at Bow. At Caitha the road from Edinburgh to Selkirk and the south, turns off over the moor; and between the Tweed and Gala there are remains of a large fort on the rising-ground of Caddonlee, in which the top of a quern of true Italian lava has been found;

and a smaller one at the pass of Laidlawstiel, by which the main road went up the Tweed, before the rocks at Thornilee were cut through. North of Stow (where there are two forts) the forts begin again on the west side of the Gala, with a square Roman camp on a steep hill-side, which there is no reason to doubt is the Castel Guinion of Arthur's battle. There are traces of the two old churches—that of the Holy Rood as “St Ruth.” Where Mr Tennyson got his detail of Arthur's emerald Madonna I do know, but I find it is likely to be the old form of the tradition about this battle, for the Byzantine school of gem-engravers used green stones for sacred subjects. Mr Skene places Urien's battle of Gwenystrad, some sixty years later, at Stow also; Guinion being “white” and Gwenystrad “white valley.” Perhaps Stow is the most likely locality; the Galystem—Galastun—of the poem would be its early Saxon name. It is interesting to observe that geala (gaila) is white in Scotch Gaelic; this confirms the identification, and is just such a translation as one might expect on a frontier. The name evidently refers to the peculiar short light grass of the valley, as unlike the commoner heather, bog, or wood. The district called Goden must be the valley of the Tweed, I think. The poem called the Battle of Goden is addressed to Arthur in person—whether or not it refers to the “Cat Coed Celidon.” There is, or was, a round fort high on the hill at Watherston; and then an imperfect one at Plenploth; which is of great interest, for the name can be nothing but Plan-ap-Loth, the place of the son of Loth-Llew of Lothian himself. Loth sounds like a mispronunciation of Llew, but I do not think it is; in the same poem in which the Cath Palug figures, there is a personage called Glewlwyd Gavaelvawr, who, especially as he is represented parleying defiantly with Arthur, can hardly be any one but Llew Lloyd, or Leo the Grey, of the Gavel Mawr, or large territory. His name may appear in Badlew, Llew's House, near the source of the Tweed; Kaer-liudcoit, above mentioned, would mean the town of Lloyds' Wood. Of his two sons, Medrawd and Gwalchmai, the latter has come down as Gofannon (Gawaine) which is probably from a resembling Welsh word which might mean “scarred,” “Le Balafre” in fact; it might also mean “the Smith.” Llew must have been many years older than Urien. I do not know of any fort at Fountainhall, where several small streams break up the hillside; but there is one on a planted knoll close to the road,

further north; and then a circular one nearly on the top of the enclosed hill at Haltree; it was stripped of its characteristic ring of loose stones, by the tenant of the farm, ten or fifteen years ago; then, on the ridge between the deep valley of the Corsehope Burn and that of the Heriot—the upper part of the Gala, before it turns into the White Valley—comes the important though indistinct fort belonging to Borthwick Hall. There is a Caitha, or Battle, Rig, leading up to it. Stones seem to be wanting in the soil. The late Mr Lawson was interested by finding a water-plant growing on this dry hill top; which I suppose indicates a rain water reservoir for a length of time. North of the Heriot, up which a road leads to the Tweed at Inverleithen, I conclude there must have been another fort, from George Chalmers' "high circle of stones" which subsequent writers seemed to have turned into a *circle of high stones* and dubbed a Druidical circle. There are traces of a fort at the watershed of the Little Gala and Fala burns. (Is Fala the Welsh *Gwela*, pale?) Three or four miles further north stands Borthwick or Locherward, at the head of the East Lothian Tyne, where Kentigern spent eight years, no doubt in the earlier part of his life. Fragments of a sandstone cross with knotwork were found when the present church was built.

I had come to the conclusion that the Harits' Dyke in Berwickshire must have been a branch of the Catrail, connecting the valleys of the Leader and Whitadder as a defence against the Saxons of Northumbria, before I found that that opinion had been long in print; I arrived at it by finding that William Rufus regarded the Leader, the frontier of Wedale, as that of Cumbria. Gordon found the tradition that the works of the Catrail extended to the Firth of Forth. I connect the Harits' Dyke with Llew's kingdom of Lothian, whether or not he owed it so entirely to Arthur as the Welsh accounts state; and I suppose it ceased to be a fortification after Edwin's time. That Edwin was actually baptised by the son of Urien and nephew of Llew, I am inclined to believe, in the silence of Bede on the point; that cautious Saxon must have perfectly understood the advantage it would give him with the Christian Welsh of Lothian; and there are some ecclesiastical indications which lead me to think he had not got possession of Lothian at the time. In some copies of Nennius, the writer gives his authority for the tradition, and the authority of the Abbot of Whithern (for that is

what Nennius seems to mean) is strengthened where Edwin is concerned, by his calling the place where he was defeated and killed, Meicen; not Hatfield; the eighty thousand acres of marsh that formerly existed there, over woods felled by the Romans, show that Migen, marsh, was really the Welsh name of Hatfield.

I imagine the strong country of Scottish Cumbria was eventually conquered by an agreement, tacit or expressed, between the Kings of England and Scotland; the latter must at least have remained neutral. The independent Cumbrians were probably troublesome neighbours to both.

The Yarrow Inscription. By MISS RUSSELL. [Plate I.]

THE copy of the Yarrow inscription from which the lithograph is taken, was made from the photograph of the cast taken by Mr Andrew Currie, which is in the Museum of the Society of Antiquaries in Edinburgh. In the photograph it is considerably more distinct than in either the cast or the original; this is partly from the large straggling letters being brought more together before the eye (the stone is six feet long) and partly from a well-known tendency of all photographs. The photograph can be obtained from Mr Bashford, of Portobello, for about five shillings. My reading of the letters does not differ from that given by Dr. J. A. Smith, except that I make out a few more; but by dividing the letters differently, I think sense, though not grammar, may be made of the whole. He cannot find a meaning for "HIC MEMOR JACETI;" but I read

HIC MEMORIA CETI-	that is—This [is] the Sepulchre of
LOI FINN Q Fii PRINCI-	Catellus and Finn, sons of
PE I· NVDI	the illustrious Nudd, Chief
DVMNOGENI· HIC JACENT	of the Dumnonians. Here
IN TVMVLO DVO FILII	lie in the tomb the two
LIBERALI	sons of Hael.

Cadell is a well-known Welsh name, which has become a surname; I do not know whether the name of Cadell son of Nudd is recorded elsewhere. Having once made out "Cetiloï," it appeared probable the next word was a name also; and I thought at first it was another Welsh name, Runn; till a close inspection, made with a view to the lithograph, showed me that the first letters were certainly F and I. Two irregular marks

which follow, I think must have been made by the stone here flying off under the chisel, for when the sculptor began the joined double N further on, he seems to have used some sort of drill instead. I mention this particularly, because the name so interrupted is extremely curious and suggestive; Finn is the Gaelic form of the Welsh Gwynn, and this is presumably the Gwynn ap Nudd who has become altogether mythical in the Welsh tales, which contain little or nothing of the Cumbrian traditions except the proper names. He must have been connected with the Welsh conquests to the north of Dumbartonshire, in the country which is called Uffern or Avernus in the ancient Welsh poems, no doubt from the formidable character of the mountains and their inhabitants; for he is connected with Arawn or Angus, who has become, in the tales, king of the under-world; Gwynn ap Nudd is a prominent personage in this; and it is curious to find him apparently recorded as a real man. I had forgotten the circumstance, but I see it remarked lately, that when Professor Daniel Wilson published his "Prehistoric Annals," the second sentence only of the inscription having been made out, it was supposed it might relate to the well-known Rhydderch Hael—Rodarcus Liberalis—instead of to his first cousin, Nudd Hael. Another son of Nudd Hael's, named Dryan, is known to have fought in the great battle in the year 573, near the Moat of Liddel, which established Rhydderch as king of Strathclyde or Cumbria.*

It is possible the first sentence was not exactly intended to be altogether without a *verb*; my impression is, that the sculptor may have had some confused idea of getting it in at the end, but that the whole was even then so illegible, that he thought it better to begin a fresh sentence. The slab is a natural flat stone.

There is nothing whatever to indicate whether the two brothers were killed in battle or not; but one's impression is, that the two standing-stones, somewhat to the north of which (I think) the inscribed stone was found, mark the places where they were killed. There were formerly something like thirty cairns on the moor round them, in one of which an iron spear-head was found when the ground was ploughed. The inscribed stone is now placed upright between the two standing-stones.

* St Mungo's Well near Selkirk is of particular interest in connection with this family, and the circumstances connecting Kentigern and Rhydderch. It was under Rhydderch Hael's auspices that Kentigern was established at Glasgow. I rather think this dedication always indicates a British population.—H. J. M. R.

ADDITIONAL REMARKS.

After placing the photograph in a variety of lights, I came nearly to the same conclusion as Miss Russell, about the lettering, except that what she considers to be FINN, (and she may be right) appeared to me to be NENN. There is a shadowy appearance of a large N after the I of the preceding word, and both Sir James Simpson, and Dr. Smith (Proc. Soc. Antiq. Scot. vol. iv. pp. 134, 538-9) adopt this reading. This, however, and what follows, is the dimmest part of the inscription. F^{II} is a contraction, possibly for the genitive plural, at least it ought to be. PRINCIPEL. is either an erroneously formed genitive singular, or it is susceptible of division. Under the latter view, PRINCIP. may be a contracted word; E may be ET, and I. with a period, IMPERATORIS. DVMNOGENI is a genitive singular. Out of this we obtain the expanded reading:—"Hic [est] Memoria Ceteloi Nennique [vel Finnique] filiorum Principis et Imperatoris Nudi Dumnogeni. Hic jacent in tumulo duo filii Liberalis," i.e. Here is the sepulchre of Catelus and Nennius (or Finn), sons of the Chief and Commander [the "Guledec"] Nudd, the Dumnonian. Here lie in the tomb the two sons of Hael.—I think there is here record of two persons only, and not four, and that the second section is supplementary. The lettering resembles that of the "Cat-Stane" described by Sir James Simpson, (Proc. Soc. Antiq. of Scotland, iv., plate v.,) attributed to the fourth and fifth century; and also the Llanerfyl Inscribed Stone (Montgomery Shire Collections, xvi, p. 91) of the fifth or sixth century, but is ruder than either. St Kentigern, the protegee of Rhydderch Hael, uncle of Nudd Hael, died in the beginning of the 7th century, (Historians of Scotland, v. Introd. p. LXVIII). Was this inscription, within the bounds of his diocese and apparently of his age, the handywork of any of his disciples, or did he himself inspire the legend?

Memoria is not of common occurrence in the sense of sepulchre; but there is an example in Gruter, 894, 2. SERVILIUS TROILVS SE VIVO COMPARAVIT MEMORIAM SIBI ET SVIS. MEMORIAM POSVIT has been found at York on a stone coffin, (See Dr. McCaul's Britanno-Roman Inscriptions, pp. 98, 214, 215.) St Augustine de Cura pro Mortuis, c. 4, expressly gives *Memorie* as the equivalent of *Monumenta*. In the life of St Anthony, translated from Athanasius by Evagrius, the saint is recorded as having withdrawn to the sepulchres remote from the

town, and one of the brethren shut him up in a tomb ("in memoria"), and there he dwelt alone. *Memoria*, in this sense, thus belongs to a late stage of Roman literature. J. H.

Notes on the Marine Algæ of Berwick-upon-Tweed. By
EDWARD A. L. BATTERS, B.A., L.L.B., F.L.S.

ALTHOUGH the stretch of coast line between Holy Island and Burnmouth is as rich, and possibly richer, in the various forms of marine algæ than any other portion of our Eastern shores of similar extent, possessing as it certainly does one hundred and forty-six, and probably many more, out of the three hundred and ninety-one ascertained British species, it has not up to the present time received from botanists anything like the attention it deserves; indeed for the last twenty years, with the exception of a small list by Mrs Gatty in the third volume of the Proceedings of the Berwickshire Naturalists' Club, which Mr Hardy has kindly furnished me with, it has been almost entirely neglected, and even previously to this the literature upon the subject is exceedingly meagre.

The second volume of Dr. Johnston's "Flora of Berwick-upon-Tweed" published in 1831, enumerates about eighty species, but owing to the author having taken for his text books Lightfoot's *Flora Scotica*, 1777, and Dawson Turner's *Synopsis of the British Fuci*, 1802, the nomenclature of which has of late years been entirely superseded, the identification of the species is rendered extremely difficult. Fortunately, however, in the first volume of the "Natural History of the Eastern Borders," published by the same author in 1853, the names have been taken from Harvey's "Manual of British Algæ," and a large number of additional species, which had been omitted from the earlier volume, are included. The arrangement too is greatly improved, marine and fresh water algæ being placed in separate lists, and a few lichens which are inserted in the "Flora of Berwick" under the heading Algæ having been omitted from the later volume. A few algæ however mentioned in the "Flora of Berwick" have been omitted, without apparent reason, from the list given in the "Natural History of the Eastern Borders," thus *Cystoclonium purpurascens* is inserted in the former work (sub nomine *Gigartina purpurascens* Fl. of Berw., vol. II., p. 234), but is omitted from the latter. It is however recorded in Mrs Gatty's list (sub nom. *Hypnea pur-*

purascens). Again *Callithamnion polyspermum* is recorded in the earlier volume (sub nom. *C. purpurascens*, Fl. Berw. vol. II., p. 240), but is not mentioned in the later. Johnston and Croall however (Nature Printed British Sea Weeds, vol. II., p. 175) give this species as occurring at Berwick, on the authority of the passage in the "Flora of Berwick." Almost the same may be said of *Rhizoclonium riparium* (*Conferva riparia*, Fl. Berw., vol. II., p. 254), without doubt these species do occur at Berwick, and probably Dr. Johnston omitted them unintentionally from his list in the "Natural History of the Eastern Borders."

All the species mentioned in this latter list, with the exception of *Mesogloia vermicularis*, a species I have never met with, and which I believe has not been found for many years, are still to be found in the vicinity of Berwick. Mrs Gatty's list needs no comment; all the algæ there recorded are still to be met with near Berwick. It is not usual, however, to reckon *Rhipidophora paradoxa* amongst what are now usually called marine algæ.

The following is a list of the Algæ which have been recently found in the neighbourhood of Berwick-upon-Tweed, and which, as they are not mentioned in either Dr. Johnston's or Mrs Gatty's list, I believe to be previously unrecorded in the neighbourhood:—

1. LAMINARIA FLEXICAULIS, (*Le Joli.*) (*L. digitata* var. *stenophylla*, Harv.)—This species is not uncommon all along the coast from Holy Island to Burnmouth. There can be no difficulty in distinguishing this species from *Laminaria digitata*, Lamour., as its smooth, almost black, and somewhat compressed stems, may be known at a glance from the pale brown, corrugated, cylindrical stems of the latter species. As its name implies its stems are much more flexible than those of *Laminaria digitata*, and may often be tied in a knot, while the stems of the latter are crisp and easily broken.

2. LITOSIPHON PUSILLUS, (*Harv.*)—This species is always parasitical on the stems of *Chorda filum*, sometimes entirely covering them with its hair-like fronds. This plant is plentiful in a long, shallow, sandy pool situated about half way between the pier and the "Greenses."

3. MYRIONEMA STRANGULANS, (*Grev.*)—Always parasitical on *Enteromorpha compressa* and other green algæ; this species forms dark stains on their fronds which look more like dirt than an alga. Not uncommon.

4. *ELACHISTA SCUTULATA*, (*Duby.*)—Always parasitical on the stems of *Himanthalia lorea*, forming raised hairy lumps on its fronds. Not uncommon on a ledge of rocks lying a little to the northward of Dodds' Well.

5. *ELACHISTA VELUTINA*, (*Fries.*)—Parasitical on the thongs of *Himanthalia lorea*, and often found in company with the preceding, the two species sometimes intermixed on the same thong. It forms light brown patches on the thongs of the *Himanthalia*, and is never so much raised as the preceding species.

6. *ELACHISTA GREVILLEI*, (*Arn.*)—Parasitical on *Cladophora rupestris*. Very rare indeed. I shall not give the exact locality where this species is to be found, as there is but one pool near Berwick in which it grows. This species, I believe, has been found but once since its discovery by Dr. Greville in 1852. My specimens are in fine fruit, the first found in Britain.

7. *SPHACELARIA PLUMOSA*, (*Lyngb.*)—Rare. Cast up amongst sea refuse behind the pier and elsewhere. Berwick specimens of this plant are very small when compared with specimens gathered on the west coast of England.

8. *ECTOCARPUS FASCICULATUS*, (*Harv.*)—Rare. Found at the Coves, Dodds' Well, and Burnmouth.

9. *MYRIOTRICHIA FILIFORMIS*, (*Harv.*)—Parasitical on *Asperococcus echinatus* in shallow pools between the pier and the "Greenses." Rare.

10. *POLYSIPHONIA BYSSOIDES*, (*Grev.*)—Rare. Cast up among sea refuse. In looking through the collection of the late Dr. Johnston, which Mrs Barwell Carter was kind enough to show me, I noticed a specimen apparently of this species labelled *Dasya coccinea* var. It therefore appears that Dr. Johnston took this for a variety of *D. coccinea*. A moment's reference to the microscope however will serve to separate the two plants. The main stems of *P. byssoides*, as well as the branches, are marked with three or four upright lines, the main stems of *D. coccinea* are opaque. If sections of the stems of the two species are made the difference is even more apparent, as then the eight internal tubes of the *Polysiphonia* are plainly visible. *Polysiphonia byssoides*, moreover, turns nearly black in drying.

11. *POLYSIPHONIA PULVINATA*, (*Spreng.*)—Not uncommon on algæ and rocks between tide marks all along the coast.

12. *BONNEMAISONIA ASPARAGOIDES*, (*Ag.*)—Rare. Cast up amongst sea refuse during the summer months, often in consider-

able quantity, but very irregular in its appearance.

13. LOMENTARIA ROSEA, (*Thur.*) (*Chrysymenia rosea*, Harv.)—Very rare indeed. My specimen of the species is small, and appears to be the variety called by Harvey, *Chrysymenia rosea* var. *Orcadensis*. I found it growing on an old stem of *Laminaria digitata* to which it was attached by long fibres, with rootlets here and there. It is a very beautiful little alga.

14. HAPALIDIUM PHYLLACTIDIUM, (*Kütz.*)—Parasitical on the preceding. I have only found one specimen of this species, but still I have no doubt that it is not uncommon at Berwick, as it ought to occur on the fronds of *Chrysymenia clavellosa*.

15. DELESSERIA HYPOGLOSSUM, (*Ag.*)—Very rare indeed. Cast up during the summer from deep water. I have always found this species in company with *Bonnemaisonia asparagoides* although it is rather rarer than that plant.

16. DELESSERIA RUSCIFOLIA, (*Lamour.*)—Rare, but not so rare as the preceding. I have never found this plant growing. It is sometimes cast ashore at the "Greenses."

17. NITOPHYLLUM PUNCTATUM, (*Grev.*)—Not uncommon. Always found floating, though not unfrequently attached to some other alga. This is a very variable species; sometimes the fronds are almost entire and more than an inch across, at other times much and irregularly laciniated, the segments only a few lines broad; the margins too are sometimes strongly curled, but the thin substance, bright, light pink colour, glossiness when dry, and entire absence of veiny lines, render it easy of recognition.

18. NITOPHYLLUM BONNEMAISONI, (*Grev.*)—Rather rare. This, like the preceding species, is always found floating. Holy Island specimens are much finer than those found at Berwick, although it is often thrown ashore in considerable quantity at the latter place. The veins which rise from the base of the frond, and spread faintly upwards, are a great aid in distinguishing this species from *N. punctatum*, which otherwise it somewhat resembles.

19. CATENELLA OPUNTIA, (*Grev.*)—Rare, although found in considerable quantity when it does occur. This species loves the shade, and is to be found growing on the sides of some of the caves at Dodds' Well and elsewhere. It is a small plant often not half an inch high, and unless carefully looked for is likely to escape observation.

20. CERAMIUM FLABELLIGERUM, (*J. Ag.*)—Rather rare. Paras-

sitical on the smaller algæ, &c., between tide marks all along the coast.

21. *CALLITHAMNION PLUMULA*, (*Lyngb.*)—Very rare. Cast up from deep water behind the pier usually in single specimens. This and *Bonnemaisonia asparagoides* are two of the species Mrs Gatty says (vide “British Sea-weeds” Introduction p. xvi.) are quite unknown on the north-east coast but of course this is a mistake. Mr E. M. Holmes, F.L.S., has kindly examined my specimens of these species, so that there can be no doubt of the correctness with which they are named.

22. *CALLITHAMNION FLORIDULUM*, (*Ag.*)—Not uncommon all along the coast from Berwick to Burnmouth. This species forms little, purple, cushion-like patches on the rocks between tide marks.

23. *PEYSSONELLA DUBYI*, (*Crouan.*)—Parasitical on the stems of *Laminaria digitata* forming thin, purple stains, often of considerable extent, on its stems. Not uncommon.

24. *BRYOPSIS PLUMOSA*, (*Ag.*)—Berwick specimens of this alga are very small, never more than an inch long often much less. It is to be found in the pools near the “Narrow Lane” but is very rare.

25. *ENTEROMORPHA CORNUCOPIÆ*, (*Hook.*)—Parasitical on *Corallina officinalis* between tide marks. Rare.

26. *ENTEROMORPHA ERECTA*, (*Hook.*)—This very pretty species does not appear to come nearer to Berwick than Holy Island; it is to be found, though rarely, at the latter place in shallow sandy pools, and is plentiful at particular spots. In the water it looks more like a *Cladophora* or *Conferva* than an *Enteromorpha*.

27. *ENTEROMORPHA RAMULOSA*, (*Hook.*)—Not uncommon near Berwick and very plentiful a little to the north of the Needle-eye.

28. *ENTEROMORPHA PERCURSA*, (*Hook.*)—Not uncommon. Often mixed with other algæ. Found at the Coves and elsewhere.

29. *CLADOPHORA REFRACTA*, (*Kütz.*)—Occasionally found at the Coves.

30. *CLADOPHORA LANOSA*, (*Kütz.*)—Parasitical on *Polyides rotundus*. My specimens of this species are very small and poor compared with specimens gathered in the south of England. In a pool not very far from Dodds’ Well there is a considerable quantity of it, elsewhere near Berwick it is very rare.

31. *CLADOPHORA ARCTA*, (*Kütz.*)—Not uncommon in Berwick Bay.

32. CONFERVA MELAGONIUM, (*Web. et Mohr.*)—This plant is to be found in deep pools near the Coves; its long stiff filaments which stand straight up in the water like pieces of wire, render this species unmistakable; it is rather rare.

33. CONFERVA ÆREA, (*Dillw.*)—Rare. This species is sometimes to be found in shallow sandy pools near the "Greenses."

34. CALOTHRIX SCOPULORUM, (*Ag.*)—Common on the coast near Berwick. This plant forms a dark green film on rocks near high water mark rendering them very slippery.

35. CALOTHRIX FASCICULATA, (*Ag.*)—A taller, handsomer, and much rarer species than the last; it is not uncommon near "Sharper Head."

In addition to the preceding species, the whole of which may be found described and figured in any good manual of the British Algæ, the following species, hitherto unrecorded on our coasts, have been found at Berwick, and my very best thanks are due to Mr Holmes, F.L.S., for his kindness in naming my specimens and furnishing me with much valuable information concerning them.

36. PHYLLITIS FASCIA.—Very rare. This species is very like *Chorda lomentaria*, only flat; it is to be found a little to the northward of the Needle-eye; it was first found on our coasts by Mr Holmes at Elie in Fifeshire, and has, I believe, been found nowhere else in Britain except at the station above recorded.

37. PHLÆSPORA TORTILIS.—This plant looks like a very curly variety of *Dictyosiphon faniculaceus*; it has been recorded from two or three Scotch and one Durham localities.

38. MELOBESIA LAMINARIÆ.—Not uncommon. Parasitical on the stems of *Laminaria digitata* on which it forms a thin crust; it may be known by its very depressed cystocarps scarcely visible above the surface of the pond.

39. NITOPHYLLUM REPTANS.—Rare. Parasitical on the stems of *Laminaria digitata*, and attached to them by innumerable little rootlets; it was first noticed in this country at Sidmouth by Mr Holmes. Berwick, I believe, is the only other locality where it has been found in Britain.

40. THAMNIDION INTERMEDIUM.—Very rare. A species which at first sight might be taken for *Callithamnion Turneri*, but the stem is forked, and the fruit corymbose and borne on the lateral branches.

41. DASYA GIBBESII.—Very rare indeed. Not unlike *D.*

coccinea only the main stems are transparent and not opaque as in that species. I have only found one specimen of this species, it should be carefully looked for.

Mr Holmes has kindly furnished me with the following list of rare algæ likely to be found at Berwick.

1. *Dictyosiphon hippuroides*.—Always parasitical on *Chordaria flabelliformis*, a species it closely resembles; it has been found at Dunbar, and there is no reason why it should not occur at Berwick.

2. *Dictyosiphon mesogloia*.—A species very like a *Mesogloia*; it has been found at Longniddry and should be looked for where streams of sea water flow between rocks.

3. *Dictyosiphon hispidus*.—Found at Joppa, &c.

4. *Chorda tomentosum*.—This species is almost certain to occur at Berwick; I feel quite sure I saw a specimen of it in the collection of the late Dr. Johnston.

5. *Codiolum gregarium*.—An alga which forms a green film on rocks, it has been found in the south of England by Mr Holmes.

6. *Phleespora subarticulata*.—In his "Flora of Berwick-upon-Tweed" Dr. Johnston speaks of having found a variety of *Dictyosiphon fœniculaceus* jointed like a *Ceramium*, I have no doubt he refers to this species.

7. *Callithamnion luxurians*.—This *Callithamnion* forms a pink fringe on old *Zostera* stems.

8. *Cladophora flexicaulis*.—An alga which always grows on *Cladophora rupestris*, this fact may help to the identification of this species, as I believe no other *Cladophora* grows on a plant of the same genus.

9. *Porphyra leucosticta*.—Very like *Porphyra laciniata*, only the fruit is formed in pale coloured patches in the margin and is radiate.

10. *Prasiola marina*.—Very like a very minute light brown *Enteromorpha latissima* or *E. compressa*, but it is only a few lines high; it has been found at Dunoan, Joppa, and elsewhere in Scotland.

Areschong's "Phyceæ Scandinavicæ Marinæ" and Crouan's "Florule du Finistere," may be consulted for other species likely to occur at Berwick.

In conclusion I should strongly recommend the study of the marine algæ of the neighbourhood to such members of the Club

as are at all inclined to botanical pursuits; in no other branch of the natural history of our islands is so favourable an opportunity offered to botanists for the discovery of new species and new forms of fructification. The study of algology as yet is imperfectly understood, and the satisfaction of adding to the flora of the district, and possibly of the country, or to the knowledge of any particular science, is greatly in excess of that derived from the mere collection of dried specimens of ascertained species of flowering plants, to which too many of our country botanists restrict their efforts.

The study is not a difficult one, nothing more being required than a little perseverance, a good manual of the British algæ, and a common microscope, and the beauty of the specimens when properly set out is far in excess of any collection of flowering plants, which it is impossible to preserve in anything nearly approaching their pristine beauty and delicacy of colour.

Some Account of an Ancient Urn and of Gold and Silver Ornaments found under a cairn in the parish of Gordon about the year 1838, by the late Mr James Hay, and now in possession of Mr John Hay, Feuar, Gordon. (Plates II and III.) By the REV. WILLIAM STOBBS, M.A.

NEARLY all the land lying to the north-east of Gordon, between that village and the river Eden, was within living memory a barren moorland. With a view to its reclamation the superior let it in portions to several of the inhabitants of the village in the form of feus. To transform so unpromising a piece of moor into arable land proved to be no easy task. The stones, and even rocks, with which the surface was strewn were so numerous as to require the expenditure of incredible labour in their removal. Perseverance, however, won the day; and what a few years before had been a stretch of heather and whins, presented the more pleasing aspect of well fenced fields, whose crops testified by their variety and abundance to a high degree of cultivation.

The feu which fell to the lot of the late Mr Hay seems to have been a more than usually formidable subject; for not only did it possess its full share of stones scattered by the hand of nature, but it was encumbered in addition by a large pile of them, erected

by the hand of man, and called the Cadger's Cairn. I have ascertained the position of this cairn. It stood on a slight 'knowe' in the north-west corner of the eighth field on the left hand side of the road going to Edenside. A bridlepath, no longer existing, between Gordon and Mack's Mill, ran by the side of it, and the cairn was about exactly half way in a direct line between the two places. Travellers and cadgers made it a resting place, hence I suppose, the name. I have not been able to make out whether the stones composing this cairn were arranged in any order, or whether they had a 'built' appearance. It seems not. At any rate their number must have been enormous, for when they came to be driven away they supplied more than a hundred cart-loads.

Imbedded in the soil upon which this cairn had rested, Mr Hay in trenching came upon an urn of half-baked clay. It was about 16 inches in height, and 10 inches in diameter at the mouth. Its surface was profusely ornamented. Unfortunately it fell into fragments a few days after its discovery. Plate III. Fig. 1. represents a portion of the lip of the urn, and the largest fragment that remains.

In the same place and at the same time there were also found the following:--

1. A Gold Ring (Plate II. fig. 1.) The mechanism of this ring is curious. First two or three threads of gold wire have been twisted into one long strand, then five plies of this strand have been twisted into a ring, so that every portion of the ring is of the thickness and strength of at least ten wires. The ends of the wire are kept in the inside so as to be out of sight, and the soldering is managed with considerable skill. The ring is in beautiful preservation. Dr. Anderson thinks it is fully finer in point of workmanship than any specimen they have in the Scottish Antiquarian Society's Museum.

2. The Hook of a Silver Brooch. (Plate II. fig. 2.) The ornamentation, as will be seen, is extremely tasteful. The chasing had been filled with *niello*, of which some traces may yet be detected.

3. A portion of a Silver Bracelet. (Plate II. fig. 3.) The ornamentation of this article has not been done by hand, as in the case of the brooch, but by stamping with a comb-like punch.

4. 5. Two Ingots of Silver. (Plate II. figs. 4. 5.) Weighing respectively $1\frac{3}{4}$ and $1\frac{1}{4}$ oz.

6. An Iron Spear-head. This was so eaten with rust that it scaled on every handling and finally disappeared. No drawing consequently could be given of it. It may be mentioned here that all the drawings represent the natural size of the objects.

The friends of the late Mr Hay maintain that he found the urn and the articles in gold and silver just enumerated, in the same place, at the same time; and that he brought them home on the same evening. They are therefore of the belief that the articles in gold and silver were found *inside* the urn. In this, however, they must be mistaken. The urn and the articles may have constituted *one find*, but they could not constitute *one deposit*. The urn belongs to the bronze age. It is one of the kind used at interments to hold food for the dead. The cairn undoubtedly marked the grave of some one great in his day; and had some person conversant with antiquities been present when it was removed and the urn was come upon, the story of the burial would have unfolded itself. The silver articles and probably—but not necessarily—the gold ring, belong to the later iron age, to the tenth or the eleventh century; and the presence of the iron spear-head lends confirmation to this view. The ingots seem to point to a time when coined money was unknown or scarce; and lead us to suppose that we have here a hoard of the precious metals, in the only form in which they were then used as a medium of exchange. In times of trouble or panic a person possessed of treasure would naturally consider a cairn the best place to bestow it, affording as it did not only ready means for present concealment but a lasting mark to guide to future recovery. Possibly this is the explanation of the somewhat singular circumstance, that articles such as the urn and the silver ornaments belonging to ages so far from each other in point of time, should yet be found so near each other in point of place as to induce the person who came upon them to believe that they formed but one deposit.

Dr. Joseph Anderson, who has been shown the articles and whose remarks upon them are incorporated in the above statement, says that this "find" is one of very great interest, and is the only example of its kind on the mainland of Scotland. He regrets that he was not sooner made acquainted with it, as in that case he would have given a description of the articles in his recently published third volume on the Antiquities of the Later Iron age.

Plate II. fig. 2. Is a flint celt in possession of the writer. It was found by a young man in the month of February, 1882, while trenching a piece of ground, little more than 100 yards from the site of the Cadger's Cairn mentioned above. It is of a pale gray colour, roughly chipped, polished at the cutting end. It belongs to the middle stone age and is allowed by Dr. Anderson to be a very fine specimen of its kind.

WILLIAM STOBBS.

Remarks on the Registers of the Parish of Elsdon. By THOMAS ARKLE, Highlaws, Morpeth.

THE Elsdon Parish Registers, the only chronicle of a large portion of the people of Reedwater since about the year 1670, are in general meagre in their details, which consist of little more than names and dates, interspersed with a few brief incidental observations on circumstances thought worthy of a passing notice.

In the records of a district like the Parish of Elsdon, accounts of the burial of men slain in personal encounters might have been expected; for though the fierceness of border warfare had abated, still in the seventeenth century petty feuds were frequent in the district, where parties at enmity generally pursued each other with the bitterest rancour. However, the only entry of this nature is the burial on the 15th of April, 1693, of "Mark Potts of High Carrick, who was slain upon y^e Mote Hills," but by whom is not stated. Accidents are in a few instances noted, but the invidious chroniclers have mostly perpetuated derisive appellations, have alluded to personal and mental infirmities, have almost treated indigence as a crime, and recorded with un-failing assiduity conjugal incontinence, and slips indicating the frailty of a few of the ladies of Redesdale, whilst in the whole history there has not been found room for the commemoration of a single act of disinterestedness, charity, or virtue.

In 1689, we find that "Thomas, y^e son of Jo. Potts of Carrick, was drowned near Cants Miln Dam hed," whilst in 1741, "James and John, sons of William Dunn of Hole Miln," met with a similar fate, but the place of the accident is not recorded.

In 1688, "Bartholomew, son of Wester Will of Landshott," was baptized, and from 1686 to 1709 there were buried "John

Hall the bab," "Kilp and Tirleytower of Hadderwick," "Short-beard of the Stobs," "Allans Jo. of Garretshields," "Dishes Bells Rogerson," and "poor Thomye tunder."

In 1691, "Jane y^e Dumb daughter of Gerard Coxon of Rattenraw" was buried, in 1695, "a child of a weaw^{er} of Rochester was buried at Biriness," and the Registrar adds "some say he received alms." There was also buried in 1699, "Andrew Rutherford of Elsdon very poor," in 1701, "a beger under the name of Jane Davison," in 1727, "Easter Hymarsh of Elsdon Ideott," whilst 1729 completes the climax of misery by the burial of Gerard Coxon of Rattenraw, who had the double misfortune of being "an ideott and very poor."

At the very commencement of the Register is recorded the baptism of "Elizabeth the bastard daughter of David Burn of Scotland, and Ellender Pott of Durtrees," and the burial of "Isabella the daughter of Edward Reed of Troughend by Ann Pott of Potts Durtrees." The Register contains many similar entries, amongst which are the baptisms of "John y^e fatherless bastard son of Jane Hall of Otterburn," and "Nicholas the bastard child of the dumb woman of Rattenraw." There is also an entry of the baptism of "Mary the Bastard daughter of Matthew Anderson of Yaitsfield" and "Ellenor Potts of Monkridghall," to which the scribe has felt it his duty to add "he y^e father having a wife."

In 1681 "Jane Carr Widdow, a quaker, was buried at Otterburn," probably the last interment in that burying ground, which was situated behind the present Presbyterian chapel.

In the older Registers the ages are not given, but in 1687 Jane Nicholson of y^e Raw was buried, "reputed to be near 100 years."

In 1675 "John Harle of Otterburn *alias* Lord Harle was buried" at Elsdon, and in 1711 the place was honoured by having the remains of "Robert the son of Lord Rutherford" deposited within its sacred precincts.

There are numerous records of persons having been buried in woollen cloth, in accordance with an act of the legislature,* which strongly shews the protectionist notions of the times, in which it was passed. Philanthropists had not then conceived the noble but illusory idea of uniting all the nations of the earth in an universal brotherhood, or had not like ourselves learned

* Caroli II. Tricesimo, 1678.

the further important, though mortifying lesson, that many of our neighbours would rudely spurn our proffered embraces.

Highlaws, Morpeth, 5 February, 1883.

APPENDIX.

To these pleasingly told notices about the parishioners of Elsdon, I may subjoin a few little known particulars, from the "Depositions from the Castle of York relating to Offences committed in the Northern Counties in the 17th century," [Surtees Society, 1861.,] that afford us a glimpse of some of the relations between pastor and people at the period, and the danger to which the former was liable from Border freebooters. "June 6, 1660, Jeremiah Nelson, minister of Ellesden, saith that on May 7th, a little before midnight, certain men broke into his house, and came with swords and pistolls into the said house, and shott off a pistoll, and did come into the lodging parlour, where he and his wife lyes, and did threaten him often, that if he would not give them his money presently they would kill him, and some of them said often, 'Kill Baal's priest,' and they took away a purse and bag and money in it." The old Border peel-tower afforded no security to its inmates. The rector's servants gave chase to the robbers, but could not overtake them. Mr Nelson made another deposition on May 6th, 1660. He then says, "that John Shield, Quaker, did disturb him, on the 27th, in the pulpit, and on Monday last he did deny the Holy Scriptures contained in the Bible to be the word of God." The Editor adds, at Durham, on Dec. 5, 1637, I find Percival Reed, charged with "abuseinge Mr Isaac Marrowe, clerke, parson of Elsdon, calling him base priest, and stinking castrell, and did push the said Mr Marrowe by the beard." pp. 84-85.

J. H.

Brief Notes on the Geology of Corbridge, Northumberland.

By G. A. LEBOUR, M.A., F.G.S., Professor of Geology in the University of Durham College of Physical Science, Newcastle-on-Tyne.

THE Tyne, where Corbridge stands on its left bank, runs in a broad valley bounded on the north by the Blyth-Pont and Tyne watershed and on the south by that between Tyne and Derwent. The geology of this valley about the Corbridge meridian though not specially complicated yet offers several points of interest to the student of Glacial deposits and of the Carboniferous series.

The formations occurring in the immediate neighbourhood will now be noticed seriatim, beginning with the newest and highest.

ALLUVIAL DEPOSITS: Under this head may be classed the material forming the low flat haughs by the river—loam, sand and gravel resulting from the regular and occasional overflows of the Tyne. Between Corbridge and Hexham these flood accumulations are extensively developed on the south or right bank, and form the ground chosen for the many market and nursery gardens established hereabouts. The terraces, though much lower and fewer in number than the remarkably fine ones higher up the valley about Haydon Bridge and Bardon Mill, are clearly traceable running east and west parallel to the line of railway—each serving as a measure of the *thalweg* of the Tyne in ancient times. At this particular spot these old alluvial terraces do not reach very much above the level of still possible floods, and may therefore be grouped without impropriety with the true recent deposits of the lowest flats. Nevertheless it must be noted that whilst the material of the latter is really the *alluvium*—or matter brought and deposited by the river itself—the higher, more denuded, and consequently less distinct terraces are carved, to a great extent, out of the thick sands and gravel to be next noticed.

SANDS AND GRAVELS OF THE DRIFT: These are beautifully exhibited along the railway. Capping the Boulder Clay and rising to a considerable height up the southern flank of the Tyne valley, they frequently merge, as has already been observed, into the true river alluvium below. But whereas the latter consists for the most part of such detritus as is derivable from the rocks of the district—grits, sandstones, limestones, and basalt—the former contain a very large percentage of rounded fragments

foreign to it—slaty, greywacke, and igneous rocks akin to those of Cumberland and Southern Scotland. This distinction between the Drift and Alluvial gravels is easily made in writing, but is by no means so easily arrived at in the field, since mixed with the true alluvium must necessarily and constantly be found pebbles fallen from the topographically higher-lying and older gravels.

It has been the custom to call these hill-side gravels and sands which fill up the valleys of the Tyne, Derwent, and Wear, sometimes as far as the 700 feet contour line, the "Middle Glacial Sands and Gravels." They undoubtedly correspond to many deposits which in other parts of England are usually so termed, but nothing has been better proved by the recent wide-spread investigations in British glacial geology than the fact that these deposits are not strictly equivalent among themselves. No good purpose can therefore be served by adopting a title which in the present case would be especially misleading, since nowhere within the district is there any Upper Boulder Clay. But although all that can be said as to the position of these loose beds is that they overlie the Boulder Clay or Lower Boulder Clay, their Glacial age is tolerably well ascertained, scratched and striated stones having from time to time been found in them.* In the fine bluff which forms the back-ground to the Rifle Volunteers' targets west of the Corbridge Station the sands and gravels can be well studied. There the current-bedding of the sands with patches of coal-débris presenting wedge-ended lenticular sections, and the unconformable junction with the Boulder Clay beneath, are exposed in a steep river cliff of which the face is continually changing, owing to constantly recurring falls. The coarser gravelly faces of the deposits is met with also on the hills over which the footpath from Corbridge to Aydon Castle runs.

BOULDER CLAY: Of this no very remarkable sections need be called attention to. It is present over a considerable portion of the entire tract under notice, wherever the solid rock does not come to the surface, from the high ground about and north of the Roman Wall. The valleys occupied by the Erring Burn and

* The above statements must be taken in a broad sense. There are often adventitious beds of sand and gravel in the Lower Boulder Clay, and also beds of clay (probably re-assorted Boulder Clay, but without scratched Boulders) in the Drift between Wansbeck and Wear. These, however, are in nowise continuous, and cannot for a moment be compared either with the sands and gravels under consideration, nor with the so-called Middle Glacial Beds of other areas.

the River Pont are both filled up by Boulder Clay, sometimes to a comparatively great depth. In the Pont Valley the Boulder Clay is associated with many adventitious beds of sand and gravel such as those before referred to, but these cannot be observed *in situ* and are known only through the many borings and sinkings about Clarewood and Fenwick, in the neighbourhood of Great Whittington and Matfen. At Grottingham on the west side of Watling Street near Stagshaw Bank a tilerly has been worked for some years in which the clay used, though belonging to the Boulder Clay in part is also in part to a certain extent a re-assorted deposit. Several other tileries of a similar character have at one time or another been established in the neighbourhood.

MILLSTONE GRIT: Two lines meeting at the river about two and a half miles to the south east of Corbridge between Styford and Bywell—one running with a north easterly curve to Harlow Hill, and the other running due west, to the south of Hexham near Beacon Grange—would separate the Millstone Grit from the Carboniferous Limestone or Bernician Series. This boundary is somewhat arbitrary, being determined simply for convenience by the outcrop of the highest calcareous member of the lower set of beds. I have frequently insisted, in various papers published during the last ten or twelve years, on the fact that in Northumberland the Millstone Grit is devoid of any distinctive characteristics by which it can be differentiated from the non-calcareous portion of the Bernicians. The valley from Stocksfield to Hall Moor is cut through Millstone Grit, and rocks of the same age furnish the greater part of the high ground rising from beneath the Drift gravels and sands to the south of Corbridge. Indeed most of the ground between the Tyne and Derwent is here Millstone Grit.

CARBONIFEROUS LIMESTONE SERIES (BERNICIAN ROCKS): All the rest of the solid, as distinguished from the superficial, geology of the region under consideration (excepting igneous rocks) belongs to the upper division of this series, that is, to that portion of it which in West Yorkshire and Westmoreland would be called Yoredale Rocks, and to which, as exhibited in Durham and Northumberland, I have, for reasons fully stated elsewhere,* and now generally accepted as sufficient by competent authorities,

* See Transactions of the Mining Institute; for 1876, and also the Geological Magazine, Decade II, vol. IV (1877).

given the name of Upper Bernician. Thin limestones separated from each other by thick grits and sandstones, shales, and coals are the characteristics of this formation. The conditions under which its various members were deposited therefore varied from those of land-surfaces of much smaller area and shorter duration than those of the later Coal Measure times, to those of sandy shelving sea-shores, shallow muddy estuaries, and deeper (but not *very* deep) sea-bottoms abounding in the sea-life of coral regions. The wreck of this fauna it preserved to us in the shape of beds of calcareous rock almost entirely made up of the hard parts of the creatures then living, entire or in fragments, encrinites, brachiopod shells (and especially those belonging to the genus *Productus*), branching compound corals (such as *Lithostrotion junceum* and other species of the same genus), and foraminifera, predominating. It is worth noting that the last-named, so often regarded as almost the only organic limestone makers, although common enough when carefully sought for in the Bernician limestones of Northumberland, are yet quite of secondary importance as rock builders here, when compared with the more bulky organisms before alluded to. On the whole, then, the long Bernician period, represented in some parts of this County by more than 8,000 feet of numberless alternations of strata, was evidently one of incessant oscillation, land succeeding sea and sea land, again and again without intermission.

Taking (as is most convenient to do) the uppermost bed of limestone as the upper limit of the Series within the boundaries of the tract described, we have the following easily determined Limestones to which we may look for lines subdividing the Series in a useful manner. They are in descending order:—

The Felltop Limestone	No 4 Limestone
No 2 Limestone	The Little Limestone
No 3 Limestone	The Great Limestone

Of the above The Felltop, Little, and Great Limestones are practically continuous across the County from Alston to the sea. The first-mentioned is well seen in the bed of the river at the sudden bend half a mile east of Styford Hall. It is full of fossils here, and it is remarkable that these are as a rule different from those which characterize the bed at Harlow Hill. They agree, however, with the faunula of the same horizon at Foxton Hall near Alnmouth, of which I gave a description some years ago in these Transactions. Nos 2,

3, and 4 on the other hand are not known to the south west of Corbridge, nor do they appear to be known in the northernmost extension of this part of the Series. They are, in fact, local beds of more or less lenticular shape, indicating areas of comparatively deep sea, probably occupying arms of the sea or straits some twenty or thirty miles in width, and separating stretches of low-lying land (probably islands) of which the traces are preserved to us in some of the thin seams of coal—seldom thick enough to be worked but none the less interesting to geologists—that occur about this horizon. What the exact area of these successive straits (successive in time only) may have been we have no evidence to tell, but that between Tyne and Wansbeck (or perhaps Coquet) in the time which elapsed between the deposition of the Little Limestone and Felltop there was, at three distinct periods and occupying identical portions of what is now Northumberland, a coral sea of no great width is abundantly proved. That this narrow sea ran east and west, and that its deepest portion was somewhere between Belsay and Stamfordham is all but certain.

These three intercalated beds of Limestone are thus of great interest, and can nowhere be better examined than in the neighbourhood of Corbridge. All the lime quarries between the Roman Wall and the Tyne and east of the town, (except those at Halton Shields and between Harlow Hill and the Southern Whittledean Reservoir) are opened in one or other of these beds, in which and in the shales accompanying which, it may be mentioned in passing, most of the common fossils of the Yoredale Rocks may be found.

Coinciding with the intercalation of these Limestones is a very important thickening of the whole set of beds between the Felltop and the Little Limestone, a thickening accompanied or chiefly caused by a great developement of the sandy and gritty members of the Series rather than by an increase in the thickness of the shales. Thus, as I have elsewhere shown,* whereas the entire thickness of the strata between the Felltop and Little Limestones is only 350 feet (with no limestones) in the Alston district, it is 1450 feet in the country between Corbridge and Belsay (with three thick limestones), and whereas in the former region the total thickness of the sandstones is nearly equal to that of the shales, the shales in the latter form scarcely one fourth of the

* Transactions Mining Institute, vol. xxiv, p. 73 (1875).

entire mass. Another point to be noticed is this, viz. : that the three intercalated limestones occur towards the upper part of this group of beds, nearer to the Felltop than to the Little Limestone, there being as much as 1250 feet (out of the 1450) of sandstones and grits with scarcely any shale between the lowest of the intercalated limestones, No 4, and the Little Limestone. These sandstones and grits occupy the whole of the sloping ground north of Corbridge between the town and Stagshaw Bank, and are especially well seen at Inghoe, a little village standing on the summit of a bold escarpment about four miles north of the Roman Wall, and very well seen from thence. To these grits, which are often very coarse, the name of Inghoe Grits has been given.*

The Little Limestone, a bed well-known but not very often exposed in Northumberland, has been largely quarried at Halton Shields. The quarries here are interesting as they are opened in an abnormal thickening of the limestone which is here jammed between two nearly parallel N.W. and S.E. faults. As a result of this "squeeze" the stone is much broken up, in places, into a regular breccia, and the interstices between the fragments are filled with Carbonate of Lime by which the whole has been re-cemented. Some very fine specimens of Calcite in large nail-head crystals are frequently found in nests, lining cavities in this crushed Limestone.

A small colliery is worked at Halton Shields close to the quarry just mentioned, and another, scarcely larger, at Stagshaw Bank between the Military road and Grottington. These are established to work the coal known as the Little Limestone coal, a seam which occurs beneath that Limestone and, under various names, has been worked near its outcrop across the whole county. It is the same coal as that at Acomb, Blenkinsopp, Clarewood, and Boghall.

Other thin and seldom worked seams occur near to and below each of the three intercalated Limestones.

At Bewclay on the Watling Street the fine and bold range of the Great Limestone is a prominent feature in the landscape, the outcrop of the stone, owing to the denudation off its dip-slope of the overlying thick shale, beyond of unusual breadth. Very good specimens of Asphaltum can be obtained in small pockets in this limestone here.

* Loc jam cit. p 75.

IGNEOUS ROCKS: Under this head a small basaltic dyke must be mentioned. It belongs to the N.E. and S.W. Series* and can only be observed in a very weathered and decomposed condition close to the Watling Street in the bank of a small burn running to Little Whittington.

Two other parallel dykes belonging to the same Series† can be seen in the Bingfield Burn a mile or two further north, but beyond the limits adopted in drawing up these notes.

VEINS: A vein of lead ore, probably the north-easternmost extension of the well-known Fallowfield vein, has been worked on a small scale at Grottington.

FAULTS: Besides the two already noticed as crushing the Little Limestone at Halton Shields, attention must be called to the great Stublick Dyke or fault which runs in an east and west direction south of the Tyne, passing by Dipton Hall and the Linnels wood. Here the Millstone Grit on the north is brought down by the fault to the level of the Felltop Limestone to the south on the flanks of the Devil's-water glen. The effect of the Stublick is, however, greater than this. To it is due the southern dip of all the beds between Stagshaw Bank and Corbridge and thence to the western boundary of the County. The general dip of the strata in Northumberland is S.E. to E. as exhibited to the E. and N.E. of Corbridge. In this neighbourhood, therefore, is to be found the key to one of the most marked and important changes in the lie of the beds in the County.

Restoration of Jedburgh Abbey. By JAMES WATSON,
Author of "Jedburgh Abbey, Historical and Descriptive,"
&c.

THE purpose of this paper is to record somewhat in detail the alterations and improvements made by the present Marquis of Lothian on the Abbey Church of Jedburgh; and to give a brief architectural description of that noble fabric. It seems desirable, however, that this should be preceded by some reference to the history of the Abbey up to the time of the recent restoration, and this shall be done as concisely as possible.

The monastery was founded as a priory for the Canons

* See Lebour's "Outlines of the Geology of Northumberland," p. 75.

† I notice that they are marked as one dyke running N.W. and S.E. in the recently published one-inch map of the Geological Survey.

Regular about 1118, and was changed into an Abbey near the close of the reign of its founder, David I. Like all the large religious houses, Jedburgh Abbey was richly endowed; and several of its superiors were men of considerable influence in the State. One of the most memorable days in its annals was that in October, 1285, when Alexander III. was married at its high altar to Jolande, daughter of the Count de Dreux, in presence of the principal nobility of France and Scotland; and when, as the old Chroniclers tell us, the rejoicings were suddenly brought to a close, by the appearance of a spectre at the royal banquet which took place afterwards. During the long war that followed on the disputed succession to the throne after the sad death of this beloved monarch, the monastery passed through many vicissitudes; it was pillaged and burned several times, and the effects of the flames may still be seen on various parts of the ruins. The first of these calamitous visitations occurred a little before 1300, in which year the conventual buildings were uninhabitable; and the Canons were compelled to seek shelter elsewhere until their own home was again made fit for their reception. The town was laid in ruins in 1410, and again in 1416 by the English under Sir Robert Umfraville; as also in 1464 by the Earl of Warwick; and it is all but certain that the Abbey must have suffered at one or other of these times, as a restoration of several portions seems to have taken place shortly afterwards. In 1523, after a whole day's cannonading by an English force 6000 strong under the Earl of Surrey, it had to capitulate, and was committed to the flames; in 1544 it was again burned by Lord Evers; and lastly in 1545 by the Earl of Hertford. From these latter injuries the Abbey never recovered; and it appears that instead of attempting to restore the whole of the church after this, a portion under the tower was fitted up, intended no doubt to serve only as a temporary place of worship. But events of a different character followed all too quickly for the Roman Catholics; the tide of the Reformation swept over the land, and in 1559, when the monasteries throughout the country were suppressed, Jedburgh Abbey was still greatly in ruins. It was in the church under the tower where David Panter, Bishop of Ross, was consecrated with much solemnity in 1553—the last event of splendour and dignity witnessed by the papists; and it was at the door of the same church where Paul Methven—the first “Reformed” minister of Jedburgh—stood

bare-footed and bare-headed, arrayed in sackcloth, in expiation of a serious charge of immorality of which he had been found guilty. In February, 1574-5, this church having fallen into a ruinous state, through the neglect of the Abbot commendator, the Privy Council, at the request of the Town Council and community of the burgh, authorised the taking down of the timber of the refectory for its repair. This continued to be the only place of worship for nearly a century longer; but between 1668 and 1671 the west end of the nave was converted into "a new spacious church" by the Episcopalians—Episcopacy having in turn succeeded Presbyterianism—and the old church was discarded. The rude masonry still seen under the tower is a portion of the old church. The new church extended to the fifth pillar from the west end, and included north and south aisles. Besides the principal entrance at the west, there were two doorways on the north, and one on the south by which the minister entered. The ten commandments and the creed were painted high up on the east gable, and texts of scripture above the pillars on the basement story. There were no galleries. In 1792-93 the church underwent a great alteration by which its appearance both externally and internally was sadly changed. It was the work of the Presbyterians this time. The groined roofs of the side aisles were taken down. The south aisle was removed altogether, and the wall brought forward to the pillars. The lower windows rose to near the top of the arches; and windows were also inserted in the arches of the triforium. The north aisle wall was also taken down and rebuilt. Instead of the two doorways as formerly on the north, there was only one after the alterations, with two windows at each side, 3 feet wide by 5 feet high, and five smaller ones of the same plain character higher up the wall. The pulpit was placed on the south side between the second and third pillars, and in front of it were two galleries, the lower one being under the arches of the basement story, and the upper one—or cock loft as it was called—in the triforium. Similar galleries were erected on the same levels at the east and west gables. During these alterations the pillars were cut into so as to afford supports to the beams of the galleries; portions of the richly foliated capitals were ruthlessly knocked away, and mouldings literally smashed; the great west window was filled with slate, the walls and pillars were plastered, and nothing whatever was done to preserve the character of the beautiful old

edifice. The roof was flat and under the clerestory. Worship continued to be held in this place till April, 1875, and might have been much longer but for the liberality of the Marquis of Lothian who built a handsome new church for the parish in exchange of the old one with a view to having this excrescence removed. The arrangement for this was made by the late Lord Lothian, and fulfilled in a highly generous spirit by the present Marquis.

Lord Lothian being fully alive to the importance of the work connected with the removal of the old church from the Abbey, and the future preservation of the venerable ruins, very wisely determined to have it done under the superintendence of a skilled architect, and for this purpose he procured the services of Mr Robert Rowland Anderson, Edinburgh, a gentleman who deservedly occupies a high position in the profession. The taking down of the modern masonry brought to light many curious and valuable specimens of the art of the carver, and of moulded stones formed hundreds of years ago by the hands of cunning workmen, but which by the vandals of the end of the 18th century were looked upon as only so much rubble, and used by them as such. The interest attached to their discovery was something akin to what a geologist would have experienced in disinterring a like number of fossils from some ancient formations; each specimen having a character peculiarly its own, and the period to which it belonged being quite easily ascertained. The comparative anatomist could with no greater certainty piece together the bones of an extinct animal than could these stones be assigned to their respective places in the ancient building. Many of them exhibited the chevron, the cable, dog-tooth, star, nail-head, and other ornaments, all belonging to the Transition Norman, and which, there could be little doubt, formed part of the doorway that was taken down when a portion of the south aisle was removed in 1792. Then there were bases, capitals, at least one piscina; groin ribs, and various other mouldings, all of an early date. These have been preserved within the precincts of the Abbey. A number of Scottish copper coins belonging to the reign of Mary Queen of Scots, Charles I., and Charles II. were also come upon by the workmen, and were claimed by the Crown as treasure trove. It was unfortunately found necessary for the protection of the nave to place a series of tie-beams across at the clerestory, which greatly mar

the fine effect of the interior. The pillars and arches were scraped so as to free them from the plaster and paint that had disfigured them for nearly a century. No attempt was made to renew the capitals and arch mouldings that had been knocked away inside the old church, but in both of the side aisles the recently discovered groin ribs were replaced as far as practicable. The north wall was partially restored so as to indicate its original character; and the portion of the south wall that was wanting was rebuilt. Not a few of the pillars of the clerestory were renewed; nearly the whole of the corbelled eave course on the north was restored; and to prevent water percolating down through the masonry, the wall-heads were covered with Caithness pavement. The wall-heads throughout the other parts of the building were also carefully cleaned and covered with cement. The slates were taken out of the west window, and its appearance was further altered by the removal of a mullion and transom which formed no part of the original design. The mullion branched away at the top, and formed two pointed lights; and the transom, which had rudely formed cusps, crossed half way up. A small window with a trefoil arch was for the same reason removed from above that on the north side of the west doorway.

On clearing away the accumulation of earth under the flooring of the church, the workmen came upon large quantities of human bones all of which had been previously disturbed; and holes were dug in the adjoining grounds where they were carefully deposited. One of the skulls picked up attracted some attention as it bore the mark of what seemed to have been a wound caused by a sabre—the result doubtless of some dint given in the rough days of Border warfare—but the wound not being a fatal one had healed up before death gave the final stroke. They also came upon a regularly built vault of stone with arched roof in the north aisle containing two coffins—one of lead, the other of oak—and as all remembrance of the existence of such had been forgotten, many conjectures were made as to who were its occupants. The mystery was, however, cleared up. Thomas Philip Ainslie of Over Wells, in the parish of Jedburgh, having died at Newcastle on the 18th of May, 1837, application was made to the Kirk Session for permission to have his remains laid “in the vault within the church,” granted by the heritors to his father. The Kirk Session regretted that permission could

not be granted: 1st—because the vault was originally formed to hold only the remains of “the late Mr Ainslie and his wife, both of whom were interred there which filled up the whole space; and, 2nd, “because the place in which the vault is situated, which was formerly a passage, now forms part of the place of public worship, having been some time ago taken in and seated.”

An important piece of work executed at the same time was a *fac simile* of what is known as the cloister doorway, an admirable example of Transition Norman. There are few, if any, who will disagree with the dictum of the late Sir Gilbert G. Scott, that this and the great western doorway are two of the most exquisite gems of architectural art in this island. This being the case, Lord Lothian did a good service (whatever may be the opinion of some critics as to the propriety of adding new work to old) in causing a copy to be made at this time, as such would have been impossible a few years later in consequence of the rapidity with which the old work is decaying. The mouldings generally are bold and beautiful, and the delicately wrought foliated capitals are protected by a circular abacus. In the arch the first order inside the label mould is entirely composed of the chevron ornament, while the second is covered with representations of human and other figures, grotesque animals, and foliage, alternately arranged. There is a representation of David slaying the bear; of Samson tearing asunder the jaws of the lion; and nondescript animals with human heads and bodies like birds, the tails terminating with foliage, as is common in work of the period. The third order consists of a pointed bowtell; and the fourth is a kind of zigzag moulding decorated with branchlets and leaves. The new doorway has been put up in the south wall of the nave, to the west of the old one. But there were other matters that claimed serious attention. The tower was found to be in a very unsafe condition, and something required to be done for its preservation. The north piers and part of the wall above belong to the early part of the 12th century, while the south piers and the greater portion of the tower itself belong to the latter half of the 15th. It was in the old work where the danger lay. The danger was not a thing of yesterday, for as early as 1636 one of the “pryme pillars” was reported to be in a dangerous state; and that for its repair it would cost a thousand marks, and “thrie scoir singill tries, threttie double tries, two hundreth dails to be scaffolding and centries.” The frailty of this “pryme pillar”

had not a little to do with the resolution to leave the church under the tower for that at the west end of the nave; and for the same reason it was found necessary at a later date not to remove the whole of the old walls. Lord Lothian at one time seriously considered the propriety of renewing the north piers so as to give the tower a further lease of stability, but ultimately the idea was departed from, and means were taken to preserve it as far as possible in its present state. A brick buttress was thrown up against the north-west pier which bulged out considerably, and large wooden beams were placed against the north-east pier—doubtless the “pryme pillar” already alluded to—which is almost wholly encased in modern masonry. To lighten the top of the north wall a belfry was taken down, but this was not to be regretted as it was not in keeping with the general design. The belfry consisted of three distinct parts, namely, a central octagonal tower, twenty feet high, with an open bell cot on each side. The octagonal part was clearly of first Transition character, of the same date as the pointed part of the chancel, and therefore at least two hundred years older than the tower on which it stood. We think it probable that this was one of the turrets of the eastern gable (its measurements were such as to support the idea) and that it was erected on the tower shortly after 1545 for the use of the church under it. The kirk clock was in the centre turret, and bells were suspended in the bell cots until 1771 when they were removed to the town steeple then recently built. Originally the clock had occupied a position lower down on the north wall of the tower, where the mark of the dial is still seen at the centre window, or opening, and the Abbey bells had evidently been hung in the upper story. To ensure the safety of the foundations, concrete was laid round those of all the pillars; and to add to the appearance of the north transept a large quantity of earth—the accumulation of centuries—was cleared from its base. No cost was spared to improve the amenity of the Abbey, and with this view the manse, which was close by, and several other houses, were taken down. The whole work, as may well be imagined, was one of great labour and much expense; but the result has been such as to make Jedburgh Abbey one of the most beautiful ecclesiastical ruins in Scotland, and for this the Marquis of Lothian deserves the gratitude—as he will no doubt receive—of all lovers of architectural art.

Jedburgh Abbey does not exhibit that richness of detail so characteristic of Melrose and other buildings of the later periods, but it possesses a grandeur in its simplicity that few can equal, and that certainly none can surpass. At the foundation of the monastery the church, it would seem, consisted only of a choir of two bays on each side, with side aisles, and probably an apse towards the east; two transepts, and a tower. Some of the old work still remains, and is a fair specimen of the period. One thing worth noting is the arrangement of the lower arches, which spring from the sides of the round pillars instead of from capitals like the zigzag moulded arches above, suggesting the idea that this may have been the result of an after thought. Something similar is to be seen in Christ Church Cathedral, Oxford, and also in Romsey, Hampshire.

The nave, which is an exquisite example of Transition Norman, is the grand feature in the Abbey. It is 130 feet in length, and 50 feet from the ground to the wall-head, the composition of the various parts being light and graceful. There are nine bays in all. The basement story consists of clustered pillars which support deeply moulded pointed arches; in the triforium are semicircular arches subdivided by pointed ones, the latter being supported by slender shafts; while the clerestory is a detached arcade of thirty-six arches, all pointed. In the lower story the pointed bowtell is the chief moulding; all the capitals are more or less foliated; and the abaci, with only one exception, are square; in the clerestory the mouldings are round, the capitals plain, and the abaci have lost their square edges. The west front is a very good composition of the same period, but has suffered considerably by the slow tooth of time, and the still more cruel hand of men. The doorway is deeply recessed, and the enriched mouldings of the semicircular arch are principally the chevron, the chain, and the fish bone. The sides are greatly injured, and seem to have been fired; the shafts that formerly supported the capitals, which still remain, have disappeared; and much of the ornamentation has been obliterated. Sufficient, however, remains to show how very elaborate the carving must have been. On each side of the doorway is a round headed window, nine feet two inches in height, and two feet five inches in width; while in the centre of the gable is another window, also with a semicircular arch eighteen feet ten inches high by five feet eight inches wide. At the sides of this window there is

an attached arcade of pointed arches, but nearly all the supporting shafts are gone. At the top is a beautiful St Catherine's wheel of a later date. The north aisle of the nave had been lighted by windows similar to those at the sides of the west doorway; while the south aisle had dormer windows. As dormers are understood not to have been known until about the middle of the 14th century, this would suggest that the present was not the original south wall, but one built probably about the time of the restoration of the conventual buildings, alluded to at the beginning of this paper. There is evidently a break in the masonry near the old cloister doorway which would go so far in support of this supposition. Some writers have held that the clerestory of the nave and the pointed part of the chancel belong to the Early English style of architecture, but this opinion has been arrived at without taking the details sufficiently into account. The pointed part of the chancel seems to be the nearest approach to it, the windows and buttresses partaking largely of the character; but the capitals are undoubtedly Transition Norman, and the abacus is square, which, according to Rickman—no mean authority—is the best mark. The stilted arch, never a very graceful nor pleasing feature, is seen here. It is greatly to be regretted that this part of the building is so much dilapidated, the whole of the eastern gable and portions of the side walls being gone.

The north transept, part of the south chapel of the choir, and nearly the whole of the tower, belong to the Decorated period. The transept, which appears to be the earliest, is supported with shelving buttresses, and has three windows, two in the west wall and one facing north. The former have plain chamfered jambs, and are divided by one mullion each, with a quatrefoil at the top; and the great north window, which measures twenty-eight feet in height, and over nine feet and a half in breadth, has moulded jambs, and is divided by three mullions, with somewhat flowing tracery. A window similar in design, but much smaller in dimensions, is seen in Melrose Abbey, in the chapel, fifth from the tower on the south side of the nave. The only difference in the tracery is that at the top of the lower lights of the Melrose window there are double cusps, while in Jedburgh they are single. We incline to think that the Jedburgh window is the earliest of the two. The tower is of massive proportions, nearly ninety feet high, and gives an imposing effect to the whole

edifice. The little chapel south of the choir is interesting as showing a curious combination of the Decorated style with the Early Norman. The groined roof is partly of the one style and partly of the other, and is the result of partial restoration.

Perhaps it may be well to correct an error which has been prevalent, to the effect that this chapel was formerly used as the Jedburgh Grammar School, and that in it Thomson, author of "The Seasons," and other celebrated individuals, received the rudiments of their education. There can be no doubt whatever that the school was in close proximity to the chapel, either inside or immediately outside of the Abbey, as we learn from a report anent the condition of the crown arch of the tower which fell in 1743, that the arch was ruinous and dangerous "especially the south-east part thereof which lies next to the Grammar School," whereby the said school was in the greatest danger. But several entries in local records in reference to the repairing, &c., of the school previous to this date are such as to make it absolutely certain that the current tradition is incorrect. The school is spoken of as having chimneys, and as being thatched with broom, conditions that could hardly apply to this chapel. The school was removed in 1751.

We remember a number of years ago pointing out to the Rev. Canon Greenwell, of Durham, a curiously carved stone built in as a lintel above the south chapel, which he at once pronounced to be part of an Anglo-Saxon cross belonging to the 9th century. The late Marquis of Lothian was communicated with on the subject, and his Lordship caused it to be taken out so that it might be seen to better advantage. The carving represents a tree, the branches of which form circles, and in these are two birds and several nondescript animals; three of them are shown as eating the fruit of the tree, and one gnawing a branch. Two of the animals of a dragon-like form are imperfect in consequence of the stone having been broken towards the top. This stone, along with two others, apparently of the same period, that were built into the bell cots at the top of the tower, are figured in Stuart's "Sculptured Stones of Scotland." In this work Mr Stuart says—"At the church of Norham, which Egred built, there were many crosses of Anglo-Saxon character. The cross at Jedburgh seems undoubtedly to be of the same period, and must be classed with similar remains found at Abercorn, Norham, Coldingham, Lindisfarne, Jarrow, and Hexham; all sites of

Saxon foundation." The three stones are now preserved in the north transept. Another stone which has proved of some interest to antiquarians is built in as a lintel at the foot of the north-west turret stair. It is of Roman origin, and the inscription begins with the well-known "I.O.M."—Jupiter Optimus Maximus. The following contracted words can easily be made out, "CAESA." "SEVER." "TRIB.," but the inscription as a whole has never been deciphered. The probability is that this may have been a tablet erected at the side of the Watling Street or Roman Road, which crosses the district within two miles of Jedburgh. An illustration of this stone is given in the 1st volume of Jeffrey's "History of Roxburghshire."

Special reference might also have been made to the masons' marks, and to the double roof marks on the Abbey—the latter subject presenting much more difficulty of solution than would at first sight appear—but as this paper has already reached a greater length than was originally intended, we will not at present venture on them.

The Seals and the Arms of the Royal Burgh of Jedburgh.
By A. C. MOUNSEY, Jedburgh.

ON the 13th of March, 1680, the Town Council of Jedburgh met to consider certain difficulties that had arisen in connection with the Armorial bearings of the burgh. The minute of that meeting recites that the only seal made use of by the council, either in sealing of evidents or of burgess tickets "for this thirty years by gane," that is, from 1650 to 1680, had borne the unicorn for the town's arms; that the unicorn being a part of the king's arms, the town could not warrantably assume nor further use it; that the burgh's arms had never been matriculated according to Act of Parliament; and that the old seal "which has at first been made use of," that is, the original seal of the burgh, was unfit to be made use of again. For these reasons the council recommended the magistrates "to write in or speak with" the Lord Lyon for getting the burgh's arms matriculated, and to intimate to him that "they shall hereafter bear for their arms a man on horseback, with steel cap and jack, and a Jedburgh Staff in his hand," the motto to be supplied by the Lord Lyon, who was at that time Sir Alexander Erskine of Cambo.

The minute adds that Provost Ainslie "has produced the twa old seals."

The new arms referred to in the minute were accordingly granted to the burgh, and they are matriculated and thus blazoned in the Lion's Register of Arms:—"The Royall Burgh of Jedburgh gives for Ensignes Armoriall Gules on a horse Saliant argent furnished azure a Chevalier armed at all points grasping in his right hand a Kynde of Launce (called the Jedburgh Staff) proper. The motto in ane Escroll Strenuè et prosperè."

After receiving the above new arms in 1680, the Town Council, therefore, had in their possession four different seals of the burgh, namely, the seal that had been last used, the new seal, and the "twa old seals."

The number of seals known to have been used by the burgh is also four. They are:—

1. An oval seal bearing the Virgin sitting in a chair opposite another figure also on a chair. Legend, *S. communitatis de Jeddeworthe*.

2. A seal bearing the Virgin and Child. Legend, *Sigillum commune de Jedburgh*. This seal is figured in Jeffrey's *History of Roxburghshire*.

3. A seal bearing on a shield an unicorn passant. Legend, *S. communitatis de Jedburgh*. Figured in Jeffrey's *History*.

4. A seal bearing an armed Knight at full gallop. Legend, *Sigillum burgi de Jedburgh*. Figured in Jeffrey's *History*.

Now, of these four seals, Nos 1 and 2 are evidently the oldest. They are pre-Reformation seals, and they are no doubt the "twa old seals" produced by Provost Ainslie at the Council board in 1680. Of these two, again, No 1, on which the name of the burgh is spelt *Jeddeworthe*, seems clearly to be the more ancient; it is the seal which "at first has been made use of," the original seal of the burgh.

Of the other two seals, No 3, bearing the unicorn, succeeded that with the Virgin and Child, and was used from 1650, the second year of the Commonwealth, to 1680, the thirty-second year of the reign of Charles II. This statement is corroborated by the fact that the Weavers' Seal of Cause, subscribed by Provost Kirkton in 1625 and now in Jedburgh Museum, is sealed with the Virgin and Child, while the Ratification of it in 1671 bears the unicorn. No 4, with the chevalier and "a kind of

lance called the Jedburgh Staff," has been in use since 1680, and it is the only arms that the burgh is entitled to bear.

In his *History of Roxburghshire*, Mr Jeffrey asserts that when the community of Jedburgh swore fealty to Edward I. in 1296, the seal attached to the declaration had for device *an unicorn tripping argent ringed maned and horned*. This assertion is made without authority and, as has been seen, without due investigation. There cannot possibly be any authority for the *colour* (azure) at that early period.

The weapon called by the Jedburgh Magistrates in 1680 a *Jedburgh Staff*, was defined by the Lord Lion as a *Kynde of Launce*, and styled by John Major (*De Gestis Scotorum*, v. 3.) *baculum ferratum Jedwardiæ*, and was well known and was long used not only by the Jedburgh men but also over all the Scottish Lowlands, and it is in many old writings sharply distinguished from the axe and the halberd. It was used, as Major tells us, by the Borderers under Bruce at Bannockburn, and it was a recognised military weapon so late as 1643. (Spalding's *Memorialls of the Troubles in Scotland*, II. 270, Spald. Club. ed.).

List of Hill Forts, Intrenched Camps, etc. in Roxburghshire on the Scotch side of the Cheviots. By JAMES GEIKIE, LL.D., F.R.S., F.G.S., Murchison Professor of Geology and Mineralogy in the University of Edinburgh.

IN transmitting this valuable paper as a contribution to an attempt to classify and enumerate the Border Camps, and analogous remains of ancient peoples, Dr. Geikie makes a few preliminary observations, in his accompanying letter, which may serve to introduce the subject. "As you are interested in the prehistoric remains of the Cheviots, I enclose a list of the various Camps, Forts, Intrenchments, Standing Stones, and Tumuli, I came across upon the Scotch side while engaged in doing the Geology. I am not aware whether as full a list has been made before. It is worth noting that remains of camps and forts are much more abundant about the head waters of the Beaumont than elsewhere in the Cheviots;—I speak, of course, of the Scotch side. In that same neighbourhood, traces of ancient cultivation are abundant, and the same is the case in the district about Hownam. West of the Kale, camps are few and far

between. But the numerous intrenched positions in that valley, and in those of its upper tributaries, and the still more remarkable abundance of such remains about the head waters of the Bowmont, give one the impression of a pretty well populated district—one, however, in which the inhabitants seem to have lived in fear of their neighbours of the lower countries.”

LIST OF HILL FORTS, ETC.

- Morebattle Hill, top of, (717 feet). Camp 500 or 600 feet long by 250 feet broad. On same hill, about 300 yards N.W. of last, a Camp not so well preserved, 240 ft. across. Traces of double intrenchment.
- Linton Hill, above Burnfoot farm-house, S.W. of Yetholm Loch, many tumuli once existed; now mostly destroyed. Mr Purves of Burnfoot (since dead) told me, he had ploughed several down, and found nothing of any importance—“nothing,” said he “but a wheen rubbishy pots of earthenware.” I saw fragments lying about. It was of the usual unglazed character.
- Valley of Kale Water. Ruinous tumulus at Priest’s Crown, near Blinkbonny, 1 mile east of Eckford.
- Do. Cessford Burn. “Hobbie Kerr’s Cave;” hollowed out in Conglomerate.
- Kale Water: Hill a little south of Grubbet Mill: small circular camp about 90 ft. across.
- Do.: Hownam Law. Supposed Roman Camp.
- Do.: Kersmoor Head about one mile S.E. of Hownam Law: Tumuli.
- Do.: Hownam Rings. Hill-top 1 mile east of Hownam: Intrenched camp or fort. Three rings (intrenchments) face the west, and two the east. About 100 yards or less due south of this strong camp is a line of Standing Stones called “The Eleven Shearers.” The line runs nearly west and east, but a little north of west and south of east. Many of the hill-slopes of this neighbourhood show lazy-beds or traces of ancient cultivation.
- Do.: Chatto Craig (1024 ft. high). Circular hill-fort or encampment: double intrenchment. Inner ring measures 160 ft. by 100. Two miles south of Hownam
- Do.: Thoulieston Hill (1027 ft.) due west, 1 mile or less from Hownam Camp, rudely square, 250 ft. across; with mound in centre: perhaps Roman? Some 400 yards S. is a circular, or rudely square fort or camp measuring about 125 feet across.
- Do.: Shank End: 1 mile N.E. of Towford: small circular camp, about 120 feet by 100.
- Do.: Woden Law (1380 ft.) Camp: form of, accomodated to the conformation of the ground. Six intrenchments face S.E.; only one overlooks the steep-hill slope towards the Kale. Probably Roman.
- Do.: Large Roman Camp at Pennymuir.
- Do.: Gaisty Law, head of Gaisty Burn; curious irregular hollows and ridges. Perhaps remains of old British Town.

Do. : Bughrig : Capehope Burn : Moat Knowe.

[A fuller description of the Moat Hill is contained in another communication, as follows :—]

I find I have noted the extreme length (from north to south) of the Moat Hill fortification as 166 yards—its breadth being 100 yards. A spiral or circular pathway led up to the top of the hill, which has been protected by upright slabs of porphyrite—and a similar wall evidently circled round the top of the hill. The slabs have been taken from the hillock itself—the top of which would doubtless be somewhat levelled by the process. The top of the hill within the fortification showed a number of crossing and intercrossing ridges, which were I suppose foundations—and suggested to me that the whole hill-top formed a kind of fortified dwelling for one or two “small families,” with separate walled apartments. In the Outer Hebrides I have seen similar arrangements in some of the more primitive districts; where to utilize space, one wall served as wall for two separate abodes. I have seen the same in Iceland. The distance between the Moat Hill and the circular encampment alongside is about 100 feet. This camp is 150 feet in diameter. One could not help fancying that this circular camp may have been intended as a place for keeping cattle over night.

Yett Burn : Huntfold Hill (1087 ft.) Very fine circular camp or hill-fort.

On the north side facing the hill-slope above are four intrenchments; while only three overlook the Yett burn. The inner camp measures 150 ft. across. From the centre of the inner camp to the outer intrenchment is 320 ft.; and 170 feet from same centre to the outer ring on the south side.

Do. : Head of Burn, north of Callaw Hope, Callaw Cairn, 1662 ft. : A tumulus.

Do. : Hut Knowe, $\frac{3}{4}$ ds of a mile N.W. of Hunthold Hill, on hill between Yett Burn and Mainhope Burn : double intrenched circular fort, 250 ft. by 200.

Heatherhope Burn : North Side : Blackbrough Hill : (1300 ft.); a circular camp or fort, measuring 300 ft. by 200 ft.

Do. : South side : Little Rough Law : circular camp measuring 200 ft. by 160 ft. About two-thirds of a mile above Heatherhope Shepherd's house, another camp measuring 200 ft. by 200 ft.

Bowmont Water : Upper tributaries of :

Calroust Burn : in Crook Cleuch, two small circular camps, a little over 30 yards apart, measuring each about 100 ft. across.

Calroust Burn : The Castles ; fine camp with double intrenchment, measuring 550 ft. by 250 ft. to 300 ft. An intrenchment curves from the north of the camp down to the edge of a steep cliff of porphyrite which faces the Burn. Some 500 yds. S.E. of the Castles, a straight intrenchment runs across the hill-top between Calroust Burn and Alder Burn.

Windygate Hill on Border line (2034 ft.) : Tumulus : another lying N.E. on same line at height of 1860 ft.

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Between Calroust Burn, (near where it joins the Bowmont) and the Bowmont, a small circular camp on hill at 750 ft. level : measures 150 by 120 ft.

Kelsocleuch Burn : west side ; S.W. of Kelsocleuch shepherd's house about 400 yards, circular camp, 150 ft. across. East side of the same burn : on Hayhope Knowe a circular camp measuring 400 ft. by 200 ft. N.W. of last, 250 yards or so, another circular camp, 150 ft. by 120 ft. N.E. of last about 400 yards on north side of the hill-road, a circular camp or fort with traces of three rings ; measures 300 ft. by 250 feet. About 200 yards N.W. of last, an intrenchment runs from the hill-top north-east down the hill-slope to Kingseat Burn—a distance of 500 yards or so. North-west by west of Kelsocleugh shepherd's house, 500 or 600 yards, is a small circular camp (120 ft. by 100 ft.) and traces of a smaller one abutting upon it ; both forming part of one and the same defence. West of this encampment, 100 yards or so, is a long intrenchment that undulates towards north—running along the hill-slope until it reaches some springs, after which it follows the water-course down the hill-slope to Outer Souter Cleuch. This intrenchment is rather more than half a mile in length.

Kingseat Burn : on Fundhope Rig are traces of a small circular camp. At feet of the Dry Slack occurs a circular camp measuring 150 feet across. Farther down the burn, at about 200 yards above the mouth of Cheviot Burn, an intrenchment runs up the hill to the north, and keeps along the hill face, until it reaches the Cheviot Burn. Near the north end of the intrenchment, and upon the line of the latter, is a small circular camp, rather faintly marked, about 60 feet or so in diameter. On the hill-slope (north) behind Cocklaw foot is a circular camp, 200 ft. by 120 ft. ; on the hill-top (Bonnie Laws) is a tumulus. Between Bonnie Laws and Park Law (at about 850 ft.) is a small circular camp about 100 ft. or so across. Upon Park Law is a fine double intrenched camp, measuring 300 ft. by 200 ft.

Sourhope Burn (Bowmont Water) : Kip Knowe. Circular camp with triple intrenchment facing the hill-slope above ; and a single intrenchment facing the steep slope towards the burn. The inner ring is some 200 ft. across. Upon the hill-top to the west, about 500 or 600 yards, a tumulus. There is another still further west on Hot Hill close beside the hill-path.

— Mow-Law, opposite Belford, (Bowmont Water). Ring round the hill-top—not a camp, apparently. On the slope below the hill lies a circular intrenchment called the Peel, 130 feet or so in diameter.

Atton Burn (Bowmont Water) : Near the head of the burn, Kip Knowe, small circular camp, 150 ft. by 120 ft.

Curr Burn (Bowmont Water), south side of, The Shank : nearly opposite shepherd's house, a camp, 350 ft. by 180 ft. It has a double intrenchment on the side facing N.W., i.e. looking right down the valley. On

Wildgoose Hill (1097 ft.) between Curr Burn and Halter Burn, is a camp measuring 350 ft. by 180 ft.

Halter Burn (Bowmont Water). On hill-slope above Burnhead (east side of valley) a camp, with traces of double intrenchment: 250 ft. by 120.

Castle Law (Bowmont Water). Venchen Hill near Yetholm: a circular camp, with triple intrenchments on S.W. side; only a single intrenchment on the opposite side, 300 ft. by 250 ft. or thereabout.

Jed Water and Tributaries:

Arks, 500 yards north of shepherd's house: circular camp 200 ft. by 120 ft. In a plantation west of the camp is a tumulus.

Hyndlee Hill (1000 ft.), 1 mile [3 miles] S.W. of Southdean Manse; circular camp with double intrenchment, 300 ft. by 250.

Southdean Rig, 2 miles S.E. of Southdean; small circular camp in a plantation.

Southdean Hill: camp or fort, 320 ft. by 150 ft.

Doorport Hill, near Chesters, Southdean. Fine double intrenched camp; inner ring measures 240 feet across; outer ring, 350 ft.

Tinnis Hill: above Patonhaugh in Jed Water, camp or fort, 220 ft. by 120 ft. or so.

Hog Hill, east of Edgerston Burn, a Tumulus.

Stotfield Hill, same neighbourhood, a Tumulus.

Kip Knowe, near Falla, a Tumulus.

Howden, near Jedburgh: traces of a circular camp.

Lanton Moor near Jedburgh: circular fort or camp: 120 feet in diameter. Same moor east of Timpendean Tower, at corner of a plantation, remains of a camp.

Head Waters of the Oxnam:

Cunzierton Hill: (1100 ft.): circular camp or fort, 450 ft. by 260 ft.

A small intrenchment outside of main intrenchment on S.W. side.

On Watling Street: East of Trestle Cairn, some Standing Stones: one mile north of Roman Camp at Pennymuir.

North of Trestle Cairn: Standing Stones. Tumulus on each side of Street nearly a mile north of these last stones.

Jock's Hill, The Law: near Swinside: Remains of an oval camp or fort: 500 ft. by 350 ft.

Between Oxnam Water and Jed Water: Several tumuli N. and N.E. of Crailinghall on edge of Cessford Moor. Tumulus near N.E. corner of Whitton Loch.

Between Jed Water and Rule Water: west of Mervin's Law a tumulus, near footpath leading across moor.

Near Ashtrees, head of Woodfield Burn, about a dozen tumuli within a radius of 300 yards or so.

Bowshot Hill: remains of a camp, apparently oval; about 360 feet by 220 feet.

Faw Hill, east of Bowshot Hill; circular fort, 200 ft. across.

Westerhouses, near Abbotsrule; oval camp called Iron Castle: 350 feet by 230 feet.

Bonchester Hill, Rule Water. Largest hill fort in the district: has appar-

ently been dug into, and otherwise tampered with. Measures some 300 yards by 240 yards or so. Traces of several intrenchments, which run into each other here and there.

JAMES GEIKIE.

OBSERVATIONS.

The outlying districts on the Borders have hitherto been regarded as utterly barren of interest, but are actually worthy of the Club's deepest attention, the country especially between Kale Water and the boundary line being crowded with memorials of the primitive inhabitants, where to the uninstructed eye, in summer time, there is little else visible than rough grass and boulders, brown patches of heath and green brackens. We owe it to Professor Geikie's fortunate forethought that they are hidden no longer.

I may remark that Mr Purves's overturn at Linton Burnfoot, previously and hereafter referred to, was not quite so unproductive of information as was supposed: a very fine highly polished flint celt, and a peculiarly shaped stone-axe of mountain limestone, ground all over—both Neolithic—having been preserved. They are figured in the Club's "Proceedings," vol. VIII. Plate VIII. fig. 3. and Plate IX. fig. 3., and described at pp. 544, 545. Thomas Pringle, the poet, in delineating the scenery of his boyhood, thus alludes to the tumuli on the summit of Blaiklaw or Blake-law in that neighbourhood:

“ And, tinged with that departing sun,
To Fancy's eye arises dun
Lone Blaiklaw, on whose trenchèd brow,
Yet unprofaned by ruthless plough,
The shaggy gorse and brown heath wave,
O'er'many a nameless warrior's grave.”

Poetical Works, p. 124.

All traces of these are now obliterated. Equally unsuccessful would be the search after five or six upright stones, forming a circle, once existing on the farm of Frogden, which were designated "The Tryst"—from their being a rendezvous where predatory hordes projecting an incursion into Northumberland were wont to assemble. (New Stat. Acct. Rox. p. 152.). The Rev. Dr. Leishman, Linton, communicates the following particulars about these vanished antiquities. "It is to be feared that all traces have been effaced. Except the crowns of the Linton and Graden Hills, every acre of the parish that is not mere bog has been latterly under the plough. The 25-inch Ordnance Survey marked about fourteen tumuli as then to be seen, all of

them on two farms lying on the southern slopes of Linton Hill. Such of them as now remain have probably been disturbed. The late Mr Purves, Burnfoot, often told me that in the earlier years of his tenancy, he had many of them broken up, and found in them ancient pottery and bones. But when these remains were exposed, they went to pieces.

“The Tryst Stones have long disappeared. I remember one old man who had seen them, but I did not know of this till after his death. From what I have been able to gather, it appears that the circle stood about 300 yards east of the curious hollow which the Statistical Account compares to a cockpit. The field in which the stones were is still called the Five-stone field; and a parish road, about 200 yards off, the Five-stone road; but I am told that just at this point, the present road leaves the line of the old track, which ran close to the circle and pit. I have often wondered what the history of this hollow has been. It seems to have been artificial, though its perfectly regular form has been lost of late years, by the making of a sloping track through its edge to cart off stones that lay at the bottom.”

Several instances of urns and other finds in the Hownam district have come to my notice, but they are reserved, as well as much curious matter obtained recently, for a subsequent year. The list at present given will, it is to be hoped, aid further research.

To Sir Walter Elliot, I owe some reminiscences of camps, &c. in the Southdean and Hobkirk districts. Sir Walter says: “Within the memory of persons of middle age, there was a somewhat remarkable fort, or tumulus on the farm of Turnpikehead, close to the N.E. of Southdean Church, now in the occupation of Mr Telfer, whose father took the place when it was moorland and ploughed up the whole. The old name of the farm was ‘Round-about,’ from the circular ditches surrounding the spot.” Subsequently, Sir Walter states, “I have got some further particulars about ‘The Round-about,’ from my keeper’s wife, a daughter of old Andrew Telfer, the late farmer. She remembers it quite perfect in what is now the field opposite the New Church, but then an open heath covered with heather, in which stood the Round-about, a circular enclosure 25 to 30 yards in diameter, surrounded by a high earthen mound, outside of which was a deep ditch, and beyond it a second earthen mound not so high as the inner one. It was a favourite playing place of

the children, who used to run or slide down the outside of the inner circumvallation to the bottom of the ditch, and then ascend the opposite mound. It was levelled by her father, who ploughed up the moor, and made it arable. It cost him no small labour, and in the process many small manufactured stones, such as whorls, &c. were obtained, and quantities of flints, many of which old Andrew used for his old gun. The floor was hard as if beaten down with clay, and on the west side was a large earthen ridge as for an approach, extending more than 100 yards, and the top had a line of stunted rowan-trees, the only trees about. For years afterwards pieces of flint were picked up when singling turnips or during other agricultural work. None are now forthcoming, although I told William Telfer, the present tenant, some years ago to preserve any for me. His sister—my informant—gave me a couple of spindle whorls, some years ago, which I still have. I cannot help thinking that this must have been a remarkable work. Faint traces of the circle are still discernible all round the Camp.

“There was also another old site behind the gamekeeper’s house in the village of Chesters, traces of which, the gamekeeper says, can still be seen. It goes by the name of the Kilhow. About four years ago, an earthen ware urn was dug up in a field behind the school-house, now in the farm of Mr Mein of the Broom, which was unfortunately broken to bits by the labourer’s spade. I imagine Chesters to have been a place of note in early times.

“The remains at Bonchester Hill, two or three miles west of the village of Chesters appear to be the site of an old Celtic town. The two double ditches on the south side are still very perfect, and there are still indications of the old entrance on the S.E. side quite traceable. Three quarters of a mile south of Bonchester Hill is a quadrilateral camp at the base of Wolfelee Hill, nearly opposite my house, but a little farther south, three sides of which are tolerably perfect, with a gateway or entrance on two of the sides. This I take to be Roman, and may have been raised to act against the British town on the hill.”

The summary in the Statistical Account of the parish of Hobkirk completes, what can at present be said about this part of our limits. “On Bonchester Hill, there are remains of a citadel, with numerous encampments, both round and square; and in some places modern circumvallations may be observed inter-

secting the more ancient. The situation is commanding, and seems to have been regarded as a place of strength and convenience.* Hand mill-stones, arrow-heads, and other implements of former times, have been found in the vicinity. On Rubberslaw, at Wauchope, and in several other places, there are likewise vestiges of encampments or fortifications. In digging, some time ago, at Langraw, a quantity of ashes and partly consumed bones were exposed within a circular area about 18 feet diameter. On these being removed, four holes drilled in the *dent* or sandstone shale were discovered, in which posts had been secured by small stones crammed in from above. Whether these posts had supported a canopy or a funeral pile, or what had been the purpose of the erection, we are unable to determine." [A hut circle with posts to support the roof, having the domestic fire in the centre, in which bones deprived of their marrow, had been burned.?] Several urns have been dug up in different situations. Two cairns have been removed within the memory of the present generation; one on the east side of Rubberslaw, the other at Fodderlee, near to a place where tradition says a battle had been fought."†

Several of the weapons and implements disclosed by modern cultivation in the Southdean and neighbouring district have been preserved in the Jedburgh Museum. Jeffrey, "Hist. of Roxburghshire," i. plate 2, has some poor figures of certain of them. Nos. 1 and 2, socketed and single-looped bronze celts were from Southdean Law; 5 is a bronze knife or razor, discovered near Southdean; 6, an "axe of stone," more correctly a polished stone-celt, was found at Chesters. 7 is a heavy axe-hammer of stone from Howden Moor, Jedburgh. 4 is an iron-spear head from Westerhouses near Abbotrulle; and 8 is a supposed hilt of a Roman sword from near Abbotrulle. Mr James Watson has obliged me with rubbings of such as he met with in the Museum at Jedburgh. There are four bronze celts from Southdean, all different in type, and well worth figuring. They are remarkable for their small size, as if they had been wielded by pigmies. I give the following notes of them, although they cannot be accurately described without drawings or from actual inspection.

* The writer's derivation of Bonchester from *Bona Castra* is amusing.

† New Stat. Acct. of Roxburghshire, pp. 212-3.

BRONZE.

1. Socketed celt, single looped, rugose longitudinally ribbed and otherwise ornamented : 4 inches long ; $1\frac{1}{2}$ inch wide at the butt ; $1\frac{3}{4}$ across the broad cutting edge. Southdean.

2. Flat celt ; except a stop-ridge above the blade : $4\frac{1}{2}$ inches long : 1 inch across the butt : $1\frac{1}{2}$ at the stop-ridge ; and 2 across the cutting-edge. Southdean Law.

3. Flanged-celt, with groove for the handle ; not ornamented ; 6 inches long ; $\frac{3}{4}$ inch across the butt, 2 inches at the broad end ; length to the stop-ridge, 3 inches. Southdean.

4. Flanged-celt, rugose with small longitudinal ridges, and other ornamental work ; $5\frac{1}{4}$ inches long ; $\frac{3}{4}$ across the butt ; $2\frac{1}{4}$ across the broad end ; $2\frac{1}{2}$ inches to the stop ridge. Southdean.

5. A bronze knife or razor, $4\frac{1}{2}$ inches long ; $\frac{3}{4}$ inch at widest ; perforated near the broadest end ; gradually tapering to a blunt apex. Southdean Law. Jeffrey's fig. 5.

FLINT AND STONE.

1. A very fine example, regularly tapering, and shaped like a chisel, of a white flint celt, beautifully although roughly chipped ; ground at the broad end ; $7\frac{1}{2}$ inches long ; $1\frac{1}{2}$ inch at the butt ; 2 inches at the broad end. Southdean.

2. Broadish stone celt, said to be of greenstone, but possibly of indurated green-slate, polished all over, 5 inches long ; $1\frac{1}{2}$ inch at the butt ; nearly $2\frac{1}{2}$ across the broad end. Southdean, Jeffrey's fig. 6. from Chesters.

3. Part of a stone-axe, if axe it be, as it is more like an adze or hoe, of a peculiar shape ; 6 inches long ; 1 inch at the butt ; $5\frac{1}{2}$ across the broad end. Southdean.

IRON.

1. Iron spear-head from Abbotrule ; $6\frac{1}{2}$ inches long ; greatest breadth of the blade $1\frac{1}{2}$ inch.

In May, 1883, a stone axe or celt, was turned up by the plough on the farm of Cunzierton, on the Oxnam, which is thus described : "The stone which is of a lightish colour and very hard, has taken on a beautiful polish, and the implement seems as fresh as if newly formed. It measures a little over 6 inches in length, about 3 inches broad at the face, and tapers away to a point at the other end. It is thinner than most of the axes found in the district, being not more than $\frac{1}{2}$ inch at the thickest part. It is in the possession of Mr Stavert." It is of aventurine quartz.

Our friends the Hawick Archæologists have mapped the British, Roman, and Saxon antiquities in their circuit. They cluster around that town, especially studding the vicinity of the Teviot, and one of its lesser southern tributaries, and also the Slitrig ; but appear to be few in number on the Borthwick Water. The map is I believe the production of our learned member, Dr. J. A. H. Murray, and is unpublished. We still require to know about the camps of Liddesdale, and those around Melrose before Roxburghshire can be said to be fully surveyed archæologically.

JAMES HARDY.

On Lepidoptera in Roxburghshire. By ADAM ELLIOT,
Samieston, Jedburgh.

THE various districts of the county of Roxburgh will require to be more fully investigated by Entomologists before an account of its Lepidopterous insects can be written, bearing a near approximation to the number of species occurring throughout its area. It must be remembered that the character of the seasons has a very direct effect on the numerical decrease or preservation of species. Of this influence we have a recent and very obvious example, the winter of 1881-2 being mild and open, the summer following has been generally one of the most barren in Macro-lepidoptera that has occurred for many years, and the two immediately preceding seasons being very productive, following hard winters with much snow, the results produced by the weather are particularly marked; this effect may probably also be observed in other orders of insects, such as the Coleoptera, and so a course of years is necessary in order to note the insects which are recurrent in their appearance.

A pretty large number of species have been recorded, but as yet the numerically extensive Sub-division of the Heterocera—the Micro-lepidoptera—has received comparatively little attention. The Lepidoptera that I shall endeavour to note, I have observed principally in the south-eastern division of the county, either as imagoes, or reared from larvæ obtained there; some of them, however, to the westward, or taken by others.

I shall first note some of the species belonging to the first order of Lepidoptera—the Rhopalocera—and shall append a list of the components of both orders—the Rhopalocera and the Heterocera—which I know to occur in these districts.

Of the first order, the Rhopalocera, I am able to record twenty one species only. Of these the Pieridæ comprise five species, the Satyridæ six, the Vanessidæ four, the Argynnidæ two, and the Lycænidæ four. Many of these are common and generally distributed; several very local, and one species, *Colias Edusa*, recurrent and extremely uncertain in appearance, although I have seen it both in the eastern and western districts. Of the local species, *Satyryus Semele*, in both districts, frequents dry rocky banks and stony places on the sides of the hills, to which it is confined. *Erebia Blandina* haunts from about Minto westwards. I have seen a specimen some miles further west, which,

however, appears to be about its limit of occurrence in this direction. *Cænonympha Davus* is found in some particular spots of the Border hills, and *Argynnis Aglaia* has also there its peculiar resorts. *Melitæa Artemis* has been taken in abundance near Minto, and it occurs also seven or eight miles south-westward. I have captured *Lycæna Alsus* and *Artaxerxes* in the valley of the Slitrig in the western district, and in the eastern they have been found in the Oxnam valley. The species mentioned are the more notable representatives of the order Rhopalocera in these districts.

In the second order, Heterocera, and in its first group, the Sphingidæ, the genus *Ino* with its three species is represented only so far as I know by *Staticea*, a pretty but small species to be met with in the western district, and I have there taken it in considerable numbers in bright sunshine. I have not heard of any species of *Zygæna* having been seen, but *Filipendula*, being a generally distributed species, will probably yet be recorded. The larvæ of *Smerinthus Populi* are common on every species of *Salix* and *Populus*, showing much variation in colour and marking. I have taken it from *Salix alba* almost white in hue, and a very marked var. occurs on *Populus nigra*, each segment excepting the first, second, and twelfth, having a purplish blotch just above the spiracles, and I have this year kept a few pupæ from these from which I expect to observe whether or not the imago will shew any variation from the usual type, these variations not being at present perfectly accounted for. The well known *Acherontia Atropos* appears occasionally in early summer, and again in autumn; the June specimens have probably hybernated, or are from late autumn larvæ, and just emerged from the pupa state in time for the potato plants. *Sphinx Convolvuli* is another splendid insect, and being a recurrent species is not so frequently met with, but has been secured both in the eastern and western districts, and I have a large specimen obtained at Glenburnhall near Jedburgh in the end of August, 1881. The two rare species of the Sphingidæ, *Deilephila Galii* and *Chærocampa Celerio* have both occurred; one specimen of the latter I have from the western district, and also *Porcellus*. *Macroglossa Stellatarum* and *Bombyliformis* are very uncertain in appearance. The larvæ of *Trochilium Bembeciforme* are common in stems of *Salix alba*, the imagoes not so often seen.

The first family of the group of Bombyces, the Epialidæ, is

represented by all the known species; *Velleda* and *Sylvinus* being especially abundant in some particular years. Of the Notodontidæ, *Harpyia Vinula* is generally distributed but scarce; *Notodonta Dromedarius* and *Ziczac* moderately common, the larvæ of the former on birch, and of the latter on *Salix Capræa*; of *Leio-campa Dictæa* on poplar, and *Dictæoides* on birch, the latter a scarce species, but in two localities I have gathered the larvæ, and bred the imagoes. *Lophopteryx Camelina* on oak and *Salix Capræa*, is a rather common and generally distributed species, the imagoes showing considerable variation. *Pygæra Bucephala* with its gregarious larvæ, which occurs so abundantly in some places, is not common in Roxburghshire. Of the *Liparidæ* we have *Dasychira Fascelina* and *Demas Coryli*: the latter I have bred from larvæ on willow and sloe, and although a scarce insect, it seems to be generally distributed. The common species of the Lithosidæ—*Nudaria Mundana*—is generally abundant. In the Chelonidæ, *Euthemonia Russula* has been taken in the western district. *Nemeophila Plantaginis*, which I found in two different localities, is a very local insect; and when it does occur is confined to a few acres of moorland, and not even then visible every season. *Bombyx Quercus*, var. *Callunæ* does not appear to be very general in its distribution: in this district I have only found it on moorland in the higher parts of the Oxnam valley, and have bred a fine series of specimens from larvæ taken there, which I reared exclusively on hawthorn and poplar. The imagoes from these are remarkably large, the female measuring $3\frac{1}{2}$ inches across the expanded wings. *Saturnia Carpini*, the solitary representative of the Saturnidæ, is found on every moorland: it seems specially subject to the attacks of parasitic Diptera and Ichneumonidæ, and from this cause is decreasing in some localities.

In the large group of the Noctuæ, the pretty species, *Thyatira Batis* occurs, but not commonly, and the same may be said of *Acronycta Ligustri*. In the autumn of 1880 I took two specimens of *Nonagria Lutosa*, the best species we have of the Leucanidæ. *Luperina Testacea* may be frequently seen flying swiftly over the hill-sides at dusk in August. *Mamestra Furva*, easily confounded with vars. of closely allied species, is occasionally to be met with, and *Celæna Haworthii* in the higher mountain localities. I took several specimens of *Caradrina Blanda* in the summer of 1881, being the best species we have of the Caradrinidæ. In the Noc-

tuidæ we have *Triphæna Ianthina*, and *Fimbria*. We also have *Subsequa*, the best species of the genus, and of which Mr C. G. Barrett, the well known Lepidopterist, says: "the Roxburghshire specimens have very much darker fore-wings than any I have before seen. They contrast handsomely with Suffolk specimens." We have also *Noctua Glareosa*, *Triangulum*, and *Conflua*, and in the Orthosidæ, *Orthosia Suspecta*, *Upsilon*, *Loto* and *Macilentia*; *Anchochelis Litura* and *Orrhodia Vaccinii* and *Spadicea*. *Tethea Subtusa* is the best and only species of the Cosmidæ I can record. In the Hadenidæ, which is pretty fully represented, we have *Epunda Lutulenta*, and *Viminalis*, and a very beautiful var. of the former species, of which Mr Barrett says he has hitherto seen similar specimens from Aberdeenshire only. *Aplecta occulta* is very uncertain in appearance, but was moderately common, both in the lower and moorland localities in July and August of 1880, and the same year I was fortunate in taking a fine specimen of *Hadena Rectilinea*. In the Heliothidæ, *Anarta Myrtili* is moderately common on nearly every moorland in the district, and there revelling in the hottest sunshine of June and July. In the Plusidæ, the two fine species of *Plusia Festuæ* and *Bractea* occur, both, however, rare in this locality.

In the next group of the Heterocera, the Geometrina, a large number of species are present, and several that I have taken in the eastern district, have not hitherto I think been recorded for Roxburghshire. In the family of Ennomidæ, *Ellopiæ Fasciaria* may be found in some of the woods of old Scotch firs in July; *Ennomos Tiliaria* and *Himera Pennaria* in the lower and more sheltered localities. In the Amphidasidæ, *Amphidasis Betularia* is of occasional occurrence. We have several species of Boarmidæ, *Cleora Lichenaria*, *Boarmia Repandata* and *Rhomboidaria*, being all moderately common. *Venusia Cambrica*, one of the best species of the Acidalidæ, I have taken in some of the fir woods where *Pyrus Aucuparia* grows. The specimens are generally squatted on the trunks of fir, and sometimes keep very close to the bark, and are easily secured. *Acidalia aversata* is common enough, but shows considerable variation in the specimens. I have reared its larvæ from the egg upon *Veronica officinalis*. *Scodionæ Belgiaria* occurs on moorland, and *Aspilates Strigillaria* in one locality only so far as I know, and is there not too plentiful. *Hybernica Aurantiaria* is rather more frequent than *Defoliaria*, and the former has not, I think, hitherto been recorded so far north.

In the Larentidæ we have *Cheimatobia Boreata*, and the genus *Oporabia* is represented by all its three known species, the two rarest being *Autumnaria* and *Filigrammaria*. The affinities of these two species being at present the subject of investigation, I have sent to Mr Buckler a number of *Oporabia* larvæ for that purpose. *Larentia Salicata* flies over the hill-sides in the higher localities at dusk, and *Cesiata* is in great abundance in some of the fir woods, where the food plant of its larvæ, *Vaccinium Myrtillus*, is found. Among the *Eupitheciæ*, we have *Subfulvata* general but scarce; *Pygmeata* on marshy ground in the higher localities; *Indigata* along the borders of fir woods; *Absynthiata*, *Exiguata* and *Rectangulata*, all moderately common. *Thera Firmata* in some years is very abundant. The common species, *Hypsipetes Elutata*, shows more remarkable varieties, the most notable having the fascia white, which is a very uncommon form, and of which Mr Barrett says, "it is quite the loveliest var. of *Hypsipetes Elutata* that I ever saw: the white fascia is quite a new form of variation to me in this most variable species." *Melanippe Tristata* is moderately common on hilly heath ground in especial localities, and *Coremia Munitata* in like situations; *Anticlea Derivata* in the more sheltered localities; and *Coremia Ferrugata*, not commonly, however, in the fir woods. *Scotosia Dubitata* occurs sometimes in autumn, but is very uncertain in appearance. The genus *Cidaria* is almost fully represented in species, the two of rarest occurrence being perhaps *Corylata*, and *Piceata* the dark variety of *Suffumata* which is to be found in most of the Scotch fir woods. *Corylata* I have taken in the imago state, and have also bred it from September larvæ on *Salix Capræa*, which is not generally accepted as its food plant. *Chesias Spartiata* is common about broom in autumn.

Of the large sub-division of the Heterocera, the Micro-lepidoptera, I have taken about 80 species, but expect still to add largely to the local list in this numerically extensive section.

In the first group of Micro-lepidoptera, the Pyralidina, we have in the Pyralidæ, *Botys Fuscalis* and *Pionea Forficalis* occurring rather sparingly. *Scopula Lutealis*, more esteemed by collectors in the south than here, is rather common. *Simæthis Pariana* appears on flowers of ragwort, but not commonly. In the Crambidæ we have a number of species, all more or less common, *Crambus Pratellus*, *Tristellus*, and *Culmellus* being plentiful on every grassy hillside during their time of appearance.

In the group of the Tortricina, *Amphysa Gerningiana* occurs on moorland in the upper part of the Kale valley, and also *Tortrix Viburnana*, commonly. *Tortrix Forsterana*, in some of the Scotch fir woods, drops to the ground, when beating the trunks for them, like a small piece of loose bark falling. When on the ground they remain motionless, and so may easily be passed unnoticed. *Catoptria Cana* is a scarce species. *Halonota Trigeninana* and *Brunnichiana* are moderately common, and the same may be said of the two species of *Anchylopera*—*Myrtillana* and *Unguicella*. *Bactra Lanceolana* is very plentiful. *Peronea Maccana* is a good and scarce species; the only two specimens of it I have seen were taken when sugaring for Noctuæ in autumn. *Pamplusia Monticolana* occurs on moorland, and I have taken it on one of the highest summits of the western Cheviots. *Mixodia Schulziana* is a scarce species. In the lower localities the pretty species, *Argyrolepis Cnicana* seems local and of rare occurrence and for which Stainton mentions one English locality. *Xanthosetia Hamana* is of more general distribution.

In the numerically extensive group of the Tineinæ, we have *Tinea Semifulvella*, very rich in colouring, and among Scotch firs I have seen *Incurvaria Masculella* in abundance flying in the sunshine. *Plutella Dalella*, a good species, is found sometimes on trunks of Scotch fir, and on moorland, and in the month of January I took a hibernated specimen when turning a stone-heap at a high elevation. *Depressaria Nervosa* is a scarce species. *Pleurota Bicostella* occurs sparingly on most of the grassy hills; *Gracilaria Swederella* principally in fir woods. On the trunks of fir trees, can be picked up, *Elachista Apicipunctella*, a minute species requiring careful search.

In the group of the Pterophorina I can only as yet record the two species, *Platypilus Bertrami* and *Pterophorus Microdactylus*. *Alucita Polydactyla* I have not yet taken, but being a common insect it may yet be added to the local list of Micro-lepidoptera.

LIST OF SPECIES.

SUB-KINGDOM, ARTICULATA.

CLASS, INSECTA.

ORDER, LEPIDOPTERA.

Sub-Order I. RHOPALOCERA.

FAM. PAPILIONIDÆ.

SUB-FAM. PIERIDÆ.

Colias Edusa, F.

Pieris Brassicæ, L.

Rapæ, L.

Napi, L.

Anthocharis Cardamines, L.

Fam. SATYRIDÆ.

- Satyrus Semele, L.
 Janira, L.
 Hyperanthus, L.
 Erebia Blandina, F.
 Cœnonympha Davus, L.
 Pampilus, L.

Fam. VANESSIDÆ.

- Vanessa Cardui, L.
 Atalanta, L.
 Io, L.
 Urticæ, L.

Fam. ARGYNNIDÆ.

- Argynnis Aglaia, L.
 Melitæa Artemis, S. V.

Fam. LYCÆNIDÆ.

- Polyommatus Phlœas, L.
 Lycæna Alsus, S. V.
 Alexis, S. V.
 Artaxerxes, F. Sp?

Sub-Order II. HETEROCERA.

Group, Spingina.

Fam. ZYGÆNIDÆ.

- Ino Statices, L.

Fam. SPHINGIDÆ.

- Smerinthus Populi, L.
 Acherontia Atropos, L.
 Sphinx Convolvuli, L.
 Deilephila Galii, S. V.
 Chærocampa Celerio, L.
 Porcellus, L.
 Macroglossa Stellatarum, L.
 Bombyliformis, O.

Fam. SESIDÆ.

- Trochilium Bembeciforme, H.

Group, Bombyces.

Fam. EPIALIDÆ.

- Epialus Hectus, L.
 Lupulinus, L.
 Humuli, L.
 Velleda, H.
 Sylvinus, L.

Fam. NOTODONTIDÆ.

- Harpya Furcula, L.
 Vinula, L.
 Notodonta Dromedarius, L.
 Ziczac, L.
 Leiocampa Dictæa, L.
 Dicæoides, E.
 Lophopteryx Camelina, L.
 Diloba Cæruleocephala, L.
 Clostera Reclusa, S. V.
 Pygæra Bucephala, L.

Fam. LIPARIDÆ.

- Dasychira Fascelina, L.
 Demas Coryli, L.
 Orgyia Antiqua, L.

Fam. LITHOSIDÆ.

- Nudaria Mundana, L.

Fam. CHELONIDÆ.

- Euthemonia Russula, L.
 Arctia Caia, L.
 Nemeophila Plantaginis, L.
 Spilosoma Fuliginosa, L.
 Menthastris, S. V.

Fam. BOMBYCIDÆ.

- Bombyx Rubi, L.
 Quercus, L.
 Var. Callunæ.

Fam. SATURNIDÆ.

- Saturnia Carpini, S. V.

Fam. DREPANULIDÆ.

- Cilix Spinula, S. V.

Group, Noctuæ.

Fam. CYMATOPHORIDÆ.

- Thyatira Batis, L.

Fam. BOMBYCOIDÆ.

- Acronycta Psi, L.
 Ligustri, S. V.
 Rumicis, L.

Fam. LEUCANIDÆ.

- Leucania Conigera, S. V.
 Lithargyria, E.
 Comma, L.
 Impura, H.
 Pallens, L.
 Nonagria Fulva, H.
 Lutosa, H.

Fam. APAMIDÆ.

- Hydræcia Nictitans, L.
 Micacea, E.
 Xylophasia Rurea, F.
 Lithoxylea, S. V.
 Polyodon, L.

- Charæas Graminis, L.
 Luperina Testacea, S. V.
 Mamestra Furva, S. V.

Brassicæ, L.

- Apamea Basilinea, S. V.
 Gemina, H.
 Oculea, F.

- Miana[†] Strigilis, L.
 Fasciuncula, Hw.
 Celæna Haworthii, C.

Fam. CARADRINIDÆ.

- Caradrina Blanda, H.
 Cubicularis, S. V.

Fam. NOCTUIDÆ.
 Rusina Tenebrosa, H.
 Agrotis Saucia, H.
 Segetum, S.V.
 Exclamationis, L.
 Porphyrea, S.V.
 Triphæna Ianthina, S.V.
 Fimbria, L.
 Subsequa, S.V.
 Orbona, F.
 Pronuba, L.
 Noctua Glareosa, E.
 Augur, F.
 Plecta, L.
 C-Nigrum, L.
 Triangulum, Hf.
 Brunnea, S.V.
 Festiva, S.V.
 Conflua, T. Sp ?
 Rubi, View.
 Baja, S.V.
 Umbrosa, H.
 Xanthographa, S.V.
 Fam. ORTHOSIDÆ.
 Trachea Piniperda, Panz.
 Tæniocampa Gothica, L.
 Rubricosa, S.V.
 Instabilis, S.V.
 Stabilis, S.V.
 Munda, S.V.
 Orthosia Suspecta, H.
 Upsilon, S.V.
 Lota, L.
 Macilenta, H.
 Anchocelis Lunosa, Hw.
 Litura, L.
 Orrhodia Vaccinii, L.
 Spadicea, G.
 Scopelosoma Satellitia, L.
 Xanthia Cerago, S.V.
 Selago, H.
 Ferruginea, S.V.
 Fam. COSMIDÆ.
 Tethea Subtusa, S.V.
 Fam. HADENIDÆ.
 Hecatera Serena, S.V.
 Polia Chi, L.
 Var. Olivacea.
 Epunda Lutulenta, S.V.
 Viminalis, F.
 Miselia Oxyacanthæ, L.
 Dichonia Aprilina, L.
 Phlogophora Meticulosa, L.
 Euplexia Lucipara, L.
 Aplecta Herbida, S.V.
 Occulta, L.
 Nebulosa, Hf.

Hadena Adusta, E.
 Protea, S.V.
 Dentina, S.V.
 Chenopodii, S.V.
 Oleracea, L.
 Pisi, L.
 Thalassina, Bk.
 Rectilinea, E.
 Fam. XYLINIDÆ.
 Calocampa Vetusta, H.
 Exoleta, L.
 Cucullia Umbraticæ, L.
 Fam. HELIOTHIDÆ.
 Anarta Myrtilli, L.
 Fam. PLUSIDÆ.
 Habrostala Urticæ, H.
 Plusia Chrysitis, L.
 Bractea, S.V.
 Festucæ, L.
 Iota, L.
 V-aurum, G.
 Gamma, L.
 Fam. GONOPTERIDÆ.
 Gonoptera Libatrix, L.
 Fam. AMPHIPYRIDÆ.
 Amphipyra Tragoponis, L.
 Nænia Typica, L.
 Mania Maura, L.
 Fam. EUCLIDIDÆ.
 Euclidia Mi. L.
 Glyphica, L.
Group, Geometrina.
 Fam. ENNOMIDÆ.
 Rumia Cratægata, L.
 Metrocampa Margaritata, L.
 Ellopiæ Fasciaria, L.
 Selenia Illunaria, H.
 Odontopera Bidentata, L.
 Crocallis Elinguaria, L.
 Ennomos Tiliaria, Bk.
 Himera Pennaria, L.
 Fam. AMPHIDASIDÆ.
 Phigalia Pilosaria, S.V.
 Amphidasis Betularia, L.
 Fam. BOARMIDÆ.
 Cleora Lichenaria, Hf.
 Boarmia Repandata, L.
 Rhomboidaria, S.V.
 Fam. ACIDALIDÆ.
 Venusia Cambrica, C.
 Acidalia aversata, L.
 Fam. CABERIDÆ.
 Cabera Pusaria, L.
 Fam. MACARIDÆ.

Macaria Liturata, L.
 Halia Wavaria, L.
 Fam. FIDONIDÆ.
 Strenia Clathrata, L.
 Scodiona Belgaria, H.
 Fidonia Atomaria, L.
 Piniaria, L.
 Aspilates Strigillaria, H.
 Fam. ZERENIDÆ.
 Abraxas Grossulariata, L.
 Ulmata, F.
 Lomasipilis Marginata, L.
 Fam. HYBERNIDÆ.
 Hybernia Rupicaprararia, S.V.
 Leucopheararia, S.V.
 Aurantiaria, H.
 Progemmaria, H.
 Defoliaria, L.
 Anisopteryx Æscularia, S.V.
 Fam. LARENTIDÆ.
 Cheimatobia Brumata, L.
 Boreata, H.
 Oporabia Dilutata, S.V.
 Autumnaria, G.Sp?
 Filigrammaria, H.S.
 Larentia Didymata, L.
 Multistrigaria, H.
 Cæsiata, S.V.
 Salicata, H.
 Pectinitaria, Fuess.
 Emmelesia Alchemillata, L.
 Decolorata, H.
 Eupethecia Subfulvata, Hw.
 Pygmæata H.
 Satyrata, H.
 Castigata, H.
 Indigata, H.
 Nanata, H.
 Vulgata, Hw.
 Absynthiata, L.
 Tenuiata, H.
 Exiguata, H.
 Rectangulata, L.
 Thera Juniperata, L.
 Variata, S.V.
 Firmata, H.
 Hypsipetes Elutata, H.
 Melanippe Tristata, L.
 Montanata, S.V.
 Fluctuata, L.
 Anticlea Derivata, S.V.
 Coremia Munitata, H.
 Ferrugata, L.
 Camptogramma Bilineata, L.
 Scotosia Dubitata, L.
 Cidaria Psittacata, S.V.

Cidaria Miata, L.
 Corylata, Thnb.
 Russata, S.V.
 Immanata, Hw
 Suffumata, S.V.
 Var. Piceata.
 Prunata, L.
 Testata, L.
 Populata, S.V.
 Fulvata, Frst.
 Pyraliata, S.V.
 Fam. EUBOLIDÆ.
 Eubolia Mensuraria, S.V.
 Plumbaria, F.
 Anaitis Plagiata, L.
 Chesias Spartiata, Fuess.
 Fam. SIONIDÆ.
 Odezia Chærophyllata, L.
 SUB-DIVISION,
 MICRO-LEPIDOPTERA.
 Group, Pyralidina.
 Section 1. DELTOIDES.
 Fam. HYPENIDÆ.
 Hypena Proboscidalis, L.
 Section 2. PYRALITES.
 Fam. ENNYCHIDÆ.
 Herbula Cespitalis, S.V.
 Fam. HYDROCAMPIDÆ.
 Hydrocampa Nymphæata, L.
 Fam. BOTYDÆ.
 Botys Fuscalis, Lt.
 Pionea Forficilis, L.
 Scopula Lutealis, H.
 Olivalis, S.V.
 Ferrugalis, H.
 Stenopteryx Hybridalis, H.
 Fam. CHOREUTIDÆ.
 Simaethis Pariana, L.
 Group, Crambites.
 Fam. EUDOREIDÆ.
 Eudorea Pyralella.
 Cratægella, H.
 Fam. CRAMBIDÆ.
 Crambus Pratellus, Clk. Db.
 Hortuellus, H.
 Culmellus, L.
 Tristellus, S.V.
 Group, Tortricina.
 Fam. TORTRICIDÆ.
 Amphisa Gerningiana, S.V.
 Tortrix Icterana, Fröl.
 Viburnana, S.V.
 Viridana, L.
 Forsterana, F.

Fam. **PLICATÆ.**
 Lozotænia Musculana, H.
 Spilonota Suffusana, Kollar.
 Catoptria Cana
 Halonota Bimaculana, Dnv.
 Trigeminana, Ss.
 Scutulana, S. V.
 Brunnichiana, S. V.
 Dicrorampha Petiverella. L.
 Politana.
 Coccyx Hyrciniana, T.
 Fam. **ANCHYLOPERIDÆ.**
 Anchylopera Myrtillana, T.
 Unguicella, L.
 Bactra Lanceolana, H.
 Argyrotoza Conwayana, F.
 Fam. **PERONIDÆ.**
 Cheimataphila Mixtana, H.
 Peronea Maccana, T.
 Variiegana, S. V.
 Ferrugana, S. V.
 Teras Caudana, F.
 Fam. **STIGMONOTIDÆ.**
 Pamplusia Monticolana, D.
 Fam. **CNEPHASIDÆ.**
 Sciaphila Subjectana, G.
 Virgaureana, T.
 Fam. **SERICORIDÆ.**
 Mixodia Schulziana, F.
 Fam. **LOZOPERIDÆ.**
 Argyrolepia Cnicana, Db.
 Eupœcilia Angustana, H.
 Ciliella, H.
 Xanthosetia Hamana, L.
 Group, Tineina.
 Fam. **EXAPATIDÆ.**
 Chimabacche Fagella, W. V.
 Fam. **TINEIDÆ.**
 Ochsenheimeria Biscutella, Z.
 Tinea Rusticella, H.
 Tapetzella, L.

Cloacella, Hw.
 Semifulvella, Hw.
 Incurvaria Musculella, F.
 Nemophora Schwarzziella, Z.
 Fam. **MICROPTERYGIDÆ.**
 Micropteryx Subpurpurella, Hw.
 Fam. **HYPONOMEUTIDÆ.**
 Swammerdamia Apicella, Dnv.
 Fam. **PLUTELLIDÆ.**
 Plutella Dalella, Stn.
 Cerostoma Vitella, L.
 Fam. **GELECHIDÆ.**
 Depressaria Assimilella, T.
 Arenella, W. V.
 Applana, F.
 Nervosa, Hw.
 Gelechia Ericetella H
 Terrella, W. V.
 Pleurota Bicostella, L.
 Fam. **CEOPHORIDÆ.**
 Cœphora Pseudospetella, Stn.
 Endrosis Fenestrella, S.
 Fam. **ARGYRESTHIDÆ.**
 Argyresthia Nitidella, F.
 Fam. **GRACILARIDÆ.**
 Gracilaria Swederella, Thnbg.
 Elongella, L.
 Tringipennella, Z.
 Fam. **COLEOPHORIDÆ.**
 Coleophora Albicosta, Hw.
 Fam. **ELACHISTIDÆ.**
 Chauliodus Chærophyllellus, Goeze
 Elachista Apicipunctella, Stn.
 Cynnipennella, H.
 Fam. **LITHOCOLLETIDÆ.**
 Lithocolletis Spinolella, D.
 Pomifoliella, Z.
 Group Pterophorina.
 Pterophorus Bertrami, Rössler.
 Ochrodactylus, Z? H. S?
 Microdactylus, H.

NOTE:—Since making out the above list I have in addition another species of Eupethecia and nine more of Micro-lepidoptera taken this season, which might form part of a supplementary list at a future time.—A. E.

Rooks and Rookeries. By JAMES SMAIL, Kirkcaldy.

“ He buildeth his nest with a watchful skill,
 And biddeth his mate well fare,
 And tendeth the wants of his younglings all
 With a parent's tend'rest care;
 And bravely he breasts the blasts of life,
 Howe'er so rough they blow;
 E'en many a man full much may learn
 From the homely old corn crow.”

THE Crow tribe are widely diffused over the world; and in the Border counties we have five distinct species: the Raven, Carrion Crow or Blackneb, Hooded Crow, Rook or Whiteneb, and Jackdaw.

The only Border haunt of the raven known to the writer is Henhole, a very deep corrie, with here and there perpendicular cliffs, on the north side of the Great Cheviot, and down which flows the highest branch of Colledge Water, there always ink-black from the inflow of water from the mossy land which for many square miles covers the somewhat flat top of that high mountain. Any one visiting Henhole is certain to see the ravens which nest there; for at a great elevation they may be seen slowly wheeling in wide circles; and they invariably draw attention by uttering their deep croaking call. They are very shy wild birds, though when tame they are amusingly familiar. Forty years ago there was a tame raven at the High Street brewery, Jedburgh, which among other accomplishments could so fairly imitate the trumpet-call made daily by the guard of the Chevy Chase coach as it bowled along the street, that not unfrequently people rushed out-of-doors thinking the coach was passing, but only to find master Ralph had been indulging in a little private trumpeting. The raven, though a very powerful and in emergencies a very bold bird, is, especially in a wild state, very harmless. It seldom molests a sickly lamb; and we know of no instance in which it has been known to attack a sickly sheep. The same cannot be said of several of the lesser of the corvine birds.

Carrion crows are at the present time very numerous in the Cheviot Hills; and to this may be attributed to a very considerable extent the falling-off in the numbers of blackgame and grouse in the district. On some of the western Cheviots where thirty five years ago blackcock shooting yielded excellent sport,

for many years past it has been exceedingly poor. Wandering over those hills of late years, which I have repeatedly done in the shooting season, I have often observed that carrion crows were almost always in sight, flying in pairs. On some of the higher fells in Upper Liddlesdale I have seen as many as five pairs at one time all carefully hunting every foot of ground.

Hooded crows are comparatively scarce in the eastern Borders ; but they are moderately numerous about the sea-margins, as are also both carrion crows and rooks—the latter especially in winter.

Rooks are widely spread over many lands, and, as we shall show, they abound in vast numbers in the Borders. They are our most wary and intelligent birds ; and considering the vastness of their number it is somewhat wonderful how few comparatively fall a prey to guns, traps, and other deadly engines set against them. They are also more bold and clever than the lively and cunning Jackdaw. Many who have not carefully watched the ways of both think otherwise ; but having for a long course of years been an observer of the habits of those birds, both wild and tame, I have to state that I have found the rook superior both in intelligence and general courage ; and in a tame state it confides more in man than the Jackdaw, and shows besides so many peculiar traits that at times it actually seems to possess humour. The tame rook is particularly fond of any hard shining portable article—a penny-piece, for instance ; and all such things, after hammering them a little with his bill, he invariably hides. After pushing a penny as far out of sight as he possibly can under some cover, he immediately begins to walk sentry at the spot—head and tail cocked up in a ludicrous fashion ; and performs a strutting march with all the pomp and gravity pertaining to a drill instructor of a Highland regiment of the line. For his size there is no braver bird than the rook ; and there is no bird of equal size for which he shows fear. He faces the kestrel hawk, and often fights with it. I once watched a fight between a rook and kestrel for fully half-an-hour, and when I left they were still fighting. This was on the Dunion moor near Jedburgh. The birds fought for perhaps a couple of minutes at a time ; then the hawk flew off some twenty yards or so ; and in less than a minute the rook invariably mounted from the ground, and looked for the hawk, which it no sooner saw than it darted down on it, and renewed the fight. However I have in the nesting season seen the missel thrush drive off the

kestrel ; and on the other hand I have seen the robin drive off the missel thrush when that large bird came near his nest.

We have no birds so gregarious as rooks ; and though in their assemblies at times in vast numbers in the air they do not in their movements show the fine lines and curves made by the plover tribe when congregated on the wing, it is still very interesting to watch their movements ; the observer will notice that when at a very great elevation they appear to fly round in an almost stationary circle, the circle in reality slowly but gradually moves in one direction, until all the birds disappear. "A wedding of crows" is the old term applied to such gatherings. Judging by their movements and cries the birds seem to be greatly excited when so assembled. It is a common thing to prognosticate a change of weather when rooks are seen wheeling in those air flights ; and it is also usually prognosticated that a change of weather is at hand when they are seen sitting closely together on lea or stubble fields, and all utterly silent. On many occasions after seeing such assemblages, I have carefully watched for weather changes ; and with a few exceptions unworthy of note, any changes in the weather were of so ordinary a nature as to call for no special remark. Rooks in vast numbers live constantly with us ; and they can store no food, and are always within a comparatively short distance of their nightly shelter ; so that whatever fore-sight they may possess as to coming changes of weather, it can be of little or no practical advantage to them. It is different with the migrant birds. They shift north or south as the seasons change. In an extra early spring or winter those birds shift their abode before the usual time. They sometimes derive benefit from this, and occasionally are injured by it. Swallows, for instance, often suffer greatly by coming to us too early in the spring, when the flies on which they feed are not numerously on the wing.

It may be mentioned, however, that some observers have noticed that when rooks that visit the sea shore in the morning for feeding purposes do not fly inland shortly after feeding, but remain by the shore for nearly all the day, it generally is rough weather inland, however calm it may be by the sea. But the great bulk of the rooks in the eastern Border counties live too far inland for seaside visiting. Their movements either in flocks or singly when seeking after food are easily understood ; but the course of many of their other movements is quite beyond the

observer's comprehension. In the High Street of Kirkcaldy, for instance, during three or four days in the autumn of the years 1880-1 and 2 I noticed, at first with some surprise, that rooks sat in the mornings and afternoons in such numbers on the roof of the George Hotel, which is in the High Street of the town, that they covered nearly the whole slates; and with the exception of a few which sat on the next building, they did not, so far I could make out, assemble or rest in large numbers on any other house in the town. Numbers of people when they notice rooks shooting down the wind to their nests or sheltering wood, predict change of weather; whereas it is the only very speedy way by which they can reach the desired haven from a very high altitude. It is a very quick graceful movement. The rook may be two hundred feet above its nest; and with a view of reaching it by the quickest mode, it dives suddenly and with great velocity in three or four angled breaks, and reaches its abode in two or three seconds.

If the spring is early, rooks begin to build their nests about the close of February and beginning of March; and notwithstanding what is popularly believed to the contrary, they do as much in the way of laying the foundations of their airy dwellings on any good fresh day at that time as on the first Sunday of March. The old birds in a large rookery mostly take up their old nests with little or no molestation from their brethren, but matters are very different when strange rooks and those rooks that were fledglings in the previous year attempt to take up house. Those unfortunates have for at least a month to endure the hazard of a bitter war, for the fighting over nest-sites is really furious; and to watch the excited birds doing battle over a small sprinkling of foundation-sticks is often amusing. When the opposing birds are busy fighting over a half-built nest, it often occurs that some observing rooks dart on the unfinished structure and in a few moments carry off the whole material to their own nests. Again, over a single nest-hold a dozen rooks may be seen hotly fighting and screaming, sending nest-sticks and small clouds of feathers into the air, bringing one in mind of a brawl among a few termagants, when caps and hair are seen flying on the wind. For several years there was a solitary rook nest on a tree in the grounds of Ednam House, Kelso; and I have seen as many as eight rooks fighting over it when it was being built. There were other places as good for nesting on the same tree, but jeal-

ousy and love of strife seemed to blind the birds, for no nest was ever built on it but the one. When whaling vessels reach the Gulf-stream the weary frost-bitten sailors at once find their troubles cease and their wounds begin to heal in the genial climate; so, whenever the rook lays her first egg in the hitherto hotly disputed nest, all is peace; and from that day till her young are fledged and afield not even a rude caw is given over her head. This shows an instinct strongly akin to reason, and an idea of fairplay.

The faith that in the breeding season rooks have in man is truly wonderful. They build their nests on the trees that surround his dwelling, and often on trees so low that the nests could be reached by a ten feet pole. They also build in clumps of trees and small woods in towns and cities; and of late years there has been a great increase in town and village nests, and also in the nests built near mansions and farm houses in the country. This may be accounted for in two ways; first by the increase of the birds; and second, because the rooks find from experience that they are less molested and shot down in such places than when they nest in the ordinary large rookeries, where the slaughter of the innocents is generally done on a wholesale scale, by climbers and shooters.

Rooks are both early and late birds. I have frequently heard them, when flying overhead, so early in the dawn in spring and summer that they could not be seen; and every one has seen and heard the long strings of clangourous rooks flying homeward in the dull grey of night fall; and even behind the main flight, laggards and keen grub-hunters keep flying homeward in ones and twos for a considerable time after the main body is settled for the night; but none of those single late-returning birds lift up the voice. They approach and enter the rookery in dead silence, as if ashamed of their hours.

In the nesting season many rooks lose their voice. You see them apparently crowing, but no sound is produced. I cannot account for this. One of my tame rooks entirely lost its voice one spring. He often tried to crow, but could not. I noticed that the point of his tongue at this time looked dry and it had a sort of dead-brown colour. I have often observed that a number of parent rooks have a peculiar cry when approaching the nest with food for the younglings. They produce a nearly continuous fond shrill and pleasing sound, something like a long

continued *roo-roo-roo*, uttered in a high pitch; and I have also noticed that the nestlings when they hear this, and they know a mother's voice as well as does a child, begin to flutter and cackle, well knowing doubtless that food and caresses are in store for them. After leaving the nest the young are fed by their parents for a short time, and they fly in company for a few months.

The male rook is an inch longer than the female; but the plumage of both is the same.

The young do not get a scabrous beak (whiteneb) till very late in the autumn; and sometimes it is spring before the change takes place. I have seen a tame rook nearly fifteen months old before the beak was changed in colour.

In wild upland districts where there are no trees it is not uncommon for a large flock of rooks to roost for the night on the ground, among rough bent-grass and heather, which yield them excellent shelter; and as the fox, like his friends of the dog race, does not partake of rook, they sit without molestation; and when dawn comes they will no doubt find breakfast at hand; for I do not think they would roost in such places were it not in the prospect of food to be had in the dawn. Very wild windy weather may also sometimes cause them to take up a ground abode for a night now and again. The late Mr John Elliot, Primrosehill, told the writer that on a summer night in crossing a high spur on the Lammermoors he and a friend rode into a large flock of rooks that were roosting among the heather. He was greatly surprised, as so doubtless would be the birds, which all flew off in silence, barring the flapping and fluttering made by their wings as they hurriedly made off. Rooks if disturbed during the night make no vocal sound whatever. In this they are unlike their congeners the jackdaws, which now so numerously lodge and hunt with rooks, and which give voice at any hour of the night if disturbed. From the rookery in Galashiels it is quite a common thing to hear a great midnight clamour, all done by the jackdaws. This is specially noticeable in bright moonlight nights, when the male and young flying rooks and jackdaws can be seen roosting on the branches. Having quietly watched them on many such nights, I am of opinion that the frequent cacklings and flutterings are caused by a few of the more restless jackdaws; and when one or two give voice, in a second of time the whole daw tribe seem to join in the concert, while the annoyed rooks solemnly

look on and bear and suffer in silence. Jackdaws are wilder and more easily frightened than rooks, as I have already said; and a proof of this is that when a gun is fired in the direction of a high flight of rooks and jackdaws (for the latter always accompany the rooks) the daws from their wild and sudden side darts show that they are much more alarmed than the rooks, which swerve comparatively little on hearing the shot; and yet the rooks are nearer any shot so fired than the daws, which in all such assemblages fly above the rooks.

It is only of comparatively recent years that jackdaws have in considerable numbers taken up their abode and hunt with the rooks. The cause of this is, I think, the want of what may be called normal nesting places for the jackdaws. I have no hesitation in saying that jackdaws are ten times as numerous now as they were forty years ago; whereas the places in which they naturally prefer to nest have not increased in number, hence they are driven into new localities and new kinds of nesting places. The favourite nesting places of the jackdaw are fissures of cliffs and scaurs, ruins of abbeys and castles. These have not increased in number; so the young birds have had in a sense to emigrate; and some have taken to the woods where they nest with the rooks, either in the holes of trees or in open nests built in the dark centre of the upper branches of the spruce fir; and large numbers have found their way to Galashiels, where, in that busy town, they eagerly pursue their calling, which seems to be the closing up of every other chimney with a nest. At Springwood Park, a few jackdaws build in some rabbit holes in a steep bank.

Every colony of rooks has its own hunting ground. The birds do not of course confine themselves to an exact boundary line, or quarrel as some bipeds do over march fences. A few miles of take-and-give now and again, or doing a little hunting on what might be called neutral or other ground, counts as nothing; but as a rule they keep pretty much the same ground year after year, just as a number of the small birds to our knowledge do. In the mid-summer and winter months when all the ordinary rookeries are forsaken, and the birds from these brigade and lodge together in vast multitudes in the large and sheltering woods called winter rookeries, such as Sunderland Hall, Mellerstain, and Longnewton, the birds from the forsaken rookeries, daily return and feed on their old territory.

At first peep of dawn a column of rooks may be seen leaving the winter rookery and sailing away in one direction for the familiar feeding ground in the district of their at present forsaken rookery, to which they pay an occasional passing visit; and in which they have a friendly gossip over the old nests; and about the same time other large flights leave the winter quarters and sail off in different directions with similar ends in view. Sometimes when visiting the old nests in autumn a little repairing is done; and I have known cases where entirely new nests have been built in autumn. They do not fight to any extent worthy of notice over the nests in autumn; but they do much cawing and capering, and show much excitement. The storms of winter, however, generally wreck nearly all the exposed nests. Where a cluster of some five or six nests is fixed in a many-branched fork of a strong tree the winter weather generally does it no harm.

The trees of nearly all the very large rookeries are of Scotch fir. Of the hardwood trees in rookeries the rooks prefer the ash for nesting purposes; but there are some pretty extensive rookeries in which almost all the trees are of varied hardwood. The large rookery destroyed some years ago at Carolside, Berwickshire, was almost entirely of hardwood. The greatest number of rook nests I ever saw on one tree was 46, on an ash tree in the town of Galashiels, in 1878. Give the moderate number of four young birds as the product of each nest, and we have 184 birds reared on one tree; and adding the number of parent birds the tree would give rest to 276 rooks nightly.

With a view of ascertaining the number, size, age, &c. of rookeries in the counties of Northumberland, Roxburgh, Berwick, Selkirk, and Peebles, I sent out, in 1877, a circular in which I asked for information on those points; and the circular also asked for information as to the food of rooks; and for information about wood pigeons and heronries in those counties. Two hundred circulars were sent out, many of them to members of the Berwickshire Naturalists' Club, and the rest to landlords and farmers and gamekeepers, the latter a class who generally know much of birds and their ways. The returns received are numerous; and many of my correspondents have kindly taken much trouble and have shown much care in getting up and sending correct information; and I heartily thank all who have sent in the returns, from which what follows is largely drawn.

The first query in the circular was: "Name the rookeries you know to exist in each of these counties. State also whether the rookeries are large or otherwise." It should be noted that the words "large" or "small" placed against the rookeries in the lists are on the whole suggestive only, as what one writer might think large another might consider small. To have supplied the size by measurement would have been difficult; and would besides have entailed an amount of other work which I could not have asked anyone to perform. Although I have got lists from correspondents all over the counties named, it should be borne in mind that none of the respective county lists may be perfect; indeed, they can scarcely be so, for although the attempt was made to have them correct, I have found returns from different individuals which in some places do not tally, and which it would have been very difficult to rectify unless by personal inspection on the spot.

LIST OF ROOKERIES.

BERWICKSHIRE.

Dunglass, partly in Berwickshire, partly in East Lothian, large.	creased because of the neighbouring Carolside rookery having been destroyed.
Paxton, in policy of Paxton House, large.	Whitehall, large.
Milne Graden, in policy of M. Graden House, moderate size.	Marchmont, moderate size.
Blackadder, at Blackadder House, large.	Charter Hall, considerable.
Ayton, at Ayton Castle, large.	Kimmerghame, small.
Peelwalls, Peelwalls House, small.	Cumledge, small.
Mordington, Mordington House, moderate size.	Kelloe, small.
Sanson Seal, Sanson Seal House, small.	Hirsel,
Longridge, Longridge House, [N. Durham], moderate size.	Hume Castle, very small.
Templehall, Coldingham, small.	Todrig, very small.
Horncliff, at Horncliff Mains, [N. Durham], moderate size.	Langton, small.
Ladykirk, moderate size.	Nisbet, small.
Houndwood House, old, moderate size.	Ninewells, small.
Longformacus, moderate size.	Hutton Hall, small.
Marshall Meadows, small.	Edgernhope, near Lauder, 50 years of age, large.
Blanerne, considerable.	Allanbank, near Lauder, very small.
Duns Castle ("Peelies"), small.	Cauldshiel, forty to fifty nests, 10 years of age.
Mellerstain, large.	Spottiswoode, large.
Chapel on Leader, begun 28 years ago, very large; and greatly in-	Mertoun,
	Eccles, medium.
	Eccles Newtoun, very small.
	Bartlehill, very small.
	Stoneridge, medium.

There are besides scattered over this county a considerable number of small clusters of trees on which rooks build and these are not taken notice of in the above list.

ROOKERIES DESTROYED.

Mr John Archibald, Cockburn, wrote that he in the breeding season, kept down the number of rooks largely at Duns Castle, by sending men along the sides of the rookery after dark with fowling peices which they fired. A large number of the birds fled altogether.

Birkhillside, by cutting down the trees.

Part of Marchmont, by cutting down the trees, and burning fires in the rookery.

Ninewells was formerly a large rookery, but was totally destroyed many years ago; but of late years rooks have begun to build on the tall trees near the mansion. Rooks almost never return to a forsaken rookery.

Carlside rookery was destroyed in 1870 by having the nests torn down in the breeding season, and having guns fired in the wood from dawn to sunset during several weeks.

ROOKERIES IN WHICH ROOKS RESIDE IN WINTER.

Dunglass.

Duns Castle, near Milburn.

Mellerstain.

Marchmont.

Edgerhope, near Lauder.

Spottiswoode.

Milne Graden.

NORTHUMBERLAND.

Major Fair, Over Wells, who knows all Roxburghshire and nearly all Northumberland, has sent me in a list of sixty two rookeries for the two counties; and I shall give those for this county in the order in which he has put them:—

Carham, Tweedside, very large.

Catcleugh, Reed Water, small.

Cottonshopeburnfoot, do. medium

Callaly, large.

Ellingham, very large.

Eslington, large.

Shawdon, large.

Felton, large.

GLENDALE AND EAST OF WOOLER.

Kirknewton (2), large.

Yeavering, large.

Akeld, medium.

Akeld Steads, large.

Humbleton (2), medium.

Lanton, small.

Sandyhouse, small.

Milfield hill, small.

Ford, large.

Etal, large.

Kyloe, very large.

Paston, large.

Trickley Wood, very large.

Doddington, small.

Lilburn, once large, but now greatly reduced by the nests having been pulled down.

Roddam, large.

Earle, small.

End of Major Fair's list.

Flotterton, on Coquet.

Morwick.

Widdrington, large.

Hauxley, moderate.

Cheswick, small.

Hanging Braes, fair size.

Lowlynn, Beal, very large.

There are also two small rookeries, names unknown, on the roadside between Kirknewton

and Cornhill; and another small one near the Hanging Braes, name unknown.

Ilderton Haugh, 100 nests, lately established.

Hedgeley, small.

South Middleton, very small.

Red Hall.

White Hall.

Little Benton, large.

Low Gosforth, large.
 High Gosforth, large.
 Killingworth, near Long Benton,
 10 years of age, small.
 Backworth, small.

Blackden (Blagdon?) large.
 Prestwick, near Ponteland, small.
 Millburn Hall, near Ponteland,
 large.

The following five rookeries are in the parish of Stamfordham :

Stamfordham, 150 nests.
 Fenwick, new, 50 nests.
 Cheeseburn Grange, small.

Blackheddon, very small.
 Matfen, old large.

The next five rookeries are within three miles of Stamfordham :

Millburn, old.
 Huntlaw, small.
 Longside, old.

Harlow Hill, new.
 Dissington North, old.

The following rookeries down to Beaufront are from 4 to 8 miles from Stamfordham :

Rudchester, new, small trees.
 High Seat, old.
 Clarewood, new.
 Shildon.
 Higham Dykes, old, large.
 Newton Hall, old.
 Carr Hill, old.
 Aydon Castle, old.
 Ponteland, old, very small.
 Hallington, new.
 Old Deanham, old.
 Shaftoe Nest.
 Dalton Hill.
 Ripplington.
 Kirkley.
 Bowridge (?)
 Old Den, recent.

Kirklands, old.
 Penny Hill near Whalton.
 Stagshaw Close House.
 Stagshawbank, small.
 Beaufront.
 Hesleyside, large, age about 40 years.
 Chipchase, medium.
 Nunwick, large, age about 80 years.
 Wester Hall, small, age about 80 years.
 Walwick, small, age about 80 years.
 Chesters, large, age about 30 years.
 Fallowfield, small.

The following rookeries down to Twizel are within the district, taking Belford as the boundary to the north, Chillingham to the west, and Alnwick to the south :

Adderston, old, large.
 Annstead.
 Bamburgh Grove.
 Beadnell Hall, old, large.
 Belford Hall, old, large.
 Budle House.
 Burton.
 Charlton Hall, old, large.
 Chillingham, old, large
 Charlton North.
 Craster Towers, old, large.
 Doxford.
 Elford, old, large.
 Ellingham, old, large.
 Eglington.
 Embleton.
 Falloden, old, large.
 Howick, old, large.

Lucker.
 Denwick.
 Ditchburn, West.
 Newton-by-the-Sea.
 Pasture Hill.
 Preston Tower, old, large.
 Rock, old, large.
 Shoreston, new.
 Swinhoe.
 Tuggal Hall, old, large.
 Bell's Hill.
 Twizel, old, large.
 Felton Park, large.
 Longhirst, small.
 Longhorsley Tower, small.
 Whitton Tower, Rothbury, small.
 Lesbury House, small.
 Swarland Garden, small.

Hartburn Vicarage, small.
 Troughend, Redesdale, very old,
 small.
 Carrick, Redesdale, very old,
 small.
 Otterburn, large.
 Shaftoe, age over 100 years, large.
 Coatwalls, small.
 Low Burradon.
 Spitalford, near Embleton.
 Learmouth, small.
 Thornington, small.
 Newton, ten years ago there was
 only one rookery here, now

there are three. (3.)
 Mitford.
 Lilburn Grange Farm, small.
 Cresswell.
 Downham.
 Mindrum.
 Shotton, small.
 Haggerstone, five to six hundred
 nests.
 Hulne Park, five to six hundred
 nests.
 Middleton Hall.
 Lee Hall, small.

Several correspondents who have sent in schedules, state that besides the rookeries named there are scattered over the country a large number of very small clusters of trees bearing a few rook nests.

ROOKERIES DESTROYED.

Formerly there were rookeries in Coquetdale at Biddleston, Harbottle, and Burradon. The proprietors had them destroyed, because they considered rooks destructive to game.

Togston, where the rooks were intentionally molested till they left.

Barras Bridge rookery caused by the extension of Newcastle, and the trees dying out.

West Bitchfield, trees cut down.
 Belsay.

Dalton Hillhead, trees cut down.
 Bavington, fires made under roosting trees.

Chipchase and Walwick partly destroyed by cutting down of trees.

Gallowhill rookery, parish of Bolam, was destroyed by the trees being cut down.

At Biddleston a pretty large rookery was destroyed by shooting the birds and having the nests pulled down.

ROOKERIES IN WHICH ROOKS RESIDE IN WINTER :

Trickley Wood.
 Callaly.
 Shawdon.
 Felton.
 Morwick.
 Carham.
 Kylee.
 Millburn Hall.
 Blagdon.

Hulne Park.
 Hesleyside.
 Dissington.
 Nunwick.
 Chillingham, but few in number.
 At Crawley they sit on the hill in thousands at night, and only resort to the rookery at Shawdon during heavy storms.

ROXBURGHSHIRE.

Stirches.
 Whitehaugh.
 Martins House, age fully 50 years.
 Highchesters.
 Chisholm.
 Borthwickmains.
 Falnash (2).
 Skelfhill.
 Dod.
 Stobs.

Craik.
 Todshawhaugh.
 Borthwickbrae.
 Borthwick Walls.
 Caerlanrig.
 Brieryhill, age 4 years.
 Binks, age 4 years.
 Wilton Lodge, age 2 years.
 Minto, old.
 Menslaws.

None of the above are large and a number of them are very small.

Riddell.	Woodside, about 80 nests, age about 10 years.
Linthill.	Sprouston, small.
Clerklands, small.	Haddon, small.
North Sinton, small.	Mackside (or Doorpool) on Rule Water, very large.
Longnewton, very large.	Wells on Rule, large.
Lanton.	Westerhouses, small.
Harestanes.	Stotfield on Jed Water, medium.
Ancrum, large.	Edgerston on Jed Water, large.
Mounthooly, small.	Rennieston on Oxnam Water, small.
Crailling, medium.	Bloodylaws do. do.
Heiton Mill (2), small.	Fala Stell do. do.
Springwood Park, large.	Littledeanlees do. do.
Pinnaclehill, medium.	
Broomlands, small.	

The following are on Kale Water :

Marfield, very large.	Grahamslaw.
Gateshaw, small.	Boughtrig (2), small.
Clifton Park, large.	Chatto, small.
Grange.	Whitton, small.
Hownamains, medium.	Hindhope, very small.
Grubbet.	
Sharplaw near Hownam Kirk, medium.	

The following are on the Bowmont Water :

Clifton, small.	Belford, there was once a herony here but it is said the rooks drove off the herons.
Cherrytrees, small.	Calroust, age 90 years.
Yetholm, small.	
Lochside, small.	
Attonburn, age about 35 years, medium.	

