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No. 16.

THE TRANSACTIONS

AND

JOURNAL OF PROCEEDINGS

OF THE

DUMFRIESSHIRE AND GALLOWAY

Natural History and Antiquarian Society

FOUNDED NOVEMBER, 1862.

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COUNCIL 1899-1900.

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J. M'G. SLOAN.

CONTENTS.

PROCEEDINGS AND TRANSACTIONS

OF THE

DUMFRIESSHIRE AND GALLOWAY

NATURAL HISTORY & ANTIQUARIAN SOCIETY.

SESSION 1899-1900.

19*th October*, 1899.

ANNUAL MEETING.

Rev. Mr Andson in the Chair.

New Member.—Dr Alexander Trotter, Dalshangan, Dalry.

Donations and Exchanges.—"A Country Schoolmaster—James Shaw," presented by Professor Wallace; Transactions of the Edinburgh Geological Society, Vol. XII., Part IV.; Proceedings of the Natural Science Association of Staten Island; Life History Studies of Animals, by L. C. Miall; The Royal Menagerie of France, by E. T. Hamy; The Law which underlies Protective Coloration, by Abbot A. Thayer; on Soaring Flight, by E. C. Huffaker; North American Fauna, No. 14, from U.S. Department of Agriculture—Biological Survey; No. 15, Revision of Jumping Mice of genus Zapris; Report of 7th Meeting of Australasian Association, 1898; Transactions of Canadian Institute, Supplement to No. 9, Vol. V., Part I.; Journal of E. Mitchell's Scientific Society, 1898, 15th year, Parts I. and II.; Year Book of the Department of Agriculture, U.S.A., 1898; Report of Marlborough College Natural History Society, 1898; Annals of New York Academy of Sciences, Vol. XI., Part III.; Recent Research in Egypt, by W. F. Petrie; A Preliminary Account of Archæological Field Work in Arizona in 1897, by J. W. Fewkes; A new group of Stone Implements from Lake Michigan, by W. A. Phillips; A Study of the Omaha Tribe, by Alice C. Fletcher;

Anales del Museo Nacionales de Buenos Aires, VI.; Communicaciones del Museo Nacional de Buenos Aires, 1899; Bulletin of the Geological Institute of Upsala, Vol. IV., Part I.; Proceedings of the Holmesdale Natural History Club for the year 1896, 1897, and 1898; Transactions and Proceedings of the Botanical Society of Edinburgh, Vol. XXI., Part III.; Berwickshire Naturalists' Club—The Session Book of Bonckle.

The Librarian reported that a copy of Dr Munro's book, entitled "Prehistoric Scotland," had been purchased for the Library.

SECRETARY'S REPORT.

The Secretary (Dr J. Maxwell Ross) then read his Annual Report. During the session there had been 10 deaths or resignations among members, and 7 new names had been added to the roll, which now contained 16 honorary members, 14 life, and 188 ordinary. A distinguished honorary member, Mr Peter Gray, who had done much good work for the Society, died shortly after the last monthly meeting. Seven monthly and two field meetings were held. At the former twelve papers were read, and a lantern demonstration given, besides specimens of Roman tiles and tesseræ and a collection of pebbles, ores, &c., were shown. The field meetings were to Thornhill, Penpont, and Tynron, and to Moffat and Moffatdale.

TREASURER'S REPORT.

The Treasurer (Mr J. A. Moodie) read his Annual Report, from 1st October, 1898, to 30th September, 1899:—

CHARGE.

Subscriptions from 151 Members at 5s each		£37	15 0
Do. ,, 9 ,, 2s 6d each		1	2 6
		£38	17 6
Entrance Fees from 3 New Members		0	7 6
Arrears of Subscriptions paid		2	10 0
Subscription paid in advance		0	5 0
Copies of Transactions sold		1	18 6
Interest on Bank Acconnt		0	8 1
Balance due to Treasurer	£8 19 11		
Less Balance in Savings Bank	0 12 6		
		8	7 5
		£52	14 0

DISCHARGE.

Balance due Treasurer at close of last Account		£13	12 0
Less Balance in Savings Bank		0	4 5
		£13	7 7
Paid Salary of Keeper of Rooms and additional Allowance for Heating Rooms during Winter Months		3	0 0
Paid for Stationery, Printing, &c.		0	13 0
Paid for Periodicals and Books		3	4 1
Paid for Coals and Gas		0	9 11
Paid Fire Insurance Premium, less bonus		0	0 0
Paid Expenses of calling Meetings:—			
Post Cards	£3 15 4		
Addressing same	0 18 0		
Printing same	1 1 0		
		5	14 4
Paid Expenses of publishing Transactions for last year as follows:—			
Dumfries Standard for Printing... ...	£24 4 7		
Postage of Transactions	1 6 7		
		25	11 2
Miscellaneous Payments		0	13 11
		£52	14 0

Statement as to the cost of publication of "Birrens and its Antiquities," for year ending 30th September, 1899:—

Balance due to the Treasurer as at 30th September, 1898 ...	£11	7 10
Less Copies of Book sold during the year...	0	7 0
	£11	0 10

ELECTION OF OFFICE-BEARERS.

The following were then elected office-bearers for the ensuing year:—Hon. President, Mr W. J. Maxwell of Terraughtie; Vice-Presidents, Mr James Barbour, Mr Robert Murray, Provost Glover, and Rev. John Cairns; Secretary, Dr J. Maxwell Ross; Treasurer, Mr John A. Moodie; Librarians and Curators of Museum, Rev. Mr Andson and Mr James Lennox, F.S.A.; Curators of Herbarium, Mr Scott-Elliot and the Misses Hannay; Members of Council, Mr James Clark, Mr William Dickie, Mr James Davidson, Mr W. J. Maxwell, Terregles Bank, Mr J. M'G. Sloan, Dr Clarke, Mrs Thomson, Mrs Brown, and Miss Hannay.

COMMUNICATIONS.

The Place Names of the Cairn Valley.

By Dr J. W. MARTIN, Holywood.

I do not know that I shall have much to offer you by way of what is new and undiscovered, but I have thought it might be useful to bring up before the members of the Society the subject of place names, and for that purpose I have selected the locality with which I am best acquainted, and which is most easy of access to me, namely, the region of the Cairn from its source till it joins the Nith, and which very aptly comprehends the three parishes of *Glencairn, Dunscore, and Holywood*, or a length of, let us say, 30 miles, by a breadth of 7½ at the broadest point. It may be that the members of the Society may be stimulated into working up other parts of Dumfriesshire not so accessible to those of us in this district, and thus the usefulness of the Society may be extended and enhanced.

Place names are derived from the nomenclature given by the ancient inhabitants of a county or district to the different landmarks and rural objects in the neighbourhood, as well as to the dwellings frequented by them or the new-comers. The *names of places* of any antiquity in the south and west of Scotland are for the most part either of Celtic or Anglo Saxon origin, sometimes spoken of as Northern English. Goedilic or Gaelic was a branch of the Celtic employed by the Picts of Galloway and west of the Nith. It goes without saying *that place names* have retained much of their original form, as far as Goedilic Celtic is concerned, though the inhabitants and people have changed; and a good instance of retention of names of places is found in Bible lands, where, to this day, rudiments of the names of places now almost lost to civilization, are identical with their most ancient names recorded in the Bible and secular history. This is noticeable to any one reading books dealing with Arabia and Palestine, but I need not trouble you with instances. As it is classically put, "Conquest has little power in changing the place names of a county." I need not point out to you that the investigation of the names of places has a considerable bearing on the history, as well as the ethnology and geography, of a county. Unfortunately many names get twisted and changed by mispronunciation and mis-spelling. Much valuable information is thus lost, and identification of the original names is rendered impossible. A

knowledge of the locality is often essential to the unravelling of a place name, the English speaking population having almost entirely changed it. The locality of the Valley of the Cairn and neighbourhood, where names of ancient and more modern are mixed up, affords us examples of such a discrepancy, though the place names are for the most part fairly easily determined.

It may be well to glance at what were the different races which inhabited lowland Scotland from time to time, and from whom the place names were most likely derived. To begin with, the Roman invasion lasted from B.C. 55 to A.D. 420, but there are few Casters or Cesters, identified with Roman occupation, to be found in the south of Scotland. The most ancient inhabitants that we know of were the Iberians, but there are few if any place names derived from their language, unless it be Urr and Isla (Isle).

The people whom the Romans conquered were the Cymri, or Britons or Welsh, but these had not yet reached this part of Scotland, which was occupied by the Goedilic Celts, the same as the Irish, Manx, and Cornish, and included the Northern and Southern Picts, "the Picti" (Phichti) of Caledonia — the land of trees and forests—who more properly occupied the northern two-thirds of Scotland. These mingled with the Iberian aborigines—characterised as dark-haired, long-skulled, short people, cave dwellers, ethnologically like the Basques, now fast disappearing, and the Atticot Picts west of the Nith and in Galloway. We may place the period about the second or third century.

Associated with these about the fifth and sixth centuries we have the Scots who came from Ireland (Erin), and settled in Lorne and Argyle, and originated the West Highland Clans. (Some of the East Highland Clans, if you may so call them, are French, like the Frazers, Hays, &c.) St. Ninian began his conversion of the Picts about the fourth century. This is a landmark.

It was not till the eighth century that Galloway was conquered by Alpin, King of the Scots, which would have an influence in eliminating the British language. No doubt the names of places would be somewhat established by this time, for we have traces of British words.

Between the sixth and ninth centuries certain adventurers had come from the Continent, viz., the Angles, Jutes, Saxons, and Danes of the Teutonic stock, and these originated the northern English names. Then came the Scandinavian tongue—the people

who ravaged our shores between the eighth and tenth centuries. Firth and Wick are the common examples of Scandinavian terminations, as also gill, beck, rig, garth, and wald.

Lastly, we have the middle English or broad Scotch, a modification of the Anglo Saxon predominating about the thirteenth century, and it entered largely into the literature of early Scottish history as well as place names. Can it be said to have yet died out? Examples we get are town, hows (O.E. holg), hain or hame, knowe from knoc, pow from poll a stream, law (O.E. hlóew), monts from monadh, a mountain or moor, kirk for church, gate for way or road, yett for gate, water was weter in O.E.; and in tracing broad Scots names we get to confusion of Gaelic and Celtic names, *e.g.*, bannock, gore, glass, almond for awmon, and so forth.

We know how the cockney changes names in our own day, and the Ordnance Survey has much to answer for in this respect. We may accept it that by this time hills, rivers, cliffs, and all distinctive features of the landscape had received Goedilic names; while habitations, towns, settlements, and fields were of a mixed nature, or purely given by the new-comers. I am told that large islands, especially those inhabited, have Scandinavian names, while mere rocks and the smaller islands have retained the Celtic.

Place names are of two kinds, simple and compound, and compound are either qualitative or substantive. Examples of simple names in the study before us are drum, lag, butt, rigg; compound as Craigenputtock, Barbuie, Dunesslin, Auchencheyne, Brockleston. Substantive place names are Kirkcudbright (St. Cuthbert), Auchencheyne (St. Kenneth), Maxwelton (imported from the name Maxwell), Maccus Villi. Out of 310 place names before me I find 108 have Saxon terminations, like head, 39 of these being ton or tun; 90 are distinctly Goedilic Celtic origin; others are broad Scots; a few are imported proper names, and three are Danish or Welsh. Some are distinctly Norman.

It is noticeable that the further inland you proceed the names are more and more Gaelic, while nearer the estuary the names are mixed, fewer being Celtic; that fact explains itself from history. I have noticed that on the right bank of the Cairn the names are nearly Anglo Saxon, with some exceptions; while the left bank, or watershed, is more markedly Celtic, at times Welsh or broad Scots. The fact may have pointed to the disposition of the peoples. I find the commonest prefixes are Bar, Ben, Craig,

Dal, Drum, Dun, Bal, Knock, Auchen. A word beginning with Castr has been disputed, and is generally acknowledged to have nothing to do with the Romans.

I shall proceed to give you a vocabulary of most of the place names I have looked into, and for that purpose have used the names of the parishes to denote the district referred to.

I. Glencairn.

Tererran—tir, land or farm, iar, western. (The present proprietor prefers to associate it with Keran or Kiaran, the name of a saint, K becoming T.)

Dibbin—dipping, perpendicular or steep place.

Benbuie—Beann a hill, buidhe of a yellow colour.

Milburn—burn of the mill.

Clarenceton—dwelling of Clarence. Now Cambuscairn (bend of the Cairn).

Neiss—nios top, therefore a height.

Broomfield—modern.

Barjarg—dhearg red, bar height, in Keir.

Barnyard—G. bearnach aird, height with the gaps or fissures.

Carshogle—G. carsg, oglaich, pass of the soldier.

Dabton—Dubh, dun, dark hill.

Keir—G. ciar, dark brown.

Knies—O.E. or Dan. naes, a ness or cape.

Pulcaigrie—Pol water, Crioch boundary.

Tynron—teine, sron, beaconfire point.

Closeburn—cill, church ; Osburn, St. Osborne.

Glenhowl—gabhel, a fork, river junction.

Grainshead—O.N. greni, a branch.

Dunreggan—Dun, a hill or fort ; chreagain, little crag or rock.

Dungalston—Dungal, abbot de Sacrobosco, 1296, ton, place.

Snaid—snaithad, a needle, narrow communication between two glens.

Gilmourston—Gilmour's dwelling.

Birkshaw—Dan. skor, wood, and birch.

Auchencheyne—Choinneach, G. gen of St. Kenneth, Auchen, field.

Twomerkland—a merk 13s 4½d, land valued at.

Woodlea—Icl.-hlie, shelter.

Craigneston—dwelling at the abutting rock.

Blackston—Black's dwelling.

Girharrow—garbh, rough, airde, highness.
Craigdarroch—rock of the oak wood.
Townhead—height of the settlement.
Kirkland—lands or locality of the church.
Maxwelton—Maxwell's dwelling, from Maccus Ville, Normandy, Maccus, the son of Murin, a Saxon lord before 1150. (Name taken from some house further down the parish).
Moniaive—Minnyhive, Moine, moss, ghabaidh, dangerous—gh not pronounced.
Glencairn—glen of the heap of stones, or of the river Cairn.
Shancastle—sean old, castle.
Crossford—ford of the cross.
Straith—stratha, a valley.
Barnhead—height.
Wallaceton—settlement of Wallace.
Coldstream—stream, from the coil wood.
Lagganpark—field of the little hollow.
Gravelpit—explains self.
Woodhead—height of the wood.
Huntfield—hunta, a hunter, O.E.
Dardarroch—Dar, dair, or dara, wood of the oaks.
Springvale—valley where springs are found.
Hastings Hall—the manor of Hastings.
Skelston—skali, huts.
Garriston—Garry's farm.
Ardnacloich—stoney height.
Lochurr—odhr, grey loch; G. dobhar, water.
Caitloch—used to be Cadzeloch, place of the battle.
Barbnie—Bar hill, buidhe yellow, as of flowers.
Cairnhead—head of the river Cairn.
Conrick—con a dog, A.S. hryeg, ridge or back of hill.
Blairoch—Blair level, achadoch field.
Lochmailing—maol, a bare round hill; O.S. mailen, a farm; beside the loch.
Inghston—settlement of the English.
Poundland—land valued at a pound Scots, 20d.
Holmhead—upper part of the meadow near river.
Dalwhat—dal a field, geata, chat, of the wild cat.
Glenlach—tuilach, hill, and glen of.
Corriedow—black ravine.
Glencrosh—glen of the cross.

Waulkmill—mill where cloth was dressed, Sc. wauk is to "full," or dress cloth; wealcan is to turn about.

Glenwhisk—uisge water, glen of.

Ewanston—Euan's settlement.

Grains—the split or branches of the valley.

Mains—steading.

Glenriddel—Riddel, ancient family name.

Slatehouse—sgleat a slate.

Borland—land of the food supply. Boers or original inhabitants. See "The Raiders." Ingliston and Borland frequently together.

Coatston—G. coid brushwood, sticks, ton dwelling.

Crawfordton—Crawford's dwelling, called the Hill.

Knockauchley—arable or flat field, of the hill.

Brockloch—place of the badger.

Muirwhirn—moor of the rowantrees; also, pfuaran, a spring of water.

Crichen—the boundaries.

Calside—side, coill wood, might be the sunless side O.S.

Shillingland—'sheiling' or booth, land.

Kirkcudbright—church of St. Cuthbert, C. 700 A.D.

Crowhill—croabh trees, or crò a circle.

Breconside—the brake or bracken, and side, slope.

Castlefairn—castillum, village or town, fheàrna, alder trees.

Balenie—baile house, roinne, point of land.

Stronshalloch—stran, a little strath; and seilach (shaloch), the willows.

Auchenstroan—field of the little strath.

Gordiston—Gordon's settlement.

Riggfoot—foot of the furrows or field, O.E. hrick, a ridge.

Barndannoch—the boldness of the height (danachd).

Clench—crnach, stack-like hill.

Fleuchlarg—Fleuch, wet (in the sense of rainy), Leathad, slope.

Glenjaan—short glen.

Craiglearn—creagach, rugged rock.

Jarbruck—garbh rough, burg fort, same as borg.

Peelton (opposite)—Peel, W., a moated fort, or tower.

Castlehill—hill of the Castle.

Monigryle—moine moss, thicket, Icl. grœnn, green.

Gapsmill—named from "kep the gap," guard the opening in a fence; from Covenanting times.

II. Dunscore.

Glenesslin—glen, a valley, ess or eas, water, linne, a pool.
Greenhead—the green headland or hill.
Laggan—a little hollow.
Drum—druim a ridge.
Newton—the new dwelling.
Swyre—O.S., Swair, neck or pass at top of the hill.
Lochmaderie—Loch of the, madah a wild dog, derry, of the oaks.
Dunscore—Dun hill, G. sgor the sharp rock, A. 1300 Dunescor.
Farmersfield—explains self.
Killyleoch—coil wood, leigh, also lago, Sc. for lower.
Lag—hollow.
Netherton of Colliston—the nearer house of M'Call's dwelling.
Farthingwell—baile, house or farm ; farthine, rounded hill.
M'Cubbington.
Glenmidge—glen mheadhow, mid, between.
Isle Toll-bar—Iosal, lower, and toll-bar.
Hopeside—named after Rev. John Hope, minister of Dunscore.
West Skelston—skali huts, shielings.
Shank—tongue of land, O.E. scanca, the leg.
Boglehole—A.S., bogle a fairy.
Dempstertown—(deemster a judge in the Isle of Man), man's name.
Blacksteps—probably from black stones in the stream.
Merkland—land valued at 13s 4d.
Woodfoot.
Throughgate—A.S., geat, passage through, ford.
Allanton—person's name.
Burnfoot and Burnhead.
Bush—Boscus a wood or thicket, Dan. Busk.
Bar—hill of.
Muirhall—recent.
Butt—place abutting or next to.
Lagganhill—formerly Laverock hall ; name changed by new occupiers.
Bogrie—soft ground.
M'Murdoston—family of M'Murdo, founder of the Volunteers.
Dinning—Dinat a woody glen, also Dunan little hill or fort.
Rosehill—where the wild rose was plentiful.
Moat—ancient meeting place.