There are besides some small clusters of trees in Bowmont Water on which a few rooks build.

In Liddesdale there are rookeries at

Saughtree, old, small.	Flatt, age 10 years, small.
Thorlieshope, old, small.	

The following are pretty widely dispersed in the County :

Cessford, small.	Firth, small.
Ednam (several), small, old.	St Leonards, age 50 years, small.
Edenhall, medium.	Upper Blainslie, small.
Ednam House, very small.	New Blainslie, age about 10 years, small.
Hendersyde Park, large, old.	Drygrange at Leaderfoot, medium.
Chesters.	Langshaw, small.
Holydean, small.	Craigsfordmains.
Raperlaw, small.	

Correspondents have notified that numerous very small clumps of trees on which a few rooks build exist in the county ; and of course these are not given in the foregoing list of rookeries. There are however two small rookeries near to Maxton on the Kelso railway line, which might be put in the list had their names been obtainable.

ROOKERIES DESTROYED.

A large rookery was destroyed by the late Mr Douglas at Cavers. The birds were shot and the nests torn down. A small rookery near Wolfelee House was destroyed in a similar manner many years ago. One rookery destroyed at Arks, by keeping up night fires. Rookeries at Floors and Roxburgh, destroyed by pulling down the nests. The Hallrule rookery was similarly destroyed.

In the early part of the century, and for generations before that, there was a large rookery near Jedburgh called the Auld Wood: but I am unable to state why or how the rooks left that fine sheltering wood. It was of fine massive old Scots fir; and it was nearly all blown down in a storm

forty six years ago.

It is somewhat surprising that there are so few nests in Jed Forest, where shelter and protection is so abundant.

Upwards of sixty years ago, a large rookery was destroyed at Monteviot. Firing'guns and shooting down birds produced little effect; but a band of boys was at last employed for a short time in the nesting season with bows and arrows. The latter were long and of peeled wood, and were shot up among the nests, which so terrified the rooks that they have never built a nest at Monteviot since. A thin stick held toward even a tame rook or Jackdaw, or indeed almost any bird, causes great excitement and terror.

ROOKERIES IN WHICH ROOKS RESIDE IN WINTER.

Mackside.
Longnewton.
Stirches.
Clifton Park.

Stobs.
Wells.
Ancrum.
Marfield.

SELKIRKSHIRE.

Galashiels, in the town, once pretty large, but from the growth of the town many of the nest-trees have had to be cut down. In some gardens nests are built about fifteen feet from the ground, on slender poplars.

Fairnalee, small.

Netherbarns, very small.
Tushielaw, small.
Newburgh, small.
Kershope, small.
Tinnis, small.
Holylee, medium.
Sunderland Hall, very large.

The rookeries in this county are pretty old and birds are increasing rapidly. Sunderland Hall rookery is of well-grown Scots fir.

ROOKERIES DESTROYED.

Newhall rookery, Caddon Water, destroyed by cutting down the trees.

ROOKERIES IN WHICH ROOKS RESIDE IN WINTER.

Sunderland Hall.
Tushielaw.

Tinnis.

PEEBLESHIRE.

Castle Craig, very large.
Barns, near Peebles, medium.
Castle hill, Manor Water.
Dawick (Posso) small.
Kailzie, large, age 100 years.
Portmore (3) small, all of recent date.
Traquair, medium, age upwards

of 100 years.
Hallmanor, small.
Harehope, small.
Shielgreen, small.
Boreland, small.
Rachan.
Mossfennan.
Killbucho.

ROOKERIES DESTROYED.

Lyne rookery, by cutting down the trees.
 Stobo rookery, by shooting, and by pulling down nests.
 Darnhall, by shooting and pulling down nests.
 A small rookery at Dawick was cut down. "It is said that the herons drove the rooks from this wood."
 Darnhall rookery was destroyed several years ago. The rooks

from this crossed over to Portmore, and settled in a wood there; and as the late respected proprietor did not wish to have them in that wood he had them driven off, and they then settled in the present rookery, where they still remain; but five year ago some left and took up a new abode on the estate.

ROOKERIES IN WHICH ROOKS. RESIDE IN WINTER :

Castle Craig.
 Kailzie.

Barns.

Mr Ainslie, Stobo, reports that "thousands of rooks reside in the Stobo woods all the winter."

The foregoing lists show that over and above pretty numerous small clusters of trees on which rooks nest, there are

ROOKERIES :

In Berwickshire,	39.
„ Northumberland	147.
„ Roxburghshire	88.
„ Selkirkshire	9.
„ Peebleshire	16.

Total rookeries in the five counties, 299.

The winter rookeries are :—

In Berwickshire,	6.
„ Northumberland,	14.
„ Roxburghshire,	9.
„ Selkirkshire,	3.
„ Peebleshire,	3.

Total winter rookeries, 35.

I feel all but certain that some errors have been made in regard to the number reported to me of winter rookeries. From observations I have made regarding the habits of rooks, I make out that they, in numerous instances, fly long distances to their respective winter residences, which are few; and it is (in my opinion) probable that some ordinary breeding rookeries have been reported as winter habitations, because of the rooks being often seen visiting these in the winter months. Jackdaws, I may mention, are reported of by several correspondents as roosting and nesting numerously in the winter rookeries.

The rookeries reported as having been destroyed are :—

In Berwickshire,	4.
„ Northumberland,	12.
„ Roxburghshire,	6.
„ Selkirkshire,	1.
„ Peeblesshire,	5.

Total 28.

Area of—Berwickshire in square miles,	464.
—Northumberland,	„ 1952.
—Roxburghshire,	„ 670.
—Selkirkshire,	„ 260.
—Peeblesshire,	„ 356.

Total square miles, 3702.

From want of dates it is impossible to say what the increase has of late years been in the number of rookeries, for as will be observed, the dates given are few in regard to either the commencement or the destruction of the same.

There has, however, within the last thirty years been beyond all doubt a vast increase in the number of rooks. The nests in many rookeries have to my own knowledge been more than doubled in number; first by the increase of nests on the individual trees, and next by taking in of new adjoining trees for nesting purposes.

The following query was sent out: “Do you consider rooks are much more numerous now than twenty five years ago?” In the returns received from Northumberland only six correspondents reply in the negative. From Berwickshire, there is one “no”; and Mr Macpherson, Mellerstain, states that he thinks “the rooks here rather decreased of late years.” From the counties of Selkirk and Peebles there is not one statement to the effect that they have not increased. For Roxburghshire, two gentlemen in Upper Teviotdale report that they have decreased, and one in Lower Roxburghshire gives a similar report for his own neighbourhood; and two simply answer “no” to the query. A number of gentlemen did not reply to the query, giving as a reason that they had not given attention to the matter.

The replies in the affirmative as to the increase of rooks are as ten to one compared with those in the negative; and many of those who write stating that the increase is very large complain

of the extra damage done since those birds became so numerous, to farm produce and the eggs and young of game birds ; but of this more hereafter.

Query No 6 in the schedule sent out was as follows : “ What kind of food do rooks eat ? State particularly whether in your neighbourhood you know them to eat bulbs of turnips or clover ; and whether you know of their preying on the eggs or the young of partridges, pheasants, or other birds. State also whether you have known them to injure young lambs.”

I have received such copious replies to this ; and nearly all of them made from personal observation by the writers, that a small volume could be filled by them. I must of necessity abridge largely. At same time I shall state facts sufficient to show beyond all question the kinds of food on which rooks chiefly live, and also the different sorts of food on which they occasionally feed at certain seasons of the year, and in certain states of the weather.

Gesner writes of the rook as a corn-eating bird ; and Mr Knapp in his delightful work the *Journal of a Naturalist* speaks of it as a grub or worm devouring bird, and most writers consider it a bird that partakes of both grain and grubs.

My opinion, formed from observations extending over a long number of years, with excellent opportunities for watching their ways, is that rooks are omnivorous, but that they prefer as food before all grain or vegetable matter, grubs of all kinds, and slugs and earth worms. Wire worms, spiders, and all the beetle tribe, together with their larvæ and eggs are ever being hunted after by those birds. When grain is in plenty in the fields it is almost never touched provided a supply of the grubs indicated are to be had ; and in summer and autumn grubs as a rule are always to be had in fair abundance, unless in places where rooks are so very numerous as to prove a pest. Observing husbandmen have long known that rooks do a vast amount of good by hunting up and devouring the many kinds of grubs that infest the land and destroy its produce ; but they are, of course, also aware that where the birds are excessively numerous they prey at times heavily on the valuable produce of the land. They must of necessity eat ; and when in such large numbers they find the supply of their favourite food short, they will in such circumstances prey on anything edible. In the cold dry early spring weather they prey to some extent on grain when it is

being sown ; and farmers occasionally express a good humoured wish that some neighbour would begin to "sow first and feed the crows." After grain is in the seed bed it is seldom preyed on by rooks ; and when they are seen feeding in thick black clusters on parts of newly-sown or sprouted corn fields, it is almost always grubs they are assembled to devour ; and almost any farmer can testify that the spots on which he may have seen rooks thus clustered after the grain has been sown for a time bear as good a crop as the other parts of the field. Indeed in an immoderately dry season when from want of surface moisture earth worms remain underground and slugs and grubs are scarcely procurable even in small numbers, they do not attack to an extent worthy of notice either grain recently sown or grain in the ear. But in severe winters and in early spring they do much damage in stackyards here and there. In autumn they speculate now and then from the stooks, but very moderately. I have shot rooks on several occasions when feeding in stubble fields where grain was abundant, and when opened I seldom found more than a few grains in the stomach, and I as often found none ; but there was genererally present a considerable mash of beetles, small earth worms, hoglice, and larvæ of various insects.

Rooks are a pest in the potato field when the crop is young. They then, especially in dry summers, dig up the seed-tubers and thereby do much damage ; and on that account a crow-herd is often necessary. Many people, however, mistakenly think that rooks dig up the seed potatoes in order to eat them. They seldom eat any part of them ; but they carry them off and split them up, to feed on the numerous grubs that are generally found sticking in and around the partly decayed tubers.

They are much more destructive in the turnip field ; and indeed in the north of Roxburghshire and in Lower Selkirkshire the damage they do to the turnip crop is a matter of very grave importance. All over the country they have always more or less been in the habit of pulling up considerable quantities of turnips in the early stage of their existence on the prowl for grubs ; but it is only of late years that they have taken to feed largely on the bulbs of turnips—this in winter and the early spring. I have seen one heap of turnips, of perhaps ten tons, brought in from the field to the farm yard, more bulbs broken and partly eaten than there were whole bulbs ; and this was done entirely by rooks. On the same farm in the severe winter of

1880-1, the rooks actually fed from the boxes along with the sheep (hoggets) on cut turnips. From the farms of Netherbarns, Rink, Fairnalee, Meigle, Caddonlee, Newhall, Kilnknowe, and Hollybush, all in Lower Selkirkshire, and in all several thousands of acres in extent, I have reports from the respective tenants, all of whom state that they have lost considerably from the damage done by rooks to their turnips in winter and spring. They eat green-top yellows, but are fonder of swedes. They dig into the bulbs and make pear-shaped holes; and when these fill with water and freeze, the bulbs go down whenever a thaw sets in.

They also take up clover in several districts; and do here and there much damage to that plant; but their end in uprooting it seems to be more to secure grubs than to eat the plant. They do eat of the plant however.

The rook has also other eating proclivities which makes it anything but a favourite with gamekeepers and numerous sportsmen; for over and above eating of what has already been noticed, and of carrion, it annually destroys for its maw large quantities of the eggs of pheasants and partridges and of barnyard hens that "lay away." Eggs it is most severe on in dry cold weather, when grubs are scarce; and the egg-season of pheasants and partridges is the season when rooks have young, a time that in a drougthy spring presses hard on their industry; hence their readiness to go a-nesting when grubs are few. I know of several rookeries near game preserves; where, the keepers have told me repeately, more than half of the game birds were able to bring up broods from the second laying only, the first having been entirely gobbled by the rooks. They generally carry the contents of the eggs in their bill-sack or pouch to their young.

Rooks are also birds of prey; but in this position they are somewhat cowardly, as they only prey on almost featherless younglings. They kill in this state the progeny of pheasants, partridges, and a few of the young of such birds as the black-bird and thrush. They also, but seldom, kill small leverets and very young rabbits. They also occasionally attack and injure weakly lambs; but I do not know personally of a case in which they have killed a lamb. What I have above stated as to the food on which rooks live is from information which was in my possession, either furnished by friends or from my own observations, before I perused the returns received in the schedule already

referred to. Before giving some extracts from these returns I may state shortly a few reasons why I think rooks have of late years somewhat changed in regard to the food on which they live. There are several not unlikely causes why they have got keener of eggs and quarry; and the taste for quarry, which was shown at a much earlier date than the taste for young birds, may have led to the slaughter of the innocents. About fifty years ago most of the cultivated land of the Borders was, broadly speaking, in a natural state, for the manures used were of a kind likely to tend to increasing, rather than otherwise, the number of worms, grubs, and insects on which rooks naturally feed. Now, however, from the almost universal use of lime and other quickening manures and stimulants, not a third of the number of grubs and earthworms and slugs are in the soil that there was then, maugre the increased fatness of the land. As a proof of this, let any one examine the furrows when they are being made in a field upon which lime has been somewhat recently laid, and the same in an adjoining field where no lime has been applied. The preponderance of animal life in the shape of earth worms, &c. in the unlimed field will be found to be great. The fact is that lime kills to a large extent both wormlings and the larvæ of numerous insects on which rooks feed. Indeed most of the older husbandmen can testify that in some fields where grubs were occasionally little short of a plague before the quickening artificial manures were applied, earth worms and grubs are now but little known. Now, rooks are beyond dispute increased immensely in numbers of late years, especially since the gun tax was put in force; and, as above shown, there is a falling off in their natural food, hence, they have taken to devouring on a pretty extensive scale very valuable farm produce, and, like some less honest bipeds, to "trespass in search of game, for they are omnivorous." It should, however, be remembered in their favour that they are so constituted that they require a portion of animal food—worms or otherwise—to maintain proper health. They therefore by instinct hunt up the needful.

In moderate numbers rooks, in my opinion, would be, as they once were, very useful birds, the friends of the husbandman, and very little of an enemy to the sportsman; and something should be done to have their number reduced, otherwise the depredations described will be multiplied, and the country at large will suffer loss. I have shown the different methods by which

rookeries have been destroyed or curtailed; and those in a position to lessen the damage done by rooks would by largely lessening their number benefit both farmers and sportsmen, as well as the general public.

The following extract from the First Parliament xxvi of May, 1424, cap. 19, James I of Scotland, was kindly sent me by Sir George Scott Douglas.

First Parliament, xxvi of May, 1424, Cap. 19, James I of Scotland.

Of bigging of Ruikes in trees.

“For thy that men considderis that Ruikes biggand in Kirk Zairdes, Orchardes, or Trees, dois greate shaith upon Cornes: It is ordained that they that sik Trees perteinis to, lette them to big, and suffer on na wise that their Birdes flie away. And quhair it be tainted that they big, and the Birdes be flowin, and the nest be funden in the Trees at Beltane the tres sal be foirfaulted to the King (bot gif they be redeemed fra him, throw them that they first perteinid to) and hewin downe, and five schillings to the Kingis unlaw.”

I now annex some quotations from the returns received in answer to the query as to the food of rooks, as put in the schedule sent out.

BERWICKSHIRE.

Mr R. Logan, Birken-side :

“Eat grain, worms, potatoes. Being now much overstocked, rooks have taken to other than their legitimate food, such as clover roots, and turnip bulbs.”

Mr G. Muirhead, Paxton :

“Evidently omnivorous in this district. One caught lately here in a trap set at a call-duck’s nest. It had eaten five of the eggs before the trap was set, and when caught the culprit was in the act of breakfasting on the remaining eggs in the nest.”

Mr James Macpherson, keeper, Mellerstain :

“Feed on bulbs of turnips largely in winter. Don’t think they eat clover. Have sufficient proof that they take eggs of pheasants and partridges and also young birds, having killed them in the act.”

Mr A. Campbell Swinton of Kimmerghame :

“Eat bulbs of turnips and eggs of pheasant and partridge.”

Mr A. Hutton, keeper, Carolside :

“Very destructive on eggs of game.”

Mr P. Scott, keeper, Thirlstane Castle :

“Eat eggs of game birds, and bulbs of turnips. Once saw a company of rooks fly at and kill a full grown blackbird.”

Mr J. Ferguson, Dunse :

“Eat chiefly worms and larvæ, and in the season corn and young potatoes.”

Mr G. McDougal, Blyth, Lammermoors :

“ Feed on worms, grub, &c. when at hand, after that, corn in the hard state and barley when sprouting, then potatoes and turnip bulbs lastly. In winter do a great deal of damage to turnips and young clover. Take eggs of other birds if exposed. Have known them kill very young hares, and take the eyes out of weakly lambs before they were dead ; but they wont attack strong lambs.”

Mr A. M. Caverhill, Crichness, Lammermoor :

Writes that they are destructive to oat and barley stacks in frosty weather, and also to clover and eggs and occasionally the young of game birds, and “ they do pick out an eye of a lamb occasionally.”

NORTHUMBERLAND.

Mr M. H. Dand, Hauxley Cottage :

“ I believe them to be omnivorous. Do not know that they really injure clover.”

Mr A. H. Evans, Scremerston Vicarage :

“ Eat larvæ, worms, and grubs of all sorts. Have never known them eat bulbs of turnips or clover.

The late Mr R. Hodgson-Huntley of Carham Hall :

“ Eat grubs, corn, turnips, potatoes, beans, and also undoubtedly destroy eggs of partridges and pheasants and the young birds. They are often caught here in traps set for vermin and baited with eggs, rabbits' intestines, &c.

Mr T. Elliott, keeper, Lilburn Tower :

“ I have frequently shot rooks carrying off eggs of game birds and young tame pheasants. Hundreds of pheasant and partridge eggs are annually destroyed here by rooks. They also eat turnips in hard weather. They have carried off both young chickens and young ducks from the chicken yard. They are more ravenous in dry weather when little grub, &c. can be found for their young.”

Mr E. Bold, Long Benton, Newcastle :

“ Eat grubs, snails, and worms. Never saw them destroy root crops. In dry weather seen them pull up potato sets to get grubs.”

Rev. J. F. Bigge, Stamfordham Vicarage :

“ They principally live on worms, wireworms, grubs. Talking to a farmer one day, he said “ see how the crows are eating the barley ” (on the stooks). I said “oh no,” and having my gun I immediately shot two in his presence, and cut up their crops. There was not one grain of barley present but a large quantity of grubs, &c. I do not think they touch turnips or clover. I know they eat duck eggs.” Mr Bigge's friend,

Mr Ridley writes as follows :

“ Eat grubs, corn, potatoes, turnips, carrion. Do not eat clover. Prey on eggs of all kinds. This has only been observed of late years—10 or 15 years.”

Rev. F. R. Simpson, North Sunderland Vicarage :

“ Their chief and choicest food is insects when they can get them. They are innocent of turnips or clover in this neighbourhood, and also of eggs or young of game or other birds. They are never on turnip fields, and if on

new grass or clover, feed not on the clover but on the grubs to be found on the roots of the plants. They dig up potatoes in dry summer months."

Mr Thomas Arkle, Highlaws, Morpeth :

"Eats grubs when attainable, otherwise corn, also bulbs of turnips, and rarely eggs."

Rev. A. Proctor, Alwinton Vicarage, Morpeth :

"Rookery of Biddleston destroyed because of the destruction of pheasant eggs."

Mr C. Rea of Doddington, Wooler :

"Eat chiefly worms, grubs, &c. In hard weather will eat turnips and clover. Do not prey on eggs of game."

Mr J. Craster, Craster Tower :

"Eat generally worms, grub, and corn. Eat potatoes, and eggs of game birds and plovers."

Mr C. F. J. Thompson, Kirknewton House, Wooler :

"Live on corn and grub. Shepherd told me the other day that they eat nearly as many turnips as the sheep—this in hard weather. Eat eggs of all kinds, also young birds. Sometimes tear out sheep's eyes before they are quite dead. They are now worse than the carrion crow for attacking sheep."

Rev. W. I. Meggison, South Charlton Vicarage, Chathill :

"In autumn and early winter months they feed chiefly on grain : in spring on worms and grubs. In breeding time on flesh, and will carry off eggs, chickens, ducks, game, and newly-dropped lambs. Destructive on potatoes and turnips, but the latter always a grub at the root and were of no value. They tear up young clover to get at the larvæ."

Mr J. Ellison, Hulne Park, Alnwick :

"Insects, worms, slugs, grain, turnips. Also eggs and young pheasants in dry weather."

Mr J. Lovat, keeper, Keilder Castle :

"In hard weather eat bulbs of turnips and clover. Game eggs, very much more so in dry seasons. Do not know that they injure young birds or lambs."

ROXBURGHSHIRE.

Major Fair, Over Wells, Jedburgh :

"All my information tends to convict rooks as destructive to game, both eggs and young birds. The claims of their own young demand of them to seize anything that can pass muster as food. There is no surer bait for a rook than an egg. They also in hard or dry weather are destructive to turnips, dabbling holes in the bulb ; and they are very destructive to barley on a bare knowe. I think they eat roots of clover ; and they pull up young turnips in search of wire worm."

Mr T. Morrison, keeper, Sprouston, Kelso :

"Eat turnips, and eggs and young of game birds : also young hares and rabbits. I once saw a hare at the side of a field driving off two hooded crows, as I thought, and I got within range and shot the birds which turned out to be rooks. I then found two small leverets sitting in a hole made by a horse's foot. This was a case of the old hare defending her young against the rooks."

Mr John Elliot, Flatt, Liddesdale :

"Do not know that rooks eat turnips here or clover, or prey on eggs or raw game."

Sir Walter Elliot of Wolflee :

"Mainly insectivorous. About eight years ago my tenant, Mr Wilson, Cleughhead, sowed a field with barley close to his house. The rooks settled on the field in great numbers, and he begged my keeper to shoot them. He accordingly killed two, and he and Mr Wilson opened their crops on the spot. One grain was found in one and three in the other, but both were crammed full of grubs."

The late Professor Elliot, Goldielands, Hawick :

"The main food of the rooks is grubs of various kinds, and occasionally corn and potatoes. They never touch turnips unless forced by famine; but they pull up the young turnips to get at the maggots at the roots. *Here* they do much more good than harm."

Mr T. Elliot Boog, Timpendean, Jedburgh :

"Eat turnips undoubtedly. Have known them to destroy game eggs of all kinds, but particularly black game, in a dry season. When there is not much food on the low lands they take to the hills and moors."

Dr. F. Douglas, Woodside, Kelso :

"Their food consists chiefly of grubs, but they will eat bulbs of turnips. They make no habit of preying on birds' eggs or young birds."

Mr T. Elliot, Hindhope, Jedburgh :

"Turnips and clover. Prey very strong on game eggs; and they lift young ducks."

The late W. Grieve, Skelfhill, Hawick :

"Eat eggs, carrion, corn, potatoes. From an agricultural or pastoral point of view I think rooks of the greatest service in moderate numbers; but the fewer the better from a game point of view."

Mr John Simson, Oxnam Row, Jedburgh :

"Principally grub and worms. Eggs and young of game. Turnips in winter."

Mr John Clay, Kerchesters, Kelso, writes

much the same as Mr Simson; and adds that rooks "sometimes injure young lambs."

Mr James Wood, keeper, Floors Castle :

"Grain and animal food; bulbs of turnips and eggs and young of game and other birds."

Mr J. S. Dudgeon, Longnewton Place :

"Grub of all kinds preferred to all other food. Vegetable food only taken when there is a scarcity of insect matter. I believe they do much more good than harm to farmers."

Mr E. Kerr, keeper, Springwood Park :

"I have seen them kill leverets and young rabbits, and destroy eggs of game birds, and carry off the young."

Mr Henry Elliot, Greenriver :

“Grub and grain. In a snowstorm, turnips. No clover.”

Dr. J. Robson Scott, Belford, Yetholm :

“Feed chiefly on worms and slugs, and eat every kind of carrion. Eat corn, especially barley after it is sprung, and also fond of potatoes in the same state ; turnips in winter, but not clover.”

SELKIRKSHIRE.

**Mr Adam Brydon, Netherbarns; Mr Walter Elliot, Hollybush ;
Mr John Riddell, Rink; Mr William Lyal, Caddonlee ; Mr Robt.
Hall, Kilknowe ;**

All report that rooks are most destructive to turnips, and they are losers to a very considerable extent whenever a keen frost sets in, because then the birds in countless numbers attack the bulbs, and eat or destroy them. Mr Elliot adds : “ I am of opinion that rooks in moderate numbers do more good than harm ; but of late years they have got so numerous that the injury they do to farmers is incalculable. Grubs are their natural food, but the country being so much overstocked the birds eat every thing they can get. I have also seen them lift eggs and fly off with them ; and they pick out the eyes now and then of weakly lambs. They work very long hours.”

The late Mr James Kerss, keeper, Bowhill :

“Rooks will feed on all kinds of grain, but only on bulbs of turnips in very hard weather. They pull up clover only in autumn, to get at grubs. They eat eggs of game.”

The late Major Plummer of Sunderland Hall :

“They eat the bulbs of turnips. I have seen quantities of undigested turnips under the trees in our rookery. They also eat eggs, but I do not think they trouble young birds or lambs. After the destruction of the rookery at Traquair, the neighbouring farmers complained that the crops were much injured by slugs, &c.”

PEEBLESSHIRE.

Mr W. L. Black of Kailzie, Peebles :

“The rook will eat almost anything, but their natural food is grubs, worms, and such like. When the young are in the nest they appear to be fed on eggs when they can be found, which the parent birds carry to them in their throats. The rook appears to carry the egg to a distance and then suck it, as I have seldom seen the shells near the nests, and never under the trees in the rookery. They do some injury to turnips clover, and potatoes.”

Mr Colin J. Mackenzie of Portmore :

“Besides the ordinary food of rooks, such as worms, grub, &c., I have seen them greedily picking the bulbs of turnips ; and only to-day I watched a number of them hammering away at some of my own turnips. I have from personal observation known them eat the eggs of pheasants, partridges, and grouse.”

Mr James Potts, Kingsmeadows, Peebles :

“They destroy a deal of bulbs of turnips. They have taken only weakly young pheasants of my rearing ; but they take lots of eggs.”

Mr John Clark, keeper, Traquair :

“ Carnivorous food, and worms, grubs, eggs of game birds. Have known them molest weakly lambs ”

Mr James Ingram, West Dawick, Peebles :

“ Grain, potatoes, turnip bulbs, and eggs.”

Mr W. Ainslie, Stobo Mill :

“ They feed on all kind of agricultural produce. They also prey on eggs and the young of partridge and pheasant.”

Mr William Riddell, Howford :

“ Principally worms, grubs, &c. ; but as soon as grain begins to ripen they are down upon it, and can destroy a large quantity in a few hours. Clover I do not think they taste, but turnips they eat greedily. They take eggs and will pick out the eyes of a weakly lamb.”

I have quoted pretty largely from the returns on the subject of the food of rooks ; and I do not require to add any remarks on the statements made, further than this (and it is almost unnecessary), that the returns are from observers who on the whole have had the best opportunities of watching the “ ways that are strange ” of the wary and clever and hardworking rook. I beg to offer my sincere thanks to those who have so kindly furnished me with data for this paper ; and I have also received many valuable hints from the Club’s worthy Secretary, Mr Hardy.

Notice of an Ancient Celtic Ecclesiastical Bell, now preserved in the Museum, Kelso. By JOHN ALEXANDER SMITH, M.D., Sec. Soc. Ant. Scot., &c.

THROUGH the courtesy of the officials of “ The Tweedside Physical and Antiquarian Society ” and Dr. Charles Douglas of Kelso, I have now the pleasure of exhibiting from their Museum, at Kelso, this ancient ecclesiastical bell. Many years ago I had seen the bell in the Museum, and intended from time to time to try to get it for exhibition to the Society ; as it seemed to me never to have attracted the attention that it really deserved, and it may be said that it has never been described until now.

The bell has been formed of a plate of iron about 25 inches in length by 14 inches in breadth at its extremities, and $\frac{1}{8}$ ths of an inch in thickness, which has been bent or folded on itself in the middle, a semicircular or rounded portion being cut on opposite sides of the plate, where it is folded ; so as to allow its edges to be turned inwards and overlap each other, and thus

form a somewhat square-sided figure, becoming gradually wider towards its open extremity. The over-lapping sides of the bell have then been joined together on each side by three large flat-headed nails, well riveted inside the bell. A rounded handle of thinner iron plate, with its edges curved upwards so as to form a deep groove above, and bent into a flat curved outline, had then been strongly fixed in the line of the greatest diameter of the top of the bell; its extremities piercing to the inside, where they have been strongly riveted, and still project considerably inside the top of the bell. The bell had then apparently been dipped into melted bronze so as to cover its whole surface, as portions of the bronze coating still remain on most parts of the bell, both outside and inside; and traces of it are seen also on the flat tops of the large headed nails on its sides. Nothing now remains to show how the tongue or clapper of the bell had been originally fixed; probably it may have been fastened in some way to the ends of the handle projecting inside the top of the bell.



Ancient Celtic Ecclesiastical Bell now in the Museum, Kelso ;
(13 inches in height).

The bell measures 11 inches in height, not including the handle. It is $6\frac{1}{2}$ inches in length along the top by 3 inches in breadth across, and gradually widens to 8 inches in the greater diameter of its open mouth; by $6\frac{1}{2}$ inches across, or in breadth. The handle is 2 inches in height from the top of the bell, and $4\frac{3}{4}$ inches in length by 1 inch across in breadth, and the bell now weighs 13 lbs. 8 ounces avoirdupois. The whole bell is in a wonderfully perfect state of preservation, being broken a little only at the corner of the plate at one of its sides; although it has now lost the greater part of its original bronze coating, at least, on the outer surface. The bell is well shown in the annexed careful drawing. When the bell is struck it still gives forth a very musical sound, more so than one would expect from its appearance.

With the permission of the officials of the Museum, and at my request, Mr W. Ivison Macadam has been good enough to make the following careful analysis, both of the iron plate and the bronze coating of the bell:—

ANALYTICAL LABORATORY, SURGEONS' HALL,
EDINBURGH, 14th April, 1882.

Analysis of an old Square-sided Bell, received from Dr. John
Alexander Smith, Edinburgh.

	Bronze taken from outside of Bell.	Bronze taken from inside of Bell.	Bronze form- ing Handle of Bell.
Copper,	82·719	82·675	82·771
Tin,	16·001	16·047	16·036
Ferric oxide,	0·764	0·850	0·717
Insoluble siliceous matter,	0·516	0·428	0·476
	100·000	100·000	100·000

The ferric oxide is most probably derived from the inner framework of the bell.

The bell consists of an iron plate bent into shape, and riveted with iron bolts. The surface of this framework has afterwards been coated with bronze of the above composition.

I have made a series of experiments, and find that iron plates may very readily be coated with bronze. The iron plate is first cleaned thoroughly dried, slightly heated, care being taken to prevent the oxida-

Ancient Celtic Ecclesiastical Bell. By J. A. Smith. 187

tion of the iron by overheating, and then dipped into the molten bronze. By this means the surface of the iron is covered with a coating of metal and protected from the weather.

In the case of this Bell the molten bronze has been poured into the inside of the bell, and the rapid cooling of the alloy due to the absorption of heat by the cold iron has caused the work to be done in a most irregular and crude fashion. The handle of the bell has been fixed on after the bronzing process was completed, the rivet ends being free from bronze.

A small portion of the iron framework of the bell was also analysed, and gave the following percentage results:—

Iron,	.	.	.	.	.	98·846
Copper,	.	.	.	.	.	0·412
Tin,	.	.	.	.	.	0·079
Insoluble siliceous matter,	.	.	.	.	.	0·663
						<hr/>
						100·000

The copper and tin are due to small portions of the protecting surface too minute to be separated.

W. IVISON MACADAM, F.G.S., F.I.C.

Lecturer on Chemistry, and Analytical Chemist.

Dr. Charles Douglas, at my request, most kindly made a search among the records of the Museum, to try and learn something of the history of this bell. He tells me there is an entry about it in an old MS. book belonging to the Museum, as follows:—“Old Metal Instrument, use unknown, from James Douglas, Esq., Banker, Kelso, Secretary to Society,” and over this entry there has been subsequently written in pencil “a bell.” Mr James Douglas is long since dead, and there is no date given; but the handwriting, Dr. Douglas says, he believes to be that of another brother of his, who has now been some thirty years in Australia. Dr. Douglas, in making inquiries for me in various quarters, learned, however, from Mr J. B. Kerr, of the Commercial Bank, Kelso, now the Secretary of the Tweedside Society, that the bell did not belong originally to Kelso, but was really brought from the neighbouring parish of Ednam in Berwickshire. Mr Kerr, when a boy, had been educated there under the tuition of Mr John Gibson Smith, the parish schoolmaster, with whom he was boarded, now upwards of thirty years ago. He remembers the bell being in Mr Smith’s possession at Ednam, and believes that it was brought to Mr Smith as a curiosity, of unknown use, by one of the schoolboys, it having probably been found at that time, somewhere in the immediate neighbourhood. He has no remembrance, however, of the exact locality from which it came,

and as Mr Smith, the teacher, emigrated to New Zealand many years ago, and it is doubtful if he is still alive, no more detailed information can apparently be got at present about the discovery of the bell. From Mr Smith, however, through Mr James Douglas, the bell was fortunately presented to the Museum at Kelso, where it is still carefully preserved.

It belongs to the class of bells carried and rung by the hand, and from its character and shape, to the earliest type of these—the quadrangular-shaped bells in use by the early Celtic Church, previous at all events to the twelfth century—as from that time of Papal progress in Scotland until the present day church bells have all been made, or rather cast, in a circular form. Professor Daniel Wilson, LL.D. (on December 25, 1851), brought before the Society a paper on “Primitive Scottish Bells,” giving notes of the Bell of Strowan and other Ecclesiastical Bells of Scotland. He there simply includes in his enumeration the name of the Kelso Bell, if I mistake not, on my authority, as being preserved in the local Museum of that town (*Proc. Soc. Antiq. Scot.*, vol. i. p. 18), and in his *Prehistoric Annals of Scotland* (1851), describes various Scottish Ecclesiastical Bells. Dr. Joseph Anderson has also recently given a most interesting and detailed account of all the other square-sided bells of the early Celtic Church known in Scotland, in his valuable work, *Scotland in Early Christian Times*, vol. i. (Edinburgh, 1881) of his Rhind Lecture Series.

It is of the greatest interest to discover that this old Celtic bell had been found in the parish of Ednam, which Mr Cosmo Innes cites as the example, to show the rise or creation of a Scottish parish, in his interesting volume of *Sketches of Early Scottish History* (Edinburgh, 1861). Mr Innes afterwards refers in detail to this parish of Ednam, as “marking the very birth of our Parochial institutions,” in his introduction to Part I. of the *Facsimiles of National Manuscripts of Scotland*, published by the Government, where indeed copies of “Thor the Long’s Charter of Ednam,” &c., are given in facsimile, and fully detailed.

From the interest attached to the still earlier Scottish or Celtic Church, to which I believe this bell really belonged, I may be pardoned quoting some explanatory sentences from Mr W. F. Skene’s important work, *Celtic Scotland* (Edinburgh, 1877), vol. ii.

Mr Skene says: “It is to the Columban church, established in Northumbria by King Oswald in 635, that we must look for

the permanent conversion of the Angles who occupied the eastern districts between the Tweed and the Forth, and for the foundation of churches, or rather Columban monasteries among them” (p. 199).

Aidan was the first of the Columban bishops, and founded the monastery of Old Melrose on the Tweed, and Saint Cuthbert became a monk of this monastery shortly after the death of Aidan, in 651.

“In the year 664 the Columban church in Northumbria was brought to an end by the adverse decision of the Council of Whitby, and Bishop Colman left the country with those of his Scottish clerics who would not conform to Rome. Eata, the abbot, however, and his provost, Cudbercht (Cuthbert), gave in their adhesion to the Roman party, and, at Bishop Colman’s suggestion, the monastery of Lindisfarne was placed under Eata’s charge, who thus became abbot both of Mailros and Lindisfarne. To the latter monastery Eata transferred Cudbercht, ‘there to teach the rules of monastic perfection, with the authority of a superior, and to illustrate it by becoming an example of virtue’ (p. 209).

“The causes which combined to bring the old Celtic church to an end may be classed under two heads—internal decay and external change. Under the first head the chief cause was the encroachment of the secular element upon the ecclesiastic, and the gradual absorption of the latter by the former.” “The external change produced in the church was the result of the policy adopted towards it by the kings of the race of Queen Margaret.” “It mainly consisted, first, in placing the church on a territorial in place of a tribal basis, and substituting the parochial system and a diocesan episcopacy for the old tribal churches with their monastic jurisdiction and functional episcopacy; secondly, of introducing the religious orders of the Church of Rome, and founding great monasteries as centres of counter-influence to the native church; and, thirdly, in absorbing the Culdees, now the only clerical element left in the Celtic Church, into the Roman system, by converting them from secular into regular canons, and merging them in the latter order” (p. 366).

“Edgar, the eldest son of Queen Margaret, had no sooner made good his right to the throne* by English assistance, than

* 1097—1107 A.D.

we find him refounding the monastery of Coldingham, which had been destroyed by the Danes." "We find in another charter the establishment of a parish church clearly presented to us, as well as the process by which it was accomplished. In this document Thor informs his lord, Earl David, that King Edgar had given him Ednaham, now Ednam, in Berwickshire, waste; that he had inhabited it, and built from the foundation the church which King Edgar caused to be dedicated to St. Cuthbert, and had endowed it with one plough, and he prays his son to confirm the donation he had made of the church to St. Cuthbert and the monks of Durham.† Here we have, in fact, the formation of a manor with its parish church, and in a subsequent document it is termed the mother church of Ednam. Edgar appears to have made no attempt to introduce a parochial church north of the Forth, or even to fill up the vacancy in the see of St. Andrews; but on his death, when the territory which formed his kingdom, with its heterogeneous population, was divided between his two brothers,—the districts north of the Forth and Clyde, with Lothian as far as the Lammermoors, falling under his will, to Alexander, as king, and the districts of the Cumbrian Britons, with the rest of Lothian, to David, as earl,—the policy which had been inaugurated by their Saxon mother, Queen Margaret, of assimilating the native church to that of England, was at once resumed by both" (p. 368):

These extracts will help to show us how tendency to change originated in the old Scottish church, and this characteristic, square-sided, Celtic bell, would seem, therefore, in the absence of old ecclesiastical remains of any other kind in the immediate district round Ednam, to be the only relic now existing, to take us back, not only to the days of Thor the Long, but to the older time, when an early Celtic church existed there, founded long before, it may have been, by St. Cuthbert himself, in this his own missionary district of the Tweed and its tributary streams.

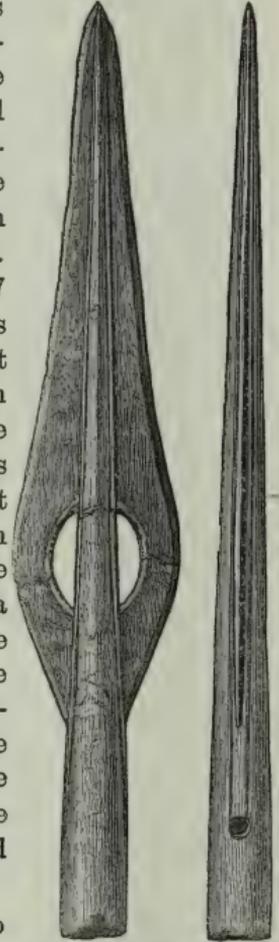
This Celtic bell is also especially interesting as being apparently the only example of its kind and class now known to exist in all the southern districts of Scotland, and therefore all that now-a-days seems to remain of any of these ancient ecclesiastical establishments.

† National MS., part i. p. 8.

[This article has been reprinted by permission from the "Proceedings of the Society of Antiquaries of Scotland," vol. xvi., 1861-62, with Dr Smith's sanction. I had forgotten, when corresponding with Dr Smith, that there is another notice of this bell, with a different account of where it was found, in the "Catalogue of Antiquities, etc., exhibited in the Museum of the Archæological Institute of Great Britain and Ireland, July 1856," p. 33. I extract what is said of it. "An Ancient Bell of iron, dipped in brass, with which the entire surface was probably coated. Its dimensions are almost the same as the Birnie bell; the form and proportions are identical with those of the *Clog-rinny*, or bell of St Ninian, (of which a representation is given). This supplies an accurate notion of the fashion of these early Christian relics. The example exhibited was found at Hume Castle, near Kelso. Its previous history has not been ascertained.—*The Tweedside Antiquarian Society, Kelso.*" The Church of Home, once a manorial church, and dedicated to St Nicholas, and at least as old as the reign of Malcolm IV, when it was conferred by Earl Gospatric on the Monastery at Kelso, may, if this statement is to be depended on, prefer a stronger claim to the ownership of this bell than Ednam. It was certainly the belief in 1856 that the bell "was found at Hume Castle." The parishes of Home and Ednam are adjacent. Mr Smith (who is still alive) having antiquarian tastes, may have acquired it from the finder, who sent it to him by a boy.—J. H.]

On a Bronze Spear-head found on Bowsden Moor, North-umberland.

IN November, 1882, when a drainer was cutting a drain on Bowsden Moor, the property of Sir John Marjoribanks, Bart., of Lees, the spade, at a depth of 30 inches below the surface, struck on a bronze spear-head, which except a fracture from the spade, was extracted entire and proved to be a very fine example of the variety of that ancient weapon, with lunate or crescent-shaped openings, one on each side of the midrib containing the socket. The spear-head is a little more than 17 inches long. The butt-end is $1\frac{3}{4}$ inches across; the breadth diminishes to $1\frac{1}{2}$ about the setting on of the blade; at 6 inches in length below the oval forming the lunate openings, it is 3 inches across: (this oval is 2 inches across and three inches long); about 10 inches it is $2\frac{1}{2}$ inches across; and then gradually tapers to an obtuse apex. A little above 2 inches from the socket there is a small rivet-hole, with a corresponding one opposite for the fixing on of the staff. The socket appears to be hollow from the butt-end to the apex. The openings in the blade are regarded either as "ornamental, or else as intended to diminish the weight of the weapon." The midrib on each side, and the margins of the openings are ridged.



Sir John Marjoribanks, to whom the Club owes the knowledge of this discovery, sent *Bowsden Moor* $\frac{1}{4}$ the spear-head for exhibition at one of the Club's meetings; and also a full-sized drawing. For an electro of their wood-cut (not yet published) of this interesting spear-head, the Club is under obligation to the Council of the Society of Antiquaries of Scotland. It is $\frac{1}{4}$ the size of the original. It strongly resembles a specimen $19\frac{1}{4}$ inches long, found at Winmarleigh near Garstang, Lancashire, figured in Dr. Evans's "Ancient Bronze Implements of Great Britain," p. 335, No. 419.

Bowsden Moor, in the parish of Lowick, is about 3 miles from Duddo. Antiquities of a still earlier date than the bronze period, —for bronze spear-heads rarely or never occur in barrows*,— have been disclosed near Bowsden. “In the year 1800, as some workmen were levelling a barrow, about a quarter of a mile north from Bowsden, they found two urns inverted upon broad flags, and containing bones which appeared to have been partially burnt. Previous to this, another funeral urn was turned up by the plough at Bowsden Hollins.”†

In Northumberland, bronze spear-heads have been met with in a variety of localities. About 1726, a very remarkable discovery of this kind happened while a mason was engaged in clearing the earth from a rock in Hulne Park, about a mile to the N.W. of Alnwick, in order to win stones, when he came upon 20 bronze sword blades, and 16 spear heads, lying close to the top of the rock, about half a yard from the surface. A foot lower he found 42 socketed celts.‡ “The spear-heads had a socket for the insertion of a wooden pole; some were long and narrow, with a small wing or flange on each side; but in others the flange was wider and cut through or eyed.”§ A very fine example with entire blade, about 15 inches long, as well as a smaller one of the same type, about 8 inches, and one with lunate openings in the blade (Evans’s figure 419) were found with two bronze swords in a bog at Thrunton, near Whittingham, Northumberland, about 1847. Of this last “the surface of the blade is ornamented by being worked into steps or terraces, and the socket by bands of parallel lines.”|| An example of a variety with loops at the base of the blade, and two small openings, was found at Elford, Northumberland, and is in the collection of Canon Greenwell, F.R.S. (Evans, p. 326. fig. 405). A variety, with two small slits in the lower part of the blade, was found (broken) with a rapier-shaped blade at Corbridge, (Ib. 333.) In a spear-head shown in Evans’s fig. 417, the two oval orifices in the blade are placed the one somewhat below the other. This

* Greenwell’s *British Barrows*, p. 45.

† Mackenzie’s *Hist. of Northumberland*, i., p. 381.

‡ Hutchinson’s *Northumberland*, ii., p. 244; Mackenzie’s *Northumberland*, i., p. 484; Richardson’s *Table Book*, i., p. 364.

§ Tate’s *Hist. of Alnwick*, i., p. 14.

|| Evans, *Bronze Implements*, pp. 314, 315.

specimen is in Canon Greenwell's collection, and was found at Blakehope, among the Cheviot hills (Ib. pp. 334-5). Canon Greenwell regards bronze spear-heads as belonging to an advanced period of the time of Bronze.* J. H.

* British Barrows, p. 49.

Local Documents. By CHARLES WATSON, F.S.A. Scot.

1. *Dunse.*

28 Decem: 1650. I do hereby order and require the Governor of the Gaurrison of Dunse to take care that the lands of the Petitionr be equally and indifferently assessed, and that no more be taken from her than her pporion comes to and is paid by others of like rent and estate.

O. CROMWELL.

[This is an original, but the lady's name, for whose benefit it was issued, is not preserved.]

2. *Heuch, North Berwick.*

REX.

Johnne Law Messinger we greit you weill Forsamekill as it is understand unto us that Marioun Hepburne spous to Robert Home in Heuch hes intercomwin with Robert Hume hir sone quha is or rebale and fugitive fra or lawis for the tressonabill assisting and pairttaking with Francis sumtyme Erle Bothuile in suppryseing of or palice of halyruidhouse upon ye xxvii day of December last bipast. It is thairfoir or will and we comand you to put or uther lies [letters] in execution chairgeing ye said Marioun and all uyeirs q^t sumevir personis pteining to ye foirsaid Robert home in heuche to void and red thaim selfis furth of the tour and fortalice yairof wⁱⁿ the space and under the panes contenit in or utheris lies of ye dait the fyfteine of December. And that thae transport with them na gudes nor geir. In respect the samin appertanis to or lovitt Sr Vitor [servitor] the young Laird of Polwart as lauchfull donator to the escheit of the said Robert home in heuche. Attour It is or will and we comand you to deliver ye said tour and fortalice to or said Sr Vitor the young Laird of Polwart to be keptit and usit be him his Srvisor in his name at his awin will and plesr. And this ye fail not to do as ye will ansr unto us upon the execution of yor office Keipand this prt^s for yor warand Subscryvit w^t or hand at halyrud house ye* day of Januar 1591.

JAMES R.

[Robert Home in Heuch, to whom Marion Hepburne was espoused, was a natural son of Alexander Hume of Heuch, near North Berwick, to whom his father, who died 26th Aug. 1563, had granted seisin in his lifetime. Patrick Home younger of Polwarth, as legitimate heir, wished to eject him, but the Council interposed and reinstated him. (Register of Privy Council, I., pp. 245-6.) In consequence of the traitorous conduct of Robert Home, junr., as referred to in the writ now printed, the Polwart family acquired possession

* Note, the day of the month is blank.

of the estate, and on Aug. 21st, 1592, Patrick Home de Polwart was served heir of Alexander Home de Heuch, the brother of his grandfather, in the superiority of the demesne lands of Heuch extending to 23½ husbandlands, etc. Inq. Retornat. Haddington, No. 424—Case of Lieut. Alex. Home, p. 5.—J. H.]

3. *The two following letters were addressed to Wm. Hay, Esq. of Drummelszier.*

1.

Sir, I can not perswade myself That you can be Ignorant of the Duty of a subject when He or those that may depend upon him are called out according to Law for the King's service, nor of the powers The King and parliament Have Invested those with whom It Has pleased His Majestie to intrust at this conjuncture, yet I cannot but observe that notwithstanding of a legall Intimation both you yourself and those that depend upon you Have failed to Appear as in Duty and obedience to the Laws you are bound to Doe and I cannot answer the Trust Reposed in me if I Do not take notice of it. I Desyre you may send me by the bearer a true accompt of what Arms and Horses you have in your possession and prevent my taking a Course that may not be so agreeable as I could wish.

I am Sir
Your most humble servant
POLWARTH.

Redbraes Castle,
Saturday the 17th Sept^r.
1715.

2.

Sir, I expected to have heard from you last night as you promised, and that you would have sent you* six months cess of the town of Dunse for his Maties services; And now I send you this Express to putt you in mynd to doe it once this night. Otherwise I must be excused to levy it in a way that will not be very agreeable either to you or me, I am, Sir

Yo^r most humble Servant
WILL: MACKINTOSH.

Kelso 23d Octor.
1715.

[“Will. Mackintosh,” was Brigadier Mackintosh of the rebel army, who had entered Dunse on Thursday, Oct. 20th, 1715, where he proclaimed the pretender James VIII, and after having collected the public revenue, set out for Kelso on the Saturday, where he arrived the same night.]

4. *Epitaph upon the decease of the Right Hon^{ble}. Sir John Hume of Rentoun, Knight, Lord Justice Clerk.*

Here rests the Beam of Renton's place
A brannch of Humes that high renowned race
Whose wise endowments and his fyne deport
Advanced his seat amongst the sagest
Adorned the Senate and with
He gained respect besyde his births renown
In all his life proved loyall to his prince

* This is evidently a clerical error.

And dy'd a Judge of the pretorian Bench
 Yea like the Swan whose last song is ye best
 With praying voice he went to joyfull rest
 They of his Loynes his land and revenues have
 Heaven hath his croft and Coldingham his grave

By Mr ANDREW BANNATIN

Minister of Coldingham.

5. *List of the Heritors of the Shire of Berwick who attended or sent their servants to attend the Rendevous on Fogo Moore on Tuesday the 17th of March 1696 Conform to ane Act of His Maj^s. Council.*

The Lord Polwarth a servant; My Lord Mersingtone a servant; My Lord Corsrig a servant; Lantone a servant; Swintone a servant; Jeriswood a servant; Ninewells a minor a servant; Hiltone a minor a servant; Sir Pat. Home of Brownsbank a servant; Whytefeild a servant; Earnslaw a servant; Edringtone a minor a servant; Kettleshile; Auchenhay (?); Whitsome hill a servant; Sclatehouse; John Brown portioner in Whitsome; Abraham Home, portioner in Home.

These were generally well mounted and armed w^t sword and pistol.

Fairnyside sw. and pist.; Craw of Netherbyres sw.; Alexr Smith for his father Mr Pat. Smith Minister in Twedmouth for Hillend sw.; Spence of Spencemains sw. and pist.; James Purves of Purveshaugh sw. and pist.; John Dullopp portioner in Flemingtong sw.; John Dickson of Heirlaw sw.; John Ramsay of Nunlands sw.; Ro^t Cossar of Waster Kennetsyde heads a small heritor stout arms; Jo. Craw for the air of James Tait portioner in Cockburnspath sw.; James Redpeth of Angellraw sw.; Purvishall sw.; John Stevensone of Plowland sw.; Alexr Dickson of Stonefalds sw.; James Innerwick portioner in Whitsome sw.; John Allan portioner in Whitsome sw. and pist.; Ro^t Home portioner in Hutton sw.; Ja. Nisbet portioner ther sw.; Thomas Cox portioner ther stout arms; Geo Friskin portioner ther stout arms; Mr Will. Cranstone portioner in Huntlywood sw.; Ro^t Speid for Slighshouses a minor sw.; John Home of Hutton Hall sw.; John Crystison portioner in Hutton sw.; Mr Arch. Sibbald portioner in Paxtong sw.; Jo. Purves for John Keil portioner in Earlston, w^tout arms; John Wilson portioner in Leitholm sw.; Mr Ro^t Rule of Peelwalls a servant w^tout arms; Geo. Brown for Mark Pringle portioner in Nenthorn w^tout arms; Pat. Home of Bastlerig a servant w^t sw. and pist.; Schelfeild a servant w^t sw. and pist.; Pat. Home of Foulshotlaw sw. and pist.; James Craws in Burnhouses a servant w^tout arms he himselve is past date; Gilbert Elliot of Brintaburn sw.; Will Bell portioner in Spotiswood sw.; Marjory Banks of Dedrigs sw. and pist.; Jo. Dods portioner of Spotiswood sw.; Greenknow a minor a servant sw.; John Holyburtine portioner in Coldstream sw.; John Parks portioner in Hornden a sw.; Geo. Bell port. ther sw.; Will. Richysone port. ther sw.; Ro^t Bog portioner in Nethercraw sw.; Pat. Trotter of Kidcleugh sw.; John Home portioner of Whitsome newtong sw.; Geo Anderson portioner in Chirnsyde w^tout arms; Mr Jo. King of Bogangreen a servant w^tout arms; Wedderly a servant sw.

Mr Pa. Craw of Heughead excused himselfe as being to attend the Heritors of Midlothian.

This list taken up day and place forsd by me.

GEO. HOME.

6. *Cranshaws.*

I Mr Archibald Borthwick Minr of the Gospell at Greenlaw hereby enacts myself as Cautioner for Mr John Campbell Minr of the Gospell at Cranshaws that shall obtempore and obey any sentence that the Shiriff prpall of Berwickshire or his Deputs shall pronounce in the action of removing purchased at the instance of David Denham of Cranshaws agt the s^d Mr Campbell. And I the s^d Mr Campbell obliges me to relieve my s^d cautioner of all skaith that he may sustain through becoming cautioner for me in manner above written In Witness q^r of these pr^{ts} are subscribed by us and written by me the said Mr Campbell at Greenlaw the ten day of Aprile Jm vii and seven years [1707] before these witnesses Mr David Brown Minister of the Gospell and Mr Alexr Cockburn brother gudeman* to the Laird of Reyslaw.

A. BORTHWICK

JO. CAMPBELL

DAVID BROWN witness

ALEXR COCKBURN witness

[John Campbell, A.M, lauréated at the University of Edinburgh, 28th June, 1697, became chaplain to Sir John Swinton of that ilk; was licensed by the Presbytery of Chirnside 4th Nov., 1701; called to Cranshaws 8th Nov., 1705; ordained assistant and successor 28th March, 1706; died 16th Jan., 1759, in his 84th year and 53d of his ministry. He married 12th June 1707, Elizabeth Craig, in the parish of North Berwick, by whom he had a family.—Rev. Hew Scott's Fasti, etc.]

* [?]german.

Ornithological Notes. By ROBERT GRAY, F.R.S.E.

HONEY BUZZARD (*Buteo apivorus*).—A female bird of this species was shot at Colinsburgh, Fifeshire, on 16th June, 1881, and was skinned and stuffed by Mr Hope, George Street, Edinburgh, in whose hands I saw it.

HOBBY (*Falco Subbuteo*).—A most beautiful male was found dead near Belford, on 24th September, 1881. It was sent to Mr Small, Edinburgh, for preservation, and I had an opportunity of examining it shortly after it was received.

GREAT GREY SHRIKE (*Lanius excubitor*).—Various examples of this species, killed in East Lothian and Berwickshire, have come under my observation during the past year. They were all distinguished by the double white spot upon the wing. It would be well, however, for members of the Club to scrutinize carefully any specimens of Grey Shrike which they may have an oppor-

tunity of seeing recorded from either county, as it is not unlikely some of them may prove to be a nearly allied species—Pallas' Shrike (*Lanius major*) which has several times occurred in Scotland. A description of this species by Mr H. Seebohm has been given in the "Proceedings of the Royal Physical Society" for Session 1882-83.

GRASSHOPPER WARBLER (*Salicaria locustella*).—A few pairs of this bird breed near the shore at Longniddry, Haddingtonshire, every year. The species has also been observed nesting for several seasons past on the estate of Morton hall near Edinburgh, by Mr William Evans, a Fellow of the Royal Physical Society, who has paid much attention to the Ornithology of the Lothians.

GOLDFINCH (*Carduelis elegans*).—Although the Goldfinch has during the last thirty years become very scarce in the counties of Edinburgh and Haddington, I am glad to be able to report that small flocks still make their appearance in the neighbourhood of Edinburgh. Their best known haunt is on the slopes of Arthur's Seat facing Duddingston. I watched a flock on 26th October last feeding on the seeds of *Senecio viscosus*, large quantities of which grow on the slopes.

TURNSTONE (*Streptilas interpres*).—Two specimens were shot at Aberlady, Haddingtonshire, early in September 1882, and were sent to Mr Hope, taxidermist, Edinburgh, for preservation. They were in full summer plumage and beautifully marked.

EGYPTIAN GOOSE (*Anser Egyptianus*).—A specimen, remarkable for its small size, was shot at Elie in Fifeshire in March 1881, and forwarded to Mr Small in whose hands I saw it.

BEWICK'S SWAN (*Cygnus Bewickii*).—Two swans of this species—a male and a female—were shot on Shaws Loch near Selkirk by Dr. Anderson of Shaws on or about the 1st December, 1882. The birds were sent to Mr Small who sexed them, and who informs me that Dr. Anderson wrote to him to say there were five altogether in the flock but three of the birds escaped.

SHOVELLER (*Anas clypeata*).—This beautiful duck continues, up to the present time, to breed in considerable numbers in Fifeshire where it was discovered nesting three years ago by Mr A. C. Stark, a Fellow of the Royal Physical Society and an excellent observer.

PINTAIL (*Anas acuta*).—A female Pintail was shot at Yester, Haddingtonshire, on 21st December, 1882, and was sent to Mr Small who informs me that about the same time he got another

—also a female—but failed to learn the precise locality where it was killed. A third—a male bird—was shot at Queensferry in February, 1882, and preserved by Mr Hope who kindly shewed me the specimen.

POCHARD OR DUN BIRD (*Fuligula ferina*).

TUFTED DUCK (*F. Cristata*).—These two ducks breed in some numbers on a loch in Fifeshire and appear to be increasing every year. During the past season there were from fifteen to twenty pairs of each, and several nests were carefully examined leaving no doubt whatever as to the identity of both species. The precise locality is for obvious reasons withheld.

COMMON GUILLEMOT (*Uria troile*).—I examined two Guillemots in full summer plumage which were shot in the Firth of Forth on 1st February, 1882. A Razorbill shot at the same time was in the winter plumage. I had met with similar cases before.

BLACK GUILLEMOT (*Uria grylle*).—A few pairs still linger in the vicinity of the Isle of May in the Firth of Forth, where an occasional nest may yet be taken. It is, however, doubtful whether, notwithstanding the protection afforded to the sea birds, the species will maintain its hold in this locality.

LITTLE AUK (*Mergulus alle*).—A Little Auk was found alive in the water of Leith at Gorgie near Edinburgh, on 9th April, 1883, and sent to Mr Small for preservation.

LITTLE GULL (*Larus minutus*).—A young bird, apparently a few months old, was shot at North Berwick on 7th December, 1882, and is now I believe in the collection of Dr. Crombie of that place. I have records of the occurrence of Little Gulls in other parts of Scotland which lead me to infer that flocks had arrived in the north west two months earlier and had probably found their way eastward through the Pentland Firth to the coast of Caithness from which they would by easy stages travel southwards, lingering no doubt for a time in the intervening estuaries. Their first appearance was, I find on referring to my note books, at the island of Lewis in the month of October—two roughly skinned specimens with the flesh adhering to the skins and wingbones having been sent to Mr Hope by a resident keeper, along with an Iceland Gull (*Larus Icelandicus*), shewing the two species had come together, as they are known to do in other quarters where flocks of Arctic Gulls arrive at irregular intervals.

200 *Effects of Lightning at Chapelhill.* By Jas. Hardy

GLAUCOUS GULL (*Laurus glaucus*).—A young bird, sex not noted, was shot at Eyemouth on 19th December, 1882, and was sent in the flesh to Mr Small for preservation.

BUFFON'S SKUA (*Lestris Buffonii*).—A beautiful male bird of this species was shot by Mr Broadwood at Dunbar in June, 1881, and sent in to Mr Small to be preserved. It screamed on being struck by the shot—a circumstance I had before remarked in connection with the occurrence of the bird elsewhere.

Edinburgh, July, 1883.

On the Effects of Lightning in Smelting and Altering Gravel at Chapelhill, Cockburnspath, 10th July, 1882. By JAMES HARDY.

A thunder-storm on the 10th July, 1882, at Chapelhill, Cockburnspath, was attended by circumstances almost unprecedented in such electrical discharges. About half-past ten A.M. preliminary to a loud sharp peal of thunder, the lightning struck about three feet square of the gravel in front of the farm-house, smelted a portion of it into lava-like slags, and converted other portions into black vesicular light-weighted cinders, without amalgamating them into masses. It lifted many of these, at the same time, and drove them forward to the base of the front-wall of the house, and transported the smaller pellets, as if impelled by a gust of wind, and scattered them for several yards over a grassy plot round the east corner of the dwelling. The gravel is a compact fine-grained greywacke, with some flinty slate, which is a constituent of veins, and bits of porphyrite. In the slag state the substance is nearly homogeneous, with the exception of some white streaks that appear to be quartz. In one instance a bird's eye speck of quartz remains unaltered, set in a thoroughly fused combination. When fractured most of the fragments glitter, and have become iridescent. Vein-stones, although vitrified externally, are less, or scarcely perceptibly changed internally: these have had a surplus of siliceous matter in their composition. Some portions might be called a volcanic ash; others show that greywacke, if melted under pressure, or other peculiar conditions, might become a dark-coloured trap, or might even assume the colour and aspect of hematite. Concretions of red hematite, when found in the fields, are popularly called "thunder-bolts;"

a name and idea possibly derived from some previous observation of the effects of lightning, when it has struck a soil impregnated with iron and fused it. The development of this high-colouring shows that greywacke or ancient porphyries in being converted in a heated state into red sandstones, would require very little additional oxide of iron to redden them. The fluxing material was probably the felspar in the greywacke which was discharged, leaving the alumina and quartz in the vesicular examples. Quartz by itself evidently requires a still higher temperature to smelt it. The thunder-storm, which lasted a considerable time, was accompanied with torrents of rain, and a heavy fall of hail-stones. A mass of these hail-stones, $2\frac{1}{2}$ feet long, 18 inches broad, and 6 inches in thickness, which had slidden from the roof, being covered up to protect it, remained entire in a consolidated state next day. This was reported in the newspapers as the remnant of a shower of ice.

Some of the specimens of the smelted stones I picked up myself; the rest were contributed by Mr John Wilson, Chapelhill.

On mentioning the subject to Professor Geikie, he recalled to recollection other similar phenomena, which I had almost forgotten. Humboldt found two square feet of rock on the summit of Toluco vitrified by lightning; and Saussure saw the same thing on the top of Mont Blanc. In elevated sandy districts vitreous tubes, or fulgorites, are occasionally formed by lightning, "which melts the sand to a considerable depth, so as to form tubes, commonly sinuous, with solid and smooth walls internally, and rough on the outside" (Edin. New Phil. Jl. ii., pp. 199, 200). Darwin gives an account of the "lightning-tubes," which he found intersecting the sand-dunes near Maldonado at the mouth of the La Plata. In 1828, MM. Beudant, Hachette, and Savart, with a Charles's battery succeeded in the formation of artificial lightning-tubes.

Notes of the Measurements of a few of the larger Trees at Edgerston House taken in January, 1883. By FRANCIS RUSSELL, Esq., Sheriff-Substitute of Roxburgshire.

It was only lately that I had an opportunity to take the measurements of some of the Trees at Edgerston, and I now enclose a statement of these for the information of the members of our Club. The point of measurement was about 4 feet from the ground.

	ft.	in.		ft.	in.
OAKS	10	5	(1)	9	9
			(2)	8	6
			(3)		
	13	8	(1)	12	9
ASHES			(2)	12	6
			(3)	11	0
			(4)	10	10
			(5)		
	13	6	(1)	12	8
PLANE TREES. (<i>Acer pseudo-platanus</i>)....			(2)	11	3
			(3)	10	6
			(4)		
LIME....Low spreading (1) on a mound: with numerous	19	0		11	0
large protuberances or knots on the trunk.			(2) Tall and shapely.		
	18	6			
ELM...Spreading low and knotted.					

The large Lime tree (19 ft.) stands on a mound; the ground having been apparently artificially lowered from the level on which it had been planted. The forester told me he had tried to count the *rings* in a large Ash (which had been blown down, I think) and was able to make out as he thought about 300 rings; but he admitted that he could not count them with certainty.

Arrivals, Departures, and Occurrence of Birds near Belford, 1881-2. By JOHN AITCHISON.

It has been deemed expedient to defer the Record of Migration, &c. of Birds on the Borders to next Part of the Club's Proceedings. Meantime the subsequent careful observations by Mr John Aitchison, Belford, may fittingly occupy its place, as they comprise a variety of particulars that could not have been incorporated in a general summary. Mr Aitchison's merit as a painstaking ornithologist, and writer on his favourite study, are generally acknowledged in his native county. It is but justice that he should speak for himself. J. H.

Belford, Northumberland, Jan. 1883.

(Dear Sir)

In the remarkably mild and open winter of 1881-2 there was very little worth noting in the bird world about here; and no large migratory flocks of ducks, geese, swans, &c., such as we often see about Fenham and other parts of the Northumberland coast, were observed during the whole of last winter. The weather during the months of January and February

was unusually mild, or even warm, and several of our native birds commenced to breed in the first month of the year. On the 16th January a nest of the Missel Thrush was found on the bare branch of a young ash tree in a plantation on the west side of Middleton, and bordering close to the moors. It was nearly completed, and on the 20th it contained two eggs. On the 24th January a Blackbird's nest was found at Howick, containing four eggs pretty well incubated. In the rookery here (Belford) the Rooks were very busy nest-building by the end of January; and many of them were sitting on eggs by the middle of February, and numbers of young rooks were observed hopping about on the branches, and others were able to fly about by the beginning of April. Wood pigeons and Starlings were equally forward in beginning nesting operations. I observed Starlings were paired early in January, and on the 12th I saw a pair examining into an unused chimney of the Workhouse here, evidently seeking for nesting accommodation. It was not, however, until the 30th that I saw them carrying materials, and knew that they had then begun nest building. In speaking of the Starling I may remark that this species has increased immensely in this district during the last summer. In autumn large flocks were to be seen flying about the fields, and the numbers that visited Middleton Hall in the evenings were something prodigious. The flocks continued to arrive from all parts of the district almost incessantly for the space of an hour and a half or two hours, and although it is impossible to give anything like an approximate opinion of their numbers, I believe I am quite under the mark in saying that there could not be less than from 100,000 to 150,000 birds collected there at one time. Their number were simply immense; and people who have lived all their lives in the neighbourhood, and others who came from a distance to see them, declared they never saw anything like it in their lives before. They roosted upon the laurel shrubs on each side of the carriage drive and round about Middleton Hall; and were clustered together on the branches as close as eggs in a box. It was a fine sight to see these birds arrive in the evenings, as with a sweeping circular flight, and in the strictest order the successive flocks settled upon the trees, keeping up all the time a loud chattering noise which could be heard for a considerable distance off, and which somewhat resembled the whistling of a gentle gale of wind.

Many of our spring migrants put in a somewhat early appearance this year. I observed four Wheatears on the 20th March, and several others a few days afterwards in a ploughed field at Belford Moor. They were all males, and I saw a male and female on March 30th, flitting along on a stone wall by the road side a little on the west side of Belford. This was the first female I had seen this year. A few Pied Wagtails remained here all last winter; but I noticed that their numbers were considerably augmented in March, and by the end of that month they had become common. Except when the winters are severe, there is always a "sprinkling" of the Pied Wagtail to be found about here. The Chiff-chaff I observed on March 30th. There were three of them by the side of a low hedge on the road to the station, and my attention was first directed towards them by their well known and peculiar note. On April 5 saw both Whin-chat and Stone-chat on Belford Moor for first time this year, though it is probable they had arrived some days before

that time. Willow Wren, April 10, a few individuals. Garden Warbler, April 15, Black-cap Warbler, April 20, a male heard singing in a hedge and seen to fly across the field. A pair of Redstarts seen on April 20. This species is not very plentiful here. Two Greater Whitethroats seen May 1st; they were plentiful in a week afterwards. Lesser Whitethroat, first saw several individuals on May 6, and also on May 8. Heard a Sedge Warbler singing late at night on April 22 and again on April 25, after which it sang nearly every night for a fortnight and then became silent. Grasshopper Warbler first seen on May 6th. Sand Martins made their appearance on April 3, Chimney Swallows on April 8, and House Martins on following day April 9. By the 15th both Swallows and House Martins were plentiful. The Sand Martin is never abundant in this neighbourhood. Chimney Swallows and House Martins were abundant here all summer, but not so numerous as they were during the summer of 1879. They left us in a body on September 28th; a pair last seen on October 7. Swifts, a pair, seen May 7; seven or eight individuals seen near Belford, May 10, and last seen August 21st, previous to which day they had been seen flying about in considerable flocks. On September 12, 14, and 20 observed small flocks of Wheatears going south. Greater Whitethroat last seen (three individuals) on September 20. Woodcocks have been observed here all summer. Two pairs bred in Detchant Wood by Belford, and another pair is recorded to have been bred in the Duke's Park at Alnwick. This species has been fairly plentiful here this autumn, but not abundant. Saw several flocks in October, but they were somewhat scarce up to near the end of November, when their numbers considerably increased, and a good many were shot. Wild Ducks (Mallards and Wigeons) were very abundant about Fenham and Wern Slakes during November and December last; and seaside shooters made some good captures during the time of the snowstorm. They were also plentiful at Spindlestone Call (Cauld), Swinhoe Lake, and other sheets of water inland in the district. In the month of December, while the snowstorm lasted, several somewhat rare birds were shot on the coast between Bamburgh and Holy Island. On December 6th a Kingfisher was shot at Ross Low—a rather scarce bird now and one becoming yearly more scarce in this district. December 11, an immature specimen of Blackthroated Diver was shot at Wern Slakes by Mr John Turnbull, Belford. December 12 an example of the Water Rail was captured alive by Mr Burn, on his farm at Glorprum. It was an adult specimen and died soon after being taken. A Pintail Duck was shot at Fenham in the early part of December, but I do not know the exact date. On December 21st a specimen of the Waxwing was shot on Ross Links, by Nichol Weatherston, of Bamburgh, and is in possession of Mr Jas. McDougal of that place. Very few specimens of the Waxwing have been observed about here this winter. Mr John Turnbull, Belford, shot on December 26th a somewhat large example of the Common Cormorant near Wern Mills. It measured 3ft. 2in. length, and 4ft. 9in. from tip to tip of wings, and weighed $7\frac{1}{2}$ lbs. Large numbers of Plovers, Curlews, and Lapwings were seen about the seaside, and large numbers of Starlings were observed feeding on the salt grass about Fenham, during the time of the storm. Some of our summer migrants would seem to have remained with us all last winter. The note of the Cuckoo, as you are aware, was frequently reported in the papers as having been heard in

various parts of the country long before the usual time for the arrival of this bird; and I am told that the notes of the Corncrake was distinctly heard at Chatton, Howick, and Longhoughton in the month of January last year; I did not hear it myself until the 15th of April, which I regard as a very early date. The note of the Cuckoo I did not hear until the 5th of May, about its usual time; and heard it last on the 25th June. On April 3rd I observed three Yellow Wagtails in a meadow below Belford Station; I also saw several examples of the Grey Wagtail by the side of a burn near the Station on the same day. The Goatsucker I observed had returned to Belford and Chatton Moors by May 15th, on which day three examples were flushed from amongst the ferns. A fine specimen of the Hoopoe was shot at Beadnell on the 28th of August. During the first and second weeks of December a number of Snow Buntings visited the garden in company with Sparrows, Chaffinches, and others. They came regularly every day as long as the snow lasted, but disappeared as soon as fresh weather arrived. A small flock of Bullfinches also came regularly to the garden, and remained for about a fortnight feeding on the seeds of nettles, &c., outside the garden wall after the snow had gone. A Rough-legged Buzzard was observed in the vicinity of Ross Links for several days during the first week of December. It had probably been attracted by the number of ducks and other birds. A great many Geese—Grey-lags and Ware Geese—were observed about Fenham in the recent storm. Many were shot, along with several specimens of the Wild Swan and Bewick's Swan. Teals were scarce, and I have only heard of a few being taken. Little Grebes were plentiful; and several Little Auks were seen about on the water. One was found as far inland as Chatton, where it was shot.

I omitted when speaking of the Rook to mention a somewhat curious fact of the late breeding of a pair of these birds, and which, perhaps, is worth recording in your Club's Proceedings. During the early part of last October a pair of rooks were observed building, or repairing their nest, on a tree near the garden of Longhirst Hall, Northumberland, and in a short time after were observed patiently sitting on what were no doubt eggs. About the middle of November they were seen daily feeding their brood, and the latter had just emerged from the nest on to the branches when the snow-storm came on in December. The parents, however, continued to feed their young ones with unremitting attention, and it is believed they succeeded in bringing them through the storm.

JOHN AITCHISON.

Notes on Biel and Stenton.

[Supplementary to Vol. ix., pp. 430-439.]

SOME little mistakes and omissions having occurred in the Report of the Meeting at Biel and Stenton, I have been favoured with supplementary notes on the subject from Miss Nisbet Hamilton, to which I have added others supplied by the Rev. George Marjoribanks. The occasional sketches of County man-

sions and families given in the "Proceedings" having attracted the attention of topographers, it is most desirable that, whatever may be their deficiencies otherwise, they may be reliable.

The following statements are from the communications of Miss NISBET HAMILTON.

QUEEN ELIZABETH'S PEARLS, p. 431.

The necklace which has always gone by the name of "Queen Elizabeth's Pearls," is supposed to have been a gift from Queen Elizabeth, when on a visit to the Lord Treasurer Burghley, either to Abigail Cave, who was nearly related to the Cecils, or to her second husband, William, first Baron Sherard of Leitrim, who was brought up in the Cecil Family as page to Lady Burghley:—The Descent of the Biel Family from the Caves and Sherards is as follows:—Roger Cave of Stanford, co. Northampton, sixteenth in descent from Jordan de Cave, a Norman baron who came over with the Conqueror, married Margaret, daughter of Richard Cecil, and sister of the celebrated Lord Treasurer Burghley. Their third son, Cecil, married Anne, daughter and heir of Anthony Bennet of Greenwich, and left two daughters, of whom the elder, Abigail, married first, Sir Thomas Tresham of Newton, co. Northampton, and secondly, William Sherard of Stapleford, co. Leicester, created Baron Sherard of Leitrim in 1627.—The Sherards were descended from the Family of Sherard, which was powerful at the time of the Conquest in the counties of Chester and Lancaster. The first Lord Sherard was succeeded by his eldest son, Bennet, second Lord Sherard, who married Elizabeth, daughter and heir of Sir Robert Christopher, Knt. of Alford, co. Lincoln. Their son Bennet was created Earl of Harborough, and their second daughter Lucy, who succeeded to her mother's property, became the second wife of John, second Duke of Rutland. The eldest surviving son of this marriage, General Lord Robert Manners of Alford and Bloxholme, co. Lincoln, succeeded to his mother's estates, and married Mary Digges of Roehampton, co. Surrey. Lord Robert left two sons and two daughters, all of whom died unmarried with the exception of the elder daughter, Mary, who became the wife of William Hamilton Nisbet of Belhaven and Dirleton, my great grandfather.

WILLIAM PITT'S GOLD CHAIN, p. 431.

I have always understood that the hair contained in the locket was cut off, after Mr Pitt's death, by his friend the Right Hon. William Dundas, Lord Clerk Register, (my great uncle). The

chain belonged to Mr Pitt, and the watch to which it was attached, was, *I believe*, presented by Mr Dundas to Mr Pitt's University.

ATHENIAN CHAIR, p. 434.

The Athenian Chair on the upper terrace at Biel is not one of the Elgin Marbles, but was bought by my great grandfather, Mr Hamilton Nisbet, during his visit to Greece in the early part of this century.

WILLIAM HAMILTON NISBET, Esq., p. 439.

William Hamilton Nisbet of Belhaven and Dirleton, was born in 1747 and died in 1822. [These dates could not be ascertained at the time of visit.]

MONUMENT OF THE RIGHT HON. R. C. NISBET HAMILTON
AT STENTON, p. 439.

I am able from a sketch written in "Life and Work" for 1880, by the REV. GEORGE MARJORIBANKS, to preserve in our pages, the following description of the Iona Cross, erected in memory of the late Right Hon. R. C. Nisbet Hamilton, in Stenton Churchyard.

This form of the Cross, so unique a specimen of which we have in this parish, is distinctly national, being generally called that of Iona, and is frequently found amongst the old sculptured stones of Scotland. Its front faces the east. Taking first, therefore, a front view of the structure, it will be observed that in the centre of the circular head there appears the sacred monogram, formed of the two first letters, in Greek, of the name Christ, the circle itself being symbolical of eternity. If we now look from the circular head of the cross, it will be observed that on each of the four arms there are emblematic figures, these being symbolical of one or other of the writers of the Gospels. On the left arm is the Winged Man, emblematic of St Matthew, who treats chiefly of the Human Nature of Christ. On the right arm, looking toward the cross, is the Winged Lion, emblematic of the Resurrection, of which the lion was in early times accepted as the symbol, and assigned to St. Mark, because he dwells in his Gospel on the Resurrection. On the lower limb we find the Winged Bull, emblematic of the Passion of Christ, and the symbol of St. Luke, who dwells on the Atonement and Priesthood of our Lord, which is fitly set forth by the Ox, the beast of sacrifice. At the top we have the Eagle, emblematic of St. John, because he dwells specially on the Divine Nature of Christ, thereby soaring higher, as it were, than any of the other sacred writers. On the shaft, and between these evangelistic symbols and the thorns encircling the sacred monogram, there is lacing ornamental work, somewhat modified from old examples. The back of the cross shows on the centre of the head the sacred dove, symbol of the Holy Ghost and emblem of purity, descending surrounded by winged cherubs; while at the bottom of the shaft are three fishes, placed triangularly, and denoting baptism in the name of the Holy Trinity. The four limbs or arms have groups formed of grapes or ears of wheat, emblematic of the Sacrament of

the Eucharist. On the shaft, and between the arms and centre, there is, as on the front, though of a different type, ornamental interlacing work from old crosses. The north side of the cross presents, in combination with interlacing ornaments, the lily of the Annunciation with the rose; and on the other side, similarly combined, are palm leaves—emblematic of the Christian's victory, and pomegranates—suggestive of hope in the Resurrection. On the base, in letters copied from an old cross of the middle of the fourteenth century, is the following inscription:—

ROBERT A. DUNDAS C. NISBET HAMILTON. Born Feb. 9, A.D. 1804. Died June 9, A.D. 1877.

"Blessed are the dead which die in the Lord from henceforth: Yea, saith the Spirit, that they may rest from their labours; and their works do follow them."

"Grant them, Lord, eternal rest, and let perpetual light shine upon them."

The memorial was executed by Messrs. Macdonald, Field, and Co., Aberdeen, in Peterhead (red) granite, from full-sized models and drawings of every ornament and figure, furnished by Mr William Steell, under the superintendence of his distinguished father, Sir John Steell. I may add, in conclusion, that filial affection lent its aid to this beautiful work of art, in the way of suggesting symbols for the memorial. For a considerable time Miss Nisbet Hamilton was engaged in making a careful study of the sculptured stones of Scotland, the fruits of which are embodied in this splendid memorial of an honoured parent.

OLD BAPTISMAL FONT, FINIAL, etc., p. 434.

Mr Marjoribanks writes, 6th August, 1883, "We have now got restored to the old church (standing near where originally it must have been in Roman Catholic times) the *Baptismal Font* of the old church. There is also placed on the ruins of the old church the *finial* stone into which the shaft of the Cross had fitted when the building was entire. This stone was built into an old wall in the village, and always puzzled me. When the Club visited Biel two years ago, Canon Greenwell was told off to look at the stone, and he at once told us what it was. It is an interesting looking stone—the cross appearing roughly on its four sides."

The two stones on the apex of the Rood Well, I understand, still retain the position they occupied when the Club visited Stenton.

J. H.

Reports on the Effects of the Great Storm of Wind, 14th October, 1881, on Trees and Animals.

IT seemed desirable that some record should be preserved of the disastrous influences of the gale of October 14th, 1881, that uprooted such numbers of trees in the plantations in the Border districts, and in other ways spread disaster and ruin both on land and sea. I have only as yet mentioned the subject to a few members and correspondents, knowing that space could not this season be afforded for numerous returns. Without further preface I present the following instalments. J. H.

BERWICKSHIRE.

THE WIND STORM OF THE 14TH OCT., 1881, IN THE EAST OF BERWICKSHIRE.

The most furious tempest of wind resembling more a tropical typhoon or tornado, than an ordinary gale broke over Berwickshire on the 14th October, 1881, and was accompanied by deplorable loss of life at sea: as well as irreparable damage done to the woods in the county. At breakfast, 8.30 a.m., the barometer was observed to have dropped to 28.5 at an elevation of 380 ft. above sea level. So low was the reading, that at first it was considered there was something wrong with the instrument (a Fitzroy's Barometer). The morning was fine with a clear sky, which at 7 a.m. showed High Cheviot (31 miles due south) with first snow of the autumn covering not only the summit, but also the ridge of the hill, for a third of its altitude. A severe gale seemed imminent from the barometric conditions, although complete stillness prevailed outside. As I had occasion to be out on duty, I watched the weather with suspicion. About eleven o'clock the northern horizon began to be obscured from east to west and coming storm seemed certain. As the cloud travelled from N. to S. as mid-day approached, its colour was blue gray, hanging ominously in curtain like folds of threatening aspect, discharging sheet lightning; accompanied with a peculiar rushing rumbling sound. As I have previously stated there was an unnatural stillness, preceeding the outburst of the storm. Turning my horse's head I galloped home, and just in time, for when within a hundred yards of the gate, the wind blowing at first from every direction, broke on the top of a clump of trees close to me, twisted them around as with a whirlwind, and within a few minutes, eight of these trees were prostrate. Some were broken clean over twenty feet from the ground. Large Ash trees were torn up, with tons of soil attached to their roots. Beeches and Elms of great age, and size, by the roadsides, fell obstructing all passage till the afternoon of the following day. Several houses were wrecked by the falling trees, the inmates having had to seek shelter elsewhere. Horses in fields were greatly alarmed, galloping wildly to some men repairing the fence, stopping and evidently wishing to be removed to shelter. A spaniel accompanying me was so alarmed, that on reaching home, she buried herself under a pile of straw in one of the stalls in the stable, and was not again visible until the

afternoon of the following day. Pigeons flew to their dovecots as before a thunder storm, and no living animal was visible, when the storm was at its height. The windows were so obscured by vapour and dirt from the outside, that it was only by partially raising a sash on the south side, that I could get a view of the ruin, that was going on outside. Slates, cans, and tiles were flying from the houses; and the half of the roof of a neighbouring church was lifted entire the slates adhering to the wood, carried through the air and deposited in a neighbouring garden; in its course carrying away a turret, composed of stones weighing 1 cwt. each. The noise was deafening, the roar of the wind, the splash of the rain, hail, and snow furiously driven against the north side of the house. Altogether for three hours, while the storm was at its height, no one living recollects of its equal. Nervous women went to bed, could take no food, and were helpless all that day. Then news arrived of the disasters to the Eyemouth fishing fleet, which at the time were discredited; but now we know, how far short of the truth was known, and how much more disastrous the calamity proved. These have already been described in the newspapers, but the damage on land has yet been very imperfectly described. No one can have the least idea of the destruction, in this district, without inspecting the trees, as they now cumber the ground, obstructing all passage: and it will take a very long time, before order can again be restored. During the height of the gale, a funeral proceeding from Huttonhall Barns to this place had a very perilous journey. Trees were falling in every direction; large branches obstructing the road, and the wind almost overturning the hearse. Some persons in the company, were obliged to go on before, and clear the obstructions on the road. At one period progress was entirely arrested by the falling trees, but by making a detour into a private approach the procession was enabled to extricate itself. At Marchmont, Dunse Castle, Manderston, Wedderburn, and Broomhouse, the injury to the woods, will never be recovered from. Considering the velocity of the wind said to be 70lbs to the square foot, it seems remarkable that buildings withstood its violence. In the fine woodlands at Whitehall, Ninewells, Blanterne, and Mains, close to my residence, the injury to the trees is irreparable. Avenues of large beeches meeting overhead are completely prostrate. Large spaces were cut through exposed parts of thicker woods, by the destroying wind. In a wood at Craigswalls there is a space of 20 acres, with not one tree left standing, all blown down, one on the top of the other. At Whitehall a similar gap is made, where the largest Oaks, Beeches, Ashes, and Elms are torn up by the roots, leaving nothing standing, destroying one of the most picturesque glades in the south of Scotland. Magnificent Spanish Chestnuts, some of them 13 feet in circumference four feet from the ground, are overthrown. Seven of the group remain, six of the best were prostrate. The Scotch Firs in front of the house, remarkable for their gnarled boughs, and picturesque outline, are very much destroyed, large branches having been torn off. Silver Firs, a hundred feet high in the avenue, are torn up by the roots, greatly disfiguring the approach. While Ashes, of great size, are snapped through, above the ground; in

some instances reduced to matchwood, as if a bomb shell had burst in the centre of the tree. Large Oaks are in the same state, proving the irresistible force of the tempest.

I have endeavoured to describe the suddenness of the advent of the storm. The accurate information is given by the Barometer; which fell 1 inch during Thursday night the 13th inst., and within an hour of the advent of the storm began to quickly rise—the mercury rising $1\frac{1}{2}$ inches before 11 p.m. on Friday the 14th.

No such destructive gale has occurred in this district in the memory of man, although in 1856, 1st of February, I recollect a terrible S.W. gale which obstructed the roads with trees. At the worst of the present storm, the wind was due N., which can be easily seen from the trees all lying north and south. CHARLES STUART, M.D. Edin.

Hillside Cottage, Chirnside, N.B.,
Berwickshire.

MARCHMONT HOUSE, BERWICKSHIRE.

THIS estate is in latitude $55^{\circ} 43' 30''$ and longitude $2^{\circ} 25' 20''$, and about 20 miles from the sea. The inclination of the ground is from north-west to south-east and the plantations range from an elevation of 400 feet to 900 feet above the sea, chiefly in belts running east and west, and the extraordinary gale of the 14th October, 1881, blowing as it did from the north committed serious havoc amongst the trees all over the property.

The gale commenced about 11.45 a.m. from the north-west, and continued about 10 minutes, when there was a lull of 15 minutes, after which it veered round to the north, and blew with terrific violence for the space of two hours, cutting its way through the trees, uprooting most, and snapping others at various heights from one foot to thirty feet above the ground, some of the trunks, at the last mentioned height, being 30 inches in diameter, and some of the branches of the Oaks were crushed to the earth as if an enormous weight had fallen upon them. This was particularly noticed, no doubt brought about by the Oaks rooting deeper and their being better able to stand the wind pressure, while the toughness of vascular or fibrous substance enabled them to hold out until their limbs were severed at the joints, and hung in half dismembered masses round their trunks. All the trees being in full leaf the wind had the greater effect. To describe the violence of the gale is impossible—a man could not stand against it. A flock of Cheviot ewes in the Policy seemed endowed with wonderful instinct, for previous to the gale they were observed to pack themselves in a corner clear of trees, and as far from the direction of the wind as they could get. When it ceased, they again spread themselves over the pasture.

Numerically the Spruce Fir suffered most, Scots Fir next, then Larch, Silver Fir, Beech, Ash, Elm, Lime, Poplar, Chestnut, and Oak. A large proportion of the Beech here, is above 200 years old, past maturity, and the roots and trunks much decayed.

To state the number of trees blown down by the gale can be of little interest unless a minimum size of trees is given and strictly adhered to,

but it may be stated that about 15,000 trees of a *useful* size, were blown down on the property generally on the 14th of October, 1881. But little damage was done by the gales of the 16th, 22nd and 27th of November, and of the 13th February last, they all blowing from the west.

PETER LONEY, Land-steward.

NORTHUMBERLAND.

WEST STREET, BELFORD, Feb. 6th, 1882.

In accordance with a promise I made to you some time ago, I now endeavour to send you a few rough notes on the effects of the great storm on the 14th of October last—at least so far as it affected this immediate district—which I have collected from the agents and managers of the estates mentioned therein.

The morning of the 14th of October was calm and mild, a slight wind and drizzling rain blowing from the south. Between ten and eleven o'clock it faired up, and the wind shifted round to the west. Black, heavy, thundery-looking clouds soon after made their appearance; the wind began to rise and a heavy downpour of rain seemed imminent. No rain came however, and the wind again shifted into a southerly direction, gradually shifting its position and increasing in violence as it veered round to S.E., E., N.E., and N., and by one o'clock had risen to a perfect hurricane, carrying almost everything moveable before it. It attained its greatest violence at about from one to half-past one o'clock, during which time almost the entire destruction to plantations, &c. occurred. In Belford comparatively little damage was done to houses or other buildings; and the gardens of Belford Hall, being well sheltered from the north and east, suffered very little indeed. The principal destruction occurred amongst the trees in the Park and in other plantations on the estate. Mr Miller, agent to Major Clark, informs me that "in the Policy Grounds, exposed to the north and north-east, more than 100 old hard wood trees were all uprooted within the space of a few acres (10 or 12 acres); besides from 200 to 300 smaller trees, principally Firs, in the various other plantations on the estate." The two large Hornbeams, mentioned by you in the Club's Proceedings for 1880, have, I believe, escaped uninjured, also the "grand American Elm," but one of the Holm-oaks (*Quercus Ilex*) has been broken in two near the top, the other escaped without suffering much harm. In his letter to me Mr Miller remarks "one striking feature of the storm here was that its utmost and dangerous violence did not last more than a quarter of an hour or twenty minutes, but so extreme was it during that time that it seemed to make roads in the thickly planted Policy Grounds, carrying all before it, whilst close at hand, and equally exposed parts, suffered no damage, and in sheltered places nothing very unusual was felt." He adds "several large Elms, both English and Scotch, were blown down; but the largest trees down are Chestnuts and Beech." Mr Drummond of Middleton bears the same kind of testimony to the eccentric course of the storm; he says it appeared to travel in detached columns, and to move by leaps and bounds; sometimes striking a space of from 20 to 40 feet wide, along which it would travel for 40 to 200 yards, then rise up and leave everything untouched for a considerable distance, then sweep down again and make another "path," and so on throughout its entire course. The course

taken of these columns might have been distinctly traced in the various plantations in the district. In Detchant Wood, and other plantations on Middleton estate, spaces of from 20 to 40 feet wide and from 50 to 100 yards in length, scarcely a tree is left standing, whilst on each side of those spaces scarcely any traces of the storm is visible. Mr Drummond thinks that he is under the mark in stating that fully 1,000 trees have been blown down in the different plantations on Middleton estate. Fifty five Silver Firs perished in Detchant Wood, but the principal destruction was amongst the Larches, Oaks, and Beech. The ornamental "Noblesse," in front of Middleton Hall, was partly uprooted, but having again been righted, and secured with ropes, and its roots re-covered with soil, it is hoped that it will not have sustained any permanent injury. This tree was planted nineteen years ago, and is 33 feet in height. A Silver Fir planted in Detchant Wood by the hands of the late Mr Selby, over 60 years ago, has been completely torn up, and is the only one in that part of the wood which has succumbed to the storm. It is somewhat singular the wind should have been most destructive in large plantations, and that the largest and best trees should have suffered most; yet from all the reports I have received such appears to be the case. The plantations on Twizzell House estate have suffered very severely, and many fine trees have been uprooted. Mr W. Robinson, gamekeeper to Mr Antrobus, says, "To the best of my calculation, without actually counting them, the number of trees blown down on the 14th of October on this estate was about 3,000; but the park has not suffered to the same extent as some other plantations on the estate. The wind broke in at the opening at the Lodge, and levelled down about two acres of mixed timber on the south side of the carriage drive, leaving only a tree standing here and there. Amongst the fallen trees were some remarkably fine Larches, some of them containing 70 and 80 feet of timber each. One fine Silver Fir, I measured, contained 150 feet, another about the same size, which stood close to the coach drive, had its top blown off and is otherwise disfigured. Another fine Silver Fir which stood at the bottom of the lawn, and measured 9 ft. 8 in. in circumference 5 feet from the base, was entirely uprooted and in its fall broke a fine Maple to pieces. The North Wood has suffered most, there being between six and seven acres at the north side completely levelled, with only here and there a straggling tree left standing. The principal trees down are Larch, Scotch Pine, and Hardwood; there being many good Larches amongst the number containing 60 and 70 feet of timber, besides some fine Spanish Chestnuts." Mr Robinson remarks that "the wind appears to have confined itself to a narrow strip of about 100 yards wide up the north side of the wood to near the middle, where it made a breach through some 100 yards in length and 40 yards in width, reaching a square of young Larches, which it passed over untouched, then came down on the next square, where the trees are of the same kind as on the north side, levelled about an acre of them, then missed a part, and coming down again at the top of the wood, made another breach across levelling some hundreds of Spruce and Silver Firs in its destructive course." At Warenton Law, near Bell's Hill, a clear breach was made right through the plantation, some 40 yards wide and about 250 yards in length, so that from a distance the wood has the appearance of having been divided

by a railway. At Lucker, Mr Robson had 12 Apple Trees uprooted in his orchard, most of which were heavily laden with fruit at the time. The storm caught Earl Percy's foxhounds at Middleton, and it was with great difficulty that the huntsmen and riders succeeded in reaching places of safety. Flocks of Wood Pigeons, Rooks, and small birds crouched by the sides of the hedges or wherever a little shelter could be obtained, and might have been knocked down by scores by any one with a stick. Not a bird was left on the Farne Islands, and old men, who have lived all their lives in the vicinity, declare that they never saw the Farne Islands totally covered with salt spray till that day, and that during the storm not a single patch of black rock was to be seen, the force of the wind carrying the spray far above the highest pinnacles of the Islands. The birds crowded the shore in thousands seeking shelter behind the sand banks and hedges; the links and fields about Bamburgh and opposite Holy Island were covered with them, and many were no doubt carried far inland. On the day after the storm a Guillemot (*Uria troile*) was found on Craggy Hall farm, about a mile west of Belford, which had no doubt been carried there by the force of the wind. It was disabled in one wing, but fought fiercely with the shepherd's dog for its life when discovered.

JOHN AITCHISON.

On some extraordinary abnormal Fruits of the Blackthorn, from the Banks of Heriot Water, above the Pease Mill, and not far from the Pease Bridge, Berwickshire. By JAMES HARDY.

[Plate IV.]

THE specimens exhibited are from two very large clumps of Blackthorn growing on dry slopes near the Heriot Water. The bushes are old, and have reached their acme of growth, and possibly have been injured by recent rigorous winters, for they have a scanty crop of foliage, and are still very black, while other clumps near or surrounding them are full-foliaged, verdant and healthy, but without these remarkable productions. They were first noticed on May 16th, but have increased greatly in size since, and from their pale green and russet tints are noticeable at a considerable distance as something uncommon. They stand (being abortive fruits) on the branches and twigs, in clusters of from 1, 2, 3, 4, or 5, up to 10 or 12. Their shapes are oval, elliptic-oval, oboval, or pyriform; and they are flat or turgid; sometimes curved and amorphous. Some of them are not unlike the kernels of almonds. Some are sessile, but most are stalked. They are rugose, pale yellowish green on one side, tinted with red on the rest of the surface, with a dull lustre; those approaching to sloes are rounder, and shining, and of a deeper

green. The largest is $1\frac{1}{4}$ inch long, by more than $\frac{1}{2}$ an inch broad. Several of the flatter examples have a suture or seam down one edge, as if they were metamorphosed leaves (as morphologically they are) folded in the middle, and combined at the margins. When opened they appear like pods, and a considerable number have two (not one, as might have been expected from sloes having mostly one stone) abortive seeds attached at the end nearest the stalk. Their taste is very bitter, and being kept they smell strongly of prussic acid.

A curling up of the leaf occurs in the blackthorn, tinted with the pale-green and red tints on these monster sloes, as if minor imitations of them, which is occasioned by colonies of leaf mites (*Phytopti*.) The sloe bushes came prematurely into blossom this season, but I saw none similarly affected to these two clumps. Before summer these mock-fruits had dried up and become black.

Mr Charles Watson, Dunse, writes me, of date 19th June, 1882 :—

In looking over a supplement to Johnson's *Gardeners' Dictionary* which has lately been published, I came upon an article on 'Bladder Plums' with an illustration which is exactly similar to the sloes you had at Haddington the other day. The article proceeds thus :—'When the other parts of the flower have fallen off the ovary turns yellowish and commences to swell at rather a rapid rate finally assuming the form of distorted plums . . . but instead of being plump and fleshy, they are merely hollow bags filled with air. This distorted growth is caused by a fungus which after a few weeks develops as a greenish mould on the surface, the bladder then blackens and shrivels and speedily decays.'

There is a reference to the *Gardeners' Chronicle* for 1872, p.p. 940, for fuller information.

The illustration is from a painting by Miss Dickinson.

*On Examples of the Wood-Ant (Formica rufa, L.) from
Yardhope Woodfoot, Northumberland, with notice of
Formica umbrata, Nyl.* By JAMES HARDY.

MR M. ARKLE, Carrick in Redesdale, of date July 17th, 1882, forwarded a number of the females and neuters of this remarkable Ant—"the Pismire"—which we have not on the Scottish side—from the great colony at Yardhope Woodfoot, in the wilds behind Harbottle, which was observed some years since by his grandfather, Mr Thomas Arkle, Highlaws, at whose instance the specimens were sent.

Mr Bold says "it is not abundant in the vicinity of Newcastle; more plentiful in the woods at Gibside, Dilston, and Shotley Bridge, and in immense numbers by the side of the Devil's water above Dilston; sea-coast near Whitley, and in plenty in Bothal woods." At Bothal, on the day when the Tyne-side Club met at Bothal, "the ants were seen streaming up one side of a large tree, and down the other. Those coming down were each laden with a small green caterpillar."

Mr Arkle has also sent some fragments of their nests, which in this instance had been a congeries of twigs of birch and oak, catkins, leaf-buds, and dwarf acorns of oak or birch; foliage and broken stalks of ferns; portions of ling-heather, and a twig of *Polytrichum*.

Mr Smith says:—"This species is popularly known as the Wood-Ant, from the circumstance of its forming the heaped-up nests of leaves, sticks, and similar materials, usually in woods, but colonies are frequently met with in other situations; indeed it sometimes takes possession of the decaying trunk of a tree, and has been observed in a wall built of turf; but woods are its common habitat." (Cat. Hymenopt. Ins. Brit. Mus. Part. vi. p. 3.) Latreille says that in France, it very commonly occurs in woods, where it makes nests raised in the shape of a sugar-loaf or of a dome, from two to three feet high, composed of a mixture of leaves, straws, little twigs of different plants, of earth, of sand, &c. When these habitations are disturbed there proceeds from them a strong acid vapour. It is usually from this species that chemists extract *formic acid*. In Sweden it collects the resin of the junipers which are of frequent occurrence in that country; and the inhabitants gather from the nests this substance, which they are in use to burn as a disinfectant, its odour also being not unpleasant.

The Kidland shepherds are well aware of this colony. One of them told me that he once placed an obstruction in one of the numerous well-worn tracks, along which they filed going and returning from and to their nests, when an extreme state of commotion ensued, of which he had not time to see the close.

I formerly recorded the larger Yellow Ant (*Formica umbrata*) as a Northumbrian species. Its stations were under stones on the Sner Hill, and in Langleyford vale, also on the Watch Law.

More lately my attention has been directed to a large colony formed by this species near the base of the green hill slopes of Kidland, in the form of clusters of piled up heaps of fine clay, crowded over a grassy bank facing to the Alwen river, near the foot of Alrihope Burn, Milkhope. There is a smaller collection of similar hillocks on the steep verdant bank below Kidland-lee, and in Whiteburnhope. I observed another above Heatherhope, and a small one at the base of the black moor with "glitter" edges on Chatto ground, below Bughtrig in Roxburghshire, both among short grass. The shepherds take a manifest interest in the settlements of the "pisseiores," and after years' absence will inquire into the welfare of the little wise creatures that amused them, or stung them, as the case might be, when in the happy days of youth they reclined on these beautiful hill-sides above the margins of the glittering streams.

Presentation to Mr Hardy.

It may be remembered that at the public meeting of the Club held at Grant's House on the 29th June, 1881, a Testimonial was presented to Mr James Hardy, its indefatigable and accomplished Secretary. In noticing the Proceedings of the day in the Report of the Meeting, page 450, vol. 9, it is simply stated that "The President called on Dr. Francis Douglas to present Mr Hardy with a Testimonial of respect from the Members of the Club." With characteristic modesty Mr Hardy omitted to notice the observations which accompanied the presentation, and the amount which had been subscribed for the Testimonial. A few details may not be unworthy of record in the pages of our Transactions, regarding the origin of the proposal and the success which attended its promulgation amongst the Members of the Club.

It was at the Gilsland Meeting, in September, 1880, that a suggestion was made and adopted by several influential members, that our talented Secretary should be presented by the Club with some Testimonial to show its high consideration of his long and gratuitous services as Secretary, as also of the zeal and ability he has displayed in the laborious Editorship of the Proceedings of the Club.

A circular embodying these sentiments was sent to every member, and was heartily and cordially responded to by one

hundred and forty members. The subscription was limited to one pound; no one contributed less than ten shillings, and the aggregate amount received was upwards of £126. Mr Hardy was consulted as to the form which he would like the Testimonial to take. He selected a microscope to assist in the prosecution of some of his favourite studies, and expressed a desire that the balance should be given in money to enable him to arrange and bind his very voluminous collection of books, pamphlets, and manuscripts. A Microscope by Hartnach of Paris was ordered, together with Polariscope, Camera lucida, and Micrometer. A silver plate on the case contained the following inscription:—

“Presented to James Hardy, Esq., Oldcambus, together with a purse of above 100 sovereigns by 122 Members of the Berwickshire Naturalists’ Club at its Jubilee Meeting in testimony of their appreciation of his long and able services as Secretary and Editor of the Proceedings of the Club, and of the high respect in which he is held for his many scientific attainments and valuable contributions in various departments of Natural History and Archæology, during a period of above 40 years.

Grant’s House, 29 June, 1881.”

It ought to be mentioned that the plate was prepared two months previous to the meeting, and that during that interval a number of additional subscriptions were received.

F. DOUGLAS.

MARCHMONT.

Meteorological Observations taken at Marchmont in 1882.

THE following readings are taken from standard instruments, which are regularly tested, and in accordance with the Scottish Meteorological Society’s regulations:—

Lat. 55° 43' 30" ; Long. 2° 25' 20". Elevation, 500' above the sea.

MONTH.	RAINFALL.				Sunshine in hours	Highest Temp. in Louvre Box.		Lowest Temp. in Louvre Box.		Black Bulbs.	
	Total Depth in Inches.	Greatest fall in 24 hours.		No of days wet 0.1 or more		°	°	°	°	Maximum	Minimum.
		Depth	Date							°	°
January	1.54	.45	2	13	74	51	28	57	20		
February	1.91	.45	13 & 23	12	80	55	28	69	20		
March.....	1.84	.55	1	20	129	59	28	84	20		
April	4.49	1.18	13	19	121	58	27	94	18		
May	2.52	1.25	7	12	260	68	31	113	21		
June	3.89	.75	9	20	209	73	36	120	29		
July.....	3.96	.89	6	24	222	75	42	126	31		
August	3.26	.87	22	16	225	81	42	121	33		
September...	2.40	.52	27	19	147	67	35	105	24		
October	5.15	1.08	19	26	97	66	29	87	20		
November ...	3.41	.40	3	23	75	51	26	63	15		
December ...	5.20	1.84	7	20	53	52	9	58	4		
Totals...	39.57			224	1692						

PETER LONEY.

Rain Fall at Glanton Pyke, Northumberland, in 1882 communicated by FREDK. J. W. COLLINGWOOD, Esq.; and *at Stamfordham, Northumberland,* communicated by REV. J. F. BIGGE.

GLANTON PYKE.			STAMFORDHAM.		
		Inches.			Inches.
January ..	..	1.17 ⁵	January ..	..	0.94
February ..	..	1.73 ⁵	February ..	..	0.78
March ..	..	1.82 ⁰	March ..	..	2.01
April ..	..	3.62 ⁰	April ..	..	2.69
May ..	..	3.81 ⁰	May ..	..	1.94
June ..	..	3.68 ⁵	June ..	..	4.14
July ..	..	2.63 ⁵	July ..	..	3.05
August ..	..	3.50 ⁰	August ..	..	2.76
September ..	..	1.63 ⁰	September ..	..	1.87
October ..	..	3.85 ⁵	October ..	..	3.67
November ..	..	3.30 ⁵	November ..	..	3.23
December ..	..	3.27 ⁰	December ..	..	4.50
Total ..	..	33.04 ⁰	Total ..	..	31.58

Rain Gauge—Diameter of Funnel, 8in. ; height of Top above ground, 4ft. 3½in. ; above sea level, 517ft.

Rain Guage—Diameter of Funnel, 5in ; height of Top above ground, 1ft. ; above sea level, 400ft.

*Donations to the Berwickshire Naturalists' Club, from
Scientific Societies, Exchanges, &c., 1882-3.*

- BATH. Proceedings of the Bath Natural History and Antiquarian Field Club, Vol. v., Nos. I. and II., 1882-3. 8vo. *The Club.*
- BELFAST. Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1880-81, Ser. II, Vol. II, Parts I and II, 8vo. *The Club.*
- BOSTON, U.S.A. Proceedings of the Boston Society of Natural History, Vol. xx., Part IV.; Vol. XXI., Parts I., II., III., 1880-1882, 8vo. *The Society.*
- Memoirs of the Boston Society of Natural History, Vol. III., No. IV. New Hydroids from Chesapeake Bay. By Samuel F. Clarke, Ph.D.; Vol. III., No. IV., Archipolypoda, a Subordinal Type of Spined Myriapods from the Carboniferous Formation. By Samuel H. Scudder, 1882, 4to. [No. III. not received.] *The Society.*
- BREMEN. Abhandlungen herausgegeben vom Naturwissenschaftlichen Vereine zu Bremen, VIII. Band, I. Heft., 1883, 8vo. *The Society.*
- BUCKHURST HILL, ESSEX. Transactions of the Essex Field Club, Vol. II., Part 6; Vol. III., Part I., 1882-83, 8vo. *The Club.*
- CARDIFF. Report and Transactions of the Cardiff Naturalists' Society, Vol. XIV., 1883, 8vo. *The Society.*
- EDINBURGH. Proceedings of the Royal Society of Edinburgh, Sessions 1878-79, 1879-80, 1880-1, and 1881-2, 8vo, Vols. x. and XI. *The Society.*
- Transactions and Proceedings of the Botanical Society, Vol. XIV., Part III., 1880, 8vo. *The Society.*
- Transactions of the Edinburgh Geological Society, Vol. IV., Part II., 1882, 8vo. *The Society.*
- Proceedings of the Society of Antiquaries of Scotland, 1881-82, Vol. IV., N.S., 4to. *The Society.*
- Proceedings of the Royal Physical Society, Sessions 1881-82, Vol. VII., Part I., 8vo. *The Society.*
- ESSEX, SALEM, U.S.A. Bulletin of the Essex Institute, Vol. XIII., 1882, 8vo. *The Institute.*
- GLASGOW. Proceedings of the Natural History Society of Glasgow, Vol v., Part I., 1880-81, 8vo. *The Society.*
- Proceedings of the Philosophical Society of Glasgow, 1881-82, Vol. XIII., No. 2., 8vo. *The Society.*

- Transactions of the Geological Society of Glasgow,
Vol. VII., Part I., 1880-81, 1881-82, 1883, 8vo. *The Society.*
- HAWICK. Transactions of the Hawick Archæological Society,
1881-82, 4to. *The Society.*
- LEEDS. The Annual Report of Leeds Philosophical and Literary
Society for 1881-82, 8vo. *The Society.*
- Transactions of the Yorkshire Naturalists' Union,
1880, 1881, Parts 5 and 6, 8vo. *The Union.*
- LONDON. Journal of the Anthropological Institute of Great
Britain and Ireland, Vol. XI., No. IV.; Vol. XII., Nos. I., II.,
III., IV.; Vol. XIII., No. I., 1882-3. *The Institute.*
- Proceedings of the Geologists' Association, Vol. VII.,
Nos. 5, 6, 7; Vol. VIII., No. I. (with Annual Report), 1882-3,
8vo. *The Association.*
- Proceedings of the Society of Psychological Research,
Vol. I., Parts II. and III., 1883, 8vo. *The Society.*
- NORWICH. Transactions of the Norfolk and Norwich Naturalists'
Society, 1881-2, Vol. III., Part III., 8vo. *The Society.*
- PERTH. Proceedings of the Perthshire Society of Natural
Science, Vol. I., Part II., 1881-2, 4to. *The Society.*
- PLYMOUTH. Annual Report and Transactions of the Plymouth
Institution and Cornwall Natural History, Vol. VIII., Part I.,
1881-2, 8vo. *The Institution.*
- WASHINGTON, U.S.A. Annual Report of the Smithsonian Insti-
tution for the year 1880. Washington, 1881, 8vo.
The Smithsonian Institution.
- List of Foreign Correspondents of the Smithsonian
Institution to January 1882. Washington, 1882, 8vo. *Ibid.*
- WELSHPOOL. Collections, Historical and Archæological, relating
to Montgomeryshire and its Borders, Vol. XV, Parts II. and
III.; Vol. XVI., Part I. London, 1882-3, 8vo.
The Powysland Club.

LIST OF NEW MEMBERS FOR 1882.

ADMITTED OCTOBER 11TH, 1882.

Alexander Bowie, Canonbie, Dumfriesshire.
 William Edward H. Kelso, 3 Northumberland Street, Edinburgh.
 Lieut.-Col. Alexander Murray Brown, Longformacus House, Dunse.
 Rev. Robert Nimmo Smith, First Charge, Haddington.
 The Most Hon. the Marquess of Lothian, K.T., Newbattle Abbey, Dalkeith, Mid-Lothian.
 John Walker Logan, Avenue, Berwick.
 Robert Stephenson, Chapel, Dunse.
 Rev. W. D. Herald, B.D., Dunse.
 Robert Robertson, Ladyrig, Roxburgh.
 John S. Bertram, Cranshaws, Dunse.
 William Gunn, Dunse.
 Rev. Arthur Gordon, Greenlaw.
 James Parker Simpson, Alnwick.
 Andrew Ker, St. Boswells.
 Dr. Allan Wilson, Alnwick.
 The Right Hon. the Earl of Home, Hirsel, Coldstream.
 Rev. Robert Stewart, Jedburgh.
 George Bulman, Corbridge-on-Tyne.
 David Dippie Dixon, Rothbury.
 John Turnbull, Ettrick View, Selkirk.
 Adam Cochrane, junr., Fernieknowe, Galashiels.
 Rev. William Robertson, Sprouston, Kelso.
 Alexander R. Brown, Rowantrée Butts, Galashiels.

ERRATA.

PAGE,	45,	line	1	from the top, for Jerdan, read Jerdon.
„	76,	„	31	„ for peretissimo, read peritissimo.
„	93,	„	29	„ for Lleinwy, read Lleinawg.
„	„	„	37	„ for there, read thence.
„	95,	„	36	„ for godeh, read godeu: also on page 103, twice.
„	96,	„	14	„ for Minnoth, read Minnoch.
„	102,	„	32	„ for 1780, read 1750.
„	103,	„	9	„ Insert not after I do.
„	„	„	26	„ Insert a dash instead of a hyphen, between “Loth” and “Llew.”
„	153	„	20	„ for Derisvata, read Derivata.
„	167	„	35	„ for Edgernhope, read Edgerhope.
„	168	„	10	„ for Carlside, read Carolside.
„	177	„	27	„ for repeately, read repeatedly.
„	179	„	11	„ for shaith, read skaith.
„	180	„	20	„ for youg, read young.
„	191	„	16	„ for Gospatrie, read Gospatric.

General Statement.

THE INCOME AND EXPENDITURE have been:—

INCOME.

	£	s.	d.
Arrears received	30	18	0
Entrance Fees	18	0	0
Subscriptions	89	2	0
	<hr/>		
	138	0	0
Balance due Treasurer ..	5	18	3
	<hr/>		
	£143 18 3		

EXPENDITURE.

Balance due Treasurer from last account	4	5	9
Gibb and Hay for Lithographing ..	7	19	6
Printing	80	6	3
Expenses at Meetings	10	19	0
Postages and Carriages ..	30	19	9
Berwick Salmon Company ..	9	8	0
	<hr/>		
	£143 18 3		

Presented
22 DEC 1887

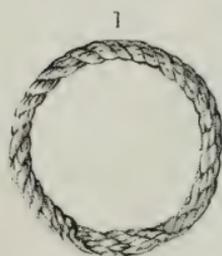
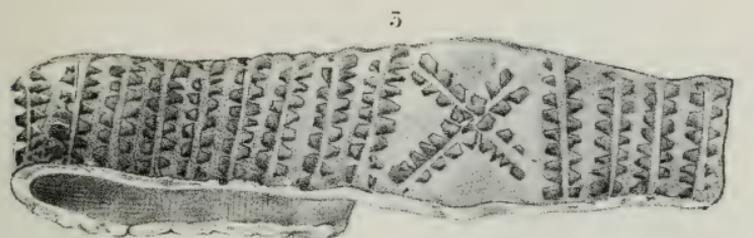


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W. & A. Johnston Edinburgh

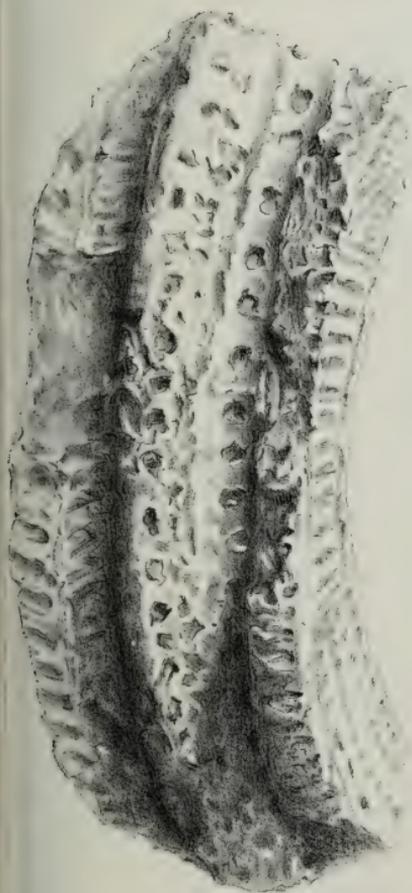
INSCRIPTION FOUND IN THE VALLEY OF THE YARROW IN 1807.



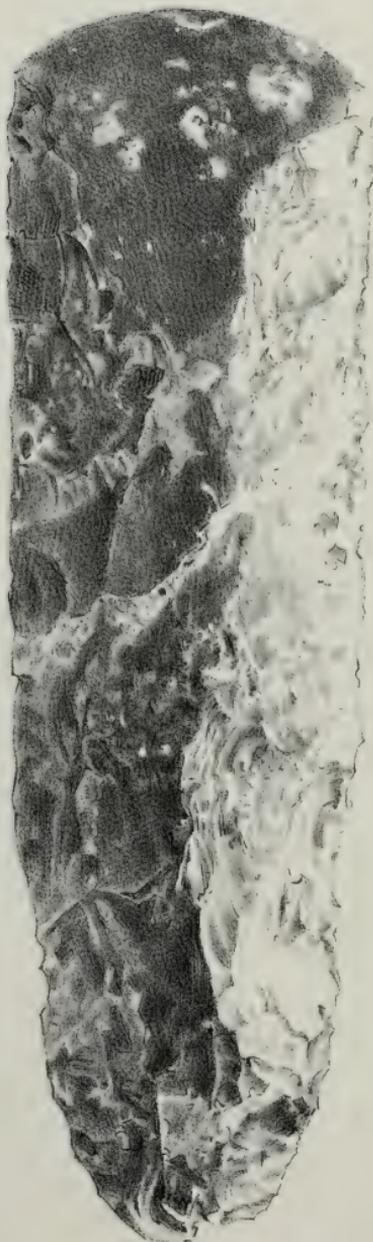


GOLD RING AND SILVER ORNAMENTS, ETC FOUND AT GORDON.





1



2

FRAGMENT OF URN AND FLINT IMPLEMENT FOUND AT GORDON.





MONSTROSITIES OF THE SLOE,
NEAR PEASE BRIDGE, MAY, 1882.



PROCEEDINGS OF THE BERWICKSHIRE NATURALISTS' CLUB, VOL. X., NO. II.

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PROCEEDINGS
OF THE
BERWICKSHIRE NATURALISTS' CLUB.

Address delivered to the Berwickshire Naturalists' Club, at Berwick, October 10th, 1883. By GEORGE PRINGLE HUGHES, Esq., of Middleton Hall.

GENTLEMEN,

MY first duty, as President of the Berwickshire Naturalists' Club, is to tender my thanks to the late President, the Rev. James Farquharson, and to our distinguished friend, Sir Walter Elliot, for proposing and seconding, and to the members for electing me to that office, for the season we are to-day bringing to a close. Some years ago you very kindly named me for the post, but the numerous affairs of a private nature, which at that time claimed my attention, induced me to decline, with reluctance, an honour which I have this year accepted with much pleasure.

When, however, I call to remembrance the able men who have preceded me in this office—men who have been distinguished in one or more departments of science, I must make one earnest appeal to your kind indulgence ere I enter upon the subject of my address.

The British Association, the Scientific Parliament of the year, and the Berwickshire Naturalists' Club had their origin in the summer of 1831, the latter having the precedence by a very few days. The Association, which that year held its meeting at York, has from the first been assisted, at its annual Congress of 7 days, and on the Com-

mittees receiving grants of money, by men of eminence in nearly every phase of science. Its yearly reports furnish a chronicle of the march of scientific discovery.

With a much smaller number of members, and a limited field for exploration, the original work of the Berwickshire Naturalists' Club reflects credit, from its first formation, on the active and educated naturalists who have at all times leavened its body. Johnston, Selby, Jardine, Tate, and Baird have left works which have taken a place among the standard Natural History literature of the age. Others, equally distinguished, have become eminent in the general field of scientific investigation; and some are yet among us whose labour and success as explorers entitle them to rank among the leading pioneers into the yet unexhausted recesses of British Cryptogamic and Entomological life. Without trespassing on the privilege of two of our botanists to furnish us with the particulars of two important discoveries, I may observe that at the Holy Island meeting of this year, a meeting deserving to be remembered for the brilliant variety of the flora culled from the spring tide margin of its sandy beach, one member was fortunate in collecting specimens of the *Cakile rugosa*, hitherto unregistered in any work on British Botany. The *Carex divisa*, a plant seldom hitherto collected north of the Yorkshire coast was culled by another from the sandy flat to the N.W. of the Island.

In the report prepared by our learned and obliging Secretary, Mr Hardy, you are likely to get a thorough detail of the Holy Island and other meetings of the year. I regret to say that climatic influences, caused the field work of our Club this season, to be more than usually limited, but zealous members have gone over the ground intended for the meetings and have made fair botanical quests. Never in my remembrance has florescence been more gorgeous, or longer sustained, than the past summer, and the herbarium of the botanist must be replenished with a choice collection of fresh rarities.

The intended meeting at Wooler, not unlike that at Aberlady, was a blank. From early morning rain descended

with more or less intensity. Fortunately its range was general, and no member of the Club came to the place of meeting that day. Our Secretary, who with laudable zeal had made the necessary arrangements for the meeting while I was at Southport, and Messrs Wilson and Weddell of Berwick, who had come to Wooler a day before, gave me the pleasure of their society. To them I read a short paper, on the Geological features of the Glendale Valley, which I had had an opportunity of introducing to the notice of the Geological section of the British Association. I subjoin its outlines. 1st the Primary System of the Cheviots, probably elevated several thousands of feet above their present height and gradually reduced by atmospheric and glacial action. 2nd, The Carboniferous formation to the east, resulting from an exuberant vegetation and tropical climate, which in the course of thousands of years had been submerged and elevated by volcanic influences operating during immense periods, when the sea may have laved the base of the Cheviots. By degrees the climate became of an arctic temperature, "darkness was upon the face of the deep," and the mountain range deeply laden by snow and ice discharged its surplus burden, with masses of rock and debris, into the lower valleys, which may have been grooved and deepened by the immense pressure from above. The abrading effect of this glacial era would leave few traces of the sea upon the mountain base. Then was formed those beds of boulder clay, gravel, and sand occupying the vale of Glendale, which the industry of man, in recent times, has clothed with rich meadows and cultivated crops. A more benign temperature in post tertiary times, after thawing the ice had left the vale an inland lake which ultimately drained off by the weakest or lowest point of the inclosing banks; after which a swamp and jungle forest would occupy the rich alluvium, until the increase of man reduced the wilderness to a fruitful field. Dispersed, in more or less abundance by the agency of moving or floating ice, we find in our days, or on the surface erratic blocks of primary rocks pertaining to formations hundreds of miles distant. Even from the Labrador coast, or

possibly from the rocks of the central Atlantic axis—according to Professor Hull a vast mountain range—we have imbedded in our diluvium on the British Isles blocks of stone or rock pertaining to none of the known formations of these Islands. The Boulder Committees of the British Association, and the Royal Society of Edinburgh, have inspected and registered most of the rare or important boulders on the surface of Great Britain; but in the course of deep cuttings, and even agricultural work, erratic blocks are often disinterred. It is the duty of every member of a scientific society to inspect and report to the secretary of his club, or a member of a boulder committee, the particulars of such a discovery. Otherwise, the means by which large blocks of stone may be broken down, or buried out of sight, are so numerous, that we have good reason to fear the complete obliteration of this valuable evidence of a glacial period.

The day after our intended meeting at Wooler Mr Hardy and I had the opportunity of driving to Tiptoe, and of inspecting that part of the valley where volcanic upheaval had effected a cleavage of the sandstone rock, and had invited the escape of the waters of the Glendale Lake. At Tiptoe these sandstones are of the finest texture and much laminated. When in that vicinity we also observed that a series of interesting objects, natural and historical, at Etal, would furnish the Club with subjects for a spring or autumn meeting, which could be undertaken from the large and comfortable hotel at Cornhill.

At the south-east corner of the Glendale Lake, where its waters seem to have shallowed to a point, there is to be found a deposit of moss and marl, separated by a boulder clay ridge from the Coldgate Water. From this deposit my father, some 50 years ago, removed three well preserved antlers of the Red Deer (*Cervus elephus*). One of these, set up at Middleton Hall, has 23 points, and according to the opinion of our best authorities, including the Earl of Malmesbury, it is the most perfect specimen, taking age, size, and preservation into account, to be found of the species in Great Britain. Indeed, if we remember that half its num-

ber of points constitutes a royal stag of the present day, these antlers indicate the superior developement which an unenclosed forest in those early days enabled its wild denizens to attain.

Near the same situation was found a single horn of the *Bos Urus*, which is one of the few remains of that aboriginal ox found east of Linton Moss and north of Yorkshire ; where in the valley of the Humber it and the Mammoth have been frequently found. The Rev. John Storer, in his valuable work on the Wild Cattle of Great Britain, recently published, describes a visit he had paid to Middleton Hall in 1874, during a lengthened tour I was then making. He says, "Between Chillingham and Wooler we drove to Middleton Hall at the end of the old Caledonian Forest, where lies the extensive Bog or Moss of Cresswell. We were shown some of the remains preserved at Middleton Hall, but I much regret that in consequence of Mr Hughes's absence from home, nor subsequently at Wooler, could I discover whether the remains of the *Bos* have ever been found there ; but my informants thought not. It is much to be desired that this bog, and perhaps Robin Hood's Bog in Chillingham Park, should be more carefully examined ; and Lord Tankerville informs me that in the case of Cresswell Moss this has been thought of. Probably the remains of the *Bos primigenius* lie buried there ; and not only his : perhaps those of his descendants—the intermediate link between him and the Chillingham bull—might be also found. The reliquiae of the wild beasts that ranged the forest at the same time having been exhumed, those of the ancient Caledonian wild bull may yet be discovered, and the great probability is that, as in the case of the red deer, they would indicate that the Caledonian bull of those days was, though inferior in size to the ancient *Urus*, a larger animal than the present Chillingham ox, yet of the same type as both of them."

I very much regret that a voyage to Australia and America denied me an interview with Mr Storer, and the pleasure I should have felt in stating to him that a horn had been found of an aboriginal type. Uncertain whether I had in

it a true *Urus* horn, I took it to the British Association Meeting at Southport, and had the satisfaction of hearing from one of the best authorities of the day, Professor Boyd Dawkins, that it represents the *Bos Urus*, many centuries ago the king beast of the Great Caledonian Forest, having its eastern termination at or near Chillingham.

The White Cattle in that fine old park are according to our leading authorities, including Professor Rüttimeyer, who judged them solely by their "osteological characteristics," the direct descendants of the *Bos primigenius*. I may observe that a few weeks ago I had a section made into the Cresswell pit, and intend the work to go on, hoping to disintomb other remains than those already obtained, and of a greater variety of species. So far no bones have been found, but the workmen have cut through a thick deposit of Alder, Hazel, and Oak.* The shells, which are of the usual fresh water species found in marl, I exhibit a few samples of. A compost formed by the mixture of marl, moss, and a little quick lime has been found beneficial in fertilising the porous gravel of the adjoining fields.

This year, as on former occasions, I represented our Club at the meeting of the British Association held at Southport. In sympathy with the purely mathematical leaning of the able President of the year, Professor Cayley, and the practical disposition of most of the associates from the manufacturing towns of Lancashire and Yorkshire, the work in the mathematical and mechanical sections may be expected to engross a preponderating share of this year's report, and to be deserving of the study of the lovers of abstract science.

There having been few if any discoveries of importance to report, the Section of Geography might consider itself fortunate in having had a President well known as a Physical Geographer, and one whose range of travel enabled him to impart a general interest to communications on any part of the globe. The topographical survey of India, to which

* Subsequently to writing the above we have found 2 vertebræ of the ox and the rib of a stag, if I mistake not, 6 feet from the surface of the formation.

Lieut.-Colonel Godwin Austen was at one time attached, has furnished the Royal Geographical and the Geological Societies with some of their most valuable members.

The Geological Section was presided over by Professor W. C. Williamson, a veteran and enthusiastic worker among the Yorkshire formations. In his youth he had had "almost daily intercourse with William Smith, the father of English Geology," and the latter part of his life has been devoted to Palæontology, especially that of the vegetation of the Carboniferous Age. By request, his opening address was devoted to that subject. Professor Hull propounded a bold theory regarding the distribution of limestone from an elevated volcanic formation in Mid-Atlantic. Principal Dawson, of Montreal, gave an interesting account and shewed several specimens of the *Eozoön Canadense* found in the limestone strata, the second of the Laurentian series of rocks of Canada, and supposed to be the first indications of animal life, and occurring in coral like masses in the thick bedded serpentine of the St. Lawrence. A number of large blocks of the Laurentian limestone are to be laid before the British Association next year, when the strongest microscopes are to be used for the solution of this interesting question.

In my capacity as Delegate from this Club I took an active part in a meeting of Delegates from various local scientific clubs and societies, who had referred to them a list of new rules drawn out by the committee of scientific local societies at the instance of the General Committee of the Association. It appears by their report

"That the numbers of local clubs have latterly very greatly increased, and comprising upwards of 170 societies for natural history and antiquarian study, the number of Delegates from each club to the Congress had been reduced from two to one. Also that the Delegate appointed by his Club transmit to the Secretary on the first day of meeting of the Congress a copy of his Club's proceedings, and furnish other information regarding his Society or Club."*

If appointed the Delegate would be a temporary member of

* Report of Committee to British Association.

the General Committee and his club or society would be classed as a Corresponding Society of the British Association, and its papers would be registered in an index attached to the Annual Report. The Delegates would hold meetings of their own under a chairman of scientific standing, when the general interests and work of their respective Clubs could be considered and compared. These revised rules have since our meeting been referred back to the Council, and have probably become standing rules of the Association. I trust that the members of the Berwickshire Naturalists' Club, as well as other local Clubs throughout the island, may see the importance of these arrangements, as furthering the interests of science, by systematising and registering the work of the corresponding Clubs, in one of the most important volumes of scientific transactions published for each year.

I suggest that when they have received the sanction of the General Committee of the Association a copy of the rules be attached to the first following Transactions of our Club for the convenience of our future delegates. I attended the last meeting of the General Committee of the Congress, and was much gratified at the cordial invitation which Sir Charles Tupper and Principal Dawson brought to us from the Canadian Government, to hold the Congress of 1884 at Montreal; promising to defray a large share of the travelling expenses of each attending member. I had registered my name several months ago, and I am glad to say that 500 other names had been received for the meeting of 1884.

Apropos of the meetings of scientific societies it would be remiss to overlook the Fisheries Exhibition, which, for some months past, has been held in London. The magnitude of the arrangements and conveniences, and the cosmopolitan interest shown by foreign nations and our colonies, place this clearly in the first position among international exhibitions of the kind. The important question affecting the provision of wholesome and cheap food for an increasing population has naturally directed the attention of those interested in the welfare of this and other nations to the vast area of the ocean and its hidden wealth. In and around

our own British Isles are to be found rivers, lakes, and a coast line already stocked with the most edible species of fish, and only requiring the application of scientific guidance to further the breeding and growth of kinds most valued as articles of food or domestic economy. Numerous useful appliances, originating at home or abroad, have contributed to enlighten our fishing population, and to foster a love for an avocation fraught with danger and demanding a more than ordinary share of hardihood and skill. Regard has likewise been taken for the deplorable loss of life at sea, which has occasionally denuded whole villages of their male population, leaving hundreds of widows and fatherless children upon the charity of the benevolent. A long and carefully prepared essay by H.R.H. the Duke of Edinburgh, read by his brother the Prince of Wales, before the Fishery Commissioners, and several representatives from foreign powers, furnished numerous statistics, more especially with regard to our fishing population, and advocated that searching inquiry should be instituted into the particulars of every accident to fishermen at sea.

It must be a yearly subject of interest to our Club to watch the success of those great industries the Salmon and Herring Fishings. The natural history of the former fish and its congeners has been well studied by Tweedside naturalists and sportsmen, who have, I believe, solved to their satisfaction most of the difficulties and uncertainties, at one time attached to the genus. Quoting from a paragraph in the *Newcastle Journal* of the 15th September, the last of the Tweed net fishing, I find that

“Since the commencement of February the catches have been satisfactory in numbers. Salmon were scarcer than they were last year, but grilse and trout have been rather more plentiful, though less numerous than two years ago. The remarkable feature of the season was the early appearance of grilse, and their continuance to a longer period than usual. Two salmon of 45lbs each were the heaviest fish taken this season. At one catch on the sands near to Goswick 600 fish were taken. A reflecting light has been tried on the Tweed, which has proved somewhat successful in attracting fish near to the side.”

“Fortunately the salmon disease disappeared from the river earlier this year, and did not commit such havoc as in the previous season. Consequently many more marketable fish were got, and fewer had to be killed or returned to the river. The general condition of the fish has been excellent and the supply to London double of last year.”

Anthropology, or the study of man, as we are sparingly furnished with traces of his unwritten history and method of life, although enveloped in mystery and obscurity will always attract a share of our investigations. One of our members, whose acquaintance I had the honour of forming when I was very young, has published a large and handsomely illustrated volume, the result of many years devoted to the examination of sepulchral mounds in the north-east of England. The uncultivated moorlands, and numerous camps and fortlets, which impart to North Northumberland a share of its pristine characteristics, and have preserved from destruction the tombs and mortuary relics of bygone ages, furnished Mr Greenwell with a productive field for exploration. Traceable on the wide moors many tumuli are yet unexamined, though I believe the remains have usually decomposed by the influence of peat moss and vegetable life. At one of the Club's meetings of this year we had an interesting paper and photographs of several flint implements found at Farnham near Rothbury. Though the ages of stone, bronze, and iron occasionally overlap each other, these implements can be classed stratigraphically, palæontologically, and archæologically, more especially when found imbedded with the bones of the Urus or Reindeer of the Quaternary period, or underlying the pine tree deeply covered by moss in a Scandinavian peat bog. In “*De Natura Rerum*” Lucretius says

“*Arma antiqua, manus, ungues, dentesque fuerunt,*”

“*Et lapides, et item sylvarum fragmina rami :*”

“*Posterius ferri vis est, ærisque reperta,*

“*Sed prior æris erat, quam ferri cognitus usus.*”

“Flints,” writes Professor Joly of Toulouse, “are found scattered over the surface of the soil, or buried in its depths; in the heart of gloomy caves, or beneath the ruins of the most

ancient monuments; some rudely shaped, others finely polished and fashioned into forms similar to those of axes, knives, and tools of every kind. These flints were employed in certain sacred rites by the Egyptians, the Romans and perhaps the Scandinavians. In every part of the world these flints have been found and at great depth, and even under the ruins of Nineveh and Babylon, and along with the bones of extinct species, in undisturbed strata."

The skulls of Neanderthal and Engis and jaw bones found in French caves of the Palæolithic age, bear strong testimony to man's antiquity and mode of life in that part of Europe.

Sir John Lubbock, an original author on Anthropology, observes, that early historians and poets indicated a Bronze age prior to that of Iron, which at the dawn of history was coming into use. This compound of copper and tin was used by the inhabitants of the Swiss lake villages, first made known to us by Keller.

"Along the shallow edges of the Swiss lakes flourished once upon a time many populous villages built on platforms, supported by piles, exactly as many Malayan villages are now, and from the remains of these we have dredged up arms, bones of animals, pottery and ornaments, grain, and stuff used for wear."

Prior to the bronze was the stone age, divided into the Palæolithic or early stone age, when weapons and implements were unpolished, and the Neolithic with more perfect forms often polished. It is supposed by Boyd Dawkins that two distinct races of men, at that time, inhabited Europe, one allied in habit to the modern Esquimaux, and ignorant of pottery. I heard Dr Latham, the other day, expressing a similar opinion, and that the Celtic race overspread all Central Europe and Great Britain, except that the Slavonic race occupied the country on either side of the Lower Danube; and that previous to the Celts a race of short, round, and curly headed men had been thinly scattered over the British Isles. Few traces of the latter have been found, but they had probably followed quickly upon the Glacial epoch, and their habit of life would probably approximate to that of the Esquimaux.

This is a topic I shall not at present occupy you with. I may, however, observe that an Urn and a drinking vessel have very recently been found on the farm of North Doddington, a lithograph of which may some time find a place in the Club's Proceedings.

The approaching issue of the Northumberland and Roxburgh Ordnance Maps will facilitate the study of Geology in the field of this Club's work. In future the facts there stated may be relied upon, and fresh observations should be attempted.

It may be considered by the Club whether a Committee should be formed to make Meteorological experiments and observations and to send in a report.

Apart from Geology, Mineralogy has been little cultivated by members of our Club, and as a matter of commercial importance the propriety of so doing might be thought of by a section of our members.

A list of Mineral Wells should be registered; also any indications of mineral veins.

I am also reminded by our Secretary that the lists of Coleoptera and Lepidoptera which have appeared in the Club's Proceedings, should be systematized.

Hemiptera have been partially catalogued; Hymenoptera have been merely touched upon; Diptera have been scarcely studied at all; in a few orders scarcely a species has been registered.

To give an idea of the rapid march of scientific discovery Dr Günther estimates the number of species described up to 1831 at 70,000, at the present day at near 350,000. It is estimated by Mr Waterhouse that 12,000 species of insects are contained in our museums which have received no description, and that probably less than one half of existing insects have been collected.

It has been with reason thought, that little or no dredging having been done in the neighbourhood of Holy Island and the estuary of the Tweed, and with the great improvements that have latterly occurred in dredging, that the lists of Mollusca, Crustacea, Annelides, and Zoophytes generally

might be added to. Attention might be especially called to the coast of Holy Island as likely to produce new forms of Algæ and Molluscs on the calcareous and carboniferous formations. It has been suggested by myself that a subscription list might be attempted to defray the expense of a dredge, and the expense attending one or more yearly excursions from the estuary of the Tweed. Likewise that a microscope of moderate power and a few dissecting instruments might be obtained, and if possible find safe custody at the Museum. With such appliances the Berwick meeting of our Club might become a day of much interest and instruction, not only in dredging, but in dissecting, and microscopically studying the sub-marine life of the Northumberland and Berwickshire coast.

It is pleasing to learn that a series of tables for the prosecution of Zoophytology by dissection are to be established at Torquay, on a similar principle to those so successfully organised by Dr. Doran at Naples some years ago, and which several of our Professors of Natural History, by the leave of the British Association, have studied at.

It is with much regret that I find space does not admit of a retrospect of a few of the salient discoveries, or of hypothetical speculations advanced by some of our leading Biologists. "For from the time that nations had assumed a status as civilized, we find men of distinguished power differentiating themselves from the crowd, and seeking to connect natural phenomena with their physical principles. In the interchange of commercial relations between ancient Greece and the nations of the East, bringing with it wealth, refinement, and information, we may trace some of the influences which fostered the sciences.*"

Struggling for a plan of creation we find that Lucretius and Democritus invented the Atomic Theory, which has for ages afforded speculation to a long chain of natural philosophers, until the question has latterly received its nearest solution in the laboratories of our chemists and physiolo-

* Professor Tyndall.

gists. We can only judge of atoms and molecules by the result of chemical combinations, or by their effect as atmospheric components. They are invisible, and no microscope is likely to reveal their form to the eye. In the list of elementary bodies an atom of Hydrogen is taken as No. 1 or the lightest, and gold is one of the heaviest being 196 times the weight of Hydrogen. Thorium which is 233·9 times heavier than Hydrogen is the most dense. These atoms in various combinations enter into nature organic and inorganic; the most simple and the most complex structure differing only in the manner and proportion in which these elements are combined and arranged.

Can inorganic combinations, then, of themselves work out the problem of a living organism? Can a fermenting vegetable organism produce animal life? These are questions which the great Des Cartés in the first case and Professor Tyndall in the latter think they have satisfactorily solved.

Des Cartés had a bias towards deductive reasoning—his contemporary Bacon to induction.

“Des Cartés was the first to reduce, in a manner eminently capable of bearing the test of mental presentation, vital phenomena to purely mechanical principles. Through fear or love Des Cartés was a good churchman; he accordingly rejected the notions of an atom, because it was absurd to suppose that the Creator if he so pleased, could not divide an atom; he puts in the place of the atoms small round splinters and light particles out of which he builds the organism. He sketches with marvellous physical insight a machine, with water for its motive power, which shall illustrate vital actions. He has made clear to his mind that such a machine would be competent to carry on the processes of digestion, nutrition, growth, and respiration, and the beating of the heart. Had Des Cartés been acquainted with the steam engine, he would have taken it, instead of a fall of water, as his motive power, and shown the perfect analogy which exists between the oxidation of the food in the body and the coal in the furnace.*”

It is difficult to conceive how an able thinker such as Des

* Prof. Tyndall's Address to British Association.

Cartès could entertain the idea that mental problems are to be worked out by machinery.

Professor Clerk Maxwell, a schoolfellow of my own, and a thinker of whom Scotland may well be proud, while she in common with the University of Cambridge and philosophy generally must lament his early death, delivered a very able lecture at Bradford in 1873. He then propounded the theory,

“that atoms are prepared materials, which, formed by the skill of the Highest, produce by their subsequent interaction all the phenomena of the material world. Natural causes are at work, which tend to modify, if they do not at length destroy, all the arrangements and dimensions of the earth, and the whole solar system. But though in the course of ages catastrophes have occurred, and may yet occur, in the heavens; though ancient systems may be dissolved, and new systems evolved out of their ruins, the molecules out of which these systems are built—the foundation stones of the material universe—remain unbroken and unworn.”

These are words which impart to the study of natural phenomena a sublimity calculated to foster an appreciative regard for the works of a Creative Intelligence.

The doctrine of Evolution or Progressive Development, propounded a century ago by Lamarek, and which has lately had its most able exponent in Charles Darwin, has to a certain degree revolutionised the study of organic nature, and has suggested to, and by its novelty encouraged, our younger naturalists to devote much of their time and speculation to Embryology, and specific affinities.

In recapitulating his great work on “The Origin of Species” Darwin observes,

“Organs in a rudimentary condition plainly show that an early progenitor had the organ in a fully developed state; and this in some instances necessarily implies an enormous amount of modification in the descendants. Throughout whole classes various structures are formed on the same pattern, and at an embryonic age the species closely resemble each other. Therefore I cannot doubt that the theory of descent with modification embraces all the members of the same class. I believe that animals have de-

scended from at most only four or five progenitors, and plants from an equal or less number.

“Analogy would lead me one step further, namely to the belief that all animals and plants have descended from some one prototype. But analogy may be a deceitful guide. Nevertheless all living things have much in common, in their chemical composition, their germinal vesicles, their cellular structure, and their laws of growth and reproduction. Therefore I should infer from analogy that probably all the organic beings which have lived on this earth have descended from some one primordial form into which life was first breathed by the Creator.”

This bold conclusion would fly in the face of Revelation, tradition, and the consciousness of our moral being. The theory is one eminently ingenious and pleasing to the vanity of man.

But the postulates on which the argument is founded are too numerous and too vast, in their demands of time and circumstance, to shake our faith, in the revealed word of God, in its reference to that most important of his works, the intelligence and moral being of man. Influenced his mind and moral condition undoubtedly is by circumstances, but I cannot conceive by what process of evolution man could be elevated from the irrational creation, except by the direct intervention of his Creator. The intellect of man, besides, has been so constituted that the idea of a God is innate, and nearly identical with the consciousness of his existence. “There is a spirit in man, and the inspiration of the Almighty giveth him understanding.”

While, however, we disagree with the deductions of Darwin, he must be allowed the credit of having added mightily to scientific information. Too many, even of our ablest philosophers, allowed themselves to be drawn into a belief in his doctrines, but I think I already observe a re-action. Theories, like those of Darwin, however plausible they may at first appear, are likely to end in disappointment, as their truth can never be proved.

Our safer course is to rest our belief on the miraculous interposition of an all wise God at man's creation, gifting

him with faculties of the mind capable of appreciating the works of Providence, in a world furnished and prepared for his use and culture.

Sir William Hamilton, my instructor in metaphysics, was careful to inculcate the principle, that mind and matter were distinct and that there is little harmony between them. I believe, nevertheless, that matter may be a means whereby the mind may educate itself, and that in the great field of creation there is ample subject for admiration and study, without indulging in speculation far beyond any possibility of proof.

Let the student of nature investigate the operation of those laws which govern creation, and some knowledge of these cannot but lead up to the adoration of its Legislator and Guide.

“THESE WAIT ALL UPON THEE : THAT THOU MAYEST GIVE THEM THEIR MEAT IN DUE SEASON. THAT THOU GIVEST THEM THEY GATHER : THOU OPENEST THY HAND THEY ARE FILLED WITH GOOD. THOU HIDEST THY FACE THEY ARE TROUBLED : THOU TAKEST AWAY THEIR BREATH THEY DIE, AND RETURN TO THEIR DUST. THOU SENDEST FORTH THY SPIRIT THEY ARE CREATED, AND THOU RENEWEST THE FACE OF THE EARTH. THE GLORY OF THE LORD SHALL ENDURE FOR EVER : THE LORD SHALL REJOICE IN HIS WORKS.” (PSALM CIV.)

Report of the Meetings of the Berwickshire Naturalists' Club for the Year 1883. By JAMES HARDY.

IN the Report of this year's operations in the field, I shall for the most part confine myself to the actual occurrences of each day, reserving more detailed information otherwise collected for separate notice.

The weather, a very important item in the success of meetings, has been, like the season itself, very variable on the Club's days. We had two brilliant days—Kelso and Eccles, and Holy Island;—a day that threatened a continuous rain in the morning, and yet cleared up to be one of the finest days of the year—Yarrow meeting;—a day that gave us a forenoon of propitious skies, nearly drowned us at mid-day, and then broke up into a lovely afternoon and evening—Aberlady;—and finally a day of almost uninterrupted rain and tempest—Wooler and Cheviot. None of our meetings, however, have been in vain; something advantageous can be extracted from them all.

EDNAM, ECCLES, CROSSHALL, LEITHOLM, ANTON'S HILL, AND
BIRGHAM, FROM KELSO.

At the first meeting for 1883, on Wednesday, May 30th, the weather was very favourable, and there was a large attendance of members and guests at breakfast at the Queen's Head Hotel, Kelso. About half-past ten the company set out on their day's excursion in brakes and private conveyances. On the way to Ednam, the site of the ancient hospital of St Leonard's of Ednam, latterly called "the Spittle," was pointed out, while *Myrrhis odorata*, one of the plants common to gardens connected with such an institution, was seen growing in so great abundance as amply to identify the existence of the hospital with this particular spot. The monument to the poet Thomson was not visited. In the right hand hedge-row by the wayside, still nearer to Ednam, Mr Brotherston finds young plants of the small-leaved maple, and scattered examples of the rare moss *Leucodon sciuroides*.

Halting at Ednam, the party were permitted to approach the gigantic wych-elm in the brewery garden; one of the largest trees of the kind in Roxburghshire. According to the measurements taken, the girth is 20 feet 3 inches above the ground; and 18 feet 6 inches at 2 feet from the ground; and at the insertion of the boughs it appeared to be considerably broader. One of

the limbs was mutilated by the great October gale, 1881. These dimensions do not quite correspond with the estimate in Dr. Johnston's "Flora of the Eastern Border," p. 177. "It is nearly 60 feet in height, and the branches spread over a space 23 yards in circumference. The trunk is sculptured with ridges like a cork-tree, and is ornamented with some admirable tufts of *Polyporus squamosus*."

The bulk of the village consists of two rows of slated houses, with gardens in front, decorated with flowers. Common rue (*Ruta graveolens*) was noticed in two of them. The manse is surrounded with young trees and shrubs. A line of old ashes encircles a portion of the churchyard. Cleanliness and order were prevalent. Mr Pringle, the schoolmaster, officiated as guide. A visit was paid to the churchyard, where the burial ground of the ancient family of Edmonston was commented on, as well as others, and some of the inscriptions on the older tombstones were transcribed. The church is small, but neat and commodious. Here was shown the old Session book kept in the time of the Rev. Thomas Thomson, the father of the author of the "Seasons," etc., who was minister here; also a miniature portrait of the poet, consigned by the Earl of Buchan to the custody of the minister of Ednam for the time being, to be handed down as an heir-loom. The house where the poet was born was then indicated to the members; who next proceeded to Mr Burn's home-stead to see the old residence of the Edmonstons, once proprietors of the largest proportion of the parish, which is now converted into a barn and thrashing-mill, and previous to that used as the farm-house. It has been an oblong of no great architectural pretensions, but of much capacity, as it could at once accommodate 150 guests with beds. Beneath a portion of the barn-yard, foundations of several old buildings were come upon, when the house was adapted to its present purposes; and a staircase was discovered. This was conjectured at the time to be some monastic edifice, but there is a greater likelihood that it was the remnants of the old "bastel-house," which was "strongly holden" when won, 24th July, 1544, by the English under "Sir Bryan Laytton and Henry Ewry," when they also burnt Ednam village. There was no other ecclesiastical establishment than the church, served by a vicar from Coldingham, which stood near the present one, in the south-eastern corner of the churchyard. The officiating priest would occupy the toft

with houses granted by David I to the monks of Coldingham. When the Edmonstons, about 1630, had parted with their Mid-Lothian property and came here to reside permanently, they would probably employ the materials of the dismantled fortress for their new erections.

About a quarter of a mile to the north-west of the village is a considerable hillock, called at present "The Mount," the summit of which is fenced by an earthen wall enclosing a plantation. At the northern end is a ponderous undressed flag of sandstone, some inches thick, and about 8 feet square, laid against a tree; and near it is the sepulchral cavity whence it has been raised. The present inhabitants have forgotten its history; but it appears to be alluded to in the old "Statistical Account" of 1794, vol. XI., p. 307. "There is," says the Rev. David Dickson, "a small rising ground, west from the village, called the *Picts Knowe*; out of which some years ago, were dug three stone coffins, with an urn in one of them. The Knowe is since enclosed and planted with trees." The interments it will thus be seen belong to the pre-historic era. There is a considerable expanse of flat ground surrounding the hillock, extending to the Eden. Not far off sheltered by trees is Newton Lees. The fair mansion of Newton Don stands out in the distance in the midst of woods.