Gateside—gat gap, place of.
Friars' Carse—Kerss low lying marshy or alluvial ground by a river.
Carsemill—mill and farm of.
Whiteside—O.E., hwit, white, of the appearance of stones.
Roughhill
Nithside—beside the Nith.
Crawston—Sc., crawe a crow.
Greenwell—grianach, sunny, baile a house.
Longbank.
Linburn—formerly Lintburn, where lint was soaked.
Craigenputtock—the rock of the putag, small ridge or ring of land; by some, rock of the wild hawk.
Dunesslin—Dun a fort or hill, and Ess water, formerly Farthingrush (rounded hill, covered with scrub).
Corsefield—field of the cross.
Hallidayhill—man's name.
Castrammon—Carstrammon, G. Crasg pass or ford of the Alders, from (craobh, crov) fhearna.
M'Cheyneston, Ellisland, Milliganton, Amulligan 1619.
Courthill—cruit or cul, back and hill.
Townhead—explains self.
Craig—Creag.
Dalgonar—field or plain of the little beak, G., gobau.
Moss-side, Poundland, Whitedyke.
Brocklestone—stone of the badger's hill.
Holm—O.E., a small island in a river.
Lagg—valley.
Broadford.
Shangan, Drumshangan—hill or ridge of the ants.
Chapel—probably ancient chapel.
Goosedubs—O.E., puddles for geese.
Miltonmill.
Kenmuir—head of the moor.
Skinford—sceithan, a bush.
Kilnhouses—kiln for baking bricks.
Stroquhan—struthan, a little stream, and valley of.
Lagganlees—the meadows of the little hollow.
Craigenvey—Creag and bheath (vay) birches, rock of the.
Lochenlee is Lochunlead—lade, a water course.
Bessewalla—old name Barswally, bar, height, hill, shith (shee), top or place, a bhaile, hamlet; O.E., hlaw, a hill.

Kelliston—Kelly's dwelling, coil a wood.
Whiteyett—O.E., geat, a passage.
Junken—junction of lands.
Gallawards—height of the gallows.
Sundaywell—sean, old taigh house, Fr. ville; used to be a tower or keep.
Drumburleigh—ridge of the tumulus.
Kilroy—ruadah reddish colour (church of the).
Netherlaggan—frequent affix, lower.
Isle—anct. Ilis, Iosal (G.) lower, or island land.
Ancient Names—
Crossengarrioch—Garriston?
Pollogan—Laggan.
Pollocostertan.
Derengorran—Dalgonar.
Durrisswan—Stroquhan.
Athenwarn—ford of the rejoicing.
Pollechonstergan.

III. Holywood.

Broomrigg—brick, ridge, where broom grows.
Gulliehill—the hill of the gully or clift.
Hardlawbank—boundary land.
Holywood—sacrum nemus, the Dar Congal, Thicket of St. Congal, hence the Holywood Abbey, founded 1135.
Portrack (used to be Portract)—tract of land near mansion.
Nith—Niduari of Bede, Pictish tribe of Galloway.
Bellfield—Billa (Bile), a large tree.
Glengowan—gobhan a goat, glen of the.
Hulton—belonging to the Hall, or family mansion.
Speddoch—Ir., spidiog, spiddog, Robinredbreast (wood of the) redbreasts.
Shawford—ford of the wood.
Scaurbrae—sgurr, precipice, large conical hill, Sc., brae.
Bearcroft—O.E., Bere, barley, croft field.
M'Whanrick—M' (muir), magh, plain, Bhainne milk, O.E., hryeg, ridge of land; might be anct. Macwatter.
Crossleys—fields of the cross, anct. Corsleis.
Morrinton—person's name (Morrin).
Irongray—(G.) aird an greaich, height of the moor.
Killylung—coille wood, and G. Luinge, a ship.

Holm—small island in a river.
Cowhill—coil, wood and hill.
Summerhill—surname (Summers).
Abbey—from Holywood Abbey.
Standalane—O.E., stan, a tall rock by itself.
Gribton—Grib's ton (village or dwelling).
Clouden—clwyd warm, afon or âu, stream or river, also clith, violent.
Cormaddie—hill of the dog or wolf.
Birkhall—house of the birches.
Rue—Rudha, a point of land.
March-house—march line of division between lands.
Knowehead—Sc., knowe, hillock, top of the hill.
Berryland—the hill land.
Fourmerkland—land valued at 4 merks (54s 8d); Fourmerkland Tower built by R. Maxwell 1590.
Newtonairds—the new dwelling of the height.
Balfreggan, Barfreggan—hill of the blackberry.
Looberry—lub a bend, curvature, high hill.
Clachan—collection of houses.
Steilston—O.E., stoel place, ton dwelling, hostelry.
Slaethorn Croft—slae is sloe; G., croit, pendicle of land.
Dalawoodie—Dail fields of, bheadaig, gossip or wanton.
Kilncroft—cille church, croft, field.
Ashyholm—O.E., aesche the ash tree, holm.
Kilness—cille church, nios top, summit.
Baltarsan—house at the crossing.
Druidpark—probably from Druim, a ridge.
Dumfries—Dun fort, of the Frisians; some say of the furze or whin.
Solway—O.N., söl.-vagr. muddy bay.

Such are most of the names in the watershed of the River Cairn, extending through the parishes named to the west of Dumfriesshire. It has been attempted to give the most likely interpretation of them, and if bringing this subject before the Society might somewhat advance the work of place-names in the county, this work may not have been done in vain.

16th November, 1899.

Mr JAMES BARBOUR, V.P., in the Chair.

Donations and Exchanges.—Annual Report of the Smithsonian Institution for 1896; Transactions of the Nova Scotia Institute of Science, Part I., Vol. IX.; Annals of the New York Academy of Sciences, Vol. XII.; International Catalogue of Queensland Scientific Literature; Guide to Queensland; Proceedings of the Academy of Natural Sciences.

COMMUNICATIONS.

Notes on an Old Tradition.

By the Rev. JOHN CAIRNS.

About six miles to the north-west of Dumfries the River Cairn unites its waters to those of the Cluden, which comes tumbling from its source among the Irongray hills down a rocky course, the most picturesque part of which is the fall at the Routin' Bridge. Below the junction the river sometimes bears the name of the Cairn, which is much the larger of the two uniting streams, but it is more frequently known as the Cluden, and it is thus designated on the Ordnance Map. That it has been so called from early times is shown by the names of such places as Cluden and West Cluden on its banks and Lincluden at its mouth. Above the junction the Cluden is popularly known as the Old Water, and it is so marked on the Ordnance Map.

An interesting explanation of these facts is afforded by an old and very persistent tradition current in the neighbourhood, according to which the Cluden originally had the valley to itself, the Cairn being an intruder of comparatively recent date. It is affirmed by this tradition that at one time the Cairn expanded into a loch above Dalgoner, in the parish of Dunscore, and that the outlet from this loch was to the east and not to the south, the river finding its way by the valley which runs down by Birkshaw, Lag Tower, and Glenmids to the Nith a little below Auldgirth. The tradition goes on to say that in the Middle Ages the monks of Melrose, to whom a grant had been made of the lands of Dunscore, with a view to the improvement of their property, drained the loch at Dalgoner by cutting a new outlet for the Cairn through a rocky barrier, on which it is even said

that the marks of tools can yet be seen, and so caused the river to flow first into the bed of the Glenessland Burn and then into that of the Cluden below the Routin' Bridge. Another form of the tradition makes the Romans and not the Melrose monks the engineers of the diversion, but that the diversion, by whomsoever effected, has taken place it is confidently affirmed. Hence, it is said, come the facts I have already referred to, that the smaller stream gives name to the combined stream below the junction, and that the same stream above the junction is called the Old Water. Hence, too, comes the further fact that beside the supposed original course of the Cairn there is a farm which to this day bears the name of Cairnhall.

The fact of this tradition being so definite, so long established, and so persistent as many of us here know it to be, almost seems to establish a kind of *prima facie* presumption in its favour; but it may be pointed out that those arguments in support of it to which I have just referred have less in them than might at first sight appear. It is no uncommon thing for the smaller of two uniting rivers to give its name to the product of their union. The Teith is a much larger and finer river than the Forth, and yet it has to yield its name to its weaker rival. So too with the Missouri and the Mississippi. Then as to the Old Water, Sir Herbert Maxwell has pointed out that we have here an instance of a mistaken etymology due to a resemblance in sound of two entirely different words. Speaking of the name as it appears on the Ordnance Map, he says: "A common Gaelic word for a stream is *allt;* this coincided in sound with the broad Scots 'auld;' apparently those who advised the English surveyor thought it more genteel to write 'old,' and the real significance is completely hidden by a forced interpretation." With regard to Cairnhall, it may be remembered that there is a Cairn Mill on the Scar, in the parish of Penpont, far away from any possible former course of the Cairn; so too much need not be made of that point.