Cultivated fields lie close up to the village. The wheat-crop is much infested with grip-grass, (*Galium aparine*), whose seeds are a nuisance to the miller; corn-poppies were also prevalent. *Convolvulus arvensis* grows at the bottom of one of the hedge-rows.

The house in which Lyte, the hymnologist, was born, is detached from the village, by the side of the public road, near the old toll-house. There is a small rookery in the vicinity.

The drive from this pretty village to Eccles opens up a succession of interesting views, but it is only places and objects in the line of the Club's researches that I am called on to mention. By glancing in Armstrong's Map of Berwickshire, 1771, at the route taken, it is evident that several places then extant are now obsolete, and as some of these occur in historical documents, it is useful to have them pointed out. This I shall do as we proceed.

Nearly mid-way Harpertoun was passed, and as a few observations were made there, this appears to be a fitting opportunity

for preserving them. At the roots of old willow trees at the pond for the thrashing-mill, Mr Andrew Brotherston gathered *Leskea polycarpa*, a moss not on our lists, but also got elsewhere in the district by other members. There are no primroses or cowslips in the strips of wood here, nor did I observe any on the banks of the Tweed parallel to the course of our returning drive. In the wood that bounds the farm on the north, and separates it from Harlaw, there is a considerable patch of *Pyrola minor* and a good deal of *Listera ovata*. *Tortula lavipila* is sprinkled over some of the older trees. Wild gooseberries, strawberries, red currants, and geans grow among the underwood. The only shell-slug visible is *Helix nemoralis*. The marshy soil near the ditches is full of the runs of *Arvicola glareola*, the Bank Vole; and the certainty of this being the species was ascertained by one being detected at an opening in its burrow. Wild ducks and teals breed in the ditches, and the remainder of the old lake which is almost drained away. Magpies are numerous, no fewer than sixteen having been seen on one occasion. Lapwings frequent some of the fields; jackdaws build in the trees near the house; and there are a few starlings. The red-start is a summer visitant; and willow-wrens are numerous. Thrushes and wrens are much diminished in number. Yellow-hammers are very plentiful all over this district. Large collections of wood-pigeons harbour in the woods, and spread out over the fields to eat the clover, especially in November.

In 1771 Harpertoun did not occupy its present position, but stood not far from Harlaw loch, near the N.W. end of the farm. This was the place of which the Dawsons were occupants. James Dawson, senior, tenant here, died about the close of the year 1696, and being an elder in Ednam, the session cast their eyes on his son, James, to supply his place; and there is an entry in the Session book of date January 13th, 1697, to this effect.

“The Session considering that their wants an elder in Harpertoun through the deceise of James Dauson who was elder their and being satisfied with James Dauson his son anent his qualifications appoint the minister to dwell wt him in order to be an elder and reporte.” Feb. 7. “The minister reports that he did speake with James Dauson and with difficulty prevailed with him, the Session ordaines the minister to serve his edict the next Lord’s day.” Feb. 29. “The Session considering that James Dauson’s edict was served the last Lord’s day, caused the beddall to call thrice at the church door if any had ought to object to come in and they should be heard, none compeared, the Session appoints the

minister to proceed to his ordination the next Lord's day." Mar. 14. "James Dauson was ordained and admitted to be an elder and received by the Session."

The interest to posterity of this reference to these worthy men is that they were the ancestors of Mr William Dawson of Graden, who introduced the modern turnip husbandry into Roxburghshire, and was otherwise a man of strong character and ability. He was born at Harpertoun, but at what period I have not ascertained.

Somewhere to the S.E. of the modern farm-house, on the south side of the road, a place called "Girthridge hall" is placed in 1771, now unknown, except as the name of a field.

On the boundary line of Roxburghshire and Berwickshire, not far from the public road, stood more than a century since (but swept away now) a farm-place called Bangos, or Bangyswalls, which the minister and session of Ednam once made an effort to annex to their parish, as well as to Roxburghshire. The following notices of the affair appear in the old Session Book of Ednam.

Jan. 27, 1691. "The minister informs the Session that the tenant in Bangoswalls with the rest of the indwellers there refused to be examined notwithstanding their being several times desired to attend. The Session considering the affaire appoints the beddall to cite Rot Aitchison tenant forsd to appear before the Session." March 16. "Robert Aitchison being cited and called thrice compeared not is ordered to be cited *pro secundo*. March 27th. "The beddall having omitted to cite Rot Aitchison the Session continues y^r appoyntt." Apr. 14. "Robert Aitchison being cited and called compeared and with him Mr William Hog his master and he being interrogat why he did not submit to the ordinance of Jesus Christ in this paroch seeing it is knowen that formerly it was a parte of this paroch and the inhabitants there were admittid to all Church priviledges in this paroch. Whereupon the said Mr William Hog answered (in name of his tenant) and said that he denyed the steed of Bangas walls to be any pairt of the paroch of Ednem and earnestly desired that the Session would be pleased to referr it to the Presbetry and he would there give in sufficient reasons why the forsd steed should not be a pairt of this paroch. The Session considering the affaire judges it fite that it should be referred to the Presbetry for determination."

The general aspect of the country is a succession of flat spaces and rolling ridges, running east and west. Several of the farm houses are perched on the highest part of the ridges. On one of these peaks—Kingsrig on Bartlehill farm—there are said to be some artificial mounds. Kingsrig, I see, was a farm place in 1817, but is now a led-farm.

Eccles village lies in a flat expanse, well screened with trees on the south side. Eccles consists principally of a row of cottage houses, with flower gardens in front of several of them, on the north side of the public road; and a shorter row at the west end on the south side, the rest of the space on that side being an orchard. At the east end on the north side is the farm house, and the hinds' cottages; and on the other side of the road the capacious manse. There is also here the Free Church and its manse, near the road passing south towards Eccles Newtown, and Birgham. Near the foot of the bank is the public school and schoolhouse. In front, near the churchyard wall, is a decaying stump of what has once been a very large tree, 8 yards in girth, with six steps of sandstone placed against it, perhaps as leaping-on-stones for those who used to ride double to the church. This stump is cut at the level of the churchyard wall, to prevent children—who will climb—from being injured should they fall. It is said that this was one of a row of fine ash trees, that stood formerly within the circuit of the churchyard, and that about 1770, Sir John Paterson, the owner of Eccles, whose memory still haunts the village as an encroacher on public rights, defrauded the heritors out of the space between those trees and the new churchyard wall. This stump is the only remnant of the true boundary.

Mr Melville, the schoolmaster, shewed the Club, the church and churchyard, the old hand bell for ringing before and warning to funerals, and the old Session book. Mr Melville was so kind as to examine this book to ascertain its contents, and he presents this summary:—

“The book goes only as far back as 1720. The great majority of the cases refer to breaches of the seventh commandment. Among other cases I find in 1723 some persons brought before the Prebytery for making penny weddings. Then there are cases of rebuking for scandalizing, swearing, or drunkenness. Two or three times the Session complain of bad coppers being put into the plate. I find also that those who refused to be married in church were to be fined 2/6 for the poor. One of the beadles was rebuked for giving tokens to some persons whom he did not know. There are of course plenty of cases of sitting six times on the stool of repentance. Some farmers would not do this, and they were allowed on payment of something to the poor, to keep their own seats. In a difficult case of discipline, the minister read the whole process before the congregation, and then proposed waiting a little to see ‘what Divine Providence may cast up.’—I find collections made for the church all over the world—Lithuania, North America, Saxony, New

York. Also collections for the Society for Propagating Christian Knowledge 1721—and for harbours at Eyemouth, St Andrews, and Banff.”

The churchyard is large but crowded to excess, and to relieve it the old grave yard at Birgham, where there once was a chapel, has again been opened. Eccles church is a heavy piece of architecture, modelled on St Cuthbert's Chapel of Ease, Edinburgh. The minister, the Rev. Adam Murray, for whom it was built in 1774, boasts of it as “the best and handsomest country church in Berwickshire.” It can accommodate 1000 people. Painted of a dark colour, the interior is gloomy and depressing. The seats in the gallery are allotted among the heritors, and marked with their initials; those belonging to Eccles House still carrying the S. J. P. of Sir John Paterson. The church steeple is a local land-mark. There are numerous interesting tombstones in the churchyard, from which I copied most of the inscriptions. One of these, a through, is to the memory of the progenitors of Dr Johnston, the earliest name inscribed on the stone, being “William Johnston, Tenant of Ednam in Ednam Mains, who died November 3d, 1699, aged 50 years.” The stone has recently been renovated.

This was the first occasion of the Club having visited Eccles, but to several of its founders it was endeared as a family home. The three Bairds were born here, in a manse afterwards burnt down, and subsequently rebuilt on the present ample scale;—John, born 17th February, 1799, Andrew, born 16th November, 1800, and William, born 11th January, 1803. Dr. R. D. Thomson, born 1811, another early and eminent member, was the son of the Rev. Dr. James Thomson, minister here; and he wrote for his father the latest Statistical Account, besides contributing to our knowledge of its Natural History in a variety of aspects.

The two old vaults behind the mansion house are now, with a portion of the eastern wall of the house, the only relics of the buildings of the Cistercian Nunnery; so thoroughly had they been wrecked in the Border raid of Sir Bryan Laton, 27th September, 1544. An excavated sandstone, like a spout or drain, with a corresponding arched stone above it, used in an outhouse, appears to have been part of the piscina of the original church. The font, still in good preservation, is placed in the garden;—a bowl of fine-grained sandstone, perforated at the bottom and smoothed on the outside; 2 feet 8 inches in diameter. An ash tree, deriving its sustenance from the churchyard, has anchored

itself on the top of one of the cellars, and intertwined its roots with the stones and lime of the fabric, but it has rent one of the arches, a not unfrequent result of cherishing such parasites. The mansion-house is old, of three stories height, plain but with much accommodation. To the rear of the house is a square orchard, with very high and thick walls and a pond in the centre; in the S.E. corner is a very large plane-tree (*Acer pseudo-platanus*), which is 14 feet at 2 feet from the ground, and 13 feet at 4 feet. The spread of the branches is 78 feet. It forks, and the secondary stems after the first great branch is given off, continue of remarkable thickness. It has been eased by lopping off some of the weighty branches. This is one of the row of trees already spoken of as having lined the public road near the churchyard. Here again Sir John Paterson had cheated the heritors out of this tree, and a slice of the road side also. The orchard wall is considerably advanced beyond the boundary of the churchyard, and narrows the road inconveniently. It is reported that he made the heritors tipsy, and meantime had staked off the plan, to which in their muddled condition they readily assented. Sir John was a racing man, and the extensive and commodious stables attached to the mansion were built by him, with money which he had won by playing at cards with the Duke of Roxburghe. There is a very fine umbrageous lime-tree before the house. It measures 12 feet circumference at 2 feet from the ground; and 11½ feet at 6 feet. The spread of the branches is 74 feet in diameter. There are some fairly grown oaks and ashes in the grounds. There is a stout short-stemmed oak of somewhat remarkable growth behind the western lodge, which at 2 feet above the ground girths 11 feet 4 inches. A fine view of the Cheviots is obtained from the grass park to the south of the policy. There is a rookery in the woods. A long established sandstone quarry is situated in a field to the east.

The members were hospitably entertained at Eccles House by Mr and Mrs Dove. The family portraits were viewed, and the bronze spear-head discovered at Bowsden, engraved in last year's "Proceedings," was exhibited by Mr Hood, factor to Sir John Marjoribanks.

In January, 1867, a gold coin of Nero, with "SALVS" on the reverse, was found near Eccles. In October, 1883, a heavy polished stone-celt, of about 9 inches long by 3 across, of white indurated sandstone with some red streaks, was ploughed up in a

field at Mersington in the parish. Both are in the collection of the Society of Antiquaries of Scotland.

The route was now taken to Crosshall pillar, which stands off the main road, but on a road parallel to it, in a field called Deadrigs, which was also the original name of Crosshall farm. After passing the Eccles farm cottages, we turned up by a lane environed with bushy hedges unpruned. Scrog apples are mixed with the thorns; and an overgrowth of wild roses, with a sprinkling of sweet briar, grew on the unoccupied spaces next the hedges. After a couple of fields' breadth a cross road is struck which conducts to the pillar. A large patch of garden strawberry flourishes on the ditch back, perhaps indicative of the site of the garden of old Deadrigs. The sandstone obelisk with the Soulis insignia on the shield, and the adjuncts on its four sides of two crosses and a sword; and the effigy of a naked man, with his feet and knees turned inwards, and his hands applied to his breast, attended by a deer-hound with pricked up ears and long sweeping tail, is fixed in a quadrate block of sandstone, in front of the cottage houses, and although unprotected is in wonderful preservation. A considerable correspondence that passed between some Berwickshire gentlemen, desirous of protecting the historical antiquities of the county, and a previous owner, was read, and it was the general opinion that it would be conducive to the security of the obelisk if it were enclosed by a railing, which needs not be so very expensive, as was estimated to them. A separate notice will embody the contents of the papers then produced. From near the pillar, Stainrig was in view, and the top part of Duns Castle in the remote distance; opposite to it is Hardacres and Stonefold; Lambden House, with its conspicuous flowering gean-trees, when in season; Rowchester house among trees in line with the last; Springwells, Pittlesheugh, Eccles Tofts, and Purves Hall; other note-worthy places hereabouts were not within view. There is a good outlook to Northumberland. The alternation of ridge and hollow crossing the face of the country is again very obvious. As we turned up to join the main-road, the October gale has prostrated some fine Scotch firs, not far from the Orange lane farm-steading. The old map of 1771 places another plantation on the west side of the road here, named Ann's Grove, the name possibly taken from Ann Hume Campbell, who was the eldest daughter and co-heir of Hugh, third earl of Marchmont, and wife of Sir John Paterson.

Mr Watson has supplied an account of the origin of the name of Orange lane which is not generally known. The farm house "was built by Mr Dickson of Anton's Hill, and the first tenant was John Orwin, who was an innkeeper and lived there in 1788. In course of time the name has been corrupted into its present form." It is older than this, however, for it appears on the map of 1771. *Solanum Dulcamara* grows near Orange lane. Within sight of it is Bankhead. In Bankhead wood, Dr. Thomson found *Pyrola minor*. On a rivulet behind the ridge here, the old map places Horsesyke Mill. The puzzling name Horsykend, which occurs somewhere in the Club's Proceedings, or in the Flora, signifies end of this Horse syke.

The road now leads straight forward to Stainrig, which is a new house. Anton's Hill on the opposite ridge is enveloped in the shadow of its many goodly old oaks. There is a small rookery at Stainrig. The note of the Wood-warbler (*Phylloscopus sibilatrix*) was heard among the tall tree tops; and missel thrushes were seen. About a story height of Leitholm Peel, up to the first windows, still continues erect; it is ivied behind. A corn field prevented access to it. It belongs to Anton's Hill. When the Statistical Account was written, this wall was 31 feet long, about 15 feet high, and two thick. "Wester Peles" was among the "Towres and places brent, raced and caste doune" by the Earl of Hertford's forces between the 8th and 23d September, 1545. Wrangham, which participated in the same disaster, stood behind the wooded ridge that envelopes Anton's Hill, and was represented in 1771 by a place called Wrangham-hill. Formerly there were several houses between the Peel and the present bridge. Mr Melville writes: "After you pass Leitholm Peel, you come to Anton's Hill lodge (on the left). A little on, in the middle of a large grass field, you see a clump of trees, not far from the road. In the middle of this clump is a circular fountain with this inscription: 'FONS. SACR. SAN. ANTON. AC SANITAT.'"—a modern fancy, no doubt.

We turned up to go to Anton's Hill before crossing the Lambden burn, as there was nothing particular to be gained by proceeding to Leitholm, which entails the climbing of a steep bank. There were some fine ashes, till wrecked by the October gale, at the angle before reaching the burn. The tree-pipit (*Anthus arboreus*) frequents the tall trees in this neighbourhood. The Lambden burn winds along a green meadow, which is adapted

for grazing above the bridge. Having no proper banks the burn is liable to overflow the haughs. Its "hooks and crooks," that "fill the bowie and fill the kirn," are proverbial. It enters Leet a mile below this, and ancient Leitholm is said to have been situated at the junction. "The Chapel of Leitholm," says Dr. Thomson, "stood at the west end of the present village. The site of it is marked by an old ash tree known by the name of the *chapel tree*, which grows on the summit of the *chapel know*. The adjoining ground was used as a place of burial, and is now cultivated. Bones and coffins have been occasionally dug up." Alexander the parson of Letham witnesses more than one of the earlier charters of Coldstream Priory. On a previous occasion I went to see the village, which is the most thriving in the parish. It has a large school, and a Presbyterian meeting-house, and has a sort of independent position. It consists of a double row of houses, built along a ridge, on each side of the public way; some empty and in disrepair, but the majority renovated; and several of a better cast. There were flower plots before a number of the houses; on the whole a respectable looking place. The village ends on the east in a green lane, at least as much grass as road on it, between tall unkempt hedges. On a higher parallel ridge on the opposite side of the stream stands Belchester, the tall trees near it, that maintain the rookery, being very prominent. In Armstrong's Map, 1771, an old British Camp is set down near Belchester.

The Virtue Well is at the Leet. Its present state is thus described to me: "It is in a sort of marsh, and all the back water from the burn has surrounded it, so that no water can be got from it. It would be worth cleaning out," as undoubtedly ought to be done. This chalybeate well was furnished with a stone cover in 1780. Dr. Thomson, who analysed the water, says "the supply of water is pretty copious." "Its specific gravity is 1.00237, and in summer the temperature is 48°. The solid contents are sulphate of lime, common salt, and a minute portion of iron held in solution by carbonic acid."

The carriages drove up to Anton's Hill, where there is a comparatively new mansion, with charming well laid out lawn and flower borders. Capt. Hunter was unfortunately absent in London. Among the usual assortment of plants grown in a greenhouse, there were here several forced examples of *Saxifraga pyramidalis*, (which is shy of flowering on some borders), that

shewed what a princely plant it is, when grown to perfection. Permission had been granted to visit Belchester House and grounds, but time did not permit, as several members had to leave by early train. The rest of the journey round by Birgham to Kelso was performed by most without any halt, but those in the last carriage, came on more leisurely. Passing Grizzlefield farm, there was not much of immediate interest till reaching Hatchednize. On the high bank of the Leet on the N.E., Castlelaw House and its mysterious "Mount" peered through encompassing trees and the woods of Hirsell, and the green bare summit of the Hirsell Law swallowed up the rest of the prospect. Ferneyrig bog of which we skirted the one end, and Lithillam Loch, furnish the best botanical ground in this part of Berwickshire. Since the early days of the Club, no naturalist has explored them and except some plantations they remain in almost their primeval uncultivated wildness. The plantations may even have restored some of the scarcer half-dying out plants to vigour. Of its zoology we know next to nothing.

Birgham is a lengthy village, with two farm steadings one at each end. In 1771 it belonged to "Cockburn, Bart." At present the superiority is divided between the Earl of Home and Sir John Marjoribanks. Behind the easternmost farm-steading is situated the graveyard, which has again become the object of parochial solicitude. On one of the tombstones the name of the place is spelled Birgholm, which is of the same exquisite stamp as the modern Leitholm. Beneath this green platform, the celebrated historical haugh, stretches away in a spacious open plain bounded and encircled by the broad Tweed, whose waters flashing in the sunlight, are skimmed by the black-headed gulls, engaged in the pursuit of minnows or water insects, their lively forms finely relieved against the brightness. Where the bank rises on the southern side it is crowned with trees. Birgham is of sufficient height to catch a view of the Cheviot hills.

Lonicera perfoliata was in full bloom in front of one of the cottages. Above a deep cutting by the road-side after passing Springhill *Reseda lutea* and *Hypericum perforatum* grow on the steep bank. As we proceed, the chief elevation of the river banks, originating in a deep section of the rocks, is on the north side. The rock is partly of red sandstones and marls with bands of gypsum, but nearer Lochton of grey marls, and sandstones, overlaid by a thick bed of rolled greywacke gravel, closely re-

sembling the elevated gravel ridges piled up, of similar materials, near Pallinsburn lake. Patches of this unmistakeable gravel brought from the upper reaches of the Tweed and its tributaries, are turned up among the soil of several of the farms here, and probably, at least so far as I saw, mingled with minuter grit and sand it furnishes the main constituents of the kaims, which formed a peculiar feature in the early stages of our journey. The rolling earth waves were again repeated at Lochton, and these undulations were equally exemplified on the face of the country southward of the Tweed.

Jackdaws build in some of the sandstone scaurs here, and a small colony of bank martins is established in the cliffs opposite to the Anna. It is a most animated scene on these fine reaches of the river, when the swallow tribes, at the period of their annual arrival, flock thither in thousands for sustenance, of which at that chilly season the insects floating on or flying above the stream afford the readiest supply; crossing and recrossing as they do in sport, as if weaving an airy net; or sallying forth in long flights, and executing rapid evolutions; or sedulously in earnest work plying their little bills amidst the dimpling ripples. Of angling on the Tweed I have had no experience, but the pleasure experienced beside that classic stream must be exquisite. Looking over the rocks here, the water-dock shows its rough foliage near the river brink. Among some trees opposite Lochton, *Allium vineale*, *Viola sylvatica*, *Viola odorata*, and *Myosotis sylvatica* were gathered. At Edenhall there is a scattered rookery. Common peppermint grows wild in a ditch near Edemouth bridge. Here is a favourite resort of the pied wag-tail; and the white throat and the sedge warbler find a retreat; and a little more inland the redstart is not a stranger.

Kelso was reached in time to permit of a glimpse of its buildings, ancient and modern, so much appreciated by strangers, as well as to allow a sight of the nurseries, with their diversity of floral varieties and temptations. At the hostelry there were two rich collections of spring garden flowers on view, brought by Mr Boyd and Mr Muirhead.

At four o'clock the members assembled at the Queen's Head Hotel, where Mr and Mrs Hill provided a sumptuous dinner. Mr G. P. Hughes of Middleton Hall, President of the Club, was chairman, and the Rev. R. Hopper Williamson, Whickham, and Mr William Wilson, Berwick, acted as croupiers. Amongst

others present were—Sir George H. Scott Douglas, Bart.; Mr James Hardy (Secretary); Revs. John F. Bigge, Stamfordham; A. B. Coulson, Carham; C. J. Cowan, Morebattle; John Edmunds, Kylee; Thomas Ilderton of Ilderton; Ambrose Jones, Staunington; Peter M'Kerron, Kelso; William Stobbs, Gordon; Major Thompson and sons, Walworth Hall, Darlington; Captain J. F. Macpherson, Melrose; Captain F. M. Norman, R.N., Berwick; Messrs Charles Anderson, Jedburgh; Henry H. Blair, Alnwick; William B. Boyd, Faldonside; Alex. H. Borthwick, Melrose; J. Broadway, Alnwick; M. T. Culley of Coupland; Charles Douglas, M.D., Kelso; Middleton H. Dand, Hauxley Cottage; John Freer, Melrose; Thos. Greig, Upper Wooden; W. T. Hindmarsh, Alnwick; Edward Johnson, M D., Tweedbank; W. H. Johnson, Edinburgh; James B. Kerr, Kelso; R. Darling Ker, Edinburgh; William Madden, Berwick; Alex. J. Main, M.D., Alnwick; George Muirhead, Paxton; J. L. Newbigen, Alnwick; Adam Robertson, Alnwick; Francis Russell, Jedbank; W. Stewart, Kelso; David W. B. Tait, W.S., Kelso; John Turnbull, Abbey St Bathans; John Turnbull, Selkirk; J. J. Vernon, Hawick; Charles Watson, Dunse; J. G. Winning, Branhholm, &c. After dinner, the following were proposed and seconded as new members:—Mr M. Culley, younger of Coupland Castle; Mr John Dunn, M.A., Newcastle; Mr Thomas Greig, Wooden; Mr William Horsley, Chirton House; Mr James R. Storer, Alnwick; and Mr J. G. Winning, Branhholm. The two toasts allowed by the rules of the club were duly honoured, but previous to this the Chairman very felicitously gave the toast of the Queen, alluding in feeling terms to her Majesty's illness. As time pressed, there was only time to read a selection from the six papers on the notice paper, though they were all of special interest. Mr Jas. Tait, Blainslie, had one on the "Black Dyke," with remarks on some camps near Lauder. Dr A. J. Smith sent his published paper on the Celtic Bell, now in Kelso Museum. Miss Sarah Dand, Morwick Hall, forwarded drawings of the inscriptions on the rocks near Morwick, and explanatory notes.

A fine photograph of a group of fifteen flint implements found at Farnham, in Coquetdale, was passed round the table, and a paper thereon by Mr D. D. Dixon, Rothbury, was read; and Mr Loney sent a sketch copy of the cross at Crosshall.

VISIT TO KIDLAND.

As an appendage to this meeting, I may state that immediately it had concluded, having been unsatisfied with the results of the Club's visit to the Upper Coquet in the previous summer, I proceeded for a week to the secluded and almost unknown, except to the sportsman, tract of country called Kidland, which lies between the Great Cheviot and the head of the Coquet, crossing the hills by Hownam, Greenhill, Heatherhope, Philip-hope, the Windy Gyle, and Usway Ford to Milkhope. Here I was joined by Mr Dixon, and Mr James Thomson, from the southern side of the Cheviots. We had a most enjoyable time, and clear bracing weather. We explored and botanised most of the tributaries of the Alwin, climbed not a few of the hills, secured several rare plants, as well as observations on the zoology and mineralogy. The site of Memmerkirk was surveyed, and the positions of the remains of numerous shielings and hut circles were ascertained. A mineral spring and a vein of lead ore were revealed to us by our host, Mr John Anderson, Milkhope, who afforded us much insight into the condition of shepherd life on that rough and inclement out-post of civilisation. A circumstantial and reliable account of the discovery of a bronze, iron, and stone implement together in a fissure of peat, on the back of Cheviot, by the finder himself, was obtained; and on my return home, a drawing of the articles suitable for engraving has been presented by Mr Robt. Blair, South Shields, the obliging Secretary of the Society of Antiquaries of Newcastle, who had acquired the articles from our informant some years ago, while crossing these almost trackless wilds. A packet with several rude stone implements, and patterns of glazed earthenware pottery, has recently been dispatched from Milkhope, and has arrived safely. Kidland having been from early times a possession of the monks of Newminster, a history of the district is rendered possible, and the charters have been copied, with the intention of this being attempted. On my return I spent a day in revisiting the remains of antiquity on Bughtrig, including the Moat. Western Kidland between Usway burn and Chew-green still requires investigation. In regard to the Roman Station at Chew-green, or Makendon Camp as it is called, our venerable member, Mr Carr-Ellison, on whose property it is, informed me when I afterwards visited him at Hedgeley, that he intends to excavate it, in the interests of archæology.

HOLY ISLAND.

The second meeting of the year was held on Wednesday, 27th June, at Beal Half-way House, for Holy Island. There was a very full attendance, upwards of fifty members and their friends being present from the different districts embraced by the Club—Berwickshire, Roxburghshire, Northumberland, Selkirkshire, East Lothian, Dumfriesshire, Edinburgh, and Durham sending representatives. A substantial breakfast having been despatched at the comfortable road-side inn, a start was made from the railway station in long carts, conveyances, and on foot to cross the three miles of wet sands which lie between the mainland and the island. Arrived there, the party was met by several more members of the Club, who had been resident on the island for a day or two previous. The party now broke up into different groups, following the bent of their own inclinations as to the direction they took. Most, however, at first had a good look round the venerable old priory, the beautiful ruins of which, no matter how often visited, are ever full of interest, teeming as they are with so many associations of the past. Most of the party also, at some time or other during the day, climbed up to the topmost platform of the old castle to enjoy the magnificent panoramic view to be had from it. Mr M. G. Crossman, Berwick, having his yacht lying in the harbour at the time, kindly invited the visitors on board, and hospitably entertained them to lunch in the saloon.

Meantime the more ardent naturalists of the company, having escaped from these fascinations, were engaged in botanising the northern end of the island, where they were joined by the President and the junior Secretary, who were the latest to arrive. Here the miniature meadows, hedged in by the long sand-bent (several of which are very damp), were crowded with blossoms, and every creek and bay and long-stretching line of coast offered a rich and varied flora. The gay Viper's Bugloss was particularly effulgent, and along with it grew the more sober-tinted, but more curious Hound's-tongue. The frequent plots of Birds'-foot Trefoil were especially rich in colour; and alongside of them were contrasted the fainter hues of the Silver-weed, which is very common here. Sheep-rot (*Hydrocotyle vulgaris* and *Juncus bufonius*) grew in the marshes. The Sea-pink or Thrift was remarkable for the size of its individual and loosely-detached florets, and for the number of white and pale-tinted varieties.

The usual sea-side frequenters—Sea-side Sandwort, Sea Milk-wort, Yellow Stone-crop, Purple Mountain Milk-vetch, Jointed Glasswort, and Sea Rocket—were picked up; and a great profusion of the rare Sea Lungwort (*Mertensia maritima*) was seen in full blossom (blue) at “The Coves.” The Orchises, *O. latifolia* and *O. incarnata*, stood up in crowds in the moist soil of the marshes; and the rare Water Pimpernel (*Samolus Valerandi*) by the little water-courses. The bright crimson *Erythraea littoralis* was coming into blossom; and a Gentian, not examined, was common. *Littorella lacustris* (Plantain Shore-weed) was gathered in the marsh behind the Salmon Fishery Houses. *Chara hispida* also grew there, and quantities of the curious star-headed sedge, *Carex incurva*, which was discovered here by Mr Boyd on a former occasion. Double Lady-smock bordered a marsh in another part of the island. On the present visit the Club was fortunate to add the following plants to the flora of the island, which is evidently not yet fully investigated:—*Equisetum variegatum*, *Lycopodium Selaginoides*, *Thrinchia hirta*, *Carex distans*, and the rare moss, *Amblyodon dealbatus*, which grew in great quantity and full of capsules. The Rev. James Farquharson picked up *Carex divisa*, new to Northumberland; and Dr. Charles Douglas and others, *Cakile rugosa*, new to Britain. Every one was charmed with the richness of the flora. There were few birds visible. Larks were singing overhead; several sea-pipits and a single wheat-ear were seen. A small colony of ring plovers and a number of lapwings were disturbed on the Snook, and made much clamouring.

The long procession in recrossing the sands, in vehicles of every description, with groups of walkers and waders in half amphibious attire, and the glorious cloud and land prospect overhead and afar off, formed a grand picture.

A list of plants picked up on this occasion has since been forwarded to me by our late President, the Rev. Jas. Farquharson.

“The following is by no means a list of all the plants picked up by various members of the Club on occasion of our visit, but only of the more notable species. None are entered in it but such as were actually gathered by myself and others.

Thalictrum minus.

Cakile maritima.

Coronopus Ruellii.

Draba verna (in flower at mid-summer!)

Cardamine pratensis (Double flowered. In a marshy spot

between old lime kiln and the sea, west of the town).

Spergularia marina.

Lotus corniculatus, var. *crassifolius*?

—————var. *villosus*?
Astragalus hypoglottis.

Anthriscus vulgaris.
Tragopogon pratensis.
Carlina vulgaris.
Erythræa littoralis.
Hyoscyamus niger.
Mertensia maritima.
Asperugo procumbens.
Cynoglossum officinale.
 Echium vulgare (some magnifi-
 cent plants among the sand-
 hills.)
Anagallis arvensis.
Anagallis tenella.
Samolus Valerandi.
Armeria maritima (pure white).
Littorella lacustris.

Suæda maritima.
Salicornia herbacea.
Salix repens, var. *prostata* ?
Orcis latifolia, var. *incarnata*
 (very fine).
Allium vineale.
Blysmus compressus.
Carex incurva.
 ——— *vulpina.* (Margin of small
 pool between Beal Farm
 and the Island).
 ——— *distans.*
Poa compressa.
Botrychium Lunaria.
Lycopodium Selaginoides.
 J. F."

Lowlynn was open to the Club, where there is a collection of rock plants, which were much admired. A small party, after visiting the island, drove to Haggerston House, and saw the garden and grounds. The floral show is on the ribbon system; but there are also a few herbaceous plants of old standing, none of them rare. The greenhouse was well stocked with ferns, and the flowering plants were a good selection. The apricot trees here sometimes die suddenly on the walls without apparent cause. Many of the hollies had succumbed to the severity of recent winters, and a large tree of *Sequoia gigantea* (or *Wellingtonia*) was killed here. *Araucaria imbricata* was comparatively unimpaired. The house is capacious, but it is only inhabited in the shooting season.

A number of the party had to catch early trains, but there still remained about forty, who met at dinner at the Half-way House. The President, G. P. Hughes, Esq., of Middleton Hall, occupied the chair, the vice-chair being filled by the Rev. James Farquharson, Selkirk. After dinner the following six gentlemen were proposed as new members:—Mr James Thomson, Shawdon; Mr James Thin, jun., Edinburgh; Dr Robert Shirra Gibb, Boon, Lauder; Col. Forster of Sanson Seal; Mr William Robertson, Alnwick; and Mr Richard Burdon Sanderson of Budle. The following papers were read or laid before the meeting.—1. "William Stevenson: his Scientific Work and Writings," with an obituary notice. By Professor Duns, D.D., F.R.S.E., of the New College, Edinburgh. This memoir also contained selections from the letters of eminent scientific men addressed to Mr Stevenson. 2. "On the Damage done to Pine Trees at Coup-land Castle by the Snowstorms of Winter 1882-3." By M. T.

Culley, Esq. 3. "On the Signification of the name Lindisfarne." By R. Carr-Ellison, Esq., F.S.A., of Dunstan Hill. 4. Geological Papers and Sections by Mr David Carr, Felkington, consisting of—(1st) "Breaks of the Coal Measures to the Tweed and the Till for three miles." (2d) "A section of the Kyloe Hills, from Fenwick, N.E. of the Hills to the Low." (3d) "A Section of the Face of the Hetton Limestone." 5. "On a Recent Visit to Kidland, with an account of its Antiquities, Botany, Zoology and Mineralogy." By James Hardy.

Mr Gunn, Chief Magistrate of Dunse, showed and explained a photograph of the singular tree-like appearance on his son's arm after being struck by lightning. It was not like the twigs of a yew tree, but closely resembled the dendritic figures on porphyritic rocks, attributed to the action of manganese. Mr Robert Renton brought two very small stone balls found on Fans farm, a few coins obtained in Coldingham churchyard, and a strange monstrosity of the water hemlock (*Cicuta virosa*). Mr Charles Watson exhibited skins of the Bernicle Goose from Goswick, and of the Arctic Tern from the same vicinity.

One of the coins dug up in Coldingham churchyard, while opening a grave, is an Anglo-Saxon (copper) styca. There is a short cross as usual on the centre of each disc. The obverse inscription reads: +EANBALD AR. i.e., Eanbald Archbishop; on the reverse is the moneyer's name +EODVLF. There were two archbishops of York named Eanbald; the first died 10th August, 796, and on the 14th August, four days after, the second Eanbald was consecrated in the place of the other; and he received the pall 8th Sept., 797. (Anglo-Saxon Chronicle, sub annis). What intercourse there was between York and Coldingham at that early period, it is impossible to say. Visitants there might be to the shrine of St Ebba, and monasteries were then a sort of hostelry for wayfarers. The coin being found in the churchyard we may presume that it had some connection with the monastic establishment here; moreover it is a church and not a regal coin.

There is another coin I have got to mention, which was found on Holy Island, but under what circumstances I am not informed. This is a Gold Lion of James I., of Scotland, in good preservation. The obverse bears the Arms of Scotland (lion rampant within a double tressure) in a lozenge shield, fleur-de-lis between some of the words; a medium crown: X IACOBVS. DE. IGRA-

CIA. REXS. On the reverse: in an orle of six crescents embracing a quatrefoil and terminating in fleur-de-lis, a St. Andrew's Cross with I on the centre, between two fleur-de-lis: +SALVVI. (2 crosses) FACPOPVLVS. (a fleur-de-lis) TVVRONE (a fleur-de-lis). This blundered inscription for SALVVM. FAC. POPVLVM. TVVM. DNE., is recorded in Lindsay's Coinage of Scotland, p. 160, from a coin in the British Museum. I give the divisions of the lettering as on the example submitted to me, and not as in Lindsay. This I believe will be placed in Berwick Museum.

A third coin, a plack of Mary Queen of Scots in billon, was found in digging potatoes at Holy Island. It corresponds with a figure in Lindsay's plate 16, No. 30. It is thus technically described in Lindsay's Scottish Coinage, p. 197. Obverse +MARIA. D. G. REGINA. SCOTORV. Thistle head crowned with an arched crown between M. and R. Cross M.M. Reverse: OPPIDVM. EDINBURGE. A plain St. Andrew's cross through an open crown between two cinquefoils. Fleur-de-lis M.M. This belongs to Mrs Lumsden, Castle Heaton.

A fourth coin picked up this year in a field near the Pease sands, on the track of the old Berwick and Edinburgh road may also be recorded here. It is a *hardhead* of Queen Mary, a minute copper coin. It is figured in Lindsay, plate 17, p. 42. Obverse: +MARIA. D. G. SCOTTOR. REGINA. M (with a ball or dot over it) crowned in the field. Cross Potent M.M. Reverse: VICIT VERITAS. 1551. Lion rampant crowned.

ABERLADY.

The third meeting for the year 1883 was held at Aberlady on Wednesday, 25th July. Owing to the threatening condition of the weather, or other causes, only a limited party participated in the privileges accorded to this meeting and the advantages it offered for botanical and zoological, as well as antiquarian, investigation. Unfortunately, the auguries respecting the state of the weather were realised; and the sudden death of a relative in the hotel keeper's house at Aberlady necessitated the transference of the meeting to Haddington in the afternoon. Mr Clark, however, had engaged conveyances, which accommodated all present, who suffered no other inconvenience than a slight wetting. Up to eleven o'clock the day was favourable, and the party availed themselves of this to visit the grounds at Gosford, for which the Earl of Wemyss had granted permission. They

entered the gate nearest the railway, and proceeded along the extensive park, by a drive lined nearly throughout with thriving shrubs and shapely trees, among which the yew, perhaps from its withstanding the influence of the sea breeze undamaged, predominated, producing at times rather a sombre effect. The thick screen of trees along the sea-side effectually masks the extent of the grounds, which are fully two and a half miles in length, and of ample breadth. The two mansions—the old and the new, the newest having the oldest look—are placed in the most sheltered and most ornamental position amidst the woods, which are mostly of the age of the older house. Preparations are being made for the erection of a new mansion, which will supersede both.

The chief characteristic of the pleasure grounds here is the ponds, nine acres in extent. The tenacious clayey soil, and the general flatness of the land, are adapted to the retention of moisture, which is supplied from inland springs. Forty acres of shrubberies and sheltering trees encircle the winding series of ponds, which, when viewed from end to end, appear as a continuous, calm, broad river. They are pretty free from weeds. *Ranunculus aquatilis* and a *Callitriche* were noted. In summer they are liable to be covered with a "green glit"—perhaps a *Conferva*. There is a fine umbrageous tree-covered island for the water fowl breeding in and retreating to. The bright flower borders, and the varied foliage and forms of the shrubs and trees, with the sweeping expanses of closely-cut, tender-hued green grass, and the mansion in the distance partly screened, together with the charm of water gently stirred, and peopled with multitudes of water fowl, some of them of gay colouring and singular appearance, formed a peculiarly charming picture, which was quite unexpected in a situation so close to a coast swept by fierce blighting winds.

The water fowls preserved here are the following, as the names were taken down, without attempt at exact specification:—*Geese*.—Asiatic, American, Chinese, trumpeter, bernicle. *Ducks*.—Meadow (hatched by incubators), sheldrakes, eider, brown-headed teal. There are also coots and water-hens. Dab-chicks are scarce. In stormy weather in winter two hundred wild ducks at a time will take refuge here. As winter birds, golden-eye ducks, "black teals," "white teals with yellow

eyes," and a few grebes, were mentioned as resorting thither. The ponds contain perch and tench.

Glancing at the flower margins of the shrubbery there were noted:—Spacious plots of the great flowered *Hypericum calycinum*; a large kind of Agrimony; a very well-grown example of *Potentilla fruticosa*; the double *Geranium pratense*; Spiræas, including the common meadow-sweet; Burnet, a large kind; the French willow; and a shrub allied to the Snowberry, with blue berries, unknown to the company. Silver firs appear to grow well. There was a healthy *Abies Smithiana*, not particularly old, but entire at top; a fairly-sized *Cedrus Atlantica*; a *Sequoia gigantea*, of medium height. What else there were do not call for remark. A flourishing *Quercus Ilex* had escaped the recent winters. There is a vast collection of well-grown timber in the park. There is a thriving Spanish Chestnut, growing in sandy loam, with a clay-subsoil, and a N.E. exposure: 60 feet high, 25 feet length of the bole; circumference at 1 foot 11 feet; at 5 feet 9 feet 5 inches. The altitude of its position above the sea is 50 feet (Mr Hutchison). Some of the stems of the beeches are infested with the cottony *Coccus Fagi*, which, in a few instances, has been experienced to be fatal. *Chermes Piceæ* was prevalent on some of the trunks of the silver firs. Larches are apt to decay, and become hollow in the centre.

There was some curious grotto work, the production of a local stone mason, now deceased, consisting of shore gravel placed in upright rows, and cemented to form pillars, studded at the top with sea shells, and crowned with the vast *Chama gigas*, and having suspended from the centre a large madreporæ. There were three or more huge Lias Ammonites as adjuncts to these laboriously-constructed exemplifications of a taste now little esteemed. The rockeries were cleaner and better filled with variety of plants than is usual in these structures.

The garden is on a great scale, and is mainly devoted to the production of fruit and vegetables. The soil is forced. The bedding-out border was very fine, one long band of vivid colour, with sundry subsidiary detachments of skilfully-placed blossoms. The herbaceous border is thinly planted, and, at present at least, is not attractive. Roses do not thrive well here, owing to the prevalent winds. The present rosary has been thrice planted, and only owes its existence to a sheltering west wall. The crop of fruit this year is very heavy, pears especially. On one of the

walls the pear trees are so studded with fruit that the gardener had never witnessed anything of the kind, except in France. The vines are in healthy bearing condition. Among others "Bell's Alnwick Seedling," which I had seen a short time previously in the house where it was first reared, occupies a place of honour. Its red stems and variegated foliage in autumn, render it a serviceable addition to bouquets at that season. A notable peach tree, the Stirling Castle peach, covers two houses from one main stem. Two new peach-houses have been lately added. The smaller ferns were mostly Maiden-hair. The Amazonian lily (*Eucharis Amazonica*) is here flowered with success. The following were noted in passing through the houses:—*Dracæna Veitchii* (palm), two; *Dicksonia Antarctica* (tree fern); *Dacrydium cupressinum* (conifer); *Thamnopteris Australasica* (fern); *Alsophila excelsa* (two examples of this tree fern). The creepers observed were *Lapageria rosea*, *Maurandya Barclayana* (lasts three years), and *Cobæa scandens variegata*, which nearly covers the house; and there was any amount of Pelargoniums, Fuschias, Cockscombs, Gloxinias, Coleuses, Begonias, &c. A few orchids have been recently introduced.

Thus far the day's progress was satisfactory, but before reaching Aberlady the opposite shores of Fife were seen to be enwrapt in gloom, from which an intercepting shower advanced across the Firth. The hotel was gained timeously, however, where luncheon was served, and while the rain lasted the business of the Club was transacted, Mr Turnbull of Abbey St Bathans occupying the chair. The following gentlemen were then proposed for membership:—Major Bryan Burrell of Broompark, Alnwick; Mr James Brunlees, C.E., Westminster, London; and John S. Muir, M.D., Thorncroft, Selkirk.

Mr Stevens exhibited a small earthenware urn, discovered January, 1880, by John Purves, a workman, in a quarry on Gullane Hill. It belongs to the family at Luffness, who lent it to the Club to be engraved. Mr Turnbull undertook to contribute another figure of an urn found at Manderston, Berwickshire, to fill up the plate; and this has now been accomplished.

Mr Hardy handed round a "List of the Plants on the Coast from Longniddry to Gullane," picked up by himself, Capt. Norman, R.N., and Mr Arthur Evans in August, 1882, and on the previous week. Mr Evans exhibited a flowering specimen of *Cornus Suecica* from the east end of Cheviot, and *Saxifraga Hir-*

culus from Langton. Mr W. B. Boyd brought an example of the ripe fruit of *Rubus arcticus*, var. *fœcundus*, grown at Faldonside. It had a vanilla scent and flavour. A comparison of notes of the rare or new plants obtained in last month's excursion to Holy Island was made. *Thrinicia hirta* was noticed at the Snook; and this was confirmed by Mr Evans, who finds it growing all along the sandy coast on the mainland near the Island. *Thalictrum minus* and *Botrychium Lunaria* were gathered on the Links; of *Tragopogon porrifolius* one example was got by Mr Charles Watson, and *Cakile rugosa*, a plant new to Britain, was found by Dr. Charles Douglas—a whole strip of it—on the Castle Rock. The specimen of the last was determined by Professor Dickson of Edinburgh, who had a favourable opinion of its indigenoussness. Subsequently, however, my colleague, Dr. F. Douglas writes me, that it grew as if from seed that had fallen from about the Castle; and Professor Babington writes me thus: "*Cakile* (or rather *Rapistrum*) *rugosa*, I believe to be an introduced plant; it has often been found in connection with cultivation."

Twice the company essayed to venture forth to visit Luffness, which had been rendered accessible by the courtesy of the Hon. Mrs Hope. On the first attempt it was still too wet, and the conveyance had scarcely left the second time when the rain descended in torrents. Shelter was sought under trees and behind stone walls and umbrellas till it faired, when the remains of the old monastery and church of the Red Friars, with the recumbent statue, said to be that of one of the Bickertons of Luffness, by others the founder, whoever he was, were inspected, as well as the adjoining site of their fish ponds still plainly discernible. "The church measures 94 ft. 10 in. by 19 feet, forming an oblong divided by a central chancel arch." (Proc. S. A. Scotland, iii., 299.)

Luffness is a small but most interesting example of a Scottish baronial mansion. The old portion has been a fortified house, with walls of great thickness, on a model of Dirleton Castle, to which the present family have made additions not out of keeping with the original. The clustered towers are very striking. The tall chimneys are visible above the trees from every point of vantage in the district. It is surrounded by the ditches which defended the fort raised by De Thermes, the French General, in 1549, to distress the English garrison at Haddington, by interrupting their supplies, by which and other measures he effec-

tually starved the English out. The French fort was ordered to be destroyed in 1551, but the house was to remain the property of Hepburn of Waughton. The oldest part of the present house was erected by the Hepburns in 1584. The members of the Club were cordially invited to view the older portions of the house, which are the entrance hall, the library, and a sitting-room adjacent. An old door, studded with iron bolt heads, placed in a turret stair, was brought from Saltcoats. The sculptured stones affixed to the outside of the walls as ornaments appear as if they had also come from another mansion. The numerous large antlers of red-deer, suspended as trophies of the chase in the entrance hall, are from Hungary. During repairs and alterations about the place three human skeletons had been dug up; two of them in the entrance hall, one on each side. There are some very large sycamores on the outskirts of the house; a slender tall cypress near the principal walk, and some other good ornamental trees, have attained good heights. The moats have been planted up with small conifers and flower knots. There are bedded-out flowers and grass in front. Although close on the public road, the house is quite secluded.

In the bank at Peffer Mouth, the East and Mid-Lothian coal strata crop out, and are very distinctly seen. In the marsh between the bed of the Peffer and the open sands stands the King's Kist, a singular square piece of rock.

The soil and long grass on the links having become thoroughly saturated with moisture, it was resolved to give up an attempt to proceed farther in this direction. *Blysmus rufus*, *Trifolium fragiferum*, and *Carex distans* were gathered west of the Peffer. The birds seen on the shore on the previous week were curlews, ring dotterels, black-headed gulls, lapwings, sea-pipits, wheat-ears, greenfinches, pied wagtails, and redshanks, the last appearing to have nested in the marshes. To-day a flock of starlings were the only birds visible.

Before leaving Aberlady the church and churchyard were looked into, which were kindly shewn by the Rev. J. Hart, the parish minister. The embattled church-tower and two northern aisles, with fine undamaged windows, are old. The rest of the church had undergone an 18th century renovation. This is about to be removed, and the church restored to the primitive model. The church, besides an inscription to a gallant warrior of the house of Wemyss, and one of the ministers, contains a

fine marble monument erected by Patrick Lord Elibank to the memory of his lady (Lady North and Grey, who died in 1762). The principal figure is an angel leaning over an urn, and extinguishing an inverted torch. The elaborate Latin inscription on the pedestal is said to have been composed by his Lordship himself.

There was formerly a chapel dedicated to St Mary, connected with the Luffness property, in the north-west corner of the churchyard. Outside in the green pasture between the church and the sea are the yellow-tinted mouldering remains of the castle of Kilspindie, built in 1584, once the property of a branch of the Douglas family, and still more remotely, conjectured from the import of its name, "the cell of the Black Hoods," to have been the site of a settlement of Culdees. Corroborative of this, Aberlady till the Reformation was a mensal church of the bishoprick of Dunkeld, an early retreat of this religious order. Aberlady was the Port of the Royal Burgh of Haddington.

The company, increased by two additional members, as soon as the day cleared up, took the road to Haddington, obtaining as they passed a near view of the picturesque and highly interesting tract of country round the Garleton hills, associated as it is with so many important historical personages. On reaching the height, the densely-wooded country round Haddington and up the valley of the Tyne and its tributaries opened on the prospect; and the town itself, which is not unworthy of the rich sylvan accessories, and the rural charms that environ it. The crops on all sides appeared to be full of promise.

In Mr Smith's manse the old church registers are preserved, one of the volumes at least with entries older than 1600. In two of the volumes are bound up fragments of the music sung to Latin verses in the church before the Reformation, and to which both Wishart and Knox may have listened. The notes are square-headed, like the specimens in Dr. David Laing's collection, now deposited in the Edinburgh University Library. A rapid visit to the church of St Mary's filled up the interval till dinner.

Those present at this meeting were—Mr George P. Hughes, Middleton Hall, Wooler, President; Dr. F. Douglas and Mr J. Hardy, Secretaries; Dr. Charles Douglas, Kelso; Dr. James Denholm, Mavisbank, Polton; Rev. W. D. Herald, Dunse; Rev. R. Nimmo Smith, Haddington; Rev. William Stobbs,

Gordon; Messrs W. B. Boyd, Faldonside; John Congalton, Aberlady; A. H. Evans, Scremerston; William H. Johnson, Edinburgh; George Heriot Stevens, Gullane; and John Turnbull, Abbey St Bathans.

Subsequent to this visit, Mr W. Boyd and I made an examination of the coast from Luffness to Dirleton, finding *Utricularia vulgaris* in flower at the ponds, and some curious varieties of a *Carex*, perhaps not different from *arenaria*. This is an early tract, and we were too late in the season. The whole coast, however, from Longniddry to Archerfield, has been perambulated by members of the Club this season. We saw the gardens at Archerfield and Dirleton. It was a beautiful day and we were rewarded with many fine prospects.

The brown, orange-banded caterpillars of *Euchelia Jacobææ* were very numerous this season on the links, and bared the ragwort leaves to the stumps. On the roads at Gullane one could not walk without crushing some of them.

ST. MARY'S LOCH.

A meeting of nearly forty members for St. Mary's Loch, on Wednesday, August 29th, was an agreeable surprise, after the rain of the preceding day and evening, and the lugubrious looking morning. A great stock of waterproofs and umbrellas had been provided to avert rain, but fortunately the dripping mists drew up at the hour of starting from Selkirk, and those acquainted with the district averred that Yarrow had rarely been visited under more auspicious skies. Among the hills, as the complement to a previous day of rain, the features of the landscape acquire the utmost distinctness, the distant view becomes enlarged, and there is a pervading sobriety favourable to observation.

The wooded portion of the vale of Yarrow, with its renowned battle-field—its ruined tower, resort of royal hunters, feudal chiefs and vassal “menye,” and more than once begirt with a besieging foe;—and its famous dwellings, high and lowly, replete with historical, biographical and poetical associations; scenes also where

“ Yarrow in her sounding sweep
By rock and ruin raves and rushes;”

having been visited by the Club on very recent occasions, the new ground which it was about to enter upon, commences about Lewenshope. Still we are not yet so familiar here, as to know

everything. The last Polecat, we are told in passing, was killed in "Black Andro's Wood," some years ago. It was a person called "Black" Andrew Dickson, of Selkirk, who, to the emolument of himself and family, either furnished the trees, or himself planted this portion of the Bowhill estate, and has had his name commemorated in this hill-side of stately dark pines. The oaks and hazels of the outskirts of the Hangingshaw, where they thrive amidst a vast congeries of boulders,—the moraine one might say of the whole vale of Yarrow,—are the remnants of one of the old woods of the Forest. Freed of the shadows of the woods, the prospect becomes more enlivening round the base of Fastheugh hill, where there runs a fringe of bowery native birches and alders in clumps, or disposed as elegant single trees, along the southern bank of the stream. Fastheugh hill (1645 feet), being bared from base to summit on this side, is one of the finest and most imposing heights on the Yarrow; more so, however, when looked back upon half-way up the vale, which it seems to block up at this end with its bulk. It was empurpled with heather in blossom; and is not craggy, but very thin in the skin, the core of rock beneath at intervals piercing through. There are other large green hills as we proceed, but not of remarkably striking forms, and rather characterless and lumpy, seldom precipitate, a few shewing glitters or flows of small stones, and one at least distinguished by a crag. The grass is rougher than on the more arid uplands about Innerleithen. Where it is moist the covering is sprit or bent or heather, but less heathery than spritty or benty (for sprit and bent predominate), with extensive beds of brackens on the deeper, drier, and finer grass ground. The soil is more peaty towards St. Mary's Loch.

Above and below Yarrow Kirk, there are numerous gravel and drift mounds, which occasion much inequality on the surface;—spoils brought down from the upper ranges along ancient water-courses, which have again been modified by the action of the present streams. The sides of the vale are subdivided by cross cleughs and passes; some of which are broad depressions. Others are narrower, and are intersected by rapid rivulets, whose exits, bordered and littered by streaks and accumulations of rolled gravel, attest the violence of the current during the rain or winter spates; but farther up during the spring and summer-tides, lingering by the "yellow gowlon" meadows, or rushing between

flowery braes, gay with the sunflower-cistus and scented with the mountain-thyme ;

“ While a lone fairy angler, with glimmering hand,
From the thyme-laden banks waves her delicate wand.”

The gloom of Yarrow is merely a poetical fiction ; it is a quiet pastoral valley, fully as animated and cheerful as any other far withdrawn river-basin enclosed by heavy and not particularly picturesque hills massed behind each other. These are grander and wilder where they, as it were, draw themselves up to their full height, and approximate to enclose St. Mary's Loch and the Loch of the Lowes ; and dark peat rifts scar their mossy brows.

Cultivation to some extent attends the stream, with greater or less continuity, nearly to St. Mary's Loch, forming a narrow verge to the green or heathy grazings on the back ground. There are thriving crops of grain, and turnips, and clover grass, almost up to the lake's brink. The farm-houses and buildings are superior, and the cottages are better even than several in the low country ; most of them are slated, and a thatched dwelling is the exception.

We pass Lewenshope and Tinnis, and then reach the broken Deuchar bridge (a narrow bridge for riders and pack-horses), near which the mill only now survives. Deuchar was a stirring place once, when the carriers traversed the country from Ettrick and made it a rendezvous. It once had its own chapel and tower of defence. The highway to Edinburgh, in those times, went up Deuchar burn—over Deuchar hill and Minchmoor to Traquair. Deuchar-swyre was the scene of the events that gave origin to the woeful ballad, “ The Dowie Dens of Yarrow.”

“ A fairer rose did never bloom,
Than there lay cropped on Yarrow.”

The first halt was called at Yarrow Kirk, where the company alighted to see the church of the Rutherfords and Russells, and the resort of the Ettrick Shepherd and his family on the day of rest. The manse is well sheltered with trees, and is favoured with other amenities. The church, built in 1640, has no special features of interest, unless it be a mural tablet at the back, dedicated to the memory of the Rev. John Rutherford,—father of Dr. John Rutherford,—“ the Yarrow Doctor ”—Professor of the Practice of Medicine, in the early medical school in Edinburgh, and one of its institutors,—grandfather of Dr. Daniel Rutherford, from 1786 to 1819 Professor of Botany in the University of Edinburgh ;—and honoured also to have been the

maternal great grandfather of Sir Walter Scott—"the shireff," as the document quoted phrases it. In the Latin inscription, which will, if there is space, be given afterwards, the deceased is thus apostrophised: "O! thrice happy man! Thy fame is above the lofty mountains and green banks of Yarrow! Thy spirit beyond the stars!"

A stone of red sandstone is built into the wall at the western door, having on it a sun-dial and inscription:

WATCH & PRAY.

TIME IS SHORT.

The date is 1640. This dial belonged to Deuchar kirk, which Yarrow superseded, taking its place as well as that of the chapel at Kirkhope; and also of the mother church of St. Mary of the Lowes; the church which feudal strife laid low.

"Opposite Yarrow church," Mr Andrew Currie, who was our guide and instructor for the day, writes, "on the south of the river is a deep hollow with a shepherd's house—the name of this place is Kershope, and I can recollect a common remark in my young days—that in the shorter days of winter, the sun did not shine on Kershope for three weeks—now-a-days this does not hold good. An old track runs from here westward on the hill-slope, having the name of 'Harden's drive.'"

Some well-grown ash trees, as if they had sheltered an old dwelling, were passed near a green pasture above the roadside, and a grave was pointed out, among the gravel, at the top of the bank overhanging the highway, in which a skeleton had become exposed, but every scrap of bones had been purloined, as might have been expected, when the side of the grave was left unprotected. The field near this belonging to Whitehope farm, called Annan Street, is that which contains the lettered "Yarrow Stone," and the other two unhewn upright rude monoliths, one of which stands near the shepherd's house, which, from having been built among cist-graves has obtained the modern misleading name of "Warriors' Rest." This field in its uncultivated state was "covered with cairns and graves," and appears to have been a burial place of pre-historic tribes (not necessarily of warriors who were slaughtered in fight, for people when they died, then as much as now, would have to be deposited somewhere), as well as a race amenable to Christian proprieties, who understood a debased Latin tongue. Miss Russell's well-directed study has revealed to us a better reading of the inscription on

the middle stone, and part of her paper from the Club's Proceedings was read to the company. The letters could not well be traced in the open light of mid-day. The stone had formerly been protected by a wooden paling, which cattle had broken down; and idle visitors had with knives been cutting at the letters, and scratching the face of the stone. On Mr Elliott Lockhart's attention being directed to this, it was promptly remedied.

About a mile onward and to the westward of this field on the same side of the Yarrow, is the farm of Catslack-burn, its name derived, as well as that of the Catslack-knowe, and not improbably that of the first part of the Catrail, from the Wild-cats that once frequented the neighbourhood of the slack, or concealed themselves by day in the ditch of the earth-work. Another evidence of their former prevalence is the Cat craig above Tinnis, and there is also a Cat-car-wood, or Cather wood, in the parish.

"The Catrail, or rather the continuation of it, was here traced by Professor Veitch and the late Dr. Russell. It crosses the river at Sundhope, and is lost on the ascent of Sundhope hill." So Mr Currie tells us. We tried to have a glimpse of it both in going and returning, but failed, although every decayed fail-dike, on this bright day, was perceptible on the hill-slopes. Old people who preferred going to Ettrick Church used to follow a road across the hollow, between Sundhope and Ladhope.

Yarrow-Feus is a long straggling village, first feud in 1792 from the Duke of Buccleuch. To the west a few miles we crossed Mountbenger burn, and afterwards passed the place itself, once occupied by the Ettrick Shepherd, being that unfortunate farm, where according to his own confession he lost £2000. It was hereabouts that old marks of cultivation by balks were remarked. We then reached the "Gordon Arms," said to have been first established by one who had been a butler to a Duke of Gordon, or some one else of the Gordon lineage. From this branches off across the Yarrow, and then by Eldinhope and Hartleap (so called from an incident in a hunt connected with a Scottish King), a road to Tushielaw Inn, on the Ettrick. Another road to the north, up the Benger burn, leads to Traquair; and by this road the party received a contingent who had driven from Innerleithen. The old grey tower of Dryhope, abode of "Mary Scott, the flower of Yarrow," is now bare and comfort-

less, alongside the tree-encompassed modern house. A wild burn runs near it, leaving its margin widely encumbered with gravel. Goats are said to be kept at Dryhope. We had first encountered the black-faced breed of sheep above Sundhope. Sheep, however, were very much out of sight during the day.

But before reaching Dryhope we had crossed the Douglas burn, (the reputed scene of the "Douglas Tragedy,") which derives its early supplies from the Black-house heights, on the farm once held by the Laidlaws, where Hogg was a shepherd at 18 years of age, and where he continued 12 years, deriving information from books in his master's library, and by unwearied practice acquired his unrivalled facility in song writing. Altrieve, where the poet died, is opposite Dryhope burn. Ere we were aware, we had reached the loch, and looked down on its calm waters, and sunk shores. The reflection of Bowerhope Law on the opposite side, with its patches of green, its grey rocks, its purple streaks of heath, and the mackerel sky overhead, dappled with blue, called forth expressions of admiration and delight.

"Far in the mirror bright and blue,
Each hills huge outlines you may view."

As a piece of folk-lore we are told that "St Mary's Loch is as deep as Bowerhope is high." Bowerhope house, nestling near the shore of the lake, is not without the attraction of trees and bushes and green meadows. This farm has been long held, and still is, by the Ettrick Shepherd's relations, the Laidlaws, who are a very ancient race in the "Forest."

We pass Kirkstead burn near the lower end of the lake. We ought to have climbed to St Mary's churchyard, which occupies a space of level ground at a considerable height above the shore of the lake. It was, however, thought that there might be time for walking back to it. The ruins of the old church are nearly obliterated, but the plan of the foundation is still recognisable. From it is to be had the most complete upward view of the lake and its precincts. Some interments have taken place in the churchyard lately, I am told, and it is still in good preservation, and has some good headstones and monuments. Mr Bell, schoolmaster at Yarrow, states that "the enclosing wall was lately repaired, and the cost defrayed out of money left by the late Mr and Mrs Scott, Eldinhope, and ought to be in good order. The great age reached by the Scott family buried there is remarkable."

On the craggy and stony end of Henderland hill, is a thicket of hazels, stunted and tangled, the victims of the fierce gusts of wind to which they are exposed. This is another remnant of the woods that studded the ancient forest tracts, and not far remote from the favourite haunts of the stag in Meggat-land, which King James the Fifth rejoiced to pursue, and where still survives to this day, "The Deer Law." Adders are said to frequent the skirts of this wood. Meggat is renowned for its trout-fishing. Henderland Tower, and the monumental slab of Piérs Cockburn and his spouse in the chapel-garth received special attention. The journey terminated at Rodono Hotel. From its platform, Bowerhope Law exhibits its full proportions in front across the lake, and every asperity or depression on its green slopes is visible to day, and very dimpled it is throughout its extensive range.

There are two swans on the lake, and the restless black-headed gulls hover over the surface towards its outlet. On the journey up, two curlews and several lapwings were observed—Hogg's "yammering tewit and grey curlew"—and pipit larks perched on the stone-walls. Martins, but not swallows, were seen at the lower end of the lake. Slated houses allure them to their eaves and windows.

We found everything at Rodono very comfortable. A large party went to Tibby Shiels, sat in classic seats and places, and endeavoured to recall the presence of worthies who once held high converse here, when the day's angling sport was over, and enjoyment was at its height among Scotland's famous talkers, some of whom, especially John Wilson, several present had listened to, when in his most eloquent moods. "I could name," says T. T. Stoddart, "eight or nine speculators in rhymes, more than one philosopher, scholars, and lawyers of considerable eminence, along with occupants of three or four professorial chairs, in whose company, below Tibby's roof, I have spent evenings of great delight." We had Mr Andrew Currie with us, who knew personally several of the participators in those conventions.

Thereafter the company visited Mr Currie's statue of "James Hogg, the Ettrick Shepherd," so appropriately placed among the scenes on which his writings have contributed to confer celebrity; for as we can read beneath,

"Oft' had he viewed, as morning rose,
The bosom of the lonely Lowes;

Off' thrilled his heart at close of even,
To see the dappled vales of heaven,
With many a mountain, moor and tree,
Asleep upon the Saint Mary."

The members felt indignant at the profanation Mr Currie's work was undergoing from the thoughtless public and covetous visitors. They have commenced cutting their names, and scribbling their ribaldry on the pedestal, and have even knocked off and appropriated one of the horns of one of the ornamental ram's heads (of the Leicester breed by the bye), that terminate each upper corner. Several subsequently subscribed to the fund for erecting an iron-railing to preserve the statue from further spoliation.

There is an impression of mystery about the defile between the steep hills occupied by the Lake of Lowes, and the seemingly endless winding by which it hides itself among the darker elevations behind, but we find it impracticable to proceed any farther, and reluctantly return to the hotel. Time flew all too fast; there was possibility here for botanising, but little could be effected. We had to content ourselves with what came readiest to hand, and if the collection is small, it has this to recommend it, that it was native to the spot. I am indebted to the Rev. James Farquharson for a notice of what his gatherings were, and I afterwards examined what his companion, Mr Bird, had laid his hands on. "Along with another member, Mr Bird, Edinburgh," writes our ex-President, "I followed the course of the burn, which descends behind the hotel, up the steep ascent to the swampy table-land where the stream has its origin. In the little gully it has formed on the hill-side, I picked up *Lysimachia nemorum*, *Helianthemum vulgare*, *Crepis paludosa*, *Hieracium murorum*, *Carex pulicaris*, *Molinia cærulea*, *Polypodium Dryopteris*, *Aspidium Oreopteris*; while in the flat swampy ground above, where there was a profusion of Sphagnum and other moisture-loving mosses, the following were found,—*Drosera rotundifolia*, *Sedum villosum*, *Rubus Chamæmorus*, *Narthecium ossifragum*, *Apargia autumnalis*, and *Empetrum nigrum*. Broad patches of *Eleocharis cæspitosa* had begun to assume their autumn tawny hue." To these I have only to add *Parnassia palustris* and *Pedicularis sylvatica*. *Listera cordata* was also gathered. A party had a row in a boat, and fished up *Potamogeton perfoliatum*, a rarity, from the lake.

The following were present at this meeting; Sir George S.

Douglas, Bart., Springwood Park; Revs. J. Elphinstone Elliot Bates, Milbourne Hall, Newcastle; J. F. Bigge, Stamfordham; James Boyd, Innerleithen; John Edmunds, Kylee; James Farquharson, Selkirk; Arthur Gordon, Greenlaw; F. T. Hetling, Rector of Essendon, Hertford; Ambrose Jones, Stannington; E. A. Langston, Hebburn, Newcastle; J. A. Sharrock, Stockton-on-Tees; William Snodgrass, D.D., Canobie; Geo. W. Sprott, D.D., North Berwick; William Stobbs, Gordon; J. Walker, Whalton Rectory; G. P. Wilkinson, Harperley Park, Darlington; R. H. Williamson, Whickham, Co. Durham; Lieut.-Col. Dysonsaurie, 1st Border Regiment; Captain Forbes, R.N.; Dr. J. S. Muir, Selkirk; Messrs Charles Anderson, Jedburgh; Geo. Bird, Edinburgh; William B. Boyd, Faldonside; T. Craig-Brown, Selkirk; Andrew Currie, Darnick; John Scott Dudgeon, Longnewton; Thomas Greig, Wooden; James Hardy, Oldcambus, (secretary); Peter Loney, Marchmont; A. Miller, Liverpool; Robert Renton, Fans; Frederick Lewis Roy, Nenthorn; Henry Rutherford, Fairnington; Thomas Turnbull, Lilliesleaf; James Wood, Galashiels.

The Revs. J. F. Bigge and James Farquharson officiated as Chairman and Croupier. After dinner the Rev. E. A. Langston, Hebburn-on-Tyne, and Mr Henry Rutherford of Fairnington, were nominated for membership. The papers brought forward or announced were,—1, Memoir of Mungo Park, the Traveller, by Dr. H. S. Anderson, Selkirk; 2, On Bewick's Swan, shot on Shaws Lake, with the Anatomy, by Dr. Thomas Anderson of Shaws; 3, On a dreadful Storm of Hail and its effects in Roxburghshire, by Mr J. S. Dudgeon. 4, Two Notices by Miss Russell of Ashiesteel;—1st, On Three Locketts found on the battlefield of Philiphaugh; 2nd, On Dumno Coins. 5, A Notice from Sheriff Russell of a Water Rail in his garden at Jed Bank. The Rev. Dr. Sprott mentioned a curious little M.S. of ecclesiastical import, that he thought might be useful for a chapter in the Club's Proceedings, by extracting the local portions. It is entitled: "Ane Alphabetical Account of all the Churches or Paroch Kirks, in Scotland, giving ane Account of the Shires where they lye, wth the Diocie, Presbytrie, Commissarie, and Patrons these Churches belongs to, by Mr And. Sympson." The copy was written in Edinburgh, Oct., 1710, by R.M., who annexes a Catalogue of all the Religious Houses in Scotland. Dr Sprott has sent me this M.S., which I will copy and arrange for a future

number of the Proceedings. There was exhibited by the Rev. G. P. Wilkinson a very curious mediæval ivory shrine representing the apotheosis of Mary Magdalene, which had been found at Croxdale, co. Durham. Mr Turnbull, Lilliesleaf, brought a fine example of *Actæa spicata* with its berries, also the scarlet Monarda, *Monarda didyma*, both from his garden. Mr Farquharson stated that he had obtained specimens of fossil Graptolites and Crustacea from the black slate at Dobb's Linn.

The return was not less gratifying than the drive upwards. A group of cattle occupied a spit on the lake-shore in a position most favourable for a sketch. Fishers were out all along the line of the stream. The fine views of massive green hills, with far-stretching slopes and clean new farm steadings well sheltered; and lower down of clumps of trees, and birchen groves, and scattered trees, and finally the grand old woods again, kept up a succession of pleasing objects. At Yarrow Feus we witnessed a party of pied wagtails in pursuit of flies disturbed from the grass by a number of grazing cows, and admired the agility which they exhibited in capturing their prey.

One feature in Yarrow that a stranger remarks is the number of sentinel-like stone pyramids on several of the hill-tops, and especially clustered round Sundhope. The question is put, are they modern or ancient? Unquestionably modern in their present pillar-like form, but many of them constructed at the expense of a primeval cairn at their base. Those on the hills around Bowhill are very recent, having been erected when some of the family attained their majority, or for some other congratulatory manifestation. There are three all freshly built of cleaned stones on the Three Brethren Hill, out of an accumulation of long weathered stones. Those up the Yarrow were carefully constructed, probably by shepherds as landmarks in mists and snow storms. As said before, some of them at least are based on a sepulchral cairn. Mr Currie examined one of these. He writes, "I examined several cairns last spring, particularly one on Ladhope Hill. On clearing away the foundation I came on a cist formed by slabs set on edge, measuring about 2 feet 6 inches by 18 inches, filled with black earth but no trace of human remains."

There are no camps in Yarrow, and besides these cairns and the ancient burial ground at Annan's Street, no other discoveries of tombs are known, than those recorded in the "New Statis-

tical Account" of the parish (p. 47).

"On Dryhope Haugh there stood a large cairn called Hertons Hill, in the midst of which, when the stones were removed about 30 years ago [1803], to enclose the surrounding fields, some urns were found, besides a coffin formed of slabs and containing ashes. There may still be seen [1833], to the westward of Altrive Lake, on rising knolls, five considerable tumuli, probably remains of the ancient Britons. None of them have been opened; but the surface of the largest exhibits a mixture of charcoal and ashes. Its top was surrounded by a circle of stones thirty yards in circumference, with a small square of stones in the centre that were taken away to build dykes."

An iron spear-head under a cairn, and a looped bronze celt from among cists, were the only weapons disclosed at Annan's Street. They may have been contemporaneous. The sculptured stone (a sandstone) described by Dr. Daniel Wilson, from a drawing, with figures of spirals, may not be older than the latest bronze age.

The day after the meeting I spent with my friend Mr W. B. Boyd, at Faldonside, examining the thriving alpiners on his rockeries, and his amply stocked garden borders. In the afternoon we made a botanical investigation of the flat west of the house, not far from the Tweed where there is also a pond, and I noted down the following plants, which, however, are not all natives: *Symphytum tuberosum*, *S. asperrimum*; much *Stellaria nemorum*; *Asperula taurina*, *Malva moschata*, *Circea Lutetiana*, *Petasites alba*, *Rumex viridis*, *Rubus cæsius*, *Galeopsis versicolor*, *Scrophularia nodosa*, *Campanula latifolia*, *Alisma Plantago*, *Barbarea vulgaris*, and *Polygonum Hydropiper*. During the winter great numbers of short-tailed field-mice had burrowed in the woods here, far more than Mr Boyd remembered of seeing before. They were more particularly noticeable immediately after a snow-storm, as they seemed the more to be collected in larger numbers together. Mr Boyd forwarded me an example in the middle of January, and I found it to be a brownish backed vole, *Arvicola glareola* (*Mus glareolus*). By the side of the Railway near Bold Station, there is a very abundant showy *Hypericum*. I think it is *H. perforatum*; for although it has not many pellucid dots on the leaves, it has not the net work of the pellucid veins that distinguishes *dubium*; moreover the sepals are erect and not deflexed. It would require to be examined in a fresh condition.

At Galashiels, Mrs Wood, shewed me an example of *Gymnadenia albida*, which she had gathered on a dry knoll in Gala park. This is a valuable discovery. Any specimens that I have

seen of it were from Mousewald parish, Dumfriesshire. In Northumberland it grows in North and South Tynedale. Intermediate localities may now be looked for.

MIDDLETON HALL.

The meeting for Wooler and Cheviot centred in Middleton Hall. With the exception of two hours at mid-day, incessant rain fell from morning till dark, the blasts increasing in energy as the day advanced. To participate in the ample provision for breakfast at the President's hospitable board, only one arrived—Mr James Thomson, as the Club's visitor for the day. When it cleared up about 12 a.m., while Mr Hughes rode to Wooler to ascertain if there were any arrivals, Mr Thomson and I proceeded up Langleyford vale as far as Langlee. The lull in the tempest encouraged the attempt to make a few observations.

The prospect from the top of Middleton Hall bank always commands admiration. The fine long sweep of the Caldgate, broadly gravel-margined, along the green valley beneath the steep, scooped-out bank, with its fern clad sides, its scattered thorns, its breaks of close-cropt pasture, and its high terminal planting, in which the gloomy hues of the pine intermingle, on the one side; and the rough broken pastoral slopes, with dark level-topped alder groves clustered on the bottom swamps, and the scattered trees or thickets of oak, hazel, thorn or grey willow, wild briar or juniper, on the other, form a series of ever pleasing pictures to the lover of Nature in her wild aspects. The hills lift up their heads and beckon to us from afar; and the way opened up along the valley between its declivitous sides invites the willing footsteps towards the upland recesses.

When descending to Careburn Bridge we examined the section of gravel by the roadside. There are small fragments of white or greenish-white sandstone (Tuedian) and of greywacke mixed with the predominant porphyritic constituents. Remains of this sandstone are rather widely dispersed along the lower flanks of the hills. They occur in Wooler-common burn; a large boulder at the mouth of Old Middleton burn; also in South Middleton dean; and other large blocks in the Upper Lill-burn nearly up to the road that crosses to Ilderton Moor. It is not quite safe to say whence these detached portions were derived. The Tuedian occurs *in situ* in the fields between Wooler and Earle; and towards the north at a considerable elevation on Whitelaw in the vicinity of Yevering Bell. Numerous minute fragments

of far-transported greywacke occur among the gravel on the opposite side of the Caldgate.

Few symptoms of the approach of autumn were as yet manifest. The ferny covering of the end of the Sneer had acquired a sickly yellow tinge; and a ruddy-leaved mountain ash, like an outburst of fire, streamed up amidst the as yet untarnished hazels and birches. The extensive alder clumps still maintained unbroken their deep green masses of colour.

In the interval after the rain the rush of waters was audible on every side. Temporary torrents rushed violently down the steeps, and inundated the meadows. The augmented middle stream, moss-coloured and accelerated, broke high against the obstructive stones, or foamed around the rocky banks. A combination of infuriated water-falls, in one lengthened white streak dashed wildly down the precipitous ravine above Langlee. The water-crow rejoiced in the aqueous commotion. Half-way up, three long-shaped, narrow, light brown birds, were seen at a distance, believed to be white-throats. A wren was also visible. There was little else noticeable. A fresh red-admiral butterfly (*Vanessa atalanta*, L) was abroad. There was a good crop of Fungi on the flats. We got within sight of Langleyford house, and its sombre fir wood; and in the far distance, the birchen groves on the hill-sides beyond were visible. But a rain cloud that gathered about the peak of Hedgehope, dashed suddenly across the bulky Housy Crag, and swept down into the valley. This renewal of the blast deterred us from penetrating farther for the day.

The entomology of the valley and its sides has been pretty exhaustively treated in the Club's "Proceedings," except the Lepidoptera, which require some one to be stationary in the vicinity for a week or two. It is to be hoped that some of our energetic young members will soon undertake this acceptable service.

Meantime two other members, Mr Robert Weddell and Mr William Wilson, Berwick, had arrived at the hall. After luncheon, the Club was constituted, and the Rev. John Edmunds, Kylee Vicarage, was proposed as a member. The President read a paper on the Palæontology of the Glendale valley, illustrating it with the fine examples of Red Deer antlers, and a horn of the Urus (*Bos primigenius*, Boj.) that had been obtained in his father's time, from the marl in Cresswell Moss, on the estate

The girth of the horn, or rather the flint of the horn, at the junction with the skull is exactly one foot; the length from the junction with the skull to the point is two feet three inches. No tusks or teeth of the wild boar are preserved, but Mr Hughes had heard of their occurrence. After some hours of animated conversation the three visitants took their departure well enveloped in water-proofs and other antipluvial defences. Outside, the bursts of rain dashed against the windows; the trees were in violent agitation swayed by the outrageous gusts of wind; and the torn-off leaves were blown into the air like startled flights of birds, or dropped streaming to the ground. The storm increased to a gale in the evening.

Next morning a pair of chimney-swallows were sporting about the place. There are four martin nests attached to the house, but the martins generally leave about the 15th of September. This year a pair of sparrows took possession of one of the nests.

Mr Hughes shewed me the moss that furnishes the marl. It occupies a curved hollow among low hillocks of drift, composed of gravel and clay, and is of considerable extent. The cavity, which looks as if the upper portion was once intersected by a small rivulet runs up to near the top of a small rounded hill where it terminates like the rounded head of a "hope." The peat is of a good depth; and at its bottom lie the stems of great oak trees that had once grown on the dry margins and had been prostrated apparently by a gale from the north. Some hazel nuts were picked up. In the peat were fragments of rolled white sandstone and porphyry, which might have been washed in by surface water. The marl underlies the peat and the trees. The shells, which are numerous in the marl, are those of fetid stagnant water. I thought I could discern traces of *Chara hispida*. The water is drained away by a very deep ditch, which keeps constantly running. *Carex caespitosa* is abundant in the marshiest part of the moss.

This accumulation of marl has more than once been adverted to in the Club's "Proceedings." In vol. I., p. 41 (1834), Mr James Mitchell describes the deposit. Oak and willow trees, acorns and hazel nuts, appeared in the peat, but no animal remains. Out of the marl two complete skeletons of red-deer, with large branching antlers had been extracted. They were standing in an upright position. A list of the shells collected from the marl is given; which according to corrected nomenclature were:

Sphærum corneum, *L.*
 Pisidium pusillum, *L.*
 Succinea putris, *L.*
 Planorbis contortus, *L.*
 ——— nitidus, *Müll.*

Limnæa peregra, *Müll.*
 Valvata piscinalis, *Müll.*
 ——— cristata, *Müll.*

In 1860 (vol IV. pp. 158-9) it was visited by a party of the Club, including Mr Tate, who wrote the account. Three skeletons of red-deer had then been procured, and teeth of the boar. The timber noticed was of birch and hazel. A rib and some vertebræ of red-deer, and a piece of bog-iron ore were collected by the Rev. John Baird.

This is not the only locality where marl has been deposited on the margins of the great river valleys here. Its presence has also been ascertained near the steading at Humbleton Buildings on the edge of Glendale. Skeletons of bogged red-deer may also be expected elsewhere in the great plain between this and the Tweed. Several years ago I heard of one that had been found by a drainer, in what was called the Milfield plain, although the locality as pointed out was more in the Doddington district, being east of the Till.

Middleton Hall is enclosed with shady old trees, and is protected by new plantations along the heights from the N.W. wind. The mansion house is modern. The old hall stood at the bottom of the present pleasure ground, where there are two spreading sycamores. There are the foundations of an old fortalice in the adjacent field, the remains of one of the "two stone houses or castells" which were there in 1542, and belonged then to Robert and John "Rotherforthe." The old hall might represent the other. In the garden is a healthy cedar of Lebanon, whose trunk is still on the increase. The height is 34 feet; girth of the trunk at 1 foot and at 5 feet from the ground is 9 feet 6 inches; the length of the branches from the centre of the tree 29+25 feet. Besides larch, Scotch, spruce, and silver firs, Mr Hughes cultivates the following Coniferæ successfully: *Sequoia gigantea*; *Pinus ponderosa*, *Lambertiana*, *nobilis*, *Nordmanniana*, *magnifica*; *Abies Menziesi*, *Williamsoni*, *Douglasi*; *Libocedrus decurrens*. The seeds, from which several of these were raised, were brought from the Yosemite valley. In the garden there is carefully preserved a clipped pyramidal-shaped beech which has an affecting history. It is intertwined and partly overgrown with a honeysuckle; and the sprays of an old white rose penetrate

through and aspire above it, and in the summer spread abroad a wealth of snowy blossoms. The three combined, the support and its fragrant embellishments, were planted by two ladies of the Derwentwater family, who resided long in the hall after the ruin of its former owners,—the Radcliffes.

I learn that there are some old solid foundations near the outer shepherd's house; and traces of a British camp on the higher ground. On Friday afternoon, I went to Doddington, to obtain the particulars about two urns revealed in digging the foundations for re-building a farm cottage at Mr Barber's. They were dug out together from under the door-stone of the old cottage, and are both broken, but are in very fine condition otherwise. They are thin in texture, somewhat polished, and reddish coloured. Both are ornamented all over. The largest is an urn for ashes of the dead; the smallest a drinking cup. The largest, of a flower-pot shape, has at the top a band of upright and transverse strokes alternately; then a broader band of chevron or zig-zag ornament; and finally a series of upright and transverse strokes to the bottom. The other, of the size of a small tumbler, and it might be said tumbler shaped, is ornamented with entire lines, and lines of dots encircling it in alternation. It cannot be described without a figure; and Mr Barber expressed his willingness to lend the urns for the purpose of having them sketched. I learned at the Rectory that people have been uncovering the inscribed stones on Doddington hill, which the Rev. W. Procter, junr., had endeavoured to protect with sods; and also that the inscriptions at the Routing Linn are becoming effaced by the weather, and that idle visitants are disfiguring the stones by cutting their names on them.

When sheltering from a thunder storm, at Etal Castle, on the previous day, Mr Hughes and I remarked a considerable number of mason marks on the stones in the interior of the ruinous structure, which may be available for estimating its age.

The following were some of the plants noted among the rocks at Tiptoe, or on the banks of Till there:

Parietaria diffusa.	Nepeta glechoma.
Lonicera periclymenum.	Hypericum perforatum,
Euonymus europæus.	———— hirsutum.
Origanum vulgare.	Agrimonia eupatoria.
Geranium pratense.	Juncus diffusus.
Tanacetum vulgare.	

There were large numbers of swallows between Tiptoe and Duddo, but nowhere else. The region of heated air in which they sported was that in which the thunder blasts, drifting up successively from Tweedside, reached their acme, and discharged themselves in torrents of rain. It is to be hoped that the Club will have better weather than that experienced by its pioneers for a coming meeting in that vicinity.

BERWICK.

The annual meeting was held at Berwick, in the Museum. There was a drizzling rain with the wind in the east, which marred the enjoyment of the day outside. Among those present were:—Mr George P. Hughes, Middleton Hall, President; Lieut.-Col. David Milne Home, M.P., Paxton House; Revs. John F. Bigge, Stamfordham; John Edmunds, Kyloe; James Farquharson, Selkirk; David Paul, Roxburgh; Evan Rutter, Spittal; R. N. Smith, Haddington; Geo. P. Wilkinson, Harperley Park; R. H. Williamson, Whickham; Drs. John Paxton, Berwick; Charles Stuart, Chirnside; Allan Wilson, Alnwick; Capt. J. A. Forbes, R.N., Berwick; Capt. F. N. Norman, R.N., Berwick; Messrs. Wm. Alder, Berwick; E. A. L. Batters, London; Robt. G. Bolam, Berwick; George Bolam, Berwick; John Broadway, Alnwick; Matthew T. Culley, Coupland Castle; Thos. Darling, Berwick; Robert Douglas, Berwick; James Hardy, Oldcambus (Secretary); W. T. Hindmarsh, Alnwick; Peter Loney, Marchmont; William Madden, Berwick; James Mein, Lamberton; George Muirhead, Paxton; James Nicholson, Thornton; James Purves, Berwick; Adam Robertson, Alnwick; John Scott, Berwick; J. R. Storer, Alnwick; John Turnbull, Selkirk; William Weatherhead, Berwick; Robert Weddell, Berwick; Edward Willoby, Berwick; William Wilson, Berwick.

The President read his Address, and proposed Capt. F. M. Norman, R.N., as his successor; and Mr Hardy gave a summary report of the proceedings throughout the year.

A rectification was made of the designation of non-paying members, who work along with the Club, who are to be hereafter considered as Associates. A new class called Corresponding Members was established, consisting of eminent men of science, whom the Club feels bound to honour, and for whom hitherto there has been no provision made. Mr John Aitchison, Belford, for his contributions to the Ornithology of the district, was appointed an Associate; and Professor C. C. Babington, F.R.S., Cambridge

University; and the Rev. Leonard Blomfield, F.L.S., Bath; who have been in friendly relations with the Club from a very early period of its history, were recognised as its Corresponding Members.

Those gentlemen who had been proposed at the different meetings of the year, were elected; and the following proposed at the present meeting were likewise added to the membership: viz. Mr Alfred Morrall Appleton, Solicitor, 12, Elvet Bridge, Durham; Mr James Nisbet of Lambden, Greenlaw; Mr Edward A. L. Batters, B.A., L.L.B., F.L.S., London; Rev. Robert Borland, Yarrow, Selkirk; Rev. Edward Arkless, Berwick; Mr Blake Johnston Weatherhead, Berwick; Mr Charles Purvis, Alnwick; and Mr John MacNaught Campbell, Kelvingrove Museum, Glasgow.

The Accounts were audited, and it was found that the outlay for the season considerably out-ran what had been received; but not so as to exceed the amount in arrears. As the Treasurership is honorary, and occasions a deal of trouble, it is very desirable that prompt payment of subscriptions should be made. The increased size of the Club's "Proceedings," as well as the engravings, add appreciably to the current expense; and the members are receiving the benefit of every item of income.

The places selected for meeting for the season 1884 were as follows: Cornhill for Pallinsburn, Flodden, and Ford, in May; Farne Islands in June; Prestonkirk for Whittingham and Presmennan in July; Ettrick from Selkirk in August; Newcastle in September; and Berwick in October.

A paper was read on Herons and Heronries in the Border districts, by Mr James Smail. The Rev. James Farquharson made some remarks on *Carex divisa* found on Holy Island, and read a correspondence he had had with Professor Oliver on the specimens which he had submitted to him. The Rev. Geo. P. Wilkinson made a statement in regard to several old documents which a friend had lent him to show to the Club. One was a petition from Sir Carnaby Haggerston and the inhabitants of Norham to the Bishop of Durham as Prince Palatine, to hold a fair and two markets at Norham. This was followed by a counter petition by the Mayor and Bailiffs of Berwick showing cause why the request should not be received. Then there was a letter from Lord Lisburne recommending the Bishop to refuse the grant. It appeared that the Bishop first refused and then

acceded to the petition. The other document related to the Roman Catholics in the different parishes in Norham and Islandshires divisions.

The Rev. David Paul brought a number of the rarer Fungi; Mr Muirhead had a vasculum of Asters and other autumnal flowers; and Dr. Stuart had also some plants to show to members.

At Mrs Carter's, Dr. Johnston's Algæ, newly arranged by Mr Batters, were shown; Miss Dickinson's paintings of Fungi; photographs of the Farne Islands by Mr William Green, Berwick; several coins and curiosities, among others a gold St Andrews of Robert II. of Scotland from the Vale of Ettrick; and a cup (lent by Miss Leitch, Tweedmouth) said to have belonged to Queen Mary and to have been used by her at Bothwell Castle. There were also two local books from Mr Edward Willoby, viz. 1. Guild Book, 1794, 4to, entitled, "A Roll of the Burgesses of Berwick according to Seniority." 2. "A Directory and Concise History of Berwick-upon-Tweed, whereby every Tradesman, Merchant, Carrier, and the Shipping connected with the Commerce of that ancient Borough, will readily be found. Likewise Farm steeds twelve miles round the Country. The whole adapted for the Use of the Traveller and Merchant. Printed by W. Lothead, High Street. Price Three Shillings," 8vo.

Col. Milne Home, M.P., moved a vote of thanks to the President, and the members then adjourned to the King's Arms Hotel for the annual dinner.

Obituary Notices.

At the date of this, the last meeting for the year, the ordinary membership was 372. During the year the Club has lost four members by death. 1. REV. JOHN ORR, M.A., Church Street, English Presbyterian Church, Berwick, a young minister of great promise, who died suddenly at Summerhill Terrace, Berwick, March 23rd, 1883. He had only been a member for two years. 2. ROBERT CROSSMAN, Esq., J.P., of Cheswick, Lord of the Manor of Holy Island. Mr Crossman was born at Holy Island, 21st August, 1803, and died at Cheswick House, 17th July, 1883, in his 80th year. Mr Crossman was a most energetic

and successful man of business, and by his thorough probity and straightforwardness won the esteem and confidence of all with whom he came in contact; and by his many acts of benevolence and generosity he endeared himself to all sorts and conditions of men, and many of the humbler classes will, by his death, lose a kind friend and benefactor. Mr Crossman in his latter years paid frequent visits to Holy Island, which he regarded with peculiar favour as the place of his birth. When the Club met there in June, Mr Crossman sent a message expressing his sorrow that he could no longer be present to welcome the Club as he had done hitherto, when in the neighbourhood. He became a member July 31st, 1862. 3. REV. JOHN WOODHAM DUNN, M.A., Vicar of Warkworth, died 18th September, 1883, aged 71. Mr Dunn was born in 1812, and was educated at Queen's College, Cambridge (being a scholar and prizeman) where he graduated B.A., in 1836, and in the same year was ordained deacon, and licensed to the curacy of Longhoughton, where he succeeded the Rev. Aislabie Procter, and remained for three years. He was curate of Lesbury, 1839-42; vicar of Matterdale, in the diocese of Carlisle, 1842-46; vicar of Dalston, 1846-53, when the Bishop of Carlisle offered him the living of Warkworth. In 1863 he obtained his M.A. degree. He was an active and laborious clergyman, and greatly esteemed by his people; a gifted scholar, a man of general knowledge, charitable and companionable. "In 1863 the Parish Church of Warkworth was restored at a cost of upwards of £1000, with a care and beauty, which must always remind those who see it, and knew him, of the taste, knowledge and energy in such matters which distinguished Vicar Dunn." Mr Dunn's favourite literary theme was the history of his own church and its romantic neighbourhood. He was elected a member of the Club, 28th Oct., 1857. On the 25th of June, 1863, he read an interesting paper on "Warkworth—its Castle, Hermitage, and Church," with Plates, *Hist. of Club*, V., pp. 42-57, accompanied with valuable notes by Mr W. H. D. Longstaffe; and again, in the same vol. pp. 412-420, he gives "Notices of the Ancient Vill of Warkworth." He also, at a meeting held at Alnmouth and Coquet Island, Sept. 28th, 1871, read an excellent prose version of the "Story of the Hermit of Warkworth," which has since been printed by Mr Blair at Alnwick, as an accompaniment to Bishop Percy's Ballad. Still earlier he had contributed to the

“*Archæologia Æliana*” an article on Saxon Warkworth, vol. V., pp. 100-102 (1861); with a plate. In vol. VI., p. 62 of the same work he has a note “On an incised inscription on the interior jamb of the old Priest’s door in the chancel of Warkworth.” In the same vol. (1864) pp. 217-219, Mr Longstaffe, with a reference to Mr Dunn’s paper in the *Hist. of the Club*, contributes notes on Warkworth, with extracts from the Parish Books. To “*Archæologia Æliana*,” vol. III., (1859) pp. 36-38. Mr Dunn furnishes a notice, with illustration, of “Ancient Sepulchral Remains at Amble.” This relates to a “Food-vessel,” or small urn of unbaked clay, a rude chip of flint, and a smooth cobblestone found in August, 1857, in a cist enclosed in a friable shale, not far from the end of Warkworth South pier. These accompanied a skeleton lying on its left side, with the head to the S.W., having the knees much doubled, and the right arm thrown back. The urn was ornamented “with zig-zag scorings, alternating with dotted lines, and upright and sometimes slanting scorings.” It is now in the Museum of the Duke of Northumberland. Mr Dunn adds: “It appears that a few years ago, in the immediate proximity, two or more tumuli were found, which contained urns and bones; and flint arrow heads of elaborate finish have been occasionally met with,” (l.c. p. 38). Well formed-arrow heads have also been found in the same district in the land near Hauxley; and examples of these were exhibited by Mr Henry Dand to the Club at a meeting at Powburn, 27th June, 1861. (*Hist. of the Club*, IV., p. 239.) 4. DR. JAMES SCOTT of Ashtrees, Rox., and 27, Abercromby Place, Edinburgh, died at Newton, Rox., 22nd Sept., 1883, in his 70th year. Of this amiable and accomplished gentleman, a memoir by his relative, Dr. Francis Douglas, will follow. The references to Dr. Robson Scott’s contribution to the Club’s “Proceedings” are: Notices of a Deserted Heronry on the Farm of SwinDean, in Bowmontwater (1865) vol. V., p. 220; and (1883) vol. X., pp. 87-88; Presidential Address at Kelso, Sept. 24th, 1874, vol. VII., pp. 163-180; On an Oyster-Catcher shot at Belford on the Bowmont, 15th Sept, 1874, *Ib.* p. 192; Note of the Arrival of some Migratory Birds at Belford, in 1870-4, *Ib.* p. 276; Time of Arrival of Migratory Birds at Belford, Bowmont water, vol. IX., pp. 400-410.

William Stevenson. By PROFESSOR DUNS, D.D., F.R.S.E.

WILLIAM STEVENSON was born at Duns, 12th August, 1820, and died at Paisley, 20th January, 1883. The main object of this paper is to put on record Mr Stevenson's labours as a scientific worker, and his contributions to the literature of science. Mr David E. Stevenson has kindly sent to me many letters to his father from distinguished men of science, and, also, much unpublished MS. These might supply ample materials for a very interesting biography, but I shall refer to them only in so far as they fall in with the point of view of this notice. The earliest written record I have found of his scientific leanings is a Register of Barometrical Observations made at 9 a.m., 2 p.m., and 8 p.m., with a column for the direction of the wind and another for the weather. The terms, clear, cloudy, cloud with rain, fair with occasional cloud, rainy, stormy, frost, and snow serve his purpose for characterisation. This Register, begun on the 18th of September, 1837, was continued more than forty years with comparatively few breaks. As a record of close, painstaking, and acute observation in a department in which at the time of its commencement there were no easily available helps, and which grows in scientific accuracy and interest year after year, it bears full testimony to his ability as a meteorologist. It shows us his habit of the eye increasing in quickness as his range of observation widens, and his skill in the use of signs to serve for words keeping pace with enlarging knowledge of phenomena for whose description clearness and brevity are indispensable. The mode in which he both musters data and masters them in order to generalisation is equally note worthy. Mr Stevenson had early begun to think that there was a close connection between *Cirri* and *Auroræ*, and in 1840 he communicated his views to Sir David Brewster, from whom he received the following note:—

“ Sir,

I beg to thank you for your very interesting observations on *Cirri* and their connection with the appearance of the Aurora. The subject is a most important one and well worthy of being systematically pursued. I read the substance of your letter at a Meeting of the St. Andrew's Phil. Society yesterday; and we had the pleasure of electing

you a Corresponding Member of the Society. Trusting that you will make us acquainted with any of your future discoveries that you may consider important,

I am, Sir,

Yours most truly,

Nov 3rd.

D. BREWSTER."

St. Leonard's St Andrews

Sir David was quick to see the value and importance of the subject little more than hinted at here. Mr Stevenson's observations indicated a new line of research which has yielded richer results than he could have anticipated. In October 1841 he forwarded a long letter to Sir David on "The Electricity of the Atmosphere and the indications of Clouds of the nature of Cirri and Cirro-stratus." This, and another in December of the same year on "A Remarkable Auroral display on the 19th November," were read by Sir David before the same Society. Other articles followed, namely, "On some interesting Meteoric phenomena," November, 1844, and "On an Aurora," December, 1845. The same subjects led to a communication from Mr Airy, the Astronomer Royal; an interesting correspondence with Mr Glaisher, of the Greenwich Observatory, ranging from 1841 to 1852; a letter from Mr Temple Chevallier, Durham College; and to an intimate acquaintanceship with Dr. Dick, Broughty Ferry. In 1853, Mr Stevenson published an elaborate Article in the *Philosophical Magazine* in which he stated his maturest views on the connection believed to subsist "between the Auroræ and the formation and modification of clouds, particularly of the cirrus and cirro-stratus types." In this paper he also refers to "the connection between the variations of the solar spots and those of the terrestrial magnetic forces." His contributions to Meteorology at this period were many and important. Of these the following may be mentioned,—“On the general character of storms which pass over the British Isles,” (*Liverpool Lit. and Phil. Soc.*). “On the probable connection between the Solar spots and the Auroræ,” (*Royal Society*). “Comparison of the Progressive Motions of Cyclones with the Motions of the Cirri,” “Lecture on Meteorology,” “Auroræ Boreales.” The wide range of his knowledge of phenomena, the comparative freshness of his observations, the modesty with which he stated his views, and, withal, the thoroughly scientific method employed in his researches, drew to him the attention of the foremost workers in this department. The notes which follow may be taken as illustrations of the communications which reached him.—

“Royal Institution,

My Dear Sir,

8 Mar. 1853.

I am very much obliged by your kind note and shall be most grateful for any data you can favour me with in relation to atmospheric magnetism. The observations about the Cirri are exceedingly interesting, and if at your leisure you devote me a few minutes I shall be very thankful. Captn. Sabine was much struck by your note to me (the first one) and asked me to allow it to be read at the Royal Society next Thursday Evening, and I have sent it to him for that purpose.

Your Very Obligated Servt.,

M. FARADAY.

24 May 1860.

“Dear Sir,

1 Parliament St. S.W.”

I thank you sincerely for the valuable and very interesting Paper which you so kindly sent to me on the 22nd. I have read it carefully, and shall *study* it. In *much* your researches and ideas agree with mine—which encourages me not a little. During the last six months I have been urging Telegraph for Storms, and am now in daily expectation of Government authority to begin. Believe me,

Your's truly,

ROBT. FITZROY.

Can you spare me another copy for Dr. Lloyd of Dublin?”

In 1854 we find Mr Stevenson occupied with relations between “Agriculture and Meteorology,” and, in a correspondence with Sir J. S. Forbes of Fettercairn, stating aspects of interest between these branches which have subsequently been fully recognised.

There is proof that in the heart of his meteorological studies Mr Stevenson was giving equal, if not more, attention to Geology, and was, like a true observer, trying to make out the stratigraphical and palæontological features of his own neighbourhood. The publication in the *Witness* Newspaper, 1840, of Hugh Miller's graphic and fascinating papers on the Old Red Sandstone, first gave Mr Stevenson the opportunity to make known his own work in this formation. Miller's cordially appreciative notice of this is well known. But not the least important fruit of Stevenson's introduction to him was a correspondence begun in 1840 and continued till 1852. I have read Miller's notes with unusual interest and pleasure. One of these and a brief extract from another may be given:—

“My dear Sir,

Many, many thanks for your parcel of fossils; I trust we shall by and by know something of the Old Red. You will excuse me the scanty bit of paper I employ when I tell you that all my spare minutes, and they are by no means numerous, are engaged with my little work on this formation. I trust in a month or six weeks to have

the pleasure of sending you a copy. The specimen No 1, that in the thin fragments, contains not a tooth but an ichthyodorulite,—a sort of spine which formed the anterior part of a fin. I have seen a similar one, only more entire, with Mr Murchison, which was dug out of the sandstones of Clashbennie. It must have been no small fish that carried such a spear on its back, but there is nothing yet known regarding it. Your scale, No 2, is much more obscure than the scales of the *Holoptychius* generally are. I am mistaken if it be not an occipital plate,—the bony matter well nigh absorbed, and the outer surface turned towards the stone. All the fish of this formation wear their bones outside;—the scales, the external skull, the jaws, the rays, the ichthyodorulites were pure bone; the internal skeleton on the contrary, including the ribs, the vertebral column, the internal skull, and the internal rays, were cartilaginous. They formed a connecting link between the two great classes into which all true fish are divided,—the *osseous* and the *Cartilaginous*,—a link which the present creation seems to want. I can make nothing of your specimen No. 4. There is nothing coprolitic about it, nor am I prepared to say there is anything organic about it. The chemistry of geology is but little understood. I would be disposed, however, though with considerable uncertainty, to submit this last specimen rather to the chemist than to the naturalist learned in fossils. It has much the appearance of being a trick of crystalization, and had there been ice in the days of the Old Red, I would be apt to attribute it to the freezing process. But if there was ice in those times Geologists are sadly mistaken. Pardon me this miserable scrawl, which I have not even time enough to read over, and believe that I am, My dear Sir,

Yours very sincerely,

HUGH MILLER.

P.S.—In my little work I shall have to refer to your discovery. My own discoveries were made at a time when I was a working man,—a stone mason; and in addressing myself to the working classes I say so, in the hope of exciting their interest and awakening their curiosity. May I take the liberty of asking whether I may not speak of you in that character also? You will I trust forgive me if I am guessing amiss, and drop me a very few lines on the subject.

H.M.

5 Sylvan Place, 17 July, 1841.

My dear Sir, Many thanks for your kind recollection of me, and your excellent letter. It is written in a manner of which no Geologist might be ashamed, and the matter is as interesting as the manner is good. I had intended well nigh six weeks ago sending you a copy of my little work on the Old Red Sandstone,—published about that time, but in the hurry of the General Assembly and the Election, added to the average amount of toil incidental to a twice a week paper, the intention was unluckily not effected. Forgive me the delay and gratify me by accepting the accompanying copy. . . . Pardon me this careless scrawl and believe me to be, My dear Sir,

Very sincerely yours,

HUGH MILLER."

Among the other communications entrusted to me by Mr D. E. Stevenson, are letters from the Duke of Argyll, Murchison, Sedgwick, Owen, Nicol, and A. Geikie, which are all of value as indicating what share his father had in connection with the rapid progress of Scottish Geology in the course of the last forty years. To give more specimens here would extend this notice beyond reasonable length. Besides, they would require for a setting a statement of the discoveries of contemporary workers which, however suitable as a chapter of biography, would be out of keeping with our present point of view. I content myself with a list of Mr Stevenson's published papers:—"On the stratified rocks of Berwickshire and their imbedded Remains," (*Geol. Soc. Proc.* 1843) "Two Lectures on the Geology of the neighbourhood of Dunse, delivered at the Mechanics' Institute," (*Berwick Advertiser*, Dec. 1844) "On the Geology of Cockburnslaw and the adjoining District," (*Trans. Roy. Soc. Edin.* 1849) "On a gap in the Grauwacke formation of the Eastern Lammermuirs," (*Geol. Soc. Janr.* 1850) "Remarks on certain traces of a formation of Primary Quartz rock which appears to have at one time existed in the south of Scotland," (*Roy. Phys. Soc. Proc.* 1850, also *Berwick. Nat. Club Proc.* 1864) "Lecture on Geology at Eyemouth," (*Berwick Advertiser*, Jan. 1851) "On Bedshiel Kaimes and their relations to similar deposits eastward and westward," (*Berwick. Nat. Club Proc.* 1864) "On the origin of Granite," (*Roy. Phys. Soc.* 1864) The object of this paper was to expound and illustrate the following Proposition:—"Granite is the result of Molten Felspar, of rocks adjacent to the place of eruption." His illustrations are from Glencoe, Ben Nevis, Morvern, Ben Cruachan, Arran, and Aberdeenshire. "Notes on certain Spiral forms," (*Do. Do.*) The subject referred to in these notes is the spiral appearance seen in the course of streams a subject which has not yet been fully worked out. He says "It will be observed that on the right bank of the stream the spiral form is from left to right, or similar to that of the hands of a watch, whilst on the left bank it is from right to left," (*Do.* p. 865.) "Notes of plants from Old Red Sandstone, Dunse," (*Do. Do.*) "On evidence of Ice Action in Berwickshire," (*Ber. Nat. Club Proc.* 1874). In 1876 Mr Stevenson forwarded to Mr R. Etheridge, Jun., of the Geol. Sur. Scot., fragments of fossils found by him in Kimmerghame Quarry, saying at the same time that he guessed them to be fragments of *Eurypterus* larger than *E.*

Scouleri. When other fragments were forwarded Mr Stevenson's guess was found to be correct, and the form was named *Eurypterus Stevensoni*.

A subject in Speculative Geology, which has ever had a charm for students in whom a strong imagination is found united to good attainments as workers and observers, early cast its spell over Mr Stevenson. I refer to the hypothesis of the original fluid condition of the whole earth, and of its present internal condition. Field workers are necessarily much alone and have strong inducements to take to waking dreams. Besides, accurate knowledge of things ever tempts to enquiry after the thoughts which underly them. Indeed, the whole bent of recent science is dissatisfaction with the mere observation of phenomena, and an earnest desire to find the laws of which they are the expression. Had Mr Stevenson been satisfied with dreams without seeking their interpretation, and with hypotheses without attempting to render them into the form of laws, he would have escaped, perhaps, the greatest disappointment connected with his scientific work. Among his MSS. is an elaborate paper entitled "Calculations, &c., relating to the Internal Fluidity of the Earth," 1845. It is loaded with complex calculations, marked by much shrewdness and fair inductive power. But there are inaccuracies in the calculations, and mistakes as to the import and value of phenomena appealed to as illustrative proofs. Some of these errors are corrected in subsequent copies, but after a careful perusal of the paper, one finds it impossible to dissent from the criticism of Professor Hopkins to whom he had sent it:

Dear Sir,

“ Cambridge,
Feb. 23, 1853.

The subject which you have discussed in the paper you sent me has been frequently discussed before. And I am satisfied that neither further discussion of it nor numerical calculations respecting it, can be of any use to geology, unless conducted with far more mathematical accuracy than you have pretended to in these researches. Hitherto mathematicians have been deterred from attacking the subject more determinedly, I imagine, by the want of the essential experimental data to give practical value to their results. The effect of great pressure on the temperature of fusion of any substance, the degree in which it contracts or expands in the act of passing from the fluid to the solid state, the modification produced by great pressure or the rate of contraction of volume from loss of heat &c., &c., are points to be more or less approximately determined before we can enter with any hope of practical success on the general problem. I am now endeavouring, in conjunction with Mr Fairbairn and Mr Joul of Manchester, to supply some of these experimental data as far as they are attainable by direct experiment.

When the results shall be published I shall have much pleasure in sending you a copy. My impression is that of the Council the Geological would probably not recommend the publication of your memoir in the present state of the subject; but if you wish to have it read there, I will with pleasure forward it to the Secretary for that purpose. If not, shall I return it to yourself?

Your very obliged servant,

W. HOPKINS."

The thorough treatment of this subject implies both great expertness in numerical calculations, and great mathematical attainments. Mr Stevenson had natural powers which under training would have fitted him for both. But he had entered on his investigations without this advantage, and he was well aware of his deficiencies in this respect. When the late Rev. John Wallace, of Abbey St Bathans, a most accomplished mathematician and most genial man, opened a class for Mathematics in connection with the Dunse Mechanics' Institute, Mr Stevenson became one of his most devoted and successful pupils, but the circumstances were such that no great progress could be made. He does not, however, seem to have sympathised with the estimate which Hopkins had formed of his paper, because he afterwards submitted it to a learned Society in competition for a prize, with the title "Deductions from the hypothesis of the internal fluidity of the Earth." It was returned to him bearing the following pencil note, "I am of opinion this paper is not entitled by its originality or importance to any prize. J.D.F." Nevertheless, looking at this attempt to grapple with a great subject in the light even of a somewhat full acquaintance with its literature, and especially in view of Sir William Thomson's papers "On the Secular Cooling of the Earth," and "On the Doctrine of Uniformity in Geology," I cannot help bearing testimony to the ability of its treatment, and the aptness and originality of much of its illustrative matter. This list of geological papers conveys a very inadequate idea of the time and attention devoted by Mr Stevenson to the statement of his views. The correspondence referred to above is highly suggestive on this point. In several cases he preserved copies of his answers to queries by fellow workers, and these shew how heartily he entered into even the minutest details of the matter on hand—hastening to give far more information than was asked or expected. One example may be given. A good many years ago I had tried to work out the relations between deposits at Allanton, Chirnside, Putton mill, Langton, Fogo, &c., and having made up

my mind as to some of these, I wrote a note of two or three lines to Stevenson, looking for one quite as brief in return. But the answer was as follows:—

Dunse, 7th, Octr., 1858.

My Dear Sir,

You are quite right in your impression regarding the strata below Langton Bridge.—They are Lower Carboniferous and their place is at or near the very base of the System. Besides the vegetable remains you mention, I have found at the scaur below the bridge, or more correctly in the same beds a little farther down (in the plantation) teeth, scales, and spines of a large species of *Gyracanthus*. Similar fish remains have been found by me in strata occupying the same geological position at Broomhouse and Allanton. The Sandstones of Puttonmill and Kimmerghame are also very near the same position, and likewise contain fish remains.

There is an extensive series of beds in Berwickshire, intervening between these and the Encrinal Limestone which crops out south of the Tweed. The equivalents of these beds may be seen in Balagan Glen near Campsie, Auchenroch Glen near Dumbarton, &c. On the shore between the Pease burn and Dunglass there is a splendid section where strata occur, which I consider the representatives of the Langton beds (also fossiliferous near the south-east end of the section, a little above the Old Red strata). Much higher up in the same section (just below the fishers' houses at Cockburnspath Cove) are fossiliferous beds, which I consider the equivalents of the Burdiehouse strata. The Encrinal Limestone is still a long way above these beds. The intervening strata may be seen along the coast, where, however, they are not so well developed as in the Merse.

In the course of Langton burn, between the bridge and Langton wood, a series of grey and reddish brown shales are seen associated with Sandstones and beds of a sort of Cornstone or impure concretionary calcareous rock. These strata contain no fossils, but from their position and mineral character, are evidently the connecting links between the Carboniferous and Devonian Systems. The true Old Red (upper part) appears farther up the burn.

A fault or faults of small extent probably existed near Langton bridge, and a fault of great extent has produced a 'boulversement' of the Old Red above Langton wood. This fault runs along the east side of the Hardens by Raecleugh, and along the course of the burn to Choicelee, etc. Nevertheless I think the whole series of strata between the true Old Red, and the beds below Langton Bridge may be made out with tolerable completeness by comparing other sections within a range of a few miles from Dunse.

Believe me, Yours very sincerely,

WM. STEVENSON.

But the most important of Mr Stevenson's studies in geology is a series of MS notes, consisting of more than two hundred and thirty closely written folio pages, begun in 1841 and continued till 1855 under the title "Materials for the Geology of Berwickshire." They are of great value, and bear the fullest and most satisfactory evidence of his rare accomplishments as a geologist.

I say this as one well acquainted with the localities and phenomena referred to, and as having often felt the difficulties connected with attempts to determine and explain the relations of the Lammermuir and Sub-Lammermuir deposits.

Associated with these notes, and not unfrequently mixed up with them, are others made in the North and West Highlands, Fife, Forfar, Perth, Aberdeen, Edinburgh, Linlithgow, Roxburgh, Peebles and Selkirk Shires, in which his skill as a student of physical geology—descriptive and dynamical—is equally conspicuous. In these notes, moreover, a good deal occurs which indicates that Mr Stevenson might have done good work in archæology had his mind become sufficiently interested in it. The qualities shown when he had to describe superficial deposits would have been most useful in this department. But I am not acquainted with any paper on Berwickshire Antiquities by him except the "Notice of a Cist found at Broomhill, Dunse," in the Proceedings for 1863. In 1864 he delivered an Address to the Club as President. In the proceedings of the Society of Antiquaries of Scotland for 1871, intimation is made of the presentation by Mr Stevenson of a Bronze Palstave found with a sandstone Celt on the farm of Windshiel.

My chief desire in the foregoing remarks was to put on record the names at least of Mr Stevenson's principal contributions to science. The outline is necessarily meagre and bald. Before closing, I refer briefly to the worker himself. In his ripe boyhood I saw a good deal of Mr Stevenson. Occasionally on summer mornings, between 5 and 7 o'clock, he joined Stephen Hislop, myself, and others in our walks to the "*Verter Well*;"—going by *Todlaw* and returning by *Grueldykes* and "*The Style*." The tastes of the little company were mostly towards science. The eyes of one wandered among wayside trees and flowers and grasses, of another among beasts and birds, and butterflies and beetles, while Stevenson's scanned the sky or looked in the streamlet's course for his favourite "*büllets*" (pebbles). He was about 5 feet 6 in height; as a lad he was slender of build with a slightly forward stoop, and even then with student shoulders; long arms and fingers; light hair, greyish blue eyes, thinnish lips; and mouth around which happy thoughts and quiet humour seemed ever lingering. When I left Berwickshire for the University we fell out of acquaintanceship, but I continued to take great interest in the reports of his work.

Mr Stevenson's father was a working cooper in Dunse, where his family, for several generations, were well to do feuars. William was early apprenticed to Mr R. Young, draper. At the close of his apprenticeship he sought earnestly for a situation as a draper's assistant, but, after six weary weeks of unsuccessful application at shops in Edinburgh and Glasgow, he had to return home. As he had never taken heartily to shop work, he willingly embraced an offer of employment in the office of Mr Allan Purves, factor on Dunse Castle Estates, where he continued till 1848. He had for several years been well known beyond his native county. The recognised leaders in the departments of science to which he was especially devoted—Meteorology and Geology—had cordially acknowledged the value of his work. In such circumstances it was not unreasonable to begin to cherish hopes of work more congenial than the daily routine of that in which he was engaged. He thought, for example, that he might be of some service on the staff of the Geological Survey, and ventured to say so to Murchison, who mentioned his name and claims to Sir Henry T. De la Beche. But nothing came of this or other applications. Deferred hope brought its wonted sickness of heart, and he resolved to spend the rest of his days in America, where he believed merit and not interest or patronage determined success. The results of this resolution are described by himself, in a peculiarly graphic MS, entitled "*Stevenson's Voyages: Or Notes of three unsuccessful attempts to reach New York: Spring, 1848.*" The shrewd observations, strong common sense, and picturesque details of scenes and incidents which occur in this narrative will strike most. But it abounds also with illustrations of aspects of individuality, which I had not hitherto associated with Mr Stevenson. He had reached the age at which all the powers of man—moral and intellectual—seek their highest expression—powers, many of which, in the case of those studying for, or just entered on, learned professions, are repressed by the very seriousness of that earnestness of hope that springs from labour as earnest. But Stevenson at this time does not seem to have had much, if any, of the thoughtful sadness which Albert Durer has so finally expressed in his great science-picture "*Melancholia*," as usually a fruit of persistent intellectual work. There is wit in "*The Voyages*" but it is not genial. There is humour but it is not quiet. It is worth noting that the period of Mr Stevenson's greatest intellectual activity was the decade ending 1853—that is

between the age of twenty three and thirty three; a somewhat early development, when we remember that most of the really substantial and lasting work in literature and science is done after that age. Towards the close of his life the business appointments which he held in connection with town and country work seem to have made it impossible to devote much time to science. But he never fell short of the description of himself given, when a comparatively young man, on the occasion of receiving a valuable volume from his town's folk; He said—"I have always felt, as I think every one must feel in such circumstances, that the pleasure connected with such labours is, in itself, irrespective of any other recognition or reward, far more than an adequate compensation for any trouble which their performance may involve. The pleasure which one feels in doing what he concientiously believes to be right, is assuredly one of the highest which a man can enjoy in this state of existence. Convinced of the truth of this, I trust I shall be ever ready, so far as my humble abilities and opportunities admit, to take part in any work which I may consider beneficial, either to the interests of my townsmen or to those of the world at large." The re-perusal of the papers in meteorology and geology named above, together with the opportunity I have now had of carefully examining the unpublished MSS, also referred to above, have more than confirmed the high estimate I had previously formed of William Stevenson as a scientific worker.

Memoir of Dr. James Robson-Scott.

DR. ROBSON SCOTT was the eldest son of Mr John Robson, tenant in Belford on Bowmont Water, and grandson of James Robson, Esq., of Samieston, whose name has long been familiar to Border farmers and stockholders as the pioneer in the improvement of the Cheviot breed of sheep. Dr. Scott was born at Belford in 1814, and after a home education entered the literary classes of the Edinburgh University—subsequently he chose medicine as a profession, and after graduating in Edinburgh in 1836 obtained an appointment in the Medical Service of the East Indian Company at Madras. After serving some time in that presidency, he accompanied his regiment to Singa-

pore and subsequently to China towards the conclusion of the War with that country. On returning to Madras he had for two years the medical charge at the Neilgherry Hills, and then took furlough to Europe. He was appointed to a Cavalry regiment on his return to India, an appointment which he held until he left the Service in 1858. By his brother officers Dr. Scott was highly esteemed, and he was, from geniality of temper and disposition, a general favourite with all classes in the public service. In the death of a maternal uncle, he inherited the estate of Ashtrees in Roxburghshire and took the additional patronymic name of Scott. He was Commissioner of Supply and Justice of Peace for Roxburghshire, and being fond of Archæological pursuits was associated with Sir Walter Elliot, of Wolfelee, in the investigation of old county records. Dr. Scott had from his youth an ardent attachment to Natural History, especially to Ornithology and Botany. In 1868 he became a member of the Berwickshire Naturalists' Club, and to its Transactions he occasionally contributed; in 1873 he was appointed its President and delivered the annual address at Kelso in 1874. Dr. Scott was also an office-bearer in the Scottish Meteorological Society, in which he took great interest. He died after a very brief illness at his brother's house, Newton near Jedburgh, on the 22nd September, 1883, and was buried with his forefathers in the churchyard of Hownam. He is survived by his widow, two married daughters, and one son, an officer in the 3rd Hussars.

F. DOUGLAS.

Mungo Park. By H. S. ANDERSON, M.D., Selkirk.

As requested by the Members of the Berwickshire Naturalists' Club, I venture to give a sketch of the celebrated African traveller, Mungo Park, who, by his explorations in the interior of Africa, added much to our knowledge not only of the physical, but also of the moral geography of that very interesting but then almost unknown country. He was the discoverer of the course of the Niger—in truth the pioneer of African travel.

Park, as all know who have read his very interesting Journal, had to encounter the greatest difficulties and dangers, and even a long and cruel imprisonment; but all these he overcame by a rare combination of prudence, temper, and perseverance, and his simple but beautiful narrative is almost like a romance.

Mungo Park is a son of "The Forest," having been born and brought up at Foulshiel on the banks of the Yarrow, opposite Newark. He was educated as a surgeon, and was the apprentice of my grandfather Dr. Anderson of Selkirk, whose daughter he afterwards married. He went first to India, but returned soon, and being strongly impressed with a desire to travel and explore unknown regions, he selected Africa, and set out alone to that country in 1795, under the auspices of the African Association. He landed on the West Coast of Africa near the mouth of the Gambia, and then started eastward. At first he encountered considerable difficulties and opposition, but the natives were on the whole very friendly, till he came among Moors by whom he was taken prisoner and brutally treated. But he escaped, though at the greatest risk, and persevered on his journey, still proceeding eastward, until at last he reached the banks of the Niger. With what infinite pleasure he must have gazed on the great object of his mission, the long looked for majestic Niger glittering in the sun, as broad as the Thames and flowing to the east. After this he still travelled eastward, following the Niger in hopes of determining its course, and finding its termination in the ocean; but again he fell in with cruel and inhospitable natives, suffered much from hunger and thirst, and was often in the greatest danger of his life, being stripped naked and left entirely without food.

Reduced by fever, and destitute of the means of procuring the mere necessaries of life, he was at last driven to abandon his enterprise, and resolved, but with the deepest regret, to retrace his steps homewards. After again encountering great dangers and difficulties he gained the coast, where he fell in with an American vessel, and reached England by way of the West Indies, having been absent two years and seven months.

In 1799 he published the *Journal of his Travels*, which was received with much favour by the public, and is still a favourite book.

After his return to this country he married and settled in Peebles as a medical practitioner, but the drudgery of a country doctor's life, and the long dreary rides up Tweedsmoor and over Tala Linns to Meggat head were more irksome to him than the dangers of Africa; so he resolved once more to return there, and make out the course and termination of the Niger.

Accordingly under the auspices of the British Government,

accompanied by several friends, amongst whom were his own brother-in-law Dr. Alexander Anderson and Mr George Scott of Singlie, and with a band of 30 soldiers, he started on his second Mission to Africa in January, 1805. He again set out for the Niger, which he reached in about six months; but the journey being made in the rainy and unhealthy season, most of the soldiers died as also his two friends Anderson and Scott. With the few left he embarked on the long looked for river, but was soon attacked by natives, and after defending himself nobly was either killed or drowned.

His fate was for some time very uncertain, and though a tolerably correct account came to this country, his widow and family longed and hoped for his return for many a day.

Thus perished Mungo Park, a hero of "The Forest," and a hero to all who have read his Journal; one whose enterprising spirit, calm fortitude and unshaken perseverance few travellers have equalled, none surpassed. His experience and example may have stimulated and encouraged others. He led the van, and although many have since followed, and great strides have been made in our knowledge of the great Continent of Africa since his day, still much is due to Mungo Park; and the inhabitants of "The Forest" and of Selkirk have shown their appreciation of the man, by the handsome monument erected in their street to his memory.

There is in my possession an interesting relic of Park's second African Expedition. It is a copy of Isaac Watts' "Psalms and Hymns," which belonged to Alexander Anderson, my uncle, who accompanied his brother-in-law Park in his second journey, but died ere the party had proceeded far into the interior. The traveller had preserved this volume after the death of his friend, for it was found in the boat in which Park was killed, and was kept in the hut of an African chief, hung up wrapped in yellow muslin as a charm, "because it belonged to the good white man." Richard Landor brought it home and gave it to Mr Nutland, a literary friend in London. The relic was shown by Mr Nutland to Hogg the Ettrick Shepherd, who remarked "How much his friend Dr. Anderson of Selkirk would value that book." Mr Nutland readily said he would be happy to restore it to the family, and at once did so. The volume is a small duodecimo, published in 1800 by C. Whittingham, London, in which Watts' Psalms of David, imitated in the language of the New Testament,

are bound up with his Hymns and Spiritual Songs, in three books occupying 540 pages. On the fly-leaf the owner's name appears "Alexander Anderson," General Military Hospital, Gosport, Augt. 30, 1804.

The waters of the Niger have left their traces on the brown and stained pages, and almost obliterated the gilding from the edges of the leaves; but the dilapidated state of the little volume makes it all the more fitting a memento of the sad fate that overtook its owner, and then his more distinguished friend and leader. To both of them it probably brought help and solace when parted from their fellow Christians, and contending with the difficulties of African travel; for Anderson was a thoroughly religious man, and the Christian faith of Park was strong and sincere.

A most gratuitous attack has recently been made on the character of Mungo Park by an eminent and eloquent writer, Mr Ruskin, in "Fors Clavigera," in having questioned his belief and kindness as a husband and head of a family. Fortunately there exist documents which attest Park's religious principles, far more satisfactorily than his preservation and probable use of the little volume I have referred to; and a letter to his wife which has been preserved exhibits him in the character of a loving and chivalrous husband.

I append a letter written by Park on the eve of his departure for India, to the same attached friend who accompanied him to Africa, and perished ere the Niger was reached, viz. Dr. Alexander Anderson.

The letter to his wife is almost too sacred for the public eye, and but for Mr Ruskin's extraordinary and inexcusable explosion, I doubt whether I should have printed it. It was written while Park was in London, negotiating with the Government about a proposed exploration of New South Wales, which never came to any practical result. The letter speaks for itself, and completely refutes the baseless aspersions of Mr Ruskin.

Extract of letter of Mungo Park to his brother-in-law, Dr. Alexr. Anderson.
London Feby. 9th, 1793.

I have now reached that height that I can behold the tumults of nations with indifference, confident that the reins of events are in our Father's hands. May you and I (not like the stubborn mule, but like the weaning child) obey his hand that after all the troubles of this dark world in which we are truly strangers, we may, through the wonders of atonement reach a far greater and an exceeding weight of glory. I wish you may be enabled to look upon the

day of your departure with the same resignation that I do on mine. My hope is now approaching to a certainty. If I be deceived, may God alone put me right, for I wd rather die in the delusion than wake to all the joys of earth. May the Holy Spirit dwell for ever in yr heart, my dear friend, and if I never see my native land again may I rather see the green sod on yr grave than see you anything but a Christian.

Farewell.

(Signed)

MUNGO PARK.

To his Wife.

London, March 12th, 1801.

My lovely Ailie,

Nothing gives me more pleasure than to write to you, and the reason why I delayed it a day last time, was to get some money to send you wh I hope you have received. You say you are wishing to spend a note upon yourself; my sweet Ailie, you may be sure I approve of it, what is mine is yours, and I receive much pleasure from yr goodness in consulting me abt such a trifle. I wish I had thousands to give you but I know that my Ella will be contented with what we have, and we shall live in the hope of seeing better days. I long very much to be with you my love, and I was in great hopes of having things settled before now, but "Sir Joseph" is ill and I can do nothing till he recovers.

I am happy to know you will go to New South Wales with me, my sweet wife you are everything that I could desire, and wherever we go, you may be sure of one thing, that I shall always love you. Whenever I have fixed on this or any other situation I shall write to you, in the meantime let nobody know till things are settled, as there is much between the cup and the lip.

My lovely Ailie, you are constantly in my thoughts I am tired of this place but cannot lose the present opportunity of doing something for our advantage. When that is accomplished I shall not lose one moment. My Darling, when we meet I shall be the happiest man on earth. I had a letter fr my brother Adam on Monday, by this time he has sailed for India. Write soon for I count the days till I hear fr you, my lovely Ailie.

Yrs ever,

(Signed)

MUNGO PARK.

Notice of an Urn found at Manderston, Berwickshire. By
JOHN TURNBULL, Esq., W.S., F.S.A. Scot. Plate I. Fig. 1.

IN the Parish of Manderston about 150 yards south of the west gate is a somewhat abrupt rise in the ground of 10 or 12 feet. In digging material in the early part of July, 1882, from this slope to fill up a hollow in the approach to the house, and just on the top of the slope, a Cist containing an Urn was laid open. The workman's pick had passed between the stones forming the Cist—tore away the stone at the east end of it, and

broke a hole in the Urn which however otherwise remains entire. The Cist lies approximately east and west. It is from 39 to 40 inches long, 26 to 28 broad, and 16 deep. A single stone forms each side and end, and the cover consisted also of a single stone—all of them red sandstone slabs from 6 to 8 inches thick. It is difficult to say whether or not they have been dressed in any way. There was no stone for the floor. The cover was about 6 inches below the surface of the ground.

In the Cist were found an urn and some fragments of human bones much decayed—among them a piece of the skull. The urn must have stood near the east end of the Cist, otherwise it could not have been broken by the pick which tore away the east end wall. It is $7\frac{1}{4}$ inches high by 6 inches across the mouth. It is of what is called the drinking cup type, and is ornamented by incised lines encircling it forming six bands—three of the spaces between these bands being completely filled by oblique incised lines; and the other spaces being ornamented by smaller markings along-side the bands.

[I extract a few particulars from another account by Mr Wm. Fairbairn: “The urn was found about 500 yards to the west of Manderston House, and about 70 yards from a very fine spring of water which at present supplies the mansion-house. The adjacent ground runs with a gentle slope both to the north and south, and it was on what appears to be the highest part of the ridge, consisting chiefly of gravel and sand, that the cist was found, and where I may say it still stands. The circumference of the urn at top is $19\frac{1}{4}$ inches; at its most contracted part above the middle 17 inches; at the greatest girth below the middle $19\frac{1}{2}$ inches; at the base $12\frac{1}{2}$ inches. Parts of the skull found along with it are $\frac{5}{16}$ of an inch in thickness. One of the side-stones of the cist measures 3 feet and the other 3 feet 6 inches. These with one of the end stones still remain fixed in the earth. The stones are of the roughest description, and no care has been taken to square or dress them in any way. The depth of the stones may be said to be about two feet; and if the cavity has at any time been deeper, it must have been made so by scooping out the bottom.” The engraving is from a drawing by Mr Turnbull.—J. H.]

On an Urn found on the Galla-law near Luffness, East Lothian. By JAMES HARDY. Plate I. fig. 2.

At the Aberlady meeting Mr George H. Stevens, Gullane, exhibited a small earthenware Urn, discovered January, 1880, by John Purves, a workman, in a quarry on the rise of Luffness Links, towards Gullane Hill. It is what is called a "food vessel," intended to hold provisions for the spirit-body of the inmate of that particular grave in the next world. It resembles a small flower pot. Its height is $4\frac{3}{4}$ inches, diameter across the top $5\frac{1}{2}$ inches, and at the bottom 3 inches. It has a well marked lip, ornamented with 4 circular lines of impressions of plaited thong or rush; the ornament of the upper part of the urn on the outside consists of 10 similar lines, and then a well-marked smooth rib; beneath this, on the diminishing portion, is a band of upright strokes, which are from $\frac{1}{2}$ to $\frac{7}{8}$ of an inch in length.

In the same locality Mr Stevens picked up a fragment of a diminutive vessel of Samian ware, showing intercourse with Roman occupants. He also found several bits of a cinerary urn. On the same rocky "knowe"—the "Galla-law"—there were found about eighty years ago, gold ornaments, including a bracelet "of the appearance of the brass handles of an old-fashioned chest of drawers," i.e. a Penannular gold ring or armlet. Mr Stevens writes that "to the north-east of the quarry is a spring of water called 'Brand's Well,' the only one on the hill; and possibly a Holy Well endowed at Gullane by David I., when he endowed one at Garvald. Still more to the north-east on the same line, is a large number of boulders scattered on the hill-side which may have been a sacerdotal and a judicial circle, or Mote-hill."

There are likewise various other examples of ancient interments and reminders of old British occupancy on that line of coast. The most elaborately ornamented sepulchral urn hitherto discovered in North Britain was obtained in 1802, at Luffness on the estate of George W. Hope, Esq., and was long kept at Luffness, till it was irretrievably fractured by the mis-management of a servant. It had fortunately been figured and described in the "Archæological Journal," vol. xv., p. 287. There is also a figure of it in the illustrated Catalogue of the Meeting of the Archæological Institute, held in Edinburgh, July, 1856, p. 37. The height of the original was $5\frac{1}{2}$ inches; diameter of the

mouth $6\frac{1}{2}$ inches. "A few years ago," writes Mr Stevens, "about 300 yards to the east of Luffness House, in a gravel bank, the skeleton of a human being was found, buried and enclosed in a stone cist, not unlike a "box-drain," of 1 foot 6 inches square, and fully 6 feet long. The size of the leg bones and the cist indicated a man of large size. The gravel bank appeared to be an ancient sea beach on the 25 feet contour line of the Trigonometrical Survey."

On the west of Aberlady there are other traces of the old inhabitants. Mr Congalton, Aberlady, states that when he was a youth there were remains of a fine camp, in a field near Craigielaw, part of which was then entire. This was dismantled fifty years ago. Farther again to the N.W. there have occurred numerous relics of the old dwellers on these shores. Should these again be disturbed by quarrying, it is hoped they will be attended to, and not lost. "All along the shore," says the Rev. Dr. Neil Roy, writing 1791, "from Aberlady to Longniddry are a great many stone graves, all of them that have been opened containing human bones: particularly in Gosford Links they are laid almost as thick as in a churchyard, and fill a considerable space of ground. It is remarkable that many of them lie nearly south and north. In searching lately for a stone quarry there were found in a hole, enclosed with stones, about 30 inches by 18, the bones of a human body, and a small well-formed tessellated urn of a very light blue colour. It is in the custody of the Earl of Wemyss. At a small distance from these graves are two pretty large tumuli." (Trans. Soc. of Antiq. of Scotland, i., p. 517).

On the Black Dyke and some British Camps in the west of Berwickshire. By JAMES TAIT, Blainslie.

I. THE BLACK DYKE.

A few years ago the Black Dyke could be spoken of as an existing memorial of antiquity: now it is only in one small part that it can be examined with anything like critical curiosity. Its effacement has been caused by the extension of agricultural improvements over the moorlands where the Black Dyke ran. The

Black Dyke, though bearing such a name, was not a mere Dyke and nothing more ; it was also a road,* and was in fact always spoken of by people in its vicinity as an old Roman Road. It had been formed by digging a deep trench on both sides of the proposed line of way, and then throwing the earth thus excavated into the inside of the trenches, thus forming a way high and dry. Its width along its course seems to have been rather more than twelve feet, and its height seems to have varied, sometimes rising four feet above the level of the adjacent ground.

The first trace of the Black Dyke in its northern part was on the northern extremity of Boon Moor, in the Parish of Legerwood, where some years ago, before this moor was brought under cultivation, the course of the Black Dyke could be easily discerned running southwards, and passing on the eastern side of two camps fortified by earthen ramparts. These have been levelled, and the earth of which they were composed, scattered over the adjoining ground. Pursuing its way southward, seldom however keeping a straight line, but bending to the right or left as the ground required, it passed Corsbie, and then proceeded up the ridge or spur that runs out from Legerwood Black Hill. This hill which is on the west side of the Black Dyke, is of considerable elevation, and its highest portion had been used by the Ancient Britons as a place of strength : The hill being steep on all sides but one, the Britons had contented themselves with raising a single earthen rampart round their camp. Nothing can be said about the size of this rampart as it has been quite levelled in the course of cultivation. Within the last two years several spindle whorls have been picked up inside the lines of this camp. Legerwood Black Hill is the northern face of the great plateau, covering over 3,000 acres of ground which lies between Earlstoun and Legerwood. Within the limits of this plateau were several camps, one of which situated a mile north from Huntshaw appears to have been of Roman construction. The Earlaw or ploughed hill seems to have been the name of this great table land, since a valley at its base bears the name of the " Earlaw Haugh," and it is quite a possibility that the town of Earlstoun has taken its name from this Earlaw. The local pronunciation of the names of this haugh and the parish of Earlstoun favours this etymology.

* In this respect the Black Dyke resembled the Wansdyke, the great earthwork that separated Mercia from Wessex and is believed to have been used as a Road.

Returning to the Black Dyke, it was next found running down the Black Hill spur in the direction of West Morriston. All along this part of its course stone coffins have been turned up by the plough in former times; indeed, occasional spots are spoken of by old residents as ancient burying grounds. This seems to favour that etymology of "Legerwood" which explains it as "Deadmen's Wood."

The Black Dyke, passing on its right an old camp and shortly after on its left a great gravelly knowe called "Kelso Hill," now removed, left the farm of West Morriston and the Parish of Legerwood, and entered the farm of Purveshaugh, which is in the Parish of Earlstoun. It passed at some distance west from the steading of Purveshaugh, having on its right side the old farm house of Standingstone, which has taken its name from a "Standingstone" standing in a corner of the steading. This stone has no marks of any description, and looks westward to a large circular camp of the Ancient Britons—a "round about," situated on an eminence of moderate height. The Black Dyke passed on through the farm of Purveshaugh, crossing a field where, some years ago, a labourer while cutting a drain, turned up a horn containing about 150 silver coins mostly of the reign of Edward I. of England. The Black Dyke next crossed the most easterly field on the farm of Georgefield, from which it proceeds on towards a moor on the farm of Yarlside, where for about half a mile it is in its best state, and where any one who wishes to see the small remains of the Black Dyke must go. In all other parts of its course it is at the best no more than faintly discernible, but at this part is given a very fair idea of what the Black Dyke was throughout most of its course within the memory of the present generation. The Black Dyke next proceeded across the farm of Park and entering the Parish of Mertoun, crossed the western part of the farm of Brotherstone, and passed the east end of Redpath Hill, where seems to have been a British Camp.

This farm of Brotherstone takes its name from two standing-stones, standing in a field eastward from the farm steading. These stones are less weather-beaten than most standing-stones and perhaps there is truth in the traditional statement that they are comparatively modern and erected in memory of two brothers who here slew each other. Here is the site of the ancient village of Wrangham, not a stone of which now remains. This village

was the reputed birth-place of St. Cuthbert, the famous Anglo-Saxon saint, and Bishop of Lindisfarne, and here he is said to have spent his early years under the care of a devoted nurse named Kenspid. When he grew older, he is said to have served as a herd boy on the banks of the Leader, and the place of his service has been said to be Cuddyhall, midway between Earls-toun and Lauder. Old Melrose, where St. Cuthbert spent the middle stage of his life, is at a short distance from Wrangham.

Throughout the whole distance of about ten miles, along which we have already traced the Black Dyke, its course has run through fields and across country. It is quite otherwise with the remainder of it. After leaving the farm of Brotherstone, and cutting off a small portion of the farm of Craighouse, it crosses the highway leading from Melrose to Smailholm, and thereafter maintains its existence as a lawful way, fenced by hedges and dykes, and having the traditional reputation of being an old Roman Road. It next proceeds by the east end of Bemersyde Hill in a southern direction, till it reaches the road from Mertoun to St Boswells, and either becomes one with this road, or is not farther traceable. If continued by the Mertoun road to St Boswells, it may have joined the Watling Street, a local name for which is the Weirgate.

II. BRITISH CAMPS.

Returning to our starting point, the northern extremity of Boon Moor, we are there about two miles distant from the Hare-faulds, an Ancient British walled encampment, situated on the farm of Blythe, and at no great distance from the farm steading. Though the camp is now in utter ruin, twenty years ago great part of it was in a state of perfect preservation, and a short account of its former state may not be uninteresting. The camp was of an oval shape, and had been defended by a great stone wall about six feet in thickness on the northern side where it was assailable; on the other sides the wall did not exceed three feet in thickness. The "faulds" rested on the strong exterior outer wall and had their entrances toward the centre of the camp. The measurements of five of these, all on the north side of the camp, were $39\frac{1}{4}$, 57, 30, 60, and 78 feet in circumference. Each of them had behind it in the exterior wall a cell of the exact shape of a draw well. These cells may have been store-rooms for the dwellers in the folds. An old broken down dry-stone

dyke runs through the middle of the camp from west to east, and after leaving the camp its course may be traced towards the steading of Blythe for about 200 yards. The ground on which the dyke runs is above the level of the ground around it, and perhaps is the line of the famous earthwork called Harrit's Dyke which ran from Blythe to Berwick.

A small camp covering half an acre of ground stood a short distance west from the farm house of Blythe, and a strong British encampment covering fully two acres, and defended by three earthen ramparts, lies between Harefaulds and the steading of Thirlstane. It is situated on high ground, and is covered with a young plantation.

About two miles north from the Harefaulds is found a small so-called Druidical Circle, embracing within its circuit rather more than the third part of an acre. The stones of the circle are about forty in number, are all small, of a rough shape, and all apparently in their original position. Traces of hut circles were found on the western side of the Circle, and about seventy-five yards S.E., are standing two large stones near to one another, and formerly there were a great number of broken pieces of stone close around them, the remains possibly of some rude Cromlech.

About two hundred yards east from this Circle is an oval ring enclosing about two acres of ground. The stones used in this ring are of the same size and character as those in the small circle, but placed at much wider intervals, the distance between the stones varying from twenty two to twenty eight yards. This oval ring bears the name of the "Burrastoun Lair," and probably was the Lair or hiding place of the inhabitants of the Burgh town of Lauder, on occasion of a Border Raid, or an English invasion. Other Border towns in like manner seem to have had their lairs or hiding places in times of war and danger; that of Earlstoun was in the How of the Hope on Huntshaw Hill, and the last time it was had recourse to was in 1745, when the villagers fled thither at the coming of some of Prince Charlie's Highlanders, who, however, found them out and despoiled them of their brogues.

The Burrastoun Lair lies at the eastern base of Dabs Hood, one of the most considerable eminences of the Lammermoors. The summit of this hill is fairly level, and about six acres at the highest point are enclosed by strong earthen ramparts. Another

camp enclosing about half an acre of ground, and lying north from it at a distance of a quarter of a mile, may be considered as an outpost of the larger camp.

Another great camp is on the top of the hill behind Longcroft, and encloses about four acres. One striking feature of this camp is the fact that the whole interior space has been sub-divided into smaller camps, each protected by a strong stone wall. The average diameter of these smaller camps is about thirty yards.

South from Longcroft Camp and separated from it by a wide valley is Addingstone Camp. This is much smaller than Longcroft Camp, but the earthen ramparts are of immense size, and in the centre has been a circular enclosure protected by an earthwork about 60 yards in circumference. Addingstone Camp is nearly rectangular in shape.

Another great camp is Black Chesters, situated on a hill within the limits of the farm of Blackburn, rather more than two miles above Lauder, and on the western side of the Leader. As its site has been planted with trees, its area inside the outermost rampart is estimated only at about six acres. Three great earthen ramparts with wide and deep ditches between form the outer fortifications, while parts of the inner area seem to have had separate defences. To increase the security deep pits had been dug at intervals within the camp, and in these cattle and flocks may have been safely penned. A fourth rampart protected this Camp on the west side where it was most open to attack.

These Camps are the best preserved of all the Camps in Lauderdale.

Notes on the late Mr George Tate's Specimens of Lower-Carboniferous Entomostraca from Berwickshire and Northumberland. By T. RUPERT JONES, Esq., F.R.S., F.G.S., &c. (With PLATE II.)

PART I. *Enumeration of the Hand-specimens, with their Localities.*

IN the "Proceedings of the Berwickshire Naturalists' Club," for 1863 (1864), pp. 83-89, there is a "Description of Entomostraca from the Mountain-limestone of Berwickshire and Northumberland" by myself, "With notes on the strata in which they occur, by George Tate, F.G.S., &c." This paper contained descriptions of *Estheria striata* (Münster), var. *Tateana*, Jones (p. 85, fig. 1), and *Candona* (?) *Tateana*, Jones (p. 87, fig. 2), which had already been treated of in the "Monograph of Fossil Estheriæ," Palæontographical Society, 1862; also another Entomostracoon, under the name of *Beyrichia Tatei*, Jones (p. 88, fig. 3.)

I have had much doubt as to the real generic place of this last-mentioned species; and I shall again allude to it in the sequel.

After publishing the description of the Entomostraca above mentioned, the late Mr George Tate, of Alnwick, placed in my hands for examination other specimens from the Lower-Carboniferous Strata of Berwickshire and Northumberland. Various circumstances, however, have prevented my doing justice to them until now; and, although I regret the delay in fulfilling my late friend's wish that these specimens should be fully examined, yet they have had much of my earnest attention from time to time, and I am pleased to think that my friend Mr J. W. Kirkby has favoured me with his notes on some of them.

The hand-specimens confided to my care are marked with letters and localities. I will refer to them under these designations; and, incorporating Mr G. Tate's notes on their geological positions, briefly notice their characters, and add afterwards the descriptions of the new or little-known species occurring in them.

1. A. *Lamberton*. Estherian shale, with *Estheria striata* (Münster), var. *Tateana*, Jones, and *Candona* (?) *Tateana*, Jones; see "Monogr. Foss. Estheriæ," Pal. Soc. 1862, p. 27 and p. 123, where the name of the locality is given as "Lammerton."

2. B. *Alnwick Moor*. Black shale, fine-grained, somewhat carbonaceous and micaceous; low down in the Mountain-lime-

stone group; with *Anthracomya* and fish-scales. Bed-planes covered with casts and impressions of *Beyrichia crinita*, sp. nov. There is also a somewhat crushed *Estheria tenella* (Jordan), in shape like fig. 23, pl. 1, and fig. 5, pl. 5, of the "Monograph Foss. Estheriæ," 1862.

3. C. *Tweedmouth*. A dark-coloured, fine-grained shale, with numerous valves of *Leperditia subrecta* (Portlock) and *L. Scotoburdigalensis** (Hibbert), scattered over some of the planes of bedding, mostly small, crushed, half-imbedded, and otherwise obscured. This is very similar to some of the Carboniferous shales of Ireland, described in the "Ann. Mag. Nat. Hist." for July, 1866, pp. 42-50. There are also two or three specimens of a *Kirkbya* in this Tweedmouth shale. Mr Kirkby has found a similar form in the Calciferous-sandstone series of Fifeshire (equivalent to the Tuedian group of Berwickshire). We are inclined to refer this *Kirkbya* to a species allied to M'Coy's "*Cythere costata*" (see "Ann. Mag. N. H.," July, 1866, p. 43), but somewhat different in the arrangement of its ridges, and known to us as *K. spiralis*, J. & K. MS.

This shale contains some fish-remains; and it seems to be low down in the Mountain-limestone group, nearly in the same zone as the shale from Alnwick Moor with *Beyrichia crinita*.

4. D. *Quarter-of-a-mile north of Denwick Lane*. This is a limestone containing some small and obscure *Leperditia* (?); from near the middle of the M.-L. group.

5. E. *Cawlishes* [*Cawledge*], near *Alnwick*. A bluish-grey fossiliferous shale; from near the middle of the M.-L. group, and containing *Leperditia Scotoburdigalensis*, small encrinital joints, &c.

6. F. *No locality*. Limestone with *Productus*, from near the middle of the M.-L. group. No Entomostraca.

7. G. *Bellingham*. Fragment of red ironstone, from the lower part of the M.-L. group. This contains a varietal form of *Carbonia fabulina*, J. & K., which species is abundant in the Lower and Upper Carboniferous strata of Scotland, and in the Upper Carboniferous (Coal-measures) of England and Wales.†

* See "Ann. Mag. N. H." of May, 1865, and July, 1866, for the arrangement of these two species under *Leperditia* by Messrs. Jones and Kirkby.

† "Trans. Geol. Soc. Glasgow," vol. iv., 1867, p. 213; and "Ann. Mag. N. H." ser. 5, vol. iv., 1879, p. 30.

8. H. *Howick*. Bluish-grey, shaley, argillaceous limestone with *Naticopsis* and other fossils. From the middle of the M.-L. group. Some obscure ovate *Cytherella* (?).

9. K. *Shittleheugh, Reedwater, Northumberland*. Dark-shale, with some small, obscure, crushed, and nearly semicircular valves of *L. Scotoburdigalensis* (?). From the lower part of the M.-L. group.

10. L. *Howick*. Hard, black, carbonaceous shale, with *Aviculopecten*, and small obscure casts of *L. Scotoburdigalensis* (?).

11. M. *Lamberton*. Arenaceous shale, dark-grey and hard; from a few yards beneath the lowest bed of the section given at page 27 of the "Monogr. Foss. Estheriæ," 1862. It contains *Spirifer*, &c. A very interesting little Entomostracon occurs here (four or five specimens have been found) which has the characters of a minute *Cytherella*. I shall record it as *Cytherella Tatei*, in memory of its discoverer.

12. N. *Howick*. Soft, black, carbonaceous shale, with a fragment of *Aviculopecten*, and obscure casts of *L. Scotoburdigalensis* (?).

13. O. *Near Cornhill*. Impure limestone with *Anthracomya* (?) and *Microconchus*. Near the same zone *Araucarites*, G. Tate, "Fossil Flora of the Mountain-limestone Formation of the Eastern Borders," p. 298, occurs. No Entomostracon.

14. Q. *Cockburnspath, South of*. Very impure limestone, or, rather, a brownish-grey micaceous sandstone, cemented with the calcareous Entomostracan fragments. It belongs to the lower part of the Tuedian* group, and is like that marked "W," but not so coarse. *L. Scotoburdigalensis* abounds in it. In a letter Mr Tate described the specimen as "A very impure limestone near the base of the Tuedian group, on the Berwickshire coast, about one mile south of Cockburnspath. Of this bed there are three feet; and above it a conglomerate of three feet, with the same fossils. Besides Entomostraca these beds contain fish remains and plants; among the latter is *Stigmaria ficoides*."