Whether the diversion of the river in the way the tradition states was physically possible I do not profess to be able to say, but must leave that to those better acquainted with the topography and geology of the district. Whether, too, as I have heard it said, the tradition finds confirmation in certain ancient charters or title deeds I am also unable to say, for I have not had the opportunity of examining them. But some time ago I had

occasion to look into the Liber de Melros, which is a collection of all the charters of the famous abbey on the Tweed, and is one of those splendid volumes edited for the Bannatyne Club by the late Mr Cosmo Innes. Here I came upon the original grant of the lands of Dunscore to Melrose, and as this, besides being of great local interest otherwise, does seem to throw light on the tradition of which I have been speaking I should like now to quote its words to you. The granter of the lands is a lady, Affrica, the daughter of Edgar, and the great-grand-daughter of the powerful chieftain Dunegal, who, in the reign of David I., ruled over Nithsdale from his seat at Morton Castle. Affrica's charter was granted in the reign of Alexander II. (1214-1249). After the usual beginning, in which she says that she was induced to make this grant for the repose of the souls of the late king and of her own ancestors and successors and for the salvation of her own soul, Affrica proceeds to specify the boundaries of the land which she bestows on the monks:—"I have given and conceded to God and to St. Mary of Melrose and to the monks serving God there in free, pure, and perpetual charity, one-fourth part of the land in the territory of Dunscore, that, namely, which lies between Dercongal and a certain rivulet which is called Pollogan, according to its proper marches. And besides, from Pollogan, by a rivulet which descends from the moss to the west and so from the moss by a rivulet which descends to the ford of the Cairn towards Glenesslan and so by the Cairn towards the east as far as the rivulet which is called Pollocostertan and so upwards as far as Crossengarrianch, which is the march between the land of the canons of Dercongal and Derengorran ascending by the road as far as Durreswan, and thence descending by a heap of stones to a certain ditch, and from that ditch descending almost straight to the before-mentioned rivulet, namely, Pollogan." What are we to make of these strange and uncouth names, which have all or nearly all disappeared from the face of the earth and from the memory of man? Not very much certainly, but yet perhaps something. The first sentence is plain enough. Affrica gives the land which lies between Dercongal or Holywood (for this is the old name of the monastery of Augustinian Canons which had already been erected there) and the stream called Pollogan. The prefix Pol means (I suppose in Gaelic) a stream. It is the very word that has been corrupted into our Scotch word Pow, which occurs in such names as Pow-

foot and Newabbey Pow in this district, not to speak of the Powburn in Edinburgh. Pollogan, then, is the Logan Pow, clearly the Laggan Burn, up whose valley the road from Auldgirth to Dunscore runs. The district, then, between the lands of Holywood, which probably extended to the modern parochial boundary, and the Laggan was included in this grant. And this is confirmed by the fact that at a much later date we find Melrose Abbey granting to members of the family of Kirkpatrick of Ellisland certain rights over the properties of Laggan, Edgarstoun, Milliganton, M'Cheyneston, M'Cubbinton, Kilroy, and Farthingwell, all of which, I believe, are within the limits thus marked out in Affrica's charter. But when we come to the second part of the charter we find greater difficulties. I cannot find any perfectly satisfactory solution of the puzzle which it presents, and would now with the greatest diffidence and full submission to the authority of those who know the district better than I do, make the following suggestions. Besides the country between Holywood and the Laggan, Affrica gives a tract of land whose boundaries are very minutely specified. Beginning at the Laggan the boundary goes up to the moss along the course of a small rivulet. This, I take it, must be the moss, a part of which still exists in the high land to the south-west of Dunscore village. From thence a rivulet leads down to "the ford of the Cairn towards Glenessland." A very small stream is marked on the map crossing the road between Craig Free Church and Poundland and falling into the Cairn lower down. This may be the rivulet referred to, which was evidently so small that it did not possess a name. Then following the Cairn "to the east" we come to the burn which passes Killyleoch. This may be the Pollocostertan of the charter, and this finds confirmation in the fact that Killyleoch and Bessiewalla, both of which are on or near its banks, belonged at a later date to Melrose Abbey. Up this burn the boundary ascends to Crossengarriauch, "which is the march between the land of the canons of Holywood and Derengorran." In a later charter this is spoken of as "the cross which is called Crossengarriauch." So evidently there was here erected, perhaps on the wayside, a prominent and well-known cross. Is it possible that there is still a trace of this to be found in the name of the farm of Corse or Corsefield, situated at the top of the hill just where, from the words of the charter, we should expect the ancient landmark to have stood? From thence

by points that cannot now be easily identified—a heap of stones, a ditch, &c.—the boundary finds its way back to the Laggan at the point from which it started. But however interesting this mass of topographical detail may be for its own sake, I fear I have lingered too long over it, and I must now point out the bearing which it has upon the tradition regarding the diversion of the Cairn. You will notice that mention is made of the Cairn in this charter and of a ford in it towards *(versus)* Glenessland. But those of you who know the district will remember that this, the lower end of Glenessland, the place where Glenessland Burn falls into the Cairn, is *below* the point where the Cairn is said to have been diverted. If the tradition be true there was, when the land came into the possession of the monks of Melrose, no Cairn in the neighbourhood of Glenessland at all, and as it flowed through a loch at its nearest point there could be no "ford of the Cairn" within several miles. And yet here, in the charter which gives the land to the monks, the Cairn is described as following the same course as it follows to-day.

A later charter describes what is evidently the same, or virtually the same, tract of land, but begins this time not at the Laggan but at Crossengarriauch.

After describing the boundary from Crossengarriauch to the Laggan it goes on: "And by Pollogan, ascending as far as the royal road, which leads from Dercongal (Holywood) to Glencairn, and by the same road as far as the ford in a certain ditch which is called Athenweran, and as the same ditch descends to a certain footpath which leads to the ford of the Cairn, and by the river Cairn, ascending as far as a certain rivulet, which is called Pollechoustergan, and by the same rivulet, ascending as far as the before-mentioned cross, which is called Crossengarriauch." I confess I can make nothing of this description. The perplexing point is that which speaks of ascending the Cairn from the ford. In the former charter the boundary follows the Cairn "towards the east," which, of course, is descending, and if the word were descending here it might be possible to identify Pollechoustergan with the Pollecostertan, even although a little violence were used in the process; but the word is undoubtedly "ascending" in the text, and I can only leave the tangle for some more skilful hands to redd up.

There is only one more document in the Book of Melrose which in any way bears on our tradition, and that is one which,

had it stood by itself, might have lent countenance to it. It is a charter of King Alexander II., in which he gives to the monks of Melrose "the lake of Dunscore, in the valley of the Nith, and the pennyland which belongs to the said lake, and whatever is contained within the said lake and land." This, if it stood alone, *might*, I say, lend countenance to the theory that in the thirteenth century there was a lake in the valley of the Cairn. It is true it is called the valley of the Nith here—but that is clearly used in a wide sense, for the same designation is employed in the title of the two charters we have already been considering, which deal explicitly with the valley of the Cairn. The granting of the lake too, to the monks of Melrose might also lend countenance to the tradition that these same monks afterwards drained a lake on their property. But it seems to me that the phrase in the first charter of which I have spoken, about the ford of the Cairn "(looking) towards Glenessland," is, so far as it goes, positive evidence that the Cairn in these days followed the same course that it follows now, and consequently that there was then in all probability no loch in its course. It must be remembered, further, that there is another loch in the parish of Dunscore, viz., that at Friars' Carse, which is on land which we know belonged to Melrose Abbey, so this might quite well be the lake of the charter.

The general conclusion, then, seems to be that, so far as the monks of Melrose are concerned, the great engineering work of which our traditions speaks was not carried through, and did not need to be carried through. Whether it was carried through at an earlier date than theirs is, of course, another question which I have at present no means of answering.

The following is the text of the extracts from charters, of which translations are given in the foregoing paper :—

I. Carta Affricae de Valle de Nith.

"Universis Christi fidelibus hoc scriptum visuris et audituris Affrica, filia Edgari, salutem in Domino. Noverit universatis . . . me . . . dedisse et concessisse et hac mea carta confirmasse Deo et ecclesiae Sanctae Mariae de Melros et monachis ibidem Deo servientibus in liberam, puram, et perpetuam elemosinam unam quartam partem plenarie villae in territorio de Dunscor, illam scilicet quae jacet inter Dergungal et

quendam rivulum qui dicitur Pollogan per suas rectas divisas; et praeterea de Pollogan per rivulum qui descendit de mussa versus occidentem, et ita de mussa per rivulum qui descendit in vadum de Carno versus Glenesclan, et ita per Carnum versus orientem usque ad rivulum qui dicitur Pollocostertan, et ita sursum usque ad Crossgarriauch quod est meta inter terram canonicorum de Dercongal et Derengorran ascendendo per viam usque Durreswen, et inde descendendo per cumulum lapideum usque in quendam sicum, et ab illo sico fere recte descendendo usque in rivulum antedictum, scilicet Pollogan." . . (Liber de Melros 200, p. 182).

II. CARTA AUFRICAE DE VALLE NITH.

". . . Noverit universitas . . . me . . . dedisse et concessisse et hae mea carta confirmasse Deo et ecclesiae Sanctae Mariae de Melros et monachis ibidem Deo servientibus, in liberam, puram, et perpetuam elemosinam, quandam partem terrae meae in territorio de Dunscor quae continetur infra has divisas; scilicet, a cruce quae dicitur Crossgarriauch quae est meta inter terram canonicorum de Dercongal et Derrengorran, ascendendo per viam usque Durreswen, et inde descendendo per cumulum lappideum usque in quendam sicum, et ab illo sico fere directe descendendo usque in quendam rivulum qui dicitur Pollelogan, et per Pollelgan ascendendo usque ad regiam viam qua itur de Dercongal usque ad Glencarn, et per eandem viam usque ad vadum cujusdam sici quod dicitur Athenwerau, et sicut idem sicus descendit usque ad quandam semitam quae ducit ad vadum de Carn, et per fluvium de Carn ascendendo usque ad quendam rivulum qui dicitur Pollechoustergan et per eundem rivulum ascendendo usque ad prenominatam crucem quae dicitur Crossengarriauch." (Liber de Melros 201, p. 183).

III. DE LACU IN VALLE DE NITH PRO PITANCIA.

"Alexander, Dei Gratia, Rex Scotorum omnibus probis hominibus totius terrae nostrae salutem. Sciant presentes et futuri nos . . . dedisse et concessisse et hac carta nostra confirmasse Deo et Beatae Mariae de Melros et monachis ibidem Deo servientibus et in perpetuum servituris, lacum de Dunscor in valle de Nyth et denariatam terrae quae pertinet ad eundem lacum et quicquid continetur infra eundem lacum et terram." (Liber de Melros 203, p. 185).

19th January, 1900.

Mr JAMES BARBOUR, V.P., in the Chair.

New Members:—Captain Campbell-Johnston of Carnsalloch; Messrs John Tocher, Chemist; Robert Service, Nurseryman; M. H. M'Kerrow, Solicitor.

Donations and Exchanges:—Proceedings of the Academy o Natural Science of Philadelphia, Part II., April-Sept. 1899.

COMMUNICATIONS.

The Meteorology of 1899.

By the Rev. Mr ANDSON.

Barometer.—The highest reading of the barometer in 1899 was recorded on 26th January, when it rose to 30·732 in., and the lowest at 4 p.m. on the 29th December, when it fell to 28·377 in., showing an annual range of 2·355 in. The latter was the lowest reading since 1886, the next lowest having been 28·380 in. in 1891. Although this depression was so abnormal, it was not accompanied by so violent a gale of wind or so heavy a rainfall, in this district at least, as might have been expected. But the wind having been from the east, it was more severely felt on the eastern coasts. The gales in the early part of November, which were from the south and south-west, were much more tempestuous, and attended by far heavier rainfalls, although the barometer readings were mostly above 29 in., and only once went down to 28·98 in. The mean barometrical pressure for the year (reduced to 32 deg. and sea level) was 29·922 in. This is higher than the mean of the last twelve years by 0·091 in., 29·922 in., as compared with 29·831 in. The months in which the means were highest, exceeding 30 in., were May, June, July, August, and November. And these were all favourable months in point of temperature and weather on the whole, excepting May, which was cold and wet. The lowest monthly mean was in January, which had twenty-three rainy days, and the next in September, which had twenty-two.

Temperature in shade, 4 feet above the grass.—The highest temperature of the year occurred on the 2nd August, when a maximum of 85 deg. was registered. The lowest or absolute minimum occurred on the 15th December, when a reading of 13

Abstract of Meteorological Observations at Dumfries, 60 feet above Sea Level.

1899.	BAROMETER.				THERMOMETER. In Air and Protected.						HYGRO-METER.		Deductions. Glaister's Tables 2nd Ed.		WINDS.									RAIN.	
															Number of Days it blew in certain Directions.										
Months.	Highest in Month.	Lowest in Month.	Monthly Range.	Mean reduced to 32 degs. and Sea Level.	Maximum.	Minimum.	Monthly Range.	Mean Maximum.	Mean Minimum.	Mean Temperature.	Dry Bulb.	Wet Bulb.	Dew Point.	Humidity, Saturation = 100.	N	NE	E	SE	S	SW	W	NW	Calm or Variable	Number of Days it Fell.	Amount in inches.
Jan.	30·732	28·700	2·032	29·704	52·0	18·8	33·2	43·4	32·7	38·0	37·6	36·9	36·0	94	2	1	1	4	5	10	3	4	1	23	5·27
Feb.	30·545	28·810	1·735	29·795	55·0	20·0	35·0	46·5	33·7	40·1	39·3	37·5	35·2	86	2	2	3	4	5	4	2	3	3	13	3·35
Mar.	30·533	28·935	1·598	29·990	64·0	19·0	45·0	48·8	34·7	41·7	41·9	39·7	36·9	85	3	2	1	1	2	11	7	3	1	15	4·59
April	30·225	28·957	1·268	29·746	60·0	27·0	33·0	51·8	38·1	45·0	44·3	42·2	39·7	84	2	4	1	4	3	5	5	5	1	18	3·25
May	30·550	29 300	1·213	30·018	71·0	31·0	40·0	57·4	39·8	48·6	48·8	44·9	40·4	73	1	7	8	2	2	7	2	1	1	14	3·44
June	30·541	29·436	1·105	30·054	84·0	43·2	40·8	71·6	50·1	60·8	60·0	55·6	51·7	74	1	2	5	4	2	5	6	3	2	12	2·44
July	30·487	29·060	1 075	30·062	81·6	47·0	34·6	69·2	54·1	61·6	60·1	56·9	54·1	81	0	3	2	2	3	11	3	7	0	18	2·17
Aug.	30·443	29·620	0·763	30·078	85·0	45·0	40·0	74·3	52·2	63·2	62·0	58·2	55 0	78	0	4	3	6	2	6	7	2	1	10	1·69
Sept.	30·225	29·163	1·048	29·764	76·0	35·0	41·0	62·6	45·2	53·9	52·3	49·7	47·1	82	0	1	1	1	1	9	12	4	1	22	3·05
Oct.	30·440	29·389	0·999	29·998	63·3	26·0	37·3	56·7	39·3	48·0	46 3	44·4	42·3	87	2	1	2	3	5	7	6	4	1	13	2 72
Nov.	30·713	28·987	1·726	30·011	58·0	28·0	30·0	51·8	42·5	47·2	47·3	45·5	43·6	88	0	2	1	2	3	13	7	0	2	16	5·52
Dec.	30·465	28·377	2·088	29·833	53·0	13·0	40·0	40·5	31·4	36·0	34·6	33·5	31·8	90	0	2	8	6	1	3	5	4	2	15	3·19
Year	30·732	28·377	2·355	29·916	85	13	72	56·5	41·1	48·6	48·5	46·2	43·7	83	13	31	36	39	34	91	65	40	16	189	40·86

deg. was recorded. The annual range thus amounted to no less than 72 degs. It is worthy of remark that August had not only the highest single-day temperature of the year, a distinction which most frequently falls to June or July, but that it had also the highest monthly mean, viz., 63·2 deg., which was fully 5 deg. above the average for that month. August was an unusually warm and dry month, with a good deal more than the average amount of sunshine. And this was true also, although not to the same extent, of June and July. On no fewer than eleven days in August the thermometer in the shade registered readings of 80 deg. and above, and only on a very few nights did the minimum readings fall slightly below 50 deg. The mean maximum for August was 74·3 deg., and the mean minimum 52·2 deg., which gives the monthly mean of 63·2 deg. There were other four months in which the mean temperature was in excess of the average, viz., June with an excess of over 2 deg., July with an excess of 1½ deg., October with 2 deg., and November with fully 5 deg. The excess was thus in all about 16 deg. On the other hand, the months in which the mean fell short of the average were April with a deficiency of 2 deg., May of 4 deg., September of 1½ deg., and December of 3 deg. This gives an aggregate deficiency of fully 10 deg., which was more than counterbalanced by the 16 deg. of excess. Hence the name temperature of the year is, as might have been expected, above the average, although not to the same extent as last year. The mean annual temperature, calculated on an average of 12 years, is 47·5 deg. Last year it was 49·5 deg., which was one of the highest of the 12. This year it was 48·6 deg., which is rather more than 1 deg. above the average. There were more than the usual number of warm days during the summer—days with a maximum of 70 deg. and above. There were only two in May, which was a cold month; but there were sixteen in June, fifteen in July, twenty in August, and four in September—in all, 57. The number of nights on which the temperature fell to and below the freezing point was eighteen in January, with an aggregate of 61 deg. of frost, fourteen in February with 56 deg., eleven in March with 56 deg., October had six nights with 18 deg., November only three with 4·3 deg., December eighteen with an aggregate of 114 deg. of frost. As August was the warmest, so December was by far the coldest month of the past year, the monthly mean of which—viz., 37·4 deg.—was 3 deg. below the

average. The absolute minimum of 13 deg. on the 29th of that month was the lowest December reading since 1886, and the lowest in any month since the extreme frost in February, 1895, when the thermometer went down a little below zero. On both occasions the river Nith was frozen over; but in December last this condition lasted but a brief period, and the ice was not so strong as to be safe for skating or curling. On the whole, the year was a favourable one in point of temperature. Had it not been for the comparative coldness of April and May, and the spells of severe frost in the second and last weeks of December, it would have been one of the warmest years of the period of observation.