* See "The Berwickshire M.-L. Fauna, &c." in the "Proceed. Berwicksh. Nat. Club," vol. iv, p. 151; and "Geology of Northumberland and Durham" in the "Nat. Hist. Trans. Northurb. and Durh.," 1876, pp. 8 and 9. In a letter dated October 8, 1861, Mr G. Tate referred to the group of strata called "Tuedian" by him, as being "separated from the Mountain-limestone," and as being "seen chiefly in Berwickshire, on the Tweed and Whiteadder, as well as on the coast. They occur too in Northumberland. My last discovery of them was at Akeld, west of Wooler, where they are tilted up against the Cheviot porphyry."

15. R. *Leet near Coldstream.* Grey Tuedian shale, with *L. Scotoburdigalensis* (common), and two specimens of a *Cythere*, somewhat like *C. Jonesiana**, Kirkby, which is well known from Permian strata; and to which several specimens of *Cythere* from the Carboniferous Limestone of England and Scotland approach very closely in form. As, however, it is a new species I call it *C. Kirkbyana*.

16. S. *Fireburn on Tweed.* Dark-grey shale, somewhat micaceous. Tuedian. *L. Scotoburdigalensis*.

17. T. *Kenebs on the Whiteadder near Dunse.* Grey Tuedian shale, with *Anthracomya* (?) and *L. Scotoburdigalensis*.

18. V. *Tweed two miles above Kelso.* Light-grey micaceous shale (Tuedian), with broken valves of *L. Scotoburdigalensis* (?).

18. W. *Edington Mill, Whiteadder.* Coarse micaceous and felspathic sandstone, cemented with the calcareous matter of Entomostracan valves. Tuedian. *L. Scotoburdigalensis* abundant, shewing muscle-spot and interiors.

20. X. *Burnmouth on the Berwickshire Coast.* Grey micaceous shale, with *Anthracomya*. Tuedian group. *L. Scotoburdigalensis*.

21. Z. *Hutton, Hutton Hall, below Hutton Mill, and Hutton Mill, on the Whiteadder.* Grey micaceous fossiliferous Tuedian shale, with obscure casts and broken valves of *Leperditia Scotoburdigalensis*.

PART II. *Description of the Lower-Carboniferous Entomostraca collected by the late Mr George Tate, F.G.S.*

1. CANDONA (?) TATEANA, Jones.

"Monogr. Foss. Estheriæ, Pal. Soc.," 1862, p. 123, pl. v., f. 15; and "Proceed. Berwicksh. Nat. Club," vol. v., 1864, p. 87, woodcut, fig. 2.

I have nothing to add to the description formerly given of this rather obscure species.

2. BERNIX TATEI, Jones.

Pl. II., fig. 5 (Prof. Lebour's); figs. 6a, 6b, 6c (Mr G. Tate's). *Beyrichia Tatei*, Jones, "Proceed. Berwicksh. Nat. Club," vol. v., 1864, pp. 87-89; woodcut, fig. 3.

I have already (page 313) alluded to my doubts as to the generic alliance of this species. At first (*op. cit.* p. 88) I compared it with some small so-called "*Beyrichiæ* (from Canada),

* G. Tate's "History of Alnwick" vol. ii., 1869, p. 45.

figured and described in the 'Ann. Mag. N. H.' ser. 3, vol. 1., p. 244, pl. 9, in which a simple furrow and a tendency to a Leperditia-like form are characteristic." These were referred by Dr. Holl and myself in 1865 ("Ann. Mag. N. H.," ser. 3, vol. xvi, p, 417) to the genus *Primitia*; but I do not wish to transfer Mr Tate's little fossil to the last-mentioned genus for several reasons.

In the first place, the dorsal line in my woodcut, fig. 3, p. 88, ends too sharply at the narrower (posterior?) portion of the valve,—giving the valve too much of a Leperditoid appearance; in fact, the specimens have a less pronounced hinge-line, and less oblong valves (that is, with less equal ends), than the figure shews. Thus they now appear to me to be much less Leperditoid, and much more Cytheroid, that is, ovate-oblong, with the anterior portion broader than the posterior, and the dorsal much straighter than the ventral margin; the dorsal line, also, falls into its anterior slope (or stops at the front hinge-joint) at about a fourth of the length of the valve from the broadest end, and loses its straightness more imperceptibly near the hinder end of the valve. The transverse sulcus impressed on the mid-dorsal region of each valve is not, however, known in recent *Cytheræ*; but it is characteristic of *Limnocythere*, and occurs also in some other recent Entomostracans of estuarine or freshwater habitats,—namely *Cyprideis* (*Cytheridea*), and in one *Cypris* (*C. gibba*, Ramdohr). These dorso-sulcate valves of Cyprids and Cytherids exhibit also the general ovate-oblong outline described above as that shewn by the fossil specimens under notice.

Thus, then, our fossil specimens are neither *Beyrichiæ* nor *Primitiæ**; nor can we regard them as belonging to *Cythere*.

Placed with its anterior (broadest) end upwards (as usual in depicting *Cythere* and its allies), the so-called "*Beyrichia*" *Tatei* reminds us of some existing forms of *Cypris*, *Cyprideis*, and *Limnocythere*; and it corresponds with them in appearance far better than it agrees with any *Beyrichian* form, and even better than with the *Primitiæ* to which I once thought it might be assimilated. Nevertheless it differs from all in some essential particulars; and, though it may have some relationship with the *freshwater* and *brackish Limnocythere* and other dorso-sulcate forms above mentioned, yet the apparent alliance is not close enough to allow of

* I mentioned this as a likely collocation in the "Ann. Mag. N.H." November 1882, p. 359.

its being placed generically with any of them.

With my new views of its alliance, it is now described as having a moderately convex, bean-shaped carapace, with sub-oblong, equal valves, broader (higher) at one end (anterior) than at the other. The largest carapace is 1·5 millimetre long, and the width (height) of the valves is more than half the length by $\frac{1}{2}$ of the length. Both ends are rounded, but the large curve of the anterior margin is slightly flattened above in front of the hinge-line; and the hinder curve is slightly compressed at its lower half. Dorsal border straight along the hinge-line, which extends from a fifth of the length of the valve from the posterior, to nearly a third of the valve's length from the front. The surface is smooth to the eye, but, when magnified, shows a radiating reticulation, which varies in intensity in different individuals; it is also impressed with a shallow furrow in the middle third of the dorsal region, reaching to the centre of the valve; and it bears a small submedial tubercle in front of the sulcus, accompanied by some small irregular depressions of the surface; seen edgewise the carapace has a long, narrow, oval shape, with sharp ends; end-wise it is subovate. The radiate ornament on the valves from Northumberland reminds us of a similar marking sometimes visible on the outside of *Leperditia* (*L. arctica*), and always on the inside or cast. But the broad, definite, central muscle-spot and the escutcheoned eye-spot of *Leperditia* are both wanting; and the dorsal furrow, though present in *Primitia*, is not a Leperditian feature.

A coarse radiate reticulation is present in the Silurian *Beyrichia clathrata*, Jones, from Beechey Island, but the true Beyrichian furrows and lobe distinguish this form.

In some respects *Carbonia** seems to be a near ally of the form under notice; but it is not dorso-sulcate. Some of the *Carbonie* have the submedial tubercle, and an external sculpturing; but the latter appears as longitudinal striæ † or simple reticulation ‡.

In *Carbonia* the smallest end is taken for the anterior, and the right valve is larger than the left, the dorsal line convex and the ventral nearly straight. In the specimens before us the largest

* "Geol. Mag." vol. VII., 1870, p. 218, pl. 9, figs. 4—10; and "Ann. Mag. N.H." ser. 5, vol. VI., 1879, p. 30, pls. 2 and 3.

† "Geol. Mag." *loc. cit.* figs. 4, 8, 10.

‡ "Ann. M. N. H." *loc. cit.* pl. 2, figs. 9, 10, and pl. 3, fig. 8.

end is indicated as the anterior by its relation to what appears to be the projection of the front hinge-joint, as usual in many Cytherids and Cyprids.

Not agreeing, then, with any known genus, this little Ostracod from Brunton, Northumberland, requires a nominal group to be determined for it; and, known only as occurring in the Bernician* system, it may be termed *Bernix*.

Its habitat was either lacustrine or estuarine, for the specimens are found in a carbonaceous and pyritous shale, that is, a mud charged with vegetable and other organic matter, sulphur, and iron.

Bernix Tatei occurs in a pyritized state and liable to decomposition, in crowded groups, with *Anthracosia*, *Lingula*, and fish remains, in a dark carbonaceous shale† below the "Big Limestone," in the middle of the Mountain-Limestone series of Northumberland, at Brunton, near Chollerford, on the North Tyne. It was collected by Mr G. Tate during a tour along the Roman Wall in 1857. See G. Tate's "Geology of the District traversed by the Roman Wall, 4to, 1867, p. 7.

A similar fossil, evidently a slightly modified variety of the same species, having a radiately ornamented surface, but with a rather less oblong contour, has been discovered by Prof. Lebour, F.G.S., in a hard black carbonaceous shale, containing *Anthracomya* (?), and belonging to the Upper-Bernician (Yoredale) group of West Northumberland. The carapaces are thickly strewn, both in patches and scattered, on the bed-planes, together with numerous small shiny *Cytheræ* (?), sharp at one end and blunt at the other, somewhat like *C. pungens*, J. & K. and moreover like *Darwinella* in outline, as intimated by Dr G. S. Brady, F.R.S., in a letter to Prof. Lebour.

Prof. Lebour informs me that his specimens of *Bernix Tatei* come from a "Shale, containing fish-remains and plants, a few feet below the Great Limestone (the best known bed of the Upper-Bernician series), where it crosses the River North Tyne

* Those limestones, shales, coals, sandstones, and grits of the Northumberland District (about 10,000 feet thick) which are equivalent to the Yoredale and Mountain-limestone series of the south. See G. A. Lebour's "Outlines of the Geology of Northumberland," small 8vo. 1878; Lambert, Newcastle on Tyne.

† Constituting a black-band ironstone; see Mr G. Tate's description in the "Proceed. Berwicksh. Nat. Club," vol. v., p. 88.

at Walwick Grange, below Chollerford Bridge." He adds that the Brunton shale is the bed which was worked years ago on the hillside below Brunton in connection with a black-band-ironstone. This is on the same horizon as the shale at Walwick Grange; but the latter is the only available spot where it can now be seen, the shale-heaps at Brunton having long ago been covered up with grass."

[Prof. Lebour further tells me by letter that he has had the old shale-heaps (where Mr Tate got his *Bernix*) at Brunton dug up afresh, and that he has obtained numerous specimens of both *Bernix Tatei* and *Darwinella* (?) *Berniciana*, with perhaps some other species, from it*.]

We may note also that the Geological Surveyors of Scotland have collected from a soft brownish-grey shale of the Calciferous-Sandstone series (Tuedian), at Fulwood Burn, Lanarkshire, an internal cast† of an Ostracod somewhat similar to *Bernix Tatei*, having a mid-dorsal impression, with some associated small irregular depressions. It is rather larger, however, and the profiles of the valve (edge and end) differ from those of the foregoing.

3. CYTHERE (MACROCYPRIS ?) KIRKBYANA, NOV.

Pl. II., fig. 3a, 3b.

This kind of valve among fossils is usually referred to *Cythere*, but it may be equivalent to the recent genus *Macrocypris*, as far as the outline can show,—as the soft parts and limbs are necessarily wanting, it is safer to keep it in *Cythere*, used in a general and, to a great extent, an artificial, sense.

In shape the valve has one edge (dorsal) much arched and nearly semi-circular, but with the highest convexity at the posterior third; the other edge is nearly straight (very slightly incurved), length 1 millim. One end (anterior) is rather more truly rounded than the other, which slopes down rapidly from the highest dorsal curvature, where the height of the valve is almost equal to half of the length. The profile of two valves

*Prof. Lebour has just lately favoured me with specimens of this Entomostracan shale. As he intimated, it contains other species, undetermined and well worthy of attentive study. One is a *Beyrichia*, perhaps *B. multiloba*. Some of the shale appears to have been almost wholly composed of the *Bernix* and is a real oil-shale.

† Labelled "M 555a."

together (the carapace) would be lanceolate, the lateral convexity being small.

This form approximates to several Carboniferous *Cythere* (unpublished), and indeed to some other fossil as well as living forms. It is very close to *C. Jonesiana*, Kirkby; but in the latter the greatest convexity of the dorsal line is medial and not posterior; and its valves are more convex in profile. This Tuedian form, now recognised as a new species, I name after my friend and fellow-worker, Mr J. W. Kirkby, of Ashgrove, near Windygates, Fife.

From a Tuedian Shale ("R" at page 316), Banks of the Leet near Coldstream, with *Leperditia Scotoburdigalensis*.

4. *CARBONIA FABULINA*, J. & K., var.

Pl. II., figs. 2a, 2b, 2c.

At page 318 some remarks on *Carbonia*, and references to its published definition, were made in comparing *Bernix Tatei* with that genus. In the little piece of ironstone marked "G" (page 314) from the lower part of the Mountain-limestone at Bellingham, is a good specimen and well preserved, except that the antero-ventral margin has been broken.* Length 1.5 millims. Some uncertainty occurred on account of this interference with its natural outline, and inadvertently the specimen was figured in the plate with its hind end upwards, in view at first of its belonging to a different genus.

There is certainly some little difference in shape between this and the ordinary Carboniferous *Carbonia*;† but they have a considerable range of variability, and might well be extended to include this stout form. The appearance, however, of the right valve being larger than the left in our specimen, the distinct punctation, the central spot (though only of a slightly darker tint), and the relatively true profiles, leave no doubt of the specific identity.

5. *LEPERDITIA SCOTOBURDIGALENSIS* (Hibbert).

Pl. II., figs. 7 and 9.

6. *LEPERDITIA SUBRECTA* (Portlock).

Pl. II., fig. 8.

These are regarded as dwarf and poorly developed varieties of

* This fracture has caused the strong obliquity on the right hand lower part of the figure 2a.

† See "Ann. M. N. H.", ser. 5., vol. iv., pl. 2.

Leperditia Okeni (Münster), and their history is given, in the "Ann. Mag. Nat. Hist." ser. 3, vol. XVIII, 1866, pp. 39-40. Some of their allies are described and figured *op. cit.*, vol. xv., 1865, pp. 406, 407, pl. 22; but they have not themselves been well drawn hitherto. *L. subrecta* in length 2 millims., *L. Scotoburdigalensis* 1.5 millim. Their exteriors rarely bear the chief Leperditian characters—excepting general form (and that modified); but intermediate gradations, among the countless individuals that swarmed in the muddy lagoons nearly everywhere in the Carboniferous period, supply the deficiencies. Fig. 9 (an interior) shews a rather more exactly Leperditoid shape than the other two, and bears a central (thickened?) muscle-spot. Fig. 7 and 8 are from the specimen of Lower M.-L. marked "C" (Tweedmouth, see above, page 314); fig. 9 is a Tuedian specimen from "W," Edington Mill (see p. 316). Several others of the hand-specimens, both Tuedian and Bernician, contain *L. Scotoburdigalensis*, as shewn by the Table, p. 324. This variety was wrongly referred by me to "*Cytheropsis*" in the "Monogr. Foss. Estheriæ," Pal. Soc., 1862, p. 31, &c.

7. BEYRICHIA CRINITA, J & K., MS.

Pl. II., figs. 10 and 11.

This is a rather feebly developed *Beyrichia*, liable apparently to much variation in its outline and transverse sulci, though the pressure to which the probably thin valves have been subjected may have caused some of the seeming differences between individuals.

The valves are 1 millim. in length, oblong with rounded ends. In fig. 11 the height is nearly $\frac{2}{3}$ that of the length; in fig. 10 the height is proportionally less though the valve is larger. The sulci give rise to three transverse ridges, of varying length and variously disposed, sometimes at nearly equal distances, sometimes crowded towards one end of the valve—but doubtlessly unequal pressure in the muddy deposit has modified the ridges and the outlines of individuals. Occasionally two of the ridges unite towards the ventral margin, as is usual with many *Beyrichiæ*. The most interesting feature of this species, however, is the fringe of fine spines, or hair-like prickles, set along the front, lower, and hind margins of the valves; about thirty seem to have ornamented fig. 10; and much variation is seen in this respect and otherwise, among the multitude of individuals impressed on the black shale from Alnwick Moor, "B," low

down in the M.-L. group. Often the valves are destitute of this fringe; but that is not to be wondered at, as in many other instances of broad-margined palæozoic *Beyrichia* (Carboniferous and Silurian), sometimes with a radiated ledge, the thin edge has been broken away and lost.

Forms closely allied to *B. crinita* are known in the Calciferous-sandstone series at Billowness, Fifeshire, and in the Carboniferous shales at Cultra in Ireland. The fringe, however, differs, chiefly in being more delicate, and the sulci and lobes of the surface have differences in the several forms.

8. *KIRKBYA SPIRALIS*, J. & K., MS.

Pl. II., figs. 12 and 13.

Valves subovate, 1 millim. long, with a height of more than half the length; probably thin, bordered with a delicate raised rim, which sends off a branch from its dorsal portion into the central area, and this, curving along the broader third of the valve, concentrically with its edge, turns towards the ventral margin, skirting it in good specimens; and, returning over the posterior third, encloses an independent, medial, longitudinal somewhat sinuous ridge. The characteristic medial pit or depression is also present. These features are modified in the crushed specimens before us (especially in fig. 12). This species is rare in "C," from Tweedmouth, Lower M.-L. group. It occurs in the Calciferous-sandstone, Fife, where it was discovered by Mr J. W. Kirkby in 1878; and we have a similar form from Soignies, Belgium. It is allied to *K. costata* (M'Coy), in which the ridges are stronger, more numerous, and more regularly disposed; also to *K. plicata*, J. & K., MS., and another ridged *Kirkbya*, all from Lower-Carboniferous strata.

9. *CYTHERELLA TATEI*, sp. nov.

Pl. II., figs. 1a, 1b, 1c.

Valves small (.75 millim. long), smooth, white, thick, close-fitting, convex, oblong-ovate; breadth (height) equal to about two-thirds of the length, the greatest convexity rather more central than usual in the genus. The relative shortness, breadth, (height), and convexity of this species serve as distinctions.

A few specimens occur in a shale ("M," see page 315) from the Lower Mountain-limestone group at Lamberton, containing *Spirifer*, &c.

Two obscure *Cytherellæ* (?), of similar broadly ovate shape, occur in the piece of fossiliferous rock "H," from the Middle

Mountain-limestone at Howick (see page 315).

10. *ESTHERIA STRIATA* (Münster), var. *TATEANA*, Jones.

I have nothing particular to add concerning this interesting form to the description given in the "Monogr. Foss. Estheriæ," Pal. Soc., 1862.

11. *ESTHERIA TENELLA* (Jordan).

This *Estheria*, described and illustrated in the "Monogr. Foss. Esth." 1862, pp. 31, &c., is represented by one specimen in the black shale, marked "B" (see above page 313) from Alnwick, low down in the Mountain-limestone group. Since it was described by me in 1862, I have been able to add some localities of its occurrence (see "Geol. Mag.," ser. 2, vol. 3, 1878, p. 101 and p. 278) namely—Ciudad Real in Spain, Saarbrücken in Germany, and Kargalinsh in Russia. It has also been noticed by the Geological Surveyors of Scotland, at Airdrie, at Shettleston, and at Burniebrae Burn, near Shield's farm, not far from Milton of Campsie; and it is known in South Wales ("Geol. Mag." vol. VII., 1870, p. 218). These are all Carboniferous, unless the German and Russian specimens are (as Dr. Geinitz supposes) of Permian age.

A List of the Fossil Entomostraca in the Specimens of Lower-Carboniferous Rocks collected by the late Mr George Tate, F.G.S.

Numbers and Letters used
in the foregoing Notes.

- | | |
|--|--|
| 1. <i>CANDONA?</i> <i>TATEANA</i> , JONES | 1. A. Estherian shale; Lamberton.
Mountain-limestone group
(lower part). |
| 2. <i>BERNIX TATEI</i> , JONES | (p. 316) Brunton. M.-L. group
(middle part). |
| 3. <i>MACROCYPRIIS?</i> <i>KIRKBYANA</i> JONES ... | 15. R. Leet. Tuedian group. |
| 4. <i>CARBONIA FABULINA</i> , JONES and
Kirkby | 7. G. Bellingham. M.-L. group. |
| 5. <i>LEPERDITIA SCOTOBURDIGALENSIS</i>
(Hibbert) | 3. C. Tweedmouth. M.-L. group
(lower part). |
| | 4. D.? Near Denwick Lane. M.-L.
group (middle part). |
| | 5. E. Cawlishes [Cawledge]. M.-L.
group (middle part). |
| | 9. K. Shittleheugh. M.-L. group. |
| | 10. L. Howick. M.-L. group. |
| | 12. N. Howick. M.-L. group. |
| | 15. R. Leet. Tuedian. |
| | 16. S. Fireburn. Tuedian. |

- | | |
|---|--|
| | 17. T. Kenebs. Tuedian. |
| | 18. V. Tweed. Tuedian. |
| | 19. W, Edington Mill. Tuedian. |
| | 20. X. Burnmouth. Tuedian. |
| | 21. Z. Hutton, &c. Tuedian. |
| 6. LEPERDITIA SUBRECTA (Portlock)... | 3. C. Tweedmouth. M.-L. group
(low down). |
| 7. BEYRICHTIA CRINITA, J. & K..... | 2. B. Alnwick Moor. M.-L. group
(low down). |
| 8. KIRKBYA SPIRALIS, J. & K..... | 3. C. Tweedmouth. M.-L. group
(lower part). |
| 9. CYTHERELLA TATEI, Jones | 11. M. Lamberton. M.-L. group
(lowest part). |
| | 8. H. ? Howick. M.-L. group
(middle part). |
| 10. ESTHERIA STRIATA (Münster), var.
TATEANA, Jones..... | 1. A. Estherian Shale; Lamberton,
M.-L. group (lower part). |
| 11. ESTHERIA TENELLA (Jordan). | 2. B. Alnwick Moor, M.-L. group
(low down). |

APPENDIX.

DARWINELLA? BERNICIANA, sp. nov.

Pl. II., figs. 4a, 4b, 4c.

Valves small (.5 mm. long), smooth, elongate, with rounded ends, one (anterior) narrower and more compressed than the other; the carapace almost cylindrical, but tapering anteriorly; blunt or truncate behind.

This little Cytheroid occurs in great numbers, and in good preservation (valves united), with the *Bernix Tatei* found by Prof. Lebour (see above, page 319). It resembles some small Entomostraca commonly associated with certain coal-seams in Scotland; and more particularly it approaches *Cythere* (*Darwinella?*) *pungens*, J. & K. ("Trans. Geol. Soc. Glasgow," vol. II., 1867, p. 222; referred to *Carbonia* in the "Ann. Mag. N. H." ser. 5, vol. v., p. 37); but it is blunter at the ends and more cylindrical.

Dr. G. S. Brady has suggested (see above, p. 319) the alliance of this minute species with his *Darwinella*, which is fully described and illustrated in the "Monogr. Post-tertiary Entomostraca," Pal. Soc., 1874, pp. 440, 441; and the estuarine habitat of this genus is in accordance with the probable habitat of the Carboniferous specimens. I have already pointed out another such probable *Darwinella* in the fossil state, as occurring in the

Wealden shales of Obernkirchen, Hanover; "Geol. Mag." Dec. II., vol. v., 1878, p. 107.

It also somewhat resembles a small form given by Jones and Kirkby, with doubtful alliance, in the "Ann. M. N. H." July, 1870, pl. 3, fig. 26, 27.

EXPLANATION OF PLATE II.

Lower-Carboniferous Entomostraca.

[All the Figures are magnified 25 diameters.]

Fig. 1. *Cytherella Tatei*, sp. nov. *a*, right valve shown; *b*, edge view; *c*, end view.

2. *Carbonia fabulina*, J. & K., *a*, left valve shewn (figured with anterior end downwards; the dotted line shows the broken edge); *b*, ventral view (anterior end upwards); *c*, end view.

3. *Cythere?* (*Macrocypris?*) *Kirkbyana*, sp. nov. *a*, right valve; *b*, edge view.

4. *Darwinella?* *Berniciana*, sp. nov. *a*, right valve shewn; *b*, edge view. (Prof. Lebour's specimens.)

5. *Bernix Tatei*, Jones. Right valve shewn. (Prof. Lebour's specimens.)

6. *B. Tatei*, Jones. *a*, left valve shewn; *b*, dorsal view; *c*, end view.

7. *Leperditia Scotoburdigalensis* (Hibbert). Right valve.

8. *L. subrecta* (Portlock). Right valve.

9. *L. Scotoburdigalensis* (Hibbert). Interior of left valve.

10. *Beyrichia crinita*, J. & K. Right valve; crushed.

11. *B. crinita*, J. & K. Right valve.

12. *Kirkbya spiralis*, J. & K. Right? valve; crushed.

13. *K. spiralis*, J. & K. Right? valve.

On a Hail Storm near Jedburgh on 13th July, 1882.

Communicated by J. SCOTT DUDGEON, from notes furnished by GIDEON POTT, Esq., of Knowesouth.

HAIL storms of disastrous severity are of such rare occurrence in this part of the country, that some particulars regarding one which occasioned serious damage last summer in the neighbourhood of Jedburgh, may well receive some permanent record in our Club's Transactions.

The forenoon of the 13th day of July was hot and sultry, the thermometer varying from 65° to 70°. The sky, towards noon, became very black, and distant peals of thunder were heard, every thing betokening the approach of a storm from the north. Suddenly, about 1 o'clock in the afternoon, the storm-cloud burst and the hailstones came down in blinding severity at once and lasted in full fury for nearly half-an-hour. No rain fell before nor did any succeed the hailshower over the area which it embraced. Coming from the north and driven by a high wind, the hailstorm commenced about 400 yards to the south of the river Teviot, opposite to Chesters House, on the farm of Lanton Mains, and travelled almost due south for about a mile and a half, to near the top of the Dunion Hill, embracing in width from east to west an extent of almost half a mile. The cloud, however, as it travelled southwards, after proceeding one third of its way, divided into two parts of unequal magnitude, the lesser and sooner expended taking a south-westerly direction, the larger and more violent keeping its original due southerly course. There was thus left between the two areas of devastation a wedge-shaped area which suffered only to a trifling extent. The hailstones fell so thickly that at a distance of 50 yards objects could not be distinguished. In size they varied, the larger ones containing fully a cubic inch of ice, prism-shaped, in length about an inch and a quarter and in breadth about three-quarters of an inch; their edges being rounded showed the clear ice in the centre under the coating of snow ice outside. These covered the ground after the storm had passed to the depth of quite three inches, and though the thermometer during the afternoon of the 13th and the following day stood as high as 64° in the shade, still quantities remained in sheltered situations to be collected on the 15th.

As was to be expected, the crops exposed to a storm of such unusual severity suffered great damage. Barley and oats, which were in full ear at the time, were cut down and broken off to within four inches of the ground. Turnips, then beginning to close in the drill, were left without the trace of a leaf. Even pastures were blighted and scathed as by fire. It being comparatively early in the season, and the weather that followed being favourable, turnips and pasture grass in most instances recovered to great extent, but grain crops were for the most part irretrievably destroyed.

On Mr Pott's farm of Rewcastle, over which the storm passed from one extreme end to the other, fully 500 acres suffered, while on Mr Robson Scott's farm of Newton, to the west, about 60 acres, and on Mr Pott's farm of Lanton Mains, to the north-east, some 80 acres were exposed to its scourge.

Having the particulars it may be interesting to give details regarding the actual damage done in some instances. From ten acres of barley on Lanton Mains, a full and most promising crop at the time of the disaster, the whole produce when thrashed out only amounted to 88 bushels of grain. And from twenty acres of oats on the same farm the total yield was 376 bushels, while ten acres under potatoes were found nearly worthless. On the farm of Rewcastle, where 180 acres under barley and oats and 37 acres under turnips were exposed to the calamity, the damage was even more serious. Sixty acres of barley and fifteen acres of oats were so totally cut to the ground that scarcely a single head could be found standing uninjured, while the remaining 105 acres were only slightly less destroyed. The corn plants which had been thus cut down by the hailstones came away again at once in fresh growth from the root, and soon pushed forward into ear, presenting in the course of six weeks thick and even crops of grain. These might, in an earlier climate and under the influence of a warm dry autumn, have filled and ripened properly, but in this instance the weather proved adverse, and though Mr Pott exercised the greatest patience and allowed the crops to stand uncut till the end of October, the result was disappointing; for though the straw, still partially green when reaped, was found to make excellent fodder, yet the yield in grain was found sadly deficient alike in quantity and quality—quite unfit for marketable purposes. For instance from a thirty acres field of barley, stacked by the 10th of November, the produce of grain only reached 21 bushels per acre and its weight only 42 lbs per bushel. And fifteen acres of oats gave when thrashed 408 bushels of corn weighing 35 lbs per bushel. Perhaps as judicious a course was followed in the case of another field of Barley, containing thirty acres also, which had been seeded down to grass. This was allowed to stand for five weeks, or until the second growth was coming into ear, when Mr Pott had it cut and saved like a hay crop. On this fodder he wintered 60 cattle for three months, which ate it greedily and thrived well.

The injury done to the turnip crop, though at the time apparently irreparable, turned out not so serious. A field of twenty acres under Swedes, which had been thinned out for some three weeks and was looking luxuriant, was so mercilessly dealt with that no vestige of a leaf was left, and the rootlets themselves could only be discovered by poking for them amongst the soil. Yet, strange to say, the field of Swedes recovered so wonderfully that ultimately it turned out a fair crop. In the case, however, of common turnips the result was different, for a field of seventeen acres under this crop, which was cut up in like fashion, never recovered the injury, and in the end turned out next to worthless.

The severity of the storm may perhaps be best appreciated by its effect on an old grass field of 50 acres at Knowesouth, which was in the height of its well-known mid-summer luxuriance of vegetation, carrying a stock of 53 head of cattle and 2 scores of sheep. So much was it destroyed, that next day it had to be relieved of 25 head of cattle, and even then, those remaining were pinched for meat during the next three weeks.

A curious circumstance was observable in a small field of oats on the upper part of Rewcastle farm. A single ash-tree, about 50 feet high, stands in the middle of this field. Beginning at this tree and extending the whole length of the field southwards for 100 yards, the ground too sloping very considerably upwards, say quite 50 feet from the tree to the boundary fence, there was distinctly noticeable a strip of the crop, in width fully equal to the greatest breadth of the tree's foliage, which had escaped in great measure the severity of the blast. It seemed to indicate that the shelter this tree had afforded was sufficient to save the crop to its leeward for a distance of at least 100 yards, and that even when the ground sloped somewhat steeply upwards from it.

Hérons and Border Heronries. By JAMES SMAIL.

THE country members of the Club must nearly all be familiar with the appearance and flight of the Heron; and many must well know its haunts and ways. There is therefore no necessity for a long or exhaustive paper on the natural history of the bird.

When in full flight, it flies at a great height; and from the slowness with which the wings are flapped its flight seems slow, whereas it is in reality a rapid flier. When rising from a river bed its flight is decidedly slow, and it continues so until the necessary elevation for rapid flight is reached. The gull tribe, from the bulky solan goose downward, if suddenly started, or if seized, invariably vomit the fish last swallowed, provided, that is, that they had recently been feeding; but the heron on the other hand when suddenly started on the river's edge, flies off with a wild scream, and invariably as it does so dyes the water with its droppings. Anglers are all aware of this habit of the bird. Indeed there is a vulgar adage in the Borders relative to it. In the nesting season, and in the summer and autumn months, the heron is an active bird, and flits from place to place in search of food over a wide track of country. In bright winter days it travels less; and several birds at a time may be seen occasionally sunning and preening themselves on the summits of some tall sequestered fir plantation. They will sit for hours at a time in such places, with all their feathers bunched-out to the sun.

The food of herons consists chiefly of fish; but in times of strait they are not very particular as to what they eat. In frosty weather, when the river pools and lakes are ice-bound they seek the shallows of running streams, which are seldom frozen over; and there they feed on water insects, which are always numerous in such places; and as the water cricket or creeper, produced from the stone fly, is about an inch long, and is abundant in such places, and a species of earth-worm is also numerous to be found under the stones in such shallows, the birds find a fair amount of feeding even in frosty weather, when our smaller birds often suffer severely from want of food. The sea shore also yields much food for the herons; and they partake occasionally of frogs, small toads, lizards, mice, and water rats.

Several naturalists state that the heron feeds during the night, especially when it is moonlight; but so far as I have observed no naturalist has stated that he had seen it feeding through the

night. I have in summer time been very many times afoot for angling purposes at all hours of the night, and although resident in a district where herons are numerous, and often on the watch for them, I never saw one feeding during the night, nor did I ever start one during the night. I have, however, repeatedly seen herons fishing very late, when the twilight had almost given way to darkness, and the moon had cast faint shadows on the streams. But in cases where I waited and watched for a time I invariably saw the birds fly off landwards. I have also many a time in the summer heard and seen herons flying riverwards overhead in the early dawn; and times out of number I have started them on the river's edge when busy at their morning meal, just after daylight had fairly mastered the dawn; but rooks, jackdaws, gulls, and numerous song birds are as early and late astir as the heron. Indeed the black-headed gull or maw, which breeds in upland mosses, may be heard giving call-notes as it flies during all hours of the night in June and July. From my own experience, I would therefore judge the heron as a very late and very early feeder, but not a bird that feeds during the night.

The heron was once "royal game," and was protected, and was prized for the table. How it was so is a mystery. Even when plump, and dressed and roasted to perfection, it is so fishy in flavour that eating of it would turn almost any stomach of the present day. But the young birds taken from the nest, and properly stewed, are really good; I have seen them at table repeatedly. Old birds should perhaps be buried for a few days before being roasted. In our Western Isles the cormorant is used for soup, and it makes excellent soup, but the bird is buried for a few days before boiling.

The nest of the heron is broad and comparatively flat, and resembles in material and shape, but not of course in size, the nest of the wood pigeon. The number of eggs in a nest is usually two; sometimes there are three, and occasionally only one. The nests are built mostly on tall beech trees, and are placed far out, on branches that look too slender for such bulky nests. It is very exciting to climb to and visit a nest and handle the young. The swaying of the slender branches at such a height causes at times wild thrills of excitement to pass through the climber. When the young in the nest are reached they, though even nearly featherless, suddenly arch their long slender necks and strike boldly at the adventurer, their beautiful eyes

glaring and flashing the while; and at the same time the parent birds keep circling closely round the nest, screaming fiercely, and making every few seconds a wild dash at the climber, but always swerving and wheeling off when within a few feet of his head.

The Heronries in the five counties given below number 22, namely,—

In Berwickshire	8
Roxburghshire	4
Selkirkshire	1
Peebleshire	1
Northumberland	8
	—
Total	22

In the same order here is the complete list of Heronries:—

HERONRIES IN BERWICKSHIRE.

There are a good many heronries in this county, and a considerable number of single nests may any year be found in different parts; and judging from the number of herons that frequent the rivers and other small trout streams, the birds are pretty numerous. Food, in the shape of trout, smelts, minnows, loaches, and small eels, is endless in the Berwickshire rivers and burns; and trout are extra numerous in the rivers and their upland tributaries in the higher parts of the county, such as Leader Water, the Eden, Whiteadder, and Blackadder.

Luggy Wood is a heronry of some 8 nests, in the policy of Thirlstane Castle, seat of the Earl of Lauderdale. It has been in existence so long that no one remembers when it was begun.

Olisterdub is on the same grounds, and is of similar size; and was begun about ten years ago.

Duns Castle heronry contains about 12 nests.

Pistol Wood heronry on Blackadder estate is small.

The Hirsell heronry is old and pretty large.

Mertoun heronry, on Lord Polwarth's estate is also pretty large.

Lithtillum Loch heronry. No report as to size.

Mr A. Campbell Swinton reports that "till lately herons bred at Nisbet;" and Mr G. Muirhead states that he has been informed on good authority that herons used to breed on the tall silver firs on the side of the Tweed on the Paxton estate.

ROXBURGHSHIRE HERONRIES.

Hérons are very numerous in Roxburghshire, which must be a favourite abode of those birds. Like the preceding county, its rivers and streamlets yield a plentiful supply of food, and its abundance of stately trees affords good shelter and protection for nesting purposes. Solitary or single nests are also pretty common in this county.

Dodburn heronry, on Allan Water in Upper Teviotdale, numbers about 20 nests.

Wells heronry, on Rule Water, occupies the tall wood from Billerwell Ford, to Wells Mansion-House, and numbers 20 nests. Early in the century there were nearly 100 nests in this heronry.

Swindon heronry, at the head of the river Bowmont numbered from 8 to 10 nests. This was formerly a larger heronry ; but from the clearing of trees on which the birds rested the number is now small. The late Duke of Roxburghe caused some young trees to be planted and enclosed, with a view to giving the birds more nest room in the future. [Deserted 1880-83. In spring 1884 the herons took up their abode in a young plantation on the farm of Calroust, to the north of Swindon, where there are now five nests].

Ormiston House heronry in Lower Teviotdale. No report as to size. [Very limited.—J. H.]

Hendersyde Park, Kelso. Ten to fifteen nests.

SELKIRKSHIRE HERONRIES.

Hérons are common, as anglers know, all along the valleys of Ettrick and Yarrow, where they find fish food in abundance, but the only heronry in the county is at The Haining, at Selkirk. An occasional nest may be found elsewhere ; and as the heronry at The Haining is small, herons from distant nesting places must beyond doubt frequent and catch fish in the Selkirkshire streams.

PEEBLESSHIRE HERONRIES.

Like Selkirkshire, this county has many streams teeming with fish, and numerous herons may be there seen daily, hunting up the waters, and, like the former county, it has only one heronry, at

Dawick, the seat of Sir James Nasmyth, about seven miles above Peebles. The woods at Dawick form a fine retreat for birds ; and the heronry numbers about 50 nests.

Mr Colin J. Mackenzie of Portmore, writes as follows:—
“There was a heronry of considerable size in some old trees on the margin of Portmore Loch. The trees were blown down in the gale of February 1855; and for some years the herons built on some younger trees near at hand but eventually departed, and have not returned.”

NORTHUMBERLAND HERONRIES.

In the upland streams of Northumberland trout are very plentiful, and heron food is there in plenty; but the rivers in the lower parts of the county are as a whole somewhat sluggish, and fish are not so numerous. Several gentlemen have mentioned that isolated nests may be found here and there; but the following are the heronries.

Bolam, seat of Lord Decies, 30 nests.

Capheaton, seat of Sir John Swinburne, a few nests.

Sweethope, Sir Walter Trevelyan's.

Chillingham. Large.

Unthank on South Tyne. About 14 nests.

Harbottle on the Coquet. 20 nests.

Felton Park. Many years ago had 17 nests.

There is also a small heronry on Lord Redesdale's estate on Reedwater.

Account of Shooting of Cygnus Bewickii; with Notes on Anatomical Characteristics. By THOMAS ANDERSON, Esq., M.D., of Shaws.

ON Wednesday, Nov. 29th, when shooting over Shaws with a party, we were fortunate enough to meet with Bewick's Swan, and were successful in obtaining two specimens of that rare and interesting bird.

The ground was covered with snow to the depth of about $1\frac{1}{2}$ to 2 inches; there had been 6° to 8° of frost the night before; the wind was from the N.E., and the barometer was falling. This condition of weather was interesting inasmuch as five days afterwards, on Monday the 4th, began the great snow storm which continued until it culminated in the calamitous and unprecedented fall, upon Thursday the 7th of December. It will be remembered that this was followed by a week of most intense frost, the thermometer at one time registering 38° F. of

frost, the wind being from the same quarter during all that time. These conditions are interesting, because they would serve to indicate that the birds had been driven from their ordinary habitat by severe weather, and flown before it farther south than they are usually met with

The birds were five in number, and were upon the Upper Shaws loch where they were observed for the first time on Sunday the 26th. Here they had remained since that date, and although frequently disturbed by shepherds and others passing, and notwithstanding their shy and watchful habits, they showed no desire to leave. Whether this was owing to fatigue after a long flight, or to their having found their new quarters suitable to their habits and requirements, could not be determined. The loch is a small circular one about $\frac{1}{2}$ of a mile across, with a muddy bottom, and fringed with reeds and aquatic plants, and shallow to some distance out; altogether a favourable feeding ground for birds of the habits and conformation of the Swan.

When we first sighted the loch from behind an eminence 300 to 400 yards off, three of the birds were seen feeding among the weeds some distance apart, and on our appearing they immediately came together and were joined by the other two, which had been a short way up the inlet above its mouth, and commenced swimming round the edge of the loch at the side farthest opposite to where we were standing. On our approaching, the Swans went into the centre of the loch, and were swimming round in a small circle with their necks and heads erect and bill carried high in the air, and occasionally uttering a note of alarm. They kept sailing majestically round in the very centre far out of shot. At last a shot was fired, and immediately the long necks were stretched out, the great wings unfolded, and flight commenced, first very heavy and laboured as the great birds seemed to run upon the surface of the water flapping it with slow strokes that resounded loud in the clear frosty air. There was, fortunately for our object, no wind at the time, and the birds in their difficulty in rising had to come close to the edge before they had attained sufficient elevation to settle down into a regular flight. They came right over two guns and one fell, while another lagged so far behind the remaining three as to indicate that he was wounded. The first bird was recovered by a retriever, and the second bird was found on the Lower Shaws loch about $\frac{3}{4}$ of a mile away, which it was unable to leave, although it

flew from one end to the other twice before it was shot.

Both specimens were preserved and a description with carefully noted measurements taken as follows.

A. From larger specimen.

1. From tip of bill to tip of tail, $49\frac{1}{8}$ inches.
2. Length between tip of each wing, $83\frac{3}{4}$ inches.
3. „ wing from carpal flexure to tip of longest primary, $22\frac{3}{8}$ inches.
4. Bill along upper outline, 4 inches.
5. Tarsus, $4\frac{1}{8}$ inches.
6. Middle toe, $5\frac{1}{2}$ inches.
7. Claw of middle toe, $\frac{3}{4}$ inch.

Primaries ten, second and third longest and of equal length. Tail twenty. Iris brown. Legs, toes, and webs black. Bill black, but at base the covering skin a brilliant chrome yellow, which colour reached to half way between base of bill and nostril.

Entire plumage snowy white.

But it is in the structure of the trachea and sternum that the characteristic features are met with, the keel of the latter being modified in a remarkable manner to receive a peculiar development in the former.

The sternum is neither so large nor so strong as might be expected in a bird of such a size. Its extreme length is $7\frac{1}{8}$ inches, and its greatest width, which is across the plate just behind the point at which the keel springs, is $3\frac{3}{8}$ inches. Though of comparatively thin construction, its surface is well marked by the rough lines of attachment of the great pectoral muscles, which run in well defined ridges along the plate and the sides of the keel. On its posterior edge it has the two deep notches characteristic of the *Anseres* which run up to a depth of $1\frac{1}{8}$ inches.

It is in the keel itself that the remarkable modification referred to is met with. Commencing posteriorly in a smooth triangular surface, $1\frac{1}{2}$ inches from the posterior edge of the sternum, the keel gradually rises and runs forward for $5\frac{1}{2}$ inches, attaining its greatest depth, $5\frac{1}{2}$ inches, at its anterior extremity. The smooth surface does not run into a narrow edge as is the case in most birds, but presents inferiorly a flat surface throughout its entire length. In front this surface is $\frac{1}{4}$ inch wide, it contracts about the middle to $\frac{3}{8}$ inch and expands again to $\frac{3}{4}$ inch posteriorly, where it first rises from the plane surface of the sternum and

where it is bounded by the rough line of attachment of the great pectoral muscle. When examined from the front we find this keel composed of two side plates, separated by about half an inch, and forming with the floor of the sternum proper a cavity or oblong *cul de-sac*, which runs back for the entire length of the keel. Anteriorly this cavity measures across the base $\frac{5}{8}$ inch and across the apex $\frac{1}{2}$ inch (inside measurements), and contains a peculiar fold of the trachea which is prolonged into it to the depth of $2\frac{1}{2}$ inches.

The upper or internal surface of the sternum upon which the lungs rest presents a convexity along the middle line, which is most marked opposite each extremity of the keel.

Tracing the trachea downwards from the cervical region we find it there about $\frac{3}{8}$ inch in diameter, then passing in front of the clavicles, and curving downwards, it takes a perfectly horizontal course and lies in the sternal notch. At this point it is slightly larger, and it now enters the cavity of the sternum. Here its upper surface is in approximation with the lower surface of the tube as that emerges from the cavity. In fact the two tubes are parallel and the upper or returning one is slightly larger. On removing a triangular portion from the side of the keel and following the course of the trachea, we find it running backwards for $2\frac{5}{8}$ inches when it suddenly turns vertically upwards being completely doubled on itself, ascends for an inch, and is again doubled on itself, and now passing horizontally forwards emerges from the cavity in close relation to the entering tube. It now passes underneath the rounded arch of the furcula and curving upwards it enters the thorax and divides into the bronchi.

The cartilaginous rings of the trachea are, in the cervical region, more or less regular. They are slightly deeper in front and these overlap the narrower portion of the posterior rings. They become stronger as they go down, and within the sternum these rings are very strong and here they are of greatest width inferiorly. At the bend there is one large strong ring lying horizontal, and altogether overlapping those on each side; while at this point the diameter of the trachea, has nearly attained its greatest size, $\frac{1}{8}$ inch, but the superior portion of the tube is slightly larger. After passing the arch of the furcula the rings again become smaller and narrower until they enter the thorax.

Within the sternum the whole structure is stronger than at any other point, and its air-containing capacity is greater; and

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it is firmly fixed by membranous bands which do not admit of the slightest extension or retraction of this peculiar fold.

With regard to its function, this seems uncertain ; it either gives to the bird the power of emitting the peculiar note, somewhat similar to that of the Hooper (*C. musicus*), which also has a prolongation of the trachea into the sternum ; or what seems more likely it gives lightness and buoyancy to the whole frame.

Ettrick Bank, March, 1883.

On the Injury done to Scotch Firs at Coupland Castle by a Snow Storm in December, 1882. By MATTHEW T. CULLEY, Esq.

THE snow storm of December 1882 was pretty heavy, but not nearly so heavy as many that I have seen : nevertheless it did more harm to my firs than any other I have known. On December 7th very wet snow fell to the depth of about a foot, and as the wind, (which had been rather high), went off, and there was a remarkable absence of frost, it lay on the boughs of the trees so as to bend them by its weight in a very unusual manner. It thus remained without melting, while at the same time there was no frost to render it crisp and light. Scotch fir naturally suffered most severely, though all kinds of trees suffered more or less. Immense boughs were broken off the Scotch firs, so much so that the Highway Authorities sent for my woodmen to clear away the branches that fell from my trees overlooking the turnpike road near Akeld Lodge. The Scotch firs that line the approach to my house were especially disfigured, most of projecting boughs being bent or broken off, and in two cases the tops of the trees were smashed off. One large silver fir was dreadfully bent and broken in its lower branches, and birches suffered also. I never saw anything like the same amount of damage done by snow before, and I have since noticed that the adjoining woods of Ewart have suffered similarly.

Fungi from the neighbourhood of Roxburgh, not hitherto recorded from the Border district.—1883. By the Rev. DAVID PAUL, M.A., Roxburgh.

1. *Agaricus (Lepiota) clypeolarius*, Bull. In a wood ; September. A pretty Fungus allied to *Ag. cristatus*.

2. *Ag. (Tricholoma) portentosus*, Fr. In a wood.

3. *Ag. (Tricholoma) resplendens*, Fr. In woods, not rare ; remarkable for its beautiful hyaline tints.

4. *Ag. (Pluteus) nanus*, var. *lutescens*, Pers. Three or four specimens of this Fungus were found on old saw-dust at Stichill in October. It is neither *nanus*, nor *phlebophorus*, but partakes of the characters of both, which indeed seem to pass imperceptibly into one another. The pileus was moist and not pruinose, and the stem and gills corresponded to those of var. *lutescens*.

5. *Ag. (Nolanea) mammosus*, Fr. In Roxburgh churchyard. October. Rare.

6. *Ag. (Nolanea) pisciodorus*, Ces. It is doubtful if this be really a different Fungus from *Ag. (Naucoria) cucumis*, P. The difference of colour in the spores is the main distinction between them, but I am informed by the Rev. J. Stevenson, of Glamis, that in 50 specimens of *Ag. cucumis*, gathered on the same spot and at the same time, which he examined, the spores shaded in colour from the brown of *cucumis* to the pink of *pisciodorus*. Nor have I been able to detect the cucumber smell of *cucumis* as distinguished from the fishy smell of *pisciodorus* ; to me they seem all to smell of fish. But perhaps Fries would not have said of me as he says of someone in his *Hym. Eur.*, "olfactu valde praepollet."

7. *Ag. (Inocybe) geophyllus*, Sow., var. *at Leritius*, B. & Br. Found by me along with Mr W. B. Boyd at Ormiston in October. Its larger size and curious red stains mark it well off from the ordinary *geophyllus*. Mr A. Jerdon found it plentifully at Melrose in October, 1868. See "Transactions" for that year, p. 411. Perhaps not uncommon.

8. *Ag. (Flammula) lentus*, Pers. At Sunlaws. October. Not common here.

9. *Lactarius quietus*, Fr. In woods.

10. *Polyporus caesus*, Fr.

11. *Corticium puteanum*, Schum. In Roxburgh Manse, on dripping wood below a water cistern. October.

12. *Geoglossum glabrum*, Pers. Among grass.

Ednam Hospital. By JAMES HARDY.

DOCUMENTARY evidence fails to elicit the origin of the Hospital of St Leonards of Ednam. Seeing that from the days of king Edgar, with the exceptional, and I think temporary settlement of Thor the Long, the lands of Ednam appertained to the Crown, and the advowson of the hospital was attached to the lands, it is not unreasonable to conclude that it owed its foundation to David I., or his son Henry, Earl of Northumberland. The relation of Prince Henry towards the establishment is to a certain extent apparent from the Countess Ada his widow, granting to it the only endowment on record—a half carucate of land in the territory of Petcorthyn or Pechortyne, “in Scotia,” now Pitcorthie in the parish of Kilrenny, Fifeshire, (Register de Dryburgh, p. 113); afterwards transferred by arrangement to the monastery of Dryburgh; “for the soul of my lord Henry, the earl, and the soul of my son Malcolm the king, and the salvation of my soul, and the salvation of my children, and for the souls of my parents.” (Ibid, p. 11.). The date of this benefaction is thus fixed for the reign of Malcolm IV., (1153—1165).

The master and congregation of St Leonard’s Hospital had rented from the convent of Dryburgh, for an annual payment of half a mark of silver and one pound of incense, a half carucate of land in the territory of Ednam; but for convenience, in the reign of King William (1165—1214) they exchanged their Fifeshire property for this half-ploughgate nearer home. It is from a small privilege annexed to this bargain that we obtain the only particulars of the domestic economy of the inmates of the hospital revealed to us; and it shews us moreover that scant provision had been made for their maintenance and clothing. The abbot and convent, we are told, by the pressing petition of common friends yielded to the congregation of the hospital power *to full* each year a quantity of white cloth limited to 24 ells (about $74\frac{1}{2}$ yards) at their mill at Dryburgh. In respect of charity this was done at the expense of the abbot and convent, and after the manner in which they were wont to dress the coats of their lay brethren. This is the most favourable interpretation of the grant, in which it is not very clear who were to be at the charge of the cleansing operation.

The extent of the hospital land as we ascertain by a very modern advertisement afterwards quoted was about 160 acres.

It is called in a Kelso Charter (No. 14) the land of the infirm,—"terram infirmorum"—i.e., to say of sickly and decrepit monks, and for the maintenance of "poor and infirm people."

The situation of the hospital is indicated in a charter of King William, the Lion, to Kelso Abbey of lands and privileges in the territory of Ednam, as being at the intersection of the road leading from the bridge of the ford on the west side of Ednam, to the forking of the road that came from the northern part of the petary of Ednam. (Chart. Kelso, No. 14, p. 18.)

The lands and hospital of Ednam continued crown property till the reign of Robert I., who granted them to his son-in-law, Walter Stuart, from whom his son, afterwards Robert II., derived them. For an interval in the reign of David II., they were at the disposal of Edward III. In 1349, Edward III. issued a writ for restoring the hospitals of St Mary at Berwick and of Edenham to Robert de Burton, who is said to have been a busy agent of the English king on the Border. (Jeffrey's Roxburgh, iii. p. 111, from Rot. Scot, i.)

In 1373, in the time of Robert II., a concession which that king had bestowed, of the lands of Ednam and the advocacy of the hospital, was revoked in Parliament from Robert de Erskin, knt., and dame Christian de Ketht his wife, (Act Parl. Scot. i., pp. 197, 198), who were otherwise provided for; and in 1392, the lands and patronage were acquired by Sir John de Edmonston of that ilk, and Isobel Stuart his wife, elsewhere called Euphemia and also Margaret, daughter of Robert II. (Genealogy of the Lairds of Ednem and Duntreth, Glasgow, A.D., 1699, p. 4; Nisbet's Heraldry, ii., Appendix, p. 156).

This early documentary evidence dissipates the conjecture of Spottiswood (Religious Houses, &c., p. 290), that the hospital seemed to have been founded by the Edmonstons, which has been recently repeated in Walcott's compilation "The Ancient Church of Scotland," p. 387.

In 1426, an instance occurs of the exercise of the patronage: "Joannes de Edmonston. tutor dativus Jacobi de Edmonston, filii et heredis quondam Davidis de Edmonston de Ednem, presents Mr Robert Heriot to the chaplainry of the hospital, which was vacant by the death of Mr Alexander Crichton. This is confirmed by King James at Edinburgh, 27th September, 1426." (Spottiswood in Keith's Bishops of Scotland, p. 290. Edinr. 1755).

In the Retours for Roxburgh, No. 340, Nov. 8, 1633, Andrew Edmondstoun of that ilk is retoured in possession of the patronage of the hospital of Ednem. In No. 197, Nov. 22, 1649, David Creichtoune of Lugtoun, in right of his mother Joneta Edmestoune, is retoured of this patronage; and also in the lands of Spittle from olden time called the "lands of the place of the hospital of St Leonard of Edinghame," with the teinds. In No. 261, Jan. 22, 1673, Joneta Home, heiress of Major John Home of Carrolsyde, her father, held with other lands in Ednem barony (perhaps in wadsett) the patronage of this hospital.

A new period now opens out, and printed documents cease to guide. In 1692, the proprietor of Spittle was James Ffallow or Fallay. (Ednam Session Book). In that year the barony of Ednam, with the exception of Newton Don, was almost entire in the hands of the Edmonstons: the heritors of the parish were then: "Ednem," (Andrew Edmonston,) born 1688; his mother, "the Lady," daughter to Sir Alexander Don of Newton; his uncle, Sir James Don of Newton; and "James Ffallow of Spittle."

The land of Spittle next appears in 1746, as belonging to the Ormstons, a wealthy Kelso family, who according to Anderson's *Scottish Nation*, iii. p. 596, purchased what is now part of the estate of Hendersyde, in 1715, from Edmonstone of Ednam. This we learn from an obituary notice, in the newspapers of the period, of the owner, who is designated Mr Charles Ormston, sen. of Spittle. As I am not aware that anywhere else we can obtain the data about the property, or the eulogies pronounced by their contemporaries on its owners, I shall conclude by subjoining extracts of what is recorded of them and the hospital land.

"On the 26th past (September) died Mr Charles Ormston, sen. of Spittle, merchant in Kelso, in the 80th year of his age. He was one of the people called Quakers, and lived and died in great reputation among all his neighbours and acquaintance. He was a man of great plainness, sobriety, and temperance; of great humanity and hospitality; always ready to do good, and to supply the poor, which he did chearfully without ostentation. He was a kind husband, a loving father, a good neighbour, and generous master. His death, as a publick loss to the place, is lamented by people of all ranks. He has left a handsome estate to his children." (Newcastle Journal, No. 392, Oct. 11, 1746.)

"FARMS TO LET. The farms of Newstead or Fairnyhill and Ednem Hospital, the first containing 170 and odd acres, and the other about 160

acres, or thereby, are to be let on lease for such a number of years as parties can agree, to commence at Whit-sunday, 1771. Tho most part of the lands of these are of a remarkable good quality, and extremely improveable, are within a measured mile of the town of Kelso, and the farm of Newstead is steelbow. For farther particulars enquire at Dr William Ormston of Henderside, the proprietor, at Kelso; or Mr John Waldie, writer there." (Newcastle Journal, Feb. 17, 1770.)

Before the close of the year the proprietor died.

"Sunday morning died at Kelso, in the prime of his age, Dr William Ormston of that place; a gentleman of fortune and great merit; in life very much beloved by all his acquaintance, and in death universally deplored." (Newcastle Journal, Dec. 22, 1770.)

I have nothing more to say about this pendicle of the Edmonstone property, but I may take up the history of the family, which I have obtained almost complete, as Lairds of Ednam, when more space can be allotted to the subject.

On the Incised Rocks at Morwick. By JAMES HARDY.
With Notices and Illustrations by MISS SARAH DAND.
Plates III., IV., V., V*.

THIS paper on the remarkable group of incised inscriptions on the face of a precipitous sandstone rock overhanging the Coquet behind the village of Morwick, and at a short distance from Morwick Hall, is drawn up from the observations of the Club made during their visit in 1877; from the notes of Miss Sarah Dand accompanying the faithful sketches, with which, with great painstaking, she has favoured the Club; and from the recollections of a very brief visit which I paid to the spot, July 4th, 1883, in company with Mr Middleton Dand, Mr John Dand, Mr Wm. T. Hindmarsh, and Capt. McCabe.

The record of the visit of the Club on the 27th June, 1877, in the address of the President, Dr. Charles Douglas, is so accurate and ample, that it is superfluous to relate afresh the circumstances of the discovery of the figures, or their special attributes. I shall therefore incorporate the greater part of it. It is owing to the Club's resolution on that occasion, that an "account of these inscriptions with engravings," should be supplied for the Proceedings, that with Miss Dand's assistance the subject is now resumed.

"A move was now made onwards to Morwick Mill, where the party joined some of the members, who had gone by a more

direct route to inspect the incised figures on rocks overhanging the Coquet, a short way below the mill, which had recently been discovered by Mr Middleton Dand. These are different from any of those so well and elaborately described by our late Secretary, Mr Tate, and others, as occurring on the rocks at Old Bewick, Doddington, Routing Linn, and other places in Northumberland. Those already recorded occur generally on the surface of sandstone rocks, cropping up on hills or other high ground; these are on the face of a sandstone cliff rising perpendicularly from the bed of the Coquet, a very short way above the level of the sea. The most typical of the forms are composed of concentric circles with a radial groove passing from the centre to the circumference or beyond it. In these now under observation, about six in number, there is no radial groove, but the figure in the most distinct is of a spiral form, somewhat resembling those figured by Mr Tate in his paper published in 1864, from Capt. Carr, R.E., as occurring on rock temples at Malta; with this remarkable difference, however, that the latter were in relief, those on the Coquet, like all others in Northumberland, incised. The first inscription seen by Mr Dand from a boat on the river is of a different character from any of the others, the outer circle being composed of a number of dots or pits, at perhaps two inches distance from each other, in this somewhat resembling an inscription discovered by Mr Tate at Jedburgh, but not *in situ*, and shown in Plate xi. Fig. 6 of the illustrations to his paper. The entire diameter appeared from the boat, from which the inspection was made by small detachments of our party at a time, to be about a foot, and was apparently the largest observed; it faced the river; others were on a different aspect of the rock, facing nearly at right angles to the one first observed. One of our members noticed that two of the spiral figures, close to each other, were in fact continuous, the line being carried from one to the other. The inscriptions are from about ten to fifteen feet above the present level of the river, but at the remote period at which they were doubtless executed the channel of the river would be at a much higher elevation*."

The distance of the incised rock from the village of Warkworth including the windings of the river is $2\frac{3}{4}$ miles; and there is little more than a mile farther to the present mouth of the river.

*Hist. of the Ber. Nat. Club, viii., pp. 212-213.

At first I imagined that a party of wanderers sheltering here at no great distance from the open sea, might have formed these tracings during their involuntary detention; but having subsequently learned that there are remnants of a British Camp on the space behind the perpendicular cliff, it is rather I think to the agency of its resident occupants that these improved exercises in stone-cutting may be attributed.

"There is very little trace," Miss Dand writes, "of any camp left. A formed path three yards wide from and to the camp slopes from west to east to the level of the river, leaving a steep bank to the south, and a deeper bank from the height of the path to the river. To the north this is the only feature of manual formation, and is immediately to the east of the incised rock. An extensive view," she continues, "can be had to the north and west, but owing to the rising ground, only a short way can be seen to the south and east. Two small ravines on the west and east favour the idea that it might have been made a strong position. It has been suggested that here was the site of Hugh de Morwick's castle (the Norman possessor of the land), but this is a mere conjecture, for I do not know of any tradition bearing this out. Were this the fact it might account for the disappearance of the outlines of the Camp. There are several mounds running from north to south on the north side of the river on Warkworth Moor. They may be merely owing to tracks worn at different ages to 'Pomfret's ford,'—now corrupted into 'Paupers' ford'—a few yards to the east; but they are not unlike barrows." This suggestion must be left for future inquiry.

Miss Dand next proceeds to describe the figures in Plates III., IV. and V. The plates are exact reproductions of her pen and ink drawings.

"The figures are scattered over the face of a perpendicular grey sandstone rock on the south bank of the Coquet. Excepting in figures 1, 2, and 3 there seems no attempt at combination. Figure 1 is the highest. Calling the rock about 30 feet high, the spirals will be about 20 feet from the ordinary level of the river. Figure 2 is on part of the rock facing east and is about 7 feet from the ground. The spirals here like those in figure 1 are of a uniform size and depth, about 3 inches in diameter and cut into the rock about the 8th of an inch. In figure 4 the spiral is larger being quite 5 inches in diameter, and curls the opposite

way to its smaller representatives. I find figure 5 has long been known in the village as 'The Lion.' It is much the largest; is about 1 foot from the ground in a part of the rock that is very coarse and gritty, and appears much effaced by the weather. The cups round the horse-shoe in figure 6 are very much deeper than the lines, being cut into the rock about an inch. This figure is about 12 feet above the surface of the river. Figure 3 is about 7 feet above the river, is much overgrown with lichens, and is very indistinct."

I visited the scene under the disadvantage of a heavy thunder plump; and the troubled and discoloured river was in flood, sweeping down rafts of wood and branches. This necessitated a cautious guidance of the boat, which had to be steadied and held secure by a chain from the shore. The rock is a single cliff below the high bank, supposed to have been once crowned with a British Camp. It was ornamented with ferns from its numerous crevices, and one face of it was guttered from the top with numerous water runnels. It was surmised that the figures might at one time have been more numerous. The rock is crumbly, and detached masses of it have fallen; and the inscriptions now remaining are preserved on the more indurated projections. The northern bank of the river is grassy and without trees. The wooded scene above this free space, where the mill-race and the main stream of the Coquet meet at the apex of an islet clad with tall umbrageous trees, is exceedingly fine.

To discuss the particular object and meaning of these rock-writings is beyond the scope of this paper. Among them are examples of the first spirals as yet observed among the Northumbrian rocks. Next to the Berwickshire Club, the Antiquarian Society of Scotland have in their "Proceedings" figured examples of cups, circles, and other rock markings; but among them I have failed to find spirals exactly according with those represented in the accompanying plates. On the stone, however, engraved in Plate V., the similarity of the incised figures to those at Morwick, is too obvious to be disregarded. It is derived from a plate at p. 106 of Mr Robert Bruce Armstrong's elaborate and careful "History of Liddesdale, Eskdale, Ewesdale, Wauchopedale and the Debateable Land," Part 1, Edinburgh, David Douglas, 1883, 4to; which the liberality of the publisher has placed at the disposal of the Club. The stone, evidently only a fragment of a larger block once containing more figures, forms

the door-sill of the vault of the Hollows Tower on the river Esk, the residence of "Johnie Armstrong," (Gilnockie), of tragic fame, and supposed to have been erected by that Border reiver in the early part of the sixteenth century. Whence it was at first procured is not stated, but there might still be tangible evidence remaining in the neighbourhood if earnestly sought out. A representation of a double spiral, like that on the stone at the Hollows, resembling the volutes on an Ionic column, is of ready access in the Catalogue of the Museum of the S. A. S. p. 115, from a sculptured stone found in a "Pict's House" in Eday, Orkney. A very remarkable association of the double pagan volute with a Christian cross may be seen in a figure in the Scottish Society of Antiquaries' volume for 1880-81, page 121, in a contribution by Mr William Stevenson on the Antiquities of the Islands of Colonsay and Oransay. A barbarous figure with a human head and a fish's tail, has the arms converted into involute spirals on the transverse beam of the cross.

The survival of the original central cup and concentric circles of the older Northumbrian sculptures, is sufficiently pronounced in the Morwick group; but art had advanced since a more primitive age, and was forming new combinations apparently more ornamental than significant, both in what was added and what was retrenched. This modification is also exemplified in some figures on the sculptured rock at Cuddy's Cove, near Doddington, which have other more modern accompaniments. On one of them the pagan circles and cup are displayed in the centre of a small cross; shewing a pagan and Christian emblem combined, it may have been contemporaneously. We find there also the horse-shoe arch.

Ancient British Flint Implements found at Low Farnham, Coquetdale. By D. D. DIXON. Plates VI., and VII.

THE accompanying Plates VI and VII show a group of sixteen neolithic flint implements, which have been turned up by the plough in the fields at Low Farnham, in Coquetdale, and collected by Mr John Nicholson. Besides this selection of the various forms, there have been upwards of fifty other flints found. Many of them appear to have been broken by use, and others are apparently chippings struck off in the course of manufacture. Although there is none found in the neighbourhood, flint probably formed

an article of barter between tribes, and during the long winter months the occupants of a settlement or camp at Farnham may have employed themselves in the making of tools from the pieces of flint, got in exchange for other commodities, which may account for the small pieces of flint or chippings, most of which bear the mark of human workmanship. Farnham is in the parish of Alwinton, five miles west of Rothbury, one mile east of Holy-stone, and stands on the gently rising slopes of the eastern bank of the river Coquet, which here runs from north to south. No signs of any camp exist near where the flints have been found, and, at any rate, the tillage of centuries would have obliterated all traces of it had one ever existed; but in a field contiguous, there are green mounds not yet excavated, which have the appearance of burial mounds. The neighbourhood, too, is thickly studded with ancient remains. Grave mounds or barrows occur on a hill near Barrow Burn, hence the name; and on the North banks of the Coquet, at Harbottle, in 1869, several cists or graves were opened by Canon Greenwell, when most interesting remains were discovered; and, no doubt, in many of the fields around Harbottle, if a diligent search were made while ploughing, there would be found flints of a similar character to those found at Farnham. On Wreigh Hill, about a mile southward is "Hetche-ster," supposed to be a British camp, where have been found in large numbers the bones and antlers of enormous deer. On Holystone Common there are numerous grave mounds, some of which were excavated in 1870, by Canon Greenwell and C. H. Cadogan, Esq., who found them to contain urns and other relics of the ancient Britons. Two miles south is the camp of Hare-haugh with its triple ramparts, and facing it on the south is the fine circular camp, "Soldiers' Fauld," at Whitefield, topping the crest of a round hill, a spur of the Simonside range.

Doubtless, these flints are the weapons of war and of the chase as well as domestic tools, such as would be used by the ancient inhabitants of Coquetdale at a period contemporaneous with the occupation of the camps mentioned. Apart from the finding of flints, Farnham has a few other associations of interest—there once stood there a Border tower, a stronghold of an ancient Northumbrian family, the "Horsleys," "A.D. 1460, Turris de Thernham, Robti Horsley." "A.D. 1542, at Tharnham ys a toure of thinherytance of one Rog' Horsley in measurable good repac'ons." "Nun's Close" one of the fields known by that

name, where the greatest number of flints is found, seems to denote connection in days gone by with the adjoining nunnery at Holystone. Wreigh Hill rises on the south, where formerly stood a considerable village, which on Wednesday, May 25, 1412, was pillaged and burnt by the Scotch freebooters, and again in 1665 it was depopulated by the plague. On the opposite bank of the Coquet is the old village of Holystone, reputed to have been one of the places visited by Paulinus the Bishop on an evangelizing tour, where, it is said, he baptised 3000 Saxon converts, Easter 627. Plainfield Moor, which is part of Farnham, is the spot where James, the ill-fated Earl of Derwentwater, raised the standard for the Pretender in the rising of 1715.

The following is a list of the flints, indicating their nature and colour:—1, thumb flint or scraper, dark slate; 2, oval arrow head, dark slate; 3, oval arrow head, light drab; 4, thumb flint, dark slate; 5, arrow head, lower part fractured, dark slate; 6, arrow head, very light slate, as if bleached; 7, arrow head, very light slate, as if bleached; 8, arrow head, dark slate; 9, knife or flake, light brown; 10, barbed arrow head, light slate; 11, arrow head, fine dark slate; 12, knife or flake, light slate; 13, arrow head, nearly white, as if bleached; 14, portion of spear head, fractured at lower part, dark flint (beautifully chipped); 15, thumb flint, (has been the outside chip), dark slate; 16, barbed arrow head, fractured, light red brown.

[The illustrations are from pen and ink sketches by Mr J. T. Dixon, Rothbury.]

Notes on the Marine Algæ of Berwick-upon-Tweed. By EDWARD A. L. BATTERS, B.A., LL.B., F.L.S. Plates, VIII., IX., X., and XI.

SINCE writing the article for last year's Proceedings I have been fortunate enough to find at or near Berwick the following Algæ, not previously recorded as occurring in the neighbourhood.

1. *Sphærozyga Carmichaelii*. *Harv. Phy. Brit.*, Pl. 113, A. (*Cylindrospermum Carmichaelii*, *Kütz. Spec. Alg.* p. 294. *Anabaina marina*. *Bréb.* in *An. Sc. Nat.* *Belonia torulosa*. *Carm. Alg. App. ined.*).

Filaments slightly curved, attenuated at each end, moniliform, densely interwoven, forming a gelatinous stratum of a bluish-

green colour, on mud and decaying algæ. Several heterocysts in each filament. Spores one on each side of the heterocyst, oblong, about twice as long as broad, brownish green when mature.

Estuary of the Tweed and on the muddy banks of the river between the two bridges on the Berwick side. Rare.

2. *Spirulina tenuissima*. Kutz. Phyc. Gen. p. 183. Harv. Phyc. Brit., Pl. 105, c.

Filaments excessively slender, twisted into a spiral, forming a thin, bright metallic or verdigris-green stratum on mud.

My specimens come very near Crouan's *Spirulina pseudo-tenuissima*. The spiral is more open and the threads finer than Harvey's plate would lead one to suppose is the case with *S. tenuissima*. It is therefore with considerable doubt that I have referred the Berwick plant to the present species. I have only met with this plant on one occasion, when I found a considerable quantity between the old bridge and the railway bridge on the Tweed, but only secured a small quantity for examination. On returning the next day I found the mud had been disturbed and not a vestige of the *Spirulina* remained. Rare.

3. *Oscillatoria littoralis*. Carm. Alg. Appin. ined. Harv. Phyc. Brit., Pl. 105. A.

A thin membranaceous dark green stratum covering the bottom of muddy pools near high water mark. Filaments usually twisted into bundles, straight or slightly curved. Striæ well marked at intervals of about one third the width of the filament. The stratum peels off the rock in the form of a dirty green membrane which does not adhere to paper at all well.

Damp rocks near high water mark between the pier and the "Greenses." Not uncommon.

4. *Oscillatoria subuliformis*. Thwaites in Harv. Phyc. Brit., Pl. 251. B.

Stratum of dark green colour, soft, gelatinous. Filaments very slender, tapering to an incurved point. Striæ indistinct and separated from each other by intervals of half the width of the filament.

The Coves at Dodd's Well, and on the sand at the mouth of the river. Not uncommon.

5. *Oscillatoria nigro-viridis*. Thw. in Harv. Phyc. Brit., Pl. 251. A.

A dark olive green almost black stratum (a rich metallic green

when dry and mounted) soft, gelatinous. Filaments slender, points blunt and slightly, though distinctly, curved. Striæ transverse, not very distinct, separated from each other by intervals of about half the width of the filament.

On the muddy banks of the river from its mouth to the "Plantation." Very common.

6. *Oscillatoria insignis*. Thwaites, in Harv. Phyc. Brit., Pl. 251. C.

A thin, blackish-brown, gelatinous stratum hardly to be distinguished from the mud on which it grows. Filaments thick, straight; apices obtuse and curved. Striæ close and conspicuous.

On mud, Holy Island, and in great plenty on either side of the stakes after leaving Fenham Flats to cross to the Island.

7. *Lyngbya ferruginea*. Ag. Harv. Phyc. Brit., Pl. 311. (L. æruginosa Ag.; L. æstuarii, Liebm.).

A loosely interwoven, dark green or brownish stratum of very slender threads. Filaments tolerably clearly annulated, wall of the tube very thin though distinct.

Muddy pools at the mouth of the river. Rare.

8. *Rivularia atra*, Roth. var. *confluens*.

Fronds "flattish owing to the coalescence of several individuals," otherwise like the normal form, with which it is identical in microscopical structure.

This variety of *R. atra* often forms a flat expansion of two or three inches in diameter on rocks, and looks at first sight quite distinct from the almost globular fronds of the normal type of the species.

Muddy rocks near the "Greenses," and at "Sharper Head." Common.

9. *Hormospora ramosa*. Thwaites in Harv. Phyc. Brit., Pl. 213.

Fronds very minute, invisible to the naked eye. Filaments branched, colour cells oval, when mature.

Whilst examining a specimen of *Cladophora flavescens* under the microscope I discovered a few specimens of this beautiful microscopic alga.

Fenham Flats.

10. *Cladophora flavescens*. Kütz. Harv. Phyc. Brit., Pl. 298.

Filaments very slender, interwoven into large floating masses of a pale yellowish-green colour. Branches irregular, distant, mostly alternate, sometimes dichotomous, patent or nearly so, upper branches few and mostly secund. Joints six to eight times longer than broad. The colour of this alga is usually a fine

yellowish-green, but it often happens that much greener patches are to be seen mixed up with the ordinary coloured fronds in the same mass.

Holy Island and Fenham Flats. Not uncommon.

11. *Vaucheria velutina*. *Ag. Harv. Phyc. Brit.*, Pl. 321.

Filaments creeping, forming exceedingly dense cushion-like strata on mud. Branches erect simple or forked rising to one height. The tips of the branches, which rise above the mud, are bright green, the creeping filaments themselves are either colourless or stained by the mud in which they are growing. The creeping filaments are often densely interwoven and firmly fixed in the mud, the larger portion of them being usually dead "with a very offensive odour." The spherical vesicles, filled with a dark green granular mass, are not unfrequent. Vesicles either stalked or sessile usually produced on the upright branches but sometimes also on the creeping ones.

Estuary of the Tweed, and on the muddy banks of the river as far as the "Plantation." Very common.

There are several other species of the genus *Vaucheria* to be found on the soft mud below the foot bridge, but as I have never found them in fruit it is impossible to say to which species they should be referred.

12. *Fucus vesiculosus*, *Linn. var. B. subecostatus*.

(*Fucus Balticus*. *Ag. Sv. Bot. t. 516, Grev. Crypt. Fl. t. 181. Harv. Phyc. Brit. Desc. plate 204.*)

Fronds small, from an inch to two inches high, narrow, usually dichotomous and destitute of air vessels. Midrib very indistinct.

No one at first sight would take this plant to be a variety of *F. vesiculosus*; it seems to come very much nearer *F. ceranoides*. Its small size, want of air vessels, and the almost entire absence of midrib, mark it as a very distinct variety. It grows in salt marshes, usually on the soft mud round the margins of pools.

Banks of the Tweed a little way above the railway bridge. Not uncommon.

13. *Dictyosiphon hippuroides*. *Aresch. Obs. Phyc. III.*, p. 27, *Phyc. Mar. Sc.*, tab. 6., A.

Fronds brown, from a few inches to a foot or more long, filamentous, rather densely beset with irregularly alternate, sometimes opposite, branches which are rebranched again in a similar manner. Always parastical on *Chordaria flagelliformis*, which it often covers so densely that the "host plant" is hardly

discernible. Berwick Bay and all along the coast northwards. Common.

14. *Sphacelaria cæspitula*. Lyngb. Hydr. p. 105 t., 32, fig. A.

Very minute tufts of fine filaments, growing on the roots of *Laminaria digitata*. Filaments very slender. Branches irregular often secund, few. Joints about as long as broad. Colour a light brown.

Berwick Bay. Rare.

There is a small *Sphacelaria* which grows in shallow sandy pools a little to the north of Sharper head. It forms small tufts which appear above the sand like fine wire. It appears to be *S. racemosa* but as I have not found any fruit I cannot speak with certainty.

14. *Cruoria adhærens*. J. G. Ag. Sp. Alg., vol. II., p. 491.

Fronð forming a thin, smooth, fleshy crust on the stems of *Laminaria digitata*. Fronð at first circular afterwards irregular in shape, half an inch to two inches in diameter. The crust is composed of erect, or once or twice dichotomous, jointed filaments set in gelatine, all of one length so as to form a smooth surface, joints nearly as long as broad, colour a dark reddish-purple. Substance tough, but still fleshy-feeling, horny when dry. I have seen no fructification except the terminal pyriform green spore surrounded by a wide gelatinous limbus described by Harvey in the Natural History Review vol. II. (1867), p. 203 and pl. 13, c. fig 1.

Berwick Bay, common.

16. *Melobesia Lenormandi*, Aresch. (Lithophyllum Lenormandi, Rosanoff.)

Fronð forming a thin chalky crust on rocks, the under surface closely adherent, the upper smooth. Fronðs suborbicular at first, afterwards overlapping one another and irregular in outline, slightly zonate, margins crenate, lobed, tetraspores four-parted contained in hemispherical conceptacles very much flattened on the top, orifices of the conceptacles numerous.

Berwick Bay &c., common.

17. *Melobesia corallinæ*. Crn., Liste des Alg. mar. 1. c., Fl. d. Finist. p. 150.

Fronðs small, one or two lines in diameter, pale-lilac or mauve, thick, slightly convex, obovoid or deltoid, confluent, sometimes lobed, conceptacles numerous not much raised above the surface of the fronð, spores divided into two.

Parasitical on *Corallina officinalis*, which it sometimes almost entirely covers, oftener however it is found in small quantity on the fronds of the "host plant."

[In article I. "Berw. Nat. Cl. Proceedings," 1883, p. 113, line 11 from bottom for "pond" read "frond;" p. 114. line 5 from bottom for "Areschong's" read "Areschoug's."]

EXPLANATION OF PLATES.

Plate VIII.

- Fig. 1. *Phlæospora tortilis*. Natural size.
Fig. 2. Transverse section of a young branch, 500 diam.
Fig. 3. " " an old " " 500 diam.

Plate IX.

- Fig. 1. *Nitophyllum reptans* growing on *Laminaria digitata*. Natural size.
Fig. 2. The same detached from the *Laminaria* stem so as to show shape of frond. Natural size.
Fig. 3. Surface of frond, 240 diam.
Fig. 4. Vertical section of frond, 500 diam.
Fig. 5. *Elachista Grevillii* growing on *Cladophora rupestris*. Natural size.
Fig. 6. Section of same showing unilocular sporangia, &c., 500 diam.

Plate X.

- Fig. 1. *Thamnidion intermedium* growing on *Ahnfeldtia plicata*. Natural size.
Fig. 2. Branch and spores, 125 diam.
Fig. 3. Group of tetraspores, 500 diam.
Fig. 4. *Sphacelaria cæspitula* growing on *Laminaria digitata*. Natural size.
Fig. 5. Portion of same. 125 diam.
Fig. 6. Joints of same. 500 diam.
Fig. 7. *Phyllitis Fascia*. Natural size.
Fig. 8. Section of same. 125 diam.

Plate XI.

- Fig. 1. *Melobesia corallinæ*. Natural size.
Figs. 2. and 3. same. Different forms. 75 diam.
Fig. 4. Surface of frond. 125 diam.
Fig. 5. Spores. 500 diam.

Fig. 6. *Melobesia Lenormandi* growing on a stone. Natural size.

Fig. 7. The same. 75 diam.

Fig. 8. Spores. 500 diameters.

All the plants figured are new British Algæ, except *Elachista Grevillii*, but I am not acquainted with any work containing a figure of that species in fruit.

Carex divisa found in Holy Island. By the REV. JAMES FARQUHARSON, M.A., Selkirk.

ON the 26th of June, 1883, the day before the Club paid its last visit to Holy Island, when botanising there with the Rev. Mr Paul, of Roxburgh, I picked up in the marshy ground beyond the old windmill a *Carex*, of which it is worth while making a note in the Proceedings.

Not thinking there would be any difficulty in determining the species, taking it indeed at the moment for *C. ovalis*, which I wished to examine minutely, I unfortunately did not secure a specimen with roots, but gathered simply the herbage, and the spikes, at that season immature. After returning to Selkirk I examined the plant carefully, and found it to be certainly not *C. ovalis*, but a species with which I was unacquainted, and which, with the books of reference at my command, I could not satisfactorily determine. Mr A. Brotherston, Kelso, to whom I sent specimens, thought it was probably *C. divisa*, an opinion which was confirmed by Mr J. G. Baker, of Kew, to whom on Mr Brotherston's suggestion I forwarded the plant; but neither of them could pronounce on the species with certainty on account of the immaturity of the fruit, and the want of roots in the specimens submitted to them. Mr Baker having forwarded my note to Professor Oliver, of Kew, who was residing at Bamborough in August, that gentleman visited Holy Island and searched for the plant; but though he found the spot I had indicated to him, he failed to find the *Carex*.

In the month of September I had an opportunity of visiting Kew, and was enabled by Prof. Oliver's kindness, and in his company, to make a careful comparison of my specimens with those of *C. divisa* in the Kew Herbarium, especially with the

numerous specimens in Dr. Boott's collection of *Carices*. The dried specimens in the Herbarium vary considerably in appearance, but to many of them the plants in my possession made the closest possible approach. While more mature specimens would be requisite to remove all doubt on the subject, I confess there is now scarcely a doubt in my own mind; and Professor Oliver stated as the result of our examination and comparison, that there need be little hesitation in declaring that the Holy Island plant is *Carex divisa*. He was under the impression that the species had been previously found somewhere within the territory of the Tyneside Naturalists' Club; but the present is the first record of its occurrence in the district visited by the Berwickshire Naturalists' Club.

J. FARQUHARSON.

Titlark feeding young Cuckoo.

I have only a few times seen the titlark and a young cuckoo together; and it is interesting to watch how closely the small bird follows the larger in all its movements. I have not, however, seen the titlark feeding the cuckoo, which must be a very pretty sight. I have received a note from a friend, who resides in the uplands of Gala Water, telling me that he watched a titling and young cuckoo for about half an hour this season, during which time the tit many times fed the cuckoo. The cuckoo seemed easy and careless of its small foster mother, but was always ready to accept the grub offered. Sometimes the tit sat on the cuckoo's back when feeding it, sometimes on its head, and occasionally it dropped the food into the gaping mouth of the cuckoo while passing it on the wing. This is so interesting a subject, that members who have witnessed similar proceedings on the part of these birds would do well to record them for the benefit of the Club.

JAMES SMAIL.

Kirkcaldy, Oct. 24th, 1883.

On a Dirk or Dagger found at Rothbury, July, 1883. By
D. D. DIXON.

THIS dagger, a relic of those savage lawless days in Coquetdale, when all men seemed

"To follow still the good old plan,
That they should take who have the power,
And they should keep who can,"

was found by some workmen a few feet beneath the surface while digging a foundation for a house on the "Borough Butts," at Rothbury, a piece of ground known by that name lying on the north side of the river Coquet, between the church and the County Hotel, which in olden times would be the practice ground of the village bowmen.

The Butts, according to law, were erected and kept in repair by each township. From the time of Edward II., many Acts of Parliament were passed to encourage the practice of archery; and during the reign of Henry VIII., the law was very stringent that every boy over seven years of age, and every man under sixty, should provide himself or be provided by his friends with long-bow and shafts; and that on Sundays and holidays all able-bodied men should appear in the field to employ their leisure hours, "as valyant Englishmen ought to do," in the noble exercise of shooting. The vill of "Routhbery," as well as other townships, would be required to furnish in time of war a band of archers for the king's service; and doubtless Rothbury bowmen would number amongst the English Archers at the field of Flodden, where

"Fell England's arrow-flight like rain."

In 1458, John Cartington of Cartington Castle, near Rothbury, was one of the Commissioners appointed by King Henry VI. to raise archers in the County of Northumberland; and the adjacent township of Rothbury would be a portion of his district, where he would levy for men.



As the dagger, which appears to be a weapon of the 15th or 16th century, was found on the ancient archery practice ground, we may surmise it to have been dropped by one of the archers; or lost in a fray, an event that we well know was of frequent occurrence amongst the dalesmen at that period. At all events—how or when lost—we have in it a memento of savage days and savage deeds in Coquetdale.

D. D. DIXON.

Reports on the Effects of the Great Storm of Wind, 14th October, 1881, on Plantations. [Continued from p. 214.]

BERWICKSHIRE.

Report by Alexander McIntosh, gardener, Paxton House, on the Effects of the Storm of 14th October, 1881, on the woods on Paxton Estate, the property of Col. David Milne Home, M.P., 9th Nov., 1883.

About a quarter before twelve o'clock noon on the 14th October, 1881, the sky assumed almost inky darkness, and one could hear the storm approaching with a rushing sound; the wind being almost due north.

Some sashes on frames in the gardens here were lifted off and tossed about like feathers, and a brick wall, 30 feet long and 8 feet high, in connection with the forcing houses, was blown over. The storm reached its height in this neighbourhood about one o'clock afternoon.

The number of trees blown down on Paxton Estate was 456; a great many more were also damaged of which no record was kept. The most of the trees blown down consisted of hardwood, such as oak, beech, elm, etc. In most cases the trees were lying with their tops to the south. A few were lying south-east, but I attribute that a good deal to the position of the woods.

The storm must have run in currents, for some parts of the woods here escaped, while in other parts very great damage was done.

The Gardens, Paxton House,
9th Nov., 1883.

ALEX. McINTOSH.

On Billie Estate, the property of Col. David Milne Holme, M.P.
Grange, Coldingham, 31st October, 1883.

The number of trees blown down in Grange Plantation on the 14th October, 1881, was about 14,000 Scotch fir, 2,000 larches, and 500 spruce firs. The wind was from the north, and it seems to have run in currents, as there are places where the trees are standing on both sides, and the whole of the trees between levelled. All the trees in Grange Plantation were lying in one direction; but in regard to the trees that fell around Auchencrow Mains farm-house, the wind had been a good deal more from the east; and the same happened in the Callside Plantation at Restonhill. There were 1,594 trees overturned on Restonhill; and 2,181

trees on Heughhead and Cairncross; and 1,230 trees on Crosslaw, and North and South Fallaknowe. The trees in the last named plantation are mostly blown down in patches at different places, and not regularly over the whole plantation.

ROBERT CLEGHORN,
Forester, Grange.

Longformacus Estate, the property of Lieut.-Col. Brown.

Longformacus, Duns, Berwickshire, 1st May, 1884.

Dear Mr Hardy.—I have been trying to arrive at the estimate number of the trees blown down, but I cannot get at it properly; the only correct plan is to count the number of stumps, which I will set to work to do this summer.

Yours truly, A. M. BROWN.

A rough calculation of the blown down wood on 14th October, 1881, is as follows, only counting large trees,—

Scotch Fir	2854
Beech	178
Ash	114
Elm	67
Larch	400
Planes	7
Limes	2
Oaks	8
Spruce	114
Total	3744

At present, by the recent gales in January and December last, about as much again has been blown down. But I will have the whole properly counted this summer.

A. M. B.

Report as to the effects of the gales of October, 1881, and February, 1882, on plantations on Duns Castle Estate, the property of William James Hay, Esq.

The policies of Duns Castle are situated a short distance to the north-west of the town of Duns, at the southern extremity of the valley between Duns Law and the eastern slopes of the Hardens ridge; inclusive of the woods which crown the summit of the Law and the higher grounds opposite, they extend over an area of about 1000 acres. The castle itself stands at an elevation of nearly 500 feet above the sea level; the Law rises to a height of 700 feet; while some of the wooded eminences to the north-west attain an altitude of fully 800 feet. The park round the mansion is of a gently undulating character, and is ornamented with splendid trees, principally limes, sycamores, oaks, and beeches; and a magnificent avenue of limes, 300 yards in length, forms the eastern approach to the castle. Many of these trees are upwards of 14 feet in girth, and an examination of sections of several of the largest that were recently blown down show that they were at least 170 years old. The woods on the hill slopes are composed chiefly of Scotch fir, with a liberal admixture of larch and spruce and the commoner deciduous trees.

360 *Report of the Great Storm of Wind, October, 1881.*

The effects of the gale of the 14th October last at Duns Castle were most disastrous; and it may safely be affirmed that no storm of this century, not excepting the gale of 1856 which was one of the most destructive to plantations ever experienced in this district, has caused such devastation over so wide spread an area. Here, as elsewhere, the course of the wind, the comparatively short duration of the gale, and its extreme violence, gave clear indications of its cyclonic character. The wind appears to have swept down the valley from the north in circular or spiral gusts; breaking through the avenue of limes already mentioned and wrecking some fine clumps of trees in the park, as well as a belt of plantation about half a mile to the south, besides causing great havoc in the woods on the slopes at each side of the valley. On the highest portions of the grounds the damage was not quite so great; and it is somewhat singular that the subsequent gales in October, November, and the following February did comparatively little mischief at Duns Castle, although on several estates in the vicinity they were almost as destructive as the storm of the 14th October. This may perhaps be accounted for by the fact that the principal exposure of the Duns woods is towards the north and east, while the later gales seem to have had more or less of a westerly direction.

In the table appended will be found statistics of the number, varieties, ages, &c. of the trees blown down on the estate.

The price of timber in the locality has naturally been considerably affected by the sudden introduction of so enormous a quantity of it into the market; but its depreciation in value has not been so great as was at first apprehended, excepting in the case of beech which is practically almost valueless. Upwards of 1400 trees, comprising fine specimens of oak, lime, Scotch fir, larch, and poplar were sold by public roup on the ground in February last, and realised fair prices. The remainder of the wood was sold in bulk to Messrs R. & R. Brownlee, Timber Merchants, Earlstoun, who have undertaken to cut and remove the whole within two years.

An experiment of great arboricultural interest was instituted by Mr Hay shortly after the storm. Naturally anxious to save as many as possible of the fine park trees which had been overturned by the gale Mr Hay, after advising with Mr Hutchison of Carlowrie, resolved to raise a number of the largest. The operation, though confessedly one of great difficulty, was successfully accomplished in every instance within a few weeks; and at the present moment no fewer than 60 trees, most of them upwards of 100 years old, which had been prostrated by the storm, are standing in their original positions. Previously to their being raised the trees were deprived of their heaviest branches and after being brought to the perpendicular were firmly and carefully supported by strong wire ropes attached to posts driven securely into the ground. The roots were at the same time embedded in rich soil, and copiously watered. It is yet too early to pronounce definitely as to the success of the experiment; but it may be stated that all the trees which formed the subject of it are living, and many have made vigorous growths and if we are favoured with

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ordinary seasons, may be confidently expected to survive for many years to come.

J. FERGUSON.

Duns, 21 Aug., 1882.

Table.

Species.	Total Nos. blown down.	Under 50 years old.	Upwards of 50 & not exceeding 100 years.	Above 100 years.	Girth of longest trees.	Average girth.	Remarks.
Scotch Fir	6871	1045	5416	380	10 feet	6 feet	
Larch	2854	40	2814		11	9	
Spruce	2760	2200	560		9	6.6	
Silver Fir	50		50		9.6	5.9	
Oak	618		228	390	9.10	7	20 blown down oaks raised.
Lime	170		110	60	12.4	6	20 " limes "
Beech	489		226	263	16	6.10	1 " beech "
Sycamore	450		400	50	11	4.3	
Elm	724		674	50	14.6	5	5 " elms "
Ash	1211		1161	50	14	3.8	2 " ash trees "
Spanish Chestnut	7		70		11	9	
Birch	345		345		4.8	3.4	
Alder	100		100		4	3	
Poplar and Willow	160		160		14	10	2 " poplars "
Other Hardwoods	50		50		6	3.6	10 " maples, walnuts and thorns raised.
	16922	3285	12394	1243			

Note of trees blown down by Gales of 1883-4.

Scotch Fir	975,	70 under 50 years old, others above 50.
Larch	41,	All over 50 "
Spruce	30,	" "
Birch and other hardwood	50,	" "
Total	1096	

Measurements of the largest Trees at Whitehall near Chirnside, with damage done by the October Gale, by Charles Stuart, M.D.

Hillside Cottage, Chirnside, 3rd March, 1884.

My Dear Sir,—I omitted to send you the measures of the Whitehall trees, many of them blown down since, by the great gale of the 14th Oct., 1881.

13 Hollies, varying in girth from 3 ft. 10 in. to 1 ft. 6 in., and the heights varying from 51 ft. to 39 ft., all killed by the great frost of 1879-80-81.

Oaks blown down, No 1., girth five feet from the ground 8 ft. 7 in., 84 ft. high. No. 2. 8 ft. 10 in. in girth, 78 ft. high.

English Yews, 42 ft. high, 6 ft. in girth, much damaged by frost on north side.

Spanish Chestnuts.

Girth	8 ft.	9 in.	51 ft. high
"	13 "	6 "	72 "
"	9 "	5 "	63 "
"	8 "	6 "	75 "
"	9 "	3 "	63 "
"	10 "	9 "	69 "

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Girth	8 ft. 11 in.	75 ft. high.
"	10 " 9 "	72 "
Mostly blown down.		
Girth	10 ft. 6 in.	84 ft. high.
"	11 " 8 "	86 "
"	14 " 10 "	66 "
"	12 " 9 "	78 "
"	10 " 0 "	78 "
"	10 " 10 "	78 "
"	15 " 9 "	96 "

English Elm, girth 9 ft. 4 in., 87 ft. high.

Holly, 45 ft. high, 4 ft. 4 in. in girth, completely killed by frost.

English Yews, 29 ft. high, 3 ft. 2 in. in girth. 33 all killed by frost.

Scotch Firs, 69 feet high, 12 ft. 10 in. in girth. No. 2, 78 ft. high, 10 ft. 2 in. at five feet from ground, much damaged by great gale.

64 Hollies, 63 ft. high, 3 ft 9 in. in girth, had been in ancient days a hedge, all killed to the ground by frost.

Oak, 87 ft. high, 13 ft. 2 in. in girth, blown down. No. 2, 10 ft. in girth, also blown down.

Yours truly, C. STUART.

EAST LOTHIAN.

Number of Trees blown down on the Estate of Tynninghame, the property of the Right. Hon. the Earl of Haddington, October 14th, 1881, with the contents of some of the largest specimens.

Oak.	Ash.	Elm.	Sycamore.	Beech.	Spanish Chestnut.	Birch.	Gean.	Hornbeam.	Scots Fir.	Spruce Fir.	Lime.	Larch.	Sundry.	Total.
827	336	131	149	2503	11	160	20	17	4867	22	12	90	74	9219 Trees.

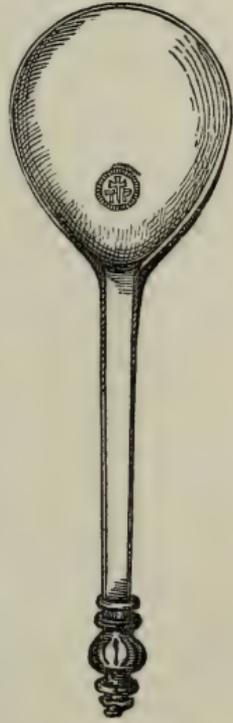
Contents of the *bole* of some of the largest trees. Some of these had limbs containing many cubic feet of timber.

	Length	by	Girth	Contents.		Length	by	Girth	Contents.
Beech	39	by	23½	149·6·9	Oak	44	by	23	161·7·8
	58	by	19	145·4·10	Scots Fir	51	by	22	171·5·0
	50	by	25	217·0·2		40	by	27½	210·0·10
	20	by	33	151·3·0		28	by	27½	147·0·7
	48	by	25	208·4·0		51	by	18¾	124·6·1
	49	by	25	212·8·1	Plane	30	by	18½	71·3·7
	27	by	26½	131·8·0	Elm	30	by	19	75·2·6
	61	by	20¾	182·4·7		45	by	20	125·0·0
Oak	53	by	18	119·3·0	Silver Fir	21	by	31	146·9·10
	36	by	25¾	165·9·2	Spanish				
	31	by	25¾	142·8·10	Chestnut	33	by	22	101·0·9
	42	by	19½	110·10·10					

R. P. BROTHERSTON.

On a Spoon of the Renaissance period found at Mousin, near Belford; with a notice of Mousin. By JAS. HARDY.

THIS small ornamented spoon, although only of pewter, is a very fine example of Renaissance—perhaps 16th century—workmanship, and has been figured for the preservation of the style from a drawing by Miss Dickinson. It was found at Mousin some years since, and belongs to Mrs Lumsden, Castle Heaton, who sent it to be exhibited at the Berwick Meeting, October, 1883. The figure has rather a diminutive appearance, being only one half of the original size, which is $6\frac{1}{2}$ inches long. The length of the mouth is about $2\frac{1}{2}$ inches; breadth of ditto, $1\frac{1}{2}$ inch; length of free part of handle, 3 inches; of ornamental part, about 1 in. The stamp contains a cross, with the initials T. P.



As it may have belonged to an occupant, and not to an owner of the place, it is in vain to search after its former possessor.

MOUSIN.

Of the township of Mousin and its owners there is no written history, and I am tempted, after looking over the references to it in some of the records, to draw up a short statement of what the information they yield, amounts to.

Mousin or Mowson is a hamlet and township in Bamburgh parish, $1\frac{3}{4}$ mile S. by E. of Belford. The present name is a corruption of the ancient Mulesfen, Molesfen, Millisfen, Mulfen, etc. The name is of Anglo-Saxon origin; the first half possibly from A.S. *moeld*, Scotch, *muldes*, *mools* earth, soil; or from A.S. *mulo*, a mule, and fen a marsh; or even from A.S. *mylen*, a mill; the mill at the marsh. *Moll* is also an A.S. personal appellation. The double *ll* and single *l*, readily combine, or fade into *w*. The name is pronounced as a labial. — “Moosn,” in the manner Scotch people say *moose* for *mouse*.

As holding by drengage, the earliest known owners represent old native proprietors who succumbed to the Conquest, and were reinstated in their lands under Norman auspices; and holding as they did directly from the crown, and officially connected with the royal castle of Bamburgh, two of

them show their loyalty, and veil their affinity to the subdued race, by adopting the Christian names of Henry and Stephen, Anglo-Norman kings.

The peculiar tenure of the numerous royal demesne tenants of Bamburgh Castle is epitomised, but quite readily understood, in the example of Mulesfen, as we find it registered in the "Testa de Nevill" and the "Rotuli Hundredorum," from inquisitions held towards the close of the reign of Henry III., and the opening years of Edward I. In this primary stage, Mulesfen was not a single vill, but is also spoken of as a "villata," or combination of vills not sufficiently large to stand single*: but possessed of the rights of a community. Of these Mulesfen proper appears to have been the head of the manor; subsequently we hear of two of the other divisions; as Mousin Newlands, and South Mulesfen.

1. Henry de Millisfen holds of the lord the king *in capite*, Millesfen in drengage, and pays by the year 30s. and makes carriage of timber (truncag") to the Castle of Bamburgh and ought to pay tallages (crown revenues) with the mesne tenants of the lord the king, and ought to pay of cornage 14d, and of merchet, (for the marriage of daughters) 16s., and of heriet (the best animal on decease of the owner) 16s, and of relief, 16s; and for forfeiture, 16s; and ought to plough once in the year at the will of the serjeant with six ploughs receiving one meal of the lord the king, and carry corn in autumn with twelve wains receiving one meal of the lord the king, and ought to reap in autumn three days annually, each day with twelve men receiving one meal of the lord the king, and is rated for mill-dues at the thirteenth measure (ad xiiij vas) and pays pannage.†

2. The villa of Mulesfen was drengage of the lord the king and was in the hands of Luce de Rysgefurd along with the heir, and is worth 30 shillings.‡

3. Stephen de Mulesfen holds one villa of the lord the king, in drengage, by the service of 30s, in the year, and shall plough with one plough, his own, one day in lent, provision being found by the lord the king, and shall reap in autumn three days, each day with twelve men, the king providing victuals, and shall carry tree trunks to the castle of Bamburgh, and shall give merchet, and aid, and pannage of his own hogs, and shall go with the serjeants of the lord the king for taking up payment of distress warrants for the debts due to the lord the king. All his ancestors have held by the same service which is of ancient infetment, and there is nothing from that fief either alienated or given away, whence the lord the king may have his service diminished.§

Henry de Mulesfen died possessed of Mulesfene manor, 52 Hen. III (1267).|| His name occurs also in a plea of that date. Henry de Mulesfene is witness¶ of the charter of Sir Simon de Lucre, assigning five roods of ground in South Charlton, of valuable common pasturage rights to the monks of the Farne Islands.**

* Ellis's Gen. Introd. to Domesday-Book, p. 131.

† Testa de Nevill, p. 389.

‡ Ib. p. 391.

§ Ib. p. 393.

|| Inq. p. Mortem, i. p. 31, No. 9.

¶ Placitor. Abbrev. in Hodgson's Hist. of Northd. vol. iii., part ii, p. 343.

** Raine's North Durham, App. p. 124.

He was succeeded by another Henry. In the "Rotuli Hundredorum, 3 Edward I. (1274), a jury of inquisition found that Henry de Molesfen holds the vill of Mulesfen of the lord the king in chief by free sokage, paying thence 30 shillings for his farm, and 14d for cornage, and he pays to the castle of Bamburgh 3 merks for multure, and shall lead by the year 15 trunks of trees by turns, and in autumn shall make one carriage with 12 wains by turns, being allowed one meal by the day, and shall reap with 26 men for one day by turns, on the allowance of one meal for the day, and shall plough with six ploughs once in the year, one meal of food being allowed for the day, and the same "villata," (or combination of vills) shall give pannage for their hogs which shall be found above a year's age at the feast of Holy Cross in autumn (Sept. 14), and for each pig that feeds in the open field one penny at the feast of Martinmas in winter (Nov. 11,) in the name of pannage to the king's agistors of Wytingeham.*

It had been then the practice of the little townlets and hamlets holding of Bamburgh by a similar tenure, to graze their pigs at Whittingham during the acorn season?; a blank unfortunately occurring in the document, can only be conjecturally filled up.

At the same date the jury said that the villates of Socston (Shoreston) Sunderland, Beednal and Mulfen were wont to come to [the woods?] of Wytenham with their hogs, and there to agist them (or pay a stipulated price for their pasture) to the agistor of the lord the king, but now for twenty years by past they had not come, to the great loss of the king. †

The great trees of Whittingham vale probably also supplied much of the materials of the truncage for fuel insisted on as the special work of the great tenants of the castle-lands of Bamburgh.

In "Placita de quo Warranto," 21, Edw. I. (1292), Roger de Mulfen was summoned about some tenements, and he pled that they were of the inheritance of Beatrix his wife, whose name was omitted in the brief, and the plea was accepted. ‡

The Mulefens disappear. In 33 Edw. I., (1304), Thomas de Camera obtains an inquisition for licence of infeftment for Robert his son, of Mulesfen manor holding of Bamburgh Castle, of two carucates of land at Yernum, and one carucate at Ederston.§ We again hear of the property of Mulesfen in the following grant, 3. Edw. III (1328-9). Newland has been dissevered from the manor, which still retains certain rights. The king then granted to Thomas de Bamburgh for his life-time all the lands and tenements with their pertinents which belonged to John Middleton, forfeited for treason, in "la Newland," and Warndham, which are valued at £7·7·6 annually, by payment annually to the king of £6·9·10, and to the Prior of St. Oswald 6s 8d, and to the proprietor of Mulesfen 2s, with which the said lands and tenements in "la Newland" are burdened annually to the said prior and proprietor.||

Mulesfen had passed to the Swinhoes in the reign of Elizabeth. In 1576,

* Rot. Hund. i. p. 95.

† Ib. p. 92.

‡ Hodgson's Northd., vol. iii. pt. ii., p. 187.

§ Inq. p. M. i., p. 55.

|| Originalia, ii. p. 305.

Thomas Swinho, gentleman, of Mowlfen was one of an inquest on the rights and liberties of Bamburgh Castle. "South Mowlsfen" was one of the places, "which pay yearly severall rents into the said Castle, which rents be commonly called *Drimgage* (sic). And the same townes alsoe do make appearance at head courts, or in default thereof lye in fyne or be mercyed." *

Henry Swinhoe of Mowson, son of Henry Swinhoe of Burton, a son of William Swinhoe of Cornhill and Goswick, was comptroller of Berwick, and was living in 1610. The will of his son Thomas Swinhoe of Mousen, Esq., is dated 13th January, 1641, and proved 1642. His son and heir Thomas Swinhoe of Mousen, Esq., was below age, 1641; he was owner of Mowsen, and Whittle in the parish of Shilbottle in 1663. There was a Gilbert Swinhoe of Mousen, 1671, who had numerous descendants.†

Mousin estate was purchased by the Rev. John Shaftoe, A.M., vicar of Netherwarden, who endowed with it a Free School and Almshouses at Haydon Bridge, by deed of gift bearing date the 16th and 17th of June, 1685.

* Hutchinson's View of Northd, pp. 169, 170.

† Raine's North Durham, p. 184.

‡ Mackenzie's Hist. of Northd, ii., p. 258 Parson and White's Northumberland, ii., p. 627; Sopwith's Alston Moor, p. 12.

On the Ancient Cross at Crosshall, in the Parish of Eccles, Berwickshire. By JAMES HARDY.

ONE of the best preserved of the ancient historical monuments of the Merse district is the cross or obelisk at Crosshall in the parish of Eccles. Hitherto it has remained intact, and it is highly creditable to the people dwelling near it, to have preserved it unmolested. As the late Mr John Hood of Stoneridge remarked in a letter on the subject: "One of the most extraordinary things about the cross is that successive generations of cottagers for hundreds of years have lived just in front of the cross, and that none of the children have ever destroyed it." One of its proprietors, however, did not exercise the same preservative forbearance, for Sir John Paterson in 1788 wished to remove it to the front of Eccles house, and employed workmen who dug several feet into the earth to try to lift it, but were unable to raise the stone on which it stands.

In connection with the Club's visit to this monument it is desirable that an account of it should appear in the "Proceedings." There have been various observations published at different periods relative to this cross. It is described, or referred to, in both the Statistical Accounts; figured and annotated on in Muir's "Notes on Remains of Ecclesiastical Architecture," p. 35.; and again portrayed by Mr Drummond in the "Proceedings of

the Society of Antiquaries," vol. iv., 1863, p. 89., in an article entitled "Notice of some Stone Crosses, with especial reference to the Market-Crosses of Scotland." The Council of the Society of Antiquaries have on this occasion granted permission to use Mr Drummond's illustration, which will afford a general idea of the aspect of the cross, with the prospect of Hume Castle in the distance. But the earliest detailed notice and delineation of its features are those of Mr Roger Robertson of Ladykirk, contained in the first volume of the "Transactions of the Society of Antiquaries of Scotland," vol. i., 1792, pp. 269-272. This being almost entirely out of reach, and containing the only plausible theory of the cause of its erection may fitly be reprinted.

The column and its basis it may be premised are of a durable white sandstone, possibly derived from Eccles quarry.

"This obelisk," writes Mr Robertson "stands near a village called Deadrig, [now Crosshall], in the parish of Eccles and county of Berwick, about half a mile westward from the turnpike road, between Greenlaw and Coldstream.

It is of one piece of stone inserted into a base. The whole height, about 14 feet 10 inches. The shaft and round top of one entire stone. Base, 3 feet 10 inches high, 3 feet 2 inches long, and 2 feet 8½ inches broad."

[The measurements as given in the new Statistical Account of Berwickshire by Dr R. D. Thomson, are as follows: "the column above the base measures 10 feet high, 1 foot 6 inches broad on the west and east sides at the bottom, and 1 foot on the north and south. The pedestal, which is a large solid block of sandstone is 2 feet 6 inches high, and 3 feet square on its upper surface, and is raised 1 foot 6 inches above the ground, so that the whole elevation of the cross is 14 feet "]



"It has two broad and two narrow sides; and tapers from the bottom, where it is 1 foot 9 inches over, to 1 foot 2 inches at the top; the diameter of the flat circular ornament on the top, being 1 foot 10 inches. On both sides of the circle at the top, there is engraved a plain cross. On the east side, a rude figure of a man 4 feet 3½ inches in length, attended by a greyhound 2 feet 11 inches long. On the opposite or west side, a shield bearing three cheverons ["a cheveron in the dexter and sinister chiefs, and precise middle base respectively, "] and below, a St. John's cross, 5 feet 2 inches high. The south and north sides are about a third part narrower than the east and west. On the south side, the same shield is repeated, and beneath is a two-handed sword, 5 feet 9 inches long; the handle 9 inches. Northside, a cross Calvary, top of it inclosed in an ornament resembling a shield. The cross is 5 feet 7 inches high.

The shape, size, and figure of the obelisk, resembles the carved pillar in Flintshire, described in Camden's *Britannia*, which he esteems to be a Danish monument, and not unlike one given and described by Pennant, in his *Voyage to the Western Isles*, p. 236.

The mixture of the heathen emblem of the dog [the editor, however, very appropriately subjoins the remark that "the accompaniment of a greyhound is very common in monuments of a very late date, and by no means requires being referred to pagan customs, "] with the Christian sign of the cross, give room to conjecture, that it had been erected when even heathen customs had not been entirely forgotten. But the shield bearing three cheverons proves, that it has been set up when the science of heraldry had been pretty far advanced in Scotland, and after the first croisade, *anno* 1096, when our nobility and gentry first assumed coats armorial. The bearing is of one of the surname of Soules [or Soulis].

A family of this name flourished in Scotland, and were employed in the highest offices of state for a long time, till Sir William, the head of the family, was tried, forfeited, and condemned by sentence of Parliament, to perpetual imprisonment, for a conspiracy against Robert Bruce, *anno* 1320 [see Nisbet, Fordun, and Index to Anderson's *Diplomata*, etc.]

The repetition of so many crosses probably shows that the person, whose monument this is, had been at the holy war. The first time that any number of the Scots went to these wars, was to the second croisade, *anno* 1144, and likely Soules among others. And we know that, much about this time the nunnery of Eccles, situated about a quarter of a mile distant from this obelisk, was founded *anno* 1154. It is very probable, therefore, that this monument was erected after the year 1154.

The sword on the southside exhibits a true representation of the ancient two handed sword; and it is of the precise dimensions of that one given to the Society by Mr Wight, and mentioned in the minutes of the Society, May 1781, donation 44.

The delineation of this sword is a proof that this monument has been erected while these two handed swords were in use, and resembles the swords represented upon the great seals of Scotland, and the seals of the great Barons; especially those from 1124, to the time of David Bruce, in 1329.

I therefore offer a conjecture, that this obelisk is the monument of the father of Sir John de Soules, Lieutenant or Viceroy to John Baliol [see

Fordun]; but I submit this to the inquiry of the ingenious antiquary.

The vulgar tradition says, that a governor of Hume Castle was killed on the spot, in a skirmish. Hume Castle is about two miles distant from it."

That the dignitary to whose honour this monument was raised was a Soules, may from the arms on the scutcheons be granted, but that it was to commemorate the father of the Sir John Soules referred to by Mr Robertson is most improbable. The father was Nicholas de Sules, sheriff of Roxburgh, 1346, who "although the wisest and most eloquent man in the kingdom was removed from the councils of his sovereign in 1255, and died at Rouen, in Normandy, in 1264. By his wife Annora, the fifth daughter of the Earl of Buchan, he had at least two sons, William and John."* To follow out their history is not required, because the want of coincidence in dates contradicts Mr Robertson's proposed identification. Neither are we helped by knowing who were the predecessors of Nicholas. Randolph de Soulis, a Northamptonshire baron, appears as the progenitor of the race, in the charters of David I., Malcolm IV., and William the Lion. He held the office of the king's butler during the reign of William the Lion. The second Randolph, lord of Liddesdale, like his predecessor, was assassinated in 1207, in his castle, by his own domestics. Fulco de Sules was the next "pincerna;" and he occurs of date 1222-1223. Nicholas, the son of Fulco, and his successor as king's butler, and notable as the erector of Hermitage Castle, is the banished noble who died at Rouen in 1264.†

None of the Soules family, so far as is known, held possessions in this part of Berwickshire. It is, however, quite possible that some distinguished scion of the race may have fallen at this spot of evil name, in some unrecorded skirmish, of which tradition is the only chronicler.

On the subject of this cross I am permitted to quote a letter from Mr James Drummond, the artist, to Mr Milne Home, dated 8 Royal Crescent, Edinburgh, 14th September, 1875, expressive of his opinion on some of the figures represented on it.

"The cross in the parish of Eccles I made a sketch of many years ago, and there is a small woodcut of it [the same now accompanying this paper] as an illustration of a certain class of Crosses in a paper which I sent to the Antiquarian Society in 1861. Nothing is such a puzzle as the date of such memorials, the art being so rude that it directs one to no period, the dress or

* Armstrong's Hist. of Liddesdale, pp. 124-125.

† Ibid, pp. 123-5.

armour being a mere blur. As to Mr Robertson's conjecture, of the heathen emblem of the dog, it is quite out of the question. I take it simply to mean that the knight was not only a soldier (as indicated by the claiemor), but was fond of the chase, such being quite common in all sorts of monumental stones in the West Highlands, where by far the finest of such memorials remain. On these you have also deer hunts, otter, seal and salmon, also falcons attacking other birds, pointing to the worldly pursuits and enjoyments of those to whom such monuments were erected.

I remember that the heraldry was very indistinct, and that I made it out on one of the shields, as something like this [a pen and ink representation of three cheverons on a shield. two above and one beneath] but I might decipher it very differently now, as I had paid little attention to such subjects then, merely sketching what was picturesque. Although the above (referring to his rough sketch) is not our way of placing three cheverons on a shield, yet it may have been an early way, or by one unaccustomed to do heraldic work, who was told to put three cheverons on a shield. Be that as it may it is a capital specimen of its class."

The arms of the Souleses were not uniformly charged with cheverons. The Sir William Soules, who died a prisoner in Dumbarton Castle, "bore bars. See his seal, General Register House, A.D. 1320. The arms of Sir John de Soules were a barry of six with a bend."* His seal is engraved in Mr Armstrong's recent work, p. 170.

Although the monument may be safe at present under the influence of public opinion, it has sometimes been regretted that it has never been defended from any accident, by an enclosure. Some correspondence as to the desirability of some protection being accorded to it, took place in 1875, between some of the Berwickshire County gentlemen and a former Marquis of Tweeddale to whom Crosshall belonged, but nothing was accomplished. From a perusal of the papers I see that an iron railing to secure it had been estimated at £30. Wire fences had not then been in vogue.

I see in the correspondence statements about some local tradition associating the name of the Soulis family with the pillar. I may safely assert that any tradition to that effect is not older than Mr Robertson's paper, and that the "Sir Roger" about to be mentioned was no other than Mr Roger Robertson himself, whom the country people had confused with the Soulises whom he had written about.

It is Mr Hood who puts the story into form. "Tradition says, it was in memory of a Sir Roger de Soulis of Hermitage, of a

* Armstrong's Hist of Liddesdale, &c., Note, p. 129.

powerful family in Liddisdale, who was ambassador from the Scottish Court to that of France in our early history. There is also a tradition about a battle being fought on the side of a small burn close by, betwixt the Scots and some English Raiders, where this de Soulis was slain—called “Lipraick’s Syke,”—where old Dickson’s father was drowned after a raid of a different kind—a hard drinking match—universal in those days.”

The country people have further improved on this story. They say that the burn ran with *lappered* (congealed) blood for twenty four hours; and then by an etymological feat they derive the name Lipraick or Lapraick from *lappered*. * The field of slaughter on the same authority was the “Dead-rigs,” although that name might have arisen from the flatness of the ground, from whose surface water does not readily recede. “Dedrygg” appears in in a Melrose charter dated 1431. (Lib. de Melros, p. 524.)

CAMP AT HARDACRES.

On the hill of Hardacres, says the more recent Statistical Account (1834), about a mile north-west of the cross, there are traces of entrenchments, and some cannon balls have been found between it and Hume Castle, which stands two miles north west. The latter are, perhaps, remnants of Colonel Fenwick’s attack upon Hume Castle in 1650. “The camp at Hardacres,” writes Mr Hood in 1875, “had a marsh on the north and south, and no access could be had to the top of the hill where the camp was, unless the intruder went in at the east end of the hill and so up to the very west end, where a double row of trenches were quite visible in my early days.” The camp on the summit of Hardacres Hill is marked as circular in Armstrong’s map of Berwickshire, 1771. This map places the village of Deadrigg to the west of the obelisk, and close to it, facing in a different direction from the present farm cottages.

[Since these notes were written I have revisited the pillar, and I am sorry to report that the stone-cutting mania is no longer

* The original form was probably Liprig, i.e. Leap-rig, from the A.S. *līp*, saltus, and *hrycg*, or *rige*, dorsum, a ridge. The same word occurs in an old grant of land near Haydon-bridge, near the river Tyne, under the form of Liprig and Liprigs.—(Archæologia Æliana, N. S. x. p. 41.)—Since this note was written, I find the Berwickshire locality written as “Leprieg[s],” in a charter of land near Halsington to Master William de Grenlaw, in the reign of Alexander II, (Liber de Melros, p. 206.)

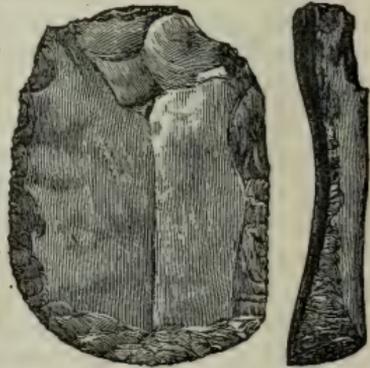
restrained at Crossrig, and that one corner of the pedestal is now lettered with fresh cut initials, and that the pillar itself has not escaped the desecrating knife; and the children are battering it with stones. Some deep pits at each corner of the basal stone were I am informed scooped out by a boy in former years. They are blackened over now, but might without explanation be mistaken for the pagan cup symbol.]

On a Flint Scraper found on Gullane Links. By JAMES HARDY.

THIS admirable example of a Flint Scraper—the finest I ever examined—was picked up on Gullane Links and given to Mr George H. Stevens, who handed it to me for record. It is now in the Museum of the Society of Antiquaries of Scotland, who have favoured the Club with the wood-cut.

The size of the Scraper is $2\frac{1}{2}$ by $1\frac{3}{4}$ inches. The wood-cut is a front and side view $\frac{2}{3}$ of the actual size.

The flint is a pale grey. The Scraper has been formed of a thickish slice, that has come off on one side, now forming the back, without a flaw, and has required no working: it is ridged on the back, slightly curved in front, and worked along both edges, as well as the front. "It bears," writes Dr. Anderson, "a very suggestive resemblance to some of the Esquimaux scrapers as figured by Sir John Lubbock and Dr. Evans."



Names of the Farne Islands and of Lindisfarne. By the late RALPH CARR-ELLISON, Esq., of Dunston Hill.

THE name of the Farne Islands was pronounced distinctly in old English as Farnè, the final *e* being sounded as in a multitude of instances where it is now mute. It is, however, of the utmost importance to the orthography, being in fact the key to the sense of the term. It represents the Anglo-Saxon *a* in Fárna for Fáraena, the genitive plural of Fara a traveller or pilgrim. So that in that mother-tongue of our vernacular English Fáraena eálande signified Islands of the Pilgrims, *peregrinorum insulæ*.

This appellation is obviously not more ancient than the Anglo-Saxon and Christian epoch in Northumbria. It must have been preceded by a Cymric-British appellation, but all trace of this is lost.* In the name of Lindisfarne, however, we have a remnant of Cymric nomenclature, for it is plainly only a variant spelling of Linnesfarne, the *d* being introduced to add emphasis to the power of the *n*, which is better conveyed by doubling the *n* itself. There is no such word as Lind in Anglo-Saxon, except in the sense of the lime-tree; but Llyn, (pronounced hlyn,) is the ordinary Welsh term for a lake or any considerable sheet of water. The lake of Bala in North Wales, the only lake of much magnitude in the Principality, is denominated *Llyn tegid* in Welsh, that is Lake-clear. And the mountain "tarns" (to use a Norse term prevalent in Cumberland) are all known as *Llyns*. Waterfalls and rapids are designated *Rhaidr*, so that it is probable that when our Anglo-Saxon ancestors applied the Celtic term *lin* to waterfalls, they rather mistook its original sense in the British Cymric tongue, which would embrace the pool above or below the cascade, and not merely the waterfall.

Lindisfarne is often thought to be so called from the Lind-Burn, which falls into the so-called slake or slack-water of Beal, (between the mainland and the Isle) near its north-western end, and traverses its bed at low water in a southerly direction till it falls into the haven at the low end of the slake to the southwards. But undoubtedly the Lind-Burn, which is but a very humble and insignificant feature, was itself so designated from the Lin or Lake or Slake which it traverses at low-water almost from end

* The author had forgotten that Lindis-farne was called by the Britons *Inis Medicante*. Gibson's Camden, fol. 1502.—J. H.

to end. "Lindesfárena eáland," in Anglo-Saxon, means simply Island of the Pilgrims of the Lind; that is, of the Lin, or Lake, or Slake.

That which I am desirous to establish by these remarks, is that every Anglo-Saxon student can easily satisfy himself that the venerable names of the Farne Islands and of Lindisfarne are not mere fortuitous and arbitrary appellations, but highly and interestingly significant. Nay, not only every Anglo-Saxon but every German scholar can satisfy himself, for the verb *fahren* in German corresponds exactly with *faran* in Anglo-Saxon, and the noun *fahren*, with *fara*, both being equivalent to traveller, way-farer, pilgrim. For many years of my life I was under the impression that the term Farne might be of very remote and præ-Christian and præ-Saxon origin, and that its meaning was obscure. But this is clearly a perfectly gratuitous conception, and I plead guilty to great self-deception on a very plain and natural Saxon etymon, though not older than the epoch of Aidan and his Saxon converts. And I greatly regret that I did not exhibit such a view of the matter to the late Mr Tate, who consulted me on the question, when engaged in composing his account of these historic Isles, so interesting to every Northumbrian.

[This notice has a melancholy interest as being the last production of Mr Carr-Ellison's pen offered to the Club. I cannot omit a quotation from the letter, dated, Hedgeley, June 24, 1883, that accompanied it. His wish to see it printed was destined not to be accomplished, as the lamented author died at Dunston Hill, on Feb. 4th, 1884. "I enclose a short paper on the etymology of the Farne Islands, and Lindisfarne, in the hope that you may be able to offer or present it to the Club, even if it cannot be read while your are on the Island. Strange to say, very few people seem to know that the appellations are strictly historic, and full of interest. It would gratify me much if in my old age I could see the paper inserted in the Transactions or Proceedings of our Club, and so rescued from oblivion. For I ought to have presented such a paper long ago."]

Notes on Plate of British and other Coins, older than the Roman Conquest of Britain. By MISS RUSSELL.

THE British and other coins in Plate XII are copied, by one of the permanent photographic processes, from coins actually in the British Museum; casts being first taken in plaster, the dead surface of which photographs better than metal. They are selected chiefly in connection with the paper on the Catrail printed by the Club in 1882, as illustrating the position of the early Celtic races in Britain. There is much less Celtic left in England than in Ireland, Wales, or Scotland, but on the other hand, many varieties of coins have been found, older than the occupation of the country by the Romans, with Celtic inscriptions, and devices chiefly copied from Greek coins. The Greek influence must have come very much through the Greek settlement of Massilia or Marseilles.

The early coins of England are so curious a subject, that so little having been made of them by the historians must be attributed to the fact, that we know very little of the people who used them, except from the coins themselves. The two coins engraved on the margin are copied from Gibson's Camden.

No. 1. of the plate is a gold *stater* of Philip II of Macedon, the father of Alexander; it is rather a mystery how he can have had such an enormous coinage as he seems to have had; these coins exist in numbers still, while his conquests were only or chiefly in Greece, and curiously enough, he was accused of bribing men of influence with the primitive currency of cattle, and with timber. The convex side has the head of Apollo with a laurel wreath; the concave side, a chariot with two horses and a driver; under the horses is a trident, and the name of Philip, in Greek letters. The date must be about B.C. 350, or rather later.

No. 2. is a coin of the Greek town of Metapontum, on the Gulf of Tarentum in the south of Italy, which is a small town still. The beautiful head of Ceres has not been done justice to in the autograph, the object being to have the best light on the British coins. The reverse has an ear of corn, an insect, and the name META.

No. 3. is a coin of Gaul, that is, France, which has been engraved for the Club before. The head of the deity is tolerably imitated from the Greek, but the chariot has a monstrous symbolical human-headed horse, which the driver is urging over his prostrate enemies; he holds something like a torque or wreath.

No. 4. is also from Gaul; it is much more like the Greek model; the head is very fair, and the horse a normal one, though by no means handsome. The object over the horse's back looks like a winged Victory, but seems to be meant for an eagle. There are three circles enclosing dots, which may or

may not indicate the value of the coin; and the name ARVD; I do not know if any meaning has been found for this or not.

Nos. 5., 6., and 7. are from Yorkshire, and of the type usually found there. They all have on the convex side a double band of small objects like bricks, which is known from a long series of examples, to be a conventional representation of the wreath on the head of the Greek divinity, with the name VOLISIOS, apparently that of the chief, across it; and ornaments in the four angles, one of which resembles considerably the circular scroll ornaments carved on pieces of wood found in the lake-dwelling at Lochlee. On the convex side is the horse, in a corresponding state of dilapidation, being actually dismembered; but also the inscription DVMNOGO VER. The R is of the type our own small r is taken from. The Dumnonii are mentioned by Ptolemy in the 2nd century, that is soon after the Roman conquest, in Devonshire and in Stirlingshire. Had the Yorkshire Dumnonii been driven westward, to join their congeners, by the pressure of the Roman invasion? The large hoard of coins like those in question found at Carnbre in Cornwall *might* be treasure carried off. N.B. Devon is evidently *both* Dumno, and Dyfnant, the country of valleys. Lindum of the Dumnonii, by help of Captain Thomas' geography, I make out to be Camelon or Kemlin on the northern Roman wall. The name Dumno is found in two stone inscriptions on the southern Roman wall, some Dumnonii having apparently helped to build it; two at least containing it have been found in France; a Dumnovellannus is one of the British kings mentioned in the great inscription of Augustus; and part of the interest of the Yarrow inscription lies in it containing the name, or form, Dumnogei. This in its turn may help to explain the English British coins, for Dumnoco, as it has usually been read, has puzzled the authorities, and it may be a contraction of Dumnogeno; the declensions and cases are all astray as it is. While we know that "princeps" or what is meant for it, in the Yarrow inscription, is actually a translation of "Ver," for Nudd Hael appears in the pedigrees as one of the "Gwyr"—Men, Warriors, or Chiefs, of the North Cumbria—in contradistinction to Wales or Devon. Letters having come through the classical languages, the Celtic words are naturally written in a more or less Greek or Latin form.

No. 8. also from Yorkshire, has the same devices, with different letters. Instead of the chief's name crossing the conventional wreath is the name Dum, but the D is of the Greek form the Delta or triangle, and the VM in monogram, as in the Yarrow inscription of four centuries later. The Delta I believe is also found in post-Roman inscriptions; with its straight lines, it is the best form for cutting on stone. The Dum is reversed, by a common mistake in rude stamping, the die having been cut right instead of reversed. It should be mentioned, the Delta is quite perfect in the original; it is almost the only letter that has not come out clearly in the autotype. On the other side, above the remains of the horse, is the word TIGII. This no doubt is the title which occurs in one of the inscriptions at Llantwit Major, of the 6th century; it is to "Juthahelo Rex at Artmal Tega." It was long ago remarked that the ancient title of the Tagus of Thessaly was probably connected with the Saxon Heretoga, Army-Leader. It is probably this word helps to form the Gaelic Tighearnach, Lord, which is variously interpreted as the man of the land, *tir*; or the man of the house, *tigh*; most likely it is

both, or all three. The same title seems to form part of the name of Prasutagus, the husband of Boadicea, who was tributary king in Essex soon after the Roman conquest. These eight coins are all gold; the five which follow are silver, except one, I think No. 10., which is electrum, a mixture of silver and gold. They show both more originality and more acquaintance with the Greek models than the Yorkshire ones; the horses,—prancing hogg-maned ponies,—are spirited enough.

No. 9. is one of the well-known coins of Cunobelinus, who was king in Essex just before the Roman conquest; it has an ear of corn on the convex side, with CAMV, for Camulodunum his capital, identified with Colchester, or rather the ruins near it; on the other, the horse, with CVNO. Cunobelinus was king over two nations or tribes, called respectively (by the Roman writers) Trinobantes, and Catti, Cassi, Cassivellanni, and in one place at least, Catyeuchlani. Now as Trin in Welsh, and Cat or Cad in both Welsh and Gaelic, mean *battle*, I do not suppose these are really proper names, but mean "warriors." And the coins rather confirm an idea I had formed before referring to them, that there was a mixture of Gaelic Celts—Gael who had never been in Scotland—among the Britons of the south of England. This view makes no difference as to anything historical; they were all Britons to the Romans, even to the people of the Grampians, and all met them with the same valiant resistance, though those who had the mountains behind them held out the longest, both in the north and in the west. The idea was first suggested to me by the Gaelic, or Gaelic-and-Welsh, look of some names north-east of London; and Boadicea's people are described as wearing something very like the tartan which seems to have been characteristic of the old Gael of Scotland, the Picts or Cathbreacan—spotted or plaided warriors—and not to have been worn by the somewhat more civilised Scots in Ireland. But it never struck me that there *must* have been Gael in Kent at least, at some time, until I saw Dr. Angus Smith's remark, that all the more primitive settlers in Britain would naturally land in the south-east first, even if coming from the Mediterranean, as they would coast along the continent, and cross with the white cliffs actually in sight. To make for Cornwall or Ireland would imply a much more advanced stage of navigation. It seems to me that the Trinobantes were Dumnonii, and of course Cymri; Camulodunum sounds much like Cam'rodunum; while the Catti, whose capital is said to have been at Verulam, that is St Albans, were probably Cathbreacan or *Men*, as I believe them to have called themselves before they came in contact with the German races, who would very certainly refuse to call the Gael distinctly "Men." That Cæsar's Mandubian Gauls lived on the Dubis or Doubs, is even more satisfactory as to there having been Gael who called themselves Men, than the Clackmannan, Slamannan, and Pressmannan, of the east of Scotland, or the Man and Minnoch names which are found in Galloway, &c., by the dozen; or the Mona and Menevia which corroborate the theory of a Gaelic population on the coast of Wales; or Mannan, still used for part of Meath, which was an outlying portion of the Pictish territory in the north of Ireland. Now one of the sons of Cunobelinus, who was killed fighting the Romans on the line of the Thames, and is said—whether truly or not—to have given name to the Isle of Dogs, is called Togodunnus; which seems to mean so evidently Leader

of the Dumnonii, that Mr Beale Poste is probably right in supposing him to be the Gwyther of the Welsh genealogies. The same writer, who saw much of the historical bearings of these coins, makes Adminius, the name of, apparently, the eldest son of Cunobelinus, Aed Menw; Aed, Aidan, being a common Celtic name, and Mino and Menw occurring in the Welsh pedigrees. And I make Aed Menw, Aed of the Men, the Gael. The prince called Maudubratius, in a previous generation, is also called Androgeus; he was son of Imanentius, king of the Trinobantes, who had been dispossessed by Cassivellaunus; who probably only took that name or title then, for whether or not he was the ancestor of Cunobelinus, it is probable the two races already formed one nation, and that Mandubratius is a title containing both Man and Breacan. The Celtic Vraichanc has been supposed to be an epithet of Mars, because of an inscription found in Derbyshire to "Deo Marte Braciacæ" but I do not suppose this means the plaided Mars (as it literally should) but the Mars of some Brychan or Cathbreacan tribe. Mr Skene protests against the worship of any such deity as Apollo Belinus in Britain; but he seems to have been worshipped in France, and the Britons whom Caesar first encountered had not long emigrated into Kent from the continent; and I do not see what one can make of—*belinus* and—*vellaunus* but lord or king. Cunobelinus should be head-lord.

No 10. is nearly identical with the coins which have the name of Dubnovellaunus, and they are attributed by Mr Beale Poste to Togodummus. The M turns naturally into B as well as V in the Celtic languages, and it is likely enough that the identification is correct; though a mere title may have many wearers. These coins have on the convex side a device much resembling the Spectacle-ornament of the Scotch Sculptured Stones, and, so far, bearing out Mr Campbell's suggestion, that it is meant for the Sun and Moon joined by two Crescents. The crescents here are very distinct, while the orbs have been reduced to two small circles with dots in the centre. It is interesting, as connecting the coin with the device used by Cunobelinus, that an ear of corn streams from the crescent on each side. The symbols of the Sculptured Stones are supposed to be nearly peculiar to the Scottish Pictavia, that is, the district from Orkney to Fife; but I see indications of them elsewhere. The concave side has the horse, with a branch or plant like a fern-leaf, and a circle and dot like those on the other side. I observe that circles like these on the coins &c., occur ornamenting the ground of some Etruscan paintings; and there are some circumstances connected with them, which suggest that if they are meant for the sun, it is the sun regarded as an Eye; which would explain this form.

No 11. has a sort of double variation of the same device, though seen by itself it looks like a concatenation of comets; but with the horse is the name TASCIOVANVS—more distinct in other specimens. I do not know how the old antiquary Dr Plot found out that *Tascio* meant Leader, but it was to his credit, for it is not Welsh—certainly not modern Welsh—but Gaelic; Toiseach, pronounced Toshach, being in full use for "leader" or "beginning." Vanus is clearly a Celtic word for head, but is actually nearer to the English "Van" than to any now in use. This coin has been supposed to be one of the father of Cunobelinus, coining at Verulam, the capital of the Catti; but the name is such a manifest title, I would only say, that from the device it

is to be attributed to one of the family. Caractacus, the son of Cunobelinus who is the hero of the war with the Romans, uses his own personal name on his coins, Kerat, a Celtic name nearly the equivalent of the French masculine Aimé—the Scotch Esme (so written from the old spelling, Aismé).

No. 12. a small coin, had AD in monogram, and is regarded as a coin of Adminius, who seems to have been the traitor who brought on the Roman invasion. There is another coin with Aedodomarus, supposed to mean Aed Mawr, or the Great. The pearl or bead pattern on No. 12 and many other coins is interesting, when it is considered that pearls were a very valuable production of Britain in Cæsar's time. The small animal is probably meant for a horse.

No. 13, also a small coin, has a crescent, with the words REX CALLE, and on the other side rather a fine eagle, with letters read as Epp, probably for Eppillus, the name of a historical king. The likeness of the Celtic *rhys* and *righ*, king, to rex, regis, seems to have been fully recognised. *Calle* would be Gaelic, not Welsh, for "wood;" it is supposed to stand for Calleva, but if the coin engraved from Camden is genuine, Calleva, whether the town was Wallingford or Silchester, is probably a mistake for CALEDU, black wood. Rude as these coins are, they have lain undisturbed, as Sir Thomas Browne says "under the drums and trappings of three conquests"; while the Roman writings have only been preserved by recurring transcription, and, what is worse, emendation.

—Catyeuchlani, if not a mistake, is another Gaelic indication—Clan Chattan in fact—the Welsh word for children is *plant*, and I do not know that it is ever used for the sept or tribe. Trino-vanus and Cassi-vellanus I assume to have been the titles of the leaders, applied by the Romans to the people.

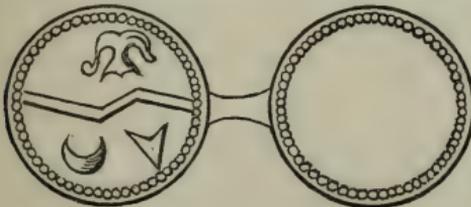
—The two coins engraved from Camden are respectively No. 26 and 30 of the second plate of British coins in Gibson's edition; the first was borrowed by the editors from Speed, the second from Dr Plot.

The first has a savage-looking bust which has been supposed to be a portrait, but is perhaps more likely to be intended for a classical divinity;



behind the head is the usual circle and dot. On the other side is the horse, also accompanied by the circle—and the name CALEDV, whatever it exactly stands for. The old engraving has been accurately copied; Speed's engraver has made the letters too like ordinary type.

The second has an important bearing on the Pictish symbols. One side is left blank by the engraver; I wish we knew what the device was; in fact it



would be very desirable to know if any coins like this and the last exist now. It should be mentioned here, that in looking through Dr Stuart's noble volumes of the "Sculptured Stones," it struck me in connection with Mr Campbell's idea about the Spec-

tacle Ornament, that the Z must be the lightning ; it is always weighted at one end, sometimes with something very like a stone axe. Taking this view the serpent would be a natural symbol of earth, and the fish of water. And since then I have been confirmed in this interpretation, by the rather important passages which Mr Skene quotes in "Celtic Scotland" about Celtic paganism in Ireland.

C. S. vol. ii. page 112. "Besides the objects of nature—the clouds of heaven, the water of the earth, the trees and fountains—in which these gods were supposed to dwell, they seem also to have been adored in the shape of idols. The word in Fiace's Hymn translated 'darkness' is glossed by 'the worship of idols;' and the few notices we have of them indicate that they were usually pillar stones. Thus in the *Dinnsenchus Magh-Sleacht* is said to have been thus called 'because there was the principal idol of Erin, that is the *Cromeruaich* and twelve idols of stone round it, and himself of gold; and he was the god of all the people that possessed Erin till the coming of *Padric*' (O'Connor, *Script. Hist. Prolegomena*, vol. i. p. 22.) and in *Cormac's Glossary* the word *Indelba* is glossed as 'the names of the altars of these idols, because they were wont to carve on them the forms of the elements they adored there.' (*Cormac's Gloss.*, Ir. Ar. Soc., p. 94). The gloss adds 'verbi gratia, figura solis.' Is it possible this can refer to the cup-markings on stones and rocks?"

I see even more in those statements than Mr Skene does; at least it looks to me as if the latter part of the gloss had been added by a third writer, who did not fully understand what he explained; that when he says "the meaning of these words is, the image of the sun" he was thinking of the cup and ring cuttings, which are found over great part of the world, while the first commentator referred to the symbols, which are almost peculiar to one district of Scotland, and there are found chiefly or entirely on monuments of the early Christian period.

The representation of the Elements is not necessarily pagan, but if in Ireland it was restricted to the idol-altars, they would naturally enough be destroyed by the early missionaries.

And here is something very like the Symbols, presumably from the south of England. Within the border of pearls, the coin in question has a zig-zag band across the centre, resembling, as the Z often does, the line of the real lightning; a detached arrow-head of the form of a metal one; and a crescent. With these is an object more like a small pair of ram's horns than anything else. This again confirms another supposition which had occurred to me, that the spirals of the rock-cuttings, &c., &c., at least the pairs of "opposed volutes," are the old emblem of divinity, best known from the coins on which Alexander appears as Jupiter Ammon.

Dr Schlieman was puzzled and interested about them, finding them on one of the stones so curiously like Celtic art which he turned up at Mycenæ—he remarks they are the device on the shields of the Amazons. They appear in Egypt, long before the name of Ammon was used, not only as the sign of the ram-headed Kneph, the god of the inundation to which Egypt owes its existence as a nation, but on the sacred boats of the other gods; and are an intelligible enough rude symbol of power; though not so happy artistically as the grand human-headed bulls of Assyria, which express the same idea.

I find that, in India, the stone we call the ammonite, the fossil nautilus shell, which forms a very fine volute, is often worn as the symbol of Vishnu the Preserver, by his devotees. But it is the double spiral we are particularly concerned with here.

Sir Henry Rawlinson engraves a statuette called Astarte, found somewhere in Etruria, in which the goddess is standing on a large pair of volutes, which however are upside down, regarded as horns.

The connection with the water—which is interesting ethnologically, for it must be remembered it is quite arbitrary—reappears in Brittany, where Mr Milne found the large water-jars, of the same type as the broken pottery which he dug up in the rubbish *under* the Roman remains, were, in the present day, ornamented with a device somewhat resembling a yoke, but more like a small pair of sheep's horns; two waving lines are always carried round the jar, and the mark is above this on one side. The potters could not tell the meaning of these devices, though they used them. But our letter N is said to be derived, through the old alphabets, from the Egyptian hieroglyphic of a waving line, standing for a wave, or the sound *en*. The Greek scroll pattern, with all the volutes turning one way, is avowedly meant for the sea.

Sir James Simpson remarks that the spirals are commoner in Ireland and Brittany than in Scotland, but they do not seem to be very common anywhere. They are found in Scotland rather with the rude cup-cuttings than with the symbols; in fact I am not sure that they occur with the latter except as decorations. In the peculiarly interesting remains from Norie's Law, the handsome volutes are mere scrolls, while the symbols are on separate clasps or brooches. The circumstance is interesting, because I make them out decidedly pagan, and the Symbols evidently were in use in the Christian period.

—The elemental symbols are often mixed up with personal or professional badges, books, swords, tools, &c. The round classical hand-mirror looks like another emblem of the sun, while the cocked-hat is an ornamented crescent. Of two suggestions of Mr Campbell's about the Comb, I prefer that which makes it mysterious (originally) on account of the line of light which follows it along the hair in certain states of the weather. I have an idea that the amber and jet beads of the tombs have been placed there partly on account of their mysterious electrical sympathies; *one bead* is often found. I think this can hardly be accidental, though of course fossil resin outlasts many other deposits, having no tendency to decay.

The opposed volutes *do* appear, and in connection with the water again, in a semi-pagan crucifix from an old chapel in Colonsay, which I should suppose was of about the date of the Symbols, the 8th or 9th century—possibly later. It is engraved in the Proc. Soc. Ant. Scot. for Feb. 14th, 1881. It is about five feet high; the outline of the stone is that of a cross, but the figure, with a human head, not badly executed, has the tail and part of the body of a fish, and instead of chest and arms, two large spirals. Fish are used in more than one way in early Christian symbolism, and there is a small conventional figure of Jonah and the Whale, engraved in Proc. Soc. Ant. Scot. for Jan. 10th, 1876, which shows how this Christ-Dagon may partly have been suggested. Altogether it appeals to the imagination, for it was only in the 17th century that the annual sacrifice, the libation of ale, to Shony (Lord), the god of the sea, was stopped by the church in the Lewes.

The rude drawing which looks like a caricature of the Crucifixion, and is such an object of interest in Rome, is said to be a serious representation of the Anubis-Christ of the Gnostics, the jackal-headed god represented as crucified. I do not know if it has been noticed, that the Irish name of the golden idol at Magh-Sleacht, the Cromcruach, means *crooked stack*. This seems odd at first, but in fact idols of this shape and material are so well known, that somebody suggests that the wedge of gold found in Achan's possession was a cone-idol.

—According to the present view, both races of Gaelic Celts used the elemental symbols. The Picts of the north of Ireland may not improbably have been an overflow from Scotland, while the Scots may have colonised Ireland direct from the Continent; the Gael of the south of England I infer were of the same race as the former.

—As to the Cymric, or half-Cymric races, it may be observed the Silures were probably the same people as the Selgovæ of Scotland. I would scarcely make them so Non-Aryan as Mr Skene does, but I have no doubt they had a large mixture of the old dark race. Silure is evidently Sil-wyr, men or warriors of the Sils; Selwood Forest shows the real name, and Sul, or Suli Minerva, at Bath, was probably a goddess of the same order as Brigantia—or ROMA herself, for that matter. It was the name of Bronsil, hill of the Silures, west of the Malvern range, which suggested the point to me. And on thinking whether Selgovæ could not be reduced to the same. I recollected that *coof* and *guff* are both in use in Scotch for fool or lout; while the vernacular English *cove* merely means "fellow," and *goff* and *gow* have been specialised to mean "smith" in the Celtic languages. The Anglo-Saxon probably shows the older word in *gum*, and *gom*, for *man*. Gaffer and gammer are the English masculine and feminine, while the Scotch "cummer" and French "commère"—nearly the same word—are probably from the same origin. The derivation of "yeoman" is so unknown that it has been connected with the extremely opposite French *gamin*, "street boy"; *goffe* is also used for fool in French; while "la gomme" is a French slang expression for the masculine part of the fashionable world; and in some of the older Teutonic languages I see *gumi* and *gomo* meant hero. This last form seems to show that the Latin "homo" is from the same root! The Scotch name Cowan, which has been somehow derived from *Cu*, dog, is of course the same word.

—The likeness which has been traced between Sil and Sikel, the name of the old inhabitants of Sicily, is not satisfactory, unless the name of the rock Scylla is a form of the latter. However, there are some old analogies, and they are rather non-Aryan. Shila or Shela is one name by which the Berbers of North Africa call themselves, and they seem to be the same people who were there before the Romans colonised the country. Further back, Homer calls the dirty aborigines of Dodona (supposed to be Yanina) Selli, and does not mention them as if they were Greeks. Whatever the name of Selgovæ is, I think *Solvay* is quite a separate word. Dr. Guest's etymology for that is valuable and probable; he says that in the Cymric of Brittany, *chal* or *shal* means the rising tide. There is a Selcoth on the road between St Mary's Loch and Moffat, which, if it is not a Saxon *Sel-cot*, holy house—which I know no reason it should be—may have been on the frontier of the

Selgovæ at some time. Selwood in Somersetshire was Penseicoit, and Sel-coth also should be a Cymric *Sel-coed*, wood of the Sils. I suspect the English "wood" to be more from the British *coed* and *goed* than from the Teutonic *wald*; or perhaps about equally derived from both.

—It may be remarked, that the Belgæ, who inhabited great part of England south of the Thames, are hardly more specialised by their name than the Catti. It seems to be the same word that forms bag and box in English, with their manifold meanings, and bulk and bulge; in fact it might mean almost anything. Mr Campbell inclines to regard Bolgam Mor, the name of one of his mythical warriors, as meaning "the great quivered one." I see indications that begger is "bagger"; which word, indeed, is used by the Americans in one sense.

—There is no stronger proof of the degree to which the old Celtic coins have been ignored, than the existence of rather a notable little book entitled "A Neglected Fact in English History," in which the author, who must have bestowed considerable labour on the subject, demonstrates that there is no appearance of any sudden change in what may be called the minor municipal arrangements of England, at any time; and infers from this, that the population subjugated by the Romans must, over great part of the country, have been already Teutonic, of the race of the Saxons and Franks. The probable explanation of the facts has only become possible rather recently; the old Irish laws, which have been printed by instalments within the last ten years, are said by the authorities to be, in fact, the same as the old German laws, only in a more primitive form than that in which the latter have come down.

—It has nothing to do with the last question, which lies much deeper, but I do not know whether there is any evidence at all that the Catti, who were known to the Romans in Germany, were not Celts. The name of their adversaries, the Hermunduri, is just what the Celts might probably call the Germans, *Irmin-ur*, or *Wyr*; *ur* seems to have been the Pictish form of *vir* &c. Whoever, or whatever Irmin was, it has probably something to do with our name for the *Deutsch*. When the admirable Grimm assumes that the god to whom the Catti sacrificed was either Tyr or Woden, he may be just as right and as wrong as Tacitus, who states that the gods worshipped in those parts were Mars and Mercury. The name of Mannheim looks like a Celtic settlement; Marcomanni, for the ancient inhabitants of Bavaria, if Celtic, should mean Picts who rode on horseback. Constanx is historically a Celtic settlement, and both Mainau and Brigantium occur near it. The alleged worship of Neptune on the lake there has a Celtic suggestion, for the Gaelic *naomh* (neuve) as Mr Campbell points out in connection with Kneph, means "heaven" and also "holy."

—Dr. Angus Smith has died since the above reference to him was written; he will be even a greater loss to British ethnology than to other departments of science. He had made some very original observations of the types of *face* and *voice* prevailing in different districts, which required a delicate ear and retentive memory.