Rainfall.—The number of days on which rain or snow fell during 1899 was 189 (rain 181, snow 8). This is a little above the average, which may be reckoned at 177. The heaviest fall in 24 hours was registered on 28th March, and amounted to 1·80 in. It occurred in connection with a south-westerly storm of considerable severity. But there were two other months in which the fall for 24 hours exceeded 1 in., viz., on 28th June and 3d November, on each of which days it amounted to 1·01 in. So heavy a fall as 1·80 in. in 24 hours, amounting as it does to 180 tons of water per acre, is very rare in this district. For the most part it is only two or three times in a year that it amounts to or exceeds an inch. The total fall for the year was 40·86 in. This exceeds the average of 12 years by fully 5 in., the mean for that period being 35·57 in. The rainiest month was November, which had a record of 5·55 in., by far the greatest part of which, however, fell in the first two weeks, and was followed by extremely fine weather in the second half of the month. I have noted that on the 4th November the Nith was in very heavy flood. Not only were the Sands flooded, but the water rose as far as the new buildings in Friars' Vennel, and in Nith Street as far as the junction with Irish Street. The depth of the river as shewn by the gauge at the New Bridge was about 12 feet. The rainfall of January was very little short of that of November, amounting to 5·27 in. Twice in that month the barometer fell below 29 in.—on the 12th, when it went down to 28·550 in.; and again on the 21st, when the lowest reading was 28·976 in. The month as a whole was stormy and wet, with strong southerly and south-westerly gales, and moderate temperature until the last week, when a spell of sharp frost was experienced. The driest as well

as warmest month of the year was August, with a record of only 1·69 in., and 10 days on which it fell, as compared with a mean of 4·16 in. The months in which the rainfall was in excess of the average were January, February, March, April, May, and November, with a total excess of about 10 in. The months in which there was a deficiency were July, August, October, and December—total deficiency, 5 to 6 in. It was in the summer months of July and August that the largest deficiency occurred, and although September shewed a slight increase it was more than counterbalanced by the deficiency in October. There were two periods which might be described as periods of partial drought. The first was between the 25th of May and the 17th of June, 24 days during which there was only once a slight shower, which measured no more than one hundredth of an inch, on the first day of June. Notwithstanding, the rainfall of June as a whole was up to the average, the latter part of the month having been characterised by frequent showers The second period was between the 29th July and the 26th August, during which there were only five days on which any rain fell, and only to the amount of four-tenths of an inch.

Hygrometer.—The mean of all the readings of the dry bulb thermometer for the year was 48·5 deg. It is worthy of note that this almost exactly corresponds with the mean temperature of the year, which was 48·6 deg., as calculated by a different method, viz., by taking the mean of all the maximum and minimum readings. The readings of the dry bulb thermometer are taken twice a day, at 9 A.M. and at 9 P.M., and it is the mean of these which brings out a result differing by only one-tenth of a degree from the mean of the maxima and minima. This shows how nearly these different methods bring out the same result, and the coincidence is not fortuitous. It is only what is to be expected, so that the one may be considered as a verification of the accuracy of the other. The mean of all the 9 A.M. and 9 P.M. readings of the wet bulb thermometer was 46·2 deg., which makes the dew point 43·7 deg. and the relative humidity for the year (saturnation being equal to 100) 83. This is slightly above the average annual humidity, which was to be looked for, when we take into account the slight excess both of rainfall and of the number of days on which it fell.

Thunderstorms, &c.—I have noted thunder and lightning six times during the year—once in February, once in May, twice in

June, once in August, and once in November. And thunder without lightning twice. A very marked solar halo was seen on the 22d October, and lunar halos pretty frequently. Hail showers were noted in January, February, March, April, and May.

With regard to the wind directions, the south-westerly was as usual the most prevalent. It blew on 95½ days of the year. The next in point of frequency was the westerly, with 64 days. The north-westerly came next with 40 days; then south-easterly with 39½; easterly with 35½; southerly with 31½; north-easterly with 30½; northerly with 14; and calm or variable with 14½ days.

A paper by Dr E. J. Chinnock, entitled "Ptolemy's England," was read.

9th March, 1900.

Rev. Mr Andson in the Chair.

Donations and Exchanges.—Bulletin of the Geological Institute of Mexico; Smithsonian Report, 1897; Report of British Association Meeting at Dover.

Communications.

1. *On the Nesting of the Nightjar in Glencairn.*

By Mr John Corrie, Moniaive.

It may be of interest to record a well-authenticated instance of the nesting of the Nightjar in Glencairn, Dumfriesshire. I was previously aware that the bird occurred in the district, but, so far as my knowledge goes, this is the first time that it has been discovered nesting.

My earlier records of the occurrence of the species are as follows:—

1. A single specimen seen hawking for moths in my own garden towards nightfall in the summer of 1888.

2. Bird heard uttering its distinctive churring cry during a night-fishing excursion to Knocksting, a small loch situated on the border of Kirkcudbrightshire.

3. An immature specimen, found in a garden on the outskirts of Moniaive, brought to me for identification, 23rd September, 1896.

These, and a reported occurrence of the bird near Craigdarroch in day-time, are all the records known to me. None of

them, it will be noticed, furnish proof that nesting had taken place in the parish, although the presence of a young bird in September might be accepted as fairly conclusive evidence that a nest was at that time in the neighbourhood. In the present instance the proof is absolute, for one of the parent birds has been seen, the nest site examined, and the young handled. The facts are as follows :—

On the 8th August last it was reported to me that a cuckoo had been found nesting on the open moor near Girharrow, and that two young birds were in the nest. As a pair of young cuckoos in the same nest is an unusual, although, I believe, not an unprecedented occurrence, my interest was aroused, and I at once commenced inquiries. These had not proceeded far before I found reason to conclude that the bird described to me as a cuckoo was in reality a nightjar. Subsequent investigation established this beyond all reasonable doubt.

I first of all called at Girharrow, which is on the Auchencheyne estate, about a mile and a half distant from Moniaive as the crow flies. Here the wife of the shepherd informed me that the young birds had left the nest, but she kindly offered to guide me to the hollow on the hill where the nest had been found. This offer I gladly accepted. Although no traces of an attempt at nest-construction were visible, the precise site could easily be distinguished by a few pieces of broken egg-shell lying in a slight depression of the ground. The neighbourhood of the nest was singularly bare and exposed, and it is evident that the bird depends upon close imitative colouration, rather than cover, for protection. Believing that the birds would not be far off, a sharp look-out was kept, and, less than a score of yards from the nest site, one of the parent birds, evidently the female, rose quite close to us, and commenced a fluttering, broken-winged sort of flight across the heather. I soon recognised that the object the bird had in view was to lure us away from its young, and I remained near the spot where the bird rose. Here a careful search was made, but to no purpose. The shepherd's wife having meanwhile returned to the cottage, I concealed myself, field-glass in hand, behind a friendly rock. After waiting patiently, in anything but a comfortable position, for fully a quarter of an hour, I had the satisfaction of seeing the female bird return to a spot in the near neighbourhood of the place where we had first seen her. I at once followed, and, although the bird took wing

at my approach, I soon discovered a young four or five days old fledgling crouching on the heath. The young bird was covered for the most part with soft downy feathers of a tawny hue, although the wings were already beginning to show the characteristic brown barring of the mature bird. The colouration generally was in marked harmony with the surroundings. During the time I was occupied in examining the interesting youngster, the parent bird continued to hover near me, uttering an incessant "Wheet, Wheet!" a note in which solicitude and anger were curiously blended.

Later on I had an opportunity of interviewing Mr Davidson, shepherd, who was the first to discover the nest. He says the discovery was purely accidental. Chancing to pause on his walk across the hill, he saw the bird sitting at his feet, and wondered why it did not take to flight. It was only when he stooped to examine the bird that he discovered its secret.

The nest was visited several times subsequently, both by him and by other members of his family, but the bird never appeared to be alarmed, and was always reluctant to leave its eggs.

It is a matter for satisfaction that a species, which occurs so sparingly, was permitted to rear a brood in safety. Mr Davidson's conduct calls for commendation, and my personal acknowledgments are due both to him and to Mrs Davidson for their courtesy and kindness.

2. *Regarding the Origin of the Ruthwell Cross.*

By Mr James Barbour.

The popular account of the origin of the Ruthwell Cross derived from tradition affirms that on being conveyed by sea from some distant country it was shipwrecked at a place called Priestwoodside, in Ruthwell Parish, and the pillar, so destined it was thought, was erected there. Subsequently the monument was removed from its original site for conveyance to the interior, and by way of propitiation for the success of the venture a widow's oxen were engaged, and put to the yoke. After proceeding some way, however, the tackling gave way, and the cross stranded. It was re-erected on the spot where it fell, and a place of worship was reared over it, which became the church of the Parish.

The point I desire to direct attention to is the idea of the foreign origin of the Cross contained in the tradition, and still prevalent. It is a common way of accounting for the presence of works without a history, and possessing merit superior apparently to any effort of local skill as this is.