Additional Note.—Tre and—Treu, which are certainly the Welsh Tuef, township, are traceable in names in Hertfordshire, north of London,

Ornithological Notes. By GEORGE BOLAM.

OSPREY : *Pandion haliaetus*, Linn.

On the 13th October, 1881, I saw a recently set up specimen in a shop in Alnwick. It had been killed at Alnmouth a few days previously by a fisherman, on whose shoulder it had suddenly alighted as he was going home in the dark late one evening; another fine example, a female, was shot at Southern Knowe on the College water on 26th September, 1881. It had been in the neighbourhood for ten days or a fortnight before it was killed, and was well known to the shepherds, who tell me that it was remarkably tame and fearless, often allowing them to approach, or pass by, within a very short distance of it without taking alarm or flying away. It was preserved by Mr Brotherston of Kelso, and is now in Mr Steel's collection in that town.

PEREGRINE : *Falco peregrinus*, Gmel.

On the 11th December last, while standing on the cliffs at Marshall Meadows, my attention was arrested by a pair of these birds which were wheeling round the bay, every now and then stooping at a bird upon the water. After a short time one of the falcons, the male, disappeared round the point to the north and was no more seen, while the female, after a few more stoops, alighted upon the cliffs which surrounded the bay. In a few minutes the bird (which I now perceived to be a peewit) rose from the water and began making for the shore, but this movement was no sooner observed by the falcon than she immediately left her perch and gave chase and the peewit was quickly again forced to take to the water, while the falcon returned to the cliffs. Again and again did the plover rise and attempt to gain the land and as often was it driven to seek shelter in the water. At each attempt, however, it drew closer and closer to the shore, and at last managed to scramble amongst the loose stones and rocks lying at the water's edge. Having once gained this shelter, one would naturally have supposed that it would have quietly remained there until the hawk had gone away, but such was not the case, for no sooner had the falcon returned to her post upon the cliffs, than the peewit again took wing and keeping close to the ground made off round the corner of the cliffs, closely pursued by the falcon, and both were soon lost to view. During the time that I watched the birds—some quarter of an hour or 20 minutes—the falcon might have easily struck the plover, but apparently was afraid to do so while over the water or in such close proximity to the ground. The peewit, when driven to the water, dived regularly and with apparent ease, each time that the falcons stooped at it, using its wings as the motive power for getting under water. As the pursuit continued along the shore the birds passed within a few feet of a fisherman, who was engaged in gathering bait upon the rocks, but nothing seemed to divert the attention of the peregrine from her quarry. How long the chase lasted after the birds disappeared from view, or how it would end of course can only be conjectured, but judging from what I saw I fancy that the plover when quite exhausted, would find safety in at length remaining quiet under shelter of some stone or rock, until the falcon, tired of waiting, should have gone on to join her mate, or in search of some less erratic prey.

COMMON BUZZARD: *Buteo vulgaris*, Leach.

A very fine male, now in my possession, was shot at Blakelaw near Chatton, Northumberland, towards the end of the year 1880. It had frequented the neighbourhood for some time, and when killed was in the act of devouring a wood-pigeon, large numbers of which were at the time to be found in a weak and dying state from the severity and the long continuance of the winter, and which would doubtless afford the buzzard a plentiful and easily obtained supply of food.

Another was seen near Fowberry Tower, the seat of George Culley, Esq., as late as the end of March or beginning of April, 1881, and was allowed to escape unmolested.

On the afternoon of 16th September last while strolling along the sea banks between Berwick and Marshall Meadows I had a fine view of a bird of this species. It seemed to be very devoid of fear or in an exhausted condition and had no doubt just arrived from a long flight. After I had watched it for some time, two crows, which had been feeding on the rocks not far off, caught sight of it and at once gave chase uttering fierce "craws"; at first the buzzard paid but little attention to them, but by and by it rose and flapped heavily away inland pursued by its sable tormentors until lost to view in the distance.

On the same day there was a great influx of migratory birds upon the coast; flycatchers, redstarts, &c., were observed at Berwick, while on the previous afternoon a red-backed shrike and a pied flycatcher had been killed near the very place where the buzzard was seen.

ROUGH-LEGGED BUZZARD: *Buteo lagopus*, (Gmel.)

In the autumn and winter of 1880-81, there were numerous newspaper reports of the capture of these birds all over the country and many of them were within the limits of the Club. Of specimens I examined and which do not appear to have been recorded, I may mention one shot at Spindleston near Belford, in the beginning of October, 1880; this was a very large bird and had the feathers of the head and neck on the upper parts of a much paler colour than usual. Another fine example was shot by Mr Hogg's keeper at Quickwood on the 15th of the same month; and a third, obtained near Coldstream, was preserved by Mr Beloe in February 1881.

HONEY BUZZARD: *Pernis aviporus*, (Linn.)

A bird of this species, in the dark brown state of plumage, was found washed up by the tide on the sands at Alnmouth in the beginning of October, 1881, and was preserved by a man in Alnwick in whose hands I had an opportunity of seeing it on the 13th of that month. The "Alnwick Mercury" of 8th October, 1881, records "a fine female shot near Dunstanburgh Castle on the 21st ult. by Mr John Duncan, of Percy Street, Newcastle," and several others were noticed in the local papers as having been captured about the time.

GREAT GREY SHRIKE; *Lanius excubitor*, Linn.

A specimen, shot at Eslington Park, the seat of the Earl of Ravensworth, was sent to Alnwick for preservation about the end of October, 1880, and I saw two others killed during the same winter, the one at Lilburn, the

other near Chillingham Castle. A male in my collection was shot upon the road close to Carham Station, upon the Berwick and Kelso Railway, on 5th November, 1881; and during the same week, another, also a male, was killed near Downham in Northumberland. About the 20th of November, 1882, one was shot near Spittal and was brought by its captor to the Berwick Museum but was not, I believe, preserved; and towards the end of the same month a seventh example was taken alive at Doxford near Alnwick.

RED-BACKED SHRIKE: *Lanius collurio*, Linn.

A young female in immature plumage was shot by my brother on 15th September last, upon the sea banks about a mile and a half to the north of Berwick, and is now in my collection.

TAWNY OWL: *Strix aluco*, (Linn.)

Tawny owls undoubtedly migrate to our shores in considerable numbers in the autumn from more northern latitudes, although I cannot say that I have remarked the clear grey plumage which Mr Robt. Gray thinks distinguishes these visitors. The species breed regularly in nearly all our woods, and the birds met with during summer vary greatly in the shade and tint of their plumage; and this variation as in the case of some other birds of prey seems to be quite independent of either age or sex.

On the 26th October last I came upon an individual of this species, sitting upon the remains of an old wreck near low water mark, upon the Goswick sands, and quite two miles away from the nearest 'land.' In spring and during the early part of summer tawny owls may often be heard hooting loudly in the middle of the day, and with apparent indifference to the bright sunshine.

PIED FLYCATCHER: *Muscicapa atricapilla*, Linn.

I have lately met with this species with some regularity during its autumnal migrations.

As previously recorded in the "Proceedings" of the Club one was shot in the garden here on the 16th October, 1879, while in 1881 I killed two birds in the same locality—one on the 25th, the other on the 26th of September. Last autumn several were observed in the garden during September and one was shot on the 15th of that month on the sea shore, sitting upon a stone within the tide mark. The above were mostly young birds in winter plumage, but one or two were adults still retaining amongst the brown winter feathers some slight indications of the black of their summer dress.

On their return in spring they are less frequently met with. They have then generally almost completed the change to summer plumage; one in this state was killed at Goswick during the second week in May, 1881, and came into the possession of Mr Robt. Gray. In May, 1879, two mature birds were seen in a garden near Longhoughton, in the parish of Lesbury, and one of them was killed by a stone from a catapult. A male in my collection, which was killed near Felton on 10th May, 1883, differs slightly from the ordinary type in having the white on the outside feathers of the tail almost entirely wanting; the outer feather on each side being the only ones showing any signs of white, and they having only the very smallest tip.

GOLDEN ORIOLE: *Oriolus galbula*, Linn.

A specimen of this beautiful bird was shot on 26th May, 1881, near Middleton Hall, Belford, the seat of J. Towleron Leather, Esq., in Northumberland, and is now in my possession. It is in the full plumage of the adult male. Though to the southern parts of the Island the golden oriole is a somewhat regular summer visitant, stragglers appearing almost every spring, and a few even remaining to breed in the north of England and in Scotland it is a very rare bird, the only other Northumbrian example having been recorded by Mr Selby, from Tynemouth so long ago as 1821.

RED-BREASTED FLYCATCHER: *Muscicapa parva*, Bech.

On the 5th of October, 1883, I was fortunate enough to shoot a specimen of this interesting little flycatcher in our garden at Berwick. When I first observed it fly across the garden and alight on some trees I was struck by the large amount of white displayed in the tail and was thus led to suspect that it was not a pied flycatcher, to which bird in other respects it was very similar. It was afterwards seen busily engaged in feeding upon Aphides, which were at the time very numerous and congregated upon the broad leaves of a sycamore tree; here again in its movements it showed a marked resemblance to its congeners, but some slight differences were noticed; it several times ran, or rather *hopped* along a branch, or the top of a wall, to secure some minute insect, and it was on the whole more restless and less disposed to remain motionless than a pied flycatcher.

On examination it proved to be a young male in the sombre brown of the autumn plumage, and in colouring it agrees generally with the short description given in the last edition of Yarrell's British Birds. The tertials are broadly margined and tipped with pale yellowish brown, and the breast and under parts are more or less of a fine warm buff. The tail which consists of twelve feathers is hair brown and white, the brown being darkest on the middle feathers; the first three pairs of quills from the outside have the brown and white in nearly equal proportions; the basal halves being white, quite pure on the second and third pairs, but slightly freckled with brown on the outer feathers. The fourth pair have the outer web only white for about an inch near the middle, with a small portion of the inner web, next to the shaft, of a like colour; while on the fifth pair from the outside the white is confined to a rather narrow margin on a small portion of the outer web; the sixth or centre pair are wholly brown. In the 4th edition of Yarrell's British Birds above referred to, it is stated that this species has only ten feathers in the tail, but Professor Newton informs me that since he wrote the account for that work he has found that specimens are met with having twelve feathers; and Mr John Hancock, to whom I have on many previous occasions been much indebted for useful information, at all times most kindly given, tells me that he finds, by examination of a large series of specimens in his collection, that twelve is the normal number of tail feathers, in *M. parva*, and that the only specimen he has which has ten feathers, has evidently lost two. Twelve would therefore seem to be the number of tail feathers in this species, and unless abnormally that number probably never varies.

The red-breasted flycatcher has only been obtained in England upon

three previous occasions—once near Falmouth, when two birds were seen, and twice in the Scilly Islands. In Ireland or Scotland it has not as yet been noticed, but the present specimen having been killed north of the Tweed and within a very few miles of the borders, would almost seem to give it a right to rank as an occasional visitor to the last named country.

HEDGE WARBLER: *Accentor modularis*, (Linn.)

Varieties of this bird frequently occur. On the 15th March, 1878, I saw a rather unusual and very prettily marked specimen near the village of Ord, about a mile and a half from Berwick-on-Tweed. The head and neck and the whole of the lower parts of the body were pure white with the exception of a dark feather or two near the occiput, and a few slight streaks of brown about the flanks; there was also a large patch of white upon the back, and several of the quills of both wings and tail were of a similar colour. Some years ago I remember seeing one which had the two outer feathers on each side of the tail quite white, the rest of the plumage being as usual; and during the past winter one frequented the garden here which had a single white spot, something in the form of a crescent, upon the back of the head.

A nest of the hedge sparrow, which I came upon near the mill in Horncliffe Dene, in May, 1882, was most beautifully suspended amongst the long slender branches of some honey-suckle hanging over the side of the cliffs; and a similar instance, where the nest was attached to trails of ivy, was noticed on the banks of the Whiteadder, in the previous year. So many of the eggs and young of these birds are destroyed by field-mice that one is almost led to wonder whether in hanging their nests to these slender branches, the birds are not exercising a kind of reason in thus doing their best to protect them from the plunders of such small enemies.

RING OUZEL: *Turdus torquatus*, Linn.

Appears to be very irregular in its migrations. In an ordinary way the breeding birds on the Cheviots have eggs in April, the second laying being about the beginning of June, but in some years migrants arrive on the coast as late as the middle of May. On 15th May, 1877, there were large numbers of the birds about the Abbey and Castle on Holy Island, but they do not build there, while in other years I have observed them on the coast from the middle of April to near the end of May. During April and May small parties may often be seen upon the Kyloe Hills, and on the 16th May, 1879, I took a nest in that locality with full complement of eggs, but it is only very rarely that they breed there.

On 5th December last I met with a single ring ouzel on the hills near Wooler; it was feeding, in company with a flock of fieldfares, upon some hawthorn berries. With the exception of the instance mentioned by White, who records the appearance of some birds of this species in Hampshire at Christmas, 1770, this would appear to be the only time that the ring ouzel has been found in the British Isles during winter.

GRASSHOPPER WARBLER: *Acrocephalus navius*, (Bodd.)

This is a bird which I cannot choose but think is rapidly increasing in our district. Some few years ago its voice was but seldom to be heard, whereas now it appears in some years almost plentifully, wherever there is scrub

or thicket enough to furnish it with a hiding place, and it is not unfrequently heard chattering away in the bottom of some thick hedge by the roadside. In this district its favourite haunt seems to be amongst tall heather, and on many of our moors its thrilling song is to be heard. On the hills above Langleyford and at the head of Common Burn it is sometimes very numerous, and must nest there in some seasons in considerable numbers.

It seems almost impossible that the note of this bird should be confounded with that of the sedge warbler to which it bears so small a resemblance, but that this often happens can scarcely for a moment be doubted, and many of the reported cases of its having been heard would, if investigated into, probably turn out to be only the latter bird. Of course such a mistake can only be made by persons who have never heard the voice of the grasshopper warbler, as once listened to, its trill can never afterwards be mistaken for the song of any other of our warblers.

In the fourth edition of "Yarrell's British Birds" the grasshopper warbler is stated to occur in all the southern counties of Scotland with the exception of Berwick, Roxburgh, and Selkirk; but this is probably an oversight, for in the two first-named counties, at least, it is a well known bird. Mr Hardy "has known it at Pease Dene from his youth up and never considered it rare," and in many other localities it has also been noticed.

LESSER WHITETHROAT: *Sylvia curruca*, (Linn.)

I killed two young birds, in immature plumage, in the garden here, about the middle of September, 1881, and one of them is now in my collection, the other having unfortunately been devoured by a tame fox in whose way it chanced to fall when shot.

GOLDEN CRESTED WREN: *Regulus cristatus*, Koch.

Sometimes appears in large numbers in autumn. Thus in October, 1882, they were particularly numerous and were to be found in all kinds of unexpected places. Parties of from three or four up to a dozen individuals occurred all over Berwick, wherever a few trees or bushes were to be found to afford them food and shelter, while others were observed flitting about amongst the "bents" upon the links at Cheswick and Goswick.

Upon the 18th of October they were very abundant on the sea banks near Berwick, and, although not appearing to be exhausted, some of them were so tame that one was actually caught beneath a hat, as it sat upon the side of a small haystack which had been left standing in the field.

In April, 1883, a gold crest was picked up in the garden with a broken wing and was put into the greenhouse, where in a few hours it had become so tame and familiar that it would pick aphides from my fingers, or from a branch held in front of it. Hopping about from plant to plant it had in two days cleared the greenhouse of aphides and other insects, and then refusing to eat any other food it died. If they could only be kept alive and in health some of these small birds would be the best possible cure for "green fly" in our greenhouses, for there is not a leaf or corner that they leave untried, and aphides appear to form their favourite food.

WAXWING: *Ampelis garrulus*, Linn.

Several occurred within the district during the winter of 1882-83. In the neighbourhood of Belford, one or more were picked up on Ross Links about the middle of December; while Mr Burn shot one at Glororum during the same month, and another was found dead at Grange Burn Mill. A fine specimen was killed on 23rd December by a man working on the Railway near Carham Station; two were shot at Ellingham near Chathill—one early in January, the other on 5th February; while near Felton a pair were observed, but were not disturbed, during the end of January, 1883.

MEADOW PIPIT: *Anthus pratensis*, (Linn.)

A very pretty and interesting variety of this bird was killed on the moors at Eglington in Northumberland about the latter end of August, 1881, and came into my possession shortly afterwards. The whole plumage, including the quill feathers of both wings and tail, is of a uniform pale yellowish white, almost exactly resembling in colour what is termed a "mealy" canary: the colouring of the legs, toes, and bill being also very pale. An example was recorded long ago by Mr Thompson of Belfast, which in the "rich primrose yellow" of certain parts of its plumage seems to have agreed very closely with the present specimen, but his bird retained about the wings and tail a few feathers of the ordinary grey plumage.

CHAFFINCH: *Fringilla cœlebs*, Linn.

To Mr Robert Renton I am indebted for a curious variety of the chaffinch, which was killed at Fans near Earlston in December, 1882; a short description of it is as follows—wings dirty white, the quills edged on their outer webs with bright canary yellow, the white band on the lesser coverts, so conspicuous on the wing of the ordinary chaffinch, is when carefully looked for, quite distinctly visible in pure white feathers amongst those tinged, or as it were soiled, with brown. Upper parts of head and neck and the sides of head pale yellowish brown, shoulders and back also pale brown, gradually becoming paler towards the rump, which together with the flanks is almost white, the feathers being margined with bright golden yellow. Upper tail coverts dirty white, tail greyish white but with the usual pure white marks on the outside feathers; all the shafts dark. The lower parts of the body are pale yellowish brown, darkest on the neck and upper breast, and gradually becoming paler towards the lower tail coverts, which latter are almost pure white. The iris was dark brown, and legs, bill, &c., of the usual colour.

GOLD-FINCH: *Fringilla carduelis*, Linn: and SISKIN: *F. Spinus*, Linn.

During the hard weather of 1880-81 a flock of siskins frequented some alder bushes close to the town of Wooler, and several of them were caught by the boys in hair nooses, or killed with catapults; amongst the latter was a single goldfinch. Although scarce, both of these birds are still sometimes to be met with in the district. I have on one or two occasions during spring and autumn seen gold finches in our garden in Berwick.

TREE SPARROW: *Passer montanus*, (Linn.)

Fairly common all along the coast line, but does not appear as a rule to advance very far inland, and except as a straggler is not generally found more than a few miles from the sea. It builds in almost any hole or crevice,

that is large enough for the purpose, and I have taken the nest within the district in holes in old walls, in trees, in sand banks or amongst rocks on the sea side, under the tiles in the roofs of buildings, and in various other situations. The nest is more carefully put together than that of the common sparrow, so large a quantity of materials being seldom used, and no loose straws are left protruding from the entrance to the hole. Although to a certain extent migratory the tree sparrow is found here throughout the year, being perhaps most plentiful during the breeding season, and I do not think that in the north we have any great increase in its numbers in the autumn as seems to be the case in some of the more southern counties of England.

STARLING: *Sturnus vulgaris*, Linn.—

An almost white variety of the starling was killed near Beal during the last week in August, 1883, and is now in my collection. The whole plumage is of a dull white, many of the feathers on the upper parts being margined or tipped with pale brown, while beneath, the breast is obscurely spotted. The legs, bill, &c., were rather pale in colour, irides of the usual dark brown.

HOODED CROW: *Corvus cornix*, Linn.

A few individuals appear to remain with us almost every summer, and these probably breed either associated with carrion crows (*C. corone*) or with partners of their own colour.

For the last seven years I have seldom missed seeing one or two hooded crows in some part of the district during summer, and in at least six of them I have known a mixed breed to have been reared upon the cliffs a little way to the north of Berwick; the young birds from these nests have usually been intermediate in colouring between *C. cornix*, and *C. corone*, although one of two shot on 27th August, 1879, had only so small a shade of grey about the shoulders that at first sight it would have passed for a pure carrion. From August to November, 1880, I kept one of these "half castes" in confinement, and when he was again allowed his liberty, he had assumed an adult plumage as nearly as possible half way in colour between the two forms.

HOOPOE: *Upupa epops*, Linn.

On 12th September, 1880, a beautiful specimen of this bird was shot by Mr Allan's gamekeeper near the old toll gate at Grindon, in the parish of Norham, and I had an opportunity of examining it, in the flesh, on the following morning. It is now preserved and in Mr Allan's possession. Another example was shot on the sands near high water mark between Beadnell village and Annstead on 25th August, 1882, by a person named Davidson, and was preserved in Alnwick for its captor.

On 16th April, of the same year, a hoopoe was observed feeding by the side of a small burn on the coast near Boulmer, but although suffered to remain unmolested, it was next morning no where to be seen, and had probably moved on, on its migratory journey.

STOCK-DOVE: *Columba oenas*, Linn.

Since my last communication on the subject numerous instances of the breeding of this bird both in Northumberland and Berwickshire have come

under notice, and I have seen a large number of nests in various localities. In this district a steep bank or cliff seems to be the site most frequently chosen for a nesting place, and instead of being in a rabbit hole the nest is often made upon a ledge of the rock itself behind some slight bush or other shelter, some of the nests bearing in this respect a very close resemblance to those of escaped tame pigeons, which breed in a half wild state in similar situations.

The stock-dove must be rapidly extending its range, for we hear constantly of examples having been seen or killed in some new locality. As an instance of this Dr Paxton had one brought to him in March, 1882, which had been shot upon the Ladykirk estate. The keeper who killed it said he had never, until a few days before when a pair took up their abode in one of the plantations, seen a bird like it, and he took it to the doctor as a "rara avis" and to find out from him what it was. This specimen, an adult male, was very kindly presented to me by Dr Paxton.

During the last year or two stock-doves have frequently been noticed in the game shops in Berwick, exposed for sale amongst the common wood-pigeons.

QUAIL: *Coturnix vulgaris*, Flem.

In some seasons is not uncommon, though but seldom seen on account of the difficulty with which it is made to take wing. They all seem to leave us very soon after the corn is cut.

A specimen was shot near Weetwood during the summer of 1878; it was in company with another and would in all probability be breeding near the place where it was killed. Two broods were reared upon an adjoining farm in 1880, and at Turvelaws, near Wooler, a pair were seen on several occasions during the summer of the following year. In September, 1879, four were seen on Nab Hill farm, in the parish of Ancroft, and two of them were shot by Mr Jas. Grey, junr., of Berwick; and Mr Nicholson informs me that in 1877 a bevy was observed upon Murton farm about 3 miles from Berwick; this would appear to have been a late brood for the young ones were scarcely able to fly at harvest time.

As previously recorded ("Proceedings" 1878, p. 496) two immature birds were shot in that year upon Unthank farm, which adjoins Murton, and I am told by Mr Marshall, the tenant of Unthank, that he has known them breed there for a considerable number of years. The late Dr Colville Brown had in his possession the skin of an adult bird which was shot at Greivestead many years ago; in that locality and on the neighbouring farm of Grindon, quails used once to be of frequent occurrence.

On 15th July, 1879, I heard the call note of the quail proceeding from amongst the standing corn, at several places upon the road between East Learmouth and Mindrum Mill, and succeeded after some difficulty in walking up to a pair of the birds; they rose suddenly within a few feet of me and did not fly far before again dropping amongst the corn. Under similar circumstances I have on more than one occasion heard them calling within a few miles of Berwick, and within the Parliamentary limits of the Borough, in the fields adjoining the roads leading to Paxton and Chirnside. Like the corncrake, quails are most vociferous after sundown, and it is when

the twilight has pretty far advanced on a fine summer evening, and when most other birds are silent, that their 'plup' 'plup' is most noticeable; this note, which is often repeated two or three times, in succession somewhat resembles one of the sounds made by a female turkey.

An egg of this species, in my collection, was taken from a nest upon the links near Boulmer, about the year 1870.

GREY PLOVER: *Squatarola helvetica*, (Linn.)

Very rarely seen on our coasts in summer plumage. On 25th August, 1881, a pair flew over my head, on the sands near Holy Island, having full black breasts.

DUSKY REDSHANK: *Totanus fuscus*, (Linn.)

A bird which there can be no doubt was of this species was shot by Capt. Parker, R.N., about the middle of August, 1882, on the sands near Goswick. Not knowing the bird, Capt. Parker took it to the Berwick Museum to have it identified, but failing to find out what it was, the bird was not preserved. From a very accurate description which I had from Capt. Parker, I felt quite sure that the bird must have been a dusky redshank, and this suspicion was afterwards proved to be correct; for Mr Wm. Shaw when I showed him a specimen of *Totanus fuscus* in my collection, at once identified in it the bird which had been brought to him at the museum.

That the specimen was not preserved is much to be regretted, for the dusky redshank is of very rare occurrence in the district; and Capt Parker told me that had he known the bird would have been at all acceptable, he would have gladly presented it to the Museum.

RUFF: *Machetes pugnax*, (Linn.)

On 22th August, 1880, I killed a young female of this species on the sands a few miles south of Berwick; and on 7th September last, a male was shot by my brother near the same place. These are both in the first plumage.

In the "Proceedings" for 1879 at page 168, a slight mistake has occurred. In speaking of three birds of this species there recorded it is stated that "two of them are in the winter plumage, the other is immature" this should be reversed so as to read "one of them is in winter plumage the others immature." The adult plumage is rare in the district.

When in the Zoological Gardens on 3rd September of last year, I was surprised to find the ruffs in full breeding plumage; as were also some of the knots, bar-tailed godwits, and dunlins, which were confined in the same enclosure. Probably from the high feeding to which these captives are subjected, they had been longer in losing their summer condition, but, especially in the case of the ruffs, which when at liberty loose their 'ruff' before the summer has far advanced, it seemed curious to find birds in this state so late in the autumn.

LITTLE STINT: *Tringa minuta*, Leis., and CURLUE SANDPIPER: *Tringa subarquata*, (Güld.)

A little stint in immature plumage was shot on 10th September, 1881, from amongst a flock of curlue sandpipers upon the rocks near Boulmer, Northumberland. Two others, also immature, were killed by my brother near Goswick, on 11th September, 1883.

BAR-TAILED GODWIT : *Limosa lapponica*, (Linn.)

During the second week in August, 1883, two bar-tailed godwits in their red or summer plumage were killed on Fenham flats, Holy Island. One of them which is now in my possession, is in full summer dress, not having changed a single feather : the other had begun to moult and had assumed here and there indications of its winter plumage. A specimen killed in the same locality in the autumn of 1882 still retained about the breast and wings a few red feathers, but I had not previously met with the full summer plumage in the district.

BLACK-TAILED GODWIT : *Limosa ægocephala*, (Linn.)

A specimen of this rare autumn visitant was obtained by my brother upon the Goswick sands on 7th September, 1883. It is a young male in immature plumage and was when shot in company with some bar-tailed godwits.

WHIMBREL : *Numenius phæopus*, (Linn.)

Does not leave us in spring until well on in May, and I have seen them in June. In the autumn the first arrivals begin to appear towards the end of July, and during August it is perhaps more abundant on our coast than at any other time of the year.

LANDRAIL : *Crex pratensis*, (Bech.)

One later than usual in departing was shot near the mouth of the Tweed on 27th of October, 1882. It was in good condition and proved to be gorged with earth worms, amongst them being the remains of a single black beetle.

In May of last year I was surprised to see a corncrake sitting upon the top of a close cut hedge, quite four feet above the ground, craking away most vociferously.

BEWICK'S SWAN : *Cygnus minor*, Keys. and Bl.

Several small flocks visited Fenham flats during the winter of 1882. In the end of November of that year I had an opportunity of examining in the flesh three specimens which had been shot there on the 25th of the month, at one discharge from a punt gun belonging to Mr Anderson, Berwick. They were all fine adult birds, and two of them—male and female—were afterwards purchased for the Berwick Museum. A few days afterwards, another bird was shot from the same boat, and two others were secured by different people. They were all adults in fine condition.

In the autumn of 1879 one of a pair was shot on the Till near Milfield by Mr George Grey, in whose possession it now is.

GREY-LAG GOOSE : *Anser ferus*, (Gmel.)

Much rarer than either the pink footed or bean goose although not unfrequently confounded with them, all geese of a grey colour being termed "grey legs" by the fishermen and local shooters. In the 'Proceedings' for 1880, at page 401, the grey-lag is made to appear as a regular visitant to Berwick ; but this is a printer's error—what I wrote was "grey geese" (meaning *grey* geese generally as opposed to *black* or *brent* geese) and this has been confounded with the grey lag goose (*Anser ferus*) and hence the mistake. The record of migration as there given, should therefore be taken as applying indiscriminately to all three species of grey geese, though

most probably to one of the two common kinds: the first flocks being generally seen passing high over-head and at much too great a distance to distinguish the species.

BERNICLE GOOSE: *Anser leucopsis*, (Bech.)

On 24th November, 1882, having occasion to be at Goswick I had a very fine view of five of these birds. They were sitting upon a wet grass field and allowed me to approach so close to them that I could distinguish that most of them were in adult plumage, with clear white bands on the head and pure black and white on the lower parts of the body; associated with the flock was a single grey goose, probably, from its size, of the pink footed species. The five bernicles remained in the neighbourhood until near the end of December, being constantly seen by the people on the farm, who were all much struck by their tameness.

About the 10th of September, when the birds first appeared, one of their number was shot near to Goswick and came into the possession of Mr Hogg, who presented it to Mr Chas. Watson of Dunse, and the latter gentleman exhibited the specimen, as a skin, at the Holy Island meeting of the Club last year.

SHOVELLER: *Anas clypeata*, (Linn.)

Occasionally seen during winter and early spring, and a few remain over the summer and breed with us, but they all seem to disappear early in the autumn so soon as the young can fly.

A pair were killed in a pond at Fenham about the second week in April, 1883, and another pair were seen near Boulmer on 8th of December, in the previous year.

PINTAIL: *Anas acuta*, (Linn.)

An old male in my collection was shot on the slakes at Fenham on 23rd September last; it is in the brown plumage of autumn.

A specimen, also a male, which I had an opportunity of examining, was killed near the same place on 6th December 1882. It appeared to be a young bird and had not quite assumed the adult plumage.

Locally the pintail goes almost invariably under the name of "gadwell," and when we hear of a gadwell having been seen or killed, it is generally quite safe to assume that the bird meant belongs to this species.

SMEW: *Mergus albellus*, Linn.

During the winter of 1880-81 a smew, in female or immature plumage, was shot in river Till near Heathery Hall in the parish of Chatton.

GREAT CRESTED GREBE: *Podiceps cristatus*, (Linn.)

A young male in first plumage was killed at Holy Island, on or about the 26th September, 1882, and is now in the collection of Mr Fredk. Raine, of Durham.

This species sometimes remains with us till late in spring. I saw one on the Tweed near Berwick Bridge, on 30th May, 1881, and two years previously, about the same time of year, a specimen in, I believe, full summer plumage, was killed near the same place.

RED-NECKED GREBE: *Podiceps rubricollis*, (Gmel.)

A grebe of this species was killed by one of the fishermen in the harbour at Holy Island, on the 10th November, 1882; on the 28th of the following

month I saw two immature birds in the mouth of the Tweed near Spittal, and about two months later another was seen in the sea off Berwick Pier.

SLAVONIAN GREBE: *Podiceps cornutus*, (Gmel.)

Next to the dab-chick, seems to be our most common grebe and may be seen pretty regularly on our coast during early spring. In my collection are two individuals, both in winter plumage, killed in the district the one on 17th February, 1883 and the other on 30th January of the present year. I have seen many others obtained in the district during the last few years.

EARED GREBE: *Podiceps auritus*, (Linn.)

A male was picked up in a disabled condition on the banks of the Tweed near Berwick, on 7th March, 1881, and a few days afterwards a female was shot in the same locality; both of these birds came into my possession. Only a few days before, the late Dr. Brown had told me that he had seen a flock of nearly 20 small grebes in the river, which he thought belonged to this species.

STORMY PETREL: *Procellaria pelagica*, (Linn.)

One was obtained by a gentleman from Newcastle, at Alnmouth, on 29th September, 1883.

SHAG: *Graculus cristatus*, (Fabr.)

On 26th March, 1882, I saw one of these birds at St. Abb's Head; it was sitting upon a ledge of the cliff pruning its feathers, and at a short distance from it sat two common cormorants. The shag was in immature plumage, having white or pale grey breast, as was also one of the cormorants, the other had almost completely assumed its summer dress.

Berwick-on-Tweed, 30th May, 1884.

Notices from a variety of sources connected with the Excursion up the Yarrow in August, 1883. By JAMES HARDY. Plate XIII.

1. *The Piper's Pool; a Reminiscence of the Battle of Philiphaugh.*

MR ANDREW CURRIE writes that at the time of the battle of Philiphaugh there was no bridge crossing the Ettrick, where it does now; "only a ford for the traffic to and from the Burgh town. On the top of the bank overhanging this ford, the people of Selkirk flocked to see the battle, and during the contested passage of the ford in which for some time General Leslie was successfully held in check—one of his pipers stationed on the steep bank was shot dead and rolled over and over into this pool. Ettrick at that time ran in full volume against Laurieston Bank, and from

the above incident the pool has since the battle retained the name of the 'Piper's Pool.' My information is derived from my mother, whose great grandfather was one of the onlookers, and who also lost his life a few years after by drowning in this very pool. On this account the pool has always had a double interest to the writer."

I have in the Wilkie MSS another traditionary relation, from which it appears that the Piper belonged to Montrose's side. The little Memorandum Book from which it is extracted appears to have been written on a voyage to Sumatra and Calcutta in 1818. An old lady in the town of Selkirk informed Mr Wilkie that on the day that the famous battle of Philiphaugh was fought, Montrose had ordered the Piper of Soney to play all the day, and if he (Montrose) gained the battle, that he would pay him well for his music. He was seated near the end of the present bridge of Selkirk on a rising bank, where he was shot. His body was thrown into an adjoining pool of water still called the Piper's Pool. Hence the saying when a person is not paid for his labour :

" He is like the Piper o' Soney,
That play'd a' the day and gat nae money."

Swina, or Swaney, or Swina is one of the smaller Orkney Islands, but we would expect the Piper to be a Celt, and not an Orcadian.

2. *Battle Cairn at Philiphaugh.*

Mr Currie continues : "The battle was fought on the opposite haughs—to westward of the bridge. Montrose's camp was hastily formed at the site of the Cairn erected by the late Sir John Murray. This Cairn I assisted Sir John in designing and erecting over thirty years ago. It stands on the eastern mound of Montrose's Camp."

3. *The General's Brig.*

"The broken bridge, called the 'General's Brig,' " says Mr Currie "to the best of my knowledge is comparatively a modern structure, having been built by Lieut.-Gen. Mackay about 1760. The general was either the son or nephew of his celebrated name-sake of Killiecrankie—a relation of the Duke of Buccleugh of that time—who leased the home farms of Bowhill and Carterhaugh from the Duke. My grandfather was the Duke's factor from 1760 to about 1780, and among the voluminous documents of his factorship I notice the expenses of this bridge. I have

always in my professional capacity been curious about bridges as regards their mechanical structure at different periods, and I may tell you this one has been very badly built—very different from the old Gothic one at Yarrow Kirk.” A cannon ball has newly been dug up near the General’s Bridge.

4. *Remarks on Silver Locketts said to have been found on the field of Philiphaugh.* By MISS RUSSELL.

I have not the notes at hand which I made on the interesting object mentioned in Sir Thomas Dick Lauder’s “*Rivers of Scotland* ;” his description is so far correct, and yet it is not what he calls it.

He says it is a silver locket found on the field of Philiphaugh, with various poetic devices outside, and containing a portrait of Montrose, most beautifully executed in relief.

The last remaining sister of the gentleman in whose possession Sir Thomas D. Lauder saw the locket, died some time ago, and after her death I managed, through the kindness of one of the Lauder family, to ascertain that the locket was safe, and to see it.

To my surprise, it turned out to be three (3) small lockets, *all exactly alike.*

The portrait, in relief in silver like that on a coin, but full face, I thought at first was *Louis the Fourteenth of France*, whose portraits are so numerous and familiar ; it was certainly not Montrose.

And after looking at it for a moment, it struck me who it must be—Charles the Second, the first cousin of Louis ; Henrietta Maria being daughter of Henri IV, and sister of Louis XIII. Charles was at the time of the battle of Philiphaugh, Prince of Wales, in exile in France, and about fifteen.

The face of the portrait is quite young, and a ribbon like the ribbon of the Garter is round the neck, as that was worn at the time.

If they were really found on the field of Philiphaugh, the history of the lockets is evident enough ; Montrose had no doubt sent, for the portraits at least, to France, as presents for royalists whom it was desirable to compliment.

The workmanship, especially that bestowed on the long flowing hair, is beautiful ; that of the lockets quite plain.

The mottoes and devices are certainly, as it were, utterances of Montrose himself ; the devices he used himself have considerable merit.

The smallness of the lockets I suppose accounts for their having been overlooked in the plunder of the baggage; I did not measure them but I think the heart-shaped outline would go into that of a shilling.

Sir Thomas Dick Lauder's Notice, "Rivers of Scotland," p. 99, is the following: "We have seen a curious locket, found on the field of Philiphaugh, and now in the possession of Mr Graham of Lynedoch. It is heart-shaped—on one side there is carved a long straight heavy sword, and below it a winged heart, showing probably that it belonged to a Douglas—on the other side is a heart pierced through with darts, with the motto, 'I live and dye for loyaltye.' On opening it, there is engraven on the inside of the lid, 'I mourne for Monarchie' and the locket contains a most beautiful minute *alto relievo* likeness of Montrose."

5. *Foulshiels and Mungo Park.*

On the occasions when I have passed Foulshiels where Mungo Park, the great African traveller was born, (Sept. 10th, 1771), and brought up, I have been surprised at the unbecoming state of the ruin of the old farm house, as contrasted with the many fine mansions and decent dwellings passed on either side of the public road. A ruined castle is picturesque and romantic, but a desolated cottage is a deformity and out of harmony with the train of pleasureable feelings induced by visiting memorable spots. Why not restore the thatched roof, as it was in the days of old Mungo Park, the father, to preserve the walls; and plant some shrubs to gladden the exterior, and make it look less naked?

The character of Mungo Park has quite recently become an object of solicitude to members of the Club, which ranks among its numbers several distant relatives or connections of his family, by reason of Mr Ruskin's recently promulgated notion of what constitutes a religious and exemplary man. The theory is made to rest on Sir Walter Scott's latent belief on old world "freits," and his friend Park's out-spoken rejection of them; although there is nothing finer in even Scott's writings than the well-known incident of the moss in the desert, and Park's reliance in the hour of despondency on God's providential care. In addition to Dr. Anderson's vindication, I shall cite what Mr Currie has to say, from what his mother told him. "My pious mother was schooled with him [at Selkirk]; and in her house he prepared much of his first account of Africa, and her opinion was that she

never had experience of a better Christian man—so unselfish—so charitable and benevolent even to his enemies.”

In his domestic relationships Park was unimpeachable, and not the heartless ogre Mr Ruskin supposes. The pleasant state of intercourse between him and his kindred may be perceived from the succeeding letter from him to Miss Bell Park, the use of which I owe to Mr Wm. Lang Blaikie, Holydean, as also the opportunity which it offers of introducing a copy of Park's autograph. [See Plate XIII.] I copy the letter verbatim.

To Miss Bell Park, Hartwoodmires near Selkirk, N.B.

“Dear Sister,

I have not heard from Scotland since I left, but I hope you are all in good health and I attribute your silence to the hurry of harvest. However, let me hear from you soon and write how Sandy's marriage comes on and how Jeany is; for I have heard nothing from her neither.

I have nothing new to tell you, I am very busy preparing my book for the press and all friends here are in good health. Mr Dickson is running about, sometimes in the shop and sometimes out of it.

Peggy is in very good health, and dressed as I think in a Cotton gown of a bluish pattern—a round eared *much*—or what they call here a Cap—with a white ribbon—a Napkin of lawn or muslin or some such thing—a white striped dimity petticoat.

Euphy and Bell are both in very good health, but they are gone out to play, therefore I must defer a description of them till my next letter.

London
Sept^r 21
1798

I remain,

your loving Brother,

MUNGO PARK.

P.S. both Peggy and Mr Dickson have been very inquisitive about you and beg their Comp^s to you.”

The Post Office stamp is SE. 21. 98. (Sept. 21, 1798).

Mr Blaikie gives me a note of some of the relatives of Mungo Park, which may be valuable some day. To the two parties mentioned,—Mrs Laidlaw, Peel, and Mr Mungo Park, Tobermory—there is in Mr Blaikie's possession, and shewn to the Club at Innerleithen, letters from Sir Walter Scott. These have already been printed in the “Border Magazine,” published at Gala-shiels.

“Old Mungo Park of Foulshiels left five sons and three daughters, i.e., Mungo, the traveller—Adam, a surgeon—Alexander, a banker—Archibald, father of the old lady who died three years ago—and John who succeeded his father in Foulshiels. One daughter married a Mr Thomson, farmer, Myretown, near Alloa. Another married a Mr Dickson, a gardener, who went to London, and became an intimate friend of Sir Joseph Banks. I have heard my mother tell of Mrs Dickson having taken ill and her

husband calling in a Doctor, who on coming into the room asked what she complained of, to which she replied 'it is only a weed.' 'A weed!' said he, 'did she drink it?' 'No, no, it is an *onfa*.' This puzzled him still more, and he thought her delirious till her brother, Mungo Park, explained to him the meaning,—a one day's fever. Miss Bell Park, the youngest of the three, kept house for her brother Archie at Hartwoodmyres, till he married Margaret Lang (my aunt), after which they removed to Lewinshope. In consequence of heavy losses by his brother Alexander, Archie became bankrupt, but through the interest of Sir Walter Scott he got an appointment in Mull. There his wife died, and he did not long survive her. Bell Park married 1st—Mr John Anderson, uncle of the present Dr. Anderson. After his death she married Mr Buchanan, a lawyer in Glasgow, and 3rd—she married Mr Dalgleish, a leading man in Glasgow. Mrs Laidlaw, Peel, was Margaret Sibbald, sister to Mrs Lang (my grandmother), the mother of Margaret Lang, who married Archie Park. Mungo Park of Tobermory was their son."

6. *Deuchar Bridge.*

I have again recourse to Mr Currie's guidance. "At Deuchar, according to the tradition of the district, there was once a castle, the site of which cannot now be identified, and on the same authority, the highway to Edinburgh went up Deuchar burn—over Deuchar hill and Minchmoor to Traquair. The old bridge here of two Gothic arches is now a ruin. In my recollection about 50 years ago it was entire, and at that time was the only bridge for church-goers and the public from Ettrick and the south of Yarrow parish by the road over Kershope-swire. This bridge I consider to belong to the 13th or 14th century, and it was similar in many respects to others of the same type built at the subjugation of the country by Edward I. Its roadway was only 12 feet wide, and rose and fell at the apex of the arch. I have examined several bridges of this period—those of Stirling, Ayr, and Twizel—the last is the finest by far with a narrow roadway of 13 feet. All of them have been very carefully and strongly constructed and founded, with hot lime poured in as the structures were built up, and when finished forming like concrete a solid mass; hence their great endurance through the tear and wear of centuries to the present day."

What bridge across the Yarrow referred to in the following entry in the town books of Peebles was then constructing, I cannot say; perhaps by way of Mont Bengier and Eldinshope: "June 27th 1653. Upon the humble desire of Patrick Scott of Thirlstane, to have ane brig across the Yarrow, the magistrates of Peebles ordain all in the town who have horses, shall send the

same for a day to carry lime for the said brig, under a penalty of forty shillings." It shows how bridges were in former times "executed by compulsory contributions of labour under magisterial authority."*

7. *Yarrow Kirk, and Monument to the Rev. John Rutherford.*

A statement relative to the parish church was recently obtained by Mr Currie among family papers, and he is of the belief that it was written by his late brother-in-law, Mr Scott, Ladhope, who died 12 years ago at the advanced age of 92. I extract the most of it.

"Yarrow Kirk was erected in 1640. The parish church was formerly on the north of St Mary's Loch and was called St Mary's of the Lowes, and having subsidiary chapels at Deuchar and Kirkhope (on Ettrick). These chapels were suppressed about 1640. Yarrow Kirk bell was the gift of James Murray of Henderland to the kirk of Deuchar in 16—†. A dial with inscription 'watch and pray,' etc. belonged also to this kirk of Deuchar.—The Rev. John Rutherford was the first parish minister after the Revolution, and was ordained in 1691. He was schoolmaster of Selkirk before this. A stone tablet at the back of Yarrow Kirk, and in Latin, records his life and labours in the parish. The Rev. John Rutherford was maternal great grandfather of the Sheriff, Sir Walter Scott.—In 1791 Dr. Russell preached the funeral sermon of his predecessor, Dr Cramond. The roof of the kirk at that time was thatched and had no ceiling. In 1826 the kirk underwent a thorough repair and a new belfry was"—. Here the document abruptly finishes.

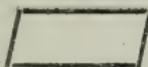
For a copy of the monument I am indebted to the Rev. Robert Borland, now minister of Yarrow, which I have compared with that in Dr. Charles Rogers' "Genealogical Memoirs of the Family of Sir Walter Scott," p. XLIX; and I have also for the most part adopted Mr Borland's translation, as being more literal.

Memoriæ

R. D. Joannis. Rutherford.

Ecclesiæ. Yaraensis. Pastoris.

Intiger-
rimi.



Vigilantis-
simi.

Et. Roberti. filii. quadriennis.

Hoc. monumentum. erigere. curavit.

Cristiana. Shaw. uxor. mœrens.

* Chambers' Hist. of Peebleshire, p. 174.

† There was a Sir James Murray of Deuchar in 1648. (Chambers' Hist. of Peebleshire, p. 454). Henderland was a modern acquisition of one of the Murray family. (Ib. p. 361.)—J. H.

Obiit. May. 8. 1710. ministerii. 19. æt. 69.
 Pastor. eras. fidus. pater dilectus. amicus.
 Certus. herus. lenis. blandus. gener. atque.
 Maritus.

Integræ. et. puræ. defunctus munera. vitæ.
 Cesisti. fatis. annis. fæliciter. actis.
 O. ter. fælicem. tua. fama. super. juga.
 Celsa. et. virides. Yaræ. ripas. animus. super. astra.

“In memory of the Rev. Mr. John Rutherford, the very upright and very watchful pastor of the kirk of Yarrow, and of Robert his son of four years of age, Christiana Shaw, his mourning widow, was careful to erect this monument. He died May 8, 1710, of his ministry 19, and of his age 69 years.

Thou wast a faithful pastor, a beloved father, a sure friend, a gentle master, a kind husband, and son-in-law.

Having discharged the office of a pure and honourable life, thou yieldest to the fates—thy years passed happily. O thrice blessed! thy fame preeminent above the lofty hills and the green braes of Yarrow, while thy soul has passed above the stars!”

The reading of *feliciter* and *felicem* for *feliciter* and *felicem* is curious.

8. On Annan Street and its ancient Graves.

To supplement Miss Russell’s valuable memoir on the Yarrow Inscribed Stone, I have collected a few notices from the articles written on that remarkable monument, regarding some of the graves in the surrounding area, and the few objects of rude art which they have yielded. I have also made a few inquiries, which have resulted at least in acquiring some original information. It is of consequence that we should be familiar with the preliminary circumstances, the knowledge of which may lead to something of greater importance being brought to light. A more careful examination of the ground when broken up for crop may reveal more of the ancient weapons or ornaments of the race once entombed here. Articles of all ages, in single numbers only have been picked up—flint, bronze, and iron. A search particularly should be instituted for stone and flint implements, as they are the most liable to be passed over. The leisurely and artistic way in which the people have been buried here, shews that this is not a mere old battle field, but a necropolis of the old races of the “Forest;” we should therefore expect that the rudest

and earliest stage would be well represented as soon as people know what to look for.

The first notice of the Yarrow monuments is by Sir Walter Scott in the Introduction to the ballad of the "Dowie Dens of Yarrow," in the "Minstrelsy of the Scottish Borders." The late Dr Russell in the "Statistical Account" of the parish of Yarrow in 1833, devotes a paragraph to it; subsequently it is referred to by Dr Daniel Wilson in his "Prehistoric Annals of Scotland"; and then it falls to be discussed in an article by the late Dr J. A. Smith, entitled "Notes on some Sepulchral Cists and on the Latin Inscription upon one of the Standing Stones near Yarrow Kirk, Selkirkshire," read July 13, 1857, and printed in vol. ii. of the "Proceedings of the Scottish Society of Antiquaries, p. 489; and again in vol. iv; in "Additional Notes" &c., pp. 524—540. This same volume also has some remarks of Sir James Simpson, on the inscription,—p. 134 and note.

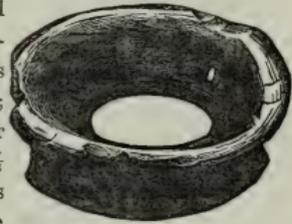
I have nothing more to suggest about the reading of the inscription, (see present vol. p. 107) further than that I give up the subdivision of the word PRINCIPEI, in favour of the view that it is either an imperfect genitive, or that the supposed period may be a minuscule S, as is suggested by Dr Smith may be the intention of a rude mark after the similarly truncated word LIBERALI PRINCIPEIS might thus be an archaic form of PRINCIPIS.

As is well known the cast of the stone now in the Museum of the Society of Antiquaries was taken by Mr Currie. When engaged with it, he made some subsidiary discoveries of very considerable service for estimating the age of some of the remains in that locality. "At the time," he writes, "when I took the cast from the inscribed upright stone, the shepherd of the ground had previously turned up in his garden ground a bronze battle-axe, and a polished black ring, like an optician's eye-glass. This I got from him, and it is now in the Antiquarian Museum. I failed to get the bronze axe, which was used as a useful chopper in the shepherd's house, but I made a sketch of it at the time." The drawing represents a celt, 4 inches long and $2\frac{1}{2}$ broad at the edge, with a socket to admit a handle, and a lateral loop. It belongs to the latest bronze period. The celt was afterwards lost by the shepherd's children.

A fuller description of some of the objects obtained by Mr

Currie is contained in the following extracts from Dr. Smith's first paper. The copy of the engraving I owe to the Council of the Antiquarian Society.

"In presenting to the Museum of the Society the small ring of cannel coal and portions of a clay urn from Mr Currie, sculptor, Darnick, it is worth recording that their remains were found in long sepulchral cists, composed of large slabs or flagstones, containing traces of bones, which were discovered this spring, while the ground was being trenched, in the garden attached to a shepherd's cottage, a little to the west of Yarrow kirk, in Selkirkshire. Eight cists were discovered closely adjoining one another, and each measuring it is said, some 5 or 6 feet in length, about the size of ordinary graves, and they lay apparently in the direction of east and west. The ring of cannel coal (which is well represented in the subjoined drawing,) is of a rounded form, and shaped somewhat like the horn frame of a watch-maker's eyeglass. It has four small perforations placed at irregular intervals in its grooved sides; which pass through to the inside. The diameter of the larger margin of the ring is nearly $1\frac{7}{8}$ inch, and of the other or smaller side $1\frac{1}{2}$; it is about $\frac{3}{4}$ of an inch in depth on the side, and the central aperture measures nearly an inch in width.



The small piece of the coarse clay urn, which was unfortunately broken at the time of its discovery, shews the usual patterns of oblique and straight lines, formed by the twisted cord, round its upper part, similar to the class of clay drinking-cups found in cists of a primitive character. A flint arrow-head was also found in the immediate neighbourhood of the cists. A special interest was given to these cists, from their being in close proximity to three rude standing stones, which are placed in a line along the valley, running nearly east and west, at about a gun-shot apart from each other; and it was at a distance of some 30 to 36 feet to the south of the eastern stone that the cists were found. Close by, a cairn or heap of small round stones was discovered, enclosing a considerable quantity of partially decomposed bones, which after a few minutes exposure to the air crumbled into dust; and so numerous were the fragments of bones cast up by the workmen employed in digging the foundation of the recently built shepherd's cottage, which stands a little to the north of the stone, that they fancied the ground here had been the site of an old churchyard."

The ground was brought under cultivation about 1807 or 8, by the late Mr Ballantyne of Whitehope. The late Rev. Dr. Russell, Yarrow, in a letter to Dr Smith, thus indicates the situation:—

"The piece of ground to the west of Yarrow Church appears to have been the scene of slaughter and sepulchre on a large scale, and probably on more than one occasion. From time immemorial it was a low waste

moor, till about fifty years ago (written in 1857), when it was formed into a number of cultivated enclosures. Some diggings at the base of the eastern monument, the one connected with the cists, laid bare a considerable pile of small bones, while around the one in the centre, there was formerly a large cairn, under which lay a quantity of decomposed bones; on more than twenty different spots were similar cairns, in many of which fine yellow dust, and in one, part of an old iron spear, much worn away by rust, was found. The real tradition simply bears, that here a deadly feud was settled by dint of arms; the upright stones mark the place where the lords or leaders fell, and the bodies of their followers were thrown into a marshy pool, called the Dead Lake, in the adjoining haugh." (Proc. Soc. Ant. Scot. ii., pp. 487-8.)

Mr Currie learned recently from an aged lady in Yarrow that the Annan or Warriors' Rest field at the beginning of the century was a "field of graves," and covered with cairns and large stones before it was brought into cultivation. The story of the old people—and Mr Currie heard of it when he was a youth—is that *old* Dr Russell of Yarrow carted away loads of bones from the place at the beginning of the century, and applied them for manure to what is called "the Glebe." The parish glebe has always been near St. Mary's Loch, and much too far for Dr. Russell's carts and horses on any such errand. But he rented from his son-in-law, Mr Ballantyne, Whitehope, fields in the vicinity of the manse, which the people in a ready way might term his Glebe. This is avouched in a letter from the old lady just referred to. "Many a cart load was taken to the Glebe—and much horror expressed." I quote this as an evidence of the vast quantity of human remains that had been here interred.

In 1876, in company with another lady, Miss Russell paid a visit to view the inscribed stone. Her account in some measure continues the preceding details, and supplies some apt explanatory suggestions and comments.

"Dr Russell got into the carriage and drove up with us to the stones first. I do not remember that he told us anything particular about them. He said the inscription was sometimes very clear in the morning light; I could only see the O which must be that of Dumnogeni; it was a dark afternoon. Then we got into the carriage again, as he wanted to shew us the place where the bones were found when the cottage named the Warrior's Rest was built. He shewed us the end of a stone cist, or rather stone built grave, with the bones of a human skeleton in it; this was discovered, I do not know exactly when, by a rabbit being seen running out of it; this is the skeleton, I think, that was sent to Edinburgh for examination and then replaced in its grave.

But some time before this, I think, he said it had been, when that cottage

near this spot was built, the shepherd was breaking up the ground allotted for the garden ; and he came upon several similar cists, with bones in them; he went to call his wife to look at them, but before she could get to the spot they had begun to crumble into dust, and were gone in a few minutes ! There were eight, I think, found in the garden.

I never heard of this discovery otherwise, but of course there was little to be seen. But Dr. Russell said he had looked up the subject at the time, and made out, chiefly from Sir Henry Rawlinson's writings, that the preservation or immediate destruction of bones and other objects suddenly uncovered—the phenomena of their crumbling to dust is quite familiar—seems to depend on whether the *air* has been completely excluded or not. If it has, the change that takes place on its sudden admission after many centuries, is so great, that everything except stones and so on, everything organic, becomes disintegrated at once ; while in exactly similar cases, if the tomb or chamber has had chinks which admitted the air, things in a dry climate will last indefinitely. This is said to have been observed to a great degree, in the heaps of half-baked bricks, which seem always to have enclosed the rooms in the palaces of Nineveh. I do not know whether the theory is altogether correct, but the facts are well known."

Mr Currie has sent me a sketch of a section of one of the cists referred to in the preceding letter, and previously in the record of Proceedings, p. 271. It is 5 feet 4 inches in length. It is on the eastern end of Warrior's Rest field, at the road side. "The end of it," he says, writing Dec. 18, 1883, "is open on the escarpment of gravel sloping to the public road, and a twelvemonth ago was full of bones. There is not a bone in it now, except a small part of a rib, which being still firm in texture shows the remarkable state of preservation of bone when lying in a bed of gravel."

I have obtained from Mr William Bell, schoolmaster, Yarrow, what information he could collect about the remains found in a stone cist near Whitehope Farm House. It appears to be the skeleton Miss Russell heard of as being sent to Edinburgh. "The skeleton was that of a full grown male. The legs had been broken and doubled up. After the discovery the skull was first in the possession of Dr. Shaw, and then the Rev. Dr. Russell got it and sent it to the Edinburgh Museum, where it now is. The bones were interred in Yarrow Church Yard by Dr. Russell. The cist was of rude construction. The unpolished stone slabs had been brought from a quarry a mile off, where flag stones are still obtained." This again points to the deliberate and careful manner in which some of the interments had taken place.

In a recent visit to St. Mary's Churchyard Mr Bell found the oldest date on the tombs there was 1699.

9. *The Tomb of Cockburn of Henderland; and the owners of Henderland Estate.*

We now pass out of Yarrow and the skirts of St. Mary's Loch into Megget (or Meggat) dale, to view the ruined tower of the Cockburns of Henderland, (a family now extinct), and the site of the little chapel and churchyard, where probably were deposited under a memorial slab, the remains of the founder of the chapel and his spouse;—Peter de Cockburn and his wife Marjory. The tomb has got mixed up, both in literature and in the popular belief, with the history of an unworthy scion of the race, who was more enamoured with the half-savage career of a leader of thieves, and the "idle limmers" of the Borders, than the straightforward path of loyalty and fair dealing; a traitor to his sovereign, and a waster of the family inheritance; who met with a tragic end as the meed of his crimes, which left a lasting impression not only among the dwellers among these hills, in his own generation, but is not even yet obliterated. Although we are now awake to the reality of events as they happened, it will probably not dissipate the cherished opinion, and this spot will continue to be visited as the tomb of an imaginary Piers Cockburn, whom the king of Scotland cruelly hanged, without a form of trial, over the gate of his own tower, and not as the mausoleum of a Border chieftain of stainless name and exemplary conduct. The popular tale is thus related by Mr Elliot Aitchison in the "Scottish Journal of Topography, Antiquities," etc., i. pp. 126-7; Edinburgh, 1847, now become a rare book.

"When James V., in 1530, made an excursion to the Border, to restore peace to the 'Debateable Land,' Cockburn fell a victim to the royal vengeance—justice it could not be called, and the deed is still regarded by the peasantry of the district as one of unjustifiable tyranny. On the king and his armed followers reaching Henderland Tower, a message was sent to Cockburn that he was wanted immediately. The borderer, being at dinner, returned an answer that he would not stir, were it the king himself who wanted him, until he had finished his repast. The messenger was sent back to say that it *was* the 'king himself' who wanted him, and that he might prepare for *instant death*. Thus taken by surprise—his followers being absent, and surrounded only by his family—the knife with which he had been eating dropped from Cockburn's hand, for well he knew the object of the royal visit—and without being allowed a moment's preparation for death, he was hanged over his own gateway. His body was buried on the top of a little knoll on the other side of the tributary brook which flows past the ruins, and a "through-stone" [the figure shows that it is not a through-stone] marks the spot, which was lately enclosed and

planted by the proprietor. The stone has an inscription round the edges in the old Saxon character, but, being overgrown with moss [lichens], it cannot be deciphered. It is said that the borderer's wife would have met a similar fate, had she not, warned by a domestic, fled to a dark cave at the foot of the waterfall in the ravine above the tower, where she lay concealed till the danger was over. The waterfall is peculiarly picturesque. It is about twenty feet high, though it cannot be seen till the visitor is close upon it."

Sir Walter Scott, in his Introduction to the poem of the "Border Widow," joins other pathetic touches.

"A mountain torrent, called Henderland Burn, rushes impetuously from the hills, through a rocky chasm, named the Dowglen, and passes near the site of the tower. To the recesses of this glen, the wife of Cockburn is said to have retreated, during the execution of her husband; and a place called the Lady's Seat, is still shown, where she is said to have striven to drown, amid the roar of the foaming cataract, the tumultuous noise which announced the close of his existence."

The "Dow-linn" and not the "Dow-glen" is the correct name of the waterfall. (*Scottish Journal*, i, p. 248). "J. P.," a correspondent of the "*Peebleshire Monthly Advertiser*," whose communication is transferred to the "*Scottish Journal*" (i.e.) furnishes some additional and apparently correct statements about the tomb and its recent history.

"The tomb, which is about five feet long, stands on a *moat*, or small conical hill, flat on the top, still called the Chapel-knowe, and is in the centre of what was called the chapel of the castle of Henderland, and probably the 'Kirk of Enderland,' mentioned in the Records of the Presbytery of Peebles, 17th June, 1603, as then 'altogedder doun and equall wt ye erd' (ground).

Sir Walter Scott says: 'In a deserted burial-place which once surrounded the chapel of the castle, the monument of Cockburn and his lady is still shown. It is a large stone broken in three parts; but some armorial bearings may yet be traced.' When Sir Walter wrote this note, the broken stone had been removed from its original resting place into the adjoining burying ground.

In 1841, Mr Murray of Henderland ordered the tomb to be repaired, the Chapel-knowe to be planted, and these interesting relics to be protected by a stone wall round the foot of the moat, in which steps were formed for the convenience of strangers visiting

'Lone St Mary's silent lake,'

and its delightful neighbourhood.

Before the repairs of the tomb were commenced, an individual who had been somewhat sceptical as to whether the stone had really been placed over the laird's grave, dug about two feet down, and to his surprise turned up a portion of a human skull. It was in the dusk of the evening, and

struck with dismay, he threw down his spade and fled. Next morning, however, he returned, and part of the skull is now (1847) in the possession of a gentleman in Edinburgh. It was submitted to the inspection of a distinguished anatomist, who reported: 'It is a portion of the inner table of the two parietal bones of the skull in advanced life, and apparently of the male sex. You will easily observe the serrated line of union of the two bones.'

The writer was of the opinion that this bone was part of the skull of the "redoubted Border Chief." The circumstance of the desecration of the tomb quite recently came to Mr Currie's notice, when he undertook a journey (Dec. 16th, 1883) to make the outline drawing of the tomb for the accompanying plate. (Plate XIII.) "That it was desecrated and the skull abstracted," he writes, "I have on the authority of my own brother at present from Australia, and to whom the thief confessed the foul deed, and indicated the party to whom he had sold it. I am glad to find now from my brother, that this same party had the good taste to restore the skull to its tomb at Henderland."

Mr Currie's report on the present state of the stone is that it is "in a very bad condition, being scrawled with names. One of these has been *recently* cut along the sword, and so deeply cut the whole length of it, that the only way to restore it to the original state would be to fill the letters in with hard cement; also to clean the whole stone of its moss, and enclose it by an iron railing. If this is not done, it promises fair to be destroyed, and unintelligible in a few years." Mr Currie had great difficulty in deciphering the letters, what with the wretched state it is in, and the dark day, and but for the assistance of his nephew, who knew the inscription, he would have failed. The reading he obtained is "HERE LYES PIERS DE COCKBURN," on the top, "AND HIS WIFE MARGORY," or "MARJORY" on the lateral margin. A more correct version and account of the sculpturing on the stones will be mentioned in the sequel.

Although Sir Walter Scott in introducing the ballad of the Border Widow, "obtained from recitation in the Forest of Ettrick," apparently gives credence to the tradition that Cockburn of Henderland was hanged over the gate of his own tower by James V., he was well aware from Lesley's History, which he quotes in the introduction to "Johnie Armstrong," that Cockburn and Scot "the king of the thieves" were beheaded and not hanged. No one could mistake who had consulted Lesley, who relates how these two offenders had a regular trial, and were

convicted before the king and a company of assessors, and were sentenced to be beheaded, and their heads were affixed to the highest place of the Court of Justice (the Tolbooth) in Edinburgh.*

Again it is the general belief, from taking the inscription as a guide, that the name of the man executed was Piers, Perys, or Peter, whereas it was *William Cockburn*, who was the criminal; and consequently this monument belongs to an entirely different personage. Moreover, whatever were the precise circumstances of *William Cockburn's* capture, James V. had no personal participation in them. *Cockburn* was seized under the superintendence of James, Earl of Murray, the king's lieutenant over the three Border Wardenries. The correct version is given in Mr Bruce Armstrong's "*Hist. of Liddesdale*," pp. 272-3, as based on original documents.

"We have no record of the proceedings of Bothwell or Murray, but it may be concluded that the latter acted with some energy, as *William Cockburn* of Henderland and *Adam Scot* of Tuschelaw were apprehended and brought to Edinburgh. On the 16th May [1530] the former was tried, convicted of high treason, theft, etc. and beheaded by favour of the king. (Books of Adjournal, MS. Justiciary Office.) The trial of the latter took place on the 18th May, when, being convicted of black mail he also was beheaded."† The words of the record are preserved in Pitcairn's "*Criminal Trials*," vol. i., p. 145. "1530, Maii 18, *Adam Scot* of Tuschelaw convicted of art and part of theftously taking black mail from the time of his entry within the Castle of Edinburgh, in ward, from *John Brown* in Hoprow; and of art and part theftously taking black mail from *Andrew Thorbrand*, and *William* his brother; and for art and part theftously taking of black mail from the poor tenants of *Hopecailzow*; and of art and part theftously taking black mail from the tenants of *Escheschiell*. Beheaded. Quhaerfor the king caused hang the 18th May *William Cockburn* of Henderlande, and *Adame Scott* of Tuschelaw, thieves apprehendit in Edinburgh, to terrifie others;—and they were heidit, and their heidis fixit upon the Tolbuith of Edinburg." Pitcairn states the indictment against *William Cokburne* as "high treason, committed by him in bringing *Alexander Forestare* and his son, Englishmen to the plundering of *Archibald Somerville*, and for bringing certain Englishmen to the lands of *Glenquhome*."

* *De Origine Moribus et rebus gestis Scotorum*, Authore *Joanne Leslæo* Episcopo Rossensi, p. 410; Romæ, 1675.

† On the 19th November 1525, 'a letter was sent to warn the lard of Henderland and *Adam Skot* to fynd pledges.'—Lord Treasurer's Accounts, MS. Gen. Reg. House, f. 8 b.

“The king now decided on taking the pacifying of the country into his own hands, and his first act showed how little confidence he had in the frequent promises he had received from the lords and barons in the south, for by his directions Bothwell, Home, Maxwell, Johnston, Buccleugh, Drumlangrig, Wamfray, Mark Ker of Dolphinstoune, John Home of Coldouneknowis, a son of Fernyhirst, and a son of Hennerland, were all placed in ward. [‘Hennerland’s son,’ was to be delivered to Lord Hay—Act. Dom. Con. MS. vol. xli. f. 79.] On the 19th May a meeting of the council took place, at which it was arranged that the king, accompanied by the true barons and lieges, should ride ‘in proper person endlangis his bordouris’ for the punishment of malefactors and the pacifying of the country. It was further decided that letters should be written stating that Henderland and Tuschelaw had been executed for injuries committed on the inward part of the realm, and the king intended to put good rule throughout all his borders.”

The lieges were therefore convoked to assemble with their households “bodin in feir of weire” well victualled and furnished for 40 days to meet the king at Edinburgh on 26th June, and accompany his highness on the following day towards the Borders. The places visited by James are as follows. “Meggot Water, Crammat, Pappert Law, St Marylaws, Carlaveruk Chapel, Ewindoors and Langhope.” (Pitscottie’s Chron.) From another and contemporary record we learn that the king was at Peblis on 2d July, at Douglas Watter, near St Mary’s Loch, on the 4th, at Carlanrig on 5th, at Allan Watter in Teviotdale on the 7th, in Heusdale [Ewesdale] on the 10th, at Stabiltgorton on the 12th, at Peblis on the 13th, at Crammald near St Mary’s Loch on the 15th, and again at Peblis on the 18th.—*Excerpta e Libris Domicilii*, Jac. V., Appendix, p. 31 : apud Armstrong, l.c. Note, p. 273.—By a comparison of dates it is clear that the king was not in the vicinity of St Mary’s Loch, until a month and nineteen days after Henderland’s execution.

But though the popular story may be erroneous, there may be features of truth in the narrative of Cockburn’s apprehension, and the escape of his wife. A verse in the ballad refers to the fatigues the wife underwent in the carrying his body to be interred. Did she convey it privately here from Edinburgh, to deposit it in the ancestral tomb? I would not willingly discredit the authenticity of the ballad attributed to this event. It may

have been written long after from the impressions of floating tradition. Both Cockburn and his wife must have been pretty well advanced in life to have a son then grown to maturity, and capable of taking an independent part.

The branch of the Cockburns of Henderland was once a more powerful family in the extent of landed property to which it was gradually being reduced by the imprudence or improvidence of its latter representatives. The successive ownerships of estates is a subject of much interest and value, especially historically; and, on this occasion, I have been enabled to bring together a pretty full history of successive owners of the Henderland estate, who have never previously been presented in consecutive view. The notices are fragmentary, and several may still remain concealed in charter-chests, or in private publications not readily accessible. To the Rev. Alex. Thomson Grant, Parsonage, Roslin, I am indebted for the many quotations from the Register of the Great Seal, 1882, 1883, 8vo.

The original of the Cockburns appears to have been "Piers de Cockburn," who signs Ragman Roll, A.D., 1292, 1296, 1297, etc. (Nisbet's Heraldry, II., Appendix, p. 37.) The Henderland Cockburns branch from the Langton stem, and were very close to it, when they obtained a renewal of their first charter, which entails the estate in defect of heirs on the Langton line. The arms of Cockburn of Henderland, according to Nisbet (Heraldry I, p. 348) are "*argent, a mullet azure, between three cocks gules.*"

At Stirling, 10th April, and of his reign the 13th year, (1383) Robert II. granted to Peter de Cockburne son and heir of Peter de Cockburne, the lands of Henriland with pertinents, and the lands in the vill of Bothill, and the lands also of Kyrkhurde in the vill of the same, with pertinents in Peblishire; and the lands of Sundreland with the manor of the same within Selkirkshire; which lands with pertinents belonged to Peter's father, but which he had resigned by staff and rod; and to hold to the same Peter and his bodily heirs, or failing to his legitimate brothers and sisters; or failing these to Alexander Cockburne de Langton the father, his heirs and assignees whomsoever, as freely and peaceably as the said Peter the father had held the same lands; reserving, however, to the said Peter the father, the free tenure of the said lands with pertinents for his life-time. (Reg. Mag. Sig. 1. 163. 11. Edinr. 1814. fol.)

In 1415, the Melros monks obtained the lands of Wynzehope or Glenkery, Selkirkshire, on the south side of the water of Temay, between their land of Migehope and the lands of Etrick and Dalgles, with twelve acres of meadow, from Robert Scot, laird of Murdieston and Rankilburn, with the consent of Walter Scot his son and heir, in exchange for the lands of Bellinden. This grant was ratified by the overlord, Peter de Kokburn,

laird of Henryland, at Melros, June 18th, 1415. (*Liber de Melros*, pp. 548-550). Cockburn appended his seal to the confirmatory deed, which presents three cocks, the arms of the family: engraved Plate XIV. f. 5. of the *Liber de Melros*: (*Bannatyne Club*). Robert Scot died 1426, leaving two sons, Sir Walter, his heir, and Stevin Scot of Castlelaw. Sir Walter Scot of Kirkurd his heir, who first established the house of Buccleuch at Branxholm Castle, married Margaret daughter of Peter Cockburn of Hinderland, by whom he had three sons; the oldest being Sir David his successor, who carried on the line of Buccleuch. (*Douglas's Baronage of Scotland*, p. 219; *Pceirage*, p. 101.). Sir Walter died between 1467 and 1470.

On 16th January, 1463-64, King James III. granted to William Douglas of Cluny, the lands of Sundirlandhall in the shire of Selkirk, which were in the king's hands by reason of the forfeiture in parliament of William Cockburne, for assistance and support given by him to the traitor James de Douglas [the last of the Black Douglasses] and his accomplices. (*The Register of the Great Seal of Scotland from 1424 to 1513*, Edinr. 1882, 8vo. No. 775.)

On the 29th March thereafter, the same king granted to William de Cokburne and his heirs, the lands of Henryland and of Bothill, in the shire of Peblis; and the lands of Skiftounholme, in the lordship of Annandale and shire of Drumfres; which were in the king's hands by reason of the forfeiture of the said William de Cokburne for his treasonable aid given to the traitor James de Douglas and his accomplices. (*Id.* No. 788.)

William de Cockburn must have recovered in some way the lands of Sundirland; as on 20th (or 30th) July, 1474, William Cockburn of Henriland, and Katherine Ruthirford, the spouse of young William, had charter from the crown of the half lands of Sundirland and Sundirlandhall, on the resignation of the father. (*Reg. Great Seal, 1424-1513. No. 1180.*)

Katherine Ruthirfurd who was married to William eldest son of William Cockburn of Henderland, was sister to Robert Ruthirfurd of Chatto. "Margaret, daughter of William Cockburn and Katherine Ruthirfurd was married to Sir Walter Scott, the first Baron styled of Buccleuch." (*The Ruthirfurds of that Ilk*, p. xxxvi). It is supposed to have been the son of "young William," and Katherine Ruthirfurd who suffered for his misdeeds in the reign of James V., but from the similarity of names this is not certain. What we know is that the William Cockburn who was beheaded, had a son, capable of acting for himself; and sufficiently dangerous as to be ordered into custody.

There is on record the marriage of another daughter of a Cockburn of "Hinderland," called in *Douglas's Baronage*, p. 215, "William," but we have not the mother's name. Walter Scott of Syntoun and Stirkschaws, who flourished 1525-1570, son of Robert Scott of Stirkschaws and Syntoun, slain November, 1509, married for his first wife a daughter of Cockburn of Hinderland, by whom he had one son, John Scott, mentioned 1513, who predeceased his father, leaving four sons, Walter who was at the fray at the Kirk of the Lowes, 20th June, 1557 (*Pitcairn*), and who died 1608; Robert, William, and James. Walter was the ancestor of the Scotts of Bonraw,

who died out in 1720. (Refutation of the "Pedigree of Scott of Stokoe," &c. By John Scott of Rodono, 1867.)

On 7th December, 1507, King James IV. granted to William Ker of Yare, and his heirs and assignees, six husband-lands in the town and territory of Bothill, in the shire of Peblis, which previously belonged to John Lindsay of Covingtoun and William Cokburne of Henderland, and were of the king by service of ward and relief. The lands had been recognosed in the king's hands, on account of alienation of them without the consent of the superior. It is mentioned that the laird of Covingtoun renounced in favour of William Ker, but nothing is said of Cokburn's action in the matter—whether he acquiesced or not (Id. No. 3157.)

Cokburn seems to have been disposing of his lands pretty freely, as on 10th October, 1508, King James IV. granted to John Murray of Fallowhill, and his heirs, two husband-lands of Bold in the shire of Peblis, extending to a twenty shilling land, old extent, which belonged to William Cokburne of Henderland; and the reason given for these lands being thus taken from Cokburn and given to Murray, is that the greater part of them had been sold by Cokburn without consent of the king, the superior. (Id. No. 3267.)

At Edinburgh 4th January, 1508-9, William Cokburn of Henderland witnessed charter by David Lindsay of Wolfchild to William Murray of Schelilaw of the land of Erlisorchart, in the shire of Peblis. (Id. No. 3315.)

On 29th January, 1522-3, the lands of Brumelaw of the annual rent of 20 merks, and also the 7 merk 16 sh. and 4d lands of Brigend, in the shire of Peblis, were appraised from William Cokburn of Hyndirland, by William Lauder of Haltoun, for the sum of £363 13s—being the price of a bargain of sheep sold to the latter by the former, and £18 of Sheriff-fee. Following on this Lauder had crown charter of the above lands on the 6th May, 1524, but with the express provision, that Cokburn, on payment of the above sum, any time within seven years, should have his lands back again. (The Register of Great Seal, 1513-1546, Edinr. 1883, Svo. No. 262.)

On 4th April, 1532, King James V., granted to James Flemyng, one of his pages ("uni puerorum suorum ab honore") and his heirs, for service rendered and to be rendered, the lands of Hinderland and Sunderland, extending to £20 lands, with tower, and patronage of churches and chapels of the same, in the shire of Peblis and Selkirk. It is added that these lands, &c., belonged to the king by reason of the forfeiture of the deceased William Cokburn of Hinderland, for several crimes of lese majesty perpetrated against the king, and of which he was accused in presence of the king, and convicted and condemned to death (Id. No. 1155).

1540. Annexation to the crown of "all and hail the lands of Cromar and bray of Mar, all and sindry the landis of Hinderland with the toure and fortalice of the samin and yair pertinentis, advocationis and donationis of Kirkis and chapellanryis."—(Records of the Parliament of Scotland, p. 636; and Acts Parl. Scot. II., p. 376.)

James V., 18th June, 1541, granted to Malcolm Lord Flemyng and his heirs the half of the lands of Sonderland with tower, fortalice and mills in

the shire of Selkirk; which had fallen to the king by the forfeiture of the deceased William Cokburne of Henderland for treason and lese majesty, and had in the king's minority been granted to the deceased James Flemyng brother of the said Malcolm; which grant the king had revoked on coming of age. (Reg. Gt. Seal, 1513-46, No. 2379.)

The same king, on the 21st Oct. 1541, on payment of a composition, granted to John Johnstoun son and heir apparent of Thomas Johnstoun of Cragaburne, the lands of Smailgillis in the stewartry of Annandale, which belonged to the predecessors of the said Thomas, and were held by them of the deceased William Cokburn of Henderland. These lands had been permanently appraised for sums of money owing by the said William Cokburn to King James the IVth. (Id. No. 2486.)

The same king, the same day, granted to John Ewart of Bodisbeck (also for payment of a composition) the lands of Skiftenholme in the stewartry of Annandale, which belonged to the predecessors of the said John, and were held by them of the deceased William Cokburn of Henderland, and had been permanently appraised for sums of money owing by the said William to King James the IVth. (Id. No. 2487.)

In 1542, William son of William Cokburne petitioned for the restoration of his father's lands; result not known.

Sir Walter Scott of Branxholm and Buccleugh remarkably signalized his valour and courage at the battle of Pinkie, 1547; upon which he got from the queen the estate of Henderland, upon the forfeiture of Sir John [William] Cockburn, and was made warden of the west marches towards England (Douglas' Peerage, p. 102.) We can see a reason for this in Buccleugh's kinship to the disinherited Cockburn.

That there were still heirs of line of Cockburn of Henderland either holding part of the property, or otherwise keeping up their claims, we learn from the Retours. Oct. 16th, 1623, William Cokburne de Henderland, is retoured heir of William Cokburne de Henderlande, the father; in the 3 merk lands of Brymmelaw, and the 2½ merk lands of Brigend [of Peebles] E. 7½ merks (Retours, Peebles, No. 60). This appears to have been a fraction of the lands pledged to the Lauders of Haltoun, 29th Jan. 1522-3,—see previously; who still held the greater proportion, for on May 18, 1625, Master Richard Lauder, heir of Alexander Lauder, fier of Haltoun, his brother, is retoured in the lands of Brumelaw, extending to 10 merks of land; and the 7 merks 6sh. and 4d, of the land of Brigend, old value, 8 merks; new value, 27m. 6s. 4d. (Retours, Peebles, No. 67). The laird of Henderland was absent from the weapon-shaw on the Burrow Moor of Peebles, 15th June, 1627. (Hist. of Peebleshire, p. 149). June 22nd, 1630, Samuel Cockburne de Hinderland, is retoured heir of William Cockburne de Hinderland, his great grandfather. (Inq. Generales, No. 1718.)

Henderland next is acquired by the Earls of Southesk, who appear to have bought up the Peebles pendicle also. May 11th, 1658, James Earl of Southesk, lord Carnegy of Kynnaird and Leuchars, is retoured heir male of his father David, earl of Kinnaird, &c., among others in the lands of Henderland within the parochin of St. Bryd, with other lands in

Selkirk: O. E. £5. N. E. £20; and at the same date in the lands of Broomelaw and Brigend—with the lands of Henderloun in Peebles, O. E. £5. N. E. £20 (Retours, Peebles, No. 144, Selkirk, No. 75). Oct. 17th, 1661, Anna, Countess of Buccleugh, appears to have had a lien over Henderland, (Retours, Peebles, No. 147). May 5th, 1669, Robert, Earl of Southesk is retoured heir of his father Earl James, in the lands of Hinderland and others, (Ib. No. 157); and also Broomelaw and Brigend (Retours, Selkirk, No. 85). He appears to have sold Henderland, as his heir Charles, May 8th, 1688, is not retoured in it; but still holds Broomlee and Brigend. (Peebles, No. 193, Selkirk, No. 97.) The lands had then been acquired by the Traquair family. Charles, fifth earl of Traquair, suffered various misfortunes, and was reduced to such straits, as to be obliged, soon after 1750, "to sell to Lord March the lands of Nether. Horsbrugh, Caberstone, Gaithopeknowe, and Henderland, for which he got £12,000 sterling." (Chambers' Peebleshire, p. 386).

The subsequent history of the estate is given in the "History of Peebleshire" by William Chambers, pp. 361-2. Alexander Murray, son of Archibald Murray of Murrayfield, advocate, succeeded his father as sheriff-depute of the county of Peebles in 1761, became Solicitor General, 24th May 1775, and M.P. for Peeblesshire in 1780. He was promoted to the bench, 6th March, 1783 (Haig's Senators of the Court of Justice, p. 537), "when he adopted the title of Lord Henderland, from the estate of the same name in Megget, which had already become a possession of the family. [He died at Murrayfield, 16th March, 1795.] The wife of Lord Henderland was a daughter of Sir Alexander Lindsay of Evelick, bart., and neice of the first Earl of Mansfield. By this lady he had two sons—William, who inherited his brother's property of Henderland, and John Archibald." This second son, who lived to inherit his brother's patrimony, was appointed Lord Advocate in 1834, and after being M.P. for the Leith Burghs, was knighted and raised to the bench in 1839, as Lord Murray. "William Murray, who predeceased his brother, left Henderland to the representative of the main line of the family, James Wolfe Murray of Cringletie, subject, however, to some arrangements, on the part of Lord Murray. On the death of Lady Murray, the estate was handed over, free, as originally destined."

"Henderland was but a short time in possession of Mr Murray. In 1862, he exchanged it with the Earl of Wemyss for Courhope and Cloich, which his lordship bought that year for £25,100; Mr Murray giving, in addition, the sum of £1550 to adjust the exchange."

The drawing made by Mr Currie gives the appearance of the slab as it appeared to him, in a gloomy December day, when disfigured with dirt and encrusted with lichens. After it had been engraved, and this paper written, Mr James Shaw, of Megget Public School, volunteered his aid to clear away the parasitic vegetation that concealed the figures cut on the face of the stone, by piling earth over it to rot out the lichens, etc. This effectually cleaned the surface, and revealed a cross of a

peculiar shape, where there is an entire blank in our figure; which I could not account for the absence of, since it is given in the figure in Chambers' "Hist. of Peebleshire," p. 413, and in the "Scottish Journal of Topography" &c. i. p. 413, from which Dr. Chambers' cut is derived. Neither of these is an exact representation, according to the drawing sent by Mr Shaw. The cross which Mr Currie fancied he faintly saw traced on the shield does not appear on the new drawing. Another drawing of the cross and its accompaniments is therefore desirable. The cross has a calvary base (of 6 steps) and stalk, and the summit might be compared to a flame bursting out of a bowl, in three successive tiers of lateral jets, the lower-most the most projecting, and an apical one. The height of the basis or pedestal is $6\frac{1}{2}$ inches; length of cross 4 ft. 8 in.; breadth of stalk $2\frac{1}{4}$ inches; length of ornamental head, $8\frac{1}{2}$; height of surmounting shield 18 inches; whole length of slab, 6 feet $5\frac{3}{4}$ inches; breadth of slab at base, $18\frac{3}{4}$ inches.

The inscription revealed by the cleansing process is nearly that given in Chambers' Peebleshire, viz. "Her llys prys of Cockburne and hys Wyfe Marjory."

10. *Antiquities of Megget-land.*

Mr Shaw favoured me with some replies to questions I had submitted to him about the remote district where he has spent many years. I cannot find a more suitable place to record them as a contribution to our scanty knowledge, and it is to be hoped that ere long he will be enabled to tell us more.

"After making enquiries of some of my neighbours, who have spent all their lifetime around St Mary's Loch, William Richardson, son of the well-known 'Tibbie Shiels,' says he remembers the finding of the horn of the Urus (*Bos primigenius*) at Kerleuch in the bottom of a moss-hag, 8 feet deep. That happened some 40 years ago. The length of the horn was nearly 2 feet. When a part of the Megget road was made passable for about one half mile above Henderland, some bronze articles were found—now lost.

Near the confluence of Winterhope burn and Megget there is a flat called the Bloody Moss, said to have been the scene of a fierce contest between two bands of freebooters. In the moss several articles have been come upon at peat-casting time, which seem to give colour to the tradition. Some of these I have seen. One was a small horse-shoe circular in shape, with two cross bars; and the remains of what looked to have been a strong horse-comb. They were found deep in the moss. Mr Mitchell, the present farmer of Henderland, informs me that 14 or 15 years ago, an iron hammer, evidently of ancient manufacture, was found in the ruins of Cockburn's Castle. Mr Mitchell regrets that it has fallen aside meantime.

Several mounds remain in Megget-dale similar to those out of which relics of former days were got at Catcleugh on Chapelhope farm, near Birkhill at the head of Moffat Water, and at Wolf-cleuch near Cramilt Craig. There is abundance of shale on the right bank of the Megget. Graptolites are found on Syart farm. Adders and blindworms are numerous in the lower part of Megget."

Donations to the Berwickshire Naturalists' Club, from Scientific Societies, Exchanges, &c., 1883-4.

- BATH. Proceedings of the Bath Natural History and Antiquarian Field Club, Vol. v., No. III., 1884, 8vo. *The Club.*
- BELFAST. Annual Report and Proceedings of the Belfast Naturalists' Field Club, 1882-3, Ser. II., Vol. II., Part III., 8vo. *The Club.*
- BOSTON, U.S.A. Proceedings of the Boston Natural History Society, Vol. XXI., Part IV. ; Vol. XXII., Part I., 1882-3, 8vo. *The Society.*
- Memoirs of the Boston Society of Natural History, Vol. III., No. VI. Some Observations on the Embryology of the Teleosts. By J. S. Kingsley, and H. W. Conn; Vol. III., No. VII. The Carboniferous Hexapod Insects of Great Britain. By Samuel H. Scudder, 1883, 4to. *The Society.*
- CARDIFF. Cardiff Naturalists' Society, Report and Transactions, Vol. XV, 1883. Cardiff, 1884, 8vo. *The Society.*
- CARLISLE. Transactions of the Cumberland Association for the Advancement of Literature and Science, No. VIII., 1882-3, 8vo. *The Association.*
- EDINBURGH. Proceedings of the Society of Antiquaries of Scotland, 1882-83, Vol. v., N.S., 4to. *The Society.*
- Proceedings of the Royal Physical Society, Session 1882-83, 8vo. *The Society.*
- Transactions and Proceedings of the Botanical Society, Vol. XV., Part I. *The Society.*
- ESSEX, SALEM, U.S.A. Bulletin of the Essex Institute, Vol. XIV., 8vo., 1883. *The Institute.*
- GIESSEN. 22 und 23 Berichtsder Oberheissischen Gesellschaft für Natur-und Heilkunde, 8vo, 1883-84, *The Society.*
- GLASGOW. Proceedings of the Philosophical Society of Glasgow, 1882-3, Vol. XIV., 8vo. *The Society.*
- Proceedings of the Natural History Society of Glasgow, Vol. v., Part II., 1881-2, 1883, 8vo. *The Society.*
- LEEDS. Transactions of the Yorkshire Naturalists' Union, Part VII., May, 1884, 8vo. *The Union.*

- Leeds Philosophical and Literary Society, Report for 1883-4. *The Society.*
- LIVERPOOL. Proceedings of the Literary and Philosophical Society of Liverpool, Vols. xxxv., xxxvi., xxxviii., 1881-3, 8vo. *The Society.*
- LONDON. Journal of the Anthropological Institute of Great Britain and Ireland, Vol. xiii., Nos. ii., iii., iv., 1883-4, 8vo. *The Institute.*
- Proceedings of the Geologists' Association, Vol. viii., Nos. 2, 3, 4, 5, and 6 (with Annual Report), 1883-4, 8vo. *The Association.*
- MANCHESTER. Memoirs of the Manchester Literary and Philosophical Society, 3rd Ser., Vol. vii., London, 1882, 8vo. *The Society.*
- Ibid, Vol. ix. A Centenary of Science in Manchester. By R. Angus Smith, F.R.S., Ph.D., LL.D., London, 1883, 8vo. *The Society.*
- Proceedings of the Manchester Literary and Philosophical Society, Vols. xx., xxi., xxii., Manchester, 1883, 8vo. *Ibid.*
- NORTHAMPTON. Journal of Northamptonshire Natural History Society and Field Club, Feb., 1884, Vol. iii., Nos. 17. and 18., 8vo. *The Society.*
- PERTH. Proceedings of the Perthshire Society of Natural Science, Vol. ii., Part ii., 1882-3, 4to. *The Society.*
- PLYMOUTH. Annual Report and Transactions of the Plymouth Institution and Cornwall Natural History Society, Vol. viii., Part ii., 1882-3, 8vo. *The Institution.*
- WASHINGTON, U.S.A. Annual Report of the Smithsonian Institution for the year 1881. Washington, 1883. *The Smithsonian Institution.*
- WASHINGTON, U.S.A. Second Annual Report of the United States' Geological Survey to the Secretary of the Interior, 1880-81. By J. W. Powell, Director, Washington, 1882, small folio.
- From the Director of the U.S. Geological Survey, Washington, D.C.*
- WELSHPOOL. Collections, Historical and Archæological, relating to Montgomeryshire and its Borders, Vol. xvi., Parts ii. and iii.; Vol. xvii., Part i., London, 1883-84, 8vo. *The Powysland Club.*

REGISTER OF RAINFALL AND SUNSHINE IN THE YEAR 1883, KEPT AT MARCHMONT.

Lat. 55° 43' ; Long. 2° 25' ; Elevation, 500 feet.

Marchmont is 500 feet above the sea, well wooded, situated as near as possible in the centre of the county of Berwick, and on the base of the Lamnermuir hills; the soil is a strong red clay, producing good crops in favourable seasons.

Date	Jan.		Feb.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.	
	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.
1	1	.11	3	.22	8	.02	6	.05	4	.05	10	.15	5	.41	5	.74	4	.74	4	.04	4	.03	4	.04
2	2	.16	4	.44	8		7	.11	6	.11	12	.33	5		3	.32	5	.32	5	.14	3	.23	3	.15
3	4		4	.02	8		8	.10	4	.10	12	.08	4		4	.06	6	.06	1	.73	3	.03	3	.03
4	1	.04	1	.04	9		7	.02	3	.02	7	.07	5		5	.08	7	.08	4	.02	4	.02	4	.02
5	3	.02	4		5		2		5		2		7		5	.02	8	.02	4	.02	4	.03	2	.02
6	5	.02	4	.03	3		7	.17	6	.17	3	.03	8		8	.15	4	.15	8	.02	4	.03	3	.03
7	4		2		2		6	.30	4	.30	10	.13	9		8	.09	4	.09	8	.26	4	.05	4	.05
8	1	.03	1	.11	6		5	.13	7	.13	5	.46	7		3	.13	9	.13	9	.32	4	.11	2	.11
9	1	.02	1	.05	4		7	.08	4	.08	6	.57	5		5	.02	6	.02	9		4	.14	2	.14
10				.26	4		5	.05	6	.05	6	.04	3		5	.98	4	.98	2		4	.02	4	.02
11				.05	8		4	.04	4	.04	6	.42	3		5	.52	6	.52	7		4	.14	4	.14
12		.05		.05	4		7	.04	4	.04	5	.06	3		5	.08	4	.08	4		4	.08	3	.08
13		.02		.04	4		3	.02	6	.02	6	.06	3		3	.08	3	.08	6		3	.02	2	.02
14		.30		.04	3		9	.14	6	.14	7	.06	4		2	.26	2	.26	4		2	.11	2	.11
15					3		4		8		9	.08	8		10	.08	6	.08	6		2	.02	2	.02
16					2		5		6		9	.03	5		2	.26	2	.26	4		2	.02	1	.02
17		.50		.22	6		7	.02	6	.02	7	.03	5		3	.02	3	.02	3		3	.02	2	.02
18		.10		.07	6		6	.09	3	.09	6	.23	6		8	.05	3	.05	3		3	.04	2	.04
19		.15		.02	2		9	.09	9	.09	9	.10	5		9	.02	6	.02	2		2	.13	2	.13
20				.02	2		1		5		6	.03	5		4	.05	2	.05	2		4	.03	2	.03
21		.02		.05	2		2	.14	5	.14	7	.06	7		4	.08	4	.08	4		1	.03	2	.06
22					2		4		10		8	.26	7		4	.11	3	.11	2		2	.13	2	.13
23					4		2	.44	10	.44	10	.43	4		3	.25	4	.25	2		2	.15	2	.15
24		.04		.04	6		5	.05	6	.05	10	.07	4		4	.11	8	.11	2		2	.15	2	.15
25		.52		.06	6		6	.13	6	.13	10	.32	4		3	.11	8	.11	2		2	.23	2	.23
26		.25		.03	4		9	.08	6	.08	10	.15	3		8	.02	4	.02	2		2	.04	2	.04
27		.24		.06	4		6	.04	9	.04	6	.07	2		8	.13	4	.13	2		2	.14	2	.14
28		.13		.02	4		2	.13	12	.13	6	.13	2		6	.02	6	.02	6		6	.03	2	.03
29		.04		.04	4		4	.04	5	.04	2	.04	7		6	.25	4	.25	6		4	.04	2	.04
30				.14	6		5	.06	13	.06	4	.23	8		4	.02	3	.02	3		4	.03	2	.03
31					4		8	.04	4	.04	5	.22	6		4	.32	5	.32	2		2	.02	1	.02
		.277		.194	182		182	.87	194	.87	194	3.48	164		151	4.29	116	3.96	102		72	1.31	59	1.31

Total rainfall, 33.60 inches ; No. of days .01 or more fell. 222.

Total sunshine, 1577 hours.

PETER LONEY.

Rain Fall at Glanton Pyke, Northumberland, in 1883,
communicated by FREDK. J. W. COLLINGWOOD, Esq.; *and*
at Duns, Berwick, communicated by CHAS. WATSON, Esq.

GLANTON PYKE.			DUNS.		
		Inches.			Inches.
January	..	2.18'5	January	..	2.11
February	..	2.22'5	February	..	1.28
March	..	2.90'0	March	..	3.10
April	..	1.47'5	April	..	1.81
May	..	3.14'5	May	..	1.50
June	..	3.18'0	June	..	2.90
July	..	4.85'5	July	..	4.06
August	..	2.7'0	August	..	2.98
September	..	4.12'0	September	..	4.90
October	..	2.30'5	October	..	2.50
November	..	1.41'5	November	..	1.79
December	..	1.73'0	December	..	1.15
<hr/>			<hr/>		
Total	..	31.60'5	Total	..	30.08
Rain Gauge—Diameter of Funnel, 8in. ; height of Top above ground, 4 ft 3½in. ; above sea level, 517ft.			Rain Gauge—Diameter of Funnel, 8in. ; height of Top above ground, 6in. ; above sea level, 500ft. Lat. 55.47 ; Long. 2.21.		

LIST OF NEW MEMBERS FOR 1883.

ADMITTED OCTOBER 10TH, 1883.

John Dunn, M.A., Newcastle.
 William Horsley, Chirton House, North Shields.
 James J. R. Storer, Alnwick.
 Matthew Culley, jun., Coupland Castle, Wooler.
 Thomas Grieg, Wooden, Kelso.
 John G. Winning, Branxholme Knowe, Hawick.
 James Thomson, Shawdon, Alnwick.
 James Thin, jun., South Bridge, Edinburgh.
 Robert Shirra Gibb, M.B., C.M., Boon, Lauder.
 Col. James Edward Forster, Sanson Seal, Berwick.
 William Robertson, Alnwick.
 Richard Burdon Sanderson, Budle House, Belford.
 Major Bryan Burrell, Broompark, Alnwick.
 James Brunlees, C.E., Westminster, London.
 John S. Muir, M.D., Thorncroft, Selkirk.
 Henry Rutherford, Fairnington, Kelso.
 Rev. A. E. Langston, Hebburn Vicarage, Newcastle.

Rev. John Edmunds, Kylee Vicarage, Beal.
 Alfred Morall Appleton, Solicitor, 13, Elvet Bridge, Durham.
 James Nisbet, Lambden, Greenlaw.
 Edward A. L. Batters, B.A., LL.B., F.L.S., Crown Court Buildings, Old
 Broad Street, London, E.C.
 Rev. Robert Borland, Yarrow, Selkirk.
 Rev. Edward Arkless, Berwick.
 Blake Johnston Weatherhead, Berwick.
 Charles Purves, Alnwick.

LADY MEMBER.

Miss Sarah Dand, Morwick Hall, Acklington

ASSOCIATE.

John Aitchison, West Street, Belford.

CORRESPONDING.

C. C. Babington, M.A., F.R.S., F.L.S., etc., Professor of Botany in the
 University of Cambridge.

Rev. Leonard Blomefield. M.A., F.L.S., F.G.S., etc., Bath.

General Statement.

THE INCOME AND EXPENDITURE have been :—

INCOME.

	£	s.	d.
Arrears received	19	7	0
Entrance Fees	14	0	0
Subscriptions	86	2	6
	<hr/>		
	119	9	6
Balance due Treasurer ..	23	15	6
	<hr/>		
	£143	5	0

EXPENDITURE.

Balance due Treasurer from last account	5	18	3
Gibb and Hay for Lithographing ..	7	15	0
Banks and Co. do	8	4	6
Printing	82	19	4
Expenses at Meetings	10	15	0
Postages and Carriages	22	15	2
Berwick Salmon Company ..	4	17	9
	<hr/>		
	£143	5	0

ERRATA.

PAGE 226, line 34 from the top,			<i>insert during after than.</i>
„ 257, „ 38, 39	„	„	remove the crochet from after <i>bufonius</i> , and place it after <i>vulgaris</i> .
„ 258, „ 8,	„	„	for <i>Erythæa</i> read <i>Erythræa</i> .
„ 265, „ 17,	„	„	for <i>rugora</i> read <i>rugosa</i> .
„ 339, „ 17,	„	„	for <i>Nolanca</i> read <i>Nolanea</i> .
„ 346, „ 34,	„	„	for Plate V. read Plate V*.
„ 354, „ 24,	„	„	remove the period after <i>Ahnfeldtia</i> .
„ 358, „ 32,	„	„	for Holme read Home.
„ 363, „ 32,	„	„	for <i>mulo</i> read <i>mul</i> .
„ 375, „ 32,	„	„	for autograph read autotype.
„ 376, „ 25,	„	„	for <i>Dumnogei</i> read <i>Dumnogeni</i> .
„ 377, „ 13,	„	„	for <i>Cassivelanni</i> read <i>Cassivellauni</i> .
„ „ „ 38,	„	„	for distinctly read distinctively.
„ 378, „ 7,	„	„	for <i>Madubratius</i> read <i>Mandubratius</i> .
„ 379, „ 24,	„	„	for <i>Cassi-vellanus</i> read <i>Cassivellaunus</i> .
„ 383, „ 47,	„	„	for Tuf read Tref.
„ 404, „ 24,	„	„	place a period after LIBERALI.

ADDENDA.—I was not aware when the paper on the Plate of Coins was written, that the supposition that *Camulus* was a British name for Mars, rested entirely on an imperfect inscription “DEO MAR·CAMVLO” found at Kilsyth on the northern wall, and, I believe, given in Gough’s Camden. According to my views, it should mean Mars of the Cymri, and I think rather confirms them.—H.J.M.R.

Plate XIV., contributed by the Author, was received after the Article p. 334-338, was printed off.

22 DEC 1837





FROM MANDERSTON.

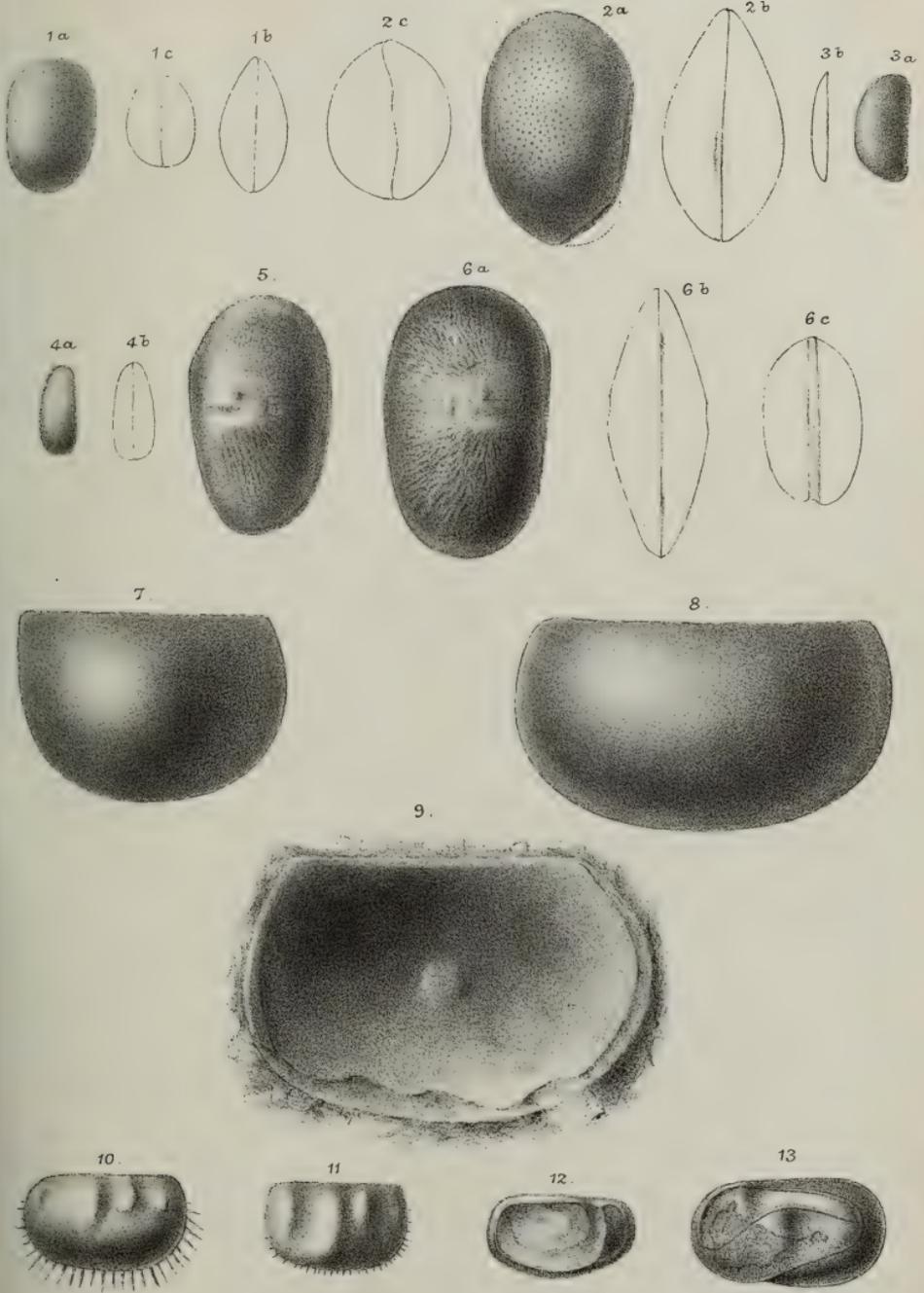
Fig 2



FROM IUFFNESS LINKS.

BRITISH URNS.



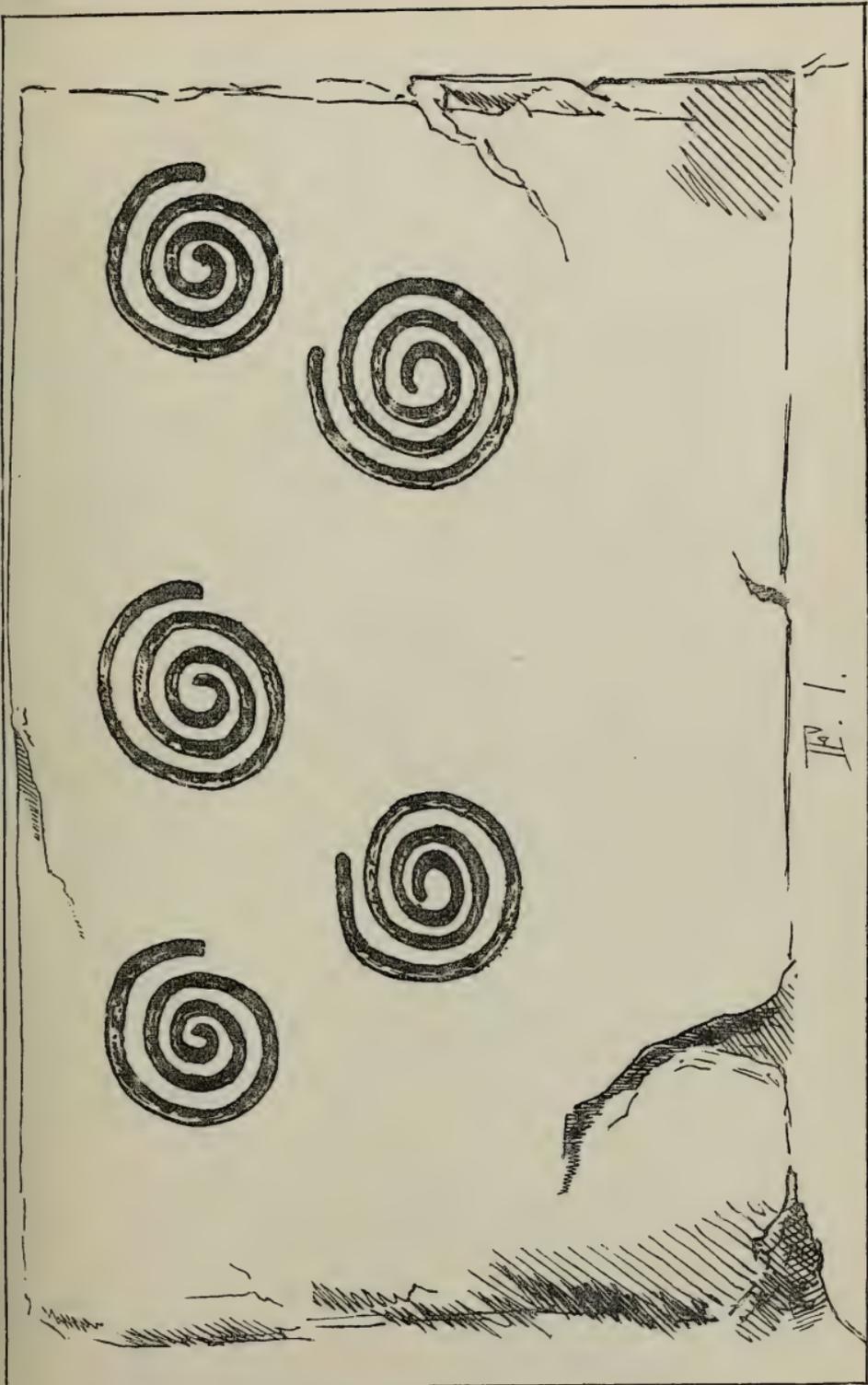


G.W. del.

G. West & Sons, imp.

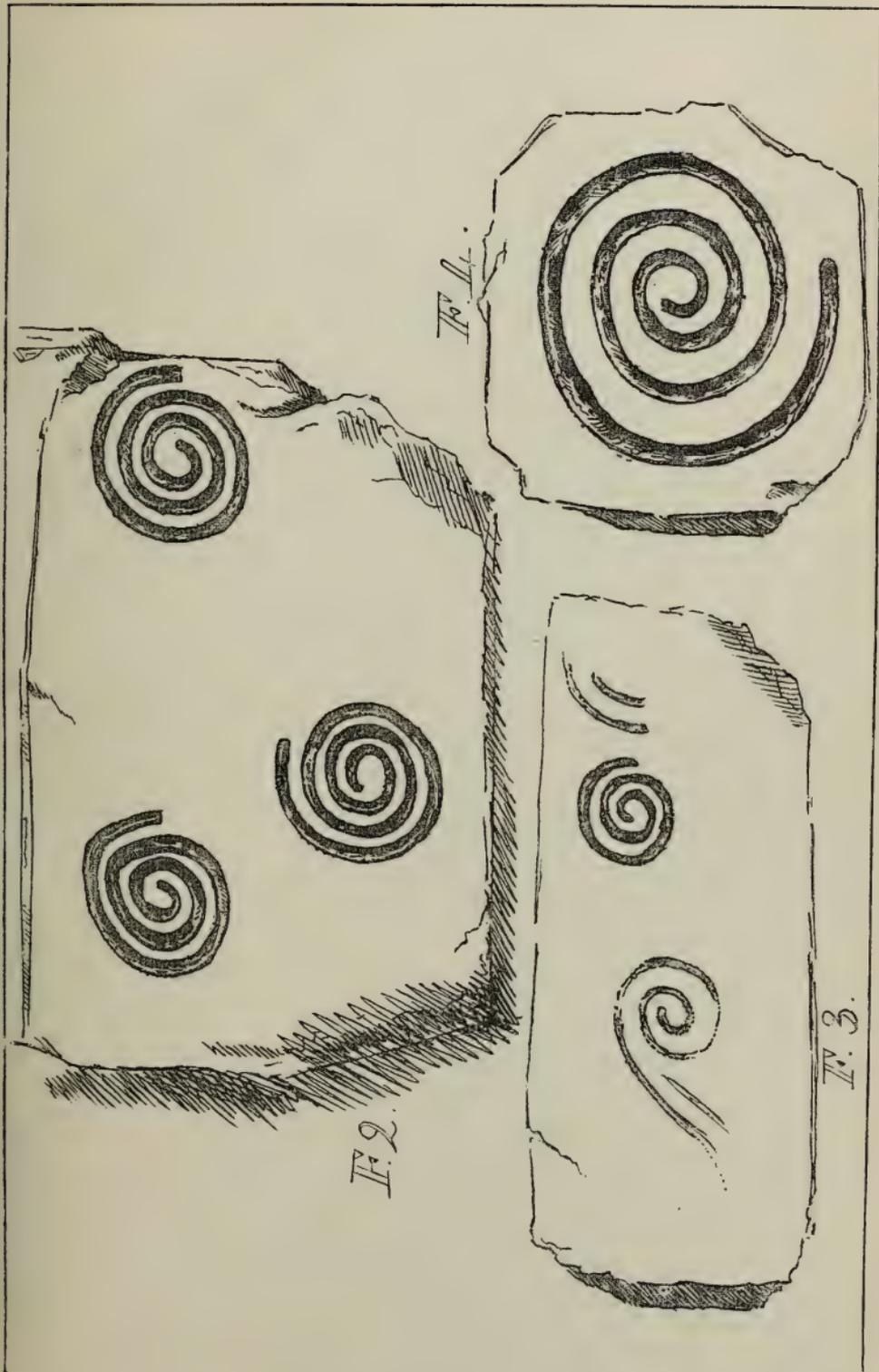
LOWER-CARBONIFEROUS ENTOMOSTRACA.





INCISED ROCKS AT MORWICK.





INCISED ROCKS AT MORWICK.



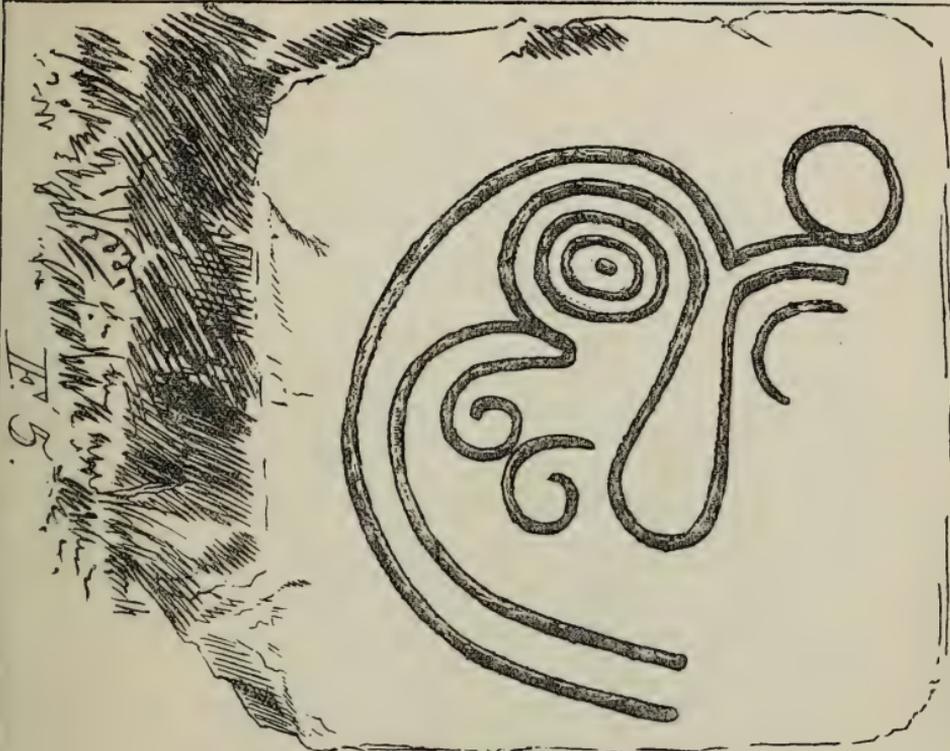


Fig. 5.



Fig. 8.



Fig. 7.

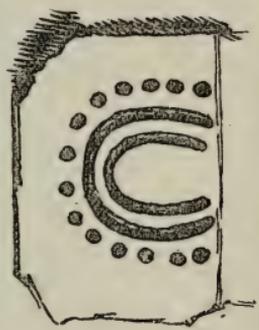


Fig. 6.





INCISED STONE, HOLLOWES TOWER, ESKDALE.



1



2



3



4



5



6



8



7



9



J.T.DIXON 1884.

TH. GUYOT. S.C.



10



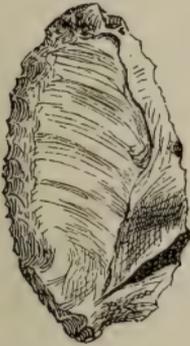
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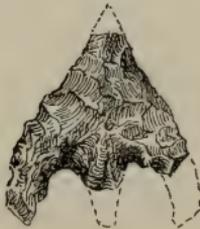
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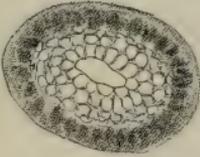
J. T. DIXON 1884.

TH. GUYOT, So.

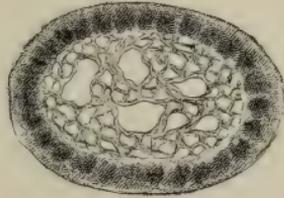




1.



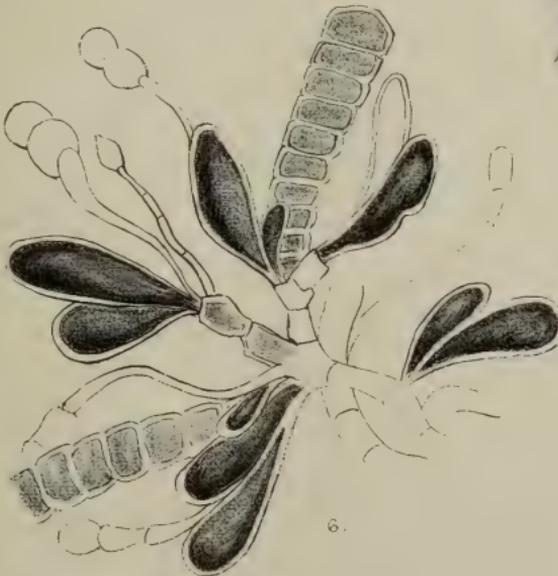
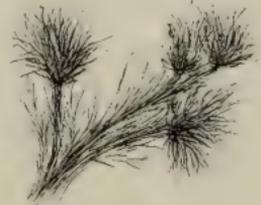
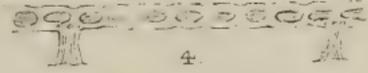
2.



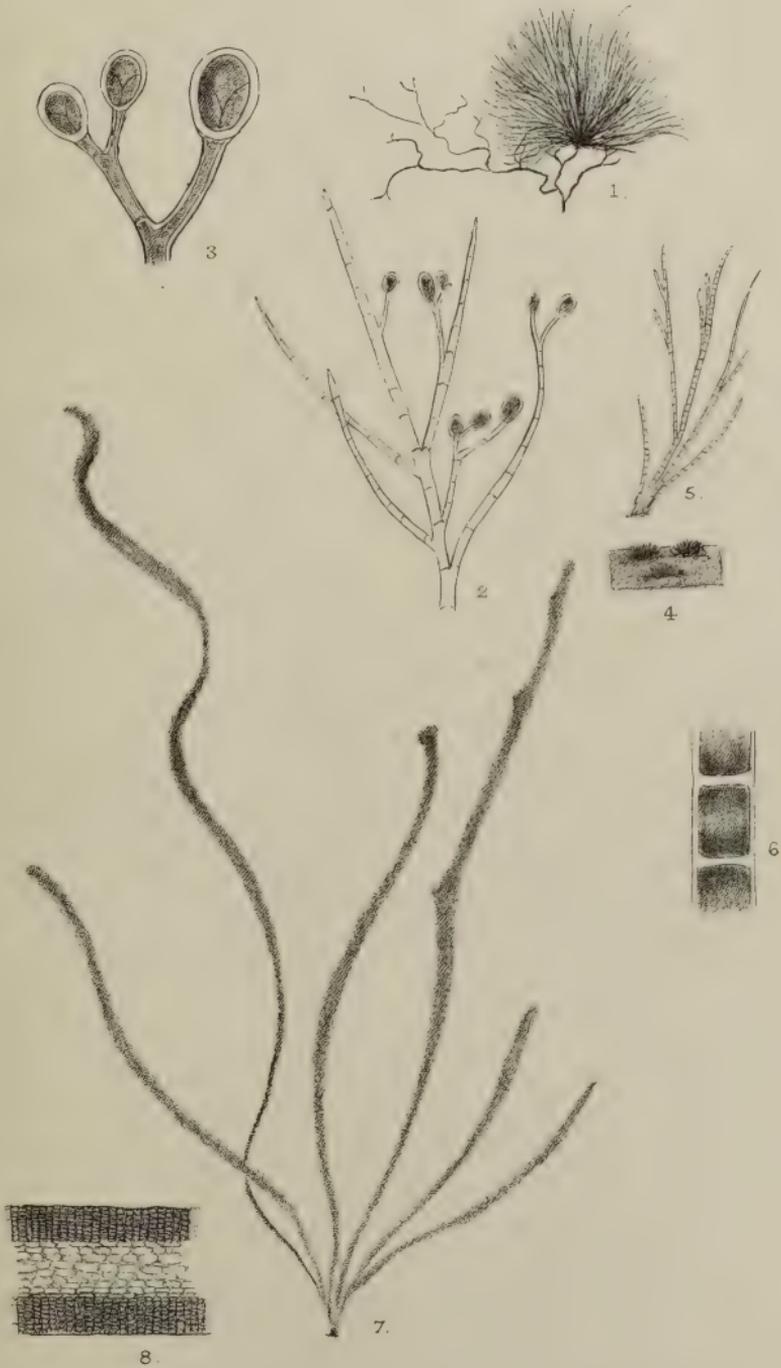
3.

PHLÆSPORA TORTILIS.







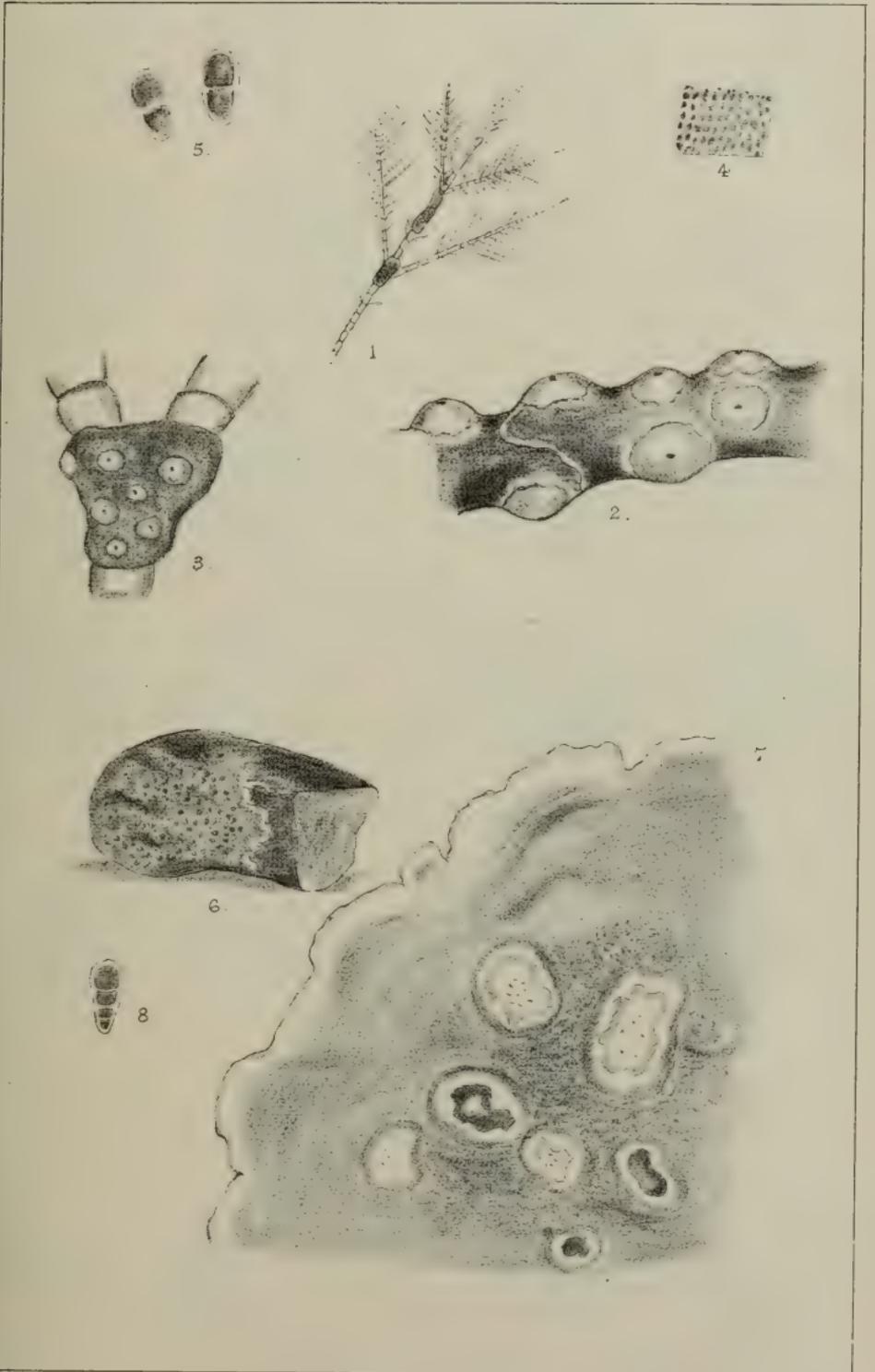


E. Baxters del. et lith.

West Newman & Co imp.

THAMNIDION INTERMEDIUM,
SPHACELARIA CÆSPITULA & PHYLLITIS FASCIA.







MACEDONIA

GREEK.

METAPONTOM



1



2



GAULISH - FRANCE



3



4



ENGLAND - YORKSHIRE



5



6



7



8



ENGLAND - SOUTH EAST



9



10



11



12

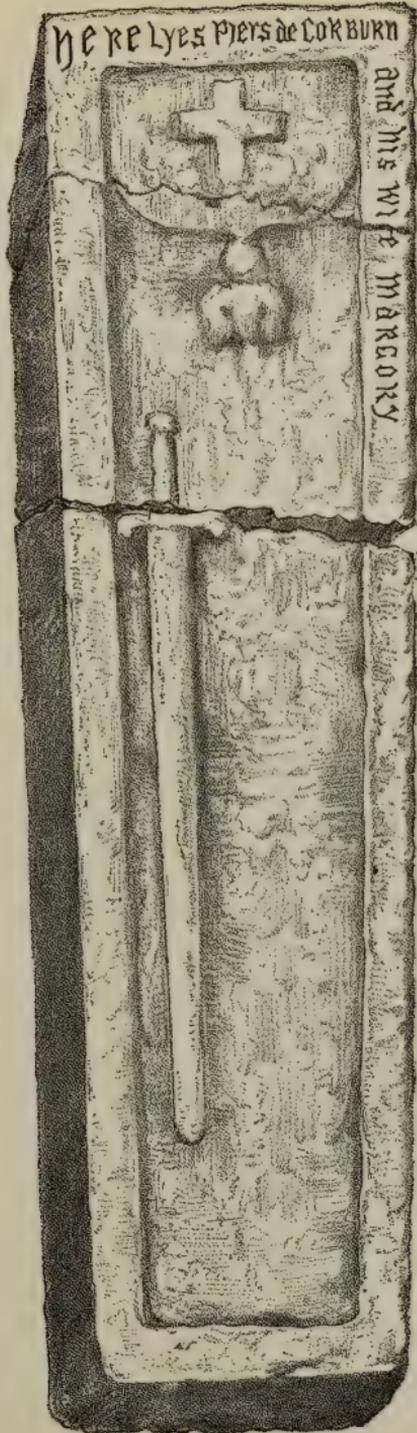


13



BRITISH AND OTHER COINS OLDER THAN THE ROMAN CONQUEST OF BRITAIN.

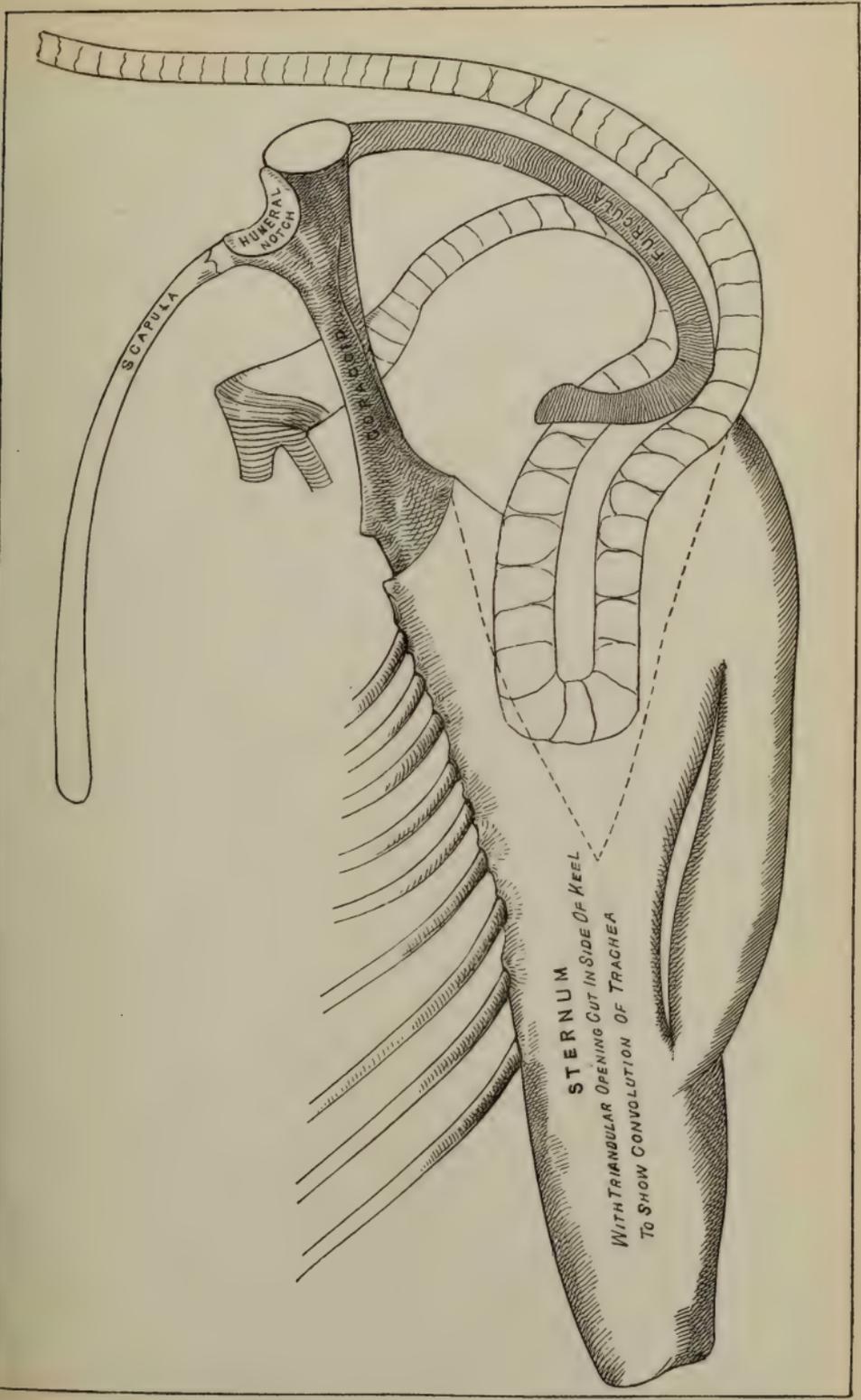




*I remain
your loving Brother
Mungo Park.*

TOMB OF PIERS DE COCKBURN AT HENDERLAND, AND
AUTOGRAPH OF "MUNGO PARK."





SKETCH DIAGRAM OF STERNUM OF CYGNUS BEWICKII.





PROCEEDINGS
OF THE
BERWICKSHIRE NATURALISTS' CLUB.

Address delivered to the Berwickshire Naturalists' Club, at Berwick, October 8th, 1884. By FRANCIS MARTIN NORMAN, Commander, R.N., Berwick, President.

GENTLEMEN :

IN proceeding by your leave, to address you at the close of my year's tenure of your Presidential Chair, let me assure you how sensible I am of the honour which you conferred upon me when you elected me to fill it.

To notice, even in the briefest manner, all that is doing, or has been done during the past year, in the vast sphere of scientific interest in which we have our little orbit, would be as impracticable as regards time, as it would be beyond my abilities and the objects of our Club.

Nevertheless, before I proceed, in accordance with presidential custom, to give some account of our doings during the season which ends to-day; our "close-time," in language which will readily adapt itself to the comprehension of dwellers on Tweedside, beginning to-morrow, I will ask your indulgence for a few minutes in an exceptional direction.

DARWINISM AND NATURAL RELIGION.

There is one great subject which, for some years past has caused a wide and deep interest, not to say also, sensation, throughout the whole civilized world, not only on account of its immediate scientific value, and the light which it

claims to throw upon the puzzling question of the origin and identity of species, but on account of its bearings upon Religion and the Origin of Man.

I allude, it seems superfluous to remark, to the Evolution Theory, which, having for long been more or less vaguely and intermittently advanced by various scientists, was taken up by Charles Darwin, who made the first truly scientific attempts to deal seriously with the conception, which he developed and made his own to such an extent, that it is now known everywhere as "Darwinism: or the Origin of Species by Natural Selection."

So engrossing has been this theme, that a more or less intimate acquaintance with it, may confidently be assumed in the case of many of our members; none are likely to be entirely uninformed about it, while all are certain to be interested in it.

As far as I am aware, with the exception of a brief allusion in the President's address last year, the subject has not been once mentioned in the literature of our Club, but it surely seems but natural, right, and proper, that there should appear in our Proceedings some record that we do not altogether ignore so important a matter, which is so intimately connected with the study of Natural History.

There are two ways of accounting for the living world as we see it. The Darwinian System seeks to revolutionise the ancient belief that the first ancestors of every species of animal and plant came direct and fully formed from the hand of the Creator, and claims to show that all forms of life, animal and vegetable, visible and microscopic, that exist, or ever did exist, upon this globe, have been produced or evolved from a very few simple, primordial, created progenitors, by a process, carried on through a vast array of ages, of Progressive Development—a process of Natural Selection from slight variations from the parent stock, and "Survival of the fittest" of them.

Now to attempt, in a few minutes, to deal even in brief with this great subject would be simply impossible, so I shall confine myself, almost entirely, to an aspect of the

question which is of high interest to all Naturalists, but specially so it would seem to ourselves ;—I mean the bearings of Darwinism on Natural Religion, or the recognition of Nature's God in Nature's Works. Not without significance was our motto selected, "Mare et tellus, et quod tegit omnia cœlum." On looking over the addresses of my predecessors, from the Club's foundation to its 50th birthday, from Dr. Johnston to Mr Brown, and beyond, I cannot help noticing that the keynote of their utterances is the intimate, direct connection between Nature and God.

Mr Brown indeed, in his eloquent Jubilee Address, which was quite worthy of the occasion, declared that he knew of no other learned or scientific society where one feature was more prominent—that is the desire which everywhere appears of seeing the hand of God in all the works of nature, and of marking the traces of His wisdom, power, and goodness.

It is often urged that science is one affair, religion another ; keep and treat them separately. I remember a German botanical lecturer, objecting in my hearing to the motto—"Domini est terra et plentitudo ejus," being impressed on the title page of an English Flora. "The English" said he "are always trying to mix up religion and science, which is a great mistake."

Well, as regards what may be called the *business*, the working out of natural science, it is, no doubt, quite distinct from theology or any religious considerations ; but not as regards its bearings ; for he who can long study nature and her wonders, without having their deeper meaning brought home to him, fails, as it seems to me, to get at the kernel of his nut at all.

Gentlemen—If the foregoing considerations have any worth or weight—if the history of our Club appeals to our sense as well as to our sentiment—you would listen with impatience if you had suspicion that the tenant of this chair was likely to be the exponent of any attempts to eliminate Nature's God from Nature's Works, whether in her grandest aspect or her minutest details. To do so, you would judge,

would rob our pursuits of their highest interests and their noblest aims.

Now, in proceeding to consider how far, if at all, by accepting Darwinism we must give up Natural Religion, we must notice at once, that the disciple of Darwin is neither an Atheist nor a Materialist, as some too hastily infer.

He recoils, often as much as if he were not a Darwinite at all, from the utterances of the Materialists, and their creed of the spontaneous generation and evolution of all living beings.

Invited by *Tyndall* to project his vision "into the infinite azure of the past," (whatever that may mean), he fails to discern with that distinguished Professor, "in nascent matter the promise and potency of every form and quality of life."

He reads, as we read, with a smile of amused amazement the opinions of *Haeckel*, and other daring and advanced evolutionists, that all creation is derived from some one form or mere monad; and that the body *and* soul (!) of the animated world consist of carbon, oxygen, hydrogen, and nitrogen, with a small proportion of sulphur; which component parts, suitably nursed, become MAN.

He does *not* opine, with *Huxley*, that the matter arises, as does the man (!) in a particle of "nucleated protoplasm"; nor is he inclined to decide with *Comte*—even if the utterance were intelligible, that "Life is the potentiality of atoms, and mind a correlation of magnetic and psychic forces."

He wearies his puzzled brain with a selection of erudite utterances of the same nature, whose meaning (if indeed there be any at all) he fails to extract from the tangle of verbiage in which it lies concealed; and then he dismisses, as having no claim on serious attention, the creed of materialism, as being equally at variance with science, revelation, and common sense, and destitute of any foundation in fact.

No, even the most advanced disciple of Darwin allows the existence of a Divine Creator, or to use his own language "He must have a Creator to start with."

So far, then, there is nothing that need cause alarm; but

I have no intention at all of trespassing upon the domain of the theologian to enquire how far Darwinism and Revelation are opposed to each other; and whether a man may hold all that Darwin holds and yet be a perfectly orthodox Christian. I am not for a moment going to bring Darwinism into competition with the Bible, to talk as if its truth at all depended upon the truth of that system; to talk, forsooth! (as we notice a disposition to do in some quarters) as if we were only waiting for the final verdict for or against the Evolution theory, to decide whether we should retain our Bibles, or, at all events, regard them with the same faith and confidence as of yore.

Many of the first men of the day have declared themselves to be fully convinced that between Scripture properly interpreted and true Science, there is no *real* opposition; but even if there be, *Darwinism has not yet taken rank as a science.* No: the point which we wish to bring out in relief is this:—Suppose Darwinism to be all true; admit for the minute that it *has* attained rank as a science, and has established, beyond reasonable doubt, that each species of plants, animals, of living creatures of every sort including man, was not at the beginning created separately and independently, did not “flash into existence,” but has been slowly and gradually produced by evolution from few and simple beginnings; to what extent should we be impeded or hindered in the exercise of natural religion, or the looking up “through Nature’s works to Nature’s God?” Do we, by accepting Darwinism, eliminate God from Nature? Is there any *a priori* inconsistency between the doctrine of evolution and what we know or believe about God?

These are crucial queries which are troubling many devout minds among naturalists, who, hopelessly puzzled by the attempt to trace any satisfactory fixed lines of demarcation, dissatisfied with the semi-artificial character of our natural systems, distracted by the genera, sub-genera, species, sub-species, and endless varieties in fauna and flora which constantly are being altered by successive authors, have despaired of finding any satisfactory answer to the question,

“What is a species?”—“What is the true natural order?” and captivated by the taking nature of this evolution scheme, which, it seems to them, is being generally accepted by the scientific world, and with their *imprimatur* by the world at large, these naturalists are disposed to accept it as the key to their difficulties, if they can only do so without doing violence to their religious instincts.

Darwin himself declares that when he views all things, not as special creations, but as lineal descendants of some very few beings which lived long before the first bed of the Silurian system was deposited, they seemed to him to become ennobled; and his views are weightily endorsed; for many very able men in pulpit, press, and platform have declared that not only does the Evolution Theory not interfere with Natural Religion, but that it even tends to raise our ideas of the greatness and powers of the Creator, if we suppose that by His omniscient omnipotence a few simple forms of matter were invested with powers capable of producing such magnificent results: if we suppose that a picture was formed in the divine mind, and ten or twelve organisms created, which were destined in course of time to clothe it with living reality; and that whether the creative activity of God is manifested by sudden creations, or by the working out of a long chain of secondary results, it is still His Creative activity, and all great questions beyond remain untouched. That seems just now the popular line to take up. On the other hand, there is a large number, and from the very first has always been a compact body of men of high light and leading, who have firmly maintained a contrary opinion; who have insisted that the theory is altogether imaginative and improbable, inconsistent with and derogatory to true conceptions of God in relation to our world, and destructive of natural religion; and that “natural selection” is a misleading expression to designate a force which has no real existence; and the “adaptation of nature” no more than a taking title for an imaginary factor in the glorious Scheme; who have refused, and do refuse altogether to bow down to the golden image which, they aver, Darwin set up, declaring

with Lord Bacon that they would sooner believe all the follies of the Talmud and Koran, than that this universal frame is without a mind, that this Order and Beauty should have been produced by an army without a Divine Marshal; and who have endorsed with emphasis, and continue to endorse the words uttered long ago, with almost prophetic strain, by a man at Cambridge, one *Isaac Newton*, words which seem to have for us who live in these latter days, a yet fuller interest and importance—"The world was not made by spontaneous energy and evolution of self-developing powers, as some have affirmed, but it was created by one Almighty, Eternal, Wise, Good Being, God."

The important part of the question, then, which we are immediately considering, appears in a different light to different people, all anxious for the truth, but with differently constituted minds. Will you think it presumption, if, without committing any one else, I consider it suggestively from my own view point for two or three minutes?

I submit, first, as a postulate, that the God in whom Darwinian and non-Darwinian both believe, *intended to reveal himself in Nature*. If He did not; if this glorious world simply exists for our use alone without ultimate and higher references; if, in it all, there is nothing more than meets the eye, it loses nearly all its significance, most of its interest, and had better be handed over to the Materialist.

If God, therefore, does intend to reveal Himself in Nature, it must be directly as the Designer and Inventor of her innumerable wonders. In what other conceivable way could they have been designed?

If you say "by the adaptations of Nature" and proceed to point out alleged instances, I urge that the blind, unreasoning, unconscious process of adaptation, which originates a Darwinian species, cannot, without doing violence to the meaning of words, possibly be called Design at all, and my understanding recoils from the idea that the countless artifices, the astonishing contrivances, the refined perfections with which all Nature teems, can be anything else than the direct inventions of an Inventor. The more that I examine

them, the more do I find that conviction forced upon my mind ; and rising with bated breath from the study of them, exclaim with Pharaoh's magicians, but with far profounder meaning, "This is the finger of God!"

Again, as a naturalist, I observe organic life, and am struck with the beauty, completeness, the exquisite finish of everything and its exact fitness for the part that it has to perform in the great scheme of Nature.

My microscope reveals to me another world, equally teeming with wonders, in which no less, but perhaps still more startlingly are displayed,

"Contrivance intricate expressed with ease,
Where unassisted sight no beauty sees,
The shapely limb, the lubricated joint,
Within the small dimensions of a point."

What is the effect on my mind if you assure me that any one of the objects which has so captivated me, which has called forth spontaneous expressions of wonder, love, and praise, is not the living representative of an original, but the half accidental result of a long course of natural development?

If this wondrous piece of mechanism, which we may call A, came from another B, which was improved from C, which adapted itself out of D, which was differentiated out of E, which "survived being the fittest" at the death of F, and so on through many thousands of gradations, the practical effect on my mind is the removal of God to such an infinite distance, that it amounts to a virtual elimination of Him from the Natural World. His works under such conditions seem to have so remote a connection with Himself, that I may abandon any attempts to look up to Him through them. Could she speak to us with the eloquence which undisturbed, she did for so long, if we no longer were able

"To trace in Nature's most minute design
The signature and stamp of power divine?"

To my mind, No!

There is in my possession a picture of Linnæus kneeling on the grass by the side of some plant whose beauties he had just been investigating, with uplifted hands, in the act

of praise and adoration. If the points in the plant which thus impelled Linnæus to an act of worship, had been the results of a mere fortuitous concatenation of circumstances, if he could not have connected them directly with a Divine Intelligence, I fail to see how he could have recognised any call from Nature to worship in her Temple.

THE EVIDENCE.

But, after all, it may be urged, and it constantly with reason is, that when any scientific system is presented for our acceptance, it must be considered on its own merits, and judged by evidence *sui generis*. Science must be met by science, it may be insisted, and not all by religious or personal considerations. If Darwinism, now or hereafter, can bring in its hand credentials in the shape of evidence which prove it to be true, we must accept it whether we like it or not. *Magna est veritas, et prevalebit*. It may be very unpleasant to me to hear that I am descended from an ape; to believe it may clash with my most sacred religious convictions; but if it can be shown that such is the case, the fact will have an objective existence of its own, and quite independent of, and unaffected by personal considerations.

Now in order to understand the nature and strength of the evidence which is adduced in support of Darwinism, and of that by which it is confuted, a study of the literature of the subject is indispensable.

To enter now into the extensive and important question of the evidence would be impossible; and you may have observed that I have purposely refrained from bringing it forward, but a subject which has so important a bearing upon our pursuits, will, I hope, be dealt with separately on another occasion.

Some of our members, no doubt, as I remarked at the outset, will already be conversant with much of the literature and will have formed some definite opinions of their own. I do not presume to advise such. But I do not think I am wrong in assuming that a much larger number, both in our Club and out of it, either have read very little or none, or

find themselves considerably puzzled and bewildered by what they have; and as Darwinism seems so much the fashion just now, such multitudes being under its spell, they believe that it must be "all right" and tacitly acquiesce in it as virtually a settled affair.

Certainly, from the tone of a portion of the press, of conversation in some circles, and even of some pulpit utterances, one might infer that it was; and that we have no choice but to believe, for instance, that the Cetacea, the whales, porpoises, etc., are land mammals who have taken to a sea life, and so on. The truth is, that though the evidence in favour of Darwinism, thus far, presents many attractive features and carries weight at points; though it often has a voice which seems to "charm wisely;" though it appears to offer to the puzzled naturalist a solution of many difficulties, for which he is inclined to give it an eager welcome; the system, on the other hand, is beset with so many and such serious objections, that in the face of them it seems impossible to advance it from the rank which it now holds, of a Scientific Hypothesis—however clever, ingenious, captivating—to that of a recognised Science. To all, therefore, who have not yet shown their colours in the contending ranks, I would earnestly say, "Suspend your judgment; do not believe that the Evolutionist has yet proved his theory, or that it is within measurable distance of being a settled affair."

MAN.

But if the contemplation of one of the simplest of Nature's works, low down in the scale of Creation, lead up our thoughts directly to her God, how much more the study of her noblest, in the person of Man, with his complex and wonderful organization, linked as he undoubtedly is, as regards his animal nature, to the animal world, and as regards his spiritual, as surely to the Great Spirit! So, in conclusion, I should like to point out clearly that it was early seen, and still is well understood, that the great point of interest in Darwinism, is its bearing upon the Origin of Man, and of those moral issues of momentous import which are involved

in the application of its principles to the human race, for it is as impossible, in the Darwinian scheme, to leave Man entirely out of the question, as it is to debate his physical without reference to his whole nature.

People everywhere have been asking, "Oh! but *do* you think we come from apes?" and the reports of the alleged discovery of a man somewhere in America with a *lusus naturæ* in the shape of a two-inch tail, and of another with more hair on his body than usual, have been received by many with feverish interest and excitement, as if tremendous truths were at stake, as if we were only waiting for another such "tale" or two to determine whether God created man in his own image, or whether natural selection improved him out of high class apes.

To deduce that man and apes are closely related, and have a common origin, on certain homologous evidence, is to say the least, surely hasty, especially in view of the total absence of connecting links, a difficulty which in this case applies with special force; because if man does come from monkey there must be hundreds of transition forms; for even ultra-evolutionists admit that between the lowest known form of man and the highest of apes, there is a wide gulf. We do not, in this instance at all events, detect those progressive variations on which the doctrine of evolution is expressly founded; they may exist, but not a true trace of them living or dead has ever been produced.

Did time allow, it would be interesting, and I think not very difficult to throw some light upon the causes which have facilitated the extraordinary success of the evolution theory, especially among the rising generation of students, to whom, rather than to the older school, Darwin said that he looked for full acceptance of his views. But violent are the fluctuations of the barometer not only in the Meteorological but in other domains besides; and if we feel unsettled, it will be wise to bide the time when the intensity of the Darwinian Cyclone shall have blown over, and when the atmosphere having fairly recovered its normal condition, people will be in a better condition to judge how much there is in it all.

For myself, gentlemen—but with the distinct proviso that I do not commit the members of our Club, either individually or collectively,—for myself I do not hesitate to declare that I confidently anticipate the speedy advent of the day when those who now, so to speak, range about in the semi-ape-like nudity of differentiated Man will be found “sitting at the feet of Moses, clothed, and in their right mind!”

THE SALMON DISEASE.

An allusion to salmon, and to still unsolved problems in local ichthyology in relation to the sea-going *Salmonidæ*, requires, I am sure, no apology in an address from a President of this Club. I can readily indicate, though I have not time to enlarge upon several points which arrest the curiosity of, and court investigation from the naturalist as well as the angler, and which have a commercial bearing also. For instance, are grilse young salmon, or a distinct species; how long does it take for a salmon to arrive at maturity; how long do smolts stay in the sea; what, exactly, are black-tails—are they, as some allege, a separate species, if not, how many sorts of fish do they represent, and specially, are there any salmon blacktail among them?

Why salmon, instanced by the clean fish which in spring afford sport to the angler at Carham, Floors, and other well known waters, quit the sea and ascend the river months before they want to spawn, and whether they eat anything, or subsist on their own fat only, until they have spawned?

But all such questions, on which much difference of opinion prevails, sink into insignificance in view of the great ichthyological problem of the day—the Salmon Disease—which is so imperfectly understood, which has assumed such alarming proportions, which is as bad or worse than ever in the Tweed, and which is extending its baneful influence to other waters besides our own.

The salmon-disease, it is well-known, is produced by the germination of the microscopic spores of the fungus, *Saprolegnia ferax* upon various parts of the fish, and their rapid increase into a leprous-like fungoid growth, which gradually

eats out its life. For some time it was a moot point whether this fatal fungus was the effect or the cause of the disease. The latest observations by scientific experts show that fish do not necessarily fall into a morbid state before they are attacked; that perfectly healthy fish may be affected; and moreover, that abrasions of the skin are not necessary, as was thought to ensure germination of the spores, though they no doubt facilitate that operation.

It is very satisfactory to know that the Tweed Commissioners, at their annual meeting on the 1st Sept., 1884, voted the sum of £200 "to assist in a comprehensive and exhaustive enquiry into the origin, nature, development, and treatment of the Fungoid Disease." The report shows that during the last five years, the enormous number of 37,969 diseased fish, salmon, grilse, and sea-trout, were taken out of the river. But the chairman was of opinion that on account of the improbability of getting hold of, and withdrawing all the fish that were dead and diseased, the figures which I have quoted represent only one fourth or one fifth of the real number destroyed. Taking them as one fourth only, we find that the startling total of 151,876 Tweed fish have been lost to commerce, and to the nation as food, during the last five years, and the tables show that the majority of those fish were salmon.

The diseased fish which were removed from the river were buried. Buried where? Most, if not all of them, in or near the banks of the river it is certain.

Now what are the proved characteristics of the spores of *Saprolegnia*, and of Fungi of the same character? They are *number* and *vitality*. They exist in countless myriads, and are extremely tenacious of life. Can any one doubt, then, that from these thousands of buried diseased fish, an innumerable number of spores were carried back into the river by the action of rain percolating through the earth, by drains and streams, by the waters of the river itself occasionally overflowing the places of sepulture; and that instead of destroying the germs of this alarming epidemic, or of removing them out of harm's way, the course which has been

followed seems but too well calculated to assist in a regular supply along the whole course of Tweed.

From a naturalist's point of view, it seems clear that unless these diseased fish, each one of which may be regarded as a separate manufactory of spores, be thoroughly destroyed, little hope can be entertained of stamping out, or even of checking the scourge; and that which now seems imperatively necessary, is the establishment of a series of cremating stations along the river, where that operation can be conveniently and effectively performed, every diligence being used to extricate from the water as many affected fish as possible.

The prudent farmer, who desires to prevent the spread of potato disease in his fields, is careful to burn all the haulms of an affected crop, so that no spores may find their way back into the ground and lie in wait for another crop.

The prudent Tweed Commissioner, too, in dealing with an evil of exactly the same nature, would, one might not disrespectfully suppose, be wise to deal with it in the same manner, so as to preserve as far as possible *his* future crops from contamination.

We do not conclude, and must not infer, that the Tweed Commissioners have overlooked the importance of the scheme on which I am dwelling; but they would probably urge that on account of the great extra expense involved, it is an impracticable one.

I do not know whether any calculations have been made with reference to the best and most economical way of destroying the fish, for it is possible that some agent equally efficient, more manageable and feasible for the purpose than fire, may exist; and I suggest that some member of our Club might experiment usefully in that direction.

I think that you will be glad to hear that the Committee of this Museum are taking steps to secure a complete collection of all the Salmonidæ of the Tweed, so that the life of a salmon from the cradle to the grave in all its stages may be represented by verified specimens.

That such a collection should be in the possession of the

Museum, and should be accessible to all who are interested is very natural, will be highly advantageous, and ought to be assisted by our Club in any way within our power.

*Report of Meetings of the Berwickshire Naturalists' Club
for the Year 1884.* By THE PRESIDENT.

CORNHILL,

FOR PALLINSBURN, FORD, DUDDO, ETC.

THE first Meeting of the year took place on Thursday 29th May, for the sixth time since the foundation of the Club. The day had been postponed from the usual Wednesday to accommodate the convenience of the Society of Antiquaries of Newcastle-on-Tyne, with whom we had a joint meeting.

While breakfast and preparations were going on at the "Collingwood Arms," Mr Hardy and I walked to the Bathing Well Plantation, a short distance south of the hotel, where a small Bath-house was formerly situated upon the little stream which still wells forth, bright and cool. In May 1853, the Club visited the same plantation, when, in the words of the Chronicler, "it was flushed with a show of flowers which no horticultural society could emulate,"—*Myosotis sylvatica* being specially mentioned. We were pleased to find, in tolerable abundance another of the plants noticed on that occasion, *Allium arenarium* (or *Scorodoprasum*), and there was plenty of *Myosotis*; but the striking feature, botanically, was the Butterbur, *Petasites vulgaris*. This plant, which loves moist sandy localities near rivers, and may be seen to perfection near the mouth of the Whitadder, displays, in early spring before the foliage appears, its heads of pink flowers to attract bees. The large leaves and long stalks at first sight so much resemble Rhubarb, that they might easily be mistaken for it by an inexperienced housekeeper. In extent, abundance, and luxuriance, the show of this plant in the Bathing Well Plantation transcended everything which had before come under our notice. Later on in the season many of the leaf stalks, measured by me, were 5 feet high. That, in the 1853 Report, there should be no mention of this plant, at the

same time of year, seems somewhat odd, as it now chokes up the whole plantation, It may, however, be a subsequent introduction, and have driven out most of the flowers which made such a display before.

Believing that every thing in Nature has its uses, we cannot help being struck with the numerous and enormous leaves of this rank-growing plant, which hide the ground, and prevent smaller plants from flourishing ; and ask—for they are useless for fodder—whether they were designed to delight the eye, or as a natural mulching, or both? Or are they just examples of the “survival of the fittest” to delight the Darwinian?

We went on to the Medicinal Well in the Haugh below the Plantation. This Well, having no connection with the “Bathing Well” stream, and now nearly obscured by neglect and marshy overgrowth, is mentioned in County Histories as being well known to possess medicinal properties ; and it is more than a tradition among old people of the neighbourhood, that invalids used to stay at Cornhill, or Coldstream, for the purpose of drinking its waters. Not being able to find out that they had ever been analysed, I sent samples to my friend Dr. A. P. Aitken, Analytical Chemist to the Highland Agricultural Society.

The ditch near the Well contains many sorts of plants, among which I noticed *Solanum Dulcamara*, or Bittersweet, which many or most people believe to be Deadly Night-shade, and call it so.

Returning to the hotel, our party, about 45 in number, set out in conveyances for Pallinsburn.

The first object of interest which arrested attention was a Toll Collector, one of the last of his race, specimens of which although observed during most Club excursions during the last 50 years, must hereafter be sought for among the fossils of the Victorian epoch.

Having reached Pallinsburn, we were courteously received by Mr Watson Askew, and proceeded to examine the great gravel bank upon his estate, one of those remarkable ridges known as Eskers in Ireland and Kaims in Scotland ; which, with a general course from East to West, are abundant in parts of our Border Counties especially Berwickshire ; which have long puzzled geologists ; and about which our Proceedings contain several interesting notices.

Our distinguished member, Mr David Milne-Home of Milne Graden, wrote a valuable essay upon them and the high-water-

marks in the valley of the Tweed, which, with its plans and diagrams, should, if possible, be studied by all who wish to understand the subject. In proof of the numbers of these Kaims in Berwickshire, and of the popular interest excited by them, the author has pointed out that several farms and estates were named after them, from one of which, Lord Kaims, celebrated as a Scotch lawyer of last century, took his title.

Typical examples of convenient access may be observed near Lucker Station on the North Eastern Railway, as about a mile from it the Bamburgh road cuts through the chief of a set of famous ridges called "The Bradford Kaims"; and at Wark, where a Kaim extends for more than three quarters of a mile between the road and the Tweed, near the Castle, on the Northumberland side; in both instances, excavations revealing the nature of the interior may be seen.

The word Kaim, Scotch for Comb, is said by Jamieson in his Dictionary, to denote the crest of a hill, or those pinnacles which resemble a cock's comb.

An examination of the contents of one of these detrital ridges, for such they are, show that they consist of stones of all sorts, and sard. Both inside and out, at first sight, they bear a great resemblance to Moraine-heaps, or the accumulation of rubbish left by the movements of glaciers; besides which, they are often associated (as at Bradford and North Charlton), with the boulder-clay, and sometimes contain a few glaciated stones. Moraines, in fact, they were supposed to be; but that opinion is no longer held. If we examine the contents of an undoubted moraine-heap—any of those, for instance in the Highlands, which in parts are so abundant—we find that the stones of which they are composed are sharply angular, or sub-angular; while we may easily satisfy ourselves that the stones of a Kaim are rounded and water-worn more or less. Besides which, the evidences of stratification are often very distinct, and in some, the fact of marine origin seems to be rendered certain by the presence of marine shells.

"He will be a lucky observer," wrote Professor Archibald Geikie in 1865, "who succeeds in harmonizing the difficulties and presenting a satisfactory explanation of these remarkable ridges."

The explanation which I believe to be now generally accepted, is, that both ice and water have contributed to their formation. They are supposed to be made up of water-

worn glacial fragments that were deposited as a detrital bed, which either then was, or at some subsequent period became, the bottom of the sea. The sea afterwards retired, leaving, except for a subsequent growth of vegetation, many of the Kaims pretty much as we see them now, having formed them by the action of its currents in heaping up its bed into ridges, or in scooping out the intervening spaces. Or the latter operation may have been affected by river currents alone after the elevation of the old sea bottom, and clearly often has been, as we may observe in many localities on the Tweed and its tributaries. Now we know perfectly well, that sea at one time covered a large area of our Border Counties; and Mr Milne Home believes that in all probability the central parts of the Tweed valley were at one time filled with detrital matter at least 300 feet in thickness. By a plan and section of sub-marine banks between the English and the Belgian coast, he shows very interestingly, that were the English Channel to be raised out of the sea at the present time, it would most likely present a series of Kaims very similar to those which we observe in the north here.

The components of the great gravel ridge at Pallinsburn are chiefly rolled shingle formed from rocks of the Silurian series of greywacke, such as now strews the banks of the Tweed and its tributaries in their upper courses.

Driving to Brankston, we inspected the Church. The ancient structure that was in view of the combatants of Flodden, especially of that heroic band that fought round the Scottish King when he fell on Piper's Hill, was taken down to its foundations about 50 years ago, except the chancel arch, which is Transitional Norman. The doorway is a reproduction of the ancient one. Here a short rapier or single-edged dagger, broken at the hilt, found near the rectory, was presented to the Secretary. Passing "the little fountain well, where water clear as diamond sparks in a stone basin fell" whence Marmion's dying draught was brought by the Lady Clare, we ascended Marmion's Hill, from which Mr Askew kindly pointed out the points of interest in connexion with that oft-described and historic ground.

"Deep drank Lord Marmion of the wave." It would be coldly hypercritical to pause to enquire whether the celebrated "Sibyl's Well" existed in his day. What a power is fiction

when wielded by a Great Wizard of the art! In our minds, as we surveyed the celebrated scene, how much more closely were the famous sites identified with the fictitious than with the real *dramatis personæ*.

To Ford Church next, where the Rev. H. M. Neville, rector, was waiting to receive us, to show us *inter alia*, his Church Registers dating back to 1683, and his communion plate, which is not antique. He also pointed out a newly discovered fragment of a recumbent effigy, which, until lately, had been one of the paving stones of the west end of the Church. Two words of the inscription

QUONDAM DNATRIX,

are still visible.

Ford Castle was next examined, and, it seems needless to say, the room, in the uppermost story of the N.W. Tower, which King James occupied when his army was encamped at Flodden—with its secret staircase to the room below, which was discovered 20 years or so ago, while repairs were being carried out.

The unfortunate monarch, as is well known, was at that time troubled with a “kind o’ dizziness,” which would not let him “gang about his business.”

From the large windows, which are a subsequent insertion, a magnificent view of the luxuriant vale of the Tweed backed by the bold rounded outlines of the Cheviots is obtained, and the nearest ridge, which though now covered by highly cultivated fields and plantations, is the identical locality where raged the famous “battle of the warrior with confused noise.”

Under the refined taste of Lady Waterford, Ford has become one of the loveliest places in the county, and with real pleasure we proceeded to walk through the grounds, and to inspect the School, with its beautiful mural frescoes by her Ladyship’s own hand.

Our drive was next to Etal, which at various times, as well as Ford and Flodden, has been so often visited, and so amply described by members of our Club, that it seems unnecessary to dwell upon it. The Etal property has seen many changes, is now the property of the Earl of Erroll, and is in the market.

Some of us having entered the public room of the little Inn at Etal, Dr Frank Douglas remarked that he well remembered attending a Club Meeting in that very room exactly 40 years ago. I was interested, of course, at hearing that, but afterwards, on

looking up the records of the day in our 2nd volume, discovered an excellent reason for that Wednesday morning being specially impressed upon our worthy Secretary's memory.

There was no breakfast! "Notwithstanding" records the president in his address for 1844 "notwithstanding that there had been a week's previous notice, we found an ill assorted board, with such a paucity of provisions as visibly affected the stoicism of many of the assembled members."

It is satisfactory, however, to know that by perseverance, and by repeated applications of the bell, "sufficient provender of a homely nature was at length procured to satisfy the cravings of the appetite, and the ruffled equanimity of the party was restored."

A short inspection of the castle sufficed, and we had no time to spare for the Mansion House of the Fitzclarences, so re-mounting our vehicles we drove towards Duddo.

"At Broomridge" observed I, innocently quoting from a county history for the information of my companions in the carriage "at Broomridge, one mile south of Ford, are the lines and entrenchments of the brave Saxon King Athelstan, who here defeated a combined force of Scots and Danes."

The defiant flash of the eyes, the prompt, loud, and unanimous chorus of "Never!" which arose from the lungs of the brave sons of Caledonia who heard me, seemed to revive the memories of Flodden, and almost threatened, had I persisted in my history, a repetition of it on a small scale. Surely the *amor patriæ* is a grand ingredient in a man's as well as in a national character.

The next halt was at Duddo—the name being derived from *Dod* a round topped hill, and *hoe* a height. The Club has no records of former visits to this place. We clambered up a rocky eminence, admired the magnificent view, and inspected the Tower, which is the remains of a little fortress, the ancient Peel of the Lords of Tillmouth, that was destroyed by the Scots a few days before Flodden. It is in a very decayed condition, and though buttressed up in parts, the structure to the south has long been cracked, and the breach is becoming wider. Dr. Thomson, in a Paper on the Strata of Berwickshire, which appears in our Proceedings for 1835, incidentally notices this condition of Duddo Tower—"rent from top to bottom in consequence of being undermined by the subterraneous working of the neighbouring coal seams."

The building stands on a hard red and white freestone escarpment, well known in the district by the name of the "Ten Quarter Freestone," which at the point where the tower is situate is from 36 to 40 feet thick. There are four seams of coal which underlie the Berwick road at about right angles, and abut against the basaltic dyke on the other side of it. The "Cooper Eye" is the chief of these seams. It is about 100 yards from the Tower, to the west, the "Bulman" seam being to the east, and nearest.

The old parish church, but still of quite a modern character, (there was no ancient one) and quite disused, is close to the Tower, the road separating them. The new church consecrated in 1880 by the Bp. of Durham is visible about a mile to the east. We were obliged to content ourselves with a distant glimpse of what are called Druidical remains, on Grindonrig, a mile to the N.W., the exigencies of time not permitting a closer examination. They consist of an ancient burial place of four large stones, set up similarly to Druidical Cairns. The belief in Druidical circles, has I fancy, rather gone out.

Our route back to Cornhill lay over "The Till by Twizell Bridge;" from which famous locality, we viewed, not without regret, the remains of the recently dismantled castle crowning the rocky steep, at whose foot, "so many a chief of birth and rank, Saint Helen! at thy fountain drink."

The exact identity of Saint Helen's well is at present much obscured by accumulations of earth and marshy overgrowth.

Nothing special in the way of Natural History came under notice during the day. Of course we observed our old friends the Black-headed Gulls at Pallinsburn.

These birds do not breed on the Farnes as some have supposed, nor are they seen there, except as temporary and occasional visitors.

Their inland breeding places were formerly more numerous than now, but the drainage of lochs and mosses causes them to desert ancient places of resort. At Pallinsburn Mr. Askew considers that they hold their own.

I have to thank Mr George Bolam, of Berwick, for the following interesting note concerning these sprightly and favorite birds.

The Black-headed Gull is a permanent resident with us, and some individuals may be seen at any time throughout the year about the mouth of our river; of course they are least numerous during the month or two

in Summer when they are engaged in breeding—May and June—but even then there are always a few of them hanging about the quay; all through the Winter they are abundant, and the same may be said of Spring and Autumn. In Autumn after the breeding birds and their young have come down from the inland lakes they congregate in immense flocks at night to roost in company with other gulls—herring, lesser-blackbacked, common, &c., upon the sands at Goswick and Holy Island, and probably most of those that frequent Berwick Harbour during the day repair thither at nightfall.

Some few of them doubtless migrate towards the South during winter but they are not perceptibly missed, their places being filled up by others.

In winter of course they lose the black heads which render them so conspicuous during summer, and it is still a point of much difference of opinion as to whether this change is caused by moulting or by actual change in colour of the feathers themselves. In the spring when changing from white to black I have never had much chance of investigating the matter, but I have shot birds during the autumnal change, and then their heads invariably showed signs of moulting, the black feathers falling out and being replaced by white ones—and I see no reason for supposing that the heads do not moult both in spring and autumn at the same time as other parts of the body.

During our drive through the country it was noticed that the foliage of the oak was distinctly in advance of that of the ash. It generally is; but the old adage

“ If the Oak’s before the Ash
Then you’ll only get a splash;
If the Ash precedes the Oak,
Then you may expect a soak,”

was inevitably quoted, and the amount of credibility of which it is deserving, came in for discussion.

It would seem ungracious to dissect so time honoured a proverb; but is there any “reason in the rhyme,” anything in the habits of the two trees which enables them to indicate what sort of weather may be expected in the future?

The Oak sends its roots deep down into the soil, and therefore is not so dependent on a wet spring for the water supply which may be necessary for early leafing, as the Ash, whose roots are near the surface, and whose leafing, *ceteris paribus*, would be quicker in a wet spring. Rain, therefore, does not affect the Oak as much as it does the Ash; so if the latter is pushed forward quicker than usual, it merely shows that the “soak” has prevailed, or is going on, but cannot justify the investiture of prophetic powers.

Statements and adages regarding the Common Ash should be received with caution; for there are, perhaps, a greater number of superstitions connected with it than with any other tree.

The summer of 1884, however, will be adduced in support of the truth of the old saying; and also of the popular belief that when the oak leaves before the ash, there will be fine weather in harvest, and an abundant crop.

After dinner, to which 60 did justice, in addition to the usual toasts, the health of The Society of Antiquaries of Newcastle-on-Tyne was drunk, coupled with the name of the Vice-chairman, the Rev. E. H. Adamson, who suitably responded. The President read a Paper on "Embedded Reptiles," which was called forth by the recent discovery of a live frog in the Scremerston Limestone.

Two photographs of three small urns and a cranium recently found at Amble, were handed round by Mr G. H. Thompson, Alnwick, who will give a notice of the discovery.

Mr Muirhead exhibited a large number of flowers grown in his garden at Paxton. Mr Peter Loney showed a collection of Ozone papers—slips of paper, which when prepared with hydrate of potassium and starch, and exposed in a wire cage for 24 hours, show, by their difference in colouring, the amount of ozone in the air—the darker the colour, the more ozone. Thus it was pointed out that on a certain day, when a very heavy gale occurred, very dark paper resulted, much more air having been brought into contact with the paper in a given time, than would have been during a light wind or a calm.

Mr Thomson showed two silver coins, one of James VI. of Scotland and the other of Elizabeth, found many years ago near Milfield; a Rose and Thistle plack; and a copper abbey-piece or counter. This last was found a short time before beneath a large stone four and a half feet below the surface of the ground while the labourers were digging the foundation of a wall for the school playground at Kelso, close to the Abbey.

Several new members were proposed at this meeting, who will be enumerated at the close.

THE FARNE ISLANDS.

THE second meeting was held at the Farne Islands, on Wednesday 25th June, and was numerously attended.

The Leith passenger steamer "Fiery Cross" had been char-

tered for the occasion, and was in waiting off the Pier Head at Berwick, at half-past ten in the morning, as the state of the tide—which inconveniently enough happened to be about the lowest in the whole year—would not admit of the embarkation inside the river's mouth. On board of her, about 50 members were conveyed from the Crabwater Landing by the little steam ferry "Susan."

With a pleasant breeze from the west which ensured a smooth sea, and freedom from the attacks of an enemy who had surely to be reckoned with by many of us, before finally deciding to take part in the expedition; with a clear sky, and the prospect of so interesting and celebrated a locality for our excursion; with Mr Cuthbertson, the Pilot, on board, to guide us safely through its intricate channels and clear of its hidden dangers; the elements of a successful and enjoyable day were certainly not wanting; and every one seemed in good spirits.

The Club had only twice before visited the Farnes.

The first occasion was on the 21st June, 1854, when ten members were present,* among whom was our late lamented Secretary, Mr George Tate, whose long, interesting, and fairly exhaustive Monograph on the Farnes, which appeared in our Proceedings for 1856, (vol. iii. pp. 222-250,) testifies of the learning and ability of the author, and of the importance which he attached to the Farnes from a Naturalist's point of view.

The record of the 1854 visit is very short, but it alludes to the gratification which was felt at seeing, at the Longstone, the father of Grace Darling, and several members of the family.

The only other record is of the date of 26th July, 1866, when a detachment from the main body of the Club, which held its meeting at Beadnell that day, sailed from the harbour there, and visited the principal Islands.

But to return to ourselves.

With the wind astern, and the flood tide in our favour, passing between the islands and the mainland, we arrived off North Sunderland before one o'clock, where we were re-inforced by about 20 more members and friends, who found it more convenient to join the steamer there, in the five boats, with three boatmen in each, which had been engaged for our use, and which we forthwith took in tow.

* Dr. Johnston, Revds. T. D. Clark, Geo. Walker, S. A. Tyler, W. Darnell, L. S. Orde, Messrs. Selby, Boyd, Embleton, and Tate.

The nearest point to the mainland is Monkshouse, near Bambro'; but North Sunderland, though half a mile further distant, is the natural and most convenient, and for more reasons than one, the recognised port of embarkation.

Being aware of the rarity of the earlier volumes of our Proceedings, with all their valuable contents, no complete series of them being accessible for the use of members in any central place (the Berwick Museum for instance); so that in all probability, not one member out of twenty would have been able to consult Mr Tate's Paper, and desiring that to no one of our party should they be entirely a *terra incognita*, I had prepared for the occasion, and had the pleasure of reading on the deck of the steamer during the voyage, an outline Sketch of the Farnes and of the chief points of interest which they present.

We often notice that the islands are erroneously designated the "Fernes" or the "Fern Islands"—indeed as such they appear on a recently published map of Northumberland. If this appellation is connected with the supposed abundance of ferns, it is singularly inapplicable; for as a matter of fact there are no ferns whatever on any of the islands.

The etymology of the title "Farne" is still rather obscure. There are several explanations. The popular one, derived from Grose and perpetuated by Raine (North Durham, p. 50, note), is that it is derived from the Celtic *fahren*, signifying a place of retreat, and that the appellation was bestowed when St. Cuthbert and other saints and hermits of old utilised it as their place of retreat. Mr Raine, elsewhere, forgetting (l.c. p. 340) his original reference, makes the word *fahre* German, adopting Grose's explanation of the supposed Celtic term.

But however ungenial it may be to interfere with long-accepted popular beliefs, especially with one so pretty and natural as this, it is necessary to state that no such word as *fahren* can be found in Celtic, nor has Mr Rhys, Professor of Gaelic in the University of Oxford, any knowledge of such a word; which, too, has been sought for in two modern Gaelic dictionaries, and is not recorded. The word that approximates nearest to the meaning attached to it by Grose, and with something of sound, is *fraon*, shelter in a hill.

In German, it is true, the word *fahren* does exist, but certainly does not mean a *retreat*. It means to move, go, &c., is used a great deal idiomatically, but always with the idea of *movement*.

Secondly, in the current No. of our Proceedings, there is a spirited little posthumous paper by the late lamented Mr Carr-Ellison, in which he seeks to demonstrate that in Anglo-Saxon, the mother tongue of our vernacular English, the islands were called "The islands of the Pilgrims"; and that "Lindisfarne" signifies "Pilgrims or Travellers of the Lin."

Next comes the theory of our learned and esteemed member, the Rev. William Greenwell, which, to my mind, appears to be so likely, that at first sight it appears to carry conviction with it, and I beg to introduce it as "Greenwell's Glory."*

The two streams which flow into the sea at Beal and Budle respectively, are the Lin and the Waren, or as it now appears on the map, the Warn, which discharged itself on Warnham Flats.

These are the ancient names of the streams; and what is more conceivable and likely than that the islands lying off the mouth of the river or brook Waren should be named the Waren Islands? The "w" easily became "f," producing Faren Islands, because it is well known that "f" and "v"—the latter being practically the same as "w"—were interchangeable between Anglo-Saxon and cognate languages. From Faren to Farne the transition is easy enough.

As regards "Lindisfarne," Dr Greenwell suggests that it may simply have been "Lindisfarnensis Terra," or the land adjoining the streams Lin and Farne. This may have superseded the ancient British title which it is known to have possessed. An inspection on the map, of the relative situations, will, I think, strengthen our disposition to receive the reverend gentleman's simple explanation as a very likely one.

Lastly, we have the interesting hypothesis of our learned secretary, Mr Hardy, which is the result of his latest investigations. It is quite as likely as the others.

"We can sometimes conjecture the position of some of the settlements of the Celtic monks of the old Scottish Church by the names of localities still embodying Gaelic elements, or by the names of the saints to which their sacred edifices or *kills* were dedicated. In the name Lindisfarne there is at least a presumption that some Celtic ingredient might be identified. The small colony of monks from Iona, to whom the island was presented as

* This is the name of a celebrated artificial fly, invented by Canon Greenwell, well-known to Border Anglers.

a home by King Oswald in 635, probably found it without a name, the British *Medicante* or *Medcaut* having fallen into disuse, while the name of the stream *Lindis*, which had to be crossed before firm land was reached, was still retained; and the danger and difficulty of traversing it and the sands, would force it constantly on their attention as a source of solicitude. It might thus happen that they would speak of the shore towards which they had to journey through quicksands and an occasionally flooded rivulet, as emphatically in their language, *Fearann* (pronounced *Fer-unn*, McAlpine), (land, earth, country); or more fully as the *Fearann-na-Lindis*, the land of Lindis; which term afterwards, revised to suit the Saxon or English idiom, became *Lindisfarne*. They do not at this time call it an island, because it was dubious, as appears from Bede's expression, whether it was an island or part of the mainland: 'bis quotidie instar insulæ maris circumluitur undis, bis renudato littore contiguus terræ redditur.' Equally, if the island was granted by charter, would the term *Fearann* apply to it, for *Fearran* signifies 'estate, farm,' as well as 'land' (M'Leod and Dewar). We have no remaining evidence of such a charter having once existed, but it is within a century of Oswy, king of Northumberland (before 670), and his nobles giving the Church at Lindisfarne numerous donations of land on the river Bowmont, with stedes and hamlets, which, from the preservation of their names, appear to have been entered in a written deed (Hist. Sti. Cuthberti apud X. Scriptores à Twysden, col. 67, apud Morton's Teviotdale, note, p. 3). If there was such a grant, the lesser islands in groups in the vicinity, which were also Church territory, would be included in it, and would likewise take the familiar title of *Fearann*, as satellites of the main possession."

Like so many localities in these Border Lands of ours, the Farnes are intimately associated with ecclesiastical history and ecclesiastical worthies; but chiefly with the name of St Cuthbert do we connect them.

There are now no remains on the Farne or House Island of the famous habitation, half cell, half oratory, in which for more than nine years, lived the celebrated Northumbrian Saint; nor of the Hospitium which he built to accommodate the numerous visitors who arrived for advice and devotion. The latter, however, was in existence up to the 12th century.

In later times there was on the island a monastic house,

“The House of Farne” in connection with the Convent at Durham, which existed till the suppression of monasteries in 1536, and which was endowed by various individuals, among whose names appears that of Sir William de Scremereston, by which we are reminded of the antiquity of our parish of that name, and, maybe, of a very retired inhabitant of it, upon whose history I endeavoured at our Cornhill gathering to throw some light.

The Farnes were among the most ancient possessions of the Church in Lindisfarne, and passed, in the course of time, to the Prior and Convent at Durham. At the dissolution of Monasteries in 1536, Henry VIII bestowed them upon the Dean and Chapter of Durham, who were in the habit of regularly leasing them, and finally sold to Archdeacon Thorp that part of them known as the Inner Farnes “together with one house or tenement called Monkhouse to the said islands belonging on the 28th September 1861 subject to the ground on which the Lighthouse and appurtenances stand and also a right of way to and from the shore.”

As considerable misapprehension exists about the ownership of the Islands, and the extent of rights over them claimed by the Farne Island Association, by whose courtesy, I may say, we were enabled to carry out our expedition, I thought it desirable that the matter should be clearly explained, and towards that end Mr Robert Archer of Alnwick, the secretary of the Association, kindly furnished me with a map and extracts from the title-deeds.

From them it appears that the Outer Farnes are under the control of the Ecclesiastical Commissioners, who have declined to renew the Association’s current lease, which expires in May 1887; while the Inner Farnes are the freehold property of the representatives of the late Archdeacon Thorp, and which, until the above named date, are also leased to the Association.

However bright and beneficent, however invaluable in their day, may have been the rays of spiritual illumination which emanated from the Farnes, there can be no doubt, that at the present time, though in a different sphere, the rays which they send flashing seawards in all directions for the guidance of “those who go down to the sea in ships,” and who, on these dangerous and harbourless east coasts, were it not for those

friendly and welcome warnings, would very much oftener than they do, go down *in* the sea in ships, are not of less utility.

So, having *en route* landed at the chosen place the material necessary for the Club Dinner—that important factor in the day's programme—we proceeded to view, in the first place, the celebrated LONGSTONE. We were skilfully piloted through the Piper Gut by our pilot, passing quite closely the S.W. corner of the Big Harcar, on which the Forfarshire was wrecked in 1838, and having hove-to, to the N.W. of the landing place, our boats easily dropped down to it on the flood tide. Stepping ashore, we were received by the light-keepers, and under their guidance inspected the Lighthouse and saw how the flash was effected, being shown, as we ascended, the room into which a portion of the rescued crew of the Forfarshire was brought by *Grace Darling* and her family.

All English Lighthouses, together with the staff necessary for their management, are under the immediate administration of the Trinity House, subject to the control of the Board of Trade, the Scotch being managed by the Commissioners of Northern Lights.

Few persons have much idea what the Trinity House is—beyond identifying it in their minds with occasional mysterious newspaper references to “Elder Brethren” and “Younger Brethren” and Banquets. The Trinity House was founded by a charter of Henry VIII in 1512, and, at first, its offices were of a religious character connected with the welfare of sailors, but gradually those functions were altered and extended, until they comprised the general control of the mercantile marine, especially the illumination of dangerous parts of the coasts.

At the present day its members, called “Trinity Brethren,” have very little to do with the mercantile marine, but they erect and superintend Lighthouses, examine and issue certificates of competency to pilots, and establish and keep in order all sea-marks and buoys. The first Lighthouse was put upon the Farnes in 1775, when coal fires were shown in open fire places. A comparison of this rude method of warning sailors of danger, with the powerful, scientific, elaborate, and highly finished systems now in use, strikingly illustrates the extraordinary progress, which, in those as well as in other scientific matters, we have made during the past century.

The present number is three, namely: one on the Longstone,

and two on the Farne. That on the Longstone was erected in 1826, is 85 feet high, and is furnished with a Revolving Light on the Dioptric or Refracting System. The duration of each flash, which is visible 18 miles from a ship's deck, is 7 seconds. It suddenly appears at almost full power, and suddenly disappears for 23 seconds,—thus there is only one flash every half minute.

On the Farne the High Lighthouse was erected in 1766, is 43 feet high, and has a Revolving Light on the Catoptric or Reflecting System, visible 15 miles.

The duration of the flash at this lighthouse was the same as the Longstone up to August 1st 1884, when it was changed, showing 2 white flashes and 1 red every 20 seconds, which gradually increase and decrease in intensity, only remaining at full power for a short time. It is interesting to know that at both lighthouses, during the period that the light is not visible, it is not lost to the mariner, but is concentrated in the beam that is seen, thus making it at the Longstone five times as powerful as a fixed light.

The Low Lighthouse on the Farne is an octagonal tower, 27 feet high, built in 1810, which shows a fixed light visible 12 miles. Colza oil is used for all the lights.

To the Lights a useful auxiliary is the Fog-horn, which, by special permission of the Trinity Board—through the kind application of Mr Benjamin Morton, Trinity Superintendent, Sunderland, to whom I am indebted for much useful information—was sounded several times.

To fog-enshrouded mariners, as I can testify from personal experience, any sort of noise is welcome save that of breakers on a lee-shore; but, intrinsically considered, the roar of this Fog-horn is of an unmusical, depressing, and unearthly character. It is managed thus: air is compressed by an air-pump worked by caloric engines, and delivered into a receiver at a pressure of 25lbs. per square inch, whence it passes into the inner cylinder.

The sound is produced by an apparatus of American invention called a Syren, which consists of two metal cylinders fitting closely one inside the other, the inner cylinder being fixed, and the other, which is about a foot high and nine inches in diameter, revolving round it. Both cylinders are pierced with 24 slits about 2 inches long by 2-10ths of an inch broad. The outer cylinder is made to revolve at the rate of 20 revolutions a second.

As the slits or openings come opposite to each other the compressed air escapes through them, producing $20 \times 24 = 480$ distinct shocks, vibrations, or sound waves a second—that is, 28,800 a minute—which, following each other in such rapid succession, fall on the ear as a continuous sound, that is projected seaward through a huge trumpet, which is always turned to windward when in use. Under favourable circumstances the trumpet can be heard 12 miles off.

The Syren is the result of a long series of exhaustive experiments, which have proved it to be the form of instrument which can be heard at the greatest distance, though in the immediate vicinity sounds produced by other means may be louder.

The Keepers observe a rule that as soon as they lose sight of the Pinnacles in thick weather they begin sounding the fog-horn.

The Farnes present so much that is interesting that we all felt, with regret I believe, how little justice could be done to it all in the course of so brief and necessarily hurried a visit.

We had no time, for instance, to examine the geological features in anything like detail. Geologically speaking, the Farnes are an outcrop of the Great Whin Sill, with remains of sedimentary rocks containing fossils, and boulder clay. There are marks of glaciation to be observed.

The Great Whin Sill was a vast subterranean lake of melted Basalt, which, at some time during the Carboniferous Period, many long ages ago,—who can tell correctly?—was forcibly intruded among the lower Carboniferous strata of Northumberland. It never reached the surface, but cooled between the sedimentary beds; which, since worn away by denudation, have here and there exposed it to view, and it forms the surface or nearly so; as at Embleton whence we get whin-stone sent to Berwick for our road metal; at Spindleston, where it forms the celebrated Craigs of that name; and at Dunstanborough and Bamborough where the Castles stand upon it.

Now this enormous sheet of igneous rock which ranges from 20 to 150 feet in thickness, is known to stretch across a great portion of Northumberland, and probably underlies the whole of the Southern and Eastern portions of the County, is not, one must note, an ordinary intrusive dyke, passing vertically through the strata as at Holy Island and other places. Neither is it a regular “interbedded trap,” or stratum which once formed the surface, and on which other beds were in due course deposited,

as was for long supposed; but that it was intruded in the way that I have described, is now, according to Professor Lebour, considered to be proved by two facts. First, the sedimentary rocks which immediately overlie the Whin Sill are altered or metamorphosed, especially when they consist of shales; and secondly, that it does not lie at one uniform level amongst the sedimentary strata, but frequently comes up in bosses, cutting through the rocks, and shifting its relative position amongst them to the extent of 1000 feet or more in short distances.

Like all basaltic rocks, the Whin Sill has a tendency to become fissured and to split up into jointed columns, as may be observed in the detached rocks called The Pinnacles, which, crowded as they are in the season—so that, apparently, not an inch of standing room is left—with guillemots, kittiwakes, and razor-bills, form one of what may be well called “the sights” of the Farnes. The Pinnacles lie close to the south side of Stapel island, where Eider ducks and other birds breed; and on that island, with the exception of a few who preferred going off to the Crumstone to see the Seals, our party landed after quitting the Longstone, whence we had easily reached our steamer, for in the interval she had moved to the southward of the island and we dropped down to her on the last of the flood.

While they were examining the interesting and, to so many of them, the novel features of bird-life there presented, I devoted the short time at my disposal to botany.

The Botany of the Farnes offers nothing that is peculiar; and, as might be expected, its plants are of a maritime character. There are no trees, and, as I have already mentioned, the fern order is wholly unrepresented.

I had with me a complete list of the flowering plants, 62 species, given by Mr Tate, and to which no one, I believe, has made any addition.

I could not observe among the very numerous single, on the Brownsman and Stapel, any double flowered specimens of *Silene maritima* recorded by him. That, however, is not remarkable; the double state of a flower being often a transient one, depending on certain conditions favorable to luxuriance.

The only other plant which calls for a word of notice is *Cochlearia Danica*, “Scurvy Grass.”

Cochlearia is a genus of smooth, sleek, shining cruciferous

herbs, whose valuable anti-scorbutic properties were better appreciated in "the good old days" of scurvy than now.

The same remark indeed may be passed with regard to the larger proportion of our wild plants, whose medicinal virtues, so well understood by our ancestors, are now eclipsed by mineral remedies, or used only in the shape of an "active principle" bought at the chemist's shop.

But *Cochlearia* is, besides, interesting as being a genus which has its habitat, like *Armeria maritima* "Thrift" or "Sea Pink," on sea shore and mountain top alike, but rarely at intermediate stations. The ordinary form, *officinalis*, which has the lower leaves roundish, cordate at the base, or reniform, is common enough at the Farnes, and can scarcely have been overlooked by any one who has wandered along our coasts, or penetrated the rocky glens and recesses of our mountain ranges. The variety *Danica*, however, belongs exclusively to the sea-coast, and is known by its deltoid, ivy-shaped lower leaves, whence the old name of the plant, "Ivy Scurvy Grass." Smith, in the English Flora, declares that it is unchanged by cultivation, and never alters; but our Dr Johnston, in his most charming of all books of the sort, "The Natural History of the Eastern Borders," confesses that he was often puzzled to know to which species to refer his specimens.

Indeed, whether *Danica* is entitled to take rank as a species, or whether it is merely a variable state of the normal type of the plant, is uncertain, and is illustrative of the difficulty which is so constantly experienced of deciding what a species really is.

At five o'clock we all gathered for dinner, which was well served, picnic fashion, on the grass on Farne Island, close to St Cuthbert's Chapel—fifty years ago a mediæval ruin, part of which was inhabited by the light attendant, but which subsequently was restored by Archdeacon Thorp with the double object of perpetuating the name of the famous saint and of providing a place for divine worship, which is occasionally held in it, the Rev. W. F. Keeling, vicar of Holy Island, having a few days before visited it for that purpose. Within is a monument to Grace Darling, the popular heroine of the Farnes, who lived with her father on the Longstone, died in 1842, aged 26, and was buried in Bamburgh Churchyard. The tower on the brow of the hill is called Prior Castle's Tower, having been built by a Prior of that name about 1500 as a place of security and defence

—a sort of peel tower, in fact. The Archdeacon put it partly to rights, and fitted up some rooms for occasional residence.

To dinner, grace having been said by the Vicar of Bamburgh, and at which the salmon of the Tweed occupied its usual position, seventy members and friends, bringing with them an ample supply of the *optimum condimentum*, did full justice, under the canopy of heaven, within sound of the surge, oft there so angry, but now hushed and gentle; while circling about them, or freshly impressed upon their delighted recollection, were the gulls, kittiwakes, guillemots, razorbills, puffins, cormorants, terns, eider ducks, oyster-catchers, divers, and the rest of the beautiful inhabitants of those bird-loving islets.

And, certainly, it is to the Ornithologist that the Farnes offer the chief attraction.

From time immemorial they have been a noted breeding station for sea-birds, and still are, in spite of some adverse influences; such as the indiscriminate destruction of eggs and birds both for commercial purposes and by visitors for amusement, which was carried on to such an extent, that the rarer, if not the commoner sorts, were in danger of being extirpated.

In illustration, I may say that a picnic party have been known to kill and maim upwards of 150 birds in an afternoon, just for amusement, by stone-throwing; but chiefly I must instance, *gunners afloat*. Immediately after the 1st August, on which day the protection of the law under the "Wild Birds' Protection Act" ceases, steamers have generally arrived, sometimes two at a time, filled with gunners, sometimes forty or fifty in each. Ranging up close to the Pinnacles, a fusillade commenced, and the work of wanton slaughter was carried out upon the birds, who would not leave their nesting places. Some were picked up, but hundreds floated uselessly away, staining with their blood not only the water, but the wing of time! This has been often repeated at intervals during the month.

Under the management of the present lessees, there is every reason to hope that this ancient and interesting station may be preserved for the birds in comparative peace and safety.

The Association, it is true, have no power to prevent persons who are on the sea from shooting birds; but still, they could touch the steamer-evil in two ways. Firstly, by not themselves taking, or allowing to be taken the first "clutches" or sittings of eggs; and secondly, by getting the close time extended, so

that the birds might fly away before the gunners arrive ; for, as it is, they fall victims to the parental instinct which prompts them not to desert their progeny,—an instinct implanted by Providence, which, surely, should be respected, and, in the interests of science as well as of humanity, not taken advantage of by man.

But a combination of both methods seemed likely to be the more effective way ; so, knowing that the Association had already entirely in their own hands the control of the eggs, it seemed to me, after due consultation with several of our members, that we might usefully signalise the visit of our Club to the Farnes, and strengthen the hands of the Association, by passing the following Resolution, which, after the usual toasts, was proposed by the President after dinner, seconded by the Rev. J. F. Bigge, and carried unanimously.

“In view of the great interest and value attached to the Farne Islands as a breeding station for many rare birds, it is the opinion of this Club that it is highly desirable, in the interests of science as well as of humanity, that additional effort should be made for the preservation and protection of the birds from the time of their arrival until the 1st of September ; and that a copy of this resolution should be sent to the Chairman of Quarter Sessions of the County of Northumberland, and to the Farne Islands Association.”

Members will, I think, be glad to know that in a short time, in answer to that resolution duly sent off to the officials named in it, our Secretary received certain documents from the Clerk of the Peace for the County of Northumberland which it is not necessary to reprint at length here, but whose substance is that upon consideration of our motion, the close-time under the Wild Birds' Protection Act had been extended from the 1st to the 11th of August for the whole county. I much wish, if possible under the Act, the extension could have been granted for the islands alone, without including the County, and I am not without hopes that this may yet be done.

The thanks of the Club are due to the magistrates for having so courteously and so promptly considered our communication.

Among the phenomena of Natural History, the migration of Birds is one of the most curious, deeply interesting, and little understood.

It may be known to many of our members, that in 1883 the British Association appointed a Committee for the purpose of

obtaining observations on the subject from Light Houses and Light Vessels.

It is obvious that the keepers of such institutions are specially well situated for the purpose, and the results already obtained are very valuable.

In the current Report, which is published by West, Hatton Garden, London, price 2s,—and which I strongly advise all who are interested in the subject to get,—I observe, with satisfaction that special praise is bestowed upon Messrs Hall and Parsons, the keepers of the Longstone, and upon Mr Cutting of the Farne, for the excellence of their Reports.

Among the birds in the act of migration which they noted, appear:—The common crossbill; missel thrush; ring-ouzel; redstart; brambling (*Fringilla montifringilla*); snow bunting; carrion crow; hoopoe; cuckoo; solan goose; 3 or 4 sorts of wild geese; king, eider, and other ducks; landrail and jack snipe (both killed against lantern); woodcock: skuas and black-headed gulls; great northern divers (fourteen at once); black and red-throated divers.

For Mr Tate's Paper in our 3d vol., the late accomplished Ornithologist, Mr Prideaux Selby (1856) supplied a "Complete Catalogue of the birds which inhabit or resort to the Farne Islands." I am informed by Mr Arthur Evans and Mr George Bolam,—ornithological authorities of our Club who should know well,—that Mr Selby's List is still substantially correct. It does not of course include birds observed in the act of migration, such as the hoopoe. Mr Evans writes that the only additions which he can make are "the sheldrake," one or two pairs of which are in the habit of breeding; an occasional shag's nest, and sometimes the ringed guillemot—viz., the ringed variety of the common guillemot. But interesting as a bird-observing station as may be the Farnes, they sink into insignificance as we read in the Report about Heligoland, which seems to be the focus on which the principal rays of bird-migration are concentrated. The scenes which occur there are indeed wonderful to read about. Golden-crested wrens filling the gardens every where by hundreds of thousands, perching on the ledges of window-panes, preening their feathers in the glare of the lamps, "all the island swarmed with them, poor little souls"—in a few hours all were gone! There, in that speck of sandstone half lost in the fogs of the German Ocean, have been caught birds from beyond the

Atlantic, from China and from Greenland, from all the regions of Asia and Asia Minor, from Northern and Southern Africa, from the Indian Ocean and the Pacific, from the Antarctic Circle and the Arctic Seas; and specimens of all these are to be found duly classified and authenticated on the shelves of a naturalist in the island, Herr Gätke; and the great work that he has long been preparing on the migration of birds should be a valuable contribution to scientific knowledge. We are assured that the collection alone is well worth a pilgrimage, and that many have come from afar on purpose to visit it.

The tide did not favour the entry of the "Fiery Cross" inside the mouth of the Tweed when we arrived there after dusk, after a quick and prosperous homeward voyage; so that, depending upon the services of small boats, which did not appear as quickly as we should have liked, it was past 10 o'clock before the last of the party had landed; but every one appeared highly pleased with the day's proceedings, during which we were so conspicuously favoured by the elements.

PRESTONKIRK, FOR WHITTINGHAM AND PRESMEANNAN.

[As I was unable to attend this Meeting, Mr Hardy has kindly furnished me with the following Report.]

THE Third Meeting of the members of the Club for the season was held at East Linton on the 30th July, when twenty-nine assembled. The day was slightly obscured with mist from the hills, and a few showers fell; but the air was genial and enjoyable. The excursion was in four carriages furnished by Mr Sharp of the Railway Hotel, and two members who had ridden across the Lammermoors were on horse-back. Only Whittingham and Presmennan were on the original programme, but, after the circular was issued, Miss Nisbet Hamilton courteously intimated that members, if they wished, might see Biel House and the pictures there, a proposal which was cordially welcomed and taken advantage of. This curtailed the stay at the places visited more than was originally intended.

The road to Whittingham is both steep and winding, but allows extensive prospects of the thickly wooded, highly cultivated, and greatly varied country between Linton and the sea, with the Bass, North Berwick Law, the Garleton and Gullane Hills as extreme out-posts to the view; while the narrow vale of

the Tyne, with the plantations upon its banks, up to Hailes Castle, and the green grassy or grey rocky declivities, and massive bulk of storied Traprain were close at hand; and on reaching the elevation at Sunnyside, the woods of Whittingham appear, with the red-coloured church on the margin, and the roof and chimneys of the mansion house, environed by the screen of trees, which spread dark and heavily massed amidst cultivated fields, variously divided and diversely hued according to their respective crops. The back-ground is occupied by the brown and green Lammermoors and the densely wooded Presmennan hill. Stoneypath Tower could be caught in the distance in one direction, and in another an obelisk on the Blaikeyheugh, raised at the expense of the county yeomanry to the memory of the late Mr Balfour. The farms and hamlets passed were Traprain, Sunnyside, Luggate, Luggate village, and Whittingham Mains. Under the influence of recent rains the crops looked promising; but on the heavy soils, with exceptional fields, the turnips were considerably in arrear of the general East Lothian crop. When Mr Archibald Hepburn occupied Whittingham Mains, besides being an ardent ornithologist, he paid considerable attention to the Coleoptera, and the results are recorded in the late Mr Andrew Murray's "Catalogue of the Coleoptera of Scotland." His rarest capture was *Lina populi* at Whittingham. On one occasion I visited Traprain Law from his residence, and picked up under stones at the base, the following rarish beetles: *Otiorhynchus monticola*, *O. scabrosus*, *Diacanthus holosericeus*, and *D. æneus*; *Sunius angustatus* and *Agathidium atrum*. Mr Hepburn likewise captured some good moths in the neighbourhood, and at Presmennan, the names of which are entered in the Club's "Proceedings," vol. II. pp. 212-213.

The modern church of Whittingham, built of red sandstone, is handsomely fitted up in the interior. The Rev. Mr Robertson, to whom the Club were much indebted for guidance, recounted its history, exhibited the church plate (silver communion cups of date 1683), and gave a synopsis of the contents of the old session minutes of dates from 1674 to 1690, and which are very legibly written. In the churchyard are curiously sculptured grave-stones of last century, and an interesting piece of architecture of last century (the Sydserff vault). On enquiry if there was any entry of where Andrew Baxter, the metaphysician, once tutor to the Drummelzier family, and author of "An Inquiry into the

Nature of the Human Soul" (1730), and other writings, was buried, none had been found. The memoirs of his life affirm that he died at Whittingham, April 23, 1750, aged 63. It appears, however, that he and his wife (Alice Mabane, the daughter of a Berwickshire clergyman) and three daughters and one son lived at Old Haddington, a place now obliterated, which lay to the west of the present Whittingham church. Of this, apparently a farm place, we have one notice in the Session Book of Hutton parish of date April 26, 1663:—"Collected 3 lib. 6 sh. for Wm. Wilson in Old Haddingtoun, who had great losse by burning." It seems also to be named in a Retour of Sir Andrew Ramsay of Wauchton, of date May 19th, 1680 (Haddington, No. 338), when he held the lands of Johnscleuch, the lands of Clints, the lands of "Old Hadding et lie house," the lands of Papill, called "Lauderlands and Haitlieslands, with the mill of Papill," etc.

Mr Robertson also pointed out that in the field below the present factor's house there was a central space with much black soil, which was reputed to be an old churchyard; the field itself was known as the "Kirk-lands." That it had been an ancient place of sepulchres was proved by its being on one occasion ploughed deeper than customary, when the tops of numerous slab graves were struck on, in which the bodies had been interred at full length. It may, from the character of the graves, have been a cemetery of the early Christians of the district, possibly Saxon descendants of those who settled under Hwite, the founder of the colony, afterwards called after him, according to the Anglo-Saxon usage, Whittingham, the dwelling place of the race of White.

I subjoin Mr Robertson's remarks from a more recent communication on the subject.

"The ancient cemetery I spoke of betrays itself by a black spot on the field of red soil just beyond Luggate-burn village. It was first shewn to be a cemetery by the following accident. A former farmer of Luggate employed a steam-plough, and one day in his absence, it laid open about 200 graves consisting of unhewn stones for sides and tops, without any bottom except the soil. That the spot had been for Christian burial is rendered almost certain by the fact that the name of the field is the *Kirklands*."

It was stated by others of the company that another ancient burial ground with slab graves has been detected on opposite sides of the Tyne above Linton. In this instance the graves

were mostly short, which indicated an earlier people, who folded up the bodies of their dead, and probably also practised urn-burial. To account for it, an imaginary battle had been suggested between tribes whose boundary was the Tyne.

But the most extraordinary assemblage known of ancient graves in this immediate district, concerning which there remains not any tradition, is that at Knowes, which lies in the Parish of Tynningham, on the Tyne, a short distance below Linton. Knowes, anciently Cnolle, was one of the sites of early Saxon civilization, which King Duncan during his short reign (1094) annexed to Lindisfarne, probably because they had been Christianised by some of St Cuthbert's disciples. Baltherus himself is said not to have been a disciple of St Mungo, but belonged to the Saxon school. There is a fac-simile of the charter in Raine's "North Durham," facing page 373. The following six places were by it given to St Cuthbert: "Tiningeham, Aldeham, Scuchale, Cnolle, Hatheruich, and Broccesmuthe, and all the service Fodanus the bishop had therefrom." Fodan or Fothad II., was bishop of St Andrews, 1051-1093—"a cunnand," i. e. knowing, "man," writes Wyntoun. This resumption by Lindisfarne occurs in the interval of ten years, between the demise of Fothad and the election of Turgot, his successor. In after times future bishops of St Andrews appear to have had a residence near Cnolle. Many ecclesiastical documents connected with the diocese of St Andrews were dated from Tynningham, which is within moderate proximity. "A field adjoining the present farm-house [of Knowes] is called the *Bishop's garden*." (Miller's "St Baldred of the Bass," p. 81.) I have met with two accounts of the discovery of the graves, one contemporary, from a newspaper, the other traditional, in Miller's "St Baldred of the Bass," 1824. I incorporate the two.

October, 1813. "Lately, on trenching with the plough (giving a deep furrow) a field (south from the house) possessed by Wm. Hunter, Esq., at the Knowes, East Lothian, and belonging to the Earl of Haddington, a number of stone-coffins were uncovered, ranged in rows from S. to N., with the heads to the west, and, as far as discovered, covering an extent of ground, measuring in length 54 yards and in breadth 26. They are computed to exceed 500 (6 or 700, Miller), in number. Each coffin lies about two or three inches from the side of the other, with the heads in exact lines, and about two or three feet from each row. They are formed of flat stones, neatly joined together on the sides, and the exact form of our present coffins, and covered on the top with flag-stones: some of

them laid with stones in the bottom, others not. It appears that the stones have been brought from the adjoining sea-shore. [This was also the case with an old cemetery of a similar character in a field at Springfield near Oldhamstocks—Club's Proc. vol. VIII. p. 409]. What were uncovered, were found full of sea-sand—[this has likewise occurred in a small group of empty slab graves in a field at the head of the Old Pease, parish of Cockburnspath],—which being carefully removed, a human skeleton was discovered, lying entire from head to foot. The bones, excepting the skulls, on being taken out, crumbled to dust, but the teeth were in complete preservation, not one wanting, and appeared to have belonged to persons dying in the prime of life. The coffins appear to have been formed exactly to the length of the different bodies; the longest measured 6 ft. 9 ins., the shortest 5 ft. 3 ins. [“4 ft. 4 ins. to more than 6 ft.”—Miller]. The thigh bones are of a great length and thickness, and one jaw-bone was discovered of a prodigious size. It seems certain from the regular positions of the coffins, and the skeletons having the appearance of adults, that they have been deposited in the earth at one time, and after having fallen in battle. In the neighbourhood many single stone-coffins have been found, and sometimes two or three together; several long stones have also been erected, as it is thought, to the memory of some fallen chiefs; which renders it probable that the vicinity has been the scene of sanguinary battles, that are of so ancient a date, as to be either unrecorded in the page of history, or form the dubious tale of tradition.” (“Berwick Advertiser,” October, 23, 1813). Mr Miller adds that “in a park, about half a mile distant, on the farm of Kirkland hill, is one of those rudely sculptured” (query, was it sculptured at all?) “perpendicular stones, which are commonly supposed to mark the scene of contention of an early period.”

I have not brought together here all the known facts about the long East Lothian Slab-graves, which are worthy of greater attention being paid to them. Crania taken from one of them near Dunglass, which contained several skeletons, were pronounced by Professor Rolleston to have belonged to a Teutonic people.

Writers of the date of this discovery had no other theory than that groups of graves beyond the precincts of modern cemeteries were indicative of a battle. But that the Knowes graves were the burial place of a race with peculiar burial customs may be suggested from the occurrence in the ancient burying places of south-west Germany of a similar system of burying the dead in rows, at full length with their heads to the west and their feet to the east, and in slab graves. The German archæologists distinguish in that district, “two kinds of ancient burying-places, one called *Hügel-gräber*, ‘grave mounds;’ and one termed *Reiken-gräber*, ‘grave rows,’ in which last the graves are arranged,

side by side, in long series, the feet of the corpse being commonly turned towards the east. Each skeleton is usually buried in a sarcophagus formed of rough slabs of stone, or in a coffin consisting of a split trunk of a tree, the two halves of which have been hollowed out with axes, and so converted into a sort of rude box for the body. The dates of these burying-places appear to range, on the one hand, not earlier than the period of the Roman rule in these parts, and, on the other hand, as late as the eighth century. The 'grave-rows' are more modern than the 'grave-mounds,' and good reasons are given for ascribing them to the Franks and Alemanni of the Merovingian period, between the fifth and sixth centuries A.D. The associated weapons are, in the main, of iron." (Prof. Huxley in Laing's "Pre-historic Remains of Caithness," p. 106). The crania are a variety of the dolichocephalic. Prof. Huxley goes on to shew that the "grave-row" skulls of south-west Germany are identical with the Hohberg forms in Switzerland of Rüttimeyer and His, and Prof. Ecker demonstrates that it is a type of skull predominant among the present Swedes, and what is called Scandinavian. "Furthermore," adds Prof. Huxley, l. c. p. 129, (as was to be expected from the known relations of the people) there seems to be no character by which the crania of the Anglo-Saxons can be distinguished from those of the Scandinavians." This reference furnishes not only an example of burial in rows, but likewise reveals a possible people who may have practised it here.

In the charters of the property as granted to the Douglasses, lairds of Whittingham, these "Kirk-lands," which have given rise to this digression, are connected with the glebe, they having the rectory and vicarage, as well as the advowson. Originally Whittingham church—the historical church—was the chapel of the lord of the manor. When Dunbar was erected into a collegiate church in 1342, by Patrick, 9th Earl of Dunbar, the dean at the head of the establishment received as his prebend all the tithes and offerings of the parish of Whittingham, where he was to have a vicar. The dean had a right to the kirk lands. On the 17th of August, 1560, William Douglas, laird of Whittingham, obtained a charter of the ecclesiastical lands of Whittingham from Claud Hamilton, then dean of Dunbar, with the consent of the Duke of Chastelherault, his father.

The Whittingham policies were now entered. These are

spacious and well ordered and kept, and furnished with some fine ornamental trees. There are four good Araucarias, two of especial merit, intact by winter frosts; two cedars of Lebanon of different ages and sizes, but neither of them tall; two deodars of considerable size; *Quercus Ilex*, *Fagus incisa*, and *Sorbus Aria*, one of each, and all thriving; *Picea Cephalonica*, a stately tree; a very leafy and well-shaped variegated sycamore, but not very large; a fair bush of weeping holly; and a weeping ash. The attention of visitors is particularly directed to a tall *Eucalyptus viminalis*, whose willowy offshoots ascend from a short thick bole. This tree was cut down by a severe winter in 1860 to six feet from the ground, and its vegetative power remained so long dormant that it was about to be removed, when sprouts appeared, and it has attained its present remarkable growth since. The circumference of the base is 9 feet 1 inch.

The gardens were shewn by Mr Garret, the present skilful gardener. They are very extensive, as well as the range of greenhouses. The business of the Club is principally with flowers, and there is here an opportunity for examining a considerable variety in the herbaceous borders, which have been established for three years' duration. Only a few things can be glanced at, chiefly because they are not everywhere:—*Galega officinalis* (Goat's Rue), white variety; *Erodium Manescavi* (purple Erodium), size of flower that of *Geranium pratense*; double potentillas, some very large flowered; a good plant of *Lychnis vespertina alba flore pleno*, which Mr Garret had raised; *Campanula coroniensis*, a fine dark blue flowered standing-up plant; *Delphinium Cashmerianum* (purple); *Phyteuma Charmelii* (blue); and a large orange sunflower, allied to *Doronicum*. Gooseberries are trained against a north wall, and, being covered with a net, can be kept long into the autumn.

Among the associates of the Geraniums, Pelargoniums, Fuchsias, Coleuses, Begonias, etc., the usual occupants and ornaments of the green and hot houses, the following may be mentioned:—*Dicksonia Antarctica*, tree fern in a pot; *Coprosma Baueriana variegata*, a green and yellowish white-edged foliaged shrub; *Imantophyllum miniatum*, a purple-flowered amaryllis-like plant; a yellow, partially double, large flowered Abutilon—Waverley. In another house are *Tacsonia Van Volxemii*, as a creeper; an excellent double begonia; a fine strain of Amaryllis, having from four to seven flowers on the spike, raised from seedlings,

prize-takers. Then in a house of palms and ferns is an example of the screw pine, *Pandanus orientalis*, of New South Wales; and a fine display on the wall of the pink flowers of *Bougainvillea glabra*, which yields two crops of blossom in the year; "Bird's-Nest Fern" (*Onoclea struthiopteris*); a few orchids; *Diplosdeum Bolivianum*, in flower; two rather curious Crotons, one with odd-shaped leaves, "D'Israeli," is new; *Lomaria gibba* (fern); *Ixorea Javanica*, a well-known showy old plant, with a brickly-scarlet blossom. There are some good Todeas, which here stand 20 deg. of frost under a frame; *Davallia Novæ Zelandiæ* (rare), and *Goniophlebium appendiculatum*, of the early polypody tribe, being their accompaniments.

At the western end of the garden are preserved two fine gate pillars (of reddish sandstone) of the early part of the 18th century, and of Italian model, which formed the former entry to the grounds of the old mansion. Passing onwards again to the grounds, we have the tower of the old castle in front, the immense yew tree under which the conspiracy for the murder of Darnley is reputed to have been discussed by the conspirators, and on the left the ancient church-yard and site of the parish church. On this open space stands a monument to the Hays of Drummelzier and Linplum and a memorial cross for deceased members of the Balfour family. Two long slab graves, discovered in the Standing-stone field at Cairndinnis, near Traprain Law, have been replaced here in the original form; their dimensions are 9 feet by 4. The great yew on a slight rise nearly in front of the castle had till recently much decayed wood in it, but has improved greatly since this was excised. It has still a clear top, but the under branches have fallen down, like those of the great beech at Newbattle Abbey, and spread their skirts widely round, and have rooted and continue to nourish the parent tree, and keep it in a growing condition. The stem at 3 feet up is 10 feet 9 inches; at 5 feet, 11 feet in girth; and then it separates into a multitude of intertwisting and intergrafted shoots. The diameter of the free space in the inside is 40 feet 6 inches; the circumference of the tree outside, 99 yards.

There is no record of the building of the tower; the shield over the doorway is very puzzling; its quarterings are; two stars or mullets in the first and second, which may represent Douglas of Whittingham; a cinquefoil in the third; and a boar's head erased in the fourth. It must be left for further inquiry. The

tower is ascended by a turnpike stair. Dunbar and the adjoining coast can always be seen in a clear day; and the mansion-house stands exactly opposite. The ceiling of one of the rooms is ornamented with stucco work in compartments. From the fat-faced cherubs in some of these it was reckoned not to be older than seventeenth or eighteenth century. The apartment on the ground floor was omitted to be shown. The old bowling green at the base is now the washing green; the kennels are beyond.

The company then crossed by the gentle-flowing rivulet called the Papaná, winding through a green haugh, which shewed, before the grass was cut, a wealth of white ox-eye daisies, yellow buttercups, and common daisies in endless numbers; and great variety of paniced and spiked headed grasses. *Ranunculus auricomus* is one of the wild flowers on the banks; and the lower stems of the older trees are decorated with the golden hues of the lichen, *Calicium hyperellum*.

The house is very extensive both in length and breadth, built in the Grecian style, which permits of ample space in the apartments, and every convenience for cabinet collections or assemblages of objects of taste. The stone employed is a fine white sand-stone. The Club were kindly invited to partake of refreshments, and then Miss Balfour shewed her late brother's museum of fossils and birds, where he had made his earliest essays in science; and her own collection of Lepidoptera, which is very fine, well preserved, carefully set out, and sprinkled with rarities, having this further to recommend it that the specimens are mostly representatives of the East Lothian fauna. The birds also contain some scarce species, and are chiefly local. The greater-spotted woodpecker, a hoopoe, the water rail, a peregrine falcon, and several shore birds were noted. There was also a botanical cabinet, which there was no time to look into.

The visitors were also favoured with a sight of the public rooms, the family portraits, and valuable paintings, and the richly-stocked library of books, several of them with exquisite bindings.

Once more outside, it was remarked that the holly hedges thrive exceedingly well here. There is not the same degree of frost in winter here as is experienced on the Tyne, to the great destruction of the evergreens.

The drive to Stenton was uneventful. Ruchlaw house was passed on the left. Turning up towards Presmennan, another

steep ascent had to be encountered. The Corn-bunting, now rather a scarce bird, was here heard trilling its monotonous song on a wall top; for stone dykes had now taken the place of hedges. The carriages halted at the farm-house. After examining the two fine Spanish chestnuts and some stately oaks, the company descended to the shores of the lake, which very much resembles a placid broad river winding between high woodland slopes. The higher southern bank, with its oaken coppice, much reminded several of the Pease Dean woods, where the oak is such a predominant feature. A few glimpses were taken of successive reaches; but there was no leisure to see anything like the whole. Cow-wheat (*Melampyrum pratense*) was common. *Carex paniculata* was noticed. It is frequented by a rarish beetle here, *Cercus pedicularius*. Near the lower end of the lake, *Calamintha clinopodium* (wild Basil), and *Scutellaria galericulata* (common skull-cap) grow; and the Spindle-tree (*Euonymus Europæus*) and the Bird-Cherry (*Prunus Padus*) are wild in the woods. By the shores of the lake, the Bull-rush, the Club-mace, and the Sweet-Sedge have been planted. Capt. Norman reports that recently along with Mr Evans he obtained *Potamogeton compressus*, and *Anacharis alsinastrum*, amongst the water-weeds; and saw a close green growth at the bottom of either a submerged state of *Littorela lacustris*, or *Subularia aquatica*, uncertain which for want of the flowers. It is the same thing that occurs at Cauldshiels Loch, and in some of the deep moss pools on Coldingham moors; in both these instances associated with *Littorella* on the shore line. In regard to the Coleoptera on one visit I obtained among the swamps, *Tachyusa flavitarsis*, *Myllæna dubia*, *Quedius peltatus*, and *Q. umbrinus*, Er; and Mr Hepburn obtained *Endomychus coccineus* and *Polydrusus undatus*. Mr Hepburn found *Leistus rufescens*, Fab., plentiful on oak and birch; not *L. spinilabris*, as Mr Murray credits him with, for that is got under stones. In those days, Mr Robert Logan, Dr James Howden, now of Montrose, and I sometimes met at Mr Hepburn's for entomological research. Subsequent to that in 1850, Mr Logan paid a visit to Whittingham alone. He furnished me with a copy of the results, in a newspaper slip, as he had reported them to the Royal Physical Society of Edinburgh. The following extract is to our purpose at present.

On the evening of his arrival, May 31st, Mr Logan "in company with Mr Hepburn, found *Emmelesia albularia* and *Phoxopteryx Lundana* in profusion

in the haughs of the Whittingham water, among *Petasites vulgaris*, etc., where they also found a single specimen of the singular *Elachista testaceella*, and one of the new species of *Eupithecia* which Mr Doubleday has named *palustraria*. On the following day, June 1st, they visited Presmennan copse, and Deuchrie Dod wood, on the side of the Lammermoors, and in this fine old ground, found the beautiful *Lithocolletes spinolella* not scarce in some dwarf salallows, along with *Grapholita campoliliana*, and one specimen of *Tinea bistrigella*. *Phæodes frutetana* was abundant in the birches, and *Tortrix ministrana*, *Ephippiphora scutulana*, *Nematopogon Panzerella*, *Adela viridella*, etc., etc., occasional among the underwood."

I understand that some of the rare or critical species that Mr Logan obtained at Presmennan among the *Microlepidoptera* are not yet wrought out.

Only a few water-hens and coots were observed on the lake, on the day of the Club's visit, the broods of ducks not being visible.

After a view of the lower section of the lake from the farm garden, and an examination of two very large sweet Bays (*Laurus nobilis*) which have escaped the frosts, the company returned to Stenton to inspect the admirably-carven granite monument to the Right Hon. R. C. Nisbet Hamilton; the Belhaven aisle, the old stone font of Stenton pre-Reformation Church; and the well-finished interior of the new church. The Rood Well, the property of the Duke of Roxburghe, was pried into, and its water pronounced to be none of the purest.

Biel has many attractions to the Club. In the interior is a treasury of art and taste, every room shewing perfection of decoration and arrangement; out of doors there is a triumph of the bedding-out system of floral ornamentation, combined with a perennial border; and the dark-hued conifers, singly disposed upon a smooth tender-hued grassy lawn, are pictures in themselves.

More rooms were open on this occasion than when the Club last visited Biel House, and a new erection, a chapel, has since then been attached to the western end. The pictures and other objects of interest have been previously described in the Club's annals. The visitors were charmed with what they saw; to most of them everything was new. The Rev. George Marjoribanks, of Stenton, pointed out what was most worthy of attention amidst so much that was exquisite. Refreshments were here again presented. The lengthened drive, ornamented with lines of yew trees, between the house and the post road, was much admired. On the return to Linton, the carriages passed within

view of Ninewar, Kirkland Hill, Knowes and Phantassie. The whole excursion was one of great enjoyment.

Twenty-five dined in Mr Smellie's public room, East Linton—Dr F. Douglas, Kelso, in the chair, and Dr Stuart, Chirnside, and Mr John Hood, Oldcambus Townhead, officiated as croupiers. In addition to the usual toasts, the health of the chairman was proposed by Mr Turnbull of Abbey St Bathans, the day of meeting being the anniversary of the fiftieth year since Dr Douglas joined the Club, at the head of whose membership he now stands, and so worthily represents as senior secretary. The health was drunk with all the honours, and was acknowledged by Dr Douglas in brief but well chosen terms.

Captain C. Lisle Cookson, Berrywell, Duns; Mr David W. B. Tait, W.S., Edenside, Kelso; and Mr John Storie, East Linton, were nominated for membership.

Notices of the papers received and of the objects exhibited were then given.

1. *On Whittingham and its Owners.* By James Hardy.—The facts embodied in this paper were:—From George, Earl of Dunbar, Whittingham passed by the marriage of his sister Agnes, daughter of Earl Patrick and the celebrated "Black Agnes" Randolph—to James Douglas of Dalkeith. Their charter is dated 21st Nov., 1372, and was confirmed by Robert II. James, second Lord Dalkeith, had a charter of Whittingham in 1439. For his second wife he had Janet, daughter of Sir William Borthwick of that ilk; and got from James II. another charter of Whittingham, to him and his spouse and their heirs, 13th Oct., 1441. Their son, Sir William Douglas, was the first of the Douglasses, lairds of Whittingham. Both the Earls of Morton and the lairds continue, in a manner not explained, perhaps as baron and feudal tenant, to hold Whittingham. James, third Earl of Morton, got charters in 1541 and 1543 from James V. of Whittingham and other lands. He died without male issue, and the descent passed to collateral branches. In Oct., 1562, Queen Mary granted to James, Earl of Morton (afterwards Regent Morton), the representative of the Douglasses of Dalkeith, all his estates, with the barony of Whittingham, with the *castle* (which shews its existence then) and mills, and the advowson of the church; and the grant, which was neither owing to his merits nor demerits, but his rightful claim, as a renewal in conveyance, was ratified by Parliament, 19th April, 1567. In Morton's time, the laird and occupant of the mansion or castle was William Douglas, one of the heirs of entail to the earldom of Morton. William Douglas joined the Lords of the Congregation, was a man of great business capacity, and a leading elder in the Reformed Church of Scotland. He was implicated in the slaughter of Rizzio, but was pardoned 24th Sept., 1567. He was appointed a senator of the College of Justice, and resigned previous to Aug. 1st, 1590 and was

M.P. for the constabulary of Haddington 1605-6. He was succeeded in office by his son, Sir Archibald Douglas of Whittingham, a favourite of James VI., whom he accompanied to Denmark. He resigned his seat on the Bench in May, 1618. He sat in several Parliaments. He obtained a Crown charter of the lands of Whittingham of date 3rd July, 1616, which was ratified in Parliament, July, 1621. His son, Archibald, died 28th Nov. 1660, leaving his sister, Elizabeth, Viscountess Kingston, his heir. She had been married to Sir Alex. Seton, second son of George, second Earl of Winton, a steady friend of Charles I. By her he had two sons and one daughter. His sons, Archibald and James, successive viscounts, died without issue, and the honours became extinct. The estate devolved on Elizabeth Seton, the daughter of the first Viscount, who had married William, only son of John Hay, eighth Lord Yester and first Earl of Tweeddale, by his second marriage with Lady Margaret Montgomery, daughter of Alexander, Earl of Eglinton, for whom he purchased the lands of Drummelzier in Peeblesshire. He was succeeded by Alexander Hay, Esq., and he again by Robert Hay, Esq., who was for 38 years in the East India Company's service. His eldest son, the late William Hay, Esq., of Duns Castle, sold the estate of Whittingham in 1817 to James Balfour, Esq., second son of John Balfour, Esq., of Balbirnie, co. Fife, who died in April, 1845. His son James Maitland Balfour, Esq., was father of the present owner, Arthur James Balfour, Esq., M.P.—a nephew of the Marquis of Salisbury—whose mental and political abilities are acknowledged by all parties. His third son, Francis Maitland Balfour, Professor of Morphology in Cambridge University, was cut off, in the outset of a most promising scientific career, by an accident on the Alps.

2. *Bibliographical List of the Books and Pamphlets printed at Alnwick, with Biographical Notices of the Authors and Printers.* By George Skelly, Alnwick.—The main interest of this paper lay in its classifying the publications of Mr William Davison, printer and publisher, Alnwick, many of which were illustrated with the cuts of Thomas Bewick and his disciples; and also by the list of topographical prints and engravings which this enterprising publisher had issued, which are now much valued by collectors.

3. *On a Funeral Slab found at Alnwick Abbey.*—Mr W. T. Hindmarsh made some observations on a photograph, which was handed round, of the monumental sculptured grave-cover recently discovered within the precincts of Alnwick Abbey, in which he had a share in eliciting the proper reading of the name, and the Latin hexameters of the inscription, which is, "Hac iacet in meta vivat redimita q: leta † obruta loreta de botry per fera leta," that is to say, "Loreta de Botry overthrown by cruel death lies in this grave, may she live and have a crown of joy."

Lora or Loretta del Butterie or Boterie has already been commemorated in the Club's "Proceedings," vol. viii. p. 242 (in Mr Tate's History of Alnmouth, parish of Lesbury), there misprinted "Boteric." Raine's History of North Durham, pp. 182-5, contains her pedigree and all that is known concerning her and her descendants. She was the eldest daughter

of Galfrid de Goswyck, one of the ancient owners of Goswick in Islandshire, who died in 1333, when his daughter Lora or Loretta de Goswick was 15 years old. She married an inhabitant of Alnmouth, surnamed Butterie, and died in 1396. In the *Inquisitio post Mortem*, she is termed Loretta del Butterie of Alnemouth. She was possessed of lands in Framlington, for on 15 Jan., 9 Ric. II. (1385-6) Loreta del Boterie de Alnemouth granted to John de Warton all her lands in Framlington. She lived in the reign of Edward II., Edward III., and Richard II., and outlived the second and third Henry Percies, barons of Alnwick, who were both buried in Alnwick Abbey; and she was alive when the battle of Otterburn (1387), was stricken, and Sir Henry Percy (Hotspur), was "lede awaye into captivity." The Lady Mary Plantagenet, daughter of the Earl of Lancaster, and Baroness Percy, had been buried in Alnwick Abbey, four years before the remains of Loreta de Boterie were deposited there. It is evident that Loreta when alive was a personage of wealth and consequence, and after her decease well thought of by survivors, in whatever rank she moved. Alianora her daughter and heir was of full age 1396, and died 6 July, 4 Henry VI. (1425). Two days before her death she infeted Edward Manners in 180 acres of land in the vill of Goswyk. Her husband John de Midelham died before 1412; and their son Thomas died before 1433. Her grandson John was of full age in 1433. The male descent continued till the reign of Elizabeth (see Club's Proc. ubi sup.) Anne the heiress, not Agnes as Mr Tate calls her (who was two years old in 1597), of the Middlehams of Ailmouth, married 1. William Swinhoe of Goswick, and through her of Alnmouth, who died 5th Nov. 1607, and by whom she had four daughters, co-heiresses; see Raine pp. 185, 158. And 2. Ephraim, 2nd son of Francis Armorer of Belford, Esq., who had lands in Cornhill. They had two children, Ephraim aged one year in 1615, and Margaret, (Raine, p. 183. Dickson, Ber. Nat. Club's Proc. IV. pp. 23, 24.) Ephraim Armorer of Alemonth, gentleman, appears in the county-rate book of 1628, and in the "Survey" of the fishings in 1649. Two of the daughters of William Swinhoe of Goswick and Alnmouth were married, but nothing is heard of them after 1638. Dr Bruce, in the *Archæologia Æliana*, vol. X., *n. s.*, pp. 193, 194, has given a notice of this discovery to accompany a plate of the Slab. He has not, however, told anything about the lady who was so honourably commemorated. Mr Skelly was, I believe, the first to detect the connection between the inscription and Loreta de Botry.

4. *Fagus incisa*, with foliage of *Fagus sylvatica*.—This had been sent by the Rev. W. I. Meggison from South Charlton Vicarage; *F. incisa* was the tree, and it had sported leaves of *F. sylvatica*. It was suggested that the former had been grafted on a common beech stock; and Mr John Boyd mentioned that this was the common practice.

5. *Portion of a Human Cranium found near Dunbar*.—This was an under human jaw of very powerful frame, with the teeth all perfect, and the frontals markedly projecting above the rest. It was forwarded by Mr P. H. Hume, who stated that it had recently been discovered in digging a foundation for a wall which is to be raised on the town of Dunbar's pro-

perty near Mrs Filleul's boarding house, Queen's Road. No reason could be assigned for its occurrence there.

6. *Capture of the Small Spotted Dog-Fish* (*Squalus canicula*) *on the Coast of Berwickshire*.—A specimen of this shark was got in a salmon net at Redheugh, 18th July, 1884. It was 26½ inches long, and weighed 2 lb. 6 oz. It is scarce at Berwick and in the Firth of Forth, where it has been caught occasionally in salmon nets at Queensferry. It is common in Cornwall where it is called Morgay and Rough Hound. Of its skin shagreen was wont to be prepared. Its curious egg was exhibited. It is oblong, honey coloured, pellucid, terminated at the corners with very long slender filaments, by which it is attached to sea-weeds and corallines.

7. *Redshank Sandpiper* (*Totanus Calidris*) *from Rawburn in the Lammermoors*.—This was a bird in the plumage of the first year which had been observed in August, 1882, by Mr Wilson, now of Wellnage, Duns, frequenting the side of a pond in company with a lapwing. It was afterwards shot by the gamekeeper, and the skin was preserved. It had probably lost its way during the autumnal migration, and joined the lapwing for company.

8. *Examples of the Porphyries of the District*.—A very good collection of specimens of the porphyries, agates, &c., of the neighbourhood of Linton was exhibited by Mr Laing and other friends in the town. A fine specimen of selenite, or pure sulphate of lime, from Mr Sharp, the landlord, had been found fifty years ago at the bottom of a pump-well at Whitsome Hill, Berwickshire. The porphyries can be dressed into excellent building stones, of which there are good examples, with sandstone lintels, in the range of houses at the east end of Linton Bridge. Some of the harder stones (for they vary greatly in this respect) take a good polish, and can be formed into ornamental slabs: in a rougher state they can be dressed into durable door steps. The clinkstone porphyry of Traprain is broken for road metal.

Both Dr Stuart, Chirnside, and Mr Muirhead, Paxton, brought collections of rare flowers then in bloom in their gardens. *Iris Kæmpferi* and *Mecanopsis Wallichi* were much admired.

Those present at this meeting were—Dr F. Douglas and Mr J. Hardy, Secretaries; Captain Forbes, R. N., Berwick; Revs. Canon Ilderton of Ilderton; P. G. M'Douall, Cosgrove Rectory, Stony Stratford; Geo. Marjoribanks, Stenton; Thomas S. Marjoribanks, Prestonkirk; Robert Nimmo Smith, Haddington; William Snodgrass, D.D., Canonbie; Beverley Wilson, Duddo; R. H. Williamson, Whickham; Drs Charles Douglas, Kelso; Charles Stuart, Chirnside; Messrs George Bird, Edinburgh; J. B. Boyd of Cherrytrees; William Crawford, Duns; Thomas Darling, Berwick; Mr Fraser, Stenton; W. T. Hindmarsh, Alnbank, Aluwick; John Hood, Townhead; Mr Kennedy, Edin-

burgh; Mr Laing, East Linton; George Muirhead, Paxton; John Storie, East Linton; Richard Stephenson, Duns; John Turnbull of Abbey St. Bathans; John Turnbull, Selkirk; Thos. Turnbull, Lilliesleaf; and Matthew Young, Berwick.

The Rev. Thomas S. Marjoribanks has, at Prestonkirk, a very varied collection of conifers, not very old, but growing vigorously. This was visited by members after dinner, who also had the pleasure of seeing his collection of roses, and well-stocked borders. In the manse are some good family portraits of his ancestry, the Marjoribanks of Ratho. The church, which has been renovated and rendered every way becoming in the interior, came in for a share of attention.

In a former visit of the Club to Prestonkirk an amusing mistake occurred, a grotesque sculpture built up into the outer church-wall, being taken for a portion of the pseudo-effigy of St Baldred, that lay long in the churchyard, after being turned outside during some alterations, and was at length smashed by a mason. This *alter ego*, it may be remarked was also a misnomer, and had no title to be called "Baldred's Statue." James Miller comes nearer the truth: "An old intelligent carpenter told me, that this statue was similar to the one now lying in Tynningham church. It was called St Baudron's, but was supposed to be the figure of some one who had left large endowments for ecclesiastical purposes." (Notes to St. Baldred, p. 86). I would rather say that it was the funeral slab of some ancient knight or landowner interred within the church. He was not necessarily a benefactor, as any local magnate, could claim this distinction.

SELKIRK FOR ETRICK.

The fourth meeting of the year was held at Selkirk on Wednesday 27th August. The Club had only twice before met at this station, on neither of which occasions was the famous vale of Ettrick explored; so the gathering, to whom new and interesting ground was promised, was a numerous one, local members mustering in force.

I may premise that as Mr Hardy is contributing a separate paper on the Ettrick to the Proceedings, my own Report of the day's doings need be but in outline.

At 10 min. past 9, our conveyances left Hogg's Railway Hotel, the weather being fine, as, indeed, it fortunately was throughout

the day. We chose the route through the battle field of Philiphaugh (see Proceedings for 1882, p. 57, and for 1876, p. 43) and across the Yarrow and the Ettrick over Collins' Bridge, through the Bowhill Grounds, thus reaching the road on the right bank of the river. Philiphaugh House, which is not ancient, is a combination of the Scotch-baronial and Italian styles. Not far from it was pointed out to us Carterhaugh, the scene of the celebrated Football match, which took place on the 4th December, 1815, between the Sutors or Souters of Selkirk and the men of Yarrow, at which was present among other notables "Mr Walter Scott, Sheriff of Selkirkshire" (for particulars see Lockhart's "Life," p. 327, and "Border Minstrelsy," p. 78.) Near it, a field remarkably full of common Ragwort (*Senecio Jacobæa*) elicited from an agriculturist of the party the remark that cattle had evidently grazed that field; for sheep being very fond of the plant, would have kept it nibbled close down.

The Scotch and local names of this plant, besides *Ragwort*, are *Yellow-weed*; *Yellow* or *Stinking Elshinders*; and in the Merse, *Fizz-giggs*.* The genus *Senecio*, represented in this country by the well known groundsel and ragworts only, is perhaps the most extensive in point of species in the Vegetable Kingdom. Nearly 600 different kinds are known to botanists, which are spread over all parts of the globe, but found in the greatest profusion in temperate climates. The name of the genus is taken from the Latin *senex*, in allusion to the white pappus hairs which crown the achenes.

Oakwood Tower, "home of Michael Scott, Wizard," next engaged our attention, but we took more interest, perhaps, in a distant view of Howebottom, the scene of an interesting experiment by the late Duke of Buccleuch, about which the Revd. James Farquharson supplied a paper to Proceedings for 1878, p. 473. Howebottom used to be a bare and treeless hill-pasturage, all of which since 1829 has been "hained," left to itself, preserved from either being cut down or pastured. As to what it is now, Mr Farquharson's paper supplies full details, from which it disappoints one to learn that the native oak has not made its appearance. That it was indigenous in Selkirkshire we have abundant documentary, as well as ocular demonstration; in fact as we drove along, Fauldshope Oaks were pointed out

* Dr Johnston.

to us, a stunted relic of the original forest, on the slopes of the hill of that name. In the neighbourhood the Witch of Fauldshope lived, and on its summit is a cairn erected in honour of one of the Dukes of Buccleuch having attained his majority.

Many hundreds of golden plovers with a few green in company were seen in a flattish meadow on our left.

Having passed the Catslack and crossed Ettrick Bridge, we had our attention directed to Kirkhope Tower, an old Peel, but dating back to the 12th century; to Kirkhope Linns, a deep gorge below the Manse, where salmon do love to congregate; to some particularly fine old Scotch firs on the crest of the hill above the Manse; and that a mile above the Linn, the river takes the odd shape of a double horse shoe.

About a couple of miles above the Linn, we passed amid a fine show of natural wood, such as Rowan, Thorn, Ash, Alders and Birch. There was also plenty of indigenous Hazel, which, we were told, fruits fairly well, much to the delectation of school excursionists.

A spot in the river below the farm house of *Singlie*, nine miles from Selkirk, was visible from the road. A melancholy interest attaches to it, as 4 young ladies, 2 of them being visitors, were drowned there in 1800, while bathing.

The geological formation of the district through which we were driving was entirely Greywacke of the Lower Silurian series. Every where ancient "high water marks," were evident in the vicinity of the river—indeed the Estuary of the Tweed is supposed to have at one time been situated where Ettrick Bridge at present stands, which is not at all unlikely, as it is indisputable that the sea formerly covered the valleys of the Tweed and its tributaries, and the evidences of its action and of the rivers having cut their way gradually down to the present level are abundant and clear. In the river-bed we saw many good specimens of Kaims, or Kaim-like ridges, which, there, (whatever may be thought about them in other localities,) were clearly formed by the action of the river scooping out hollows and leaving the ridges in its detrital bed.

Leaving our carriages we rambled up the hill side to see the remains of Tushielaw Tower and the famous "Hanging Tree," an old Ash, but in good preservation, with its ancient branches still intact, and of most convenient form and situation for the

uses to which they were put by Adam Scott of Tushielaw, who was beheaded in Edinburgh in 1530 [see "Pitcairn's Criminal Trials"; "Chambers' Gazetteer of Scotland."]

The scenery, as we drove up the valley, was that of a retired hill district, hill pasturage the main feature, with wood enough to give contrast. Here and there the devastating influences of some of the great gales were still visible in trees lying prostrate where they could be ill spared. In many of the woods and plantations of the Lowlands, however, "thinning out" has been so much neglected, that the effects of a violent storm, if the fine old trees escape, are rather beneficial than otherwise.

We reached Ettrick Church at a quarter before one, inspected the monuments of notable persons; Boston; Hogg; Will o' Phaup; Tibbie Shiel; etc., in the well kept churchyard; noticed that about the oldest thing to be seen was a monumental stone built in to the wall of the church, inscribed

S
R S MEMENTO MORI
 . 1619;

read with interest an inscription on a tombstone recording the fact that two persons named Beattie, father and son, had held the post of schoolmaster for 102 years consecutively; passed on to the manse to inspect some articles laid out for us; and, retracing our steps for a short distance, we reached Thirlestane Castle, whose gates we had driven past on our way to the Church. Lord Napier and Ettrick, Lady Napier, and the Hon. Mark Napier [well known as Arabi's counsel] kindly received and hospitably entertained us to a sumptuous luncheon, at the conclusion of which, the President, in suitable terms, proposed the health of the noble host and hostess, and expressed the warm thanks of the Club for their kindness. Lord Napier replied in a genial, interesting and amusing speech. The rest of the short time at our disposal was spent in viewing the garden and grounds, and in a necessarily too brief examination of the many objects of interest which our distinguished host had prepared for our inspection, a description of which, I shall leave to Mr Hardy's flowing pen. I will not, however, omit to note that among them was an original sketch of the farm and grounds of Abbotsford by Scott's own hand.

Thirlestane Castle is modern. It is 870 feet above the sea, and is situated close to the remains of Thirlestane Tower, a large

double Peel. The grounds are well wooded, and in beautiful order, but there are no old, or large, or notable trees—all having been planted not more than 60 or 70 years ago. In the garden two fine beds of *Hyacinthus candicans* attracted attention. The origin of the name Thirle-stane, has reference to the ancient custom of 'thirlage' or jurisdiction attached to a particular mill to which all tenants were bound to bring their grain to be ground. Our drive back was devoid of particular interest, but all were delighted with the beauty of the scenery, which was altogether much greener, and less rugged than most of us, who were strangers to the district, had expected. On many of the hill sides was a glorious flush of heather.

Dinner took place at the County Hotel at five o'clock, the President in the chair, to which forty-four members and their friends did justice.

Among the local members who joined the excursion, were the Rev. J. Farquharson, ex-President; Dr H. S. Anderson; Dr Anderson of Shaws; Messrs J. B. Brown, Thos. Craig-Brown, John Turnbull, Michael Muir, and Sheriff Spittal as a guest. Mr T. Craig-Brown very kindly and opportunely supplemented the rather too limited conveyance accommodation, by sending his own carriage for the use of the party.

NEWCASTLE-ON-TYNE.

The fifth meeting took place at Newcastle-on-Tyne on Wednesday 24th September, when the President and Secretaries, accompanied by above 30 members, assembled in the hall of the Museum, Barras Bridge, at 10 o'clock, where they were received and formally welcomed by Dr Philipson, president of the Tyne-side Naturalists' Club, Mr Richard Howse, curator of the museum, and other officials, with several members of the Antiquarian Society. The scientific and learned Societies in Newcastle who extended their welcome to us were :

1. The Literary and Philosophical Society of Newcastle, formed January 24th 1793.

2. The Society of Antiquaries of Newcastle-upon-Tyne, founded in 1813. President the Right Hon. the Earl of Ravensworth.

3. The Natural History Society of Northumberland, Durham, and Newcastle, founded in 1828. President, the Bishop of Durham. The Museum belongs to this Society, and it publishes

Transactions in combination with the Tyneside Naturalists' Field Club.

4. The Tyneside Naturalists' Field Club. Membership upwards of 600.

Our Secretary, Mr Hardy, was one of its first members and was present at its institution on the 15th April, in 1846. Several of our members are connected with all four institutions.

THE MUSEUM.

The project of erecting a new building for the large collection of the Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, originated with Mr John Hancock, and has been carried out under his direction.

The Society is also indebted to him for the splendid collection of British and other birds formed by himself, and presented by him to the Museum. The setting up of these birds is the work of his own hands, and whether they be regarded in a scientific or an artistic point of view, they are equally unrivalled.

The Society has also received, from time to time, various important gifts which render its collections in other branches of natural history exceedingly complete. The geological department is remarkably rich in the fossils of the Coal-measures, and of the adjacent formations, and it is especially distinguished by a unique collection of coal-measure fishes and *amphibia*, worked out of the black shale of the Low Main seam of this district with great skill and discrimination by the late Mr Thomas Atthey. This valuable collection was secured and presented to the Society by Lady Armstrong.

The Society has also been presented with a valuable collection of original drawings by Thomas Bewick, the celebrated wood engraver, who was a native of this district; also of original portraits of this artist, and a fine series of early impressions from his blocks. These have been presented to the Society by J. W. Barnes, Esq., and Joseph Crawhall, Esq., the executors of his last surviving daughter, Miss Isabella Bewick, under a power contained in her will. These Bewick relics are arranged in the gallery of the first room. The large room over the entrance hall is designed for a Library of Works on Natural History; and a considerable number of books on this subject have already been bequeathed to the Society.

The New Building, when furnished, will cost £42,000. Of

this sum about £38,000 has been raised by public subscription, the greater part of which has been contributed by the personal friends of Mr Hancock.

Important and unique collections of Minerals and Fossils from the Coal-measures and other formations have been contributed by Sir W. G. Armstrong, C B., Lady Armstrong, Norman Cookson, Esq., and the Committee of the Mining Institute. Mr James Kirkby presented an extensive collection of fossils from the Magnesian-limestone of the district, and of fossils from the Carboniferous rocks of Fife. Fine collections of fossils have also been given to the Society from the Secondary and Tertiary formations by M. R. Pryor, Esq., and Dr Dew-Smith, of Cambridge. Mr Hancock has also presented a large collection of eggs and nests of British and Foreign Birds; and Mrs Laws contributed a collection of eggs and nests made by the late John Laws, of Breckney Hill, a pupil of Thomas Bewick.

The Museum contains, likewise, the Entomological collections of Mr John T. Bold, rich in types of rare species, and in some orders fully illustrative of the insect fauna of the district; also the botanical collections of Mr Winch and other local botanists of note. Conchology and Zoophytology have been brought up to the present state of science.

H.R.H. the Prince of Wales formally opened the Museum on the occasion of his visit to Newcastle, 20th August, 1884.

Under guidance of the heads of departments, our members carried out a tour of inspection of the splendid Museum, and its valuable and beautifully arranged contents, which excited our admiration. Of a collection so extensive, so varied, so interesting, I shall not be expected, nor shall I attempt to give a detailed account. The arrangements are not yet fully carried out, but under Mr Howse's careful and hard-working supervision, a state of order is gradually extending itself; and we were struck, not only with the character and completeness which the Museum has already reached as a whole, but with the facilities which are available for students of special branches.

As might be expected, the specimens of the Carboniferous Series are valuable and abundant.

Perhaps Ornithology is more strongly represented than any other branch, the specimens of birds being very numerous, beautifully set up, and in capital order.

Among the miscellanea, our attention was arrested by a block

or slab of red pine or cedar, about 3 feet by 2 feet, and 3 or 4 inches thick, which was perforated over the whole extent of its surface on one side with deep circular holes or pits, nearly an inch in diameter, at the bottom of many of which was seen an acorn, or the remains of one. The general appearance of the piece of wood, which had been accidentally recovered from a marine store dealer's, was that of one at which the *Teredo navalis* had been at work. It is known, however, that the holes were made by the Red-headed Woodpecker (*Melanerpes*) of North America.

I learn through a gentleman who has seen red pines in California nearly covered with holes, that the acorns that are found in them are generally inhabited by maggots. The interesting question is suggested, whether the acorns are deposited in the holes by the birds simply to be kept till wanted, or for the purpose of breeding maggots. Woodpeckers subsist on acorns and nuts as well as on insects and larvæ, *Melanerpes* being the most frugivorous genus of any.

After spending more than two hours in the Museum, members again assembled in the Hall, where a vote of thanks to Dr Philipson, and to the other officials and authorities who had so kindly received us and conducted us through the Museum, was moved by the President, and heartily accorded.

A move was then made for Jesmond Dene under the guidance of our member Mr C. M. Adamson. Passing under the splendid iron bridge erected by Sir W. Armstrong, we walked up the Dene, which has been beautifully and tastefully planted with trees and shrubs, flowers and heaths. The plan of planting in masses has been generally and very effectively adhered to. The Dene is traversed by a burn or stream of varying width and depth, which is inhabited by many beautiful ducks of different species, for whom, however, we wished a purer and clearer water than that of the much polluted burn. Sir William having been good enough to send special permission through Mr Adamson, we proceeded to inspect the Banqueting Hall, with its fine paintings.

After that, Sir William's own private residence, with its beautifully kept garden, lawns, glass-houses, and ferneries, in the latter of which a large and luxuriant *Selaginella (caesium arboreum)* and a splendid growth of *Trichomanes radicans* delighted us.

In the Dene our attention was directed to a fine example of the cut-leaved beech, on which were displayed numbers of forms of the leaf in course of reversion to the original type, which in some instances had been completely attained, a few branchlets displaying without variation the normal oblong-ovate entire or obscurely toothed leaves of *Fagus sylvatica*.

On leaving, the party divided into two sections, the President, Messrs. Hardy, Muirhead, Hindmarsh, and George Bolam, accompanying Mr Adamson to his cottage, Upper Jesmond, after viewing Capt. Noble's residence, Crag Hall, at the upper end of the Dene, to see his splendid collection of Burmese Lepidoptera, collected and sent home by his son, and set up by himself; as well as to inspect his collection of British Birds, which, though not very numerous are perhaps, in the way in which they are preserved and set up, as near perfection as possible, the life-like appearance, attitudes, and peculiarities of the specimens, having been secured and retained with a remarkable degree of fidelity and success. Mr Adamson is well known as an observer and delineator of bird life, about which he has printed some clever "Studies." He also showed some apples from his garden which had been battered in a remarkable way by a severe hailstorm.

The more numerous party returned to Newcastle, and under the guidance of our co-member, Mr Lyall, Librarian of the Literary and Philosophical Society, who pointed out and explained the various objects of interest, made a survey of the Castle and its adjuncts, and inspected the Museum of the Antiquarian Society, which had been opened for the occasion to the Club. To Mr Lyall for this attention, and for making arrangements for holding the meeting, the Club is greatly indebted.

Dinner took place at the Royal Turf Hotel, at 5 o'clock. Twenty six members sat down. After dinner, while proposing "Success to the Berwickshire Naturalists' Club," the President observed that though this was their first visit to Newcastle as a Club, it must not be supposed that Newcastle was devoid of interest. On the contrary, as they had seen, lines of interest intersected and radiated from it in all directions. But it was rather distantly and inconveniently situated for a large number of members.

Several new members were proposed, and cordial votes of thanks were proposed to Sir William Armstrong; to Mr Lyall; to Mr C. H. Adamson, for his trouble and hospitality; and to

the officials of the various Institutions, who had so kindly received us, and facilitated our progress during the day.

The President being obliged to leave early, the Chair was taken by Dr F. Douglas, and Mr Dixon read his paper on a British Urn found near Screnwood, Northumberland.

Then part of the company adjourned to the Library of the Literary and Philosophical Society, the oldest in the city, where they viewed the Lecture and Reading Rooms, and where Mr Lyall gave explanations, and exhibited some of the rarest books.

In the evening, a few members attended by invitation a meeting of the Newcastle Antiquarian Society, when Dr Bruce read an interesting Paper on the Roman Station at South Shields, for which Mr W. T. Hindmarsh thanked him on behalf of our Club, and Dr Bruce genially replied, remarking he should be always glad to welcome our Members among them.

The following is a List of the more valuable contents of the Natural History Museum.—

1. John Hancock's Collections : British Birds, Eggs, and Skeletons.
 2. Albany Hancock's Collection of Ascidiæ and Clionæ. His drawings of Nudibranchs are also here.
 3. Alder's Collection of Zoophytes, British Shells, Books and Drawings.
 4. Atthey Collection of Coal Measure Fishes and Amphibians.
 5. Loftus Collection of Fossils and Shells.
 6. Winch Collection of Plants.
 7. Robertson Collection of Plants, including Pallas Collection of Russian Plants.
 8. Tankerville Collection of Sponges and Corals.
 9. Abbs Collection of Coal Plants, etc,
 10. Hutton Collection of Coal Plants, containing many of Lindley and Hutton's Types in "Fossil Flora of Great Britain."
 11. Kirkby Collection of Fossils, and Carboniferous Fossils from Fife.
 12. Pryor Collection of Upper and Lower Greensand Fossils.
 13. Hutton Collection of Minerals.
 14. Cookson " "
 15. Charlton " "
 16. Trevelyan Collection of Carboniferous Fossils and Coal Plants (local).
 17. Russian Collection of Minerals from Siberia.
 18. Bold Collection of Insects: Coleoptera, Hymenoptera, Hemiptera, and Lepidoptera.
 19. Wasserman Collection of Lepidoptera.
 20. Bewick Collection of Drawings and first impressions of Prints.
- General Collection: Mammalia (small); Fishes (chiefly local); Foreign Birds (not arranged); Fossils from all formations.

BERWICK.

The Annual Meeting was held in the Museum at Berwick on Wednesday, October 8th, at 12.30 p.m., Captain F. M. Norman, R.N., President, in the chair. Among those present were—The two Secretaries; the Treasurer; Col. Milne Home, M.P.; the Revs. Dr Leishman, J. F. Bigge, Thomas Brown, F.R.S.E., Canon Edmunds, W. Darnell, R. H. Williamson, D. Paul, E. Arkless, R. F. Proudfoot, Dr Morgan (Humberston, Great Grimsby); Capt. Forbes, R.N.; Col. Forster; Alderman Purves; Drs Paxton, Charles Stuart; Messrs William B. Boyd, M. T. Culley, Robert Gray, F.R.S.E., A. R. Lowrey, W. T. Hindmarsh, A. L. Miller, Wm. Weatherhead, Blake Weatherhead, E. Willoby, jun., R. C. Weddell, C. M. Adamson, E. A. L. Batters, W. Maddan, James Heatley, Wm. Green, R. B. Bolam, John Dunlop, Geo. Muirhead, Charles Watson, &c.

Colonel Milne Home, M.P., in the name of the Museum Committee, welcomed the Club in a brief but genial speech. Then the President, having announced that on succeeding to office he had appointed his predecessor, George Hughes, Esq. of Middleton Hall, to represent, and not for the first time, the Club at the 1884 meeting of the British Association in Canada, delivered his Address, at the conclusion of which he nominated as his successor the Rev. Thomas Leishman, D.D., F.S.A., Scot., who was duly elected, and returned thanks.

The following gentlemen were then elected to membership—the names including those who were provisionally elected at the various meetings of the year.—

Rev. Owen Charles Carr, M.A., Newcastle; Rev. Charles Blackett Carr, Norham; David Robertson Dobie, M.B. and C.M., Coldstream; John Hunter, H.M. Inspector of Schools, Alnwick; Robert Amos, Oaklands, Alnwick; Charles Percy, solicitor, Alnwick; Rev. J. G. S. Napier, Kelso; John H. Haliburton, Melbourne, Australia; Dr Peter White, Yetholm; Samuel Mason, Clive Terrace, Alnwick; Robert Govenlock, Teindside, Hawick; Evan Geo. Sanderson, The Elms, Berwick; John Brown, Ancroft, Beal; Dr C. C. Brown, Thirston, Felton; Dr Thomas Anderson of Shaws, Selkirk; James Logan Mack, Coveyheugh, Reston; Delaval Knight Gregson, Berwick; William Green, Berwick; Rev. A. O. Medd, M.A., Bamburgh, Belford; John E. Bell, Alnwick; George Henderson, Shidlaw, Coldstream; Charles S. Romanes, C.A., 46 Hanover Street, Edinburgh; Robert Watson,

Eccles Newton, Coldstream; Capt. C. Lisle Cookson, Berrywell, Duns; David W. B. Tait, W.S., Edenside, Kelso; John Storie, East Linton; James Blaikie, M.A., Edin. and Cantab., H.M. Inspector of Schools, 14 Viewforth Place, Edinburgh; The Right Rev. the Bishop of Newcastle; Michael Muir, Selkirk; Dr H. R. Gatley, Ayton; Alexander F. Roberts, Selkirk; Dr J. Thomas, Selkirk; D. Carnegie Alexander, solicitor, Selkirk; Edmond J. J. Browell, J.P., East Boldon, Sunderland; Robert Y. Green, solicitor, Newcastle; G. H. Philipson, M.D., D.C.L., Newcastle; David Herriot, Castle Terrace, Berwick; Joseph Oliver, Eslington Park, Alnwick; Sir William Ramsay Fairfax, Bart., of Maxton; Alex. C. M'Intyre, F.S.A., Scot., 99 Renfield Street, Glasgow; Col. John Sprot of Riddell. Corresponding member—Richard Howse, Secretary of the Tyneside Naturalists' Field-Club, Newcastle.

The following members have died since last annual meeting:—Ralph Carr Ellison, Esq., of Dunstan Hill and Hedgeley; Mr William Cunningham, Coldstream; Rev. Aislabie Proctor, Doddington; Professor J. H. Balfour, M. D., Edinburgh; Mr Robert Luff Peploe, Manager of the Commercial Bank, Edinburgh; also within the year, Mr John Gordon Maitland, advocate, Procurator Fiscal of Berwickshire; Sir John Marjoribanks, Bart. of Lees; and Mr George Heriot Stevens, Gullane.

The Treasurer's accounts were then audited. They showed a "Balance due to Treasurer" of £23 12 9½.—but that would be to a great extent covered, if all arrears were paid up.

The amount of subscription for the current year was fixed at seven shillings and sixpence.

Some discussion took place with regard to the mode of procedure in the case of members who did not pay their dues; after what period, for instance, should their names be struck off. The Treasurer and Dr Douglas gave some explanation, and eventually it was agreed to leave the matter in *statu quo* for another year.

The places selected for meetings for the season 1885, were;—1. Oxnam for May; 2. Rothbury for June; 3. Aikengall near Oldhamstocks, in July; 4. Weststruther, and Wedderlie, in August; 5. Chipchase and Haughton Castles in September; 6. Kelso in October.

Votes of thanks were proposed to the Berwick Museum Committee for the use of their room; to Mr E. A. L. Batters, F.L.S.,

Mr Leather of Middleton Hall, Miss Russell of Ashiesteel, and Dr Anderson of Shaws, for contributing plates free of expense to the last number of the Proceedings; to Mr Douglas, publisher, Edinburgh, who permitted the reproduction of a plate of an inscribed stone; to the Scottish Society of Antiquaries for allowing the Club to have replicas of three of their cuts; to Mr J. T. Dixon of Rothbury for pen and ink sketches for two plates, and to Mr John Turnbull of Abbey St Bathans, Miss Dickinson and Miss Sarah Dand for drawings.

The President then proceeded to call attention to the state of the Club, with special reference to some suggestions, copies of which had been sent out to every member with the last circulars. He congratulated the Club upon its success and prosperous condition; for the small but devoted band, eleven in number, who constituted the Club in 1831, when it was founded by Dr Johnston, of whom the Rev. Thomas Brown (whom he was very glad to see present, and to welcome at the meeting that day) was the only survivor—was now represented by upwards of 400 members in direct dynastic line. That must be considered gratifying, as far as it showed the popularity of the Club, and the readiness which it had displayed in welcoming with open arms those who had any interest in the object for which it was established, or those even, whose taste for such objects was likely to be awakened or developed. Most Societies, however, were limited in numbers, and it seemed to him wise that a regulation of that sort should exist.

It had for some time been apparent that the Club, steadily increasing as it was in numbers, (the average yearly increase for the last ten years, including those that day elected, being $27\frac{2}{10}$), was assuming unmanageable—or at least inconvenient—proportions, having regard to the organisation and conduct of the expeditions; to the convenience and comfort of members taking part in them; to the demands upon the generosity of those who so often and so hospitably entertained them; and lastly, to the danger, which should not be overlooked, that their excursions seemed to be assuming too much the character of mere pleasure excursions.

Again, owing to the want of a sufficiently definite and formal plan, a good deal of hurry, uncertainty, and confusion, often occurred when names of candidates for membership were announced; as it was, a discussion being too much a matter of

course to any one whose names were read out after dinner. He thought that this state of things was unsatisfactory and inconsistent with the Club's position and *prestige*; and with a view to rectifying it, he begged leave to invite discussion upon the suggestions, disclaiming, however, any idea of pushing any thing which might not commend itself to the judgment of old and experienced members, and especially to that of the permanent officials, to whom, he was sure, that they were all greatly indebted for their valuable and continued exertions, particularly to Mr Hardy for his able editorship of the Proceedings. [applause].

The members then proceeded to consider Suggestion I.—Capt. Norman explaining that the clause about allowing power to the President to “nominate independently in special cases,” was intended to meet the contingency of there being no vacancy, and a distinguished visitor, a naturalist of eminence, a noble host, &c., being desirous of admission, or being asked to join.

Dr F. Douglas bore testimony to the unmanageable proportions to which the Club had reached, and approved of the limitation of members. Considerable discussion followed in which Col. Milne Home, the Rev. J. F. Bigge, Messrs. Hindmarsh, Muirhead, and others took part. Eventually it was proposed by the Rev. J. F. Bigge, seconded by Col. Milne Home, M.P., and carried unanimously, that the following suggestion become a Permanent Rule of the Club.

“That the number of Members exclusive of Honorary* Members shall not be allowed to exceed 400; and that names for Candidates for election shall be brought forward in priority of application, power being reserved to the President to nominate independently in special cases, irrespective of the number of members then in the Club.”

*By which is understood Lady and Corresponding Members, and Associates.

The second suggestion, namely:—

“That in future the names of gentlemen who may desire to be admitted to Membership can be brought forward by the use of the (submitted and approved) Form only, which in each case, the Secretary is requested to see properly executed,”

having been proposed as a Rule by Mr R. G. Bolam, and seconded by Mr Heatley, was also carried *nem. con.*

The usual dinner took place at the King's Arms Hotel, at 3 o'clock, and was attended by 35 gentlemen, the President in the chair.

In proposing "success to the Berwickshire Naturalists' Club," he expressed his satisfaction that the Club had adopted as new Rules the suggestions which that day had been submitted, that the discussion upon them had been so amicable, and sincerely trusted that they would be found to act beneficially. They desired for the Club as an institution what they desired for every member of it, the "mens sana in corpore sano"; they desired that the investigation of the Natural History and Antiquities of our Border Land should be carried on with spirit and interest. They should not imagine that because so much work had been done, because their Proceedings showed such ample records, that there was nothing more to do. The new railway would open up "fresh fields and pastures new"; but the book of Nature had endless leaves. Many could observe something, could write a short paper for the Club, and so on, and there were always individual tastes to be cultivated and improved, and knowledge to be acquired, by the opportunities and the associations and the companionships which the Club afforded.

During the day Mrs Barwell Carter, with her accustomed courtesy, received members at her house in Woolmarket, where her distinguished father, the founder of the Club, lived and died. Many very interesting records of him and of Mrs Johnston, and of their joint labours in the cause of natural science, are, on these occasions, always on view, which are supplemented by the beautiful paintings of wild flowers by Miss Dickinson of Norham, whose delineations of our Flora have secured for her a place in the very first rank of floral artists.

Several members brought to the meeting objects of interest for inspection.

Mr Walby of Alnwick: a beautifully preserved collection by Mr A. Amory, of *Algæ* from the Northumbrian coast. Rev. David Paul: a very perfect celt of indurated slate, about $5\frac{3}{4}$ inches by $2\frac{1}{2}$ and 1 inches broad, turned up ten or twelve years ago, by a ploughman on the farm of Marfield, 2 miles from Morebattle, Roxburghshire. The President: a good specimen of *Filograna implexa*, Berkl., one of the Serpulæ; and a specimen of the carboniferous Limestone fossil-Polyp, *Lithostrotion* probably *basaltiforme*, both of which were fished up off the Berwick coast,

the former by Mr Evan Sanderson; also a silver penny of Edward I., found by Mr E. H. Greet in the earth thrown up when the tank was made for the Norham water-works.

EMBEDDED REPTILES, with special reference to the discovery of a Live Frog in the Carboniferous Limestone at Scremerstone. By F. M. NORMAN, Commander R. N., President. (Plates I and II). Read at the Cornhill Meeting, 29 May, 1884.

STORIES of the discovery of frogs and toads found embedded in solid wood, stone, or coal, occasionally appear in newspapers; and many are to be found in local records, and in various works on natural history.

These excite our curiosity, awaken our interest, and tend to indulge, maybe, any superstitious tendencies which we may happen to possess; but as the evidence is never quite conclusive to show that the creatures *were* entirely enclosed in the substance, and absolutely cut off from the possibility of air, water, and food supply, or that they were *not*, some mystery seems still to surround the question, which tends to deepen, rather than allay our desire to have the whole subject fully and satisfactorily explained.

Unfortunately, there is no record of a single instance where the details are sufficiently authenticated for us to determine, beyond all doubt, whether the confinement was absolute; or whether or not there existed some communication by hole, crack, or crevice with the outer world. The mass out of which the animal is liberated is broken up by workmen, or its position altered, or its essential features obliterated, and thus an examination by a competent observer of the exact original situation, which alone can be accepted as satisfactory, is never made.

The example, which recently came under notice in the neighbourhood of Berwick—the subject of my Paper to day—is, I confess, not exempt from the incomplete conditions which seem to be inseparable from such discoveries. Still, I think that its occurrence so near at hand, in the very centre of our district, is a matter for congratulation; for surely every Naturalists' Club of standing ought to possess, if no *Megalosaurus*, at least some respectable reptile embedded in its annals, much more ought one holding the honourable position of Parent Club.

Hitherto, however, we have been entirely without one; though I learn from Mr Hardy that Dr Johnston (*clarum et venerabile nomen!*), had turned his attention to the matter, and was collecting general instances.

But we have no time for the enumeration or consideration of mere general instances, however interesting. The main thing for us is to get them local or sub-local; and chiefly through the kindness of my friend, our member, Mr R. G. Bolam, of Berwick, who afforded me facilities for search among his valuable store of books relating to our Border Counties, and for a personal examination of the Chillingham relics, I am enabled to bring forward a few examples, which in addition to their general, have a more immediate interest for us—though it must be remarked that they nearly all belong, as far as this Club is concerned, to pre-historic times.

They seem to form a natural introduction to the story of our own Frog.

First then, we have the famed Chillingham Toad, of which the earliest notice is found in the "Athenian Oracle," Vol. III., published in 1704, where a translation of the inscription (see further on) is given; in the 2nd part of which there is an allusion to *Harvey*, in a context which makes it tolerably certain that the famous discoverer of the circulation of the blood is meant:

"

Here forsooth you may see a shell
The Produce of a white Hen,
How a Chicken shall be formed from it
Harvey will tell you."

Now Harvey died in 1658, and we may certainly infer that the inscription was written during his life time, and during the latter part of it when he was known to fame; but how long the toad was found before the writing of the inscription, we cannot discover.

The next notice appears in "The Gentleman's Magazine" for 1756.

"A living toad," writes the historian (but he does not state in what year) "was found in the body of the freestone which was used for the Chimney Piece of the great Hall in Chillingham Castle. It is said to have exactly filled the cavity where it lay, as a figure of metal fills a mould."

The discovery of this creature, declared by the historian Wallis

in 1769, to have been liberated from his *nidus* while the block was sawn in two, evidently produced a great impression; and whatever others might have thought, it is clear that Mr Hutchinson, another eminent Northumberland historian, had no misgivings about the genuine antiquity of the example, for he writes in 1776; with more faith than accuracy, for the stone is certainly not marble, "How wonderful are the works of Providence, how incomprehensible is the existence of this animal, shut up in the bosom of a mountain, cased in a rock of marble, perhaps 100 feet from the surface, living without air, or only such as should pervade the veins of the stone, without light, without liberty, deprived of animal consolation," and so on.

A picture or large heraldic device in a frame, was painted in commemoration.

It consists of the resemblance of a coat of arms, displaying a large toad on a shield, supported by two frogs, and the motto:—

"EST ET A JOVE BUFO."

There is also a fungus or toadstool, with a smaller toad upon it.

The Shield is flanked by a Latin inscription in two parts by an unknown author, * thus rendered into English by a late Lord Ravensworth.

FIRST PART.

Ho! Stagyrte,

"If you wish something more wonderful than your own Euripus,
Come Hither!

Let the tides flow and ebb; and he be lunatic

Who robs Trivia of her Honours.

Lo, for you something novel, which Africa bears not,

Nor Nile on his Sandy Shores.

(To wit), fire and pure flames.

Yet without Vital Air,

Out of the dark recesses of the split rock

As much as you see, the hands of the Midwife Stonecutter gave light
To a Living Toad.

[ARCH. ÆLIANA, III., 2.]

The picture, which was hanging at Chillingham in 1756, may be seen there to this day.

* Bishop Cosin, Bishop of Durham 1660-1673 was considered by Lord Ravensworth to have been the author of the inscription; but a writer in "Archæologia Æliana," III. 278, thinks that there is very strong internal evidence that he could not have been so. A number of people were suggested, but the name of the real author is buried in obscurity.

So, also, may be the slab of freestone, carefully preserved, and containing the *nidus* of the toad, or more accurately a segment of it, an irregularly shaped hole about 7 inches by 5, the interior being slightly encrusted or ferruginously discoloured. I cannot, I regret to say, after inspection endorse the statement of the writer in the Magazine, that the figure of the hole plainly corresponds to the parts of an animal.

The second example is from Hutchinson, and is of so interesting a character, that the want of corroborative evidence seems especially provoking. He says:—

“ In the newspaper of 1776 (the date of the publication of his History), a letter from Sunderland mentions, that a few days ago, in a coal mine, under the place, a large toad was found alive in the solid coal, 190 feet under-ground. On being exposed to the air it instantly died.”

My third is extracted from the “ Historical Record of Remarkable Events ” published in Newcastle:—

1797, June—

“ This month, in working a slate quarry at Barnard Castle, was discovered in a large stone, solid excepting the spot occupied by the incarcerated animal, a toad, which died immediately on being exposed to the air.”

My others are from the same source.

1809, November 22nd—

“ On opening a gap in a wall near Bamborough for the passage of carts, a toad which had been incarcerated in the centre of the wall, was found alive and set at liberty. A mason, Geo. Wilson, when building this wall 16 years before, had wantonly immured the animal in a close cavity formed by lime and stone, just large enough to contain it, which he plastered so closely as seemingly to prevent the admission of air. When discovered, it was torpid, but quietly recovered animation and activity, and hopped away to a neighbouring heap of stones.”

1812, Oct. 21—

“ Some workmen employed at Bykerhill, near Newcastle, on splitting a large block of freestone, nearly 3 tons in weight, found a living toad in the middle of it.

The cavity that contained the animal, to which there was no passage, was the model of its figure, and was lined with a black substance, suffused with moisture.”

1828, July—

“In removing the old battlements of Framwellgate Bridge, in the City of Durham, a large living toad was found in the very middle of the wall, where it must have been confined for a number of years. The bridge was built by Flambard in 1120, but the date of the erection of the battlement is not known.”

1849, July—

“Whilst workmen were engaged on sinking Seaton and Seaham Colliery, Durham, they found a large toad embedded in the solid limestone rock, 183 feet from the surface. The reptile, which was of a very curious shape, died soon after being extricated, and was afterwards exhibited at Seaham.”

And, lastly, our own example. On the 15th February, 1884, I was informed by Thomas Johnson, Esq., that on the previous day a live frog had been liberated from the solid rock of his Scremerston Quarries.

I lost no time in proceeding to the spot, where I received all the information and assistance which Mr Richardson, the intelligent and obliging foreman of works, was able to give.

The stratum of carboniferous limestone at Scremerston, in course of excavation in the open air, of marine origin, and almost certainly an altered coral reef, is locally known as the “Lowdean Workings”; and underlies, at the place where the discovery was made, a bed of shale and a covering of surface earth, together about 23 feet thick.

But this 23 feet of superincumbent strata had been removed, nearly two years previously; so that for that period the top of the limestone stratum was in reality, *the surface*; and the distance from that surface to the level of the frog’s abode, was eight feet plumb.

The limestone has naturally a perpendicular cleavage; so that the stratum is divided into a series of long rows or ranges, laterally continuous, but separated from each other before and behind by the fissures of cleavage, which are sometimes so narrow that they would with difficulty be noticed, but at others one-half an inch, one, or even two inches wide.

These fissures, called on the spot “backs,” and when they run completely from the top to the bottom of the stratum “open backs,” are occasionally empty or nearly so; but in most cases full of wet earth or clay, and small stones mixed together in various states of consistency.

The two workmen who made the discovery, no one else having been present at the time, pointed out the exact place whence was hewn the block from the interior of which it came.

They stated that in course of work, they had partially separated from the stratum a block measuring about 5 feet by 4 feet; and an inspection showed me that the separation from the contiguous portion of the stratum behind was an "open back" $\frac{3}{4}$ inch wide, and almost entirely filled with "rain wash" as already indicated.

The men went on to explain that on striking heavily with their picks on the top of this block, some large fragments were separated, suddenly disclosing a full grown frog in a torpid state, with closed eyes, who fell over on his side as if dead, but in a few minutes opened his eyes, and in a few more moved his legs, soon assuming a normal squatting position, as if nothing particular had happened.

The foreman took charge of it, providing it with a congenial home on damp earth and moss, and giving it a daily bath.

I saw it there two days after its second birth into this world, and I saw it again a few days ago. Under Mr Richardson's care it is alive and well, and though supplied with food, has not eaten any, as far as can be observed. It has not grown, and though healthy and bright, is now emaciated. It was a healthy looking, fairly plump, full grown frog, three-and-a-half inches long, olive brown above, yellowish white below, an ordinary, common-place frog, not at all "an antediluvian-looking customer," differing in no respect that I could detect from other frogs of my acquaintance; but still commanding a certain amount of respect because of the rather mysterious nature of its surroundings and antecedents.

If good old King George found it difficult to account for the apples inside the pudding, what would he have thought about our frog; for both workmen emphatically declared and persisted, and do so to this day, that between the small cavity in the interior of the block which contained it, and the "back," a distance of two feet, there was no visible chance of communication of any sort or size, nor was there one in any other direction.

Unfortunately, as I have already intimated, but too inconsistently with general experience in kindred cases, I was too late to find any other relics of the block than a fragment of irregular shape, roughly speaking 18 inches square, which displayed a portion of

the roundish waterworn cavity, which had formed froggy's home, which we judged to have been about twice the size of an orange, all the rest having been sent off to the kilns.

Asked why they did not keep part of the block back and send for the foreman, one of the men answered, "D'ye think we were going to lose two hundred weight of stone for a puddock?"

Now in considering and trying to account for the presence of incarcerated reptiles, we shall find it convenient to separate them into two groups.

(1) Those which are really and truly *embedded*.

(2) Those which are enclosed in cavities large enough to move about in.

The members of the former group claim our first chief attention—those reptiles I mean, which have been found, or are alleged to have been found, so firmly and completely embedded in the rock or coal, that they fit into it as closely as a casting, or a bullet in its mould; so that, on removing the living (if torpid) body, an exact figure of it is seen in the enclosing substance.

Such instances I have already quoted as being recorded to have occurred at Bykerhill and Chillingham; and there is another from Bathgate in Linlithgow, where the *niche* in the middle of a large piece of coal was reported to be quite smooth, and of the exact shape of the liberated frog.

The great feature of interest in connection with an animal discovered under such circumstances is the startling, but apparently legitimate inference, that it must perforce be contemporaneous with the rock which enclosed it.

Now, I will say at once that if the discoverers have been right in only *one* of the numerous recorded instances, that an animal was actually, and beyond all question, found under the conditions which we are now considering, I do not see how we can escape that inference, marvellous and incredible as it may appear.

"There are," it is true "stranger things in heaven and earth than are dreamt of in our philosophy," and may be in the coal measures particularly.

There are many marvels in natural history which have only recently been disclosed; the reviving powers for example of some creatures, notably of the Rotifers, being now known to exceed anything that was thought credible. There is the important recollection, that a peculiar and leading characteristic of toads and frogs is their power of sustaining vitality in a

dormant state. There is the consideration which claims not to be overlooked, that the evidence of the discoveries in many crucial cases, though unsupported by experts, has never been disproved. There are all those points to which due weight must be allowed; and then having made ourselves aware, if we were not already aware, of the vast number of years which have elapsed since the formation of even one of the most "recent" of the Tertiary *strata*, and how much is involved in the supposition that an incarcerated living being can be contemporaneous with any of them, and how much more with any of the ancient *strata*, we had better, should doubt remain, invoke the arbitration of Common Sense. Will not Common Sense rebel at being asked to believe that a creature thus situated could retain vitality, and not suffer decay, or atrophy of the organs, or become fossilized, or mummified, during the millions of years which have rolled on since the Carboniferous deposits, the formation of which, alone, it is estimated took more than half a million years, and in which, or in adjacent systems, most of these cases occur:—that such a creature could, by any possibility, be a direct living link with times so remote that human ken is incapable of forming any distinct idea of the *hiatus* of ages which separates us from them; of times so remote, that compared with that interval, the 6000 years or so of the life of Adamite man on the earth, are, so to speak, but a tick of the geological clock?

It certainly will rebel, and *entirely refuse*; and on that account alone, without much pausing to consider other salient obstacles to the survival of living organisms thus situated, which easily present themselves; and undeterred by a possible accusation of "begging the question" (which in this instance can have no real force) will decide without hesitation, as a moral certainty, that *no genuine instance of a really embedded reptile has ever occurred* in any of the stratified rocks.

In spite of all that, however, some persons may not be fully convinced; there may with some remain a lingering disposition to trust too much to deceptive appearances. To such I would say "nimum ne crede colori."

To such I would quote a story recently told in the paper "The Workman and Engineer," of the breaking up of a casting, and the leaping out from it of a full grown frog. There was in the casting a small hole, but in this case at least "would anyone be so foolish as to fancy that the frog had been introduced with the molten metal?"

That was the writer's sensible remark, which is totally unanswerable, unless indeed the beast were a Salamander! To such I would urge attention to the conditions under which stratified rocks were founded by deposition under water, during which slow and gradual process, the animal must have quietly maintained its position at the bottom; and in the case (like our own,) of fresh water animals being found in marine formations, must have wandered into the sea and remained living at the bottom of it. There are also alterative influences, as heat, pressure, dislocation of strata, which have affected such large portions of the earth's crust. But, surely, enough!

Still, after all, it is not to be denied that there are curious features connected with many of these discoveries, on which it is desirable that more light should be thrown, and which, therefore, demand the careful attention of naturalists.

Next, we have to consider cases like our own, and like the majority of such discoveries, where reptiles are found alive in cavities, to which *present* communication may or may not exist, or have been observed.

In the case of rocks near the surface, and in quarries, reptiles find ready admission to holes and fissures.

In the case of coal pits, wells, deep shafts or excavations, a reptile young or full grown, accidentally falling down, would seek a retreat in the first cavity that it could find; and the miner or explorer in the course of his work of dislodging it, might hastily conclude that it was co-eval with the stone out of which it made its appearance.

Thus Dr Schliemann, during his excavations on the site of Homeric Troy, found large live toads among ruins 50 feet below the surface, of which he says "they must have spent 3000 years in these depths—it is very interesting to find in the ruins of Troy living creatures from the time of Hector and Andromache." ("Troy," 1875, p. 157.) Cavities are common enough in sandstone and limestone. In the latter they are often caused by the percolation of water which holding carbonic acid decomposes the rock, carrying off in solution much of the carbonate of lime, thus making "hard water" for us to drink.

So, the floor of the cavity thus formed in which our frog lived, was composed of a damp earth, made of a decomposed limestone, stained rust colour owing to the presence of much iron in the water; and all over his floor were visible, until obliterated by the fingering of visitors, the prints of the animal's toes.

The important point—what communication existed (if any) between the cavity and the “back,” two feet distant, must, as a physical certainty, for ever remain unsolved—unless, indeed, we are satisfied to accept as final, the express and reiterated declaration of the men that there was none whatever.

The men no doubt are honest enough, there may be no intention to deceive, but they may have overlooked the presence of one, or of the evidences of a former one. To establish a fact in natural history, especially in the life or surroundings of an animal, requires the most careful and experienced observation.

But after what has been said, we shall, I think, assume as a moral certainty, the existence of a communication with the outer world, probably in the shape of a water-worn channel, through which, possibly years ago, but most probably in the spring of 1883, after the removal of the overlying shale and earth, an ovum, a tadpole, or much more likely a very young frog, wandered, or was washed in by rain or stream.

I am not inclined to support the ovum or tadpole theory, for the reason that tadpoles are aquatic creatures, and, like fish, cannot respire air except that contained in the water in which they swim, not being able to live in the air until they cease to be tadpoles.

Inside the cavity it must have grown up into the adult stage; for my opinion, after careful examination in which the foreman fully agreed, was, that the passage of any but the very smallest young frog down the “back” was impossible.

At certain seasons there is no lack of small frogs. After emerging from the tadpole stage, they wander in the vicinity of their parent waters in such vast numbers, that sometimes they are taken up by local whirlwinds, carried to a distance by strong currents, and fall in the shape of the proverbial “shower of Frogs.”

Moreover, the first effort of the juvenile frog is to seek a secure retreat, for it has numerous enemies; so that an individual who had entered, when young, willingly or forcibly, by some very narrow aperture, would soon increase in bulk, could he get suitable food, sufficiently to render escape impossible, and then might become torpid, and live on for years.

Our interest is thus chiefly centered in the enquiries—

“How long may our frog have been shut in; how did he get food?”

Well, it is evident that he *must* have been there at least for about nine months, but he may have been there much longer.

We have records of many interesting experiments for the purpose of finding out how long such creatures will remain alive, either simply buried in the earth, or entirely cut off from visible access to air and food. Mr Jesse, the well-known naturalist, relates that a gentleman put a toad into a small flower pot, and having secured it so that *apparently* no insect could penetrate, buried it in the ground beyond the influence of frost. At the end of, how many years do you think?—*twenty* years! he took it up, and found the toad increased in size, and quite healthy. Then we have careful series of experiments by Dr Edwards of Paris, and by Dean Buckland, the latter being recorded at length by his son, the late Mr Frank Buckland, in his “*Curiosities of Natural History*,” where toads were confined in holes cut in blocks of wood, sandstone, and limestone, hermetically sealed by covers of glass; the conclusion being that toads cannot live a year totally excluded from direct access to air, or more than two years without food.

Now, on this I must insist, that no experiments on animals in a state of nature can be considered satisfactory or conclusive, unless the natural conditions of their lives are exactly reproduced or imitated; and the conditions in these experiments were, in more than one particular, so confessedly imperfect, that Mr Buckland admits that they are not decisive to show that a state of torpid, or suspended animation, may not be endured for a much longer time by toads which are healthy and well-fed up to the moment of natural retirement.

In many cases, notably those at Bamborough and in the bridge at Durham, it is obvious that, owing to the porosity of the plaster or the stone, a portion of air sufficient to maintain life in the torpid state, found its way. It is noted that the great majority of instances of imprisoned reptiles have occurred in stone or wood of a not very dense character. Under such circumstances the power of cutaneous respiration is obvious, and is, in fact, the key to the secret of the retention of life by frogs and toads during the torpid state for whatever periods.

This power possessed by the skin of Batrachians, of effecting the same changes in the blood as do lungs or gills, is one of the most interesting features in the economy of these marvellously constructed animals; and it has been proved that their pulmon-

ary respiration alone is not sufficient to support life without the help of the cutaneous surface.

As regards the food supply :—

The frog lives on animal food, small worms, snails, slugs and insects, to secure and retain which its tongue is beautifully adapted.

Full grown frogs and toads as we have seen, can support a long abstinence even when not torpid, and require but a small supply of air; and while those animals with whose habits we are best acquainted take in their principal supplies of liquid by the mouth, frogs and toads take in theirs through the skin alone.

The mouth of a frog or toad is never opened except for the fraction of a second occupied in capturing its prey with its tongue. For that reason frogs kept in confinement are sometimes supposed to have no mouths, or what comes to the same thing, none that they can open. Until I easily proved the contrary, the mouth of the Scremerston frog was reported to be closed with a membrane.

It was found by Dr Townson in his experiments on the respiration of the Amphibia, that a frog when placed upon blotting paper, well saturated with water, absorbed nearly its own weight of fluid in an hour and a half. That the moisture thus imbibed is sufficient to enable some of the Amphibia to exist for a long time without any other food, cannot, Dr Townson thinks, be reasonably doubted; and taken in conjunction with the cutaneous respiration, explains to a great extent the fact that Batrachians live and often thrive under apparently very adverse conditions.

But for a full grown frog to exist without food for a time, is a very different affair from ours, whom we believe to have grown from the infant into the adult stage, making bone and skin and flesh, which could not have been done without a continuous supply.

I am not able to suppose that an aqueous solution of food adapted for such a purpose existed, or was available.

I therefore conclude that nourishment was provided in the form of minute insects brought by the trickling water.

I have purposely delayed to answer till now, in order that I might with more prominence notice, the pertinent question, having regard to the possible age of the frog, which has often been asked me—“Is he of the same species as ours, or of any

ancient sort?" Certainly he is our own, the veritable *Rana temporaria*, and no other.

Even had he been found under much less accountable conditions, we could not, for the following sufficient reasons alone, allow him to be co-eval with the stone—unless, indeed, we were to decide that he is the most ancient Batrachian ever discovered; unless "he was the first that ever burst into that silent sea." The facts are these—

The Scremerston limestone is near the base of the Carboniferous series which are Primary, during which epoch there are the earliest, but scanty indications of reptiles; and although it is true that during the succeeding Secondary era reptiles were very abundant, no Batrachian (with one notable and rather hybrid exception) has ever been found in any strata older than the Tertiary; while *Rana* does not make its appearance till we come to the Pleiocene or newest Tertiary, which was laid down many millions of years after the Carboniferous limestone; and nothing is known of our species, *Rana temporaria*, till the Post-Pleiocene, which, geologically speaking is yesterday. The exception to which I alluded is the Labyrinthodon order of reptiles.

Labyrinthodon giganteum, "a frog-like reptile as big as an ox," is found in the Küper, or Upper New Red Sandstone, the oldest Secondary, and was a Batrachian except in one important particular, that being, that he breathed air, like crocodiles, lizards, and other Saurians, and did not swallow it like frogs; and so, having affinities to both families, he is generally termed a "sauroid-batrachian."

The commencement of the existence of this family of Sauroid-batrachians is, however, of greater antiquity, as their relics occur in formations of the Carboniferous epoch, fossil evidence of the existence of more than one member of it having been afforded by the coal of Germany and Nova Scotia.

About this famous Labyrinthodon, Frank Buckland tells us that he used to make frogs walk on plaster of Paris, to shew the similarity of their foot-prints with those of their supposed ancestors in his father's museum at Oxford.

I may mention that the honourable position of "the most ancient reptile known" was for some time held by *Telerpeton Elginense*; because the sandstone wherein it was discovered, was supposed to be Old Red, older than the coal measures; whereas it is now known to be Triassic or New Red, which is newer.

In conclusion, with direct reference to the incident which gave rise to the observations for which I am asking your kind attention this afternoon—are we, then, reduced to the exclamation—“*Parturiunt montes, nascetur ridicula Rana?*”

By no means; for although we cannot admit the claims of our frog to antiquity; although, under as much common sense criticism as we have been able to command, much of the imaginative, the improbable, the superstitious has been dissipated, there still remains much that is curious, and not fully explained.

If the men were right in the declaration that no channel of communication existed when the frog was disclosed, then the channel which certainly did exist at one time since the cavity was formed, must have become stopped up since his entry, perhaps by stalactitic incrustation, or by the accumulation of *debris*.

In that case, although we may not with the discoverer at Bathgate fancifully “feel inspired with a kind of awe at being brought into contact with a living being that has, in all probability breathed the same air as Noah, or disported in the same limpid stream in which Adam bathed his sturdy limbs,” still, we may allow the possibility of the animal’s having been there in a torpid state for many years; and that, connected with other “secrets of his prison house” how he grew up, how he got food; the connection of the case with so many others of a similar nature, but far more difficult to explain; the incidental scientific topics which open out as we think over the affair, all that supplies pregnant matter.

But the occurrence will not be thrown away, if it does no more than incite any of us to a more attentive observation of the marvellous structure and curious habits of the *Amphibia*, fish at one period of their lives, and land animals at another, in which family, in all their intricate organization, the evidence of Design in Creation as an Expression of Mind, as opposed to Darwinian substitutions, much the fashion of late, seems to stand so strongly out in relief.

I trust, therefore, that though our members may think that I have dwelt upon my subject at inconvenient length, they will not be of opinion that I have invested it with undue importance; for, as I have more than once remarked, it is one of much interest, and calls for more complete and educated, and therefore, more conclusive evidence before it can be entirely extricated from the regions of the Mysterious.

Besides, a recognition by us of cases like the present, which always make a stir, a careful examination of the details, and a record of them in our Proceedings, is but the legitimate fulfilment of one of the principal objects for which our Club exists.

The Frog died on the 3rd May, 1885.

ADDENDUM.

I have to express my thanks to the Rev. Dr. Gordon, Birnie, Elgin; and more particularly to my old friend the Revd. Robert Boog Watson, Cardross, Dumbarton, for kind and interesting communications on the subject of Embedded Reptiles.

[*Since the foregoing Paper was read to the Club, Mr Hardy found the following notice of an imprisoned Toad among the scientific MSS. left by Mr George Tate, which will be read with interest.*]

On a Toad in a Limestone Rock at Whittle. By the late
GEORGE TATE, F. G. S.

AT Whittle, in the parish of Shilbottle, is an extensive Limestone Quarry, having a direction of N.N.E. to S.S.W. The limestone is the same as Tate's Quarry at Shilbottle and as that worked at Newton-on-the-Moor. It appears at Framlington, west of Brinkburn, Rothley, Kirkharle and other places southward, and it is said to run near to Stagshaw Bank. The thickness of it varies.

In April 1856, a living Toad was said to have been found in limestone rock at Whittle. It was in the middle of a large block which was blasted with gunpowder. When the rock was shivered, the Toad was exposed. It was in a cavity, just large enough for the Toad's accommodation. The Toad breathed a few times, stretched out its feet and then died. It was larger than any my informant ever saw, and he had seen many, and of a very dark colour approaching to black.

The workmen had no doubt of the animal having lived in the middle of the stone, but how came it there? Geology at once scouts the idea of its having been enclosed in the rock at its formation; for the limestone is of marine origin, and Toads lived not then. Nor will physiology sanction the notion that it had been generated there by electrical or other merely physical

laws. It must come from an egg ; but how the egg entered into the cavity, and how the animal lived in it, are questions not so easily solved.

Limestones have two sets of joints at right angles to each other, called *backs* and *joints*, and they divide the layers into rhomboidal masses. Now there seems no difficulty in ova passing down through these joints and entering between the layers, carried thither by currents of water. But the animal was not in a joint, nor between the strata but in the stone, for in course of quarrying the block had to be blasted. There are however what workmen call "drys" in limestone, which are in effect fractures along which the stone breaks more easily than in other directions. How these have been occasioned it is not easy to say—probably they are the result of the strain on the beds when they were elevated and disturbed. Now although those "drys" cause very little apparent separation of the rock, yet they must admit moisture ; for on the planes of "drys" we frequently find dendritic impressions, which are metallic deposits out of the stone on the surface of the "drys." I think, therefore, that along the line of the "dry"—where perhaps it has not been so close as in other parts—the ovum of a Toad has been washed into the cavity. And this conclusion is strengthened by the fact that moisture was observed within the cavity when the toad was first exposed. [Mr Tate subsequently adds "very doubtful this about the Toad."]

Memoir of Ralph Carr-Ellison, Esq., of Dunston Hill and Hedgeley, J.P., F.S.A., Scot.

[A melancholy interest attaches to the following memoir, as coming from the pen of the Rev. J. F. Bigge of Stamfordham. A few alterations which he had intended to make in it, he was prevented from inserting by his own very unexpected and lamented death.]

It is a painful duty to record the death of one of the oldest and most valued members of the Berwickshire Naturalists' Society, Mr Ralph Carr-Ellison. He was born on November 23rd, 1805, and was the son of Mr John Carr of Dunston Hill, in the County of Durham, and of Hedgeley, in the County of

Northumberland, in which County he was also owner of Prendwick, Byegate Hall, Lounges Knowe, Makendon, and Lumsdon farms. His mother was Hannah, the eldest daughter of Mr Henry Ellison, of Hebburn Hall, in the County of Durham. My first acquaintance with him was made in 1833 at Geneva, where he and Mrs Carr were spending the winter with their second child, then an infant. Having been ordained to the curacy of Eglingham in 1840, at which time Mr R. Carr was living at Hedgeley in the same parish, I had frequent opportunities of meeting him and enjoying his most cheerful and agreeable society. He was extremely fond of Natural History and especially of the study of birds and trees. He was admitted as a member of the Berwickshire Naturalists' Club, October 18th, 1843, and contributed many valuable papers, particularly on the Anglo-Saxon element of our Northern dialect with which he was well acquainted.

In our conversations we often lamented the circumstance that Newcastle had no Naturalists' Club similar to that of Berwickshire, and after much consideration we determined upon making an effort to found one. A meeting was held with this view on April 25th, 1846, the then Vicar of Newcastle, the Rev. Dr R. C. Coxe, being in the chair. It resulted in the formation of the Tyneside Naturalists' Field-Club, of which Mr Ralph Carr was elected the first President. This Club has now grown into gigantic proportions, containing, as it does, about 700 members. Its first meeting was held on May 20th, 1846, at Ovingham, where I then lived as Vicar. It was a very suitable spot for such a meeting, inasmuch as Thomas Bewick spent the earlier part of his life, and was also buried in that place. But it was a personal gratification to our excellent President that the Club should assemble there for the first time, inasmuch as he had been a pupil in the vicarage of Ovingham, under the tuition of the well-known Rev. James Birkett. Mr Carr always expressed the warmest affection for Ovingham, and one of the last of his manifold and varied acts of kindness was to offer a splendid metal cross to be placed on the top of the church tower. The cross was ready, but the giver passed away before the necessary arrangements could be carried out for erecting it. On leaving Ovingham, Mr Carr, who at the early age of 12 had lost his father, went to Harrow, where he was for some years, and then to Christ Church, Oxford. In 1830 he married

Elizabeth, second daughter of Major Werge of the 38th Regiment, and by her had a numerous family. In 1870 he succeeded to Hebburn Hall and the entailed portion of the Hebburn estate, assuming the name of Ellison, in addition to and after Carr, in accordance with the will of his cousin, Lieutenant-Colonel Cuthbert George Ellison of the Grenadier Guards. He died at Dunston Hill after a short illness on February 4th, 1884, in his 79th year. By his death the poor lost a sympathizing benefactor, his intimate acquaintances a stedfast friend, and the scientific world a useful and devoted seeker after knowledge.

J. F. BIGGE.

Of memorial notices of our venerated member the following may be appropriately quoted here. The "Sixtieth Report of Alnwick Scientific and Mechanical Institution, 1884," thus speaks of him: "In the death of Mr Ralph Carr-Ellison, we have lost a valuable and long-tried friend. For a period of forty-four years his name has appeared on the roll of vice-presidents of this Society, and during that time he has ever taken a deep interest in all matters relating to its usefulness and prosperity. He was an eminent scholar, and possessed a mind fully imbued with much that related to history of the 'North Countrie'; and this trait in his character will be best exemplified by the many admirable papers on different subjects that have emanated from his pen, and which will be found among the printed Transactions of several of our local societies. In addition to this, Mr Ellison's memory will be cherished for his many charitable and philanthropic acts, and his great delight in helping forward any project that tended to the advancement of education, and the amelioration of suffering humanity."

Mr Carr-Ellison was one of the Council of the Society of Antiquaries of Newcastle-upon-Tyne, and the Rev. Dr Bruce, in commemorating him, justly characterises him as "a country gentleman of seemly presence and great mental ability." "Early in my career as an antiquary," says Dr Bruce, "I was induced to seek the assistance of our friend. He invited me to Hedgeley, and I had the advantage, on more occasions than one, of examining, under his guidance, most of the objects of antiquarian interest (chiefly ancient British) in that part of Northumberland. Mr Ralph Carr-Ellison, in addition to a knowledge of the classics, and an acquaintance with the Saxon tongue, was

well versed in several modern languages. This gave him considerable advantages in discussing ancient inscriptions of doubtful reading. . . . Mr Carr-Ellison frequently attended our meetings, and was a warm supporter of every plan devised for increasing the usefulness of our Society. When a committee was formed for making excavations on the site of the Roman station at the Lawe, at South Shields, Mr Carr-Ellison was at the expense of providing a qualified person to overlook the excavators, in addition to subscribing handsomely to the funds. His extreme kindness and generosity to all who were in distress is well known to every one in the north of England. On the day that his remains were carried to their last resting-place, the ordinary observer could not help noticing how generally and how sincerely his loss was mourned by those who knew him best. We shall see him among us no more, but his memory will be ever green and fresh among the older members, who were best acquainted with him." (*Proc. Soc. Ant. Newcastle-upon-Tyne*, vol. i. pp. 125-6).

Two years ago, in the prætorium of the Roman Camp at Chew Green, on Makendon Farm, Upper Coquetdale, Mr Carr-Ellison was at a considerable expense in excavating, but unfortunately without result. In former years he had taken great interest entailing much personal exertion, in the exploration at Greaves Ash on the Breamish, and latterly had purposed to make application to his Grace the Duke of Northumberland, to have a systematic search instituted among the camps and tumuli on Beanley Moor; a project which was talked over during a visit I had the pleasure of paying to him at Hedgeley in the summer of 1883. But he never re-visited his favourite seat among the Cheviots.

His great affection for forest and ornamental trees and shrubs, and for flowers and wild birds remained unimpaired to the last. During the visit just alluded to some additions were made to the Flora of Hedgeley, which, along with the names of several old garden flowers, still preserved in the borders, were noted down as fondly as if he had been a juvenile student, and which I am informed he afterwards got transcribed, and laid the list away in his favourite book, Dr Johnston's "Flora of the Eastern Borders" and there it remains. This little incident will be appreciated by those whose peaceful pleasures, when relaxed from business, were like his "in wild fields gathered." He had assembled here, along the winding walks by the triple deans,

each intersected by a trickling burn, within the private grounds, many a garden outcast, as well as

“Chosen plants and blossoms blown

Among the mountains, flowers and weeds.”

as adjuncts to the native growths; and had embellished the environs and open spaces with ornamental shrubs, and “fair spreading trees,”

“Cedar, and pine, and fir, and branching” elm;

brought from distant lands, and the banks of famous streams, where he had seen and admired them in their aboriginal habitats. During the visits of his latter years, he delighted in his walks to speak of his trees, dwelling—as the shifting scene suggested—on the graceful or majestic features, decorative effect, ages, bulk or stature of the several kinds; their value as timber, as nurses or sheltering screens; their disposal, combination, or treatment. For he was skilled in forestry, as is well exemplified in some of the happiest of his literary sketches. No less objects of his protective care were the feathered tribes and wild quadrupeds, which (though not all alike harmless, received merciful consideration for such good qualities as appeared to be their predominant disposition) sought their summer home here, and took advantage of the inducements and provisions—not always effective—that he contrived for their nestling in comfort, and in beloved security. The rich variety of bird music at Hedgeley in the summer morning—“the charm of earliest birds”—is not one of the least of its attractions; and must have been deeply gratifying to him who was its chief promoter.

“It is the spirit of paradise

That prompts such work, a spirit strong

That gives to all the self-same bent,

Whose life is wise and innocent.”

He was an earnest improver of his landed property by planting, draining, and fencing; by levelling and reconstructing the rough and ill-contrived country roads; by aiding the erection of bridges; providing more convenient cottages and steadings; and subsidising schools in the remote hill districts within the sphere of his ready benevolence.

Mr Carr-Ellison was one of the Council of the Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne. He qualified as J.P. for Northumberland in 1838, and was High Sheriff for that county in 1846; and was J.P. of long standing and a Deputy-Lieutenant for Co. Durham.

Mr Carr-Ellison took much interest in the ancient pastime of Falconry. Between the years 1840 and 1843 he kept several Peregrine Falcons with which he had excellent sport on his own estates at Hedgeley, and with his neighbours flying the hawks at partridges, pheasants, rooks, and wood-pigeons, and occasionally at grouse and wild duck, and one Tiercel was very good at snipe. Mr Carr-Ellison then went to reside at Dunston Hill and gave up keeping hawks as they could not have been flown with safety in that populous neighbourhood. But in 1855, while again residing at Hedgeley, he once more took to Falconry, by employing for a year with his hawks, the afterwards well known Scotch falconer, Barr, then a young man, this being his first engagement.

Some of the older members of the Club may have had the rare pleasure of being actual participators in some of these right royal field sports, but to those who had not, the first paper Mr Carr-Ellison wrote for the Club, of which this was the theme, may be recommended as full of interest not only to sportsmen but to naturalists.

J. H.

Some Reminiscences of Mr Carr-Ellison. By the REV.
CANON TRISTRAM, D.D., F.R.S., Durham.

A DAY at Hedgeley, was the red-letter day of my boyhood. An invitation from Mr Carr to go round the covers with him was enough to make books and lessons mere holiday work during the week of anticipation. I was but 8 years old when he first settled at Hedgeley with his bride. Methinks I hear now those soft, gentle tones, and see that quiet, winning manner of the polished gentleman which won the heart, and at once set at ease every one whom he addressed. In an old woman or a child alike he at once inspired confidence, and dispelled all sense of their widely differing positions.

I have often wondered since, how the man of culture and of wide and varied learning could so completely win a boy's confidence, and draw out questions on every subject, which it was his delight to answer in such a way as to elicit further enquiries. I never met any one who had in such a degree the power of

attracting and interesting a child. It seemed to be his delight to draw out the power of observation in his boy companion, and to suggest the generalizations which might be drawn from the facts observed, and this not on one, but on every subject of human culture.

As we walked through the woods, he would draw attention to some plant or flower, and ask where I had seen that before, and then notice the soil in which it was found. Not a bird was in sight, but he asked its name, and told of its habits. He held his gun that the boy might have his first shot at a rabbit. By the banks of the Coquet, he would tell the life-history of ring-dotterel or black-headed gull, and then as we watched the trout, explain the various species of *Salmo* and their different habits. If we passed the ruins of Brandon Chapel, there was sure to be a story of the Great Rebellion, and the march of Cromwell to Dunbar. Well do I remember a walk to Percy's Cross and to the Percy Leap—how he rehearsed the ballad of Otterburn, and sent me happy home, with Scott's "Tales of a Grandfather," which I was not to return till I could say I had read them through. A visit to the British Camp at Old Bewick was a text for a lesson that could never be forgotten, on the difference of British and Roman remains, and on the primæval inhabitants of Northumbria.