I propose to submit some considerations which tend, I think, to give support to the opposite view. These refer chiefly to the material of which the Cross is cut, and its similarity to the rock native to the locality. Should the stone be found to agree with that native to the place, the reasonable inference would appear to be that the Cross was sculptured in the neighbourhood of the spot where it stands, as it is unlikely that the material would be exported in order to its being worked elsewhere, more likely the sculptor may have come from abroad.

The Rev. Dr Duncan, and Professor Stephen, of Copenhagen, evidently incline to regard the material of the Cross as having been taken from some not very distant quarry. The former, to whose care the preservation of the monument is largely due, speaking in support of an opinion that the Cross was executed at two different periods, says:—"The column is formed of two separate blocks of standstone, both of them probably taken from the neighbouring hills, but evidently from different quarries; for although they are both of a course texture and of a reddish colour inclining to grey, such as is to be found in the vicinity, the upper stone is distinctly of a deeper hue than the other."

It is to be observed in this connection that the peculiar variation of the colour, spoken of by Dr Duncan, is a distinguishing characteristic marking the native rock.

The testimony of Professor Stephen is as follows:—"The stone," he says, "is a hard red grit found near Dumfries, some miles away, and might have come by sea. The Ruthwell Railway Station appears to be from the same quarry. The stone of the Bewcastle district is not the same. The style of the sculpture also is different. Neither are the runes alike."

Although the stone of the Ruthwell Railway Station bears a considerable degree of resemblance in some respects to the Cross, it differs materially in respect of the colour, which is light red. The stone was taken from Drumlanrig tunnel and conveyed to Ruthwell on the railway, as Mr M'Kune, railway inspector, who assisted at the quarrying of it, informs me.

But there is no occasion for supposing that the material of

the Cross was carried from so distant a place as Drumlanrig, or even from the neighbouring hills about Ruthwell, as suggested by Dr Duncan. Rock fulfilling the required conditions is obtainable in the immediate vicinity.

Having occasion recently to examine another interesting and important historical monument in the same parish—the old Castle of Comlongon, standing not far from the Cross—I was struck with the appearance of the freestone forming the dressings, which is of a character I had not observed in other buildings in the district. The blocks vary both in colour and texture, but some of them seem to agree exactly in these respects and otherwise with the material of the Cross. It has not been ascertained where these were got, but as field stones about are of similar rock it may be inferred that the quarry was a local one. On further inquiry it was ascertained that during the construction of the Glasgow and South-Western Railway one of the contractors worked a quarry at a place about 300 yards north of the Ruthwell Station, the position of which is still apparent from the remaining debris. A fragment of stone obtained at this place is found to exhibit all the characteristics of the rock out of which the Cross is formed, as will appear from the following details :—

The rock composing the blocks of which the Cross is built distinctly differs in colour and in general appearance from the common Dumfriesshire red stone. It is a hard sandstone, of coarse texture, and a purplish grey colour, marked with glimmerings of mica. A peculiarity already alluded to in connection with Dr Duncan's description consists in a difference of the hue of the upper and lower blocks forming the shaft. The upper block is stained blood-red, but the stain does not pass quite through the stone, and one face retains the general hue, a circumstance which Dr Duncan has evidently failed to observe, and which disposes of the suggestion that the blocks were taken from different quarries, and of the theory that the Cross is of two different periods. The formation of the stone is chiefly silica cemented with oxide of iron ; the predominance of the latter occasions the blood-red stain described. Lime appears to be absent.

In comparison with the Cross, the piece of stone obtained at the quarry near the Ruthwell Railway Station is perceptibly darker in colour and also perhaps closer in texture ; but these

apparent differences are not greater than may be accounted for by the bleaching and wasting incident to the Cross through the long exposure to which it has been subjected. The Cross itself, apart from the red stain, varies in both respects, and partly at least through unequal weathering. The piece of stone before referred to is of the same formation as the Cross. Although bastard limestone occurs in the district, which was worked at one time, no evidence of lime is found in its composition, and it exhibits at one end a spot of the peculiar blood-red stain which marks so conspicuously one of the pieces of the Cross.

The facts stated are, I submit, fairly conclusive of the stone having been obtained from a local quarry ; and it follows that in all probability the Cross was sculptured and first set up in the vicinity where it stands.

It would be interesting could some clue be discovered regarding the author of so famous a monument. Professor Stephen's interpretation of words said to have been inscribed on the top stone is certainly suggestive in this connection—"Caedmon made me" is the rendering. According to the professor it applies to the runic inscriptions on the sides of the Cross ; but considering the ancient usage of inscribing the artist's name on such works, and the ordinary and natural signification of the words, it seems at least as likely to apply to the Cross itself.

In closing the paper I may be permitted a word of reference to the sculptures. They are artistically worked, and the treatment of the subjects appears to be well developed. On one side of the base, for instance, there has been a representation of the Crucifixion. It is greatly defaced, and in part quite obliterated. So far as decernible it shows, in the centre of the picture, a large cross with the crucified Christ, of which only the limbs remain. On one side may be traced, I think, indications of a smaller cross. At the foot of the cross were a group of figures. The moon or the sun shorn of its splendour appears in the firmament in allusion to the passage—"And when the sixth hour was come there was darkness over the whole land until the ninth hour." Heavy foulds of drapery frame the picture on either side, the inner edges converging at a point in the centre, and parting widely at top and bottom as if by violence, according with the Scriptures—"And the veil of the temple was rent in twain from the top to the bottom."

3. *The Roman Name for Birrens.*

By Dr Chinnock.

At the end of my paper on the Roman Roads in Britain I asked if anyone could explain the meaning of the Roman name for Birrens—*Blatum Bolgium*. After long search I find that the late Dr Edwin Guest (*Origines Celticae*) has suggested that it means the "Field or District of the Belgians." In the second Road given in the Antonine Itinerary, the three last stations are called Luguballia, Castra Exploratorum, and Blatum Bolgium. Camden, the first of British Antiquaries, identified *Luguballia* with Carlisle, and no one has since disputed the correctness of his decision. *Castra Exploratorum*, or the *Scouts' Camp*, was first identified with Netherby by Horsley, and this is now recognised to be correct. Since his time an inscription has been found at Netherby which speaks of a riding school for cavalry (*Equestris Exercitatoria*), an establishment peculiarly suitable for the Scouts' Camp. All competent authorities, British and foreign, now identify the last Station, *Blatum Bolgium*, with Middlebie or Birrens. About two miles from the site of the Roman Station is that of the strong British fortress called Birrenswark or Brunswark. *Bryn* is the Welsh for a *hill*. At Birrens several altars have been dug up dedicated by soldiers of the second cohort of the legion of the *Tungri*. This shows that the Roman Emperor stationed that legion at Birrens. The Tungri were a tribe of the Belgae, a nation which inhabited the country now known as the north of France and the kingdom of Belgium, from the Seine to the Rhine. The modern town of *Tongres* in Belgium derives its name from the Tungri. The *Belgae* were also sometimes called *Bolgae* or *Bulgae*. The name *Blatum Bolgium* was evidently derived from some native or British appellation which was adopted by the Romans. Now there are four dialects still extant of the old British or Celtic language—the Gaelic, the Irish, the Manx, and the Welsh. I consulted the Gaelic, the Welsh, and the Manx dictionaries at Dr Williams' library in Gordon Square, and at the library of University College, but there is no such word to be found with the appropriate meaning. In Gaelic there is the word *blat*, meaning a *flower*, but this will not answer our purpose. I went to the British Museum and consulted O'Reilly's Irish Dictionary, and there I found what I wanted. *Bla* means "a town, village,

place of residence, a green field." *Blar* means "a plain, a field" *Blath* means "a field." The Roman name *Blatum Bolgium* then means "the field or the town of the Bolgae or Belgae." The Roman emperors stationed a legion of their Belgian subjects there, consisting of the tribe of the Tungri and, maybe, other Belgians. The natives called the station the "*blath* or *blat* of the Belgians," and the Romans latinised the word into Blatum Bolgium, or the "Belgian Settlement."

20th April, 1900.

Mr James Barbour, V.P., in the Chair.

New Member.—Mr Alexander L. Davidson, Clarencefield.

Donations and Exchanges.—Transactions of the Cardiff Naturalists' Society; Proceedings of the Natural Science Association of Staten Island; Boletin del Instituto Geologics de Mexico, No. 13.

A paper on "The Artists of the Ruthwell Cross" was read by Mr A. L. Davidson.

18th May, 1900.

Mr Robert Murray, V.P., in the Chair.

New Members.—Miss Cresswell, Nunholm House; Mr James Laidlaw; Mr William Carswell.

Donations and Exchanges.—The Transactions of the Marlborough Natural History Society; Bennett's Contributions towards a Flora of Caithness.—III.

Communications.

The Vegetable Enemies of Mankind.

By Professor Scott-Elliot.

Dr Johnson defines an enemy as "a person who regards you with malevolence," and Daniel Webster as "a person actuated by unfriendly feelings, one who hates, wishes injury, or attempts to do injury." It is not in this sense that any plant can be said to be an enemy to mankind; but only in the sense that for the sake of its own protection or benefit in one way or another, it is

endowed with qualities which may be productive of injury to man or to other creatures that are useful to him.