Yet the man who could thus enjoy devoting himself to interest boys, was one of the most generally accomplished and widely read men I ever met. There was hardly a subject he did not treat, and in none was he a mere dabbler. At a time when Anglo-Saxon was hardly known even by its University Professors, he had acquired no mean knowledge of the language, and applied his knowledge to the elucidation of many local names, a very favourite amusement with him. He had searched out all the known Saxon remains in the north, and was the discoverer of some inscriptions. Anglo-Saxon led him to investigate the structure of all the Gothic and Scandinavian developments; and he carried researches even further. Once when I had been visiting Livonia, and produced a Lettish Grammar, I found he knew some of the characteristics of that language, and he gave me a Lettish Bible, with various notes of his own, as a souvenir of our conversation. His continental visits, which had been leisurely, had enabled him to become familiar with the ethnographic features of Europe, from the Basques to the Magyars.

His antiquarian knowledge, on which I need here add nothing to what has been said by others, was quite equalled by his architectural; and few amateurs were more at home in detecting at once the original form and state of a church from the fragmentary remains left by churchwardens and restorers. Few men were more thoroughly master of the various links between the Byzantine, the Lombard, and the Norman; and though many of his theories might be questioned, no one could question his knowledge of the facts. This knowledge rendered him a most valuable counsellor in all cases of Church restoration; and many a deed of vandalism he prevented, though sometimes, as at Whittingham, he was too late. But with his love of every Saxon relic, he combined the thoroughly practical spirit of the sanitary reformer, and had no idea of building *modern* churches unsuited to modern requirements, any more than of building cottages without any modern improvement.

In the old church of Jarrow he delighted, and the connexion of the Venerable Bede with his own estate at Hebburn was a topic of much interest. One of his first cares after he succeeded to the property, was to direct the attention of the Dean and Chapter of Durham to Bede's Well, on the confines of the two domains, and to take measures that it should be reverently cared for.

But of all his many tastes, the love of nature perhaps predominated over that of art, though his love of antiquities could colour his love of nature. It was the two combined which led him to be the first to resuscitate the ancient sport of hawking, which he did long before the days of Brodrick or Salvin, while golden eagles, eagle owls, and many other birds of prey, enjoyed ease and plenty in his aviaries 50 years ago.

His interest in natural history was scientific as well as practical, and he was one of those thoughtful observers who could have given many a hint to Darwin. For instance he once remarked to me: Why is it that while no plant appreciates a rich soil so thoroughly as the hawthorn, you never see a hawthorn growing wild or spontaneously except in the very poorest soils? The answer is, because the hawthorn as a seedling is a very weak and feeble plant. Seedlings in good soil are soon choked by the luxuriant growth of grasses and weeds. In a poor and barren field the grass is so thin and weak at the bottom that the hawthorn can get up a few inches without being choked, and thus it is safe.—An admirable instance of the struggle for existence.

Mr Carr-Ellison's love of trees has been mentioned. The citizens of Durham will have cause to be grateful for this. One of his latest acts of generosity, only two years ago, was, after he had in vain suggested to the North Eastern Railway Company that they should plant with trees the hideous slopes from the Station to the North Road, to obtain permission to plant at his own expense. To him we are indebted for the promising young plantation which will soon relieve the monotony of the bank.

I cannot close these few words of reminiscences of my earliest and best friend without mentioning his unstinted munificence in support of every effort for the welfare of the bodies, minds, and souls of those in any way connected with him. One of the first duties of a landlord he always held, was to see to the proper housing of the labourers; and in this respect he set an example. He was also unsparing in his eleemosynary gifts, sometimes in a way which might shock the Charity Organization Society. There were few donors in the two counties more liberal to Elementary Education. The Church Schools have lost in him one of their best supporters. In Church building and restoration he was ever zealous and foremost, from the time when, on his arrival at Hedgeley, he started the enlargement of Eglington Church, to the last day of his life, when he so nobly promoted the efforts for supplying the spiritual necessities of the south bank of the Tyne.

A genial, learned, rarely-accomplished Christian country gentleman of the highest type—such was Ralph Carr-Ellison.

PAPERS WRITTEN BY RALPH CARR-ELLISON, ESQ.

History of the Berwickshire Naturalists' Club.

1. ON THE FLIGHT OF THE PEREGRINE FALCON IN PURSUIT OF PREY. Vol. ii. pp. 88-98.
2. ADDRESS delivered to the Berwickshire Naturalists' Club at Whittingham, Sept. 13th, 1860. Vol. iii. pp. 157-183.
3. WHAT IS THE USE OF THE LARK'S LONG HEEL-CLAW? *Ib.* pp. 209-210.
4. ON THE PRESENT PARTICIPLE IN THE NORTHUMBERLAND DIALECT; and on the VERBAL NOUNS, OR NOUNS OF ACTION, TERMINATING WITH "ING." *Ib.* pp. 356-365.
5. THE NORTHUMBRIANS BETWEEN TYNE AND TWEED. Vol. iii. pp. 141-142.
6. HOW CERTAIN SECRETED STORES AND CERTAIN EXUDED PROVISIONS OF MOISTURE SEEM TO EXIST, WHEREBY YOUNG GALLINACEOUS BIRDS ARE ENABLED TO SUSTAIN LIFE IN DRY SEASONS. *Ib.* pp. 386-388.

7. ON FIRE-BLIGHT, or the Minor Effects of Lightning on the Foliage of Trees, and the valuable lesson which it affords to the Arboriculturist, by teaching him how to curtail the extremities of lofty branches by aid of Torch-flame. *Ib.* pp. 388-389.

8. OBITUARY MEMOIR OF THE REV. GEORGE ROOKE, M.A. Vol. vii. pp. 185-188.

9. ON THE VALUE OF THE HORSE-CHESTNUT (*Æsculus Hippocastanum*) AS A TIMBER TREE IN PLANTATIONS. *Ib.* pp. 213-215.

10. ON THE SIGNIFICATION OF SOME PLACE-NAMES IN NORTH NORTHUMBERLAND—Greaves Ash, Hedgehope, Cunion Crag, Hedgeley, Yevering, and Yevering Bell. *Ib.* pp. 237-245.

11. ON THE EFFECTS OF THE WINTER OF 1878-9 ON VEGETABLE LIFE AND BIRDS, AT HEDGELEY, NORTHUMBERLAND. Vol. ix. pp. 150-151.

12. ON THE EFFECTS OF THE WINTER OF 1879-80. *Ib.* pp. 330-332.

13. NAMES OF THE FARNE ISLANDS AND LINDISFARNE. Vol. x. pp. 373-374.

Transactions of the Tyneside Naturalists' Field-Club.

14. PRESIDENT'S ADDRESS, 1845-7. Vol. i. pp. 6-23.

15. ON EXTENSIVE FISSURES IN THE STEMS OF TWO LIVING SPRUCE FIRS. *Ib.* p. 285.

16. OBSERVATIONS ON THE COMPOSITE NAMES OF PLACES, CHIEFLY IN NORTH-UMBERLAND, OF ANGLO-SAXON DERIVATION. *Ib.* pp. 338-348, Vol. ii. pp. 98-103, 714-163.

17. NOTES ON BRINKBURN MEETING. Vol. iii. pp. 6-9.

18. ON THE EFFECTS OF THE SEVERE WINTER OF 1854-5 UPON EVERGREEN VEGETATION IN NORTH OF ENGLAND. *Ib.* pp. 58-63.

19. ON THE EFFECTS OF THE SEVERE WINTER OF 1860-61, ON EVERGREEN VEGETATION IN NORTHUMBERLAND. Vol. v. pp. 65-74.

Natural History Transactions of Northumberland and Durham.

20. ADDRESS to the Members of the Tyneside Naturalists' Field-Club, May 5, 1875. Vol. v. pp. 162-189.

21. ON THE EFFECTS OF THE SEVERE WINTER, 1878, ON BIRDS AT DUNSTON HILL. Vol. vii. pp. 356-357.

Archæologia Æliana.

22. CORRUPT ORTHOGRAPHY OF LOCAL NAMES. Vol. v. pp. 172-3; and Vol. vi. pp. 5-11. (1861-1865.)

23. ON THE DEDICATIONS OF THE TWO NOTABLE ALTARS FOUND AT CONDERCUM. Vol. vii., pp. 260-262.

24. ON THE RUDGE CUP. *Ib.* pp. 262-265.

25. ON THE ALTAR DEDICATED BY THE SPOUSE OF FABIUS TO THE NYMPHS; found at Risingham, and now at Alnwick Castle. *Ib.* pp. 265-267.

26. THE ANGLO-SAXON STONE FOUND AT FALSTONE IN 1813. *Ib.* pp. 272-273.

27. ON TWO INSCRIBED STONES FOUND AT JARROW IN 1782. Vol. viii. pp. 243-246.

Proceedings of the Society of Antiquaries of Scotland.

28. OBSERVATIONS ON SOME OF THE RUNIC INSCRIPTIONS AT MAESHOWE, ORKNEY. From Proc. Ant. Soc. Scot., 1865; Edinburgh, 1866; small 4to, 16 pages.

29. ON THE INSCRIPTIONS UPON THE STONE AT NEWTON INSCH, ABERDEENSHIRE, and on the Inscriptions on a Sculptured Stone at St. Vigean, Forfarshire. Vol. vii. 11-23: and separately in large 4to, 20 pages, plates, Edinburgh, 1868.

30. Note on No. VII. OF MR PETRIE'S COPY OF THE MAESHOWE RUNES. *Ib.* vol. viii. pp. 139-142.

Border Magazine, Edinburgh, 1863.

31. ARBORICULTURE IN THE COUNTIES NEAR THE EASTERN BORDERS, pp. 222-226; 365-369.

Transactions of the Highland and Agricultural Society of Scotland.

32. ON THE SILVER ALDER: its value and importance as a Nurse-plant to Oak.—(Silver Medal)—June 1867.

Journal of Forestry, edited by GEORGE HEATH.

33. TITLES OF ARTICLES NOT KNOWN; believed to be anonymous.

Miscellanea.

34. THE SYMBOLISM OF THE SCULPTURED STONES OF EASTERN SCOTLAND; An ecclesiastical system of Monograms and Decorative Characters.—Meanings of the several Symbols; Revised Edition, 1877, Edinr. 8vo. 32 pages, figures.

35. ANGLO-SAXON EPITAPH AT BECKERMONT: Cumberland.—Leaflet, 8vo., 1866.

36. ON A NEW METHOD OF CONTROLLING THE RAMPANT SIDE-GROWTH OF THE SCOTCH ELM IN MIXED PLANTATIONS OF HARDWOOD TREES. 4 pages, 8vo.

37. CONGRESS OF THE SANITARY INSTITUTE OF GREAT BRITAIN: held at Newcastle-upon Tyne, 1882. Papers on the influence of the Purity or Impurity of the External Air on Public Health, Public Comfort, and on the Domestic Habits of the People. [Read for his father by Edmund Carr, in the section of Chemistry, Meteorology, and Geology.]

J. H.

Notes on the early Literature of Flodden Field. By
WILLIAM WILSON, B.A., late Scholar of Trinity College,
Cambridge.

THE object of the writer in drawing up the following paper is to give a very short account of such early prose and verse accounts of Flodden Field as have fallen under his own notice, and to furnish some intimations regarding other contemporaneous descriptions of an event which some may possibly think has already received a more than due share of literary attention.

Perhaps the earliest published account of the battle is a 4to black-letter pamphlet of four leaves, entitled "Hereafter ensue the trewe encountre or Batayle lately don betwene. Englade and : Scotlande. In which batayle the Scottshe Kyng was slayne." Then follows a wood-cut representing a camp-scene. The colophon is as follows: "Emprynted by me. Richard. Faques dwellyng In Poulys churchē yerde." There is no date, and only one copy is known to exist, which is in the possession of Mr S. Christie-Miller of Craigentenny, and Britwell, Bucks. The curious in such matters may be interested in learning that at the White Knights Sale in 1819 it brought 13 guineas. It was reprinted in facsimile in 1809 "under revise of Mr Haslewood," and in 1823, at Newcastle, by Wm. Garrett, under the auspices of the Newcastle Typographical Society, but with this latter reprint the writer is not acquainted. There can be no doubt that this tract was written immediately after the battle. There are no speculations in it as to the supposed fate of King James, whose name and that of his natural son appear first in the "roll of names" of the slain, in this fashion: Firste y^e kyng of scotoes / The Archelysshop of / seynt. Androwes. We also find "The. bysshop of. Thyles, / The bysshop of. Ketnes," and among the others "Therle. Arell. Constable." It remains to add that this tract is a fragment, two leaves in the middle being missing; and Mr Haslewood's "revise" is calculated to cause some perplexity to anyone who possesses a copy of it. For he ends the 2nd leaf thus: "George darcy, sone and heyre to the lorde Darcy say /"—the 3rd leaf commencing "—de beynge Capitayne of the first batayle of the Scottths"/, the fact being that the word "sayde" belongs entirely to the 3rd, or more correctly the 5th leaf. The missing portion has now been re-

covered. In his 'Collections and Notes,' W. Carew Hazlitt remarks, "In 1867 Dr. Laing fortunately met with an early M.S., also defective, but supplying the *lacuna* in the text, and communicated it to the 7th volume of the Scottish Antiquarian Society's Transactions, introducing from the printed text what was wanting." It is, however, not the Transactions but the Proceedings to which reference should be made, vol. VII. pp. 141-162, where a facsimile of the title page of the black-letter tract and of the wood-cut is given.

Next in order comes "A Ballade of the Scottyshe Kynge," reproduced in facsimile by Mr Elliot Stock, in 1882, with a copious introduction by Mr John Ashton, to whom the reader is to consider himself indebted for whatever information he may receive on this portion of the subject. The British Museum Catalogue describes this ballad as being "included in 'a treatyse of the Scottes' published later among 'Certayne bokes cōpyled by Mayster Skelton,' but with many variations. It is believed to be the first printed English Ballad." It seems that it was found in the inside of the cover of the French Romance "Huon of Bordeaux," printed at Paris by Michelle Noir, in 1513, and bound in oak after its arrival in England. And luckily, in the other side-cover of this book were found the two missing leaves of the above-mentioned tract on Flodden Field. The whole has now been reprinted verbatim by Mr Ashton in his Introduction to the "Ballade"; but it is to be hoped that the *disjecta membra* may be united in a more befitting manner, and given in facsimile to book-lovers.

The chief literary interest attaching to this Ballad is that John Skelton, its author, enlarged or rather re-wrote it some years afterwards under the title of "Skelton, laureate, against the Scottes," most assuredly 'with many variations,' whereof the length is not the least important. The reader will find it, in its expanded form, as Appendix II. to Weber's Floddon Field. Of the original the following description may suffice.

It is in 4to., four pages, black letter. On the first page is the title 'A ballade of the Scottysse Kynge,' then a rude wood-cut representing two knights, then these four lines;—

Kynge Jamy / Jomy your. Joye is all go
 Ye sommnoed our Kynge why dyd ye so
 To you no thynge it dyde accorde
 To sommon our Kynge your souerayne lorde.

The second page contains thirty-one verses, the third page also contains thirty-one, the last being

It is not fyttynge in tour nor towne,
and the fourth page contains the close of the ballad, as follows—

A somner to were a Kynges crowne
That noble Erle the whyte Lyon.
Your pompe and pryde hath layde a downe
His sone the lorde admyrall is full good.
His swerde hath bathed in the scottes blode
God save Kyng. Henry and his lordes all
And sende the freysshe Kyng such another fall /
(Amen / for saynte charyte=
And god save noble.
Kyng / Henry /
The. viij.

It is to be noticed that Skelton in this Ballad sneers several times at King James for being a 'sumner'; a calling which was held in low estimation from the time of Chaucer. For example,

A kyng a somner it is wonder
Knowe ye not salte and sugar asonder
In your somnyng ye were to malaperte
And your harolde no thyng experte
Ye thought ye dyde it full valyauntolye
But not worth thre skppes of a pye /.

The allusion of course is to the letter which James sent to Henry, and which the latter monarch received in his camp before Terouenne. Indeed, the early date of this ballad is evident from the fact that Skelton believed James to be still alive and a prisoner in Norham Castle. He says,

For to the Castell of Norham
I understonde to soone ye cam,
For a prysoner there now ye be
Eyther to the deuyll or the trinite.

In what may be termed the second edition this passage is modified thus:—

Unto the castle of Norram
I understand to sone ye cam

.
The white Lyon, there rampannte of moode,
He raged, and rent out your hart bloude.

.
Thus for your gurdon quyt are ye,
Thanked be God in Trinite.

“That noble Erle the white Lyon” was the Earl of Surrey: a white lion being the badge of the Howard family.

Next to be noticed is the fine alliterative poem called “Scotish: Ffeilde”: contained in the famous folio M.S., of Bishop Percy, which was published a few years back—in 1867—under the editorship of Messrs Hales and Furnivall. A very short description must suffice. It is in two “ffits,” containing in all 422 lines, all of which, after the 130th line, are devoted to a description of James’s ill-fated campaign; and the editors inform us that “this piece is, with the exception of the imperfect copy lately printed by the Chetham Society, now for the first time printed.” This imperfect copy, having been printed from a M.S. found among the muniments at Lyme, is referred to as the Lyme M.S. From this poem Bishop Percy gives some quotations in his Essay on Alliterative Metre, in Vol. II. of his ‘Reliques,’ and remarks that “the author seems to have been present at the battle from his speaking in the first person plural” e. g.

“Then we tild downe ouer tents: that told were a 1000.”

“We blanked them with bills: through all their bright armor.”

“We mett him in the Midway: & mached him full even.”

North-country expressions drop now and then from his pen; for instance, ‘peertly,’ in line 121; ‘they fettled them to flye,’ in lines 183, 388; ‘fettered in a-ray’ in line 234, for ‘fettled in a-ray,’ in Lyme M.S., and ‘there company was clemmed’ in line 253. That he was a devoted adherent of the Stanleys the poem itself is sufficient evidence; as to his estimate of himself and his place of abode, we are informed in the concluding lines that

he was a gentleman by Iesu: that this jest made,
which say but as he sayd: forsooth, & noe other,
att Bagily that bearne: his bidding place had.

Bishop Percy offers a very probable correction of the above quotations, ‘which sayth but as he sawe,’ and it is to be hoped that the shade of the ‘gentleman by Jesu’ acquiesces therein.

A note by Mr Furnivall on the above passage is as follows:—

“Baggily Hall is situated about three miles from Stockport in Cheshire, but on the borders of Lancashire. It is believed to be the most ancient of the timber houses of Lancashire and Cheshire, and the remains of it are in a very dilapidated state. The only part of the old house now remaining is the hall,” of the interior of which (of the 14th century) a view is given in *Domestic Architecture of the Middle Ages*, vol. II. opp. p. 236, whence the extract above is taken. On p. 237 it is stated that the village of

Baggily, or Baguleigh, had belonged to the ancient family of Legh for two centuries before the battle of Flodden.

There is also found in the Folio MS., a version of the Ballad of Flodden Field printed by Weber, and in Vol. III. of Evans's "Old Ballads." In this version, however, the verses from 422 up to 507 "do not appear elsewhere, and are here printed for the first time. They were certainly written after 1544, as they confuse the expedition made that year into France, with the one of 1513." The poem in the Folio MS., concludes thus:—

"Now god that was in Bethlem borne,
& for us dyed upon a tree,
save our Noble prince that wereth the crowne,
& have mercy on the Erles soule of derbye!"
ffins.

No doubt "princes" should be read; i.e. most likely Elizabeth. It is presumed that Weber's volume is accessible to the reader, and therefore further reference to its contents is unnecessary; but in the introduction to "Scotish Ffeilde" is a list of early accounts of the Battle which may be not unacceptable.

1. A M.S., in the Herald's College, London—"the Gazette of the Battle of Flodden, Sept. 1513" printed in Pinkerton, Vol. II., p. 456.

2. The account given by Hall.

3. A contemporary report in Jovius' "*Historiæ sui Temporis.*"

4. A letter from Dr. William Knight, the English minister at the Court of Margaret, Duchess of Burgundy, to Cardinal Bainbridge at Rome; printed by Ellis in his "Original Letters."

5. The pamphlet re-printed by Haslewood.

6. A Document among the State Papers, corresponding almost exactly to the Gazette, entitled "Articles of the Bataill betwix the Kinge of Scottes and therle of Surrey in Brankstone Feld, the 9 day of September."

The following is from W. Carew Hazlitt's Handbook: s.v. Flodden Field, La Rotta de Scoesi. [This title over a cut of the Royal Arms of England.] No printer's name or date, 4to. A poem in ottava rima.

Bright, 1845, in lot 2000. This tract was reprinted by Earl Spencer from Mr Bright's copy, for the Roxburghe Club.

In conclusion, the following interesting account may be consulted with advantage :—

On the Battle of Flodden.

“Letter from Thomas Ruthal, Bishop of Durham, and Secretary of State, to his Right Honorable and Loving Brother, Thomas Wolsey, Almoner to the King. Date, 20th September, 1513.”—by Robert White.

It is to be found in Vol. v. of the *Archæologia Æliana*; and, in addition to its merits as an historical document, may be described as a tribute of admiration and respect to Saint Cuthbert, to whose influence the discomfiture of the Scots is largely attributed.

[To these Bibliographical Notes add: “Ballad of Flodden Field: a Poem of the XVI Century. Edited with copious Notes, by Charles A. Federer, L. C. P.” 4to., H. Gray, Manchester, 1884. *ED.*]

On the occurrence of the Diving-Spider (Argyroneta aquatica) in Haddingtonshire. By ARCHIBALD GRAY.

IN September last, when collecting water-plants at Luffness Marsh, near Aberlady, I gathered a quantity of *Utricularia vulgaris* amongst which on my return home I found a specimen of *Argyroneta aquatica*.

On a subsequent visit to the same place in November, I obtained other four specimens which are still alive in my possession.

In this locality they appear to frequent beds of *Chara hispida* which grows in large quantities in the pools, and amongst which their webs are woven.

This spider has already as a Scottish species been recorded by Professor Trail, who found a single specimen in Aberdeenshire. It has likewise been found in Possil Marsh, near Glasgow, which so far as I am aware, is the only West country habitat.

Notes on Urns and Cists found at Amble, Northumberland, in 1883 and 1884. Plates III. and IV. By GEORGE H. THOMPSON, Alnwick.

IN the month of February 1883, while the workmen were baring the top of the rock at a quarry at Amble, situated on the sea shore and to the south of the village, they came upon a Cist containing a human skull and a quantity of bones. The latter crumbled away rapidly on being exposed to the air, but the skull, owing probably to its having been nearly covered with sand which had drifted into the grave, was in a fairly good state of preservation, except the left side, the lower part being nearly gone, and having a gash in it which might have been mistaken for a wound received in battle, but which had been caused by the point of the labourer's shovel. Not being aware of the importance of what had been discovered, it was more from accident than design that the skull was preserved, and that I became aware of it some months afterwards. I found that the Cist had measured somewhere about six feet in length, by two feet in width, and the same in depth. Two slabs formed the sides, two more the ends, and one the cover. They had been procured from the sandstone beds on the sea shore, the edges being worn and rounded off by the action of the water. They rested on a bed of clay lying on the sandstone, and were covered to a depth of eight feet, by, first a large quantity of boulder stones also gathered from the sea shore, then by the sea sand which had drifted over them, and lastly by a thin mould bearing the usual sea-side vegetation. The size of the bones indicated a very tall man, and were lying together in the middle of the grave, shewing that the legs had been drawn up towards the body in the way in which such remains are frequently found; and also that it had been laid on its left side. A few pieces of the ribs from five to six inches in length, and what had apparently been finger joints, were also found. The skull (Plate IV. fig. 1.) is of the brachycephalic type and corresponds very nearly to one found at Ilderton in 1863, and described in the *Natural History Transactions of Northumberland and Durham*, Vol. I. part II. p. 145, by Dr Greenwell. Allowing for the imperfection before mentioned the circumference is twenty-one and a-half inches, the

length seven and a-quarter inches, the breadth six inches, and the height five and seven-eighth inches, and is very thick. The under jaw was thrown away among the debris. In the upper jaw the first molar on the right side is wanting, and where the socket should have been, is quite grown up with the bone of the jaw, indicating either that the want of the tooth was congenital, or that it had been lost at a very early period.

The lessees of the quarry, Messrs Green and Douglas, readily agreed to inform me if anything else should be discovered, and some months after in further baring the rock, more cists were found, and in two of them were the urns, Plate III., figs. 1 and 2. On the first visit I made after this, I could not ascertain that anything else had been noticed. There was only a little dust in one, and a small piece of bone in the other, probably the remains of cremation. The urns were stated to have been standing at the west end, and on the south side of the cists, not the most usual position for such articles. The urn, fig. 1. measures $15\frac{3}{4}$ inches in circumference at the widest part; the internal diameter at the top is $3\frac{1}{2}$ ins. and the height $3\frac{7}{8}$ ins. The rim, or lip, is $\frac{5}{8}$ of an inch broad, and is ornamented with transverse strokes. On the lower part of the urn are six long irregular oblique strokes, lying in different directions, and some of them crossing, more like scratches than the work of design. The other Plate III. fig. 2, measures 18 inches in circumference at the widest part; the internal diameter is $4\frac{1}{2}$ inches, and the height $4\frac{3}{4}$ inches. The lip is $\frac{5}{8}$ of an inch broad and is ornamented with the cable twist, or thong pattern running round it in three and four lines.

On a second visit, another cist was opened, and in it, standing at the east end was an urn, Plate III., fig. 3. This has, what is not very common, three perforated projections or ears, and is more carefully and artistically decorated than the others. It measures 16 inches in circumference; the internal diameter $3\frac{3}{4}$ inches, and the height $3\frac{7}{8}$ inches; the lip hardly so broad as the others, but carefully ornamented, as shewn in the engraving. There was nothing else found in the grave except a small bronze article, every trace of its former occupant having disappeared. The dimensions were 3 feet 9 inches in length, 2 feet in width, and 1 foot 9 inches in depth, formed of the usual water-worn slabs, but covered with two unusually heavy stone slabs, lying one upon the other, the under one broken right across, and

only prevented falling into the grave by the weight of the upper one. The only apparent reason for having two slabs may be that the first one had been broken in putting it in its place, and that the second had been deemed necessary for the security of the remains.

Close to this grave, and at the east end we opened a very small cist of an irregular shape, protected by a light stratum of boulders. One side measured $15\frac{1}{2}$ inches, the other 11 inches. In it were the bones of a very young child, as shewn by the fragments of the skull, ribs, and limbs, which were very much decayed, and mixed with a good deal of soil, in which a careful examination failed to detect anything of an ornamental kind. Up to this time, the foreman of the works reckoned that about twenty cists had been found, with fragments of skulls and bones. Only a few of the latter were to be seen, the rest having been thrown away among the soil, or crumbled away on exposure to the air. The direction in which they all lay was east and west. In one grave there was a very large quantity of remains, "quite a barrowful" the man said, indicating that two persons at least had been laid together in it. Some of the larger flat stones bore evident traces of fire, the cremation having probably taken place on them, and then they were used to cover up the grave. Some of the bones bore traces of burning, the thicker portions, such as the joints only remaining, indicating that the calcination had only been partial. There were no remains of broken pottery, or domestic utensils found in the covering of the mound.

An urn of much ruder workmanship was afterwards found, during further excavations when Dr Greenwell was present; and this, with the bronze weapon before mentioned are now, I believe, in his possession. Since then further baring of the rock has taken place, but apparently the whole of the barrow has been laid open. It is remarkable from the number of cists found in one place. In all Mr Green reckons that there will not have been less than thirty burials. The space occupied by them would measure about sixty feet in length, by the same in breadth. The labour bestowed in covering them up must have been very considerable, judging from the immense quantity of boulders which the workmen had removed in clearing the spot. When finally covered up it would present a rounded eminence of about two feet in thickness of boulders in the centre, and

gradually sloping down to the edges. Over this in the slow course of centuries, the sand had drifted to a depth of five to six feet, and then on this had accumulated a thin bed of mould, mantled o'er with turf and flowers, that give no indication that beneath it was "fraught with the relics of humanity."

I afterwards heard that a very large urn had been found during the earlier excavations, and was fortunate enough to discover a fragment of it. It had been crushed by the falling in of the covering stone, and the pieces thrown away as useless, excepting one which had been taken home by one of the workmen. It is sufficiently large to determine the size when whole. (Plate IV. fig. 2.) The segment is 14 inches, giving a diameter of $10\frac{1}{4}$ inches, outside the lip; the height 7 inches, gives a probable total height of 11 inches. The inside from about two inches from the top is blackened by the action of fire, and the clay which is half an inch thick, is burnt black through half its thickness. Evidently it had been used for cremation. The ornamentation is exactly like that of Plate III. fig. 3, except that the top of the lip has the zig-zag markings, the same as on the sides.

I also learned that a sword-shaped weapon had been found, and was in the possession of a blacksmith in the place. On making enquiry about it, it could not be found. It had been left lying about as a thing of no importance, and it was supposed his children had carried it off and lost it. From the description he gave me of it, it had evidently been bronze. The length of it was about 18 inches, by 2 or $2\frac{1}{4}$ inches in width; ridged down the middle, and having thus a double edge. The point was lancet shaped, so that it had probably been a spear head. There was nothing to shew how it could have been fastened to a handle.

The urn, Plate III. fig. 4. was the last found. Mr Park, by whom it was disinterred, has furnished me with the particulars as follows. The grave, unlike the others, lay North and South, and was of the usual character, about 4 feet long, 2 feet high and $2\frac{1}{2}$ feet broad, one large flat stone forming the cover. The bottom was formed of flat stones, in this respect also differing from the others, which had the natural clay or rock as a bottom. The urn embedded in sand which had drifted in, was at the north end, and nearly in the middle, and in an inverted position. It measures 20 inches in circumference, 5 inches diameter inside of the mouth, the lip being $\frac{3}{4}$ of an inch broad, with a single

cable twist line in the middle, and diagonal impressions of the serrated instrument with which the zig-zag ornament of the neck had been made. The height is 6 inches. The lower portion of the cup is perfectly plain and seems to have been carefully smoothed over with some hard instrument, as it has quite a glossy appearance. No large bones were found, only some small pieces of what had apparently been a skull. They were however very much decayed, and crumbled into dust when handled.

In connection with this subject it may be of interest to note that when this barrow was formed, the sea shore must have been at a considerable distance from where it now is. The quarry at high water is not more than sixty yards inland. Between the quarry and the sea, at low water, the shafts of the old coal mine which used to be worked here are to be seen. There are at least seven that are visible, three having been found in the quarry itself. They are circular, about four feet in diameter, and lying about thirty yards apart; the pick marks are as plain and distinct as though they had been hewn out a year ago instead of centuries. On Coquet Island, which lies exactly opposite, there are similar shafts, piercing the sandstone, which is the same as that of the quarry. The bed of coal has been about 2 feet 4 inches thick, the quarrymen having come upon the old workings. With high tides, the sea finds its way through these into the quarry. In exploring one of the shafts on the shore, about five feet below the top of the rock, it was found to have been closed up with old ship timbers, the trenail holes shewing their former use. How far off the old shore was to the east of the present it is impossible to determine; but there is a tradition that the "Bridge" rock which is now fully half a mile from the shore was once connected with the mainland. What makes this probable is the fact that on a fine day, with low tide, and clear water, the remains of masonry are visible upon it. Of the encroachments of the sea on our eastern shores we have another example in the submerged forest at Howick, a few miles to the north.

At Druridge bay, about five miles south of Amble, there can be seen at low water the remains of an old oak forest; and in a bed of peat moss about 3 feet thick, lying between the Amble quarry and the salt pans remains of trees are found. Even during the experience of Messrs Green and Douglas the sea

seems to be still advancing as on one occasion it broke into the quarry covering everything up. Old salt pans, which had been cut out of the rock, can be seen at low water, to the east of the present ones.

The Priory of Tynemouth had the tithes of "Ambell" among other places in Northumberland, granted to it by Earl Robert (ante A.D. 1093.) and confirmed to them by Henry I. In 1292, as appears from the Tynemouth Chartulary "Ambell" was of the annual value of 105s. After the Reformation, Dudley, Earl of Warwick, and first Duke of Northumberland, obtained a grant of the site, demesne lands and possessions of the monks of Tynemouth. The coal mines were valued at 41s. per annum; the site of a salt pan at 4s. per annum. (See "Gibson's Monastery of Tynemouth.")

Coals are now exported from Amble in large quantities from the neighbouring collieries, and salt is still manufactured. Half way between the village and the ancient British barrow, is the modern Cemetery, or "God's acre" for the parish, probably in it there may be found stone "Cists" or "Vaults" as they are now termed; and thus the instincts of to-day and two thousands years ago are found to harmonize. The Pagan refused to believe in annihilation, and the Christian has the "sure and certain hope" that is derived from Revelation.

G. H. T.

The first three figures in Plate III, are from photographs furnished by Mr Thompson, which, however, were not sufficiently distinct in the minute features; but it served as a foundation for the lithograph in which the artist has very exactly reproduced the photos. Fig. 4 is from the pencil of Mr Middlemas who also supplied guiding drawings of the other three. Plate IV. is an example of an Ink-photo. In any future discoveries, if there is no one present to take a sketch, the first step should be to secure photographs, as accurate drawings can be taken from them.

Already at p. 288 of the present vol. of 'Proceedings' a reference has been made to an account of Ancient Graves near Amble by the late Rev. J. W. Dunn, contributed to the "*Archæologia Æliana*," vol. III. pp. 36-38. On re-examining the paper, to which I had not then access, I find from the figure

that the urn found was not a "Food-vessel," but a "Drinking-Cup." Three at least of Mr Thompson's series are of the "Food-vessel," type. Mr Dunn's plate is badly drawn, and on comparison with the chromo-lithograph of the illustrated Catalogue of the Alnwick Castle Museum, far from exact. It is Plate 14A, fig. 1, of that Catalogue, described at p. 12, and is No. 19 in the series.

The circumstances detailed in Mr Dunn's paper are considerably different from the much more important recent overturn of another cemetery in the immediate vicinity; apparently those of the first belong to a prior age. To bring the facts together I shall extract some particulars from Mr Dunn's notes, which are not readily accessible to the majority of the Club's members. This first discovery happened in the middle of April, 1858.

"About 50 yards N. E. of the Cliff-House, Amble, and about 20 yards from the end of what is called Warkworth South Pier, the pilots came upon a long upright stone, standing out of the shale to the height of 12 or 14 inches, which had been laid bare by the recent heavy gales, but which, from its rude appearance, did not afford the idea of anything beyond a mere accidental tilting. Alongside this upright stone was a large unwrought slab, which, on being raised, was found to be the covering of a cist or sepulchral chamber, containing a perfect skeleton. The figure was lying on its left side, with the head to the south-west, having the knees much doubled, and with the right arm thrown back. By its side stood an urn of unbaked clay. It contained a small quantity of dark earth."

"The cist or chamber containing the remains was composed of four slabs, inserted edgewise in a cavity which appeared to have been dug out of the friable shale which lies upon the harder rock in this locality. It ranged S. E. and N. W. and measured as follows:—Depth $18\frac{1}{2}$ inches; width 26 inches; length at bottom, 4 feet, at top, 3 feet 4 inches; the difference between the top and bottom measurement being accounted for by the shrinking of the ends. The cavity in the shale was much larger than the cist, and the space between the slabs and the shale was closely filled in with stones, roughly broken, commingled with earth and larger stones. The side slabs projected somewhat beyond the ends. The bottom of the cist was covered, to the depth of about half an inch, with dark, unctuous mould."

"Amongst the rubbish composing the filling up of the space above mentioned, was found an angular piece of silex, probably an unfinished arrow-head; and in the south-west corner of the cist lay a large, smooth, cobble stone (different from any that one may pick up on the neighbouring shore), which, when considered in conjunction with the flint flake, the imagination may easily construe into the club of this ancient denizen of

our shores. The slab which constituted the cover of the cist was of great size, and extended in every direction considerably beyond it; and the upright stone was set up, not at one of the ends, but along its length. In order that the cover might lie level, pieces of shale, flags, &c., were laid on the uprights which formed the cist, wherever an irregularity presented itself."

"The skull (which was afterwards smashed), must have been very characteristic, having attracted general observation from the extraordinary lowness of the frontal region, the great development of the occipital portion of the head, and the width and length of the lower jaw from its anterior junction to the articulation of the temporal bone. The teeth (which were all carried off) are said to have been very beautiful and regular, and quite sound. With the exception of a front tooth, which was missing in the lower jaw, they were perfect. The thigh-bone measured $19\frac{1}{2}$ inches, indicating a man of large size; whilst the porous internal organization of the bones gave probable evidence of comparative youth.

"The urn is unbaked, of a light clay colour, and measures in height 8 inches, in depth $7\frac{1}{4}$ inches, and in diameter $5\frac{1}{2}$ inches. It is ornamented with zig-zag scorings, alternating with dotted lines, and upright, and sometimes slanting scorings, which appear to have been made by some rude instrument while the clay was moist. The scorings are continued over the edge of the rim."

"It appears that, a few years ago, in the immediate proximity of the present discovery, two or more tumuli were found, which contained urns and bones; and flint arrow-heads of elaborate finish have been occasionally met with."

J. H.

List of Fungi found in 1884, and not hitherto recorded from the Border District. By the Rev. DAVID PAUL, M.A., Roxburgh.

1. AGARICUS (ARMILLARIA) MUCIDUS, SCHRAD. On Beech, Rutherford—October. This and AG. MELLEUS are the only two Armillariæ that have been found here.
2. AG. (TRICHOLOMA) ALBUS, SCHAEFF. I have seen this only at Faldonside, among grass under trees, but there in abundance—October.
3. AG. (CLYTOCYBE) FUMOSUS, PERS. Bowhill—October. Occurs in considerable variety of form.
4. AG. (MYCENA) ACICULA, SCHAEFF. At Roxburgh Manse—October. A very pretty Fungus.

5. AG. (PLEUROTUS) SPONGIOSUS, FR. At Sunlaws—October. On wood. A most beautiful species, apparently not hitherto found in Scotland.
6. AG. (PLEUROTUS) LIGNATILIS, FR. On Beech, Sunlaws—October.
7. AG. (CHAMAEOTA) ECHINATUS, ROTH. On Mr William B. Boyd's rockery at Faldonside—October. A most interesting species, new to Scotland. Fries and Berkeley place it among the Psalliotæ, Cooke in Worth. Smith's subgenus of Chamæota. Fries, *Monogr. I. 409*, says:—"Spore normaliter fusco-purpureæ, sed e fundi colore vibrant in fusco-virentem, et (in nigro) ochraceo-albicantem." Berkeley notes: "Spores sometimes colourless." According to my observation they were at first creamy white, but after lying for a time, decidedly pinkish. The sooty flocculence obscuring the bright colouring is very characteristic.
8. AG. (PHOLIOTA) SUBLUTEUS, FL. D. Identified by Rev. M. J. Berkeley. New to Britain. Fries says, *non vidi*. Found a good many specimens in a grass field at Faldonside with Mr W. B. Boyd. Unfortunately a figure of this Fungus was not secured.
9. AG. (HEBELOMA) FASTIBILIS, FR. At Rutherford—October. In a wood. Not common here.
10. AG. (HEBELOMA) GLUTINOSUS, LINDGR. October. Rutherford plantation.
11. AG. (FLAMMULA) SCAMBUS, FR. On chips and bare soil in woods. Frequent.
12. AG. (CREPIDOTUS) ALVEOLUS, LASCH. On willow trunk, Sunlaws—October.
13. CORTINARIUS CYANOPUS, FR. Roxburgh—October.
14. CORTINARIUS EVERNIUS, FR. Faldonside—October.
15. POLYPORUS ADIPOSUS, B. and BR. Roxburgh and Stichill—October.
16. POLYPORUS VITREUS, FR. Roxburgh—October.

On Lepidoptera in Roxburghshire. Part II. By ADAM ELLIOT, Caverton, Jedburgh.

I HAVE now, by request of Mr Hardy and in continuation of former Notes and List of Lepidoptera occurring in Roxburghshire, and contained in vol. x. pp. 149-158 of the Club's Proceedings, made out a Supplementary List of Species, some of these having been omitted by mistake from the former list, and others taken since then, and I may preface it by a few observations.

The past summer having been a more seasonable one than we have been accustomed to of late years, with more sunshine, and a higher temperature throughout, we have, whether as a consequence or not, had an advent of a few species of our Rhopalocera, which usually are only seen in any abundance in occasional years, and frequently at long intervals of recurrence. One of the species I refer to is the Scotch Argus, *Erebia Blandina*, which I saw abundantly in the beginning of August in the eastern district of the county, but apparently confined within a very limited area. *Vanessa Atalanta*, another insect worthy of note, being one of the finest species of the Family Vanessidæ, appeared in considerable numbers during September and October, the earlier specimens being strong in flight and difficult of capture, but when near hybernation are more easily taken, and I secured a series of specimens, principally during the latter month. The sap from an oak tree, from which a large branch had been cut, formed a special attraction for *Atalanta*, and early in October I frequently observed six or more of these fine insects settled on the branch, or in its immediate vicinity. *Vanessa Io*, a congener of *Atalanta*, is a very scarce insect in Roxburghshire. It is many years since I took two specimens in the western district, and I have not seen another since. They were on flowers of the common Knapweed in the glade of a fir plantation.

In former notes I mentioned the occurrence of a peculiar variety of the larvæ of *Smerinthus Populi* feeding upon the leaves of *Populus nigra*. From these I have since bred the perfect insect, but in no way have found it to differ from ordinary typical specimens, and so in this instance the variation in the larvæ does not appear to have a like effect upon its imago or perfect state.

Of the rarer species of the Heterocera I was fortunate in taking a fine male specimen of *Leiocampa Dictæoides* at night early in

July, and in August and September, *Triphæna Fimbria*, including the dark mahogany coloured var.; and on September 16th a perfect specimen of *T. Ianthina*, being unusually late for this species. In September *Agrotis suffusa* was more plentiful than usual, and the specimens of *Anchochelis Lunosa* occurring during this month included a singular variety of a pale reddish-brown colour.

Of the group Geometrina, I bred several specimens of the genus *Oporabia* from larvæ on birch in May, a large silvery var. of these closely resembling the species *Autumnaria*, and of which Mr Barrett says: "your *Oporabiæ* astonish me; Nos. 1 and 2 must be *Filigrammaria* I suppose, but if No. 1 is that species what becomes of *Autumnaria*? This is just its size and shape. I begin to wonder whether those who consider *Autumnaria* to be a var. of *Filigrammaria* are not right."—I was fortunate in finding a locality in this district for the scarce *Eupethicia Togata*, and took three specimens in the finest condition during last June. The insects occurred in the glade of a rather large fir-wood on the farm of Crailing-hall, and near to its southern aspect. I expected to find the larvæ of *Togata* which feed on the fir-cones of the spruce, but I found the trees had not fruited and were coneless, and so *Togata* may be still scarcer in another year.

In the division of the Micro-Lepidoptera I bred *Penthina Picana* (*P. Corticana*, *H.*) from larvæ on birch in this locality in May. It is a rather local insect and Mr Stainton mentions for it the two English localities of West Wickham and Epping Forest. I also succeeded in rearing *Tortrix Forsterana* from larvæ in rolled up leaves of honeysuckle. They are very active when exposed, and resemble the young larvæ of *Scopelosoma Satellitia*, but are of a dull olive brown colour. I have found *Gelechia Confinis*, a species only discovered a few years since, to be moderately common in this district—its nomenclator being Mr Stainton. It frequents the sides of the dry stone dykes, and as you move alongside of them in July, the moths rise and settle again a few yards forward, but being a small, dull coloured insect are not easily followed. *Eudorea Murana* is much more conspicuous and being partial to like situations may be frequently taken along with *Confinis*.

Before closing these notes, I may mention that with regard to the time of emergence from the chrysalis of Lepidopterous insects, it is curious to note the regularity in time, I mean

certain periods of the day, in which different species emerge. I cannot say whether or not there is a general rule, but I have found this to be the case with several species that I have repeatedly bred;—thus the time of emergence of *Bombyx Quercus* var. *Callunæ* is from 8 a.m. to 12 p.m.; of *Harpyia Furcula* about 2.30. p.m.—*Leiocampa Dictæa* 6 p.m. to 8.30 p.m.—*Notodonta Dromedarius* and *N. Ziczac* from 5 p.m. to 6 p.m. and *Saturnia Carpini* 9.45. a.m. These instances might be extended, but they are sufficient to show the apparent rule of certain periods of emergence.

Supplementary List of Species.

SUB-KINGDOM—ARTICULATA.

CLASS—INSECTA.

ORDER—LEPIDOPTERA.

<p><i>Sub-Order II., HETEROCCERA.</i> <i>Group, GEOMETRINA.</i> <i>Fam. LARENTIDÆ.</i> <i>Eupethicia Togata.</i> <i>Sub-Division, MICRO-LEPIDOPTERA.</i> <i>Group, PYRALIDINA.</i> <i>Fam., BOTYDÆ.</i> <i>Scopula Prunalis, S.V.</i> <i>Fam., CHOREUTIDÆ.</i> <i>Simaethis Fabriciana, L.</i> <i>Fam., EUDOREIDÆ.</i> <i>Scoparia Atomalis, Db.</i> —————<i>Ambigualis, T.</i> —————<i>Murana, C.</i> <i>Group, TORTRICINA.</i> <i>Fam., TORTRICIDÆ.</i> <i>Penthina Picana.</i> (P. <i>Corticina, H.</i>) <i>Tortrix Heparana, S.V.</i> <i>Fam., PLICATÆ.</i> <i>Halanota Cirsiana, Z.</i> <i>Fam., ANCHYLOPERIDÆ.</i> <i>Hemerisia Rheediella, L.</i> <i>Fam., PERONEIDÆ.</i> <i>Peronea Caledoniana, S.</i> <i>Fam., CNEPHASIDÆ.</i> <i>Aphelia Pratana, H.</i> <i>Fam., LOZOPERIDÆ.</i> <i>Eupœcilia Atricapitana, Ss.</i> <i>Cochylis Straminea, Hw.</i></p>	<p><i>Group, TINEINA.</i> <i>Fam., TINEIDÆ.</i> <i>Tinea Pellionella, L.</i> <i>Fam., HYPONOMEUTIDÆ.</i> <i>Swammerdamia Cæsiella, H.</i> —————<i>Cerasiella, H.</i> <i>Fam., PLUTELLIDÆ.</i> <i>Plutella Cruciferarum, Z.</i> <i>Cerostoma Radiatella, Duv.</i> <i>Fam., GELECHIDÆ.</i> <i>Depressaria Heracliana, Degeer.</i> <i>Gelechia confinis, Stn.</i> —————<i>Acuminatella, Sircom.</i> <i>Fam., CECOPHORIDÆ.</i> <i>Cecophora Subaquilea, Stn.</i> <i>Fam., GLYPHIPTERYGIDÆ.</i> <i>Glyphipteryx Thrasonella, S.</i> —————<i>Fischeriella, Z.</i> <i>Fam., ARGYRESTHIDÆ.</i> <i>Argyresthia Retinella, Z.</i> —————<i>Goedartella, L.</i> <i>Fam., COLEOPHORIDÆ.</i> <i>Coleophora Troglodytella, Z.</i> <i>Fam., ELACHISTIDÆ.</i> <i>Elachista Atricomella, Stn.</i> —————<i>Rufocinerea, Hw.</i> <i>Fam., LITHOCOLLETIDÆ.</i> <i>Lithocolletis Coryli, Nicelli.</i> <i>Group, PTEROPHORINA.</i> <i>Aciptilus Tetradactylus, L.</i></p>
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I took a beautiful male specimen of *Pterostoma Palpina* here on the 28th inst., and as I have observed no notice of its occurrence so far north, I think it worthy of mention, besides adding a good species to the local list. The moth belongs to the family of the Notodontidæ, and is the only representative of the genus *Pterostoma*.

June 1885.

Notes on the Marine Algæ of Berwick-on-Tweed. By
EDWARD A. L. BATTERS, B.A., LL.B., F.L.S.

SINCE the publication of the last volume of our Proceedings, I have had the good fortune to make several important additions to my former lists of the previously unrecorded Algæ of Berwick and its neighbourhood.

The specimens from which the following supplemental list has been compiled, were collected in the summer and autumn of 1884, during a series of botanical excursions, in some of which I was accompanied and assisted by my friend Mr E. M. Holmes.

All the species recorded below are I believe, new to Berwick, and three of them, namely—*Elachista Areschougii*, *Cladophora arctiuscula* and *Codiolum longipes*, are additions to the flora of Britain.

1. *Nodularia Harveyana*. Thuret, Class des Nostoch. (Spermo-seira Harveyana, Thwaites, Phyc. Brit. pl. 173. c.)

On the mud at the mouth of the river Tweed, usually mixed with species of *Oscillatoria*. Very rare.

2. *Lyngbya majuscula* (Dillw.) Harv., Phyc. Brit. pl. 162. Kutz. Spec. Alg. p. 283. Crouan, Alg. Finist., No. 337. Lloyd, Alg. de l'Ouest, No. 135. Le Jolis, Alg. Mar. Cherb., No. 94. Liste, p. 29.

On the sands crossing to Holy Island. Very rare.

3. *Symploca Harveyi*. Le Jol., Alg. Mar. Cherb. No. 139. Liste p. 29. (*Calothrix semiplena*, Harv. Phyc. Brit. pl. 309).

Caves near the Needle's Eye and Farthing Bay, E. M. Holmes. Greenses, Dodd's Well and Scremerston, E. A. B. Rare.

4. *Calothrix crustacea* (Schousb) Born et Thur. Notes Alg. I. p. 13. pl. IV. (*Schizosiphon fasciculatus* and *lasiopus*, Kutz. *Oscillatoria crustacea*, Schousb.)

This plant grows in little tufts of a bright green colour, covering whatever it grows on with its minute fronds. The intercalary heterocysts are a great guide to its identification. It was found at Salcombe near Teignmouth by the late Rev. R. Cresswell in 1880, and was then new to Britain.

The Greenses Harbour, on rocks and *Ralfsia verrucosa*. Very rare.

5. *Calothrix pulvinata*, Ag. (*C. hydroides*, Harv).

Burnmouth; "Greenses," Scremerston, &c. Rare.

6. *Cladophora arctiuscula*. (*Kütz.*) *Crn.* Alg. Mar. Finist. No. 376. *Desmaz.* Exs. No. 475. *Conferva arctiuscula*, *Crn.* Fl. Finist. p. 127. *Crn.* MS. *Spongomorpha arctiuscula*. *Kg.*, Tab. Phyc. IV. pl. 75.

Caves near the Needle's Eye and further northward. Rare.

This species resembles a miniature form of *Clad. arcta*, but forms a continuous cushion over the rock and does not appear ever to grow in tufts like the other species of the genus. Crouan remarks (Fl. de Finist., p. 127) that when growing it has the appearance of a *Vaucheria*. This plant which has also been found at Dunbar and Joppa is new to Britain.

7. *Codiolum longipes*. *Foslie*.

Scremerston, E. M. Holmes and E. A. L. B. Greenses. E. A. L. B. Very rare.

This very curious plant forms a velvety coating over rocks, and unless looked for closely may easily be passed over for *Ulothrix flacca* or some species of *Calothrix* which it much resembles to the naked eye. Under the microscope however the oblong fruit head borne on a transparent stalk much longer than the head itself renders its recognition easy.

The surface of the growing plant is peculiarly soft and velvety to the touch. Berwick specimens exactly correspond in all respects with American specimens of *Codiolum longipes* kindly sent me by Mr F. Collins of Malden near Boston, U. S. A., who has also compared our plant with American specimens. If this plant be preserved on fragments of rock, as it grows it fades to a yellowish colour, but if scraped from the rock and set out on paper it keeps its colour to a much greater extent.

8. *Ulva Ralfsii* (*Harv.*) *Le Jol.* Liste des. Alg. Mar. de Cherb. p. 54. *Enteromorpha Ralfsii*. *Harv.* Phyc. Brit. pl. 282. *Le Jol.* Alg. Mar. Cherb., No. 230.

On the sands crossing to Holy Island usually mixed with species of conferva, &c. Very rare.

9. *Ectocarpus crinitus*, (Carn.) Hook. Brit. Fl. Harv. Phyc. Brit. pl. 330. *J. Ag. Sp.*

Scremerston. Very rare.

I was fortunate enough to find this rare species near Scremerston in the autumn of last year. The specimens which were well fruited were hardly an inch long and covered the rocks near high water mark.

10. *Elachista Areschougii*. Crn. Liste des Alg. Mar. Fl. de Finist. p. 160. Gen. 157.

Burnmouth, Berwick, and Scremerston. Very rare. Always parasitical on the thongs of *Himanthalia lorea*.

This very minute parasite is new to Britain. I first found it at Dunbar in the summer of last year, and have since found it on several occasions near Berwick.

11. *Dictyosiphon mesogloia*. Aresch. Obs. Phyc. III. p. 33. Exs. No. 106.

The sands crossing to Holy Island about midway across. Rare. E. M. Holmes.

This also is one of the newer British Algæ. Mr Holmes remarks of it "*D. Mesogloia* has probably been mistaken in the North of England and Scotland for *Mesogloia virescens* from which it is only distinguishable when seen growing by the acute apices of the fronds." Grevillea, vol. XI. p. 142. The microscopical characters of *D. Mesogloia* and *Mesogloia virescens* are however very different.

12. *Aglaozonia parvula*, (Grev.) Zanard; Kutz, Sp. Alg. p. 566. *Zonaria parvula*, Grev. *J. Ag. Spec. Alg. I.* p. 107. Harv. Phyc. Brit. pl. 341. *Aglaozonia reptans*, Ktz. Spec. Alg. p. 566. Crn. Fl. de Finist. p. 169, Gen. 182. *Zonaria reptans*, Crn. Alg. Finist. No. 74.

Berwick Bay on the stems of *Laminaria Cloustoni*. Very rare.

13. *Dermocarpa prasina*. Bornet, Notes Algologiques II. p. 76. t. 26. fig. 6-9.

Parasitical on *Catanella opuntia*, Berwick Bay. Rare. Mr Holmes in "Grevillea" vol. XI. remarks that Turner seems to have mistaken this species for the fruit of *Catanella*.

14. *Porphyra leucosticta*. Thur. MS. *Le Jol. Alg. Mar. Cherb.* No. 156. *P. laciniata*, Crn. Alg. Finist, No. 397, (Non Ag.) *P. vulgaris*, Lloyd, Alg. de l'Ouest, No. 7. Erbario critto, Hal. No.

278 (specimen Mediterranea). *Rabenh. Alg. Sachs* No. 900 (specimen Adriatica) non *Harv. nec Crouan. Le Jolis* Liste, p. 100.

Berwick Bay. Rather rare.

15. *Calithamnion roseum*. (*Roth.*) *Harv. Phyc. Brit.* pl. 230. *J. Ag. Spec. Alg. II.* p. 36. *Crouan, Alg. Finist, No. 135. Le Jol. Alg. Mar. Cherb. No. 162. Conferva rosea, Roth. Cat. II. (non Cat. III.) Phlebothamnion roseum, Ktz. Spec. Alg. p. 653?*

Berwick Bay. Rare. This plant grows at extreme low water mark at the mouth of the river Tweed, it is very seldom left exposed by the receding tide and then only for a short time. All the specimens I have found have been parasitical either on *Cladophora rupestris* or *Ceramium Deslongchampsii*.

16. *Calithamnion granulatum*. (*Ductuz.*) *Ag. J. Ag. Spec. Alg. II.* p. 61. *Crouan, Alg. Finist, No. 155. Le Jol. Alg. Mar. Cherb. No. 62. Rabenh. Alg. Eur. No. 1398. Calith. spongiosum, Harv. Phyc. Brit. pl. 125. Lloyd, Alg. de l'Ouest, No. 67. Phlebothamnion granulatum et spongiosum, Ktz. Spec. Alg. p. 658.*

Burnmouth at extreme low-water mark. Very rare.

17. *Ceramium Deslongchampsii*. (*Chaw.*) *Alg. Norm. No. 85. Harv. Phyc. Brit. pl. 219. J. Ag. Spec. Alg. II.* p. 122. *Crouan, Alg. Finist. No. 169. Lloyd, Alg. de l'Ouest, No. 238!—Gongroceras Deslongchampsii, Ktz. Spec. Alg. No. 677.*

Berwick at the mouth of the river Tweed at extreme low-water mark. Rare. Found in company with *Calithamnion roseum*, and like that species only uncovered at very low tides.

18. *Ceramium strictum*. (*Ktz.*) *Harv. Phyc. Brit. pl. 334. J. Ag. Spec. Alg. II.* p. 123. *Crouan, Alg. Finist. No. 170. Gongroceras strictum, Ktz. Spec. Alg. p. 678.*

Burnmouth, Berwick, &c. Rare.

Ceramium Deslongchampsii has been recorded by Mr G. Brady in his Catalogue of Northumberland and Durham Marine Algæ, but not from the northern side of the Tweed.

I have omitted from this list several species which appear new to Berwick owing to their identity being at present a little uncertain. Most of the synonyms and references used in this list are taken either from *Crouan's "Florule du Finistère"* or the "*Liste des Algues Marines de Cherbourg*" by M. Auguste Le Jolis.

In last years "*Proceedings*" page 354 line 15 from the bottom "*Thamnidion*" should be *Thamnidium*; on plate VIII. "*Phlæospora*" should be *Phlæospora*; on plate X. "*Thamnidion*" should be *Thamnidium*.

Alnmouth List of Marine Algæ. By ANDREW AMORY,
Alnwick.

CHLOROSPERMS.

<i>Cladophora rupestris.</i>	<i>Porphyra leucosticta</i> (rare).
" <i>lætevirens.</i>	<i>Ulva latissima.</i>
<i>Conferva melagonium</i> (rare).	" <i>linza.</i>
" <i>tortuosa.</i>	" <i>lactuca.</i>
<i>Bryopsis plumosa</i> (rare).	<i>Enteromorpha compressa.</i>
<i>Porphyra laciniata.</i>	" <i>erecta.</i>
" <i>vulgaris.</i>	" <i>intestinalis.</i>

MELANOSPERMS.

<i>Chordaria flagelliformis.</i>	<i>Fucus canaliculatus.</i>
<i>Elachista fucicola.</i>	" <i>nodosus.</i>
<i>Leathesia tuberiformis.</i>	" <i>serratus.</i>
<i>Mesogloia virescens.</i>	" <i>vesiculosus.</i>
<i>Asperococcus echinatus.</i>	<i>Halidrys siliquosa.</i>
<i>Dictyota dichotoma</i> (rare).	<i>Himantalia lorea.</i>
<i>Dictyosiphon fæniculaceus.</i>	<i>Alaria esculenta.</i>
<i>Litosiphon pusillus.</i>	<i>Chorda filum.</i>
<i>Punctaria plantaginea</i> (rare).	<i>Laminaria digitata.</i>
<i>Cladostephus spongiosus.</i>	" <i>flexicaulis.</i>
<i>Ectocarpus littoralis.</i>	" <i>fascia</i> (rare).
" <i>siliculosus.</i>	" <i>saccharina.</i>
" <i>tomentosus.</i>	" <i>phyllitis</i> (rare).
" <i>sphærophorus.</i>	<i>Desmarestia aculeata.</i>
<i>Myriotrichia clavæformis.</i>	" <i>viridis</i> (rare).
<i>Sphacelaria cirrhosa.</i>	

RHODOSPERMS.

<i>Callithamnion arbuscula.</i>	<i>Gloiosiphonia capillaris</i> (rare).
" <i>Hookeri.</i>	<i>Phyllophora membranifolia.</i>
" <i>floridulum.</i>	" <i>rubens</i> (rare).
<i>Ceramium diaphanum.</i>	<i>Schizymania edulis</i> (rare).
" <i>rubrum.</i>	<i>Chylocladia clavellosa</i> (rare).
" <i>acanthonotum.</i>	<i>Dasya coccinea</i> (rare).
" <i>Deslongchampsii.</i>	<i>Odonthalia dentata.</i>
<i>Griffithsia setacea</i> (rare).	<i>Polysiphonia byssoides</i> (rare).
<i>Ptilota plumosa.</i>	" <i>fastigiata.</i>
<i>Ptilota elegans.</i>	" <i>nigrescens.</i>
<i>Lomentaria articulata.</i>	" <i>parasitica</i> (rare).
<i>Laurencia pinnatifida.</i>	" <i>Brodii</i> (uncommon).
" <i>hybrida.</i>	<i>Rhodomela lycopodioides.</i>
<i>Corallina officinalis.</i>	" <i>subfusca.</i>
<i>Melobesia pustulata</i> (rare).	<i>Mangeria sanguinea.</i>
<i>Ahnfeltia plicata.</i>	<i>Plocanium coccineum.</i>
<i>Callophyllis laciniata</i> (rare).	<i>Rhodymenia palmata.</i>
<i>Chondrus crispus.</i>	<i>Delesseria alata.</i>
<i>Cystoclonium purpurascens.</i>	" <i>sinuosa.</i>
<i>Dumontia filiformis.</i>	<i>Gracilaria confervoides</i> (uncommon).
<i>Furcellaria fastigiata.</i>	<i>Nitophyllum laceratum</i> (rare).
<i>Gigartina mamillosa.</i>	

On the Finding of Shells in the Boulder Clay near Berwick-on-Tweed. By WILLIAM GUNN, F. G. S. of H. M. Geological Survey.

Most people who have been to Berwick-on-Tweed will know the pleasant path called "The New Walk" which leads along the north side of the river from the end of the old bridge, past Castlehills, towards New Water Haugh. At the Grove House the path enters a wood where the river bank is a mass of glacial deposits, mainly clay, with some sand and gravel bands. The ground is very uneven and insecure, in fact little else than a series of slipped masses of drift, which is constantly being undermined by the stream, and the paths are often changing. Here after wet weather fragments of marine shells may be seen occasionally lying on the surface of the clay. I cannot remember when I first began to notice them, but in the spring of 1882 I determined to make a collection of them and see if any of the fragments were large enough for the species to be made out. In this object I was assisted by one of my sons, A. E. Gunn. Of course none of the fragments we first observed and collected were *in situ* in the clay, but we eventually succeeded in tracing them upwards till we found them *in situ* in the clay itself, and in gravelly bands in the clay at heights of from 75 to 90 feet above the ordnance datum line. The part where the shells are most abundant is near the east end of the wood, and is distant from the sea-shore at the end of Berwick Pier, about a mile and a-half in a straight line. From the fine old bridge it is a walk of about a mile and a-quarter along the river side. My best thanks are due to my colleague, Mr G. Sharman, who kindly took the trouble to go over the fragments, when he was able to make out the following list of species:—

Ostrea.	Tellina Balthica, Linn.
Pecten.	Cyprina Islandica, Linn.
Astarte borealis? Chemn.	Turritella communis, Risso.
Astarte sp.	Littorina littorea, Linn.
Cardium edule, Linn.	Buccinum?
Saxicava rugosa, Pennant.	Dentalium abyssorum? Sars.
Mya truncata, Linn.	Fragments of Belemnites, derived.

It is not likely that the foregoing list is an exhaustive one, and diligent and continued search would probably make considerable additions to it. The most perfect shells are *Littorina littorea* (almost entire) and entire valves of *Tellina Balthica*, but all the shells are much worn, many are smoothed, and some of the thick fragments of *Cyprina Islandica* are glacially polished and striated. There seems also an undoubted mixture of littoral and deeper sea forms, and taking all the facts together it cannot be supposed that the shells were inhabitants of the banks of the Tweed during the glacial period. It seems more probable that they were swept off the sea bottom and carried along by the great ice sheet which moved down the east coast of Scotland and the north of England, and which had its origin about the Moray Frith according to Professor James Geikie and Dr Croll. The shores of the Moray Frith have patches of Oolitic and Liassic Strata from which the Belemnites may have been derived.

The only references I can find to shells, in glacial drift anywhere between the Tyne and the Forth, are the following:—

Professor J. Geikie, my late colleague, in his "Great Ice Age" 1st edition 1874, at p. 208 gives a section seen in the cliff at Berwick-on-Tweed, and on p. 209 mentions that broken shells occur in the upper Boulder Clay there, but that they appear to be rare.

Sir A. C. Ramsay, late Director-General of the Geological Survey, in the 5th edition of his "Physical Geology and Geography of Great Britain" pp. 385-386 (1878) gives an account of some observations made by him and others along the coast at, and south of Berwick-on-Tweed, in which he says:—"The beach-like sands and gravels that overlies the Till are charged with large blocks of limestone and porphyry at the base, and many broken sea shells."

No attempt seems however to have been made to collect and identify any of the fragments, and both the examples cited refer to places on the sea-coast, while the one described in the paper is $1\frac{1}{2}$ miles from the sea, so that at all events the locality is a new one.

The Duddo Stones and the Urns found in their vicinity.

By the late GEORGE TATE, F.G.S. Plate V.

FROM Duddo extending northward by Felkington is a high sandstone ridge; to the west is the vale of the Till, which is covered over with gravel hills. On one of those rounded mounds near Duddo is a circle of five stones. There is no popular legend regarding them, but they have been called by many a "Druidical Temple," probably because former Antiquarians have represented all such monoliths as of Druidical origin. But as stones have been set up around tumuli which are undoubtedly sepulchral, and moreover even in Northumberland, as at Rayheugh and Matfen, monoliths are placed near the barrows, I apprehend that the Duddo stones encircle the barrow which covers the remains, it may be, of a distinguished warrior or priest. The circle is about 40 yards in circumference; the stones are from 5 to 10 feet high, are red in colour, and have been brought from the neighbouring hill; one of them lies prostrate. Their great antiquity is attested by their deeply furrowed surface, and their wasted forms at the base.

No. 1. stands N. 20° W.; No. 4. S.S.E., and No. 2. S.W. There are 27 feet between 1 and 2; and 4 and 5. Between Nos. 5 and 1 are 14 feet; between 2 and 3, and 3 and 4 respectively are 10 feet.

[Mr Raine (North Durham, p. 318) says, "the remains of an outer circle were a while ago *i. e.* before 1852, discovered at the usual distance."]

[A letter from the Rev. Dr Gilly to Mr Tate, dated Norham, August 18th, 1852, informs us that "no human bones were found among the stones called 'The Druid's Temple' in Duddo; but, urns taken from a cairn within sight of these stones, contained what appeared to be small portions of bones."]

On high ground on the farm of Duddo near to Felkington, a cairn of stones and earth was opened out. It was about 2 feet high, and 10 feet in circumference; there was no cist-vaen, but at the base of the cairn were found three urns—two of them were reversed, and one of them on its base.

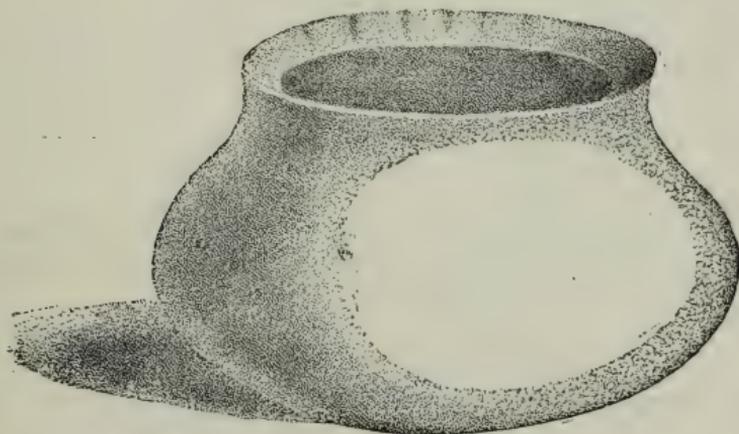
1. One of these urns was large—20 inches in height, 4 inches at the base, and 15 inches at the mouth, jar-shaped, rude made, zig-zag or chevron work on the upper part, the lower plain. It

was red in colour, and beneath it was fine dark earthy matter. It was placed on its mouth.

2. Another urn, which was broken into fragments; similar to No. 1 but smaller; placed on its mouth.

3. Urn small, and placed on its base, is very remarkable in shape. It was oval, swelled out in the middle, and contracted a little in the mouth; not unlike a cocoa nut cup, or like an oval sugar basin. [The Rev. James Raine compares it to the shape of a standing-pie.] It is longer than it is broad, and the section of the mouth is oval.—It is $2\frac{3}{4}$ inches high, but the diameter in one direction is 3 inches, and in another $3\frac{5}{8}$ inches; the bottom is rounded; diameter of the base $1\frac{1}{2}$ inches; circumference 14 inches. It is of a light whitey-brown clay colour. The clay of which it has been formed has been of a blue colour, such as is occasionally seen in the neighbourhood. It has been so well burnt, that it is partially vitrified. It is unornamented, but towards the narrow end, equidistant from the base and the mouth, are two holes $1\frac{1}{2}$ inches apart, pierced through the side of the urn; nearly opposite to them are two punctures which do not quite pass through that side of the urn. The rim of the mouth slopes inwards, thickness $\frac{3}{8}$ of an inch. This urn was full of soil, ashes, and bones apparently burnt.

The information about the urns was communicated by Mr Chrisp. They were in the possession of Dr Gilly.



[The Urn, No. 3, is here figured from a lithograph which has the name of Dr Gilly attached to it. The plate of the Duddo Stones is

taken from drawings by a skilled draughtsman, perhaps from the same source. Mr Tate described this small urn from No. 13 of the Catalogue of the Alnwick Castle Museum, where it appears to be preserved. In noticing this urn, the Rev. James Raine, states, "an immense collection of vessels of this latter description, more or less filled with bones, was discovered a few years ago at Broomridge, near Ford Castle." Mr Tate elsewhere mentions another cup-shaped urn, but not of the same appearance as the one from Duddo, with two holes one below the other under the brim, which was found at Broomridge; and another was said to be found at Ford. They have been called "incense cups" from their analogy to similar vessels still surviving in the funereal ceremonies of the middle ages. Mr L. Jewitt ("Grave Mounds and their Contents," p. 105,) conjectures that they were "small urns to receive the ashes of an infant, perhaps sacrificed at the death of its mother."]

[Mr Raine mentions that a small barrow at the foot of the hill on which the Duddo stones stand, on the north side, much levelled by the plough, has never been opened ('North Durham', p. 318.) Mr Tate also refers in his notes to this barrow. Were it not that statements in County Histories are apt to be firmly believed, it is almost needless to correct the opinion that these rude stones were erected in commemoration of a victory obtained by the Earl of Northumberland and his brother Sir Henry Percy in 1558, over a party of marauding Scots.—See Mackenzie's Hist. of Northumberland, i. pp. 342-3. Richardson's Table Book, iv. p. 116, where there is a figure. J. H.]

British Urn found at Screnwood, near Alnham, Northumberland, with remarks on other Antiquities in that neighbourhood. By D. D. DIXON.

A FEW years ago while some quarrymen were clearing the "redd" from the bank top of a quarry at the east of Screnwood, in the parish of Alnham, Northumberland, they struck upon a stone lined grave containing the urn shewn in the accompanying pen and ink sketch, but it was not until the summer of the present year that the news of its existence reached the ears of

our vigilant and energetic Secretary, Mr Hardy, when he at once took measures to have it sketched and described for the inspection of the members of the Club.



The urn, now in the possession of Mr Chisholm, innkeeper, Netherton, who kindly lent it for the purpose of sketching, measures 5 inches in height, and $4\frac{1}{2}$ inches diameter at the top. It is rudely made of coarse unburnt clay, ornamented near the top with the characteristic zig-zag marking, which has evidently been done with a knotted thong and notched stick; and it appears to belong to what is usually called the "food vessel" type. It is to be regretted that when this cist-vaen was discovered no person interested in such matters was present, to note its position or other articles contained therein.

No camp now exists near the spot where this urn was found, but there are several in the district, besides other interesting remains. On the Castle Hill near Alnham, two miles distant, there is a fine circular camp with double ramparts. The church of St Michael at Alnham, of early transitional foundation, stands on the site of a small Roman camp, "which most probably has

been for a Centurion's guard to protect the herds of cattle when grazing during summer, in the rich pastures on the banks of the river Aln, above Whittingham." (John Smart, Arch. Æliana.)

The vill of Alnham (Yarwell), as well as Screnwood (Screvenwood), and Netherton were, 37 Hen. III. A.D. 1253, part of the lordship and estate of William de Vesci. Traces of an extensive castle, which was once burnt by the Scots, are yet visible on a green knoll opposite the church; while incorporated in the present vicarage house is the stout Pele Tower of later times. In 1542, Bowes and Ellerker report—"At Alnane be two lytle towres whereof thone ys the mansion of the vycaradge and thother of the inherytaunce of the Kinges Matie p'ell of the late Erle of Northumblendes' landis being scarcely in good reparacons."

At the adjoining village of Netherton there are numerous mounds, hollow ways, and entrenchments, relics of an early race, unexplored as yet; and on an eminence at the southern border of the township called "Robert's Law," the late Mr Smart found an ancient camp in which were a number of querns or hand-mill stones. Tumuli also exist on the west side of the Wreigh or Rithe Burn, opposite Trewhitt House. In 1538 all the able men with and without horses and harness were mustered on Robert's Law, along with the other able inhabitants of "Cokedale," and the *thieves of Redesdale*, as they were politely called in those unruly times. A little south of Robert's Law, a Roman Road from Watling Street on the west to the Devil's Causeway on the east, crosses the turnpike.

Further Notes on the Antiquities of Alnham and Neighbourhood. By JAMES HARDY.

As we are very imperfectly acquainted with the extensive tract of country sweeping down from the hills (Hogden Law, 1797; Hazelton-rig hill, 1655; Northfield head hill, above Alnham, 1013; Coldlaw near Biddleston, 1287 feet), to the lowlands which terminate in the "core of the Coquet," I subjoin a few fresh incidents to Mr Dixon's contributions, which enlarge the observations of the Club into comparatively new territory. If the Club could afford by degrees to print Mr Tate's geology of

this part of the district, we should be placed in possession of an important array of facts of permanent value. While prosecuting his favourite pursuit here, he kept his eyes also on the archaeological features, and Alnham was one of the localities where he opened out his note-book and made some enquiries, which I am enabled here to specify.

In 1861, Mr Tate visited Alnham Church. He remarks: "This Church is cruciform. The architecture is transitional and Early English. The chancel arch is round—the piers are round, but the capitals are Early English. The south cross is separated from the nave by an Early English arch. Against the wall of this cross are four monumental stones to:

1. Percival Horsley, late of Screnwood, died April 2, 1694, etc.
2. Robert Horsley, at Alwinton, 1765, aged 56.
3. Cath. Horsley, 1746, aged 16, and children of Robert Horsley of Clennell.
4. Mr Collingwood of Prendwick, 1763, aged 43.

On the floor of the chancel is a stone to John Emmerson, 1662, and another with a sword and another with a cross. A recess with an arch above marks probably an interment.

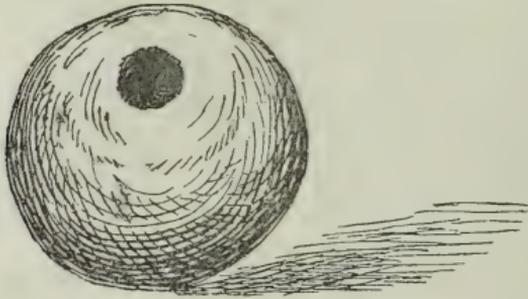
The Church is in a sad state with damp; the walls and pillars are covered in places with green *confervæ*."

This has now been remedied, and a thorough repair, under the superintendence of Mr F. R. Wilson, was undertaken in 1870. "On the Chancel floor," writes Mr Wilson, "are inlaid six tomb slabs, on which are sculptured floriated crosses of much gracefulness." ("Churches of Lindisfarne," p. 104). These Mr Wilson figures in his plate.

Subsequently, Mr Tate makes another entry. "July 22nd 1864. Castle Hill Camp. Visited the camp to-day. It is on a lofty hill with an extensive view all round, ranging along the hills south of the Coquet, Simonside and others, sweeping round by Alnwick Moor, Beanley, Bewick, Ross Castle, and the Cheviots. It is very strong, with many ditches and rampiers. There are circular and other enclosures within, and several larger enclosures on the east side. The entrance is eastward."

In 1850, the Rev. George S. Thomson, the vicar, had observed to Mr Tate, that at a place near to Alnham, a cutting had been made, which shewed under the surface in descending order, "peat bog, 9 inches; paved stones of an ancient road, 8 inches" lying on a peat bog of unascertained depth.

A large black bead, probably jet, found on the Castle Hill, was in the possession of Mr William Coulson, Corbridge. It is figured here of the natural size.



The large circular camp at Robert's Law, mentioned by Mr Dixon, is remarkable for the preservation of a tradition respecting it, which also still lingers near Bolton and Lemington. It is said that "the Saxons, on an invasion of the Danes, marched from this encampment, and encountered the invaders at Battle Bridge near to Lemington; but were defeated with great slaughter." [Mackenzie's Northd. II. p. 44.] Two small silver coins were found in the camp, but the impressions were illegible.

Some years ago, continues the historian, "a large tumulus was opened between Netherton and Biddleston. It contained an urn with ashes and charcoal, placed, after the manner of the Britons, within 4 stones and a cover."

Burradon is about a mile S. W. of Netherton. Here some interesting discoveries were made by Canon Greenwell. 1. A flint celt, of narrow, lengthened, oblong wedge form, "a beautiful implement, of a very rare form. It is of ochreous-coloured flint polished all over." It is $8\frac{1}{2}$ inches long; $2\frac{1}{2}$ inches across the broad end, and $1\frac{1}{4}$ inches at the narrow end. Figured in Evans's "Flint Implements," p. 94, fig. 47. 2. Another fine polished celt, found with No. 1, is of a dark-coloured porphyritic stone, and has the angles of the flat sides slightly rounded. It is wedge-shaped about $4\frac{1}{2}$ inches long, by 2 inches at the broad, and 1 inch at the narrow end. It is Evans's figure, No. 58, p. 105. l. c. Both are in the Greenwell Collection in the British Museum.

A stone axe from a cist at Burradon, is preserved in the Alnwick Castle Museum. (Mr Tate's Notes, 1863).

I have passed through and been among these places, but never actually set my foot on them, except at Burradon, in 1868. In the beginning of August 1867, I had an opportunity of botanising in Hazelton-rig Wood above Alnham, reaching it from Prendwick, and there found *Carex muricata*. (Club's Proc. v. p. 382; and vi. p. 54). It was the Prendwick lamb sale, an extremely cold day, after a thunderstorm accompanied with hail. A dead chimney swallow, perished by the blast, was picked up on the public road between the plane-trees avenue at Prendwick. On this occasion I had not time to descend to the Castle Hill at Alnham, or "Yilldam," as the people call it. Two years ago I was close behind Hazelton-rig hill, and also Hogden Law, but my walks pointed in an opposite direction. I then, however, picked up a few scattered notices, which may serve as way-marks for more minute investigations. My information was obtained from three different parties.

A shepherd found two gold coins, said to be of Queen Anne, in "the neck of Hogden Law"; the Duke of Northumberland obtained one, and Dr Scott of Yetholm the other.

At Castle Hill near Hazelton-rig, in 1881, in erecting a new sheep enclosure, a silver buckle prettily ornamented was turned up.

Pigdon's Leap at Hazelton-rig is a wide chasm, which Pigdon a thief, when pursued by a convocation of the country people, cleared at one bound, and so managed to escape while his pursuers lost time, being checked by the obstacle.

A blue-coloured stone celt or axe was found of recent years on Clennell by a young man.

At Sharperton Edge some one found a crook conjectured to have been used in a brewery or distillery.

At Hepple a man found what was called an Elk's horn, as thick as one's arm: probably a Red-deer antler. Other antlers of the kind have been obtained there in "redding" a limestone quarry. Mr Dixon has some of them. They are fragments of Red-deer antlers; but not particularly large.

The largest fossil Red-deer antler of the large ancient type ever seen in the neighbourhood was got at the bottom of a drain, while it was being cut at Alwinton, in or near the field belonging to Mr Burn.

This miscellaneous collection, inclusive of news about the urn now fortunately figured, from a drawing by Mr J. T. Dixon, was all the information that I could obtain on the Kidland side of the hills.

Notice of Screnwood. By JAMES HARDY.

SCRENWOOD or Scranwood is first mentioned in the Testa de Nevill (pp. 383-4), when it belonged to William de Vescy, the second. As he died in 1252, this is an early document of the reign of Henry III. For a lengthened period it was combined in feudal ownership with Burneton (now Brunton) in Embleton parish, and Preston in Ellingham parish. The feodatory of William de Vescy, Walter Bataill, held Burneton and Preston by one knight's fee of the ancient infettment of the reign of Henry I. There had probably been a sub-division of the Burneton property, for the estate held under the De Vescies was called Burneton Batayll from its occupants, apparently to distinguish it from another place of the same name. The same Walter Bataill along with Thomas Bunte, was co-occupant of Se'venwood, under the obligation of rendering feudal service equivalent to the third part of a knight's fee, of the same ancient infettment (Ibid, p. 384). Contemporaneously, as the same document indicates, Walter Bataill held from Gilbert de Umfraville, the moiety of Linesl' (Linnshiels) by the tenth part of the service of one knight (l. c. p. 393). But previous to this there is mention of the Batailes or Bataills. William de Vescy, the first, who died in the year 1184, had under him in 1168, a Walter Bataile, holding from him [the extent of the fee omitted], on the day when King Henry II. was dead and alive (Liber Niger Scaccarii de Northumberland, 1168, Hodgson's Hist. Part III. vol. III. p. 306); and he might then be part possessor of Screnwood; and we have in 1182, a Walter Bataille, possibly the same, occupying a position of high trust over the Umfraville property.—Ann. 1182, 28 Hen. II. *The land of Odinell de Umfraville.* Walter Bataille, and William, son of Walter, render account of £29 7s. 4d. from the proceeds of the land of Odinell de Humfraville in Northumberland for a half year. In the treasury £22 7s. 4d.; and to Robert de Umfraville, heir of Odinell, 100 shillings to maintain him in the service of the king by the king's writ, and in clothing of the children of Odinell 40s. by the same writ; and is quit (Pipe Rolls, Hodgson, Part III. vol. III. p. 35). Odinell was incompetent to manage, and Walter Bataille appears to have had the lands and family under his guardianship.

I am unable from the fragmentary notices to trace the regular descent of the family. In the remains of the Placita of Richard I, from the 7th year and of King John in the 9th year, we have the early history of the Bataills who owned both the Umfravilles and the De Vescies as their superiors, revealed by a complaint of Richard de Umfravill that Eustace de Vesey (1191-1216), had seized the custody of the heir of Henry Bataill, which from the land held from the Umfravills by the Bataills pertained rightfully to him. He pleaded that his ancestor, Robert with the Beard, when Gilbert Batail, the ancestor of the heir, came with the foresaid Robert de Umfravill to the conquest of England, he was infefted by Robert with Fawdon and the moiety of Nettetun (Netherton) to hold of him and his heirs by one knight's service. This land he held for his life time, and Walter Batail his son followed him, and then Henry Batail father of the heir, about whom the dispute arose. We are not informed how this affair terminated, but it was alleged on the other side that there was no legal precedent for wardship in the instance of either Walter or Henry, as they were of full age, and knighted before the decease of their fathers. (*Placitorum Abbreviatio* in Hodgson's *Hist.* Part III. vol. i. p. 341).

To this Henry Bataille and his widow, the following entries may be applicable: (1). 1204, 6 John, Henry Bataille renders account of 100 merks and 2 palfreys for having patent letters of the king that he should not be impleaded outside the shire of Northumberland for any of his tenements within the county, and that he should not be placed upon any assises or under recognisance out of the shire. In the treasury 100 merks, and 10 merks for two palfreys. And he is quit. (*Pipe Rolls, Ib.* Part III. vol. III. p. 88). (2). 1207, 9 John. Constancia who was the wife of Henry Bataille, rendered account of 1 merk for having a writ for her reasonable dowry. She has paid into the treasury and is quit. (*Pipe Rolls, Ibid,* p. 98).

It will be obvious that William, son of Walter, is omitted in the above summary of heirs, and it is also observable that Henry is not called the son of Walter Batail; perhaps William predeceased his father. One William Bataille, who also held of the Umframvills or Umfravills, has left his name attached to Battleshield on the Usway, which is called in a charter of Gilbert de Umfravill to the Monks of Newminster, the "logiam quondam Willelmi Bataill," which John de Letelwell then held (*Chart.*

de Nov. Monasterio, p. 78). Walter de Bataille as we learn from the Testa de Nevill, p. 385, was the contemporary of John de Letelwell. William Bataill, who may or may not be the same personage, witnesses a charter of Robert de Umframvill to William Bertram, of Great Bavington (Hodgson, Part III. vol. II. p. 25). We also find Bataills elsewhere of this name, William Bataill having married one of the heiresses of William Flamavill of Whittingham (Testa de Nevill, p. 393). His wife's name was Constance, and her son and heir, Robert occurs in the Pipe Rolls from 1262 to 1272. (Pipe Rolls in Hodgson, and Dickson's Pipe Rolls). The race appears to have become extinct as landowners.

By the inquisition on the death of John de Vescy, 17 Edward I. 1289, the heirs of William de Middleton held Burnetone, Prestone, and Scranewode, by the service of one knight's fee, and payment during the year of 13s. 4d. The annual value of the lands was £40. (Hartshorne's Feudal and Mil. Antiq. of Northd. Appendix, p. cxx). The names are not given, but among them was the predecessor of the Belsay family; as John de Middleton about 21, Edward I. 1292, was summoned to show cause why he had warren in Belshow, Burneton, Preston, Thorneburgh. (De quo Warranto in Hodgson, I. p. 146).

When the old Northumbrian family of the Middletons rose in open rebellion against Edward II. in 1317, Sir John de Middleton was involved in the catastrophe that ensued, and died the death of a traitor with all its forbidding penalties; and his estate was forfeited. By an Inquisition "ad quod Damnum," 12 Edward II., 1318, John de Middleton, a rebel, held Belshowe villa, Burneton manor, Preston villa, Scranewood manor, Beche-feld manor, &c. (*Apud* Hodgson, II., p. 398). In that same year this king granted to John de Crambwell, constable of the tower of London, in special entail, viz., to his heirs male, the manor of Bruneton in Emeldon, with the moiety of the vill of Preston, and the moiety of the vill of Belshow, lately pertaining to John de Middleton adhering to the Scots, for the services due (Cal. Rot. Pat. pp. 84-86). He died 7, Edward III., 1332-3, possessed of Burnetone manor, Preston, Scranewood, Belsow, etc. (Inq. p. M. II. p. 58). The Middleton property was thereafter conferred upon Sir John de Strivelyn, who was of Scottish descent. His father was of Moray (Documents Hist. Scot. (Stevenson) II. p. 66), and was restored to his lands in Scotland in 1296 (Rot.

Scot. i. p. 28). The charter in the Patent Rolls, bears the date of 9 Edward III., 1334-35. In the grant were included all the lands that belonged to Sir John de Middleton (Cal. Rot. Pat., p. 123). This grant was renewed, 33, Edward III., 1358-9 (*Ibid.* pp. 170, 171).

When Henry Percy, the second baron of that name, died, 26 Edward III., 1353, Sir John de Strivelyn held the "villatæ" of Burneton, Prestone and Scranewood, of the said Henry by homage, and by service of one knight's fee, and the third part of a knight's fee, and by the service of paying annually on the 15th July, 13s. 4d. ob. for castle ward, and the subjects were worth £20 annually; having become depreciated one half since 1289. (*Inq.* p. M. *apud* Hartshorne, II. Appendix, p. cxxvii). In the Inquisition on Henry Percy, the third baron, surnamed "le Pier," who died on Ascension day, 1368, Sir John de Stryvelyn still held Burneton, Preston, and Scranwode in demense, by homage and fealty, and by the service of the third part [so that the property had become sub-divided] of a knight's fee, and suit of court at Alnwick "de tribus in tres," and by the service of paying annually on the 15th July, 17s. 9d. ob. for castle ward, and the annual value of the property was £20. (Attested MS. copy of *Inquis.* 42 Edw. III.).

Before this date, Scranwood had in part at least obtained a new owner or new manager. Roger de Horsley who died 33, Edward III. (1358-8) held Scranwood manor, and lands and tenements at Horsley * (*Inq.* p. M. II. p. 218). His son Thomas however had not adopted a procedure quite legal to obtain the succession. In the same year, an entry in the "Originalia" states, that the king for a fine of £20 has pardoned Thomas, son and heir of Roger de Horsley, deceased, his transgression of occupying the manor of Scranwode and certain tenements in Horsley in the county of Northumberland, held of the king and his heirs, and with other capital demesnes of that fee by services, &c. And that the moiety of the said manor holding of the king *in capite* for homage and fealty, by the service of the sixth part of one knight's fee, and by the service of 8 pence or one pair of gilt spurs by the year, being by reason of the fiefs which per-

* Roger de Horsley was captain of Bamburgh Castle, 12 Edward II., 1337-8,—*Abbrev. Rot. Orig.* I. p. 241; and one of the keepers of the truce between the English and the Scots in 1320. *Ib.* p. 258. He may have obtained Scranwood in reward of his services.

tained to John de Midleton lately adhering to the Scots enemies, etc., in the hand of the king; and that the other moiety of the said manor, and the said tenements of Horsley, hold of others than the king, and therefore, etc. (Abbrev. Rot. Orig. II. p. 255). What portion of the manor was held of the king *in capite*, there are no documents to explain.

When Sir John de Strivelyn died, 2 Ric. II., 1378, he still held along with Jacoba (Jane) his wife, daughter of Richard de Emeldon, among other lands: Burneton manor, entire; at Preston a tenement and 30 acres of land, and the advowson of the chantry*; Belshowe manor, half the extent; Shanewode (Screnwood) villa. (Inq. p. Mortem, III. p. 13). His wife died in 1392; she held Burneton manor and the advowson of the chapel (Ib. p. 126).

“Through his marriages, Sir John Strivelyn became allied to the families of Middleton and Swinburn, and when he died many of his possessions passed by virtue of a settlement to John de Middleton [descended of Sir John de Middleton], and his wife Christiana.” (Tate’s Hist. of Alnwick, vol. I. p. 147). John de Midleton died in August 1396, possessed of the half of Belshowe (Belsay) and still retained Brunton manor in Bamburghshire, with a mill (Inq. p. M. III. p. 207); and when his wife Christiana died, 9 Henry V., (1420-21) she still held Burneton, Preston, and Screnewode vill, as of Alnwicke manor. (Inq. p. M. IV. p. 61). Sir John Middleton of Belsay succeeded.

At the commencement of the reign of Henry VIII. (1509), an official return was drawn up of the fortresses in the northern district of Northumberland, the names of their owners and occupiers, and an estimate of the number of horsemen which they could severally bring into the field. The computed miles are very different from the measurements of the present day. Screnwood was then in the possession of the Horsley family—“Skyrnwood—Thomas Horsley, owner and inhabitant, 20 men; from Tevedale 6 miles; from the Mers 16 miles.” (J. Hodgson Hinde’s Hist. of Northd., p. 340.) In a similar return a few years later than 1526, we have another occupant:—“John Horsley of Screnwood, from Scotland 4 mile, and from Riddisdale 3 mile, may dispend of his father’s land 10 pound by the year,

* The Chantry was at Burneton, and was licensed (by the King) 14 Edward III., 1339-40. (Cal. Rot. Pat., p. 136).

and in fee of my Lord of Northumberland 10 pound by the year. He may serve the king with 30 horsemen, and is a true wise borderer." (Ib. p. 348.) In 1542, "at Screynwood is a toure and a barmekyn of the Inherytance of John Horseley, Esquire, kepte in very good repacons." (Bowes and Ellerker's Survey, Hodgson, Part III. v. II. p. 211.)

In 1551-52, when the Border watches were instituted, "the Hogdon Law was to be watched by two men daily of the inhabitants of Cramwood (Serenwood) and Elnane (Alnham); setters and searchers of this watch, Thomas Horsley and Cuthbert Horsley." (Border Laws, p. 182, Appendix). Sir John Horsley was one of the overseers of the watch. He had been knighted for his bravery at Musselburgh fight, 1547. (Mackenzie's Hist. II. p. 152.) He was captain of Bamburgh. Thomas Horsley of Skyrnwood was a Commissioner for Enclosures upon the Middle Marches, in 1553. (Hodgson Hinde's Hist. p. 360.)

In the Liber Feodarii, 10 Eliz., 1568, the heir of Cuthbert Horsley was seized of and in the manor and ville of Serenwood and of and in the moiety of the manor and ville of Horsley, Brenkheugh, Thristlehaugh, Feeldheed, Lynehirste, Crawysfelde, and of and in Weldon and lands in Tharneham (Farnham.) (Hodgson's Hist., Part III. v. III. Pref. p. lxxiii.)

In 1660, Sir Thomas Horsley, Knt., was one of the Royalists on whom Charles II. intended to confer the honour of "Knight of the Royal Oak." The annual value of his estates was reckoned at £1000. (Hodgson Hinde, p. 392.) In the Book of Rates, 1663, Sir Thomas Horsley is the proprietor of Scarnwood, of which the annual value was £100. His name occurs among a list of the gentry of Northumberland published in Blome's Britannia, 1673, of Long Horsley, Kut. (Ib. p. 395.)

John G. Riddell, Esq. of Felton Park and Swinburn Castle is the representative in the female line of the Horsleys, and holds, I believe, at least the family did lately, Serenwood.

Record of the Migration, Local Movements, and Occurrence of Birds on the Borders, for 1882-83 and 1884-85. By JAMES HARDY, Joint-Secretary of the Berwickshire Naturalists' Club; Corr. Memb. of Nat. Hist. Society of Glasgow; Hon. Memb. of the Literary and Philosophical Society of Newcastle-upon-Tyne; and of the Tyneside Naturalists' Field-Club.

OLDCAMBUS, 1882.

JANUARY.

Jan. 3, About 12 Black-headed Gulls flying inland from the sea. A large number do not leave the coast during winter, *i.e.* do not migrate farther. Jan. 20, Rather a large flock in winter dress, following the ploughs, and at sea. 2 on the coast on Feb. 2.—Snow-bunting seen. Jan. 29, 1 Raven abroad, flying high and croaking and tumbling through the air.

FEBRUARY.

Feb. 7, 14 Grebes on the coast, and a male and female Eider. Feb. 9, about 25 Black-headed Gulls feeding among sea-weed. Feb. 11, 16 Snow-buntings in field. Feb. 20, 8 Eiders feeding off coast, 3 Herons; Redshanks left early this year. Lesser Black-backed Gull seen, and again on 21st. Feb. 24, 10 Curlews on shore. Feb. 25, Lapwings returned. Stone-chats remained in dean all winter.

MARCH.

Mar. 1, Grey Wagtail at mouth of Penmanshiel Tunnel. Mar. 3, 50 Curlews in a flock on shore, previously only a scattered few. 19 Lesser Black-backed Gulls on coast; new arrivals, young and old. Mar. 4, 1 Grey-backed Crow. A pair of Greater Tit seen in the Pease dean; the male of the ordinary colour; but the female is of a yellowish green, like a dark-coloured Canary or a Green-finch; the black of the head is fawn-coloured; belly mostly white, with yellow sides; a short brown streak in centre of the breast; wings greenish, quill feathers yellow and black lined; back greenish, with paler tints. It remained all the spring. The female was a great alarmist. Mar. 6, Black-headed Gulls still at Skateraw in fields. Lapwing, Curlew, and Plover came to Beaumont-water (*Kelso Chron.*) Mar. 9, Lapwings still in lower fields; 5 or 6 Wild Geese near Cockburnspath. Mar. 11, 1 Grebe on the coast; 5 Curlews and 4 Cormorants. Herons have left the coast. Stonechats continue. Large flock of Snow-buntings on Dowlaw heights; have been numerous there this season. Large flock of Wild Geese on Penmanshiel Moor. Mar. 12, 4 or 5 Lapwings. A pair of Grey Wagtails near Mowhaugh School, Beaumont-water (*Kelso Chron.*) Mar. 13, A pair of Marsh Tits observed in Pease dean. 1 Coot has returned to Townhead pond. Mar. 12 and 13, Lapwings came to Penmanshiel for the second time; on the 27th Feb.

they arrived there, but soon after the weather became cold and stormy, and they decamped in a body before snow fell. Mar. 14, Pied Wagtail at Penmanshiel Tunnel. Mar. 15, 4 Eider and 32 Wild Ducks at sea; 4 or 5 Curlews; Redshank heard; a female Wheatear on Beaumont-water (*Kelso Chron.*) Mar. 17, Pied Wagtails arrived, several, mostly males; one pair, male and female; a male Grey Wagtail arrived on coast; Lapwings becoming dispersed. Mar. 18, 4 Redshanks; 2 Herons remain. Mar. 20, 2 Pied Wagtails in dean; from 30 to 40 Snow-buntings passed with rapid flight, in a compact body, along the sea-side fields, about 11 a.m.—they appeared to be migrants going northwards;—2 Herons and 2 Redshanks seen; 22 Eiders in a lengthened band off coast, mostly young birds; Wild Geese seen. Mar. 25, 1 Pied Wagtail; no Curlews; 5 Cormorants. Mar. 26, Curlews going and returning, between coast and inland moors; 2 Coots in Townhead pond. Mar. 28, 1 Curlew on shore. Mar. 29, 6 Redshanks in a body; 5 Cormorants; 16 Wild Ducks; 1 Snow-bunting crossing the sea, in direction of May Island. Mar. 30, Lapwings mostly settled and breeding on the moors. Mar. 31, Water-Hen returned to inland pond.

APRIL.

Woodcocks mostly left about the beginning of April. On the previous year they remained till first week in May. Apr. 4, 1 male Pied Wagtail; 10 Eider Ducks. Apr. 5, 3 Pied Wagtails. Apr. 6, 1 Pied Wagtail; 7 Redshanks on coast; pair of Wheatears, male and female, arrived on coast. Apr. 7, 4 Pied Wagtails; several Wrens heard in Pease dean,—their numbers are recruiting; Cuckoo heard at Glanton, N. Apr. 8, 4 Coots in Townhead pond; they arrive one by one; a fight takes place among the males before pairing. Dabchicks arrived also there; numerous Moor Pipits had just arrived all over the moors; 2 Black-headed Buntings on the moors. Apr. 10, Oyster-catcher on rocks at Bilsdean; 2 Redshanks there; no Wheatears along that part of the coast, and only 1 Pied Wagtail; several Thrushes. Swallow seen at Felton, N. Apr. 11, 2 Wheatears, and 2 male Wagtails. Apr. 12, Small flock of Dotterels at Dowlaw. Apr. 13, Two pairs of Wheatears seen at different places moving inland. No migratory birds noticed at East Linton. Apr. 16, Sand Martin on Beaumont water (*Kelso Chron.*) Apr. 18, After severe weather a pair of Wheatears and a male Wagtail remain; Grey Wagtail arrived at Pease Mill; Swallow came to Marchmont. Apr. 19, House Martin at Beaumont-water (*Kelso Chron.*) 4 Swallows at Marchmont (*Mr Loney.*) Apr. 21, Milder. *Sylvia trochilus* arrived; 3 Swallows (Chimney) and 2 Sand Martins on sea-banks where the cold wind does not strike; a single Heron left on coast. Apr. 21, House Martin came to Penmanshiel, visited its nest at a window, and did not return till May. Between 40 and 50 Dotterels in a flock on Redhugh fields near the moor-edges at Blakelaw; Sandpiper returned to Beaumont-water (*Kelso Chron.*). Swallows at East Linton (*Scotsman.*) Apr. 22, Willow Wrens numerous in Pease dean; Thrushes scarce. Apr. 23, Ring Ousel on Beaumont-water (*Kelso Chron.*) Apr. 24, A small party of Willow Wrens, and a pair of Redstarts—new arrivals—at Oak brae, Oldcambus; had left next day. Cuckoo in Duns Castle

woods; a specimen of Pied Flycatcher in that vicinity, a week before May 2 (*Ber. News.*) Swallow at Duns (*Kelso Chron.*) Apr. 25, 1 Whinchat arrived; 4 Sand Martins at 9.30 a.m.; but no Swallows at coast; 5 Eiders and 4 or 5 fresh Wheatears; a few Thrushes and Missels. Apr. 26, Went to Harpertoun. Willow Wren widely diffused; Pied Wagtail settled at Edenmouth; thousands of Sand Martins on the Tweed, with 5 or 6 Swallows playing among them. Black-backed and Black-headed Gulls on the Tweed. Apr. 27 and 28, Redstart in two different localities, at Harpertoun. Apr. 29, Whitethroat just arrived near side of Tweed at Edenhall; more on 30th, extending inland along the hedges; Redstart near Highridge-hall.

MAY.

May 1, Tit Lark at Leitholm; no Swallows at the farm-places in that vicinity or Eccles; Cuckoo on moor at Penmanshiel. May 2, Swallows at Sisterpath Mill; Willow Wren generally diffused; Whitethroat and Swallows near Marchmont; Corncrake and Cuckoo at Kelso (*Kelso Chron.*) May 3, Cuckoo at Marchmont, and Swallows numerous (*P. L.*) May 4, Again at Oldcambus. 3 Whitethroats in hedges, and others in thickets; 3 Martins arrived at Siccar Point. Marsh Tit scooping out a nesting-hole in a decaying oak stump near Pease bridge; the male did the work, and carried the chips; the female played about a tree in front, and gave the alarm at my approach. Wheatear at the coast. May 5, Several Whitethroats have left, and Willow Wrens have become scarce; 5 Martins, 1 Sand Martin; and 3 Swallows passing along the coast northwards; other 2 Swallows at coast; 1 Martin left behind. In afternoon 10 Martins and a pair of Swallows seen near Cove shore; also a Whitethroat and Wheatear there. A Heron and 5 Curlews on rocks near Dunglass Mill, and 2 Swallows there. May 5, Corncrake at Duns (*Kelso Chron.*) Swifts at Kelso (*Ib.*) May 6, Corncrake at Beaumont-water; and on 12th at Jedburgh (*Ib.*) May 6, Whitethroat continues; no Swallows. May 7, 2 Swallows near Ewieside, and 2 Whitethroats. May 10, Female Redstart; Sedge Warbler in full song: several Whitethroats; 2 Martins and 2 Swallows at coast; Swallow at onstead; Cuckoo heard and seen. May 11, only 1 Wood Wren as yet in Pease dean wood. It came out on the bare boughs and twigs of tall oaks and ashes, opening its bill and holding it upwards, but at times scarcely able to emit a whispering trill. Cuckoo again heard; 2 Wheatears passing inland; 3 Swallows, 1 Sand Martin, and only 1 Martin at coast. Wind has been blowing chill on the coast-line. May 12, Milder. Sandpiper, a straggler, at burn, Oldcambus. Wood Wren just arrived near the coast; new arrivals of Wheatears, scattered birds; Whitethroats and Swallows present. May 13, At Haddington. Pair of Swifts at Dunbar; no Martins visible on the journey. At Haddington, Swallows and Sand Martins visible, the latter build in the river banks below the town. May 14, Blackcap at Pease bridge. No Swallows nor Swifts at Dunbar; 2 or 3 Sand Martins at coast there—air cold. May 16, Blackcap at Pease bridge, only one; a few Martins at coast—cold and clear. May 17, Wind E. and then N. Calm and bright sunshine. Went up to the moors. Blackcap at Oldcambus; 10 to 15 Martins at pond, and a pair of

Swallows at onstead; Sedge Warblers in the willow-scrub on the Redhenge, Dowlaw, and Lumsdean mosses; Heron flew out of the moss; pair of Stonechats at Dowlaw moss; and on two other furzy spots on the moors. Pipits thinly spread along the bog edges; Larks were not scarce. 4 Black-headed Gulls nest in Lumsdean moss; and 5 or 6 Curlews frequent the adjacent heath; 4 Wild Ducks; and 2 smaller Grey Ducks—with bullet-like heads and white patches on the wings—frequent this moss; and the Sedge Warblers were in every willow thicket; and there were a few Reed Buntings also. Grey Linnets build in the thickets of furze on the rocky ridges of the Lumsdean leas; Cuckoo heard; 4 Whinchats near Lowrie's Knowes (Dowlaw) on a grassy and whinny dry and rocky ground, sloping to a bog, the males singing a constant song; then other 3 were seen on Redhenge Hill, one male singing very sweetly; appeared to be shifting ground; still nearer Oldcambus a Whinchat was crossing a ploughed field passing inland—these were probably all new-comers. At Dowlaw-dean, while two masons were building a dyke, 2 Cuckoos alighted on the string they used for guidance in their work, and had a fight together. May 18, 2 male Wheatears, migrating across cultivated ground, flew up and perched in an ash tree; Sedge Warblers in the hedges. About a dozen Martins settled at Swallow Craig. Swallows at onstead. May 20, 2 Sedge Warblers; one hovered in the air, and then perched and sang. On the 21st they were pretty well inland; and Martins were collecting clay for nesting. May 22, Wood Wrens in four different localities in Pease-dean woods; and Blackcaps in four localities; but there were no Sedge Warblers there. Spotted Flycatcher had arrived at a planting border at 5 o'clock p.m.; departed before next day. May 23, Stonechats breeding in dean. May 24, Blackcaps singing; female Redstart; Swift seen with other Swallows. May 25, More Sedge Warblers arrived. Martins are much augmented in numbers; from 40 to 50 on the coast; many of them engaged in carrying clay to nests; again thus employed on 26th. May 29, Sedge Warbler in Tower dean, only one. May 30, Same nesting at Oldcambus; Martins continue numerous. May 31, Corn Bunting near Cockburnspath Station; Swifts plentiful at East Linton.

JUNE.

June 2, Swifts at Cockburnspath. June 14, Jackdaws carry out dead young and drop them. Carrion Crows fly off with young chickens at Pease mill, pouncing on them early in the morning. June 21, Young Jackdaws have flown. June 22, Curlews on coast for first time. Grey Linnets numerous in dean.

JULY.

July 8, 3 Curlews and 1 old Black-headed Gull on coast. July 11, Visited Skippath and Fairy Castle deans above Oldhamstocks; Pied Wagtails on the gravel above Oldhamstocks as far as the Fairy Castle; Chaffinches old and young were particularly numerous by the stream-side, as if in search of food. These upper glens are great summer breeding places for these birds. Grey Linnet seen. A breeding place probably near Ewieside Hill is one of its resorts. Great numbers of the Sand or

Bank Martin up to the Fairy Castles ravine; a few pairs of these breed in a sand pit at the Kinniegar (Coneygarth) near Chapelhill; and I am told that House Martins more than usual frequent the farm house there. A pair of Whin-chats below Aikengall; and several Wheat-ears in the gravelly stream near that upland farm place; Sedge Warbler in a willow bush there; Stone-chat on furze near the Fairy Castle; Water Crow in Skippath, but birds scarce there; only one Thrush visible; Wren in song. July 14, went from Penmanshiel, across the country by Abbey St. Bathans, Burnhouses, Rigfoot, and Whitcheater to Longformacus. The carcass of a dead horse at Penmanshiel near a wood-side has attracted fully a score of Blackbirds, old and young, a Thrush, several Chaffinches, and a Robin for maggots. My brother, in spring, saw on the post-road near Grant's House, two Blackbirds fighting. One had quite disabled the other by tearing the feathers out one of its wings, so that it could not fly. It would have been killed by its rival had he not carried it half a mile and then freed it. There were Whinchats in the river Eye in the haugh at Quixwood gate; a flight of young Whinchats was seen beyond Abbey at head of Allerburn; and another on Windshiel ground behind Cockburn Law; Stone-chats appeared on furze on the same ground; and great number of young Chaffinches on the road before the horse, possibly anticipating food from the horse-droppings. Near a wire-fence a Curlew was chasing a Corbie from its young or eggs. The Corbie sat down on the watch, and the Curlew put it up, and when the Corbie flew the Curlew went in pursuit, two or three times. Then the Curlew made a determined attack, attended with considerable wheeling in the air, and the thief finding himself overmatched made off; Water-crows had been scarce on the Dye this year. There was once a heronry at Longformacus; the Herons' pool is still known on the Dye. Swallows were seen at Longformacus, Whitcheater, and Burnhouses; there were two flights of young Whinchats between Whitcheater and Rigfoot, in a rough grass field not pastured; a Pied Wagtail at Whitcheater was hunting like a swallow for flies, in a zig-zag manner over the tops of the tall grasses, and then alighting on the twigs of some shrubs. At Rigfoot there were great flights of young Chaffinches among the brackens near the Mill Cottage; another similar assemblage has been previously noted. These young birds probably all leave the hills in autumn. Towards sunset the Rooks were resting in a body on a hill pasture near Windshiel; and another company at the Retreat above the Whitadder banks. There were Pipits on the Windshiel Moors and at Whitcheater, but not many. July 17, at Fast-castle across the moors; Whinchat on Penmanshiel Moor; Young Wheat-ears were observed at Oldcambus and above Headchesters, and quite a company on the post road above Upper Moorhouse; probably all making for some centre of assemblage farther south; Pipits few; a few Curlews left on moors; 5 seen flying towards the coast. Salmon fishers appear to have frightened the Peregrine Falcon from Fast-castle; absent this year there; Cuckoo seen at Dowlaw mill; Only a few White-throats remain in the dean at this date. July 18, some new Redshanks come to shore, one had

a constant note of *chip, chip, chip, chip*; perhaps a call to its young, as I have heard the same call at Gullane Links, where it seems to breed; no Curlews on shore. July 22, one Curlew at shore; and a few Black-headed Gulls. July 23, Whitethroat in garden at currants; Curlews flying between hills and shore. July 24, a number of young Willow Wrens among garden flowers, and examining the box-edgings; at times flying at each other in contention. July 25, Martins very numerous this year at Swallow Craig; 2 young Herons at the rocks; Whitethroat brought young brood to garden to feed on red currants. The young were active and playful, chasing each other; some of them uttered a continuous inward chirp; in appearance and attitude not unlike Linnets, hence their popular name, "Lady Linty White."

AUGUST.

Aug. 3, a Wheatear on top of one of the out-houses in afternoon—a bewildered pilgrim; Wood-wren at Oak-brae, on its passage south; Black-headed Gulls following plough. Aug. 4, to Fast-castle. Wheatear on Redheugh hill; 3 young Whinchats at nesting place at Soldier's Dyke near Dowlaw; several pairs of Martins at the cave mouths below Fast-castle; Grey Linnets on Dowlaw Hill. Aug. 9, Pease dean, several young Redbreasts and Wrens; also young Whitethroats and Willow Wrens; and young Water Crows; Blackbirds, old and young, at wild rasps and geans. Aug. 11, a few Lapwings appeared on fields in forenoon. Aug. 24, young Pied Wagtails at Cove, on road, rushing and snapping up flies. Aug. 28, Whitethroats in garden.

SEPTEMBER.

Sept. 3 to 7, a few Whitethroats visible; but have left the hedges. A party of young and old Stonechats in the dean. Sept. 5, a few Herons, Curlews, and Redshanks on the shore. Sept. 8, 12 Herons on the coast; 10 Grey Linnets at seeds of *Carduus lanceolatus*, mostly young; no Willow Wrens seen for some time; 1 Wheatear; Redbreast began singing on the out-buildings. Sept. 9, 10, and 17, White-throat still here. Sept. 12, Pipits still on the moors. Sept. 13, two young Pied Wagtails; Martins here and also on 15th. Sept. 18, many Wagtails on roof of Pathhead granary chasing flies along the slates or leaping into the air; Swallows there, but no Martins. Sept. 22, Swallows still at steading; Martins have deserted all the coast stations; Lapwings more numerous in fields. Sept. 23, 1 Swallow only; Swallows left Milne Graden, same date as last year. Sept. 25, 1 Martin left at Swallow Craig, and a pair of Swallows still remain. Sept. 26, at Harpertoun. Swallows were very numerous at Grant's house near the station, as if assembled for departure; none seen at Marchmont station; still continue at Wormerlaw; none on the Tweed, near Edenhall; (Swallows numerous at Marchmont, P. L.) Sept. 27, numerous Swallows about Berryhill and on the Kelso race course. The morning was raw and damp; the congregation of Martins in Kelso was something worth beholding; they appeared as if they had been strung row

above row on the telegraph wires, while others occupied the house-ridges in compact lines. Sept. 28, Swallows continue at Wormerlaw: these were the last I saw for the season.

OCTOBER.

Oct. 1, Swallows left Marchmont, *P. Loney*. Oct. 5, many Pipits in dean, Rock and Moss Pipits intermingled, all left the place before 6th; Stonechat in dean. Oct. 10, a single Pipit on top of Three Brethren Hill, Selkirkshire; no other bird of the kind over a great expanse of moor traversed. Oct. 24, Cormorant returned to Scart Rock; 7 Herons on the rocks, several of them young birds. Oct. 26, 10 Herons on sea-rocks; stretch out their necks when they fly off and continue in alarm. The drawn up neck marks the sedate flight; pair of Stonechats in dean. Oct. 9 and 16, Woodcocks on Oldcambus hill and dean.

NOVEMBER.

Nov. 2, Grey-backed Crows arrived on coast. Nov. 3, about 20 Missel Thrushes passed in a flock northwards; alighted on some hedges of a sea-side field. Nov. 14, Highland hills visibly white with snow. A large flock of Wild Geese, 40 at least passed over Peumanshiel, and a great flock of migrating Wood Pigeons passed south on the same day; a flock of Snow-buntings arrived in the moor fields there. Frosty on 15th. Nov. 21, 2 Redshanks in a ploughed field; Golden Plover heard at evening for two nights: pair of Ring-ousels seen about this date in a quarry on hill above Headchesters.

GREY FLYCATCHER. This summer a Grey Flycatcher's nest was placed in a tin tankard suspended inside the window of an out-house in the garden at Milne Graden. It allowed the tankard to be taken down, and the young to be examined. It first reared 5 young; and then 2 of a second laying. The nest and the "tin" are preserved in Milne Graden House.

DECEMBER.

Dec. 11, during snow, the hips were cleared off the wild-rose bushes in the dean, perhaps by Black-birds, which were numerous. 6 Grebes at sea; a pair of Stonechats perched on thistle tops at Siccar point, the male was very solicitous that the female should move on, flying foremost, and then returning to urge her forward; a Rock Pipit having approached too near, he attacked it; Redshanks of which there are very few on the coast this year, at inland pond, and later at cracks in a pool iced over. Dec. 13, One Snow-bunting in stackyard among Finches. Dec. 14, three Snow-buntings passing; 1 Grey Linnet at thistle—down on sea-coast; Song Thrush feeding on *Helix aspersa*; large numbers of Wood Pigeons have gathered into a flock, and are feeding on Swedish turnips; apparently from a different district. Having overfed themselves they sat moping till roused up by anyone passing. They left when the snow disappeared shortly after; one Fieldfare by a burn side; 3 Snow-buntings; 2 large Grebes at sea. Dec. 31, 3 Fieldfares.

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JANUARY.

Jan. 1, Grey Wagtail at Penmanshiel Tunnel. Jan. 2, 5 or 6 Cole Tits in Bowshiel dean; and 2 Tree Creepers: no other birds. Jan. 3, Redheugh moors; a Reed Bunting the only small bird visible on the open moors. Jan. 4, 17 Grebes of medium size off Siccar. Jan. 10, Two parties of Wild Ducks at sea. Jan. 22, Black-headed Gulls in winter dress at ploughed fields, and again on 23rd near Dunbar. Jan. 25, Nearly 100 Ducks at sea; the first great company seen this winter. Jan. 27, Lapwings arrived at Penmanshiel, but left when snow fell; Grey and Pied Wagtails at Tunnel mouth in end of January and beginning of February.

FEBRUARY.

Feb. 1, Frosty. Ploughs stopped. 90 Wild Ducks in three bands at sea; 3 or 4 Redshanks; 5 or 6 Curlews; and 24 Grebes. Female Stonechat in dean. Feb. 5, One Black-headed Gull. Feb. 6, One Heron at sea, and 14 Wild Ducks. Feb. 3, About 100 Sea-side Pigeons feeding on a field of young clover. Eider Ducks (2) at sea for first time this year. Feb. 16, A few Wild Geese at Penmanshiel crossing country. Feb. 18, About 100 Ducks at sea; Rooks attacked young wheat, induced by the presence of Sea Pigeons on it, which are difficult to scare. Feb. 19, 4 large Grebes at sea, and no Wild Ducks. Yellow-hammers seldom crowd, but to-day I counted 16 on one furze-bush. Feb. 23, 5 or 6 Lapwings appeared; Rooks again attacking spring wheat. Feb. 24, Greater Tit, called "Black head," active among hive-bees out airing; Water-hen returned to pond. Feb. 28, Rooks picking holes in turnips that had been eaten across by feeding sheep; very active and greedy all day on young wheat, along with Sea Pigeons. A Rook flying with its mouth open emitted sounds from its throat like nuts being cracked. A Jackdaw that had been left behind, when its neighbours fled, quite overjoyed to regain its companions, flew wildly zig-zag downwards till it landed among them. Pied Wagtails in cattle-folds at Reston.

MARCH.

Mar. 1, 4 Wild Geese. Mar. 2, Lapwings in parties of 28 and 14 hovering, uncertain of a fixed locality. Mar. 5, One Black-headed Gull near Dunbar; Lapwings very numerous in East Lothian fields. Mar. 10, Rooks again attempted young wheat, and began to rob from stacks standing in fields; 1 Fieldfare on sea-banks; Water-hen frozen out of pond in dean, in crossing fields for some open ditch, found its way through a close wire-fence into the garden. On 11th it was feeding on corn with the poultry at the barn-door; and flew off, the poultry screaming as if a hawk had manifested itself. Mar. 19, Jackdaws attacked young wheat. Mar. 20, Snowy weather. Lapwings in sheep-folds. Mar. 27, Guillemot cast ashore; 1 Heron on coast only; 4 Redstarts and 6 Curlews; and 10 Eiders at sea. Mar. 31, After a thaw, a male Pied Wagtail arrived at sheep-fold.

APRIL.

Apr. 1, Grey Wagtail at Tower burn and castle; Lapwings at nesting-places. Apr. 2, 16 Wild Ducks at sea; Stonechats in dean, resident pair. Apr. 3, 4 Wild Ducks only; 10 Eider Ducks; 5 Grebes; 1 Heron; Common Linnet in dean. Male and female Pied Wagtail. 2 Water-hens now at pond. Apr. 4, 26 Wild Ducks, and 4 Eiders at sea; Pied Wagtail flying northward along coast, 3 others inland; 2 Coots at Townhead pond. Apr. 5, 10 Eiders and 6 Grebes at sea; no Cormorants, Curlews, or Redshanks; female Wheatear; 26 Fieldfares roosting in some tall ashes and elms, rather restless; when alarmed flew up and circled round and round as if in search of other trees, and then they flew off. Apr. 6, Still a sprinkling of Wild Ducks and Curlews at sea; 2 pairs of Wagtails flying from coast inland; pair of Grey Linnets in furze. Apr. 7, no Wheatears nor Wagtails. Apr. 10, Only 1 Curlew and 1 Heron on coast; 3 Coots at pond. Apr. 11, 6 Eiders; 2 Wild Ducks; 1 Cormorant (female) and 1 Grebe only left; 2 Wheatears paired. Apr. 12, 13 Eiders in three parties, 6 of them males; 2 Wild Ducks and 2 Curlews only. Apr. 14, 3 or 4 Wheatears flying northwards; 2 after an interval; and then 3 a mile to the east—these were all advancing along the coast and not going inland. 3 Cormorants, 2 males in summer dress; 4 Grebes and 6 Eider Ducks. Apr. 16, Pair of Swallows came to saw-mill at Cockburnspath, as if going to nest; seen early in the morning. Apr. 15, From 20 to 30 Moor Pipits in a grass field near Tower; when they rose they directed their course northwards; two others more to the west apparently stragglers from a migratory band; 4 Coots in pond, no combats this year, as when 5 were present. Apr. 10, Two parties and stragglers of Rock Pipits making for the north along the coast; one of the parties of 10 to 12 crossed a field, and took the line of Oldcambus dean; 4 Eiders. Apr. 18, Ring-ousel on Bell Hill. Apr. 20, Cormorants have left, except a female. Upwards of 10 Wheatears crossing a wheat field and going inland in a south direction; alighting on clods and low bushes and paling, and stretching out long necks in alarm. Apr. 12, 2 fresh Wheatears; rest gone. Apr. 22, Swallow flying high and singing. Apr. 23, Lesser Black-backed Gull at pond. Apr. 24, Solan Geese from Bass were numerous at Cove shore on 22nd; were "striking" young Herrings; 3 seen to-day; 3 male Eiders. Apr. 25, 2 Herons at Greenheugh. These notes prove that there are solitary birds at the coast in most months of the year, which are augmented in autumn, by young broods and their parents. Apr. 26, Two pairs of Eiders; newly arrived Willow Wren associated with 3 Hedge Sparrows, in quest of insects among long grass near a sheltered drain mouth at hedgeside. Sand Martins seen at 11 a.m. Has been cold and cheerless weather for some time. Only 1 Dotterel seen this year at Dowlaw.

MAY.

May 1, A single Willow Wren at Oak-brac attempting to sing. Vegetation suffering from cold north winds. May 3, 1 Wagtail seen. May 5, Willow Wren widely spread in Tower and Pease deans, preferring the outskirts of the woods; Redstart in song in Aikieside, a harsh challenge

note, more objurgatory than melodious, followed by others better tuned, and terminating with thrush-like notes. May 6, Swallows near Cockburnspath. May 7, Wind E., milder. On the moors, a migratory rush of Pipits during the night; they sat by nines and tens about swamps on Earnslaw and Greenside hills, accompanied by several male and female Wheatears—the Wheatears were paired and very brisk; a female Whinchat was of the company, and 2 Stonechats on the furze; none of the Pipits were singing. After passing this cluster, none were seen for a long space; when a female Whinchat perched on a paling stob, from which it dropped down as if to pick up food, according to the habit of it and the Stonechats and Wheatears. Reed Bunting in Penmanshiel moss; 3 or 4 Wild Ducks; Curlews seen coming from the coast to the moors; several spread over the moors, but not numerous; Ring-ousel on the dry ground east of the moors, and in Dowlaw dean. Numerous Lapwings nesting on new land on the moss edges; Pipits rather scarce on the rest of the moor. 15 Wild Ducks in Lumsdean moss, and 4 in Penmanshiel moss—their summer haunts. Only a pair of Black-headed Gulls at Lumsdean moss; the bare heathery ridges near it, a favourite resort of the Golden Plover; saw some half-dozen Cuckoos, 3 of them calling. Only 1 Willow Wren in Dowlaw dean, and another in a thicket on the moss; Redstarts seen and heard in the dean; 2 male Whinchats on Lowrie's knowes (see last year). Cuckoo again seen at Piperton, at Penmanshiel moss, and on paling Dowlaw dean. 4 or 5 Coots in Dowlaw pond; pair of Stonechats on Redheugh hill, and a few moving Wheatears. Thus the wild moors were becoming peopled, or afforded a resting-place for sojourners on their way to still more remote retreats. May 8, Sleety and cold. A male Redstart in garden, dropping repeatedly to the ground, and then seating itself on branches, thrilling its tail; very restless, settling nowhere, it continued till 8 o'clock in the evening, then tried to conceal itself in ivy, but fixed on a wall apple-tree for the night. May 9, Snowy. Redstart acts in the same manner as yesterday. May 10, prevented by Sparrows, it was every now and then glancing to and fro to escape their intrusion; left on 11th. May 11, Tit-lark near a ditch; a male Redstart associated in planting with Chaffinches and Greenfinches; 1 female Willow Wren; 2 newly arrived Wheatears. An unwonted number of stragglers (migrants) crossed the neighbourhood this spring. Swift and Swallow on sea-banks, and a Pied Wagtail; 2 Curlews left on the shore. May 12, Wind E. with considerable rain, and then shifted to W. and became milder after severe weather. Oldcambus dean is tortuous and capable of sheltering numerous birds among its furze, white thörn bushes, and black thorn thickets. In the afternoon at 2 o'clock I happened to enter it at the open western end where it terminates in flat cultivated ground. Here and all down the dean were a band of migrants resting in the shelter, after their long journey. At first there were about 6 Whinchats, 2 Grey Linnets, 2 female Redstarts, and 5 or 6 Willow Wrens on the furze bushes; the Willow Wrens in search of food among the blossoms. More appeared as I went downwards, at one place nearly a dozen being in progress westwards; and then there were no more birds for

a quarter of a mile, when 2 Whinchats appeared, perhaps left behind; Swallow seen. May 13, Swallow came to Penmanshiel. May 14, Cuckoo heard at Penmanshiel, and Swifts seen. Looked into Pease dean; Willow Wrens general; 1 Wood Wren, newly come, was very alert and bold, chasing Willow Wrens and Gold-crests; it had a fluttering motion in its short flights like a Lark or Pipit; alighted on slender twigs and trunks of tall trees; repeatedly hawked after flies. Its short wings project as it sits; tail short; bill long and slender. Another male perched on twigs and sung, shivering its tail and the tips of its wings, and then uttering its call-note—*Twey! Twey!* It often wheeled round on its perch; there were a few also at North Cleugh and the forester's cottage. Pair of Sandpipers at Pease burn; female Redstart at the cottage; Tit-lark seated on a drying post mounted aloft and wheeling suddenly returned to its perch; 1 Swallow. I again examined Oldcambus dean; it was occupied by another migratory band of small birds. There were a pair of Whinchats at the upper end, and 4 or 5 on the grass at the lower break in the dean, as if tired, and newly landed; they hid themselves among furze. There were also several Willow Wrens and 1 Whitethroat, which was in full song, but keeping well concealed. A pair of Swallows and a Martin were dipping, in flight, in a pool; then came more Swallows, and Martins, and Sand Martins, quite a muster of new-comers. At the sea-banks the Swallows were numerous mixed with Sand Martins and Martins, and there was 1 Swift. Near Swallow crag from 20 to 30 Martins hovering about their nesting corners at the summit of the precipice. 3 Wheatears seen during the walk. In the middle part of the dean, near an old quarry, there was a crowded arrival of Willow Wrens, some of them small brown and grey birds, without the olivaceous tints, as if a distinct race; some were sitting on the grass, others on the gravel of a glitter; 5 were resting on one black thorn, like stuffed birds in a case, and 3 on another; plumage out of order, weary and drowsy. A male Whitethroat was also among the reposing group, preening himself; and there was a larger bird hid in the grass, of the size of a Pipit, but paler in hue, and showing only its head at intervals (Grasshopper Lark?) A male Stonechat was one of the band. Several of the Whinchats first seen had gone off before I returned about half-an-hour later; but Willow Wrens continued numerous among the furze, and there were several male and female Chaffinches also, which might or might not be travelling northwards. May 15, Calm and fresh. At 7 a.m. 2 Swallows lighted on Laburnum in garden fence and surveyed the situation; nested here; 2 also at Linhead. Willow Wrens getting into hedges; Whitethroat at Pease mill; Sedge Warbler in Tower dean; common Wrens numerous in that dean; Blackcap at Pease bridge, only one; Whinchat moving inland near Pease bridge; Whinchats and other birds had mostly left Oldcambus dean in afternoon; a Whitethroat and some Willow Wrens remaining behind; only 1 Martin on sea-banks. May 16, Dean cleared of Willow Wrens; Swallows remain, playing across the fields; no Martins; 1 Willow Wren in garden examining the leaf-buds; Sparrows following to pry into its proceedings. More Whitethroats arrived; and on 17th became

widely spread. May 19, Martins at pond; Whitethroats passing inland, in hedges on the 20th, when Martins were very numerous with Swallows at Swallow Craig; 2 pairs of Stonechats breeding in dean. May 21, 1 Sedge Warbler; Corncrake heard; Grey Linnets numerous among some furze at Windylaws, near Redheugh. They are said to be numerous at Ross, near Lamberton. Pair of Eiders at Scart Rock. Are they breeding on the coast? May 22, At Edrom. Swallows at Mid Edrom farm; large rookery near Blanerne; 3 Pied Wagtails on Whitadder; 2 pairs of Sandpipers; Thrush at intervals; Blackcap singing at Edrom; Dr Stuart heard it to-day at Pistol plantings. Swifts occasional; Swallows few; only 3 Sand Martins at Chirside bridge; none at Kimmergham sand-pits this year; female Redstart at Todheugh; Tit-lark near Blanerne; Starlings numerous about old trees at Edrom. May 24, Martins and Swallows on sea-banks and at Pease mill; a few Sedge Warblers in Tower dean; pair of Stonechats on furze, banks above Pease mill. May 25, 1 Flycatcher at the Oak brae wood; not there on the 26th. May 27, Sedge Warbler in hedges at Chesterfield. May 31, from Kelso to vicinity of Hownam; Tit-larks calling in Beaumont forest; Coots in pond at Kersknowe; Pied Wagtails at Morebattle Tofts, and Hownam, and Heatherhope; Black-headed Bunting at Mainside; Cuckoo and Ring-ousel seen when crossing the hills into Northumberland.

JUNE.

June 8th, returned to Hownam. Swift builds at Under Chatto; the Redstart frequents the tall hedge trees there, and has been seen in the Manse Garden; Long lines of rookeries on the Kale, and its adjuncts; Rooks feeding on Amaras and other travelling beetles, and a smooth grass caterpillar frequent in the hill pastures; Sand Martins by Kale; Cuckoo and Titling on paling; Whinchats and Wheatears seen; Black-headed Gulls fishing in the open stream; Corncrake heard here in the previous week; here last year's Cuckoo lingered so long that the snow surprised it; Tit-lark at Bughtrig, and a bird like *Sylvia hortensis*; Rookery at Bughtrig; Flycatcher at Hownam. June 22, first Curlew on the shore; Grey Linnets are numerous in the dean; Martins are numerous this year on the coast.

JULY.

In Northumberland from June 26 to July 5. July 12, a few Redshanks and Black-headed Gulls have returned to the coast. July 13, Coots at pond, utter cries in the evening like a spinning-wheel put in motion; Black-headed Gulls seen moving sea-ward; one of their Roxburghshire names is Bell-crake (Bell is bald, and Crake the land-rail) perhaps from this sound. July 19, Whitethroats come to garden; 3 Herons on the shore; and a young Wheatear. July 23, no Willow Wrens in dean; Flycatcher seen. July 24, 4 Redshanks; 2 Curlews; and a few Black-headed Gulls at shore. July 26, Willow Wrens and Whitethroats in garden at red currants.

AUGUST.

Aug. 3 and 4, Jackdaws for two days have flocked to fields where caterpillars and chrysalids of Diamond-moth were numerous on turnips, or concealed under clods, turning these over in search; but on the 5th and 6th have returned to their mischief among the bean-pods; many Whitethroats as well as Willow Wrens, young Chaffinches, and a few Thrushes in bean fields. Aug. 6, Curlews with mellow notes flying between the sea and the hills. Aug. 7, 8 Herons on shore; Whitethroats in garden; many young Stonechats in dean. Aug. 14, several birds migrating southwards; there are a number of Wheatears on walls at the upper and lower part of the dean; and 3 or 4 Whinchats are associated with the Stonechats that breed there, and a young Wheatear. Rooks and Jackdaws ravenous on corn, especially ripening oats. They hover about it, and dive into it like sea-fowl into water; the Jackdaws more in number than the Rooks; young Rooks insensible of danger despise shots fired at them; and Jackdaws associate with these bold unwary birds for a leader. When they fly off one young Rook will be attended by two or three Jackdaws; Lapwings appeared in numbers in turnip fields; Jackdaw again at the caterpillar-frequented fields of turnips. Aug. 15, Several migrating young Wheatears on walls. Aug. 18, several Wheatears, young Pied Wagtails; and several Sea Pipits have found out the Caterpillars; Sparrow Hawk scattered them. Aug. 19, great band of Curlews at sea. It will be seen by Mr R. Renton's report that during this month Curlews and Lapwings were departing from the centre of Berwickshire. 9 Herons and a considerable flock of Redshanks at sea; numerous young Grey Linnets at thistle-seed on sea-banks, they pull out the seed, and let the down fly off like successive puffs of smoke: Swift last seen. Aug. 25, 12 Herons on coast; 4 or 5 young Grey Wagtails at turnip-caterpillars; Linnets continue at thistles.

SEPTEMBER.

Sept. 4, Whitethroat at garden, all the small birds gone from the woods; Pied Wagtails among sheep at Blackburn; all the birds away from the banks of the Eye from Blackburn mill downwards to Quixwood; no Whinchats; Sand Martins or Sandpipers, or Moor Pipits; 5 or 6 Wild Ducks in Eye; Wheatears seen in crossing the country; 1 Curlew still on the uplands; Black-headed Gulls were on the leas; and Lapwings in turnip fields. Sept. 6, family of Stonechats still in dean, with a Whinchat and Willow Wren among them; Wheatear on wall; Whitethroats in garden, and for a few days' after. Sept. 11, Wheatears had all left Gullane Links; Grey Linnets frequented the links; numbers of Pied Wagtails near Cockburnspath Station, and in an oat field, all in movement southwards; 12 Black-headed Gulls and Lapwings on the caterpillar-haunted turnips; the Gulls every now and then attacking the Lapwings, which nimbly eluded them. Sept. 14, 1 Wheatear. Sept. 17, went to Wooler. Swallows assembling on slated roofs at Belford; and a little party occupied in line a rail across a brook in view of the Park; no birds on Chatton

moor. Sept. 18, Swallows still at Belford. Sept. 19, All Swallows and Martins appear to have left Oldcambus, etc., after a thick fog; and none seen at Penmanshiel after that. Sept. 25, again to Wooler. Swallows and Martins sporting together on Tweed at Berwick. Sept. 27, pair of Swallows still at Middleton Hall; numerous others at Tiptoe, along hedge sides, during a thunder storm; Pied Wagtails on slated houses at Middleton Hall, and again at Etal, in chase of flies; and again on Tweedside at Berwick.

OCTOBER.

Oct. 2, 4, and 5, bitter cold weather; Snow-buntings at Penmanshiel. Oct. 12, a Whinchat among bean stooks near coast. Oct. 13, at evening, 4 or 5 Ring-ousels in the dean among the hips of the dog-roses, along with Blackbirds and Thrushes, making much chattering. They were pursued as strangers by Yellow-hammers, which were also pecking at Chaffinches. Oct. 16, vast numbers of Lapwings in fields at Skateraw, E.L.; as they rose the fields appeared to undulate with the flapping of wings; 16 Grey Linnets in dean. I am glad to see that in summer, by hedgesides, extracting the dandelion seeds, Grey Linnets are pretty general. Oct. 20, a Ring-ousel among turnips at Siccar; pair of Stonechats left in dean. Oct. 23, 33 Ducks in sea at Siccar; 20 there a week ago; 1 Cormorant only. The salmon fishing has disturbed their retreat, and they are now scarce. Oct. 25, 5 or 6 Ducks; few bred in the mosses this year. Oct. 26, Peregrine at Siccar, near the caves; 6 or 7 Wild Ducks. Oct. 28, calm. A very large flock of Wild Geese at 4 p.m. flying to the north, towards the sea, upwards of 100; they rose from Howpark where they were feeding on stubbles; two days previously 24 had been seen at Penmanshiel. Oct. 29, 20 Wild Geese passed flying northwards.

NOVEMBER, DECEMBER.

Owing to the mildness and uniformity of the winter, very few birds have frequented the coast, and only of the ordinary kinds; the Stonechats remained all winter.

1884.

I have seldom had a poorer return of migrants than this season. Owing to the long continuance of cold north-east winds on the shelterless coast, birds on arrival either passed directly inland, the open weather offering no obstruction, or they preferred the warmer interior valleys in making their advances northwards or across the country. There were no marked "rushes" or migratory associations of a variety of birds, as might have been expected from detentions by adverse weather on the passage, but for the most part the new comers were scattered or single, the vacant places in the woods and wilds being filled up, like the silent covering of the trees with foliage, without being the subject of observation.

Jan. 20 and Feb. 23, Stonechats had continued all winter in last year's quarters, in which 3 pairs bred during May, as they had done in 1883. Feb. 23, About 20 Curlews assembled on the shore, previously they were

scattered; 14 or 15 Grebes in the sea; Herons, except one, had left the coast. Mar. 8, Lapwings returned to Penmanshiel; and on 15th, Curlews and Golden Plovers also; Grey Wagtail arrived. Mar. 16, Lapwings on breeding ground near Cockburnspath. Mar. 17, mild, Pied Wagtail arrived; Water-hen returned to inland pools; 22 Curlews still on sea-banks, and 7 or 8 Redshanks; Cormorants scarce this spring. Mar. 20, after great gales a strong party of Grey Linnets settled in a furzy dean here, and all along the furzy spots on the coast between this and Fast-castle, and many continued and bred; the bird is more generally diffused this spring by way-sides, feeding on dandelion seeds, than I have seen for several years; pair of Eiders appeared on coast, and 3 or 4 Grebes at sea. Mar. 22, Pied Wagtails again. Sowing oats; Rock Pipits following the harrows. Mar. 24, sowed barley. Mar. 25, no arrivals on the coast near Cockburnspath; a pair of Grey Wagtails seen. N.B.—“Kitchen midden”—broken bones of animals and numerous limpets and periwinkles discovered in rabbit holes at the Kip Rock, Cove Shore, Cockburnspath. Mar. 28, very cold, only 1 Curlew left on coast; Woodcocks have been very scarce during spring and last autumn, and only one or two at a time; 2 were seen during the week, and 1 for the last time to-day. The Coast near Fast-castle is one of the points for the arrival of Woodcocks, whence they become dispersed over the lower country between it and the Pease dean. Apr. 4, no Curlews, Redshanks, Wagtails, nor Cormorants on the coast; 1 Wheatear and several Moor Pipits at Penmanshiel. April 11, dry, but cold. “Chiff-chaff” in Pease dean, in two localities; Wheatears had been prevalent at Elsdonburn in Cheviot in beginning of week; two male Pied Wagtails at night; Brown Owl has eggs. Apr. 15, 20 Eider Ducks off Siccarr. Apr. 20, a single Wheatear on coast, passing northwards; 1 Redshank still left; Wild Geese left Penmanshiel outer fields; a week after another company succeeded, and they also left by May 1. Apr. 23, one Dotterel seen near Dowlaw. Apr. 25, continued cold up to date. At Bilsdean shore, near Dunglass, under shelter of the cliffs, a small party of Swallows and House Martins sporting; 2 Oyster Catchers there, Grey and Pied Wagtails likewise; Ring-ousel at top of Dowlaw dean. Apr. 27, very cold. A single Willow Warbler in hedge; single Swallow visited an old nest at Penmanshiel. Apr. 29, milder, 2 Curlews on coast; 2 male Wheatears arrived; same day a party of 18 of these birds crossed the fields at Penmanshiel, flying from clod to clod, and perching on walls; a single Swallow here. May 4, milder. A few Willow Wrens singing; 1 Whitethroat and a small crowded party of Willow Wrens arrived in dean; 2 Pied Wagtails and 2 Wheatears, a Swallow, and 4 or 5 Martins seen on coast. May 6, wind N., cold, female Tit-lark (*Anthus trivialis*) on tree in Pease dean; several Willow Warblers; 2 Wood Wrens arrived; no Blackcaps. May 7, Willow Warblers numerous; only 1 Whitethroat as yet. May 8–12, observations continued at Harperton and Tweedside. May 8, weather grey and cold, Redstarts calling in wood next Harlaw; Willow Warblers general; Swallows present, but scarce. May 9, Corncrake heard near Kelso. May 10, forenoon, walked between high hedges on roads and lanes between Hassington and Crosshall. Seldom have I seen so few small birds within

so much covert; 2 or 3 Whitethroats haunted some furze bushes where the view was open, and a Willow Warbler or Chaffinch was heard at wide intervals, but no other bird; no Swallows. In afternoon Cuckoo heard twice; Starlings were general, and Larks in the fields not scarce; Magpies visible. May 12, Whitethroat heard near Edenhall, where a newly-arrived Sedge Warbler sang, and also a Blackcap in a hedge near Harpertoun. At Kelso large band of Swifts playing among Martins; Swifts also at Cornhill, where a Corncrake was calling in a field; Swallows at Oldcambus on return. May 14, single Garden Warbler among currant bushes in garden singing at intervals. Left that evening. May 15, first Whinchat at a drain along with a Pied Wagtail; 1 Sand Martin seen; several Whitethroats. May 19, Corncrake heard; Swifts at Berwick. May 21, a single Lesser Whitethroat (*Sylvia sylvicola*) seen near Paxton House. It had a feather in its mouth as if nesting. Two young birds had been got at Berwick in September, 1881, and the one preserved closely resembles the Paxton bird. May 22, Garden Warbler on ash tree at Oldcambus examining the flowers for insects; a single Spotted Flycatcher on coast near Redheugh seated on a dog-rose bush in a wild sequestered hollow below precipices; 4 or 5 Whitethroats there also, and a Ring-ousel. 3 male Sedge Warblers more inland. May 26, Sedge Warblers advancing inland; Martins, Swallows, and Sand Martins general. May 27, Grey Linnets feeding on dandelion seeds. May 28, 3 pairs of Stonechats bred in dean this summer. May 29, Sedge Warblers near Duddo and Shellacres; and Grey Flycatchers in a wood. June 7, young Stonechats flying. June 28, Curlews and Black-headed Gulls on coast. July 2, young Whitethroats out. July 4, young Stonechats out with old birds. July 10, young Whinchats. July 15, Fledged nestful of Grey Wagtails above Oldhamstocks; Wheatears numerous near Aikengall. Whinchats and Stonechats there also, and 2 Blackcocks. July 19, Sedge Warbler has nest in a field of barley, among the long corn; perches in song on the corn-tops, or rises from them singing in the open. July 24, Redshanks on the shore. July 25 and 26, At Duns Castle. Several Redstarts seen; Mr Ferguson said these birds were very common about the Castle woods, wherever there were heaps of stones; the Stock-dove there frequents some of the roots of blown-down trees; several Teals breed about the lake; the Coots seldom leave except during the very severest winters. July 27, Whitethroat commenced visiting garden for caterpillars. July 28, Wheatears on coast; brood of Chimney Swallows out; Pied Flycatcher at foot of Pease dean. Sept. 1, Warblers and small migrants had disappeared; numerous flocks of Grey and Green Linnets on stubble-fields, where wild mustard had abounded. Lapwings returned to turnip-fields, where the foliage was much hurt by the caterpillars of the Diamond Moth, which was very prevalent this season generally. Sept. 8 and 10, Meadow Pipits frequenting grass-fields; several young Pied Wagtails also, and a Wheatear. Sept. 7 and 13, Stonechats old and young continued on the coast; 11 Herons on coast. Oct. 1 and following week, Wild Geese came to Penmanshiel as harvest ended, and continued in great numbers. Seen

at Oldcambus on Nov. 6, when in the evening a great band passed over seawards. Oct. 13, a single Whitethroat on furze associated with Stonechats; severe gales of wind for three days had perhaps diverted it from its course; it was perched in the sun, and followed the Stonechats. Oct. 16, Larks numerous in small flocks for some time back; wind from the north. Oct. 18, 3 Grey-backed Crows passing across sea-side fields. Oct. 20, Wild Ducks returned to the sea; 14 or 15 going inland at night. Nov. 5, a single Fieldfare heard; on the 11th there were many small flocks. Nov. 6, an immense string of migratory Wood Pigeons passed overhead flying southwards; so numerous that one could scarcely imagine so many were left in the country.

FANS BY EARLSTON, 1883. By ROBERT RENTON.

Jan. 1, White Chaffinch shot at Fans, it was a very light cream colour. Two years ago there were 2 Albino Chaffinches seen here; both unfortunately shot. Feb. 6, a Sentinel Butcher Bird shot at Gordon. Feb. 12, a large flock of Fieldfares in the fields; 16 Lapwings seen. Feb. 22, plentiful. Feb. 19, Herring Gull still keeping inland; Wood Pigeons, pair. Feb. 20, Rooks carrying sticks to their nests; Jackdaws in pairs. Mar. 3, Starlings building nests; Herring Gulls left; Black-headed Gulls have returned. Mar. 10, Wood Pigeons sitting on eggs at Fans moss. Mar. 24, dead Mountain Finch; weather has been very severe of late. Apr. 1, Wheatear arrived. Apr. 6, Black-headed Buntings seen in numbers. Apr. 8, Curlews and Lapwings have nests but no eggs. Apr. 10, Snipes began to pair. Apr. 13, saw three nests of Lapwings with three eggs each. Apr. 14, House Sparrows and Chaffinches preparing their nests. Apr. 24, young Rooks plentiful in Mellerstane woods. May 5-10, very cold weather. May 13, Cuckoo heard; seen on 15th. May 14, Swallows seen. May 17, Land-rail heard; seen 19th. May 18, 2 nests of Thrush, this bird has not been seen here for the last two years; Field-lark nest with 4 eggs.

Aug. 3, Lapwings in large flocks; young Curlews full grown; 1 white bird among them. They had nearly all left on the 8th; and the last was seen on 16th. Aug. 24, Lapwings all away. Aug. 25, Fieldfares arrived in flocks. Oct. 10, I saw about 12 Swallows; 1 seen on 14th, and not again.

CHIRNSIDE, 1882. By DR CHARLES STUART.

Blackbird's, Thrush's, and Wood Pigeon's spring notes first heard on Jan. 19; Partridges mostly paired from 15th Jan. At this time no Wrens visible. Mar. 23, saw Chiff-chaff among the bushes at Billie Brae. Mar. 25, saw Pied Wagtail near Eastreston. Apr. 4, saw Willow Wren. Apr. 16, first Swallows seen near Allanton. Apr. 20 and 21, plenty at dam, above paper mill, Chirnside bridge. Apr. 27, Sandpiper at Bluestone ford. Apr. 28, saw Redstart at Todhaugh. May 1, Smaller Whitethroat seen. May 4, Corn-crake heard on Chirnside crofts. May 3, Cuckoo heard in strips of wood near Blackburn, Chirnside. The Thrush although

not plentiful is again here singing. May 14, Swifts seen in their usual haunts in old tenements, next Waterloo Inn, Chirnside. June 1, Wrens at Hutton hall, Grant's house, and Edington mill. June 1, Redstarts plentiful in the village and near churchyard. July 16, Mr Millican saw a flock of Canadian Geese, feeding in his mill pond. Thinking they were tame birds, he incautiously disturbed them. They took wing and flew over Blackburn. Were they truly wild or naturalized? from Gosford in East Lothian? Aug. 18, Redstarts unusually plentiful, perhaps before migration; more fine covies of Partridges than for many years. At this date can hardly be distinguished from old birds. Aug. 21, Swifts left with a strong gale from west. Sept. 9, summer visitors mostly gone; saw Whitethroat and Willow Wren at Fishwick Mains on Sept. 6. Sept. 10, family of Pied Wagtails flying about on crofts here; plenty of House Swallows still flying about; Water-ousels and Wrens plentiful about Chirnside bridge; Wheatears scarce in this neighbourhood; saw one at Whitehall on Sept. 6. Sept. 12, a colony of Siskins and Redpolls have nested at Edington mill, among the alders, in the cover. They have been seen quite lately and seem to arrive in this country together. Sept. 24, at Peerbank stream near Edington, on the Whitadder, my sons saw a Kingfisher. None have been seen since great frost of 1880-1. Oct. 6, the House Swallows left early in the month, but stragglers still remain; saw 3 at Allanton bridge on Oct. 16; nests of young at New Mains, Foulden, on Oct. 3. Oct. 5, when gathering fungi in Pistol plantation, Blackadder, flushed first Wood Cock. Nov. 10, saw large flock of Golden Plovers, near New Horndean, and they have frequented the fields there all winter. Dec. 4, large flocks seen at Whitsomehill. Dec. 6, saw 65 Wild Geese flying south near Sunwick, day before the drifting Thursday. Dec. 7, great snow-storm, weight of snow broke the tops of the trees greatly. Hares and rabbits fed on the bark of the Scots-firs, being unable to get at other nourishment, the snow being hard frozen into the ground; Laburnums also.

1883.

Jan. and Feb. The Green Plovers have appeared in flocks at their usual time, viz., when the weather is fresh, at the end of Jan. and beginning of Feb.; but we have had some stragglers all winter. No Wild Geese have been observed flying north.

Mar. 5, in returning from Whitsome, I saw a bird resembling a Turtle-dove, in a young grass field. On stopping my conveyance, it rose, and proved to be an ash-coloured Blackbird. Being preceded by its mate in its flight, I had a good opportunity of having a good look; and from its size it was evidently a male. It flew into the Pistol plantings. This bird has since been seen at the new fox cover at Canny Bank, by Tom Shiell, keeper to the Hon. E. Marjoribanks, M.P. In the *Berwickshire News* I observed an account of a white Chaffinch having been seen near Swinton. A most beautiful specimen of the same colour was observed a few years ago in the strip of wood by the roadside between Allanton and the Free Church. The bird was a male and very shy.