The first example given by Professor Elliot is that of a fungus which infests the corn plant, living inside the leaf and stem, and with its delicate food-sucking threads bores among the live cells and absorbs food from them. This is said at times to have done immense damage to the corn fields of America and also in Cape Colony. When it is considered how large a part of the food supply which this country needs comes from America, it will be seen how much injury may be done to ourselves as well as to the States by crop failures occasioned by the prevalence of this destructive fungus and other plant diseases. The entire loss in that country from these causes has been estimated at 150,000,000 dollars annually. Then we have a large class of plants which are poisonous. The oleander, a lovely garden shrub, is one of these. All parts of it are poisonous. The cyclamen, one of the most beautiful of flowers, is another. The corms or fleshy bodies at the foot of the stem are of poisonous quality, although it is said when cooked they are no longer hurtful. The poor man's weather-glass, so called from its closing its petals in damp or wet weather, which produces bright-crimson or dark-blue specks of flowers in the stubble, is another example. The arum-maculatum, or wake-robin, is also poisonous—supposed to be so for its protection from pigs and wild boars, which are given to grubbing up and eating the underground creeping stem. The upas tree of Java (Antiaris toxicaria) was at one time the subject of much exaggeration by a Dutch surgeon, who described it as fatal to other plants or animals and birds in its neighbourhood or coming near it, but which, nevertheless, has a poisonous property residing in its bark which produces frightful irritation, and the juice of which is used as one of the ingredients of poisoned arrows. Other well-known poisonous plants are scabiosa succisa, or Devil's bit, which produces violent inflammation of the mouth and tongue; digitalis purpurea, or foxglove; aconite, strychnine, strophanthus seeds, Calabar bean, and Muavi bark. At the same time it is well known that some of our most valuable medicines are derived from these poisonous plants when administered in minute doses. The fungus which causes dry-rot in houses or ships, and sometimes works havoc in woods by attacking live timber trees, is a very destructive agent; but it has important uses also in its proper place, its design being to break up dead

logs and turn them into soil, which it accomplishes by boring into the wood, and so disorganising it that it becomes soft and powdery and falls rapidly into earth. Another and very large and important class of plants, which may in some sense be described as enemies of mankind, is the class of weeds, the number and adaptability and hardness of which, in the midst of all attempts to keep them down, is proverbial. The original curse upon man after the fall was—"Cursed is the ground for thy sake. Thorns also and thistles shall it bring forth unto thee." Some of them, like coltsfoot and bishopsweed, fight underground. The long, deep-buried roots and stems spread below the surface and steal a march upon their neighbours, and often go so deep as to be beyond the reach of the gardener's spade. In old days in Scotland the guil or gul (chrysanthemum segetum) used to be one of the most troublesome pests, so much so as to be made the subject of legislation– "Gift thy fermer put any guile into the land pertaining to the King or to ane Baron, and will not clenze the land, he sould be punished as a traitor, quha leads and convoys ane host of enemies."—Stat. Alex. II., c. 18 (Jamieson's Dictionary). It was said that this weed used to cover five times as much space as the corn in a cornfield. Unlike the weeds which spread beneath the surface, and have roots which send out fresh stems, the couch grass throws out long overground runners, which send out fresh roots and thus multiply the plant. These are more easily removed by the harrow or rake, or killed by ploughing deep into the soil. But the plant is by no means useless, affording, as it does, nourishing food to cattle.

There is another class of weeds, the seeds of which are endowed with properties which enable them to spread over a wide area, and to multiply their kind by taking root in places at a distance from the original plant which gave birth to them. Of this kind are those with delicate hairs or feathery projectors attached to them which are caught by the wind and sent flying away in different directions. The humble weeds of America are specimens of this kind, and among ourselves the dandelion and the thistle are familiar examples. Provision is thus made for bare spaces of ground, which man has left uncultivated, being speedily clothed with an abundant vegetation.

There are certain grasses which approach nearer to one's idea of a vegetable enemy than anything else. The

fruit ends in a long tail, which has the property of curling itself up when the air changes from moist to dry. The point of the fruit is hard and sharp, and when it falls or is blown upon a sheep's back the tail catches in the hairs of the wool, and by the corkscrew twisting which takes place the sharp point is forced into the skin of the sheep, and sets up inflammation, which often kills the animal. Examples of this kind are Stipa capillata, which is common in Russia. A North American species is Stipa spartea. Another is Aristida Hygrometrica in Queensland, and Heteropogon contortus in New Caledonia. The Harpagophyton or Harpy plant of South Africa is almost as bad, but with this difference, that its spiney fruits get into the mouths of grazing cattle and produce laceration, or into the hoofs of the puny buck or the antelope with a similar result. Other plants become a nuisance to mankind on account of their taking to the water and interfering with his navigation. Of these the Sudd of the Upper Nile is the best known. It is not one plant, but a malled and felled mass of many species, of which the Papyrus, Pistia, Stratiotes, &c., form a part. Steamers have their wheels choked, and even large and powerful ones are sometimes caught and kept helpless among the weeds. Another numerous class of plants which may be termed vegetable enemies are those which are possessed of stinging properties. The most familiar example of this kind is the common nettle (Urtica dirica), everywhere abundant, but particularly near human habitations, or on waste ground of their former sites. The stinging apparatus is a hair with a sharp point, which breaks off and pours the venom, purmic acid, into the skin. Notwithstanding this peculiarity it is a useful plant. Young tops of it are good as a vegetable for making soup. Pigs and fowls are fed on it. The seed yields a species of oil, and the whole plant is said to be a stimulant in paralysis. There are other species of the same genus, the stem of which is more severe than that of the common nettle. One of these is Urtica stimulans-Java, the smart of which lasts 24 hours, and even produces fever. Still worse is "Urtica Urentissima"—the Devil's leaf—of which the pain lasts 12 months, and sometimes proves fatal. A very lovely tree in Australia—"Laportea Miroidies"—has large and beautiful dark green leaves, twelve to fifteen inches long, which sting so severely as to be dangerous to horses. It is said that even the common fig leaf produces irritation. Probably the worst enemies of all to mankind are

certain associations of plants which cover vast stretches of ground, and are of no obvious use to anyone. No part of the world is free from enemies of the kind. Here we have the peat bog, Sphagnum. Another is the prickly pear in South Africa. In Queensland there are vast areas covered by the Brigalow Scrub, Acacia Narpaphylla. Even worse is the Spinifex—so-called—not the botanists' true Spinifex, which is a harmless and useful grass, used to bind and fix the drifting sand, but Triodia pungens et irritans. The stiff, hard, and spiny leaves make tracts of the country almost impassable, and indirectly have caused the death of many explorers. Another similar grass—Fertuca Alpestris—is a pest in the Southern Alps. In the first stages of man's progress the forest and swamp were his deadly enemies. Even now there are enormous areas of the world forest clad, especially in Africa. Our own country was once to a large extent in the same condition, but the remains of the Caledonian forest are too much altered by the progress of agriculture and the continual cutting down for firewood, and other useful purposes, to enable us to form any accurate idea of what the forest meant to our ancestors. Hence it is obvious that as man develops and multiplies, the forest or most of it, at least, must fall, just as it has fallen in Britain. Yet here we again come to the curious blend of good and evil. Without forest on the hills to hold, suck up, and restrain the rainfall, we should have on all the low grounds periods of destructive floods, varied by other periods of still more destructive drought, and for us who live in towns the glimpses of the woodland and wild nature are an absolute necessity. Morally and spiritually, as well as physically, it is necessary to go occasionally to the desert to recognise on what our life depends, to see the beauty which is so infinitely more satisfying than the strong structures of cities, and to sympathise with our relations beyond the seas.

A paper by Dr Chinnock on an "Origin of the Runic Alphabet" was read.

FIELD MEETINGS.

The first field meeting for the season took place on the 9th of June. The programme for the day was a drive from Castle-Douglas, embracing Threave Castle, the reputed site of an old Abbey near Glenlochar, Balmaghie Church, and Croft moat, but the state of the weather seriously curtailed it. The Dumfries party reached Castle-Douglas in a downpour of rain, where they were joined by Dr Reid, of Balmaghie, and Mr Imrie, architect, and drove at once to Abbeyyard, reputed to be the site of an old Abbey, and marked as such on an old Ordnance Survey map. No trace, however, now remains of such a building, if one ever existed. Crossing the Dee at Glenlochar Bridge, the party next proceeded to Balmaghie, where they inspected the church and churchyard, the former of which dates from 1794, and has recently been improved and enlarged, having a handsome pulpit of carved oak, and behind it a Rood screen of similar character, the gift of Mr Graham Hutchison of Balmaghie, who also presented two stained-glass windows flanking the pulpit; while at the opposite end is another beautiful three-light window, the gift of a brother. The church contains mural tablets commemorative of former ministers, the most noted of whom was the Rev. John M'Millan, founder of the modern Cameronian Church, whose incumbency of Balmaghie extended over 26 years, in the beginning of last century, during all but the first three of which he was maintained in the benefice by the parishioners in the face of a sentence of deposition by the Presbytery. The only remarkable thing about the churchyard is that it contains the tombs of three martyrs who suffered in the times of the persecution. The party were afterwards hospitably entertained in

the manse, and drove back to Castle-Douglas, constrained by the unfavourable weather conditions to forego the remainder of the projected round.

The only other field meeting held during the summer took place on the 30th June, when the