April and May. I observed the Willow Wren on Apr. 27; and on Apr. 28, great flocks of Sand Martins and House Swallows by the river. Sandpipers have also arrived on the Whitadder; on Apr. 30, saw Flycatchers at Blanerne bridge, hawking after insects from the boughs of the trees below the bridge, coming right up to the parapets. May 4, Land-rail heard at Harelaw by my son and the shepherd there. May 12, plenty of Swallows at Foulden New Mains, the afternoon being warm, although windy. May 15, a flock of 30 Swifts have arrived at their summer quarters below the inn at the lower part of the village, where they breed in the roof of a deserted old house. The weather being warm, they are flying about screaming in their flight, and evidently in great spirits. May 15, Mr Henry Craw heard the Cuckoo in the strips of wood above West Mains of Foulden near Edington hill. Weather delightful. May 17, saw Redstart on road leading to Blanerne.

June and July. June 27, flushed young Sandpipers in the corn at Hutton and side of Bluestone ford. My spaniel set them up. Well able to take care of themselves, they flew for shelter to the river banks. July 4, at Broomhouse in Edrom parish, while walking in the garden with Mr Clapham, he pointed out to me in a bed of sweet-scented violets, a nest of the Grey Wagtail, containing many young ones. The violet is named *odoratissima*, and its leaves are exceedingly large, and completely covered the nest. The Whitadder is close at hand, and I saw the old birds on the top of the wall in numbers. In a cold turf-frame, a little farther on, where a crop of the same violets had been matured, another nest exactly the same was known, the old birds flying off. Nothing could be more beautiful than the situation of the nests, the fine broad leaves of the violet covering them completely from observation, and we should have had a difficulty in identifying the species of the bird had the parents not flown off in sight. Flycatchers, and all summer visitors are plentiful, in this retired, well-wooded place. The Redstart is very plentiful this season on the Hutton side of the Bluestone ford, and many young broods of the Wren are flying about there also. July 6, saw large coveys of young Partridges strong on the wing, at Foulden Newtown and Clarabad. About 10 p.m. at this season, I observe the Herons flying high in the air over my house, coming from the river, and flying towards Blackburn and Billy Mire. The plaintive cry of the Curlew is also heard late in the evening when taking its evening flight from the bogs at Blackburn. While returning from Billy Mains, where I have been on duty at 2 a.m. on July 6, I heard the Blackbirds begin to sing almost in the dark at 2.15; immediately after the Lark rose from the corn, in full song, and the cry of the Green Plover was also heard. These I believe to be the earliest birds in the morning. The first notes of the Blackbird sound wild, as if he had slept too long and waked in a fright. The Thrush has been often heard to sing at midnight, when his mate is sitting in her nest near, and in consequence has been mistaken for the Nightingale. July 8 and 9, the Blackbirds still in full song. They have sung beautifully this summer, I suppose owing to their increased numbers, since the inclement winters of 1879, 80, 81, 82.

Aug. and Sept. On Aug. 23, our colony of Swifts left us for warmer quarters. Our cold summer must have proved a bad one for them, as there never were so few flies to be seen, consequently food must have been scarce. On Sept. 10, I saw the House Swallows congregating for a flight. Sept. 11, see no Willow Wrens, Flycatchers, or Redstarts; Partridges are more numerous than usual, strong on the wing, and not to be distinguished from old birds. The wet weather was against Pheasants, which are not so strong nor plentiful as usual. No Swallows nor summer visitors seen here since Sept. 23; however there are still a few stragglers, as 5 Swallows were seen at Chirnside station on Oct. 1, and there were two nests in Broomdykes granary at the same time. 2 Kingfishers were seen at Blanerne bridge, and another pair at Ninewells, by Mr Ross Hume. Blanerne bridge is a fine locality for seeing rare birds. Flycatchers hawking for insects from the boughs of the beeches overhanging the river; Gulls, Herons, and Wagtails are there very plentiful, and summer visitors are also numerous. There is a great increase in the numbers of Thrushes and Blackbirds. They robbed the cherry trees and then took to gooseberries and currants. The crop of the last was so great that what was stolen was never missed.

Oct. Nov. Dec. Oct. 16, Barometer falling. Large flock of Wild Geese observed over Harelaw, flying south. Oct. 18, Cheviot covered with snow. Oct. 29, large flocks of Missel Thrushes, and Fieldfares in the cleared bean-fields. Birds in flocks, especially Greenfinches which are very numerous here. The country is still green, and not like what is seen at the end of October. Still the birds are congregating; large flocks of Green Plovers and Starlings seen yesterday when out driving. Golden Plovers in flocks about Whitsome, where they constantly assemble every season. Nov. 3, after this date, the weather became fine, dry, and sunny. Green Plovers in flocks are still with us. A few Siskins on the alders at Edington hill. Nov. 19, cold wintry weather: snow right down on Cheviot. Dec. 1, Thomas Ainslie, Chirnside bridge, saw a single Swallow flying over the Mill dam there, and hawking for flies. Some repairs were being attended to on the roof of the Roaster house at the Paper Mill. This bird had been dislodged from snug quarters where I believe it had been hybernating. Dec. 8, Golden and Green Plovers in great flocks observed in many places. Dec. 9, saw two Bullfinches at Foulden-hag. These birds are now rare in this neighbourhood since the great frost two years ago.

1884.

Jan. 10, a spring-like chatter among the birds was to be heard to-day, and the Missel Thrush was in full song on the tree-tops at the manse. Jan. 12, a Sparrow Hawk in pursuit of a Thrush at Harelaw in this parish was on the point of being caught, when in despair it flew for protection to the shepherd, and lighted between his feet. The shepherd with his stick beat off the pirate, who flew in circles round his legs, quite closely, determined to seize the bird; all its efforts failed however, for the bird was set safely at liberty by its protector. When riding past Jardinefield,

in Whitsome parish, a somewhat similar experience occurred to me. A Yellow-hammer was sitting on the top of the hedge by the wayside, trilling its well-known note, "*Lerry, Lerry, Kear!*" when a Hawk flew past like a flash, and bore off the songster in its talons. Feeling greatly incensed, I instinctively dropped my reins and whip, and clapping my hands together as loudly as I could, the Hawk relinquished hold of its prey, thinking, I supposed, that I had fired at it. The poor bird flew back apparently uninjured to the hedge, close at my feet and escaped. 4 strings of Wild Geese have been seen flying south to-day (Jan. 12.) Jan. 20, saw a family of Snow-buntings at the dean above Foulden Greenlaw; and two days afterwards, the only snow we have had this season whitened the ground. The Missel Thrush continues in full song, especially in windy damp mornings, he may be seen on the top of some tall ash tree; Partridges paired about the 15th; still some covies and packs are to be seen in cold stormy weather. The Common Thrush and Blackbird were occasionally heard during this month and February; and whenever the weather was fine, the Wood Pigeon's wooing notes were to be heard.

Mar. 6, We had much stormy weather till the 6th of March, when Spring again seemed to assert itself. Mar. 10, when driving near Blanterne through Jock's Loan, an unfrequented bye-road to Billy Mains, in a pool of melting snow in a grass field close to the road, 30 pairs of Wild Ducks were counted dabbling among the water. I never got so near such a splendid lot of birds before; some of the Drakes were of unusual size, and fine plumage. They were evidently Drake and Duck paired, and such was their tameness that not one attempted to rise till I had driven past. It was certainly the most beautiful sight I had ever witnessed, it being most unusual to get near Wild Ducks. Mar. 16, in a ploughed field, outside the Pistol plantings, I counted 16 Herons sitting in a row; their heronry is close at hand, and as their breeding season is very early, they seemed to be making arrangements for the season. They have about fifty nests scattered through the southern division of the wood. Mar. 24, I saw the first pair of Sand Martins at Allanton to-day—very early. I never saw them before the 16th April on any previous year. The Pied Wagtail has been for a week at Allanton and Blanterne bridges. The Bats are flying about, on warm evenings; and the Grey Wagtail is also at Allanton, running about the stones at the river.

Apr. 1, In consequence of cold harsh weather, our summer migrants did not put in a very early appearance, remaining where they were more comfortable. The Chiff-chaff and Stock-dove were seen early in the month at Paxton, by Mr Muirhead; and the latter has nested there. I did not see the Willow Wren till Apr. 29, and the Sand Martins have often been absent for a week together, from Allanton bridge. Where do they go? Hybernation seems improbable. The Stock-dove seems now naturalized in this district. They breed in disused rabbit holes in the steep banks opposite Edington mill, and a nest was also found in the root of a fallen tree, in the plantation opposite. For seven years they have been known at Hutton bridge, and this summer two bred in the steep bank

at Blackadder house, in a rabbit hole, and reared their young. They are also known at Yetholm ; near Jedburgh ; and also in the Cheviots. Apr. 30, the House Martins, in flocks are flying about Allanton bridge, and also towards Chirnside. They came with the west wind which was first felt to-day, with gentle showers. The country is already greener, and a few days of genial weather will make a great change on the face of the fields. At the Pistol plantings saw two Bullfinches, and in the course of a drive of twenty miles, twelve Willow Wrens, and one Wood Wren. These birds all appear to have come with the west wind.

May 1, in passing down the north approach to Blackadder House, a Wild Duck with a fine brood of ducklings, appeared on the verge of a fir plantation a few hundred yards from the gate ; these had evidently been hatched close at hand, there being a fine cosey ditch in the wood for them to paddle in. The old Duck flew to the ditch and allowed her family to scuttle after her through the grass, and they seemed well able to look after themselves. Large flocks of Swallows at Allanton bridge, which seems a great rendezvous for them upon first arrival. May 5, at the east end of the Pistol plantings saw first Redstart, a male in fine plumage. Heard the Cuckoo in the Willow strips below Broomdykes ; also saw the first Swifts at the lower part of Chirnside. The Land-rail was also "craiking" on the grass fields on the Crofts, and the Gray Sandpiper was flitting about on the river. The Swifts at first only come in pairs, and it is well on in May before they are numerous. I have good opportunities of observing them, as they invariably take up their quarters among the loose tiles in an old house near the Waterloo Inn, Chirnside, where they continue till the 12th of August, when having completed their breeding operations, they take their departure for a warmer country. When hawking for insects, their motions are elegant ; skimming aloft high in the air, uttering their peculiar scream, they seem never to tire as long as daylight lasts. May 8, only a few pairs have as yet arrived ; the Redstart however is at Ninewells. The Whitethroats are also there, and a large colony of Swifts have taken up their usual abode. May 12, thermometer 67 degrees in the shade and the air balmy. The Land-rails are very noisy in the evenings. A much rarer bird than the Common White-throat, is the smaller form, the Lesser Whitethroat. For several seasons I have noticed it in Whitsome parish ; no specimen of it however having been shot, Mr Muirhead refuses to receive anything but the bird in hand, as evidence of its presence here ; the female of the larger form being apt to be mistaken for the rarity. I have been on several occasions quite close both to the cock and hen, and feel sure that I am correct in recording the smaller form to be a true summer visitor. May 14, *Certhia familiaris*, seen in the ash wood at the junction of the Allanton and Duns roads. This bird since our cold winters some years ago, is by no means common in this district. A few days ago Mr Blackadder, East Blanterne, saw from the window of his house "a Black neb" or Carrion Crow, hopping round a ewe and her lamb, in a suspicious manner, now and then making a dash at the ewe. He could hardly make himself

believe that it had any evil intentions with regard to the lamb as it was pretty well grown. He opened the window with the idea of getting a shot at the Crow. Upon hearing the window opened it flew down the field. Waiting out of sight, the bird was back again immediately, pursuing the same tactics, and lighting on the ewe, commenced flapping its wings; it could easily have been shot had the lamb not been in the way. However, Mr Blackadder was determined to see what was the cause of the Crow's proceedings, and on the door being opened it flew away. Upon looking at the ewe, he speedily discovered the cause of the extraordinary proceedings of the black-neb. A small bird had been feeding close to the ewe, and the crow wishing to capture it, the poor bird had taken refuge under the sheep, and master crow failed to dislodge it until Mr Blackadder making the ewe move, it flew away into a hedge close at hand.

June 6, many Redstarts and Whitethroats are seen daily. The delicious warble of the Blackcap in the dean below Fishwick Mains, running to the Tweed, was heard by me last Saturday, and at least three pairs were nesting there. The *Orchis mascula flor. alb.* grows there, and it was while I was gathering this plant that I saw and heard the Blackcaps; which also are to be seen near Allanton, in the Blackadder wood.

Aug. 12, many Redstarts, Whitethroats, and Flycatchers about Blannerne bridge. Aug. 20, the Swifts left us in a body on the 20th, having completed their breeding operations.

Sept. 17, the great body of the Swallows have taken their departure. From the 10th inst., they were seen in line on the telegraph wires at the station in hundreds, prepared for a flight. A few stragglers remained with us till the end of the month or early in October.

SQUIRREL STEALING FRUIT.—Sept. 18, when at Broomhouse in Edrom parish, I was informed that the garden had been robbed of plums and apricots, in a most unaccountable manner, no trace whatever being obtained of the thief. Locked doors and high walls were not easily overcome, and the innocent might be blamed. The gardener was determined to find out the delinquent, and lying in wait, caught him with the plum in his possession, and saw him nimbly scale the high wall, which is surrounded outside by trees, and escape, the said thief being a Squirrel who had feasted on the plums and apricots, and left not a vestige of one behind. I am not aware of another case of the kind on record, and shall feel greatly obliged by any one informing me as I have long since ceased to regard anything as new, if such a case came within their observation.

Sept. 24, saw a colony of Longtailed Tits in the Pistol plantings, Blackadder, a bird which has been very scarce in this district for some years.

Oct. 1, a string of Wild Geese flying north was seen from the top of Chirnside hill. Oct. 10, seven strings of Geese were seen within a few days, flying west over the farm of Broomdykes, by my son who was working among the sheep. Large flocks of them were seen at Rawburn, Longformacus, by the steward, who shot one on the young grass, where they were feeding. After being fired at they were very shy, and could not again be approached.

Nov. 19, a scant hay crop in Lammermoor, according to the old herds, foretells a mild winter; and a number of Wood Cocks sitting well, as they were doing this autumn—is a sign of the same import. (At this date January 29th 1885, we have had as yet not much snow, although plenty of frost. Nov. 30, the Thermometer to-day registered 11 degrees of frost, and with a powdering of snow which followed. Fieldfares, Redwings, and other winter visitors, now to be seen in the hedgerows and turnip-fields).

Dec. 1, large flocks of a variety of Wood Pigeons differing in some respects from our Ringdove, with some resemblance to the Stockdove, were seen at White-rig, parish of Ayton; where in other seasons I have noted them. They are evidently from the continent. They are of a duller colour than our Cushat and different in other particulars. From this date till the end of the year we have experienced very changeable weather; frost and fresh alternating each other. The temperature was never very low, but often below freezing—then fresh with rain. The Green Plovers remained in the fields till after the new year, but have since that date been invisible. We shall soon have them again.

Arrival and Departure of Migratory Birds in the Belford District, during the year 1883. By JOHN AITCHISON.

				ARRIVED.	DEPARTED.
Waxwings (in small flocks)	...	...	...	Jan. 14	Feb. 2
Do.	Do.	...	...	Jan. 25	
Do.	Do.	...	...	Feb. 15	Feb. 19
Fieldfare	...	...	...	Jan. 26	Mar. 16
Redwing	...	...	...	Jan. 3	Mar. 30
Wheatear	...	...	...	Mar. 30	Sept. 16
Chiff-chaff	...	...	...	Mar. 26	Sept. 30
Pied Wagtail	...	...	...	Mar. 24	
Stonechat	...	...	...	Apr. 3	Oct. 14
Whinchat	...	...	...	Apr. 10	Oct. 14
Sand Martin	...	...	...	Apr. 14	
House Martin	...	...	...	Apr. 18	Sept. 23
Chimney Swallow	...	...	...	Apr. 21	Sept. 23
Ring-ousel	...	...	...	Apr. 22	
Wood Wren	...	...	...	Apr. 15	Sept. 20
Willow Wren	...	...	...	Apr. 20	Sept. 5
Garden Warbler	...	...	...	Apr. 22	
Grasshopper Do	...	...	...	Apr. 26	
Sedge Warbler	...	...	...	Apr. 30	Sept. 4
Reed Bunting	...	...	...	Apr. 20	Oct. 3
Cuckoo	...	...	...	May 3	July 6

	ARRIVED.	DEPARTED.
Greater Whitethroat	May 3	Sept. 6
Lesser Whitethroat	May 10	
Swift	May 10	Aug. 16
Goatsucker	May 15	
Land-rail	May 2	Sept. 23
Redstart	Apr. 30	Sept. 6
Blackcap Warbler	Apr. 20	
Siskin (4 individuals)	Apr. 10	
Woodcock	Oct. 6	
Redwing	Oct. 18	
Fieldfare	Nov. 6	
*Gray Lag Goose	Aug. 21	
Bean Goose	Oct. 17	
Brent Do.	Oct. 14	
Wild Swan	Oct. 30	

* This specimen was shot by Mr Clark of Mousen, on Newlands pond, August 21st, an unusually early date. Only a pair of birds visited the pond.

1884.

Bohemian Waxwing (*Bombycilla garrula*), a small company of 6 seen near Belford Tollgate-house on January 14th. Feb. 12, arrival of Pied Wagtail on Town Meadows. Feb. 27, a large flock of Brent Geese visited Fenham Flatts, where they appeared to be feeding for about two hours, but all of them had disappeared before noon. Mar. 29, observed 2 male Wheatears; and on Apr. 2, saw several more near Belford Moor Farm. Also saw Chiff-chaff on Apr. 2. Sand Martin Apr. 13. Chimney Swallow Apr. 15; and House Martin Apr. 19. Willow Wren Apr. 15. Wood Wren Apr. 20. Heard Blackcap Warbler singing Apr. 27; Sedge Warbler seen and heard in song same day. Grasshopper Warbler Apr. 29 (seen). Stonechat Apr. 6. Whinchat Apr. 10. Garden Warbler Apr. 27. Redstart, May 3. Whitethroat May 3. Cuckoo May 6. Lesser Whitethroat May 6. Swifts May 8. Goatsucker May 18. Redwing left Apr. 10, appeared Oct. 6, and 14 (not abundant this winter). Fieldfares left Mar. 15, and appeared Oct. 14, and Dec. 3 (scarce this year). Woodcock Oct. 6, considerable flocks. Oct. 20, large flocks (plentiful all winter). Land-rail seen on Blue Bell Inn farm Oct. 20, first noticed May 3. Meadow Pipit Apr. 29, last seen Sept. 20. Swifts disappear Aug. 24. Swallows and Martins in a body Oct. 2. A pair observed at Twizell House Nov. 9. Yellow Wagtail first seen May 6; last, Aug. 30. Grey Wagtail first seen Apr. 12, and left Oct. 10. Spotted Flycatcher seen Apr. 26; left Sept. 12. On Sunday, Aug. 24, I observed a Hoopoe feeding on a small patch of gravel by the side of Mousen burn. Not suspecting at first what it really was, I approached a little closer to it, and soon perceived that it was no ordinary visitor there. It evidently did not see me, being busily engaged picking up insects or worms from amongst the sandy gravel. I watched

it for some time through a small glass. The elongated bill, pale red colour of the head, neck, and back; black wings, crossed with several irregular white bands; and long black tail, with a single white band across the centre, soon told me the bird I was looking at was a veritable Hoopoe; the second I had ever seen in the flesh. Its movements were exceedingly agile, running hither and thither with a nimbleness that was delightful to witness. I had watched it for about the space of five minutes, when taking alarm it uttered a short, sharp kind of scream or whistle, and flew off at a rapid pace, and with a motion very much resembling that of the Blackbird. It raised its crest as it flew off, and a more beautiful object on the wing I think I never beheld. It is to be regretted that this beautiful and rare visitor to our district should be almost constantly shot down whenever it makes its appearance.

P.S.—A Squacco Heron was shot near Howick in May last. A Bittern was shot at Ellingham by Chathill, by Sir J. Haggerstone on 19th January last. J. A.

Notes of Arrivals and Departures of Birds. By GEORGE BOLAM.

1882.

	ARRIVED (first seen).	DEPARTED (last seen).
*Swallow	Apr. 21, a single bird at Newton Barns, n. Chathill	Oct. 20, Berwick, a pair in garden.
Sandpiper, Common	Apr. 16, one on Whitadder	
Sand Martin	Apr. 12, one, and again on 16th, several.	
Swift	May 5, flying over Berwick in parties.	Oct. 4, and again on 14th—very late.
Wheatear	Mar. 31, Scremerston and Goswick.	
*Land-rail	May 5, (but reported in papers earlier).	One shot, Oct. 27, at mouth of Tweed.
*Cuckoo	May 11, but reported in papers from Glanton on Apr. 14.	
Hooded Crow	Oct. 2, at Weetwood.	Apr. 21, 1882, two seen at Newton Barns.

NOTE.

- * SWALLOW. In "Kelso Chronicle," Nov. 3, it is stated that Swallows have been seen in parties of from 3 to 6 almost every day up till Wednesday last, the 1st Nov. at Kelso.
- * LAND-RAILS were reported in the papers very early this year in many places in the south of England, and one said to have been heard 2nd week in February at Longhoughton; (see "Alnwick Mercury," 11th Feb.)
- * CUCKOOS were also early, in the papers, "near Consett, 19th March," (Newcastle Journal, 20th March), but several earlier than this from both England and Scotland, recorded in "Field."
- * SWALLOWS very early, from all over the country, including North of Scotland. The "Scotsman" reported them from North West of Scotland early in Jan.

582 *The Migration of Birds.* By George Bolam.

	ARRIVED (first seen).	DEPARTED (last seen).
Fieldfare	Nov. 18, Berwick and again on 29th.	End of March.
Redwing	Oct. 16, Berwick and Chiswick.	Mar. 17, Carham.
Willow Wren	Apr. 20, Berwick.	
Whitethroat	Apr. 29, pretty numerous.	
Sedge Warbler	May 5, several near Whitadder.	
Redstart	Apr. 27, everywhere abundant.	
Spotted Flycatcher	Not seen till June 1, when I saw one at Broom Park, but probably here before.	
Blackcap Warbler ...	Apr. 30, Paxton, a pair.	Beginning of March.
Snow-bunting	Sept. 17, Chiswick.	
Chiff-chaff	Apr. 23, Paxton, but Mr Muirhead had heard it some time before.	
Mountain Finch ...	Oct. 12, in garden, Berwick.	
Hawthorn	Plentiful in bloom, May 7, Paxton, Carham, Berwick, &c.	

In addition to the migrants mentioned above, we were visited last autumn by a party of Ring-ousels. On Oct. 13 (a thick misty day), there were 3 or 4 of them in the garden here, and I shot 2 with the walking-stick gun, both immature females, and might easily have killed others; next day there were still some 3 or 4 of them in the garden, and I shot another; and again on 18th and 20th others were seen and heard; whilst at the same time a few Redwings were found mixed up with them, and occasional Thrushes and Blackbirds. Robins are very numerous also, and Hedge Sparrows rather more plentiful than usual; whilst for about a fortnight in the middle of October, Golden Crested Wrens swarmed all along the coast. There were always about half-a-dozen of them in the garden, and everywhere where there were bushes there seemed to be one or two of these tiny creatures hopping about; even on the cliffs on the sea-shore there were numbers to be found sometimes, and the long bents on the links at Chiswick and Goswick were also frequented by them. They were all very tame and fearless, as in fact this species always is, and my brother actually caught one in a field, beneath his hat!

Lately Swans have been turning up more plentifully than usual at Holy Island; and Ducks and Geese too are numerous.

Berwick-on-Tweed, 23rd January 1883.

1883.

	ARRIVED (first seen).	DEPARTED (last seen).
Swallow	Apr. 17, a single bird at Haggerston Castle, not seen again till 26th. <i>Kelso Chronicle</i> records them at Kelso on 17th. (see papers of 20th).	No record, none seen later than usual.
Common Sandpiper	Apr. 26, Whitadder side, again on 29th.	Seen on shore near Beal, end of August.
Sand Martin	Apr. 26, late—(I had not much chance of seeing them earlier)—near Belford Station.	No record.
Swift	May 11, Edrington Castle, Berwick, a day or two later.	Do.
Wheatear	Apr. 7, Kyle; 9, Berwick.	Numerous on Sept. 18, no record of last seen.
Corn-crake	May 15, Berwick and Paxton.	No record.
Cuckoo	May 19, abundant at Kyle. <i>Bwk. Advertiser</i> of May 11 records it from Abbey St Bathans on May 8.	Aug. 11, one seen in garden Berwick, no later record. One also seen on Aug. 5, and another on seabanks near pier on 3rd.
Hooded Crow	Aug. 21, single bird at Chiswick Links. Oct. 11, flock of 8 birds near Berwick.	June 3, 1883, a single bird near Scremerston!
Fieldfare	Nov. 7, small flock near Duddo Vicarage.	No record.
Redwing	Oct. 11, garden, Berwick, and again on 13th.	Do.
Willow Wren	Apr. 26, Bells Hill near Belford, plentiful.	Do.
Whitethroat Greater	May 4, near Burnmouth.	Do.
Redstart	Apr. 27, Paxton.	Sept. 20 and 21, in garden, no later record kept.
Spotted Flycatcher	May 20, Paxton, had been there for some days.	Sept. 21, a single bird in garden, Berwick.
Pied Flycatcher ...	May 11, Linden near Morpeth.	Sept. 15, 16, and 17, all near Berwick (see Notes).*
Redbreasted Flycatcher	... ..	Oct. 5, Berwick, in garden (see Notes).
Blackcap Warbler	Apr. 18, garden, Berwick, and again on 21st.	Up to end of Sept., one shot in garden on 27th.
Garden Warbler ...	... ..	One shot in garden on Sept. 17.
Snow-bunting ...	Sept. 20, sea-banks, Berwick, 2 old birds.	Mar. 12, numerous on sands behind pier, no later record kept.

* The Notes referred to were given Ber. Nat. Club's Proc. present vol. pp. 384-396.

	ARRIVED (first seen).	DEPARTED (last seen).
Chiff-chaff ...	No record.	
Mountain Finch ...	Oct. 5, several in garden, Berwick (early).	
Hawthorn ...	In full bloom, Lowick, Beal, &c. on May 31—first seen at Carham on 24th, and again at Kylee on 25th.	
Wild Geese ...	Flock seen at Goswick, Sep. 7, (<i>species unknown</i>) 12 seen at Berwick on 20th (<i>also unknown</i>).	
Common Buzzard	Sept. 16, one seen on sea-banks near Berwick evidently just arrived (<i>see Notes</i>).	
Red-backed Shrike	Sept. 15, sea-banks near Berwick (<i>see Notes</i>).	
Ring-ousel ...	Apr. 21, Kylee hills; single bird in garden, Berwick, on 20th.	One seen Skirlnaked, Dec. 5, feeding on haws in company with Fieldfares.
House Martin (<i>Hirundo urbica</i>)	Not seen till May 13.	Nov. 11, single bird hawking under shelter of town wall, Berwick, very late; one seen in garden, Berwick, Nov. 3.
Night-jar ...	May 25, seen at Kylee (had probably been there some time).	Sept. 28, one killed near Longhoughton. Sep. 29, one seen on the sands between Goswick and Holy Island.
Tawny Owl ...	Oct. 26, I found one sitting upon the remains of a wreck near low-water mark on the sands between Goswick and Holy Island, quite two miles from nearest land.	
Stormy Petrel ...	Sept. 29, one killed near Alnmouth.	
Robin ...	Swarming in garden, Berwick, beginning of Sept. with other migrants—Redstarts, Flycatchers, &c.—but only one or two of them left by Sept. 20, and they remained with us all the year.	
Ruff ...	Sept. 7, one shot on sea-coast, Goswick.	
Black-tailed Godwit	Sept. 7, one shot on coast, Goswick.	

For the last two or three years I have paid particular attention to the movements of birds in the autumn, as observed in our garden here in Berwick; and I must confess that I have been singularly fortunate in thus chancing upon the example of the Redbreasted Flycatcher. We have but very few species of resident or breeding birds in Berwick, and hence any strangers (Warblers, &c.) are easily noticed. I now see the Pied Flycatcher here almost regularly in autumn, although really it is a very scarce bird. The kind of weather which seems to be most favourable, is the dull close but warm days which we usually have during the end of September and October. On such days we often have in the garden here quite troops of Redstarts, &c., and about the same time many of the common birds, such as Robins, Thrushes, &c., become exceedingly numerous. Many of the occurrences given in this list are also included in my Notes (pp. 384-396) when I have something else to say about the bird.

Berwick-on-Tweed, 23rd April 1884.

1884.

ARRIVED (first seen.)

DEPARTED (last seen.)

	ARRIVED (first seen.)	DEPARTED (last seen.)
Swallow	May 2, at Ross, near Belford, where they had been noticed for some days previously.	Mr Seymour Tancred of Twizell House, Belford, told me that on Sunday, Nov. 9, he saw 4 Swallows flying about over the house as if nothing were unusual. He afterwards sent a notice of this to Newcastle papers. He was not certain of the species, but thought they were the Chimney or Long-tailed Swallow.
House Martin ...	May 2, at Railway bridge, Berwick, but they were numerous and well established.	Capt. Norman says, "On Sunday last (Nov. 16) I and other gentlemen saw a Martin at Ava Lodge (Castle Terrace) hawking over the garden." I have no other late record.
Sand Martin ...	April 11, plentiful on Whitadder Banks from Berwick to Chirnside, and again on following day. About a fortnight previously Dr Stuart noted in papers that they had appeared near Allanton Bridge.	No record.

	ARRIVED (first seen).	DEPARTED (last seen).
Sandpiper ...	May 6, plentiful on Tweed at Carham; seen on Berwick pier on May 12, probably just arrived.	On sea coast, north of Berwick, end of August.
Cuckoo ...	Heard at Abbey St Bathans on Apr. 25, (Berwick papers) one seen at Lowhaughs 3 miles from Berwick, May 2, and recorded in <i>Newcastle Journal</i> of 7th as being heard at Springwood Park and Old Jeddart, on Saturday last, May 3. I first heard it on May 11, at St Abbs Head.	July 14, one seen flying over garden, Berwick. Aug. 11, one close to railway station, Tweedmouth—a young bird. Aug. 15, one shot, Middle Ord—young bird. Aug. 23, one in garden, Berwick; also a young one. Sept. 4, saw a young bird near Berwick bridge. July 7, there were 2 or 3 Cuckoos in garden, and my brother shot one—a young bird. In early morning I saw an old one two or three times. It is very early for young birds to be migrating yet; old ones always leave us in July. On the morning of 6th (Sunday) a Cuckoo was heard to call—"Cuckoo," tho' in rather a low tone—a very unusual circumstance so late in the year.
Swift ...	First seen at Berwick on May 5, fairly numerous on following morning.	No record.
Corn-crake ...	May 4, heard near Lowhaughs, Berwick.	Most unusually plentiful in autumn, and remained very late (<i>see Notes</i> .)
Chiff-chaff ...	April 10, at Haggerston and Lowlynn, and on following day in Pease-dean.	No record.
Willow Wren ...	Plentiful Berwick, Paxton, &c., Apr. 27. Very numerous on Holy Island May 12, with other migrants as Sedge Warblers, Spotted Flycatchers, and White-throats (<i>see Notes</i>).	Last seen on Sept. 17, in garden, Berwick, in company with other migrants—but this is not late.
Sedge Warbler ...	May 9, Holy Island, a single bird; numerous on 12th.	

The Migration of Birds. By George Bolam. 587

	ARRIVED (first seen).	DEPARTED (last seen).
Black-cap	Apr. 25, at Chirnside, Dr Stuart.	In garden, Berwick; from Aug. 27 to Sept. 17, on and about which latter date they were in some numbers in company with other Warblers and Flycatchers.
Garden Warbler ...	May 22, a pair seen in garden.	Probably along with Black-cap at above dates, but from similarity of plumage not recognised.
Wheatear	Apr. 1, at Berwick, numerous on Cheviot on 9th.	Sept. 17, three or four behind pier, probably remained some time after this, as it is not late for them.
Hooded Crow ...	Oct. 12, 1884, numerous Berwick, and at Goswick on 15th in flocks.	Apr. 15, 1884, very numerous at Ross Links, Holy Island. On 20th they had all but vanished, only one or two single birds remaining, and none seen a week later.
Fieldfare	Oct. 24, 1884, large flocks at Carham. On Nov. 14, saw several small flocks coming up over Berwick in early morning as tho' from sea—probably just landing.	Apr. 11, seen near Chiswick.
Redwing	With Fieldfares at Carham on Oct. 24.	
Whitethroat ...	May 11, abundant in hedges, Berwick, &c. Very numerous at Holy Island on 12th with other migrants. One in garden, Berwick, on 22nd (do not breed there).	Sept. 17, thought I recognised one in garden with other Warblers, but it looked a larger and paler coloured bird.
Redstart	Apr. 25, in full song; Apr. 30, one in garden.	Middle of Sept. in garden, Berwick, 17th, &c.
Spotted Flycatcher	May 12, a good many on Holy Island, evidently just arrived, as they are very shy and seem tired and unwilling to fly, but seek shelter by hiding in the hedges, amongst branches—a rather unusual habit.	Several in garden with other migrants, Sept. 17, 18, &c. I killed a young specimen there on 20th, this was the last seen.
Pied Flycatcher ...		Sept. 17, 2 seen in garden, Berwick.

	ARRIVED (first seen).	DEPARTED (last seen).
Mountain Finch ...	Oct. 5, one seen in garden Berwick (early) but curiously enough same day as last year.	May 1, a female in garden, <i>very late indeed</i> , but there was no mistake. I watched the bird for some time, but it was not to be seen when I went out again an hour afterwards. A strong south-west wind blowing.—This seems very late. Chaffinches, &c. in garden have had eggs for some time.
Hawthorn ...	May 12, in flower at Beal and on roadside, but it has been much kept back by the late frosts or should have been in bloom much earlier this year.	
Ring-ousel ...	Apr. 27, a pair seen near Scremerston.	Sept. 14 and 15, one in garden each day.
Great Gray Shrike	One killed near Chiswick in Oct. 1884, (rather early).	
Wild Geese ...	Aug. 27, a flock of 6 Grey Geese (<i>species unknown</i>) seen flying past Berwick in early morning.	
Wigeon ...	A good number on Fenham Flats by Aug. 23 arrived some time before and earlier than usual.	

About the middle of September we had a deal of thick misty weather, and this as I have before noticed seems to be most favourable for the observance of migrations of Warblers, &c. About the 12th there were a great many Robins in garden, and they continued very plentiful for a fortnight or so; a Common Wren appeared on 11th and remained with us a few days; and on the 12th I saw a single Gold-crested Wren in garden. All this month (September) I kept a close look-out in our garden, where, from the fact that few birds breed with us, strangers are easily noticed, and with results as stated in above table. For nearly a week previous to 17th it had been a continuous thick mist; and when on that morning it began to "lift" and the sun came out, I knew there would be a lot of small birds in garden; accordingly I saw 2 Pied Flycatchers, the only ones seen this year; 1 Spotted Flycatcher, and another next day; several Warblers, Blackcaps, Redstarts, a Grey Wagtail, and several Pied Wagtails (all in garden); a single Willow Wren; a flock of Twites, and afterwards a single bird; besides several other things, as a Thrush, Robins, &c., &c.

Next day they had nearly all gone, in fact many of them were only seen once; and on a subsequent visit to the garden a few hours later could not be found.

On the 12th May I walked over a good part of Holy Island, and found a great many small Warblers, &c. One most curious thing noticed about the Spotted Flycatchers was, that when approached they did not, as is usual, fly off to some projecting branch, but tried to escape observation as much as possible by getting amongst the thick branches in the hedges, &c.; indeed so strange were the movements of some of them that, until I had satisfied myself to the contrary, I was inclined to think them some large sort of Warbler; they more resembled in their "goings on" Warblers than Flycatchers. In the autumn Corn-crakes were most unusually numerous, and remained, for some reason, much later with us than usual. They were shot amongst Partridges by a great many people during September, though as a rule it is very seldom indeed that they are seen at this season.

Woodcocks too were more than usually numerous in the autumn; one large "flight" landed about the end of October; and a good many were killed in and near Berwick.

The Cuckoo calling so late in autumn was also rather unusual.

Berwick-on-Tweed, 17th February 1885.

Ornithological Notes. By GEORGE BOLAM.

SQUACCO HERON. *Ardea comata*, Pallas.

On 28th May 1884 a specimen of this rare bird was shot at Howick, the seat of Earl Grey in Northumberland, and is now in my possession. It seems to be a young bird of the previous year, and is just acquiring the adult summer plumage.

Lord Grey's keeper informs me that he shot it near the lake at Howick as he was returning home rather late in the evening. It flew past him along the side of a plantation, and at first sight he thought it was an Owl, which bird in flight it much resembled. It does not appear to have been previously observed by anybody; and in all probability, therefore, had not been long in the neighbourhood.

Although the Squacco Heron has been obtained in England in something like twenty different instances, it has not before been recorded from Northumberland, nor so far as I am aware from any part of Scotland; it is therefore new to the district, and an interesting addition to our local avifauna.

LAND-RAIL. *Crex pratensis*, Bechs.

In the southern counties of England Land-rails are pretty generally found up to the middle or end of September; but with us they leave, as a rule, nearly a month earlier; and it is only as stragglers that they are

occasionally shot in the early part of our partridge season. Last autumn, however, was an exception, for Corn-crakes remained with us in considerable numbers up to the end of September, and in some cases even into the beginning of the following month.

At Grindon two were shot on 20th September and at least one other seen; while during the same week three or four were seen upon the adjoining farm of East Newbiggin; and one was killed near Berwick.

On 23rd September quite a number were seen upon the Cheviots above Langleyford, when they were found in the large brakes of *Pteris aquilina* growing on the hill sides; and being mistaken, by some of those present, for Woodcocks, they were more than once hailed with a "Mark cock" as they rose!

Towards the end of the month Land-rails were shot at Warenton, near Belford (2); Fairlaw, Berwickshire (1); Middle Ord (2); Barmoor (1); and Wark Common (1); and several others were chronicled in the local newspapers as forming part of the "bags" at various shooting parties.

On 30th September one was shot near Twizell House, Belford; and another seen by Mr Seymour Tancred; and on 1st October a third example was obtained at Middle Ord.

Berwick-on-Tweed, 7th September 1885.

On some Camps in Roxburghshire. By THOMAS CRAIG,
Kelso.

IN the autumn of 1884, I spent some days in wandering among the Cheviot Hills, so far as they lie within easy reach of Yetholm, and having previously perused with deep interest the serviceable and painstaking list of Camps and other ancient remains in the district, contributed by Professor James Geikie to the "Proceedings" of the Club for the year 1882, I took the opportunity of visiting some of these. The list which the Professor furnished could only have been drawn up by one very intimately conversant with the district, and at the same time having an eye trained to detect the remains of the handiwork of the ancient inhabitants. It may be, however, that he has left some things for humbler and less scientific wanderers to note, and in the hope that some of the objects which struck my attention in the course of my peregrinations may have some interest for you, I have taken the liberty of jotting them down for your use.

I. On the hill opposite Halter Burn farm house there are distinct traces of a camp of very large size—perhaps the largest

of the series in the district. I think this is not included in the list. One of the camps mentioned by Professor Geikie lies to the south-east of this large one, and must have been visible to those who inhabited it, since it lies at a much greater elevation. The small one mentioned in the list (page 143 line 3) and to which reference is here made, lies on the northern side of Halter Burn.

II. Not far from the last mentioned, and on the same side of the Burn, is another camp, even larger than it, but not showing any peculiar feature to lift it out of the common category.

III. On a hill, or rather the off-shoot of a hill, a little to the north of The Curr, there is a well-marked circle of limited extent—so limited, in fact, as to make a person of slight acquaintance with Roman or pre-Roman remains somewhat uncertain whether it may not be foundations of a comparatively recent sheep-stell. It is surely not likely, however, that an erection for the protection of sheep would have been placed in a situation so high, exposed, and shelterless as that whereon this circle stands. A little to the south-west of the circle, passing over a rough kind of table-land, the eye lights upon first one terrace and then another, which in the month of August shone beautifully green, the bright verdure on these parts being in striking contrast to the scorched and embrowned aspect all around at the time. Is it within the bounds of probability that these terraced places were cultivated at a remote period, and that this freshness is partly if not wholly due to that circumstance? At anyrate it suits one in a poetical and contemplative mood to imagine the inhabitants of the little hut-dwelling to have patches of cultivated ground near at hand, somewhat after the manner of life of the modern crofter in the northern Highlands of Scotland at the present day.

IV. On the farm of Lochtower there is a hill on the northern slope of which is observable at certain seasons distinct traces of what seems to have been a camp of more than average size. The ground, though at a considerable elevation, has been for a good many years under the plough, and the circle may not be traceable at all times; but as seen when the ground is in pasture, the circle, which follows the slope of the hill, is remarkably well defined.

V. The camp on Venchen Hill shows traces of having had triple entrenchments on the east side. Internally it is deeper

than any which came under my observation on the Cheviot side of the Bowmont valley. To the east of the camp there are several knolls which cannot escape the attention of the observant wanderer. The east-most—like the west-most—is planted around the crown with fir trees, but the crown itself shows a flattened surface, which seems at certain seasons to be very wet, for it bears a rank growth of long and coarse grass, which sinks deeply under the feet when trodden upon in dry summer weather. The view from this height, down the Bowmont valley, would be extensive and magnificent if there were any openings through the thick screen of trees. Midway between these two knolls the rock rises to the surface, and it has been quarried on its northern face. On the south side of Venchen Hill there is, at least at several places, a very good echo, and visitors consequently may find more than amusement in awakening its responses to their voices.

VI. It may be worth mentioning that in various places among the hills to the south of Halter Burn distinct traces of made roads are observable. The roads seem to creep along the hill-sides, ever trending upwards (or downwards), and seeking a most suitable point by which to gain the other side of the hill. They seem a good cart breadth, but whether they were intended for vehicular traffic, or simply for pack horses or donkeys, is not to be determined without some precise information. Those whose studies lead them in that direction might find it interesting to investigate when, why, and who made these roads, and by whom and for what purposes they were used.

Notices of Localities for Rare Plants. By P. W. MAC-
LAGAN, M. D.

(From a letter to the Secretary).

BERWICK, 4th September 1884.

MY DEAR SIR,—I think it will interest you to see the following list of plants found in Northumberland, by the Rev. H. E. Fox of Durham, who has been passing a holiday at Bamburgh. I have specimens of them to be placed in the Museum here. I was surprised at *Corallorhiza*, considering how many people have collected over Newham Loch.

Corallorhiza innata. Newham Loch.

Radiola millegrana. Ross Links.

Centunculus minimus. Ross Links.

Althea officinalis. By the border at Fleetham—perhaps introduced but well established.

Primaria confusa and *F. micrantha.* Holy Island.

Rumex maritimus. On rubbish near Christon Bank—a casual probably.

Melilotus arvensis. Same station.

(The last I got behind Berwick pier some years ago).

Notes on the Ettrick. By JAMES HARDY.

AS PRELIMINARY to the notices on Ettrick, which the President's Address may have led members to expect, I may mention that for the present I can only take up three;—1; a notice by the late Mr William Kemp, Galashiels, contributed to a local newspaper, which I am desirous of preserving, as containing the remarks of an accurate, but imperfectly appreciated observer, on a subject pertinent to our visit. Mr Kemp was one of the earliest inquirers into the subject of "Ancient Sea Margins," about which we have heard so much since—2; notice of a small socketed bronze celt of which Mr Andrew Currie has sent me a drawing, now engraved, with the particulars of its discovery—3; a list from Lord Napier and Ettrick, which his lordship made at my request, of the family records and objects of local interest in his family's possession, which he had been previously asked to show to the Club. Whether these notes will be followed by others I am not prepared to say, but on several topics my information is still incomplete from defect of documentary and

precise evidence, and I have no intention of telling over again what every one knows from local guide books or gazetteers. The aim of the Club is to supply fresh materials; not to compile from resources readily obtainable.

1. *A Day on the Ettrick.—The Water Marks.* By WILLIAM KEMP.

Many years have elapsed since I first observed traces of "Ancient Sea Margins" along the flanks of the hills by the Tweed. Since then, for ten successive years, as leisure occurred, I extended my researches along its tributary streams. Upwards of three years ago, a part of my notes were arranged and published in a large work of great merit, by a gentleman of high standing in literature. Partly from my ardour having abated and the want of leisure, I have since then in a great measure dropped the pursuit of Geology. Of all the valleys of any note in this district, the Ettrick alone remained unvisited, save by a passing view in a carriage. But enough was then seen to excite an ardent desire for a day's investigation there. To satisfy that wish, I lately, one fine day, set off to make a careful survey for some distance up that river. I took my data from the plateau of the town of Selkirk, which stands at an elevation of 532 feet above the sea. That is one of the best marked line of levels in the south of Scotland. When the sea beat along that ancient shore line, the estuary along the vale of the Tweed had extended to the town of Peebles. The plain which that town stands upon is the detritus run into the head of the estuary, by the waters of the Tweed and Eddleston. The corresponding level on the Ettrick only extends to the village of Ettrick-bridge; consequently, that village is built upon a plateau similar to that at Peebles, at the head of an ancient estuary of the sea. This is no imaginary theory; the level from Selkirk was taken with great care. So visibly is that ancient shore line marked, that, to a practised eye, the level only requires to be applied in confirmation of the fact. On the south side of the valley, about three and a half miles west from Selkirk, by taking up a position a little above the road, upon a slight undulation, and there looking towards Selkirk, the spectator will observe several spurs from the south hills extending into the valley. How interesting it is to observe that all these are, as it were,

levelled down—all ranging in height between your eye and the town. By applying the level you can detect no deviation. By turning the tube to the opposite side of the valley, you discover other legible markings, and so on, till you arrive at the village of Ettrick-bridge.

But the chief object of my visit was to examine the “Linns of Ettrick,” a singular ridge of rock extending across the valley immediately above the village. The farmhouse of Newhall is about a quarter of a mile west from the bridge, and stands near the summit of that ridge, overlooking the narrow rugged chasm, whose dark abyss is more than one hundred feet in depth, where the river finds a turbulent passage through amidst a series of abrupt ledges of opposing rock. Taking the height of the ridge, I find it to be one hundred and eighteen feet above the village. That vast rocky barrier must have dammed back the river for many ages, forming a lake for some miles up the valley, nearly as far as Deloraine.

It is interesting to observe that the river had not always flowed over by the present breach. There is a hollow way trending round the north end of that height, some few feet below the summit, where the water had run for a period of time. That old channel makes a detour of about two miles; it may be observed below the old tower of Kirkhope, continuing down to the north side of the village. It does not appear to be difficult to account for the change of the river’s course. The old channel seems not to have been capacious enough to pass all the water in the time of great floods; consequently, the lake would rise till it overflowed the next lower part of the barrier; of course that part is seen to be its present outlet. The ridge is there comparatively narrow, every successive flood having assisted in enlarging the gulley till it became large enough to contain the whole stream.

That ledge of rock is very hard, and the mass removed so enormous, that we are lost in conjecture as to the ages that have elapsed in the wearing out of the rugged chasm. To the sight-seeker, or the student of nature, this is one of the most interesting scenes in the south of Scotland. There the wearing power of water is exemplified in a most extraordinary manner. The portion of the rock, as exhibited there, is highly interesting to a geologist, although it may have little or no interest to people in general.

2. *On an Ancient Bronze Axe found near Howford on the Ettrick.*
By ANDREW CURRIE, Darnick.

In giving the particulars of this find, I shall copy verbatim Mr Currie's remarks as contained in a letter dated 15th January 1885. "I may mention in regard to this bronze axe, that it was found on the eastern end of Howford hill (my natal ground), about 1851 or 1852. Mr Scott who succeeded to my father's lease would not part with it, and on his removal to the south of England four years ago, took it with him. He allowed me to make a drawing of it, and to ensure greater accuracy I laid it on the paper and traced it all round. This is the most perfect

BRONZE AXE, HOWFORD HILL, ETRICK
2/3. ACTUAL SIZE.



AND. CURRIE. 1885.

specimen I have ever seen, and so fresh was the casting that you would have supposed it the work of a few years back. The part of the hill where it was found was named the 'Cat's Slack.'

“The *pow* or head of the axe, when found was on a level with the short grass of the hill, and I have often wondered that it was not found sooner, as this level place on the hill-top, in my younger days, was our usual play-ground, and a very common practice it was with us to pick up all the stones to be found for rolling down the steep hill side.”

The length of this small socketed celt is 4 inches; the breadth at the upper end is 2 inches; and the neck $1\frac{3}{4}$ inches; at the cutting edge $2\frac{3}{4}$ inches.

One of these tiny celts, of a slightly different type, was found, in 1864, along with a collection of thin bronze fittings with nail-holes in them as if for plating some vehicle, along with 1 larger, and 14 smaller but not all of one size, stout, smooth bronze rings, all of which were detached, under a stone on the Horsehope-Crag, Posso. The collection was presented by Sir John Naesmyth, Dalwick House, to the museum of Chambers' Institution, Peebles, October 1879. Did a prowler on some pre-historic battle-field carry off these as a booty, and hide them there, and be unable again to recognise the spot where the plunder was concealed? The association of the small celt chopper with the other fragments is worthy of record.

3. *List of Articles exhibited to the Club on their visit to Thirlestane;*
drawn up by the Right Hon. LORD NAPIER and ETTRICK, K.T.

THE cap, handkerchief, and stockings, worn by the Great Marquis of Montrose at his execution, the handkerchief and stockings bearing the stains of blood.

The original editions of the works of John Napier of Merchiston, viz. :—

A Plaine Discovery of the whole Revelation of St. John.
Edinburgh, 1593.

Mirifici Logarithmorum Canonis Descriptio. Edinburgi, 1614.

Mirifici Logarithmorum Canonis Constructio. Edinburgi,
1619.

Rabdologiæ. Seu Numerationis per virgulas, Libri Duo.

Edinburgi, 1617; with the early foreign reproductions and translations into English, French, and other foreign languages.

Also the original edition of the "Ephemeris" for the year 1620, by John Keppler; dedicated by Keppler to John Napier. The examples of the "Numbering Rods" or calculating machine, invented by John Napier, one of which is stated, on the faith of family tradition, to have belonged to the inventor.

Two portraits of John Napier, one of which is believed to be an original done from the life, but much injured by time or former neglect.

Family portraits of no artistic value, but forming a curious series, extending from the year 1600 to the present time, comprising eleven generations in direct descent; including portraits of General Sir Charles Napier, General Sir William Napier the historian, Admiral Sir Charles Napier, and other collateral members of the family.

A portrait of the Emperor Alexander II. of Russia, presented by him to Lord Napier when Ambassador at St. Petersburg.

A portrait of the present Emperor of Germany, presented by him to Lord Napier when Ambassador at Berlin.

Early editions of the works of the Revd. Thomas Boston, minister of Ettrick, author of the "Fourfold State," the "Crook in the Lot," and other books of popular edification."

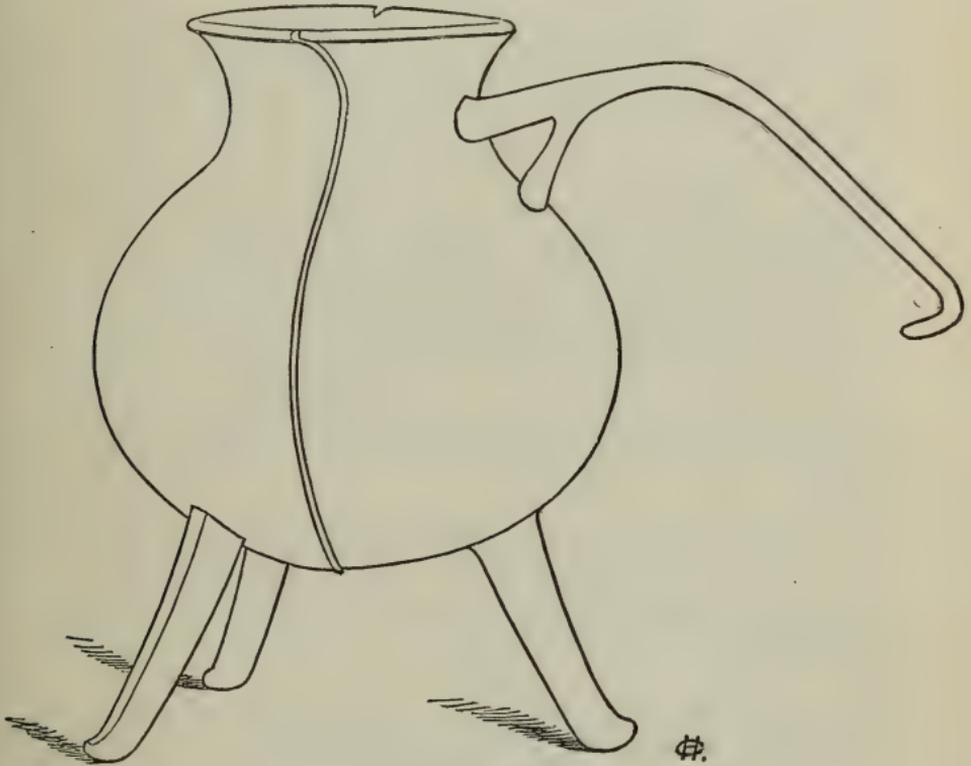
The first editions of the works of James Hogg, the Ettrick Shepherd.

A volume of Autograph Letters about 80 in number, addressed by Sir Walter Scott to the late Anne Jane, Marchioness of Abercorn.

An Autograph Letter from the Ettrick Shepherd to the late William John Lord Napier, making overtures of reconciliation to his Lordship, in connection with some offence offered to the family by certain verses in the first edition of the "Queen's Wake."

Besides these, and bearing more immediately on the branches of research prosecuted by the Club, there was a very fine long wedge-shaped stone-celt, of the same stone and shape as one figured in Club's Proceedings, vol. VIII. Plate x., fig. 2. (1878), found somewhere in the adjacent country; and a small leaf-shaped arrow-head of pellucid flint, almost like cornelian, prettily chipped, which was picked up (1876) in his Lordship's presence, on a bed of shingle, on the hill-side on the farm of Berry Bush in Ettrick parish. There was also a very good brass-pot with

handle, which was found on Thirlestane Hill according to the tradition of the House. Of this a drawing, here engraved, was made by his Lordship's niece, Miss C. Hubbard.



The pot is $9\frac{3}{4}$ inches high; the longest circumference is $25\frac{1}{2}$ inches; the circumference round the neck 16 inches; the length of the leg 4 inches; length of handle (which has been accidentally bent) 8 inches; diameter of the mouth 6 inches.

The brass-pots as well as flagons of the same material are now considered to be mediæval, and their use was continued till a very recent period; and even still some of the castaways may be found employed, after being dug out of a drain or peat moss, in the preparation of the frugal housewife's annual supply of jam or jelly.

Miss Russell of Ashiesteel, has sent me an outline drawing of a three-legged pot of a similar type, but not so elegantly shaped, and standing on shorter limbs. The handle is broken. It was

found on the east side of the house at Sunderland Hall, in 1791, and is still preserved there. Its height is 7 inches; girth 19 inches; diameter of mouth 5 inches. The metal is joined down the side. Colour uniform green.

There is a series of these handled tripod pots in the museum of the Society of Antiquaries of Scotland; and as some of them are of local interest, and are illustrative of the Thirlestane and Sunderland Hall examples, they may be quoted here from the Catalogue, p. 102. No. 234. Pot, 7 by $4\frac{1}{2}$ inches, with 3 feet, handle 4 inches long, dug up on the farm of Long Yester, Haddingtonshire. (W. W. Hay, 1831). No. 235. Pot, 7 by 5 inches, with 3 feet (handle broken) found at Dudhope near Galashiels, Selkirkshire. (Robt. Mercer of Scotsbank, 1862). No. 273. Pot, $8\frac{1}{2}$ by $5\frac{1}{2}$ inches, with 3 feet, and plain handle $6\frac{1}{2}$ inches long, found at Langton, Berwickshire. (John Gow, 1867). No. 238. Pot, 8 inches high (broken) with 3 feet and handle (broken) ornamented with double concentric circles, found in draining the Pot Loch, Scotsbank, Selkirkshire. (Gideon Scott, 1870).

Additional Notes to Papers of 1882 and 1883. By MISS RUSSELL.

THE name of Deloraine in Selkirkshire is sufficiently well known, owing to *The Lay of the Last Minstrel*; but it is not generally known that in the country it is uniformly, and correctly, pronounced Delôran.

The received derivation is "De Loraine," Mary of Lorraine-Guise having been one of the queens who had the royal jointure-lands of Etrick Forest; but neither that nor other proper names which have been suggested appear to me to contain the elements of the name as pronounced.

I had come to this conclusion lately, when something suggested the name of St Oran, the well-known companion of St Columba; and then remembered that the small stream is called Rankilburn, and that there is an old church upon it, and that Ran-kil means church-boundary or division in Gaelic; Dal-Oran would be Oran's Portion: and as the name seems to be this word unchanged, I infer that the church is probably one of those founded by Aidan and the twelve monks from Iona, under Oswy of Northumbria, about A.D. 640. The church being pushed close up to the British frontier is quite like the policy of the Saxon kings; the line of the Catrail, whether traceable or traditional, goes by Rankilburn. The element "Kil," or church, in this name, I find has been remarked before.

Mr Skene shows that the "St Adrian of the May," of the fictitious early history of Scotland, is probably one of the St Odhrans or Orans. Another island in the Firth of Forth is Inchcolm, or Innis St Colme; and we know that Inchkeith was Oswy's northern stronghold, under its other name of Urbs Giudi, apparently meaning the city of Gwyddyon. The St Helen's Chapel on the northern wall, at Condon, in Stirlingshire, probably marks the limit of the territory which Edwin had acquired, and which the succeeding Saxon kings retained for a long time. I rather imagine it must have been the occupation of Lothian which brought the Britons down on Edwin in 633, as it seems to have been held by the Cumbrians.

(If I remember right, Hadden and Stubbs have made rather a serious inversion of the Cumbrian geography, by saying that it was at Hoddam in Dumfriesshire that Kentigern spent eight years of his life, instead of at Lochorward in Midlothian. The time was in all probability before the battle of Camlan. The lives of the Welsh saints are evidently composed to suit the hereditary theory of the Iona church, which had such extensive influence).

Mr Skene's observation (C. S. Vol. II., page 49) that the Abbots of Whithorn, the successors of Ninian, as far as we know anything about them, were called Nennio, seems not only to show who the British historian Nennius was, but to throw an unexpected light on a question which has been very much controverted indeed, namely, *how many St Patricks there were*. The credit of evangelizing Ireland is divided between three names; the first, Patrick Maun, or Senn Patrick, there is little or no dispute about; he went from the coast of Wales to preach in Ireland about 380. "Maun" implies, I suppose, that he was one of the Picts or old Gael, who seem to have called themselves "Men," and that he went from Mona or Menevia to convert the Scots or Irish Gael. "Senn" which sounds like *saint*, means in Gaelic *old*, or perhaps here, the original Patrick. Nearly fifty years after, about 428, comes Palladius, who is said to have come to Ireland from the Continent, to have left it shortly for Scotland, but either died or was martyred at Fordoun in Kincardineshire, all within about a year. Immediately after him comes the great St Patrick, about whose extensive work and organization, and, necessarily long life, there is no doubt in the main. But it has been disputed for the last three centuries at least, whether he and Palladius were or were not the same man; one early writer says they were; and indeed the history of Palladius would not be much worth recounting otherwise. So that I have no doubt Palladius was the baptismal name of the Patricius who was born at Dumbarton, and carried to the Continent by pirates; though in his confessions, which seem to be genuine, he calls himself by his official name, as one of the successors of old Patrick. The Fordoun legend no doubt arises from the dedication to Palladius there; and it is worth remarking that there is a place called Kilpalet in Haddingtonshire, no doubt also a Cell dedicated to him in his Scotch aspect. I observe mention of "pre-Patrician bishops" in Sir Samuel Ferguson's recent lectures; it is quite

likely that there were different missions settled in different parts of Ireland: but the point is, that the man who really Christianized the country was probably the representative of Patrick Maun. After all, the case is not very different from that of the Abbot of Iona, whose official title meant "Heir of Columba-of-the-Church."

If Kirkhope on the Ettrick in Selkirkshire was really dedicated to St Irene, she is probably the sister of St Damasus of that name, who died in 378. This dedication, and the rude figure of the type of the Catacomb symbols found there, seem to refer the church to Ninian's diocese, or at least to the early Roman-British church.

I rather think the place called Tuessis—that is, Tweed, in the Roman geography, may be the Roman station at Newstead, between the Tweed and the Eildon Hills.

I do not know of any other important Roman locality on the river; and if it is Newstead, it occurs in a later itinerary, corresponding somewhat to the present roads between Carlisle and Edinburgh. Iberan, Birrenswark; Pinnatis, somewhere near Penchryst; Tuessis, Newstead; Lodone, Lauder; Litanamagno, Leith. 7th or 8th century.

The name of the Red Abbey Stead, for a house and some high-lying fields at the east end of Newstead, is inexplicable except on the supposition that when the Scotch king agreed to do homage for Cumbria in 945, he bargained to have it in its full extent, and at once built an intermediate Melrose Abbey on the frontier. (This abbey would be under Glasgow from the first; Coldingham remained under Durham down to 1484.) Soon after 945, the Northumbrians swore fealty to Edmund's successor, Edred, at Tadwine's Cliffe—which is so obviously a mistake for Eadwine's Cliffe, or the Eildon Hills, that it shows the English kings retained the country so far, down to probably 1018. Some of the oldest Scotch coins have the letters C A R, apparently as the mint-mark. This is not mentioned, I think, in the large work on the Scottish coinage published some years ago, probably because there seems no other evidence that Malcolm Canmore coined money, than this indication of Scotch coins being struck at Carlisle, and therefore before 1092, when Rufus took Carlisle, and tried to take the country so far as the Leader—"all beyond the Loedr."

Malcolm, or his next heir, had no doubt done homage for Cumbria to the Saxon kings; but he set himself against the Conqueror, though there are indications that at one period he paid the homage to him also.

I see much additional evidence for the view mentioned in the paper on early British coins, that the cup-and-ring cuttings on rocks, &c., were meant for the sun regarded as an eye. It struck me from seeing that circles and dots occurred with Etruscan representations of the Cyclops, who are now supposed to be degraded sun-gods. In India, where rock-cuttings occur much as in Britain, the people sometimes say the ring and dot stands for the sun, sometimes for Mahadeo (the great god) that is, Siva. Siva is sometimes represented with a third eye in his forehead, and the Cyclops are also sometimes depicted with three eyes. It is doubtless from this mythological link not having been observed, that it has not

hitherto been noticed, that in the imperfect system of the Egyptian hieroglyphics, the ring and dot stands for Ra—the sun, and also for the syllable ra. What is more remarkable is, that it also stands for the sun in the ancient Chinese writing; in the character now used, the picture element has become unrecognisable. I see it mentioned that in Syria the fear of the “evil eye” is much mixed up with that of sunstroke and moonstroke.

The rock-cuttings may possibly, or perhaps rather probably, be of the nature of charms. I see that the Egyptian god Kneph, when represented as Knouhmra, wears the solar disk above his horns; this is certainly suggestive of circles and spirals. Mr Villiers Stuart (“Nile Gleanings,”) says that from the particular relations of the ancient Egyptian language with the languages of Europe, his impression is that the old Greek accounts are true which bring colonies directly from Egypt into Europe; and indeed I do not see any reason to doubt them. However, the disk and the volutes are also to be seen together in the bas-relief of the sun-temple of Babylon, engraved in a little book which gives the results of cruciform readings up to the present year—“Babylonian Life and History.” The volutes have here lost the character of horns to a certain degree. The pre-historic temple in a small island off Malta is profusely marked with the opposed spirals, with only a few concentric circles. Captain Conder in “Heth and Moab,” describes gigantic stone disks, which he thought might be sun-images, much about the size of that in the Babylonian temple. He also says that spirals, palm-branches, and badly-drawn concentric circles, are painted in tombs in Syria at the present day. The *fern* of the coins, and of the dolmens of Brittany, may be a European substitute for the palm-branch; as I quite believe the rowan represents the mystic apple of the fairy tales, which again is a substitute for the pomegranate. Fern seed was mystical in the middle ages.

With reference to Patrick and Nennius, it may be added that the heroine martyr-abbess of Coludesburg is called the second St Ebba; and no doubt she was officially called by the name of the foundress. (Coldingham is the *ing* or shore at some distance from St Abbs Head.)

A name in the Nennius list of cities may suggest how Gerontius turned into Vortigern; Caer Guorthigern looks like Garth Geraint.

The Tomb of Cockburn of Henderland, and its Vicinity.

By JAMES HARDY. Plate VI.

THE Plate representing the tomb of Perys de Cockburn and his wife at Henderland having been proved to be incorrect as noticed at p. 417 of the present vol., I resolved to visit the spot when an opportunity should offer, in order to remedy the defect, and this I accomplished on the 26th of August, 1884, on the day preceding the Club's meeting at Ettrick. With some difficulty, owing to a current of cold wind sifting through the grassy area enclosed by the plantation, in which the tomb stands within the old chapel foundations, I made a rubbing, which has been reduced, and reproduced as a lithograph by the kindly offered aid and skill of Mr William Galloway, architect, Edinburgh, to whom the Club is very much indebted for the correct representation of this old historical monument. The reading as well as the sculpture has been put in proper form. See Plate VI.

The tomb was in much better condition than I had expected, and I do not suppose it was ever much better in recent times, for when Sir Walter Scott drew attention to it, "it was broken in three parts." These had not been very artistically connected when it was repaired by Mr Murray in 1841. The cleaning it had undergone from Mr Shaw shewed the full design, but the weather had long ago disfigured and wasted the lettering. The Earl of Wemyss has recently caused the erection to be put into better order.

According to my measurement, the oblong-chapel, built of greywacke, of which only the foundations survive, was 45 by 24 feet. The sepulchral slab, a hard red sandstone, is 9 feet 2 inches long; 20 inches broad at the top, and then 19, and 16 at the base; its thickness is $4\frac{1}{2}$ to $5\frac{1}{2}$ inches. The sword in length is $34\frac{1}{2}$ inches from the hilt; and the cross 41 inches. The tomb-stone was found in the ruins of the chapel in the midst of the last century. (Pennecuik's Desc. of Tweeddale, pp. 248-250). The chapel had neither reader nor exhorter at the Reformation. (Register of Ministers, 1567).—*Origines Parochiales*, i. p. 223.

Prosecuting the inquiry into the history of the Cockburns of Henderland, a few additional particulars were gleaned from the privately printed family record, "The Scotts of Buccleuch."

On the 8th December, 1383, there is a "Renunciation by Peter of Kockburn, Lord of Henryland, in favour of Thomas of Erskyne, Lord of Dun, and his spouse, of an annual duty, and of the superiority of Dalgles," given at Selkirk. This is a renunciation of the annual return of a pair of gilt spurs given to him and his predecessors from the land of Dalgles, Selkirkshire, and the superiority thereof, which was transferred to Erskine. (Vol. II. p. 13). On the 23rd July, 1446, William de Kokburne de Henriland witnesses the Charter by Thomas Inglis of Menner, of the lands of Brankishome and others, to Sir Walter Scott of Buccleuch, Knight. (Ib. p. 34). In 1529, there is the following "Charge by James the Fifth to Walter Scott of Branxholme, Knight, to apprehend William Cockburn of Henderland."

"James, be the grace of God, King of Scottis, to our lovit Walter Scott of Branxholme, Knycht, greeting: forsamekle as we ar informyt that William Cokburne of Henderland has been ane mysgidit man, and dailye resettis and assistis to theiffis, traitouris, and brekaris of our realme, and thairfor is fugitive fra our lawis, swa that he can nocht be apprehendet be our officiaris, quhilk is ane gret and hie contempcioun to ws to suffer to be wnpunyst: Our will is heirfor, and we charge zou that ze incontinent, thir our lettres sene, pass in our name and autorite, serche and seik said William Cockburne of Henderland, quharever he may be apprehendit, and tak and bring him to ws and our lawis, that he may be punyst for his demeritis according to the lawis and justice, and als that ze tak all his gudis moveable quharever thai ar or can be comprehendet, and eschaet to our ws the samyne, quhilkis we will that ze intromet with and dispone thairapoune as ze pleis; the quhilk to do we commit to zou our full power be thir our lettres gevin vnder our signet, and subscrivet with our hand at
the day and of our reynne the xvj zeir
JAMES R."

I went up the Henderland burn to the Dow-linn, probably named from domestic pigeons frequenting it, when the Castle of Henderland in close neighbourhood to it, was occupied. Bright pale green cushions of the subalpine moss, *Zygodon Mougeotii*, filling the fissures of the little crags; a few ash trees and pendulous mountain ashes already colouring in their foliage and fruit; long rampant Dog-roses like those in Kidland; twining Honeysuckles; *Hypericum quadrangulum*; Fairy Lint; Bugle; a Primrose peering out by the burn; Butterwort; *Carex ovalis*; *Triodia decumbens* and other moor grasses; *Geranium sylvaticum*; and a few grey Saughs formed the flora. The waterfall descends a rent in the greywacke rock in one white sheet, into a dark

pool, which has an inner hidden recess, overshadowed by a pendant mountain ash on the top of the rock above. A number of fine rowan-trees and a few ashes also grow in the hollowed-out concavity beside the water-fall, amidst a wealth of brackens, and abundance of the white flowered Grass of Parnassus. *Isohecium alopecurum* and *Marchantia* fringe the rocks at the water-fall; and the lichen, *Endocarpon minutum*, var. *complicatum* clusters where the vexed water rushes out to the light. Higher up the narrow ravine are Honeysuckle; *Hieracium vulgatum*; Common Polypody; *Chrysosplenium oppositifolium*; *Oxalis acetosella*, *Athyrium Filix-femina*; *Alchemilla vulgaris*; and Raspberry at the head of the fall. Farther up still there was a second water-fall, where *Saxifraga stellaris* grew on a rocky islet; and the banks and rocks being dry were clothed with *Helianthemum vulgare*; Bilberries, whose fruit was ripe; the Fox-glove; Ivy mantling the steep rocks; Eyebright; *Hieracium Pilosella*; Zig-zag Clover; Milfoil, and blue *Scabiosa succisa*. This was a pretty spot. The lichens on the dry rocks were *Parmelia conspersa* and *Lecidea geographica*. During spates the little terraced water-falls here will descend in one continuous rush. The wearing power of the water charged with boulder-stones and gravel is very evident in the deeply excavated and smoothed rocky channel. Towards the heathery hills behind, the stream forks and occupies two separate ravines.

There were not many birds. Those congregated in the plantations were Chaffinches and Willow Wrens, and there was a single Thrush. A young Cuckoo was seated at the top of the lower water-fall. There were eight or nine Missel Thrushes on the ferny pastures—they spread far and wide wherever there are sheep; a Grey Hen and Black Cock; and a Ring-ousel, on the edges of the heather; a Chimney Swallow was playing about; and a Martin had been at St Mary's Loch; where also I observed the Water-ousel. A Wheatear, a Lark, and a Lapwing were seen at St Mary's Churchyard.

The ruins of Cockburn Castle or peel, occupy the irregular surface of the ground between the base of the hills, and Henderland burn. There are the foundations of the walls of the square keep, the stables and byres, and the oblong folds and "bughts," which have been numerous. The keep, situated on an elevation, is 36 by 24 feet, and has an oblong building attached to the east end. An outer wall has enclosed the whole, including a con-

siderable unoccupied space. A small extent of old cultivated ground adjoins, which would scarcely grow sufficient provender for the horses and cattle, let alone grain for the human occupants.

It was a rude iron key and not a hammer that was found 14 or 15 years ago among the ruins of Cockburn's Castle; see p. 418.

I was much impressed with the solemnity and wild grandeur of the vale of the Megget, and its steep green sides and dark heathy hill-crowns; the impetuosity of its dashing waters within their blue gravel margins; the noisy rush of its distant rapids; and the whisperings of the breezes wandering among the brackens that somewhat densely overspread the lower and drier hill-slopes. The voice of inanimate nature alone broke the profound quietude.

The common yellow *Mimulus* so luxuriant below the Registrar's cottage is a garden escape.

I had merely a spare quarter of an hour to ascend to St Mary's Churchyard, and copy some of the inscriptions on the tombstones. Some of the stones are merely blank greywacke slabs.

Having recently visited the museum of the Chambers' Institution, Peebles, I took a note of the following water-fowl preserved there, that had come from St Mary's Loch:—

BIRDS FROM ST MARY'S LOCH.—BLACK SCOTER (*Oidemia nigra*), Nov. 1875, Mr William Richardson, St Mary's Cottage. TUFTED DUCK (*Fuligula cristata*), Feb. 19, 1870, by the same. POCHARD DUCK (*Fuligula ferina*), 1868. SCAUP DUCK (*Fuligula marila*), March, 1876, Mr Wm. Richardson.

Miscellanea. By JAMES HARDY.

THREE-BEARDED ROCKLING. During the week ending May 31st, two of the Three-bearded Rockling (*Motella tricirrata*), were taken in the crab-creels of the fishermen at the Cockburnspath Cove. These are only the second and third examples of the fish observed on the Berwickshire coast. The first was obtained on 8th April, 1875, and was recorded in the Club's Proceedings, vol. VII. p. 470.

COCCUS FAGI IN THE RAVENSWORTH WOODS. When walking in the end of August 1884, with the Rev. R. H. Williamson of Whickham, in the woods near the Whickham Washing-well dean,

belonging to the Earl of Ravensworth, I observed that several of the trunks of some old beeches were spotted white with the cottony investment of *Coccus Fagi*, which is not recorded in any of the lists of the Insects of Northumberland and Durham. It was a place I knew, for I had been there entomologising more than thirty years previously. On November 5th 1883, I noticed that it still exists in Dalkeith Park, and as I have noticed before, it occurs in Gosford Park, and near Ayton; still more recently I observed it on beech trunks and roots at Polton bank on both sides of the road to the Railway Station.

ANEURUS LEVIS (*Fab.*) AT GIBSIDE. This curious bug was found on one occasion under the bark of paling on the low grounds by the Derwent, near Gibside. I have still the specimens. It is not recorded in Mr J. T. Bold's list of Hemiptera, Nat. Hist. Trans. Northd. and Durham, vol. iv. It is figured in Curtis' B. E. ii. fig. 86, and Douglas and Scott, Brit. Hemipt. Pl. ix. fig. 8.

BOREUS HYEMALIS. I had forgotten to register in the Club's Proceedings this very singular looking insect as a Border species. It occurs on the top of walls, and in moss, near Penmanshiel; crawling among mosses on rocks in Oldcambus dean; and among porphyry rocks behind Wooler. My attention was called to this circumstance by a recent notice of Professor Trail in the "Scottish Naturalist." My record of it is contained in a Register of the Periodical Phenomena of Plants and Animals, in the Report of the Meeting of the British Association at Edinburgh, August 1850. It appeared March 12th 1849, and again December 31st at Penmanshiel. I have no doubt there are other localities among my notes.

LYNGBYA SPECIOSA, *Carm.* Mr Batters detected this among some Algæ that I sent from rock pools on the Grey-wacke coast at Windilaws, east of Redheugh, Berwickshire. It is not in the old lists. Mr G. T. Brady found it amongst *L. Carmichaelii* at North Sunderland, Trans. Tynes. Nat. Field Club, iv. p. 314.

LINNÆA BOREALIS. At Longformacus a new locality for *Linnæa borealis* has been discovered by Mrs Captain Brown. It grows in one of the strips of Scotch pine, which have been damaged and thinned out by the great gale of October 14th 1881. It contains, like many of the planted strips, much of the *Pyrola minor*, a likely accompaniment, as at Huntlywood, to the *Linnæa*. There are three large patches of the *Linnæa*, one of them considerably

apart from the other. Owing to the exposure to the full sun-light, some of the foliage is rather reddened. The plants flowered this summer (1885). Whether they are native or introduced, there is a variety of opinion. The pine trees planted here were brought on ponies' backs from Braemar, and it is possible the *Linnæa* plants may have come here as seedlings in the soil, or as packing. From the size of the patches they must have stood for a very considerable period. The foliage is more luxuriant and differs somewhat in form from the Mellerstane plants, as if from a different stock. It was imagined by some that they might be North American plants introduced from a nursery; but this is not the case, as Canadian plants, for which I am indebted to Mr Boyd of Faldonside, have peculiarities of their own. Mr Thomas Darling, Berwick, obliged me with flowering examples and young shoots of *Linnæa* from the wood of Castle Grant, Strath-spey, two of which had double flowers, for comparison. The result of the examination was as follows:—

1. MELLERSTANE FORM. Leaves small, rounded, slightly incised or notched, rarely twice on one side of the out-line, fore-lobe not prominent, not pointed; palish green, smoothish; leaves not crowded on the shoots.

2. STRATH-SPEY FORM. Leaves of flowering shoots like No. 1; of young shoots ovate, closely resembling No. 4, but not quite so luxuriant or so pointed at the apex.

3. CANADIAN FORM. With a more crowded and coarser foliage, the veins more prominent both on the upper and inferior surface; many of the leaves broader, almost reniform, out-line much cut by the notches, of which there are three on each side; the front-lobe often not so long as the apices of the foremost segment, not pointed; in other instances there are more ovate leaves, but still strongly incised, and blunt; dark coloured.

4. LONGFORMACUS FORM. Foliage larger than No. 1; but of the same smooth character; mostly ovate; sparingly distributed on the shoots; triply incised on each side, but not specially marked on the out-line; except in the rounder leaves. Apical lobe distinctly prominent, pointed. Colour, except where exposed, same as No. 1. Some of the forms of the leaves resemble those in the figures of *Linnæus*, *Flora Suecica*, p. 219. *Editio secunda*, Stockholm, 1755; and of the *Flora Lapponica*, *Editio altera*, Plate XII; but both are more marked in the incisures.

TRIENTALIS EUROPÆA. As a Lammermoor plant this was long ago noticed in a communication from Lady John Scott, in the Club's Proceedings, vol. VI., p. 117. It has recently been gathered by Mr H. H. Craw of West Foulden, in a plantation

on the outer extremity of Rawburn farm, where it marches with Evelaw.

POLYSTICHUM LONCHITIS. A plant was picked up by Mr Grant, gardener, Longformacus House, at the side of the Whitadder, at the base of "Moonjee." It is very dwarf, but true. I have some of the fronds.

CAREX DIVISA, *Huds.* This was found by Mr W. H. Brown, somewhere near Whitley, and is recorded in the Transactions of the Tyneside Naturalists' Field-Club; I have omitted to mark the vol. and page. It is omitted in the new Flora of Northumberland and Durham.

SPLACHNUM SPHÆRICUM, *Hedw.* A fine patch on Greenlaw Moor, August 1884, by Robert Renton; new to Berwickshire.

ANDRÆA RUPESTRIS, *L.* Sparingly on "The Mitten full of stones," a great monumental Cairn on Byrecluch Rig, Lammermoor.

GYROPHORA POLYPHYLLA, *L.* and *G. CYLINDRICA,* *L.* growing on the stones of the same Cairn.

NOTE ON A SPOON FOUND AT MOUSEN, p. 363. The initials on the spoon were T. P. It appears from the Bamburgh Church Register of Births, that there was a Mark Patersone in Mousen, 13th November, 1653 (Wilson's Churches of Lindisfarne, p. 62). The ownership may be referable to one of the occupant Patersons.

Rain Fall in 1884, at Glanton Pyke, Northumberland.
 Communicated by FREDK. J. W. COLLINGWOOD, Esq.

Rain Gauge { Diameter of Funnel, 8 inches.
 Height of Top } Above Ground, 4 feet 3½ inches.
 of Top } Above Sea Level, 517 feet.

ESTIMATED.

		Inches.			Inches.
January	.. ..	3.45'5	July	.. ..	4.96'5
February	.. ..	1.72'5	August	.. ..	1.50'0
March	.. ..	2.05'0	September	.. ..	2.58'5
April	.. ..	1.60'0	October	.. ..	2.06'5
May	.. ..	1.74'0	November	.. ..	2.21'5
June	.. ..	1.89'0	December	.. ..	2.44'5
Total				.. ..	28.23'5

Note of Rain Fall at West Foulden for ten years, 1875-1884. By Mr HENRY HEWITT CRAW.

		Inches.	Tenths.			Inches.	Tenths.	
1875	.. ..	25	7	1880	.. ..	24	6
1876	.. ..	37	7	1881	.. ..	30	6
1877	.. ..	38	1	1882	.. ..	32	8
1878	.. ..	29	6	1883	.. ..	26	3
1879	.. ..	28	2	1884	.. ..	23	4
							297	0

Being an average of $29\frac{7}{10}$ inches per annum.

*Register of Rain Fall and Sunshine, &c., in the year 1884,
kept at Marchmont House. Lat. 55° 43'; Lon. 2° 26'.*

Marchmont is 500 feet above the sea: it is well wooded, and situated as near as possible in the centre of the county of Berwick, on the base of the Lammermoor Hills. The soil is a strong red clay, producing good crops in favourable seasons.

There is nothing more striking than the absence of sunshine during the year, being 511 hours less than in 1883. The month of July was wet and cold: 5.48 inches of rain fell, there being only 5 days dry. This had a serious effect on the cereals. August was a dry month, with a considerable amount of sunshine, which had a beneficial effect on all the crops. Turnips grew rapidly, and harvest operations were, in favourable localities, begun; but September was a wet, foggy month, and much damage was done to grain in stook and stack—a considerable amount of grain had to be carried out of the stackyard to save it. Turnips made rapid growth with the warmth and moisture of September, and are the best crop we have had of these valuable roots for several years. The prices current for all descriptions of agricultural produce must have the effect of still further reducing the value of land.

Date.	Jan.		Feb.		March.		April.		May.		June.	
	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.
1	.04	1	.25	...	.04	2	.12	2	.15	3	...	5
2	...	2	.25	2	...	2	.08	2	.11	4	...	5
3	.19	...	...	2	.22	1	.04	5	.23	3	...	12
4	.34	...	.02	2	.32	...	.13	6	.02	2	...	2
5	.20	...	...	2	.02	4	...	4	.29	4	.29	...
6	...	3	.03	3	...	3	...	6	.22	4	.08	2
7	.02	2	...	4	.11	...	.04	3	.36	2	.05	2
8	.06	...	.03	...	.24	1	.03	10	.02	3	.15	...
9	.12	2	.29	...	.18	3	...	7	.02	4	...	...
10	.45	...	.09	2	.18	3	...	10	...	5	.02	6
11	.06	2	.12	2	...	4	.02	2	...	11	...	3
12	...	4	.07	...	.03	2	...	3	.05	5	...	12
13	...	4	.17	...	.04	2	.12	1	.07	5	.02	8
14	...	4	...	2	.32	2	.05	2	.06	9	...	5
15	...	3	...	...	.02	5	...	3	.03	4	...	1
16	...	4	.05	...	...	6	.07	2	.05	3	.07	1
17	...	3	.03	...	.03	4	.02	2	...	2	.02	1
18	...	2	...	2	.12	4	.02	1	...	14	...	...
19	...	...	.07	2	...	4	.02	2	...	5	...	1
20	...	4	.04	3	.04	3	...	4	.36	10	...	4
21	.33	2	.07	4	...	5	.02	5	...	1	...	5
22	.28	...	.02	2	.02	1	.11	5	...	9	.04	1
23	.75	...	.04	4	...	2	.07	2	...	12	.02	2
24	.21	1	...	5	...	7	...	5	.02	12	.02	...
25	.44	2	...	4	...	4	...	4	...	5	...	4
26	.05	2	...	2	.04	...	...	5	...	9	...	8
27	.04	2	.02	2	...	1	...	9	...	8	...	8
28	.73	1	.03	2	.04	2	.13	...	...	2	...	12
29	.05	...	.12	2	...	2	.23	2	...	...	...	10
30	.07	...	...	...	...	...	...	3	.02	...	...	1
31	...	...	...	...	.14	1	...	...	...	5	...	...
Tls.	4.43	50	1.81	55	2.15	80	1.32	117	2.08	165	.78	121

Date.	July.		August.		Sept.		Oct.		Nov.		Dec.	
	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.	R.	S.
1	·09	5	...	1	·16	3	...	4	·19	...	·07	...
2	...	2	...	3	·02	5	·12	1	·02	1	·23	...
3	·02	9	...	...	...	6	·02	6	...	2	·21	...
4	·10	2	...	5	·08	4	...	2	·53	1	·31	...
5	·80	1	...	5	...	6	·02	6	·02	...	·06	2
6	·15	...	...	7	1·17	7	·02	4	·32	3	·11	1
7	·24	2	...	8	·06	3	...	1	·03	1	·31	...
8	·09	3	...	8	·07	5	·13	...	·02	...	...	2
9	·47	...	...	5	...	2	·13	5	...	4	·02	2
10	·65	...	·17	9	·03	...	·35	...	·02	3	·12	...
11	·16	5	...	2	...	4	·38	1	...	3	...	...
12	·03	6	·13	2	...	3	·02	3	·19	...	·07	...
13	·77	4	...	6	·02	8	...	1	·02	4	·09	1
14	·17	8	...	5	·07	...	·11	5	·02	1	·03	...
15	·41	1	·05	3	·03	...	...	3	...	...	·08	1
16	·02	6	...	1	·06	2	...	1	...	...	...	...
17	·03	7	...	7	...	7	...	...	·37	...	·03	...
18	...	8	·23	6	·02	5	...	4	·17	...	·07	...
19	·07	2	·02	1	·02	3	...	5	·02	2	·33	...
20	·04	6	...	9	...	3	...	4	·33	1	...	1
21	·22	...	...	2	·37	2	...	1	·21	1	...	2
22	·50	1	...	1	·02	3	...	2	...	1	...	3
23	·18	3	...	9	·03	3	...	3	...	2	...	...
24	·07	4	...	5	·06	6	·04	4	...	3	...	1
25	·08	6	...	7	·02	5	·12	...	...	2	...	1
26	·06	1	·04	1	·21	1	·05	3	·04	2	...	...
27	...	1	·17	...	...	3	·05	3	...	1	...	...
28	...	5	·11	1	·10	2	·02	3	...	1	...	1
29	·04	...	·14	8	...	7	...	3	·02	1	...	...
30	...	...	·03	4	·39	4	·04	...	...	...	...	...
31	·02	1	·02	...	...	...	·06	...	...	...	...	...
Tls.	5·48	·99	1·11	131	3·01	112	1·88	78	2·54	40	2·14	18

Total Rainfall, 28·73 inches. Total Sunshine 1066 hours.

WIND AT 9 A.M.—*January*—N. 1; NE. 0; E. 1; SE. 2; S. 2; SW. 2; W. 17; NW. 6. *February*—N. 4; NE. 2; E. 2; SE. 3; S. 5; SW. 6; W. 7; NW. 0. *March*—N. 1; NE. 1; E. 2; SE. 1; S. 5; SW. 5; W. 9; NW. 7. *April*—N. 5; NE. 6; E. 10; SE. 2; S. 5; SW. 0; W. 2; NW. 0. *May*—N. 0; NE. 3; E. 6; SE. 0; S. 0; SW. 1; W. 18; NW. 3. *June*—N. 6; NE. 2; E. 3; SE. 0; S. 2; SW. 3; W. 10; NW. 4. *July*—N. 1; NE. 1; E. 4; SE. 2; S. 2; SW. 6; W. 14; NW. 1. *August*—N. 1; NE. 2; E. 0; SE. 0; S. 1; SW. 2; W. 22; NW. 3. *September*—N. 1; NE. 3; E. 3; SE. 0; S. 1; SW. 2; W. 16; NW. 4. *October*—N. 3; NE. 1; E. 2; SE. 0; S. 1; SW. 1; W. 17; NW. 6. *November*—N. 4; NE. 2; E. 2; SE. 0; S. 1; SW. 5; W. 10; NW. 6. *December*—N. 5; NE. 3; E. 0; SE. 1; S. 2; SW. 3; W. 14; NW. 3.

WIND DIRECTIONS IN DAYS AT 9 A.M.—N. 32; NE. 26; E. 35; SE. 11; S. 27; SW. 36; W. 156; NW. 43.

PETER LONEY.

Donations to the Berwickshire Naturalists' Club, from Scientific Societies, Exchanges, &c., 1884-5.

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————— Memoirs of the Boston Society of Natural History, Vol. III., No. VIII. On the Development of *Oecanthus niveus* and its parasitic Teleas. By Howard Ayres, Jan. 1884, No. IX. Two New and Diverse types of Carboniferous Myriapods. The Species of *Mylacris*, a Carboniferous genus of Cockroaches. By Samuel A. Scudder, March 1884, No. X. Notes on the Peeping Frog, *Hyla Pickeringii*, Leconte. By Mary H. Hinckley, May 1884, 4to. *The Society.*

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————— Enumeratio Insectorum Norvegicorum Fasciculum v, Catalogum Hymenopterorum continentem, Auctore H. Siebke, Edidit J. Sparre Schneider, Pars I., 1880, 8vo. (Saw-flies, Bees, Wasps, Sand-Wasps, Ants).

————— Die Anämie von S. Laache, 1883, 8vo.

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The Royal University of Norway, Christiana.

- DUBLIN. Scientific Transactions of the Royal Dublin Society, Vol. I., Ser. II., Nos. XX., XXI., XXIII., XXIV.; Vol. III. Ser. II., Nos. I., II., III., 1882-3, 4to.
- Ditto, Ditto. Vol. I. Ser. II., No. XXV. On the Fossil Fishes of the Carboniferous Limestone Series of Great Britain. By James W. Davis, F.G.S., &c., 1883, 4to.
- The Scientific Proceedings of the Royal Dublin Society, Vol. III., N. S., Parts 6 and 7., Vol. IV., N. S., Parts 1, 2, 3, 4, 8vo., 1883-4, 8vo. *The Royal Dublin Society.*
- DUMFRIES. The Transactions and Journal of Proceedings of the Dumfriesshire and Galloway Scientific, Natural History, and Antiquarian Society. Sessions 1880-81, 1881-2, 1882-3, 8vo. *The Society.*
- EDINBURGH. Proceedings of the Society of Antiquaries of Scotland, 1883-84, Vol. VI., N. S., 4to. *The Society.*
- Proceedings of the Royal Society of Edinburgh, Sessions, 1881-82, 1881-82, 1882-83, 8vo. *The Society.*
- Proceedings of the Royal Physical Society, Session, 1883-84, 8vo. *The Society.*
- Transactions and Proceedings of the Botanical Society, Vol. XVI., Part I. 1885, 8vo. *The Society.*
- ESSEX, BUCKHURST HILL. Transactions of the Essex Field Club, Vol. III., Part 8., 1884, 8vo. *The Club.*
- ESSEX, SALEM, U.S.A. Bulletin of the Essex Institute, Vols. XV. and XVI., 1883-84, 8vo. *The Institute.*
- GIESSEN. 23 Bericht der Oberhessischen Gessellschaft für Natur- und Heilkunde, Junii, 1884, 8vo. *The Society.*
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- Proceedings of the Natural History Society of Glasgow, Vol. V., Part III., 1882-3; Glasgow, 1884, 8vo. *The Society.*
- Proceedings and Transactions of the Natural History Society of Glasgow, Vol. I., N. S., Part I. 1883-4, Glasgow, 1885, 8vo. *Ibid.*
- Transactions of the Geological Society of Glasgow, Vol. VII., Part II., 1882-83, 1883-84; Glasgow, 1885, 8vo. *The Society.*
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NORTHAMPTON. Journal of the Northamptonshire Natural History Society and Field Club, Vol. iii., Nos. 19, 20, 21, 22, 1884-5, 8vo. *The Society.*

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General Statement.

THE INCOME AND EXPENDITURE HAVE BEEN:—

INCOME.

	£	s.	d.
Arrears received	26	15	6
Entrance Fees	11	10	0
Subscriptions	87	8	6
Interest on Deposit account ..	13	5	6
Cheque from Mr Leather on } account of extra plates. }	10	10	0
	149	9	6
Balance due Treasurer ..	23	12	9½
	£173	2	3½

EXPENDITURE.

Balance due Treasurer from last account	23	15	6
Banks and Co. for Lithographing ..	5	6	0
West and Co. do.	5	2	0
T. Guyot do.	18	8	0
Printing	79	7	6
Expenses at Meetings	10	14	9
Postages and Carriage	21	4	7½
Berwick Salmon Company	9	3	11
	£173	2	3½

E R R A T A.

- PAGE 441, line 6 from the top, for Lord Kaims read Lord Kames.
- „ 448, Note, for T. D. Clark read J. D. Clark; and for S. A. Tyler read S. A. Fyler.
- „ 449, line 28 from the top, for *fahre* read *fahren*.
- „ 451, „ 12 „ for revised read reversed.
- „ 457, „ 2 from the bottom, for Prior Castle's read Prior Castell's.
- „ 465, last line, for *Reiken-gräber* read *Reihen-gräber*.
- „ 470, line 23 from the top, for *Littorela* read *Littorella*.
- „ 576, „ 3 „ for *Lerry, Lerry*, read *Lezzy, Lezzy*.
- „ 567, sentence commencing July 13, requires transposition: “Black-headed Gulls seen moving sea-ward,” being placed at the close, instead of the middle.
- „ 582, 583, 588, for Chiswick read Cheswick.
- „ 600, line 5 from the bottom, for Oswy read Oswald.

APPENDIX.

THE following paper was read at the meeting of the Club, held at Jedburgh, on Wednesday, May 27th, 1885.

THE ROMAN INSCRIPTION IN JEDBURGH ABBEY.

By the Rev. J. C. BRUCE, LL.D., D.C.L., F.S.A., etc.

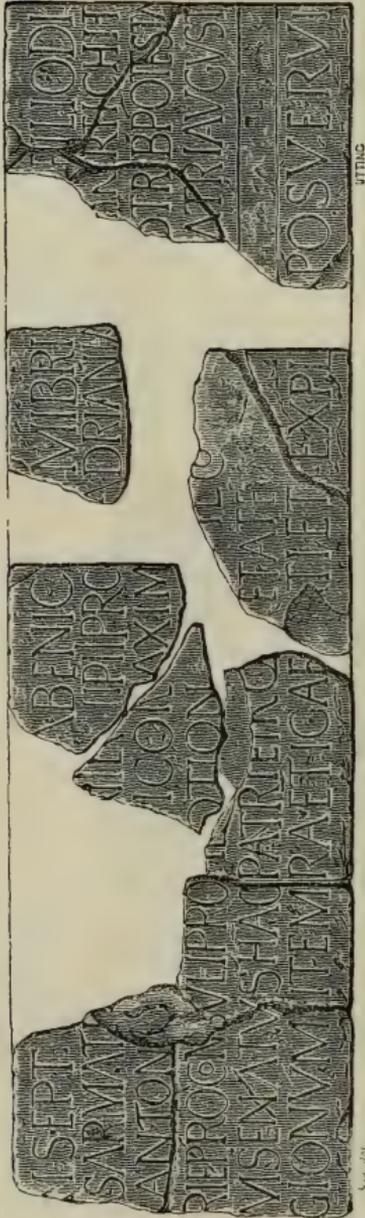
A short time ago the Marquis of Lothian did me the kindness to send me a cast in plaster-of-Paris of the Roman inscription in Jedburgh Abbey. On two occasions the attention of the members of our Club has been called to this stone. The Rev. James Farquharson, in his Presidential address in 1882, thus refers to it:—"In the roof of the turret stair, to the north of the west entrance, a stone is embedded, on which lettering, believed to be Roman, occurs. We were informed that the words 'Julius Cæsar' are found in the inscription, but no member succeeded in deciphering the name of the 'great Cæsar.'"*



Again, in the account of the "Restoration of Jedburgh Abbey," by Mr. James Watson, which appears in the tenth volume of our *Proceedings*, at page 137 the following passage occurs:—"Another stone which has proved of some interest to antiquarians is built in as a lintel at the foot of the north-west turret stair. It is of Roman origin, and the inscription begins with the well-known I.O.M. — *Jupiter Optimus Maximus.*" The following contracted words can easily be made out:—CAESA. SEVER. TRIB.; but the inscription, as a whole, has never been deciphered. . . . An illustration of this stone is given in the first volume of Jeffrey's *History of Roxburghshire.*"

* *Proceedings*, Vol. X., p. 43.

The inscription, as it appears upon the cast, of which the wood-cut is a faithful copy, may, I think, be read thus:—



I O M VE[XI]
 LLATIO RETO
 RVM GAESA
 Q C S A S IVL
 SEVER. TRIB.

which, I am pretty confident, ought to be expanded as follows:—

I[OVI] O[PTIMO] M[AXIMO] VEXI-
 LLATIO RETORVM GAESA-
 [TORVM] Q[VORVM] C[VRAM]
 A[GEBAT] IVL[IVS]
 SEVER[INVS] TRIB[VNVS];

and which may be translated—"To Jupiter, the best and greatest, the Vexillation of Rhaetian spearmen, under the command of Julius Severinus the tribune [dedicate this altar]."

I think there must have been a line or two more of the inscription, which has been chipped off by the builders of the Abbey. There would, at all events, be the usual termination of such inscriptions—the letters v.s.l.m. ("*votum solvit libens merito.*")

I have always understood a *vexillation* to be a body of men selected from different cohorts, but fighting under one common *vexillum* or standard, and sent on some special expedition.

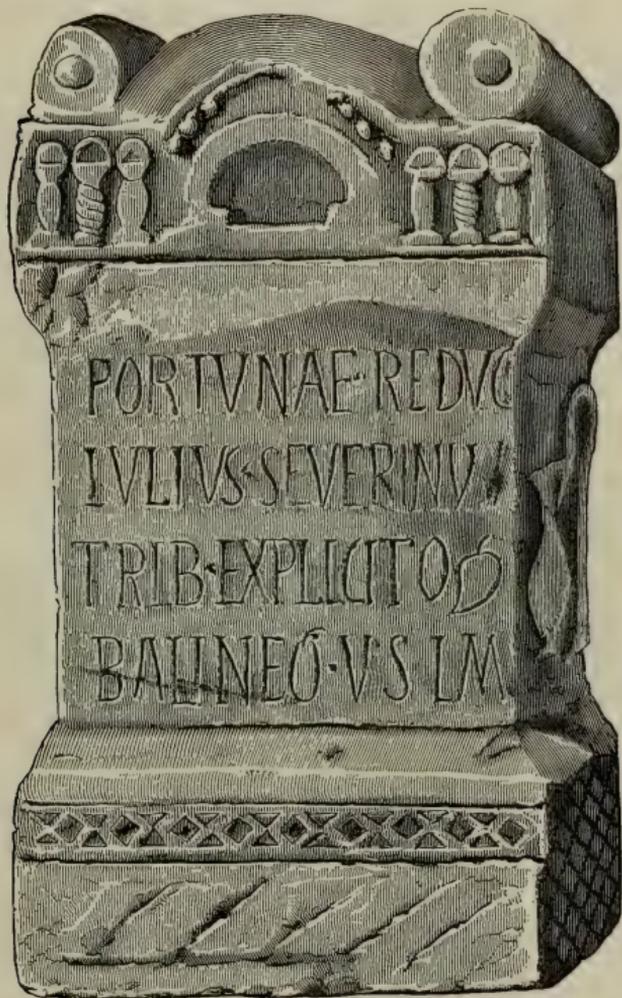
Retorum may be regarded as a rustic spelling for *Rhætorum*. The Rhætians came from the Alps.

These Rhætians were named *Gæsati*. At HABITANCUM, the modern Risingham, near Woodburn, in the north of Northumberland, we have a long but much fractured inscription which mentions the *Reti Gæsati*. This in-

scription is now in the Newcastle Museum, and is shown in the

accompanying woodcut. The last line of this inscription, it will be observed, reads thus:—[*Cohors I. Van*]gionum, item *Raeti Gaesati et Exploratores . . . posuerunt.*”

Gaesum seems to be the name of a spear or javelin, first of all used by some savage tribes, but afterwards adopted by some Roman troops. What the peculiarity of the weapon consisted in we have no means of knowing. This vexillation seems to have been armed with it, and hence were called *Gaesati*.



After each of the letters, Q, C, A, in the inscription, we have a leaf stop—indicating a contraction. These same letters occur in two other inscriptions found at HABITANCUM, but now lost. I

have expanded them as I find Professor Hübner has expanded them, and I have no doubt correctly, in the *Corpus Inscriptionum Latinarum*, Vol. VII., Nos. 987, 988.

I have only one more remark to make. The tribune's name I would have read *Julius Severus*, had I not found that on an altar dedicated to Fortune, found in the station of HABITANCUM, the name of the tribune who dedicates it is given thus:—IVL. SEVERINVS. No doubt this is the same individual as the IVL. SEVER. of the Jedburgh stone.

This altar, which is a very fine one, is now in the Museum of the Society of Antiquaries of Newcastle. It may be interesting to our members to see a drawing of it. The woodcut inserted on the former page represents it; which, together with the previous woodcut, has been kindly lent by the Newcastle Society. The inscription is:—

FORTVNAE · REDVCI
IVLIVS SEVERINVS
TRIB[VNVS] EXPLICITO ✽
BALINEO · V.S.L.M.

“To Fortune, that brings back in safety, Julius Severinus, the tribune, on the completion of the bath, erects this altar in discharge of a vow to a most deserving object.”

HABITANCUM is situated upon the Watling Street. Jedburgh is only two miles distant from this Roman road. It would be an easy thing for the *Rhæti Gesati* to find their way from Risingham to Jedburgh.

It is not a little interesting to the student of our country's history, after having meditated upon the state of things which existed when the Abbey was reared, to have his mind carried a step higher, by the examination of this Roman stone, to a time when Britain was one of the feeblest of the powers of the earth.

22 DEC 1887



BERWICKSHIRE NATURALISTS' CLUB.

LIST OF MEMBERS, OCTOBER, 1885.

	Date of Admission
1. Francis Douglas, M.D., Woodside, Kelso	July 30, 1834.
2. David Milne-Home, LL.D., F.R.S.E., F.S.A., Scot., etc., Milne-Graden House, by Coldstream, and 10 York Place, Edinburgh	Sept. 21, 1836.
3. Frederick J. W. Collingwood, Glanton Pyke, Alnwick ...	May 6, 1840.
4. Jonathan Melrose, Coldstream	" "
5. David Macbeath, Old Charlton, Kent	Dec. 16, "
6. John B. Boyd, Cherrytrees, Yetholm	Sept. 18, 1841.
7. James Tait, W.S., Edenside, Kelso	July 26, 1843.
8. William Brodrick, Little Hill, Chudleigh, South Devon	Sept. 20, "
9. John Turnbull, Abbey St Bathans, W.S., F.S.A., Scot., 49 George Square, Edinburgh	" "
10. Rev. Hugh Evans, M.A., Scremerston, Berwick ...	May 3, 1846.
11. David Francis S. Cahill, M.D., Berwick	Oct. 18, 1849.
12. John Craster, Craster Tower, Lesbury	Sep. 18, 1850.
13. William Dickson, West End House, Pinner, London ...	Oct. 15, 1851.
14. Matthew J. Turnbull, M.D., Coldstream	June 30, 1852.
15. Rev. George Selby Thomson, M.A., Acklington ...	" "
16. William B. Boyd, Faldonside, Melrose	Oct. 12, 1853.
17. Charles Stuart, M.D., Chirnside	Aug. 16, 1854.
18. Rev. F. R. Simpson, B.A., North Sunderland, Chathill	" "
19. George Culley, of Fowberry Tower, Office of H.M. Com- missioner of Woods and Forests, Whitehall Place, London	June 23, "
20. Sir William Marjoribanks, Bart., Lees, Coldstream ...	" "
21. Charles Watson, F.S.A. Scot., Duns	Oct. 20, 1856.
22. Rev. Thomas Leishman, D.D., F.S.A., Scot., Linton, Kelso	" "
23. George P. Hughes, Middleton Hall, Wooler	" "
24. The Right Hon. Lord Tweedmouth, Brook House, Upper Brook Street, Park Lane, London; and Guisachan, Beaulieu	July 30, 1857.
25. Patrick Thorp Dickson, London	Oct. 28, "
26. William Sherwin, The Grange, Farnborough, Hants ...	" "
27. Rev. Thomas Procter, M.A., Tweedmouth	" "
28. Matthew T. Culley, Coupland Castle, Wooler	" "

List of Members.

29. John Marshall, M.D., Chatton Park, Belford	...	June 24, 1858.
30. John Wheldon, 4, Paternoster Row, London, E.C.	...	Oct. 27, "
31. Middleton H. Dand, Hauxley Cottage, Acklington	...	June 28, 1859.
32. Stephen Sanderson, The Elms, Berwick	...	" "
33. Dennis Embleton, M.D., Eldon Square, Newcastle	...	" "
34. Charles B. Pulleine Bosanquet, Rock, Alnwick	...	Sept. 29, "
35. Robert Douglas, Solicitor, Berwick	...	June 28, 1860.
36. John Riddell, St. Ninian's, Wooler	...	Sept. 13, "
37. Watson Askew, Pallinsburn, Coldstream	...	Oct. 11, "
38. Rev. Edward A. Wilkinson, M.A., Whitworth Vicarage, Spennymoor, Durham	...	May 30, 1861.
39. Robert H. Clay, M.D., 4, Windsor Villas, Plymouth	...	" "
40. J. A. H. Murray, LL.D., Mill Hill, Hendon, Middlesex, N.W.	...	June 27, "
41. Charles Douglas, M.D., Woodside, Kelso	...	" "
42. Archibald Campbell Swinton, LL.D., F.R.S.E., F.S.A., Scot., Kimmerghame, Duns	...	" "
43. Rev. Patrick George McDouall, M.A., Cosgrove Rectory, Stony Stratford	...	July 25, "
44. Thomas Brewis, 6, Regent Terrace, Edinburgh	...	" "
45. Rev. W. L. J. Cooley, M.A., Ponteland, Newcastle	...	" "
46. Rev. Canon Greenwell, M.A., D.C.L., F.R.S., F.S.A., Hon. F.S.A., Scot., Durham.	...	" "
47. James Bowhill, Solicitor, Ayton	...	Sept. 26, "
48. Rev. Canon Scarth, Holy Trinity Vicarage, Milton- next-Gravesend	...	" "
49. Septimus H. Smith, Norham.	...	" "
50. Dr. John Paxton, Berwick and Norham	...	" "
51. Charles Anderson, Solicitor, Jedburgh	...	June 26, 1862.
52. Major Henry R. Hardie, Penquit, Torquay	...	" "
53. John Scott Dudgeon, Longnewton Place, St Boswells	...	" "
54. William Elliot, Sheriff-Clerk, Jedburgh	...	" "
55. Rev. J. C. Bruce, LL.D., F.S.A., Framlingham Place, Newcastle	...	July 31, "
56. John Tate, Barnhill, Acklington	...	" "
57. Rev. Peter Mearns, Coldstream	...	" "
58. William Crawford, Solicitor, Duns	...	Aug. 15, "
59. George Rea, Middleton House, Alnwick	...	" 28, "
60. Sir Walter Elliot, K.C.S.I., LL.D., F.R.S., F.L.S., F.S.A., Scot., Wolfelee, Hawick	...	June 25, 1863.
61. Alexander Curle, F.S.A., Scot., Melrose	...	" "
62. John Edmond Friar, Grindon Ridge, Norham	...	" "
63. Francis Russell, Sheriff Substitute, Jed-bank, Jedburgh	...	" "
64. William Hilton Dyer Longstaffe, F.S.A., Gateshead	...	" "
65. Robert Middlemas, Solicitor, Alnwick	...	" "
66. James Hardy, Oldcambus, Cockburnspath	...	" "
67. Rev. E. L. Marrett, M.A., Wellbury, Yorkshire	...	July 29, "
68. Thomas Clutterbuck, Warkworth	...	" "

List of Members.

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69. Thomas Tate, Allerburn, Alnwick	July 29, 1863.
70. Rev. Adam Davidson, M.A., Yetholm	" "
71. Robert Brown, Littlehoughton, Chathill	...	...	Sept. 29, "
72. Christopher S. Bell, Carlton, Darlington	...	...	Sept. 29, 1864.
73. Rev. James Farquharson, M.A., Selkirk	...	...	June 29, 1865.
74. Henry Richardson, M.D., R.N., Castle Terrace, Berwick	...	...	" "
75. Thomas Allan, Horncliffe House, Berwick	...	...	" "
76. James Smail, F. S. A. Scot., Commercial Bank, Edinburgh.	...	...	July 26, 1866.
77. Rev. H. M. Graham, Maxton, St Boswells,	...	...	Aug. 30, "
78. Rev. P. McKerron, M.A., Kelso	...	...	Sept. 26, 1867.
79. William Currie, Linthill, St Boswells	...	...	" "
80. William Blair, M.D., Jedburgh	...	...	" "
81. Major The Hon. R. Baillie Hamilton, F.S.A., Scot., Langton House, Duns	...	...	" "
82. His Grace The Duke of Northumberland, Alnwick Castle	...	...	June 25, 1868.
83. Robert G. Bolam, Berwick	...	...	Sept. 25, "
84. Rev. J. Elphinstone Elliot Bates, B.A., Milburn Hall, Newcastle	...	...	" "
85. James Brunton, Broomlands, Kelso	...	...	" "
86. Captain James F. MacPherson, Melrose	...	...	" "
87. Lieut-Col. Francis Holland, Alnwick	...	...	" "
88. James Heatley, Alnwick	...	...	" "
89. C. H. Cadogan, Brenkburne Priory, Morpeth	...	...	" "
90. Robert Romanes, F.S.A., Scot., Harryburn, Lauder	...	...	Sept. 30, 1869.
91. Thomas Broomfield, Solicitor, Lauder	...	...	" "
92. John Bolam, Alnwick	...	...	" "
93. John Dunlop, Solicitor, Berwick	...	...	" "
94. Pringle Hughes, Middleton Hall, Wooler	...	...	" "
95. James Purves, Berwick	...	...	" "
96. George L. Paulin, Berwick	...	...	" "
97. Rev. David Paul, M.A., Roxburgh, Kelso	...	...	" "
98. Thomas Patrick, Berwick	...	...	" "
99. John Scott, Corporation Academy, Berwick	...	...	" "
100. John Pringle Turnbull, Alnwick	...	...	" "
101. Rev. Canon Trotter, M.A., St Michael's Vicarage, Alnwick	...	...	" "
102. James Wood, Woodburn, Galashiels	...	...	" "
103. Matthew Young, Castle Terrace, Berwick	...	...	" "
104. Rev. Thomas Brown, F.R.S.E., 16 Carlton Street, Edinburgh	...	...	May 11, 1871.
105. Rev. Thomas Rogers, M.A., Roxwell Vicarage, Chelmsford	...	...	Sept. 26, "
106. Rev. Robert Paul, F.S.A. Scot., Dollar,	...	...	" "
107. Rev. T. S. Anderson, Edinburgh	...	...	" "
108. Rev. David W. Yair, Firth Manse, Finstown, Thurso	...	...	" "

List of Members.

109. John Philipson, 9 Victoria Square, Newcastle	...	Sept. 26, 1871.
110. Rev. Ambrose Jones, M.A., Stannington, Cramlington	...	" "
111. W. E. Otto, Jed-neuk, Jedburgh	... ..	" "
112. William Weatherhead, Solicitor, Berwick,	...	" "
113. Rev. H. E. Henderson, B.A., Alwinton, Morpeth	...	" "
114. Alexander James Main, M.D., Alnwick	... ..	" "
115. Thomas Arkle, Highlaws, Morpeth	... ..	Sept. 26, 1872.
116. James T. S. Doughty, Solicitor, Ayton	... ..	" "
117. Capt. J. Carr-Ellison, Dunston Hill, Whickham, R.S.O.	...	" "
118. W. T. Hindmarsh, Alnbank, Alnwick	... ..	" "
119. Lieut.-Col. James Paton, Ferniehurst, Jedburgh	...	" "
120. Henry A. Paynter, Freelands, Alnwick	...	" "
121. Major R. Thompson, Walworth Hall, Darlington	...	" "
122. Rev. Evan Rutter, B.A., Spittal, Berwick	...	Sept. 25, 1873.
123. Rev. Hastings M. Neville, Ford Rectory, Cornhill	...	" "
124. Col. David Milne Home, M.P., Paxton House, Berwick	...	" "
125. James Nicholson, Thornton, Berwick	... ..	" "
126. Rev. Canon Waite, M.A., Vicarage, Norham	...	" "
127. Rev. Beverley S. Wilson, B.A., Duddo, Norham	...	Sept. 24, 1874.
128. Robert Gray, F.R.S.E., F.S.A., Scot., Bank of Scotland House, Edinburgh	... ..	" "
129. Col. Sir William Crossman, C.M.G., R.E., Cheswick	...	" "
130. F. M. Norman, Commander, R.N., Cheviot House, Berwick	... ..	" "
131. James Hastie, Edrington Castle, Berwick	...	" "
132. George Muirhead, Paxton, Berwick	... ..	" "
133. Thomas Henderson, M.A., Bedford County School, Bedford	... ..	" "
134. J. B. Kerr, Kelso	... ..	" "
135. Edward Liddell, Morris Hall, Norham	... ..	" "
136. Samuel Grierson, M.D., District Asylum, Melrose	...	" "
137. Matthew G. Crossman, Berwick	... ..	Sept. 29, 1875.
138. John Freer, Solicitor, Melrose	... ..	" "
139. J. A. Forbes, Commander, R.N., West Coates House, Berwick	... ..	" "
140. David Watson, Hillside Cottage, Hawick	...	" "
141. Adam Robertson, Alnwick	... ..	" "
142. Charles Erskine, The Priory, Melrose	... ..	" "
143. Arthur H. Evans, M.A., Scremerston, Berwick	...	" "
144. James Allan, Ava Lodge, Berwick	... ..	" "
145. John Hood, Oldcambus Townhead, Cockburnspath	...	" "
146. Rev. Joseph Hunter, M.A., Cockburnspath	...	" "
147. Lieut.-Col. Andrew Aytoun, R.A., Caledonian United Service Club, Edinburgh	... ..	" "
148. Capt. Theodore Williams, Heatherslaw House, Cornhill	...	" "
149. Rev. Canon Creighton, Professor of Ecclesiastical History, Langdale Lodge, The Avenue, Cambridge.	...	" "

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|---|--------|----------------|
| 150. T. W. McDowall, M.D., F.S.A., Scot., County Asylum,
Cottingwood, Morpeth | | Sep. 29, 1875. |
| 151. John Halliday, 5 Holland Park, Bayswater, London, W. | .. .. | " " |
| 152. Rev. Joseph Hill Scott, M.A., Abbey House, Kelso | .. .. | " " |
| 153. George Greig, 28 Cornhill, London, E.C. | ... .. | " " |
| 154. Alexander Buchan, A.M., F.R.S.E., Sec. Met. Soc.,
Scot., 72 Northumberland Street, Edinburgh | | " " |
| 155. Edward Ridley, 34 Chapel Street, Berkeley Square,
London, S.W., Barrister-at-Law | | Sep. 27, 1876. |
| 156. Rev. George P. Wilkinson, M.A., Harperley Park,
Durham | | " " |
| 157. Capt. Wm. Elliott Lockhart, Branxholme, Hawick | .. .. | " " |
| 158. Sir Edward Blackett, Bart., Matfen, Newcastle | ... .. | " " |
| 159. Rev. Geo. W. Sprott, D.D., North Berwick | ... .. | " " |
| 160. John L. Crombie, M.D., Melbourne Villa, North Berwick | .. .. | " " |
| 161. Rev. Paton Glog, D.D., Galashiels | ... .. | " " |
| 162. Henry S. Anderson, M.D., Selkirk | ... .. | " " |
| 163. James Brown, Thornfield, Selkirk | ... .. | " " |
| 164. George Rodger, Philipburn, Selkirk | ... .. | " " |
| 165. Andrew Currie, Darnick, Melrose | ... .. | " " |
| 166. William Lyall, Literary and Philosophical Society,
Newcastle | | " " |
| 167. William Topley, F.G.S., Office of H.M. Geological Sur-
vey of England and Wales, 28 Jermyn St., London | | " " |
| 168. Hubert E. H. Jerningham, M.P., Longridge Towers,
Berwick | | " " |
| 169. Alexander Tower Robertson, Ravensdown, Berwick | .. .. | " " |
| 170. Rev. W. Dobie, M.A., Ladykirk, Norham | ... .. | " " |
| 171. Rev. Canon Walter, M.A., 12 North Bailey, Durham | .. .. | " " |
| 172. James Hunter, Anton's Hill, Coldstream | ... .. | " " |
| 173. Sir George Brisbane Douglas, Bart., Springwood Park,
Kelso | | " " |
| 174. Rev. G. H. Ainger, D.D., Whitton Tower, Rothbury,
Morpeth | | " " |
| 175. Sir Molineux Hyde Nepean, Bart., F.S.A., Scot.,
Duddingston House, Mid-Lothian | | " " |
| 176. Alexander Scott of Falla, Hillside, Lockerbie | ... .. | " " |
| 177. Robert Richardson Dees, Wallsend, Newcastle | .. .. | " " |
| 178. John Ferguson, Writer, Duns | ... .. | " " |
| 179. Archibald Buchan Hepburn, Smeaton Hepburn,
Prestonkirk | | " " |
| 180. James Lumsden, F.Z.S., F.S.A., Scot., Arden House,
Alexandria, Dumbartonshire | | Oct. 31, 1877. |
| 181. James Tait, Cock Hall, Eglington | ... .. | " " |
| 182. Isaac Bayley Balfour, Sc.D., M.B.C.M., F.R.S.E.,
F.L.S., F.G.S., Professor of Botany in the University
of Oxford | | " " |

List of Members.

183. Robert Mason, F.L.S., 6 Albion Crescent, Dowanhill, Glasgow	...	...	...	...	Oct. 31, 1877.
184. Chas. Felix McCabe, Thirston House, Felton, Acklington	..	..	..	..	..
185. John J. Horsley, Bellevue, Alnwick	..	..	..	..	..
186. Rev. Charles E. Green, B.A., Howick, Chathill	..	..	..	..	..
187. Thomas Chas. Hindmarsh, Barrister-at-Law, 1 Essex Court, Temple, London	..	..	..	..	..
188. Rev. R. Hopper Williamson, M.A., Whickham, Gates- head	..	..	..	..	..
189. Rev. R. F. Proudfoot, B.A., Fogo, Duns	..	..	..	..	..
190. W. H. Johnson, Tweed Villa, Relugas Road, Edinburgh	..	..	..	..	..
191. Alan Swinton, East India United Service Club, London, S.W.	..	..	..	..	..
192. G. A. Lebour, M.A., F.G.S., Professor of Geology, University of Durham College of Physical Science, Newcastle	..	..	..	..	Oct. 31, 1877.
193. Rev. James A. Sharrock, B.A., Holy Trinity Church, Stockton-on-Tees	..	..	..	..	..
194. Rev. Walker Featherstonhaugh, M.A., Edmondbyers, Blackhill, Co., Durham	..	..	..	..	..
195. George E. Watson, Accountant, Alnwick	..	..	..	..	..
196. Lowrey Calvert Chrisp, Hawkhill, Alnwick	..	..	..	..	..
197. Col. Matthew Charles Woods, Holeyn Hall, Wylam	..	..	..	..	..
198. George H. Thompson, Alnwick	..	..	..	..	..
199. William Lang Blaikie, Holydean, St Boswells	..	..	..	..	..
200. Andrew E. Scougal, H.M. Inspector of Schools, Melrose	..	..	..	..	..
201. Captain John Broad, Ashby, Melrose	..	..	..	..	..
202. John Thomson, Maxton	..	..	..	..	..
203. Dr Denholm, Mavisbank, Polton, Mid-Lothian	..	..	..	..	..
204. Rev. J. Mackenzie Allardyce, D.D., Bowden, St Boswells	..	..	..	..	..
205. Dr E. C. Robertson, Otterburn, Newcastle	..	..	..	..	..
206. William Wilson, Hidehill, Berwick	..	..	..	..	..
207. The Right Hon. the Earl of Haddington, Tynningham House, Prestonkirk	..	..	..	..	..
208. Peter Loney, Marchmont, Greenlaw	..	..	..	..	Oct. 16, 1878.
209. William A. Hunter, M.A., LL.B., Solicitor, Duns	..	..	..	..	..
210. Thomas Darling, Palace Street, Berwick	..	..	..	..	..
211. Rev. John Walker, Whalton, Newcastle	..	..	..	..	..
212. Rev. R. E. Taylor, B.A., Cresswell, Morpeth	..	..	..	..	..
213. Arthur Thew, Belvedere Terrace, Alnwick	..	..	..	..	..
214. William Hurb Sitwell, Barmoor	..	..	..	..	..
215. Edmund Dornan Hodgson, Barrister-at-Law, 3 Temple Gardens, London	..	..	..	..	..
216. John Russell, Thirlestane Road, Grange, Edinburgh	..	..	..	..	..
217. Thomas Turnbull, Lilliesleaf, St Boswells
218. Alexander Leitch, Fairneyside, Ayton

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219. J. K. Weatherhead, Solicitor, Berwick	Oct. 16, 1878.
220. Dr Stanley Scott, St Cuthberts, Spittal	" "
221. James Greenfield, Reston	...	...	Oct. 15, 1879.
222. James Mein, Lamberton	...	...	" "
223. George Skelly, Alnwick	...	...	" "
224. Rev. Canon Tristram, D.D., F.R.S., F.S.A., Durham	...	...	" "
225. Thomas Cook, Solicitor, Alnwick	...	...	" "
226. Charles M. Adamson, North Jesmond, Newcastle	...	...	" "
227. W. F. Vernon, Kelso	...	...	" "
228. William Gunn, F.G.S., 22 Claremont Crescent, Edinburgh	...	...	" "
229. Rev. F. B. Nunneley, M.D., Rennington, Alnwick	...	...	" "
230. Rev. George Gunn, Stichell, Kelso	...	...	" "
231. Patrick Kynock, M.D., Greenlaw	" "
232. George Anderson, Selkirk	" "
233. Thomas Craig-Brown, Woodburn, Selkirk	" "
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236. Robert Darling Ker, 10 Mostyn Terrace, Edinburgh	" "
237. Rev. Robert Small, Caddonfoot, Galashiels	" "
238. Rev. A. Duncombe Shafto, M.A., Brancepeth Rectory, Durham	...	...	" "
239. J. J. Vernon, F.S.A., Scot., Hawick	...	...	" "
240. Robert Henry Elliot, Clifton Park, Kelso	...	...	" "
241. J. W. Barnes, Banker, Durham	...	...	" "
242. George Bolam, Berwick	...	...	" "
243. Rev. Thomas S. Marjoribanks, Prestonkirk, East Lothian	...	...	" "
244. Rev. James King, B.A., Vicar of St Mary's, Berwick	...	...	" "
245. James Bogie, 5 Marchhall Road, Newington, Edinburgh	...	...	" "
246. Francis D. Blake, Tillmouth Park, Coldstream	...	...	" "
247. Andrew P. Aitken, M.A., Dr. Sc., etc., Chemist to the Highland and Agricultural Society of Scotland, 18 Dublin Street, Edinburgh	...	...	" "
248. James Thomas Spencer Elliot, yr. of Wolfelee	...	...	" "
249. Thomas Rutherford, M.D., Kelso	...	...	" "
250. John Crawford Hodgson, Buston Vale, Lesbury	...	...	Oct. 13, 1880.
251. Rev. Duncan Maclean, B.D., Allanton	...	...	" "
252. James Fergusson, St George's Presbyterian School, Morpeth	...	...	" "
253. John Broadway, Banker, Alnwick	...	...	" "
254. Alexander Dickson, M.D., F.R.S.E., F.L.S., Professor of Botany in the University of Edinburgh	...	...	" "
255. Major Shallcross Fitzherbert Widdrington, Newton Hall, Alnwick	" "
256. Rev. William Snodgrass, D.D., Canonbie, Dumfriesshire	" "

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257. Rev. Charles Cowan, B.D., F.S.A., Scot., Morebattle, Kelso	Oct. 13, 1880.
258. Rev. Canon Ilderton, M.A., Ilderton, Alnwick	" "
259. Edwin Thew, Alnwick, M.B., C.M.,	...	...	...	...	...	" "
260. Thomas Walby, Alnwick	...	...	...	...	...	" "
261. William Alder, Hallidon House, Berwick	...	...	...	...	...	" "
262. Robert Weddell, Solicitor, Berwick	...	...	...	...	...	" "
263. The Right Hon. Lord Napier and Ettrick, K. T., Thirlestane, Selkirkshire	...	...	...	...	...	Oct. 12, 1881.
264. William Craig, M.D., C.M., F.R.C.S.E., F.R.S.E., 7 Bruntsfield Place and Surgeons' Hall, Edinburgh	...	...	...	...	...	" "
265. Robert Hutchison, F.R.S.E., F.S.A., Scot., Carlowrie, Kirkliston, and 29, Chester Street, Edinburgh	...	...	...	...	...	" "
266. James S. Mack, S.S.C., Coveyheugh, Reston	...	...	...	...	...	" "
267. Rev. George Marjoribanks, B.D., Stenton, Prestonkirk	...	...	...	...	...	" "
268. The Most Hon. the Marquess of Tweeddale, Yester House, Haddington	...	...	...	...	...	" "
269. John H. F. K. Scott of Gala, Gala House, Galashiels	...	...	...	...	...	" "
270. Edward Johnson, M.D., Tweedbank, Kelso	...	...	...	...	...	" "
271. R. P. Brotherston, Tynningham Gardens, Prestonkirk	...	...	...	...	...	" "
272. Edward Willoby, junr., Berwick	...	...	...	...	...	" "
273. Joseph Wilson, Solicitor, Duns	...	...	...	...	...	" "
274. William Maddan, British Linen Co's. Bank, Berwick	...	...	...	...	...	" "
275. William Thompson Hall, Dunns Houses, Woodburn	" "
276. Hugh Miller, F.G.S., of the Ordnance Survey, Falstone	" "
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278. George Bird, 63, Haymarket Terrace, Edinburgh	" "
279. Rev. A. B. Coulson, B.A., Carham	" "
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286. Rev. James Boyd, Innerleithen	" "
287. Richard Lees, Solicitor, Galashiels	" "
288. Edward Tennant, yr. of The Glen, Innerleithen	" "
289. Stevenson Macadam, Ph.D., F.R.S.E., Lecturer on Chemistry, Surgeons' Hall, Edinburgh; 11 East Brighton Crescent, Portobello	...	...	...	...	...	" "
290. Hon. H. C. Maxwell Stuart, Traquair House, Inner- leithen	...	...	...	...	...	" "
291. Adam Darling, Governor's House, Berwick	" "
292. A. L. Miller, 11 Silver Street, Berwick.	" "
293. Thomas Fraser, M.D., Berwick	" "

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294.	Dr. Heagerty, Tweedmouth	Oct. 12, 1881.
295.	Alexander Bowie, Canonbie, Dumfriesshire	Oct. 11, 1882.
296.	W. Edward H. Kelso, Ashbrook, Ferry Road, Edinburgh	...	...	...	" "
297.	Capt. Alexr. Murray Brown, Longformacus House, Duns	...	...	...	" "
298.	Rev. Robert Nimmo Smith, Haddington	...	...	...	" "
299.	The Most Hon. the Marquess of Lothian, K.T., Mount Teviot, Roxburghshire	...	...	...	" "
300.	John Walker Logan, Avenue, Berwick	...	...	...	" "
301.	Robert Stephenson, Market Place, Duns	...	...	...	" "
302.	Rev. W. D. Herald, B.D., Duns	...	...	...	" "
303.	Robert Robertson, Ladyrig, Roxburgh	...	...	...	" "
304.	John S. Bertram, Cranshaws, Duns	...	...	...	" "
305.	William Gunn, Duns	...	...	...	" "
306.	Rev. Arthur Gordon, M.A., Greenlaw	...	...	...	" "
307.	James Parker Simpson, Alnwick	...	...	...	" "
308.	Andrew Ker, St Boswells	...	...	...	" "
309.	Dr. Allan Wilson, Alnwick	...	...	...	" "
310.	The Right Hon. the Earl of Home, Hirsell, Coldstream	...	...	...	" "
311.	Rev. Robert Stewart, Jedburgh	...	...	...	" "
312.	George Bulman, Corbridge-on-Tyne	...	...	...	" "
313.	David Dippie Dixon, Rothbury	...	...	...	" "
314.	John Turnbull, Ettrick View, Selkirk	...	...	...	" "
315.	Adam Cochrane, Fernieknowe, Galashiels	...	...	...	" "
316.	Rev. William Robertson, Sprouston, Kelso	...	...	...	" "
317.	William Horsley, Chirton House, North Shields	...	...	...	Oct. 10, 1883.
318.	James J. R. Storer, Alnwick	...	...	...	" "
319.	Matthew Culley, jun., Coupland Castle, Wooler	...	...	...	" "
320.	Thomas Greig, Wester Wooden, Kelso	...	...	...	" "
321.	John G. Winning, Branxholme Knowe, Hawick	...	...	...	" "
322.	James Thomson, Shawdon, Alnwick	...	...	...	" "
323.	James Thin, jun., South Bridge, Edinburgh	...	...	...	" "
324.	Robert Shirra Gibb, M.D., C.M., Boon, Lander	...	...	...	" "
325.	Col. James Edward Forster, Sanson Seal, Berwick	...	...	...	" "
326.	William Robertson, Alnwick	...	...	...	" "
327.	Richard Burdon Sanderson, Budle House, Belford	...	...	...	" "
328.	James Brunlees, C.E., 5 Victoria St., Westminster, London	...	...	...	" "
329.	John S. Muir, M.B., Thorncroft, Selkirk	...	...	...	" "
330.	Henry Rutherford, Fairmington, Kelso	...	...	...	" "
331.	Rev. A. E. Langston, Hebburn Vicarage, Newcastle	" "
332.	Rev. Canon Edmunds, Kylee Vicarage, Beal	" "
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335.	Edward A. L. Batters, B.A., LL.B., F.L.S., Crown Court Buildings, Old Broad Street, London, E.C.,	" "

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336. Rev. Robert Borland, Yarrow, Selkirk	Oct. 10, 1883.
337. Rev. Edward Arkless, Berwick	" "
338. Blake Johnston Weatherhead, Berwick	...	...	...	" "
339. Charles Purves, West Acres, Alnwick	...	...	...	" "
340. John McNaught Campbell, Kelvingrove Museum, Glasgow	...	...	...	" "
341. Rev. Charles Blackett Carr, Berwick	...	..	...	Oct. 20, 1884.
342. David Robertson Dobie, M.D., Coldstream	...	...	...	" "
343. John Hunter, H.M. Inspector of Schools, Alnwick	...	...	...	" "
344. Robert Amos, Oaklands, Alnwick	...	...	...	" "
345. Charles Percy, Alnwick	...	...	...	" "
346. Rev. J. G. S. Napier, Kelso	...	...	...	" "
347. John H. Haliburton, Tweedmount, Melrose	...	...	...	" "
348. Dr Peter White, Yetholm	...	...	...	" "
349. Samuel Mason, Clive Terrace, Alnwick	...	...	...	" "
350. Robert Govenlock, Teindside, Hawick	...	...	...	" "
351. Capt. C. Lisle Cookson, Berrywell, Duns	...	...	...	" "
352. David W. B. Tait, W.S., Edenside, Kelso	...	...	...	" "
353. Evan George Sanderson, The Elms, Berwick	...	...	...	" "
354. John Brown, Ancroft, Beal	...	...	...	" "
355. C. C. Brown, Thirston, Felton	..	..	..	" "
356. Dr Thomas Anderson of Shaws, Bucklands, Hawick	...	...	...	" "
357. James Logan Mack, Coveyheugh, Reston	...	...	...	" "
358. Delaval Knight Gregson, Berwick	...	...	...	" "
359. William Green, Berwick	...	...	...	" "
360. Rev. A. O. Medd, M.A., Bamburgh, Belford	...	...	...	" "
361. John E. Bell, Alnwick	...	...	..	" "
362. George Henderson, Shidlaw, Coldstream	...	...	...	" "
363. Charles S. Romanes, 46 Hanover Street, Edinburgh	...	...	...	" "
364. Robert Watson, Eccles Newton, Coldstream	" "
365. Edmond John Jasper Browell, J.P., East Boldon, Sunderland	" "
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367. George Hare Philipson, M.D., D.C.L., M.A., 7 Eldon Square, Newcastle	" "
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369. Joseph Oliver, Eslington Park, Alnwick	" "
370. James Blaikie, M.A., Edin. and Cantab., H. M. Inspector of Schools, 14, Viewforth Place, Edinburgh	" "
371. Sir William Ramsay Fairfax, Bart., Maxton	...	...	...	" "
372. The Right Rev. the Bishop of Newcastle, Benwell Tower, Newcastle	...	...	...	" "
373. Michael Muir, Selkirk	...	...	...	" "
374. Dr H. R. Gatley, Ayton, Berwickshire	" "
375. Alexander F. Roberts, Manor Hall, Selkirk	" "

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376.	D. C. Alexander, Selkirk
377.	Dr. James Thomas, Selkirk
378.	Alexander C. McIntyre, F.S.A., Scot., 99 Renfield Street, Glasgow
379.	Col. John Sprot of Riddell, St Boswells

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Mrs. Barwell Carter, The Anchorage, Berwick.
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Miss Langlands, 5, Strathearn Place, Edinburgh.
Miss Russell of Ashiesteel, Galashiels.
Mrs. Robert Middlemas, Alnwick.
Miss Sarah Dand, Morwick Hall, Acklington.

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Thomas Henry Gibb, Alnwick.
Andrew Brotherston, Shedden Park Road, Kelso.
Robert Renton, Greenlaw.
John Aitchison, Belford.

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Rev. Leonard Blomefield, M.A., F.L.S., F.G.S., etc. Bath.
Richard Howse, Secretary to the Tyneside Naturalists' Field-Club, Newcastle.

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JAMES HARDY, Oldcambus, Cockburnspath. } *Secretaries.*
ROBERT MIDDLEMAS, Alnwick, *Treasurer.*

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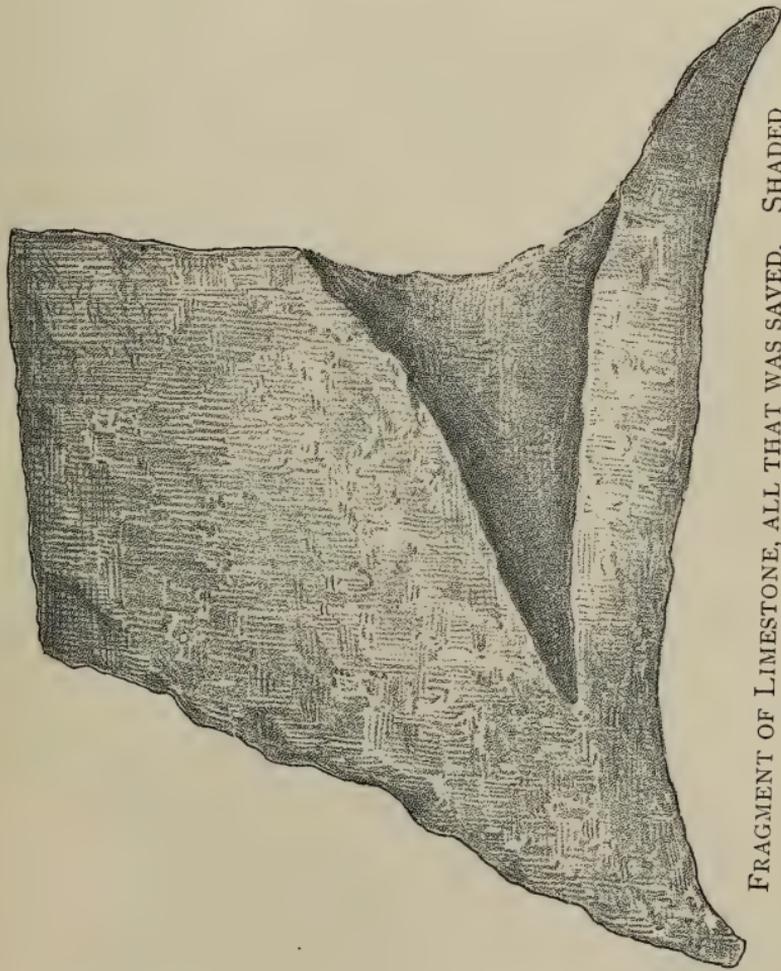
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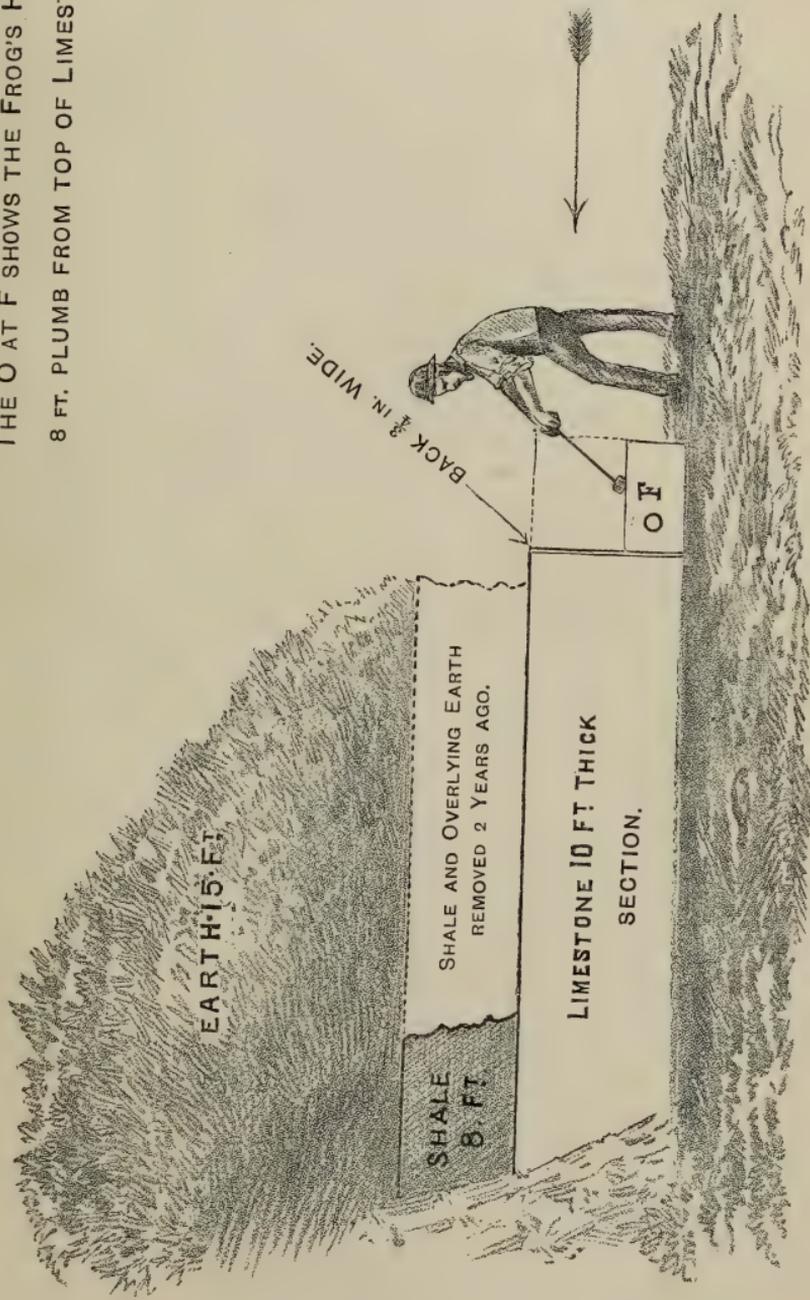




FRAGMENT OF LIMESTONE, ALL THAT WAS SAVED. SHADED
PART SHOWS PORTION OF CAVITY WHERE FROG LIVED.



THE O AT F SHOWS THE FROG'S HOME,
8 FT. PLUMB FROM TOP OF LIMESTONE.





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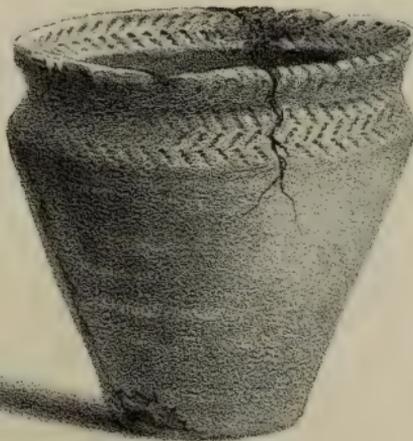
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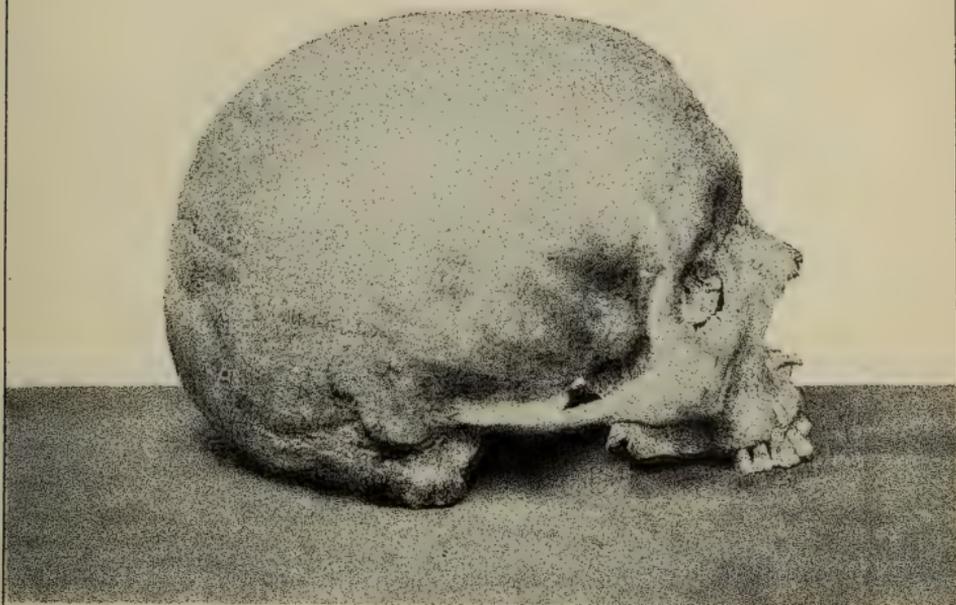


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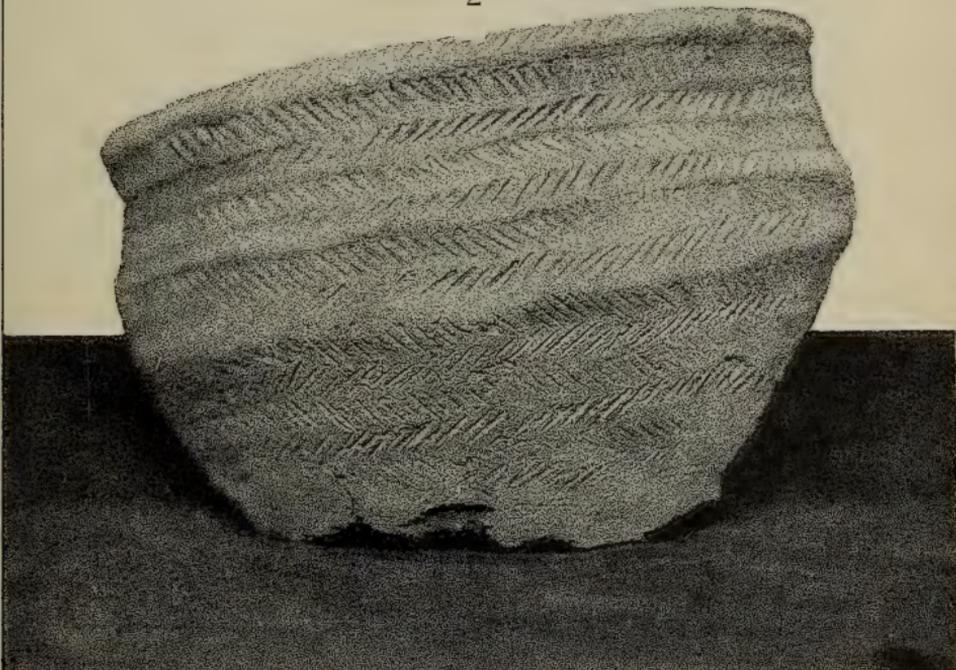




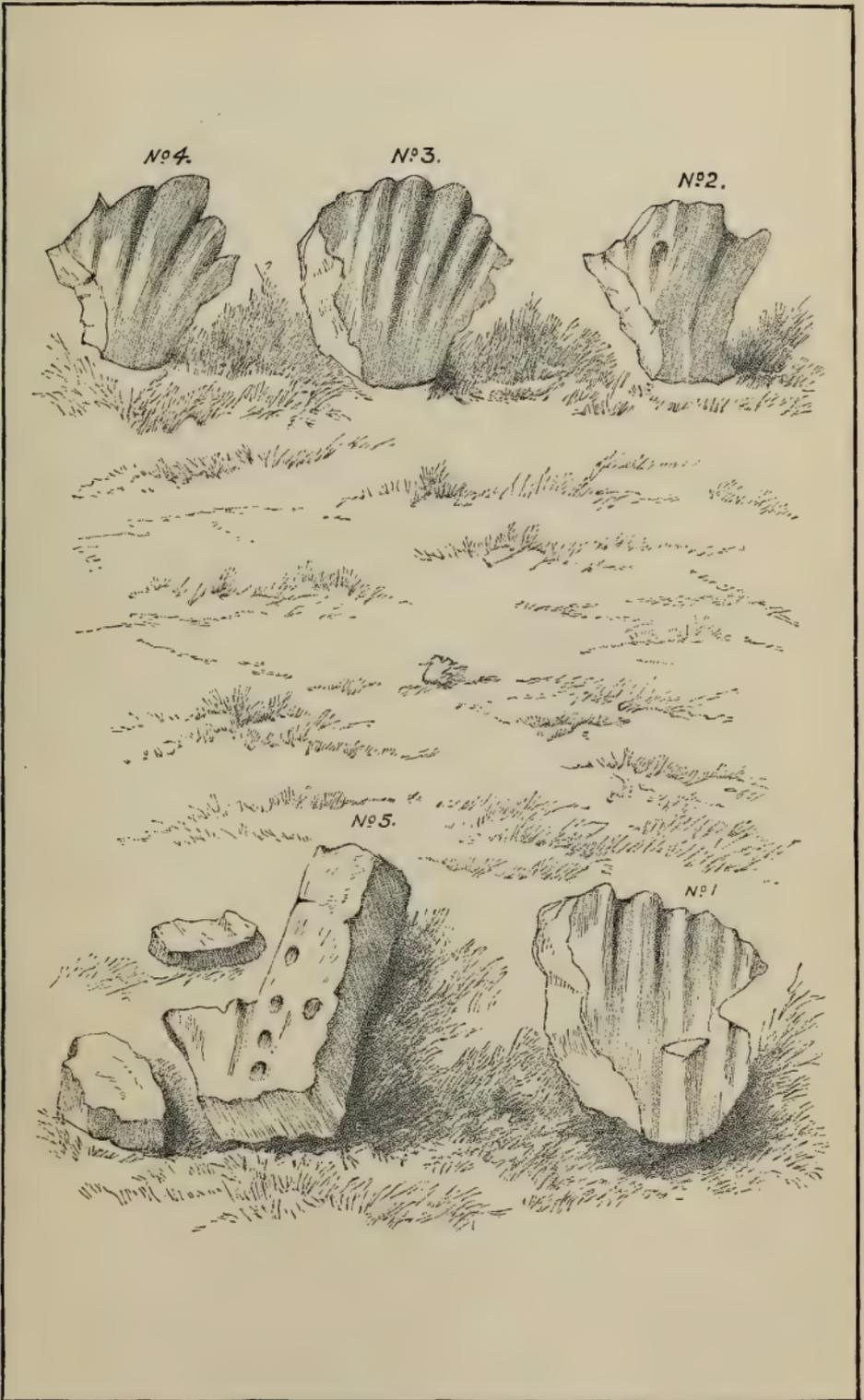
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THE DUDDO STONES, NORHAMSHIRE.





W. Galloway del.

Theo. Goyot Lith.

TOMB OF "PERYS OF COKBURNE"
AT HENDERLAND.



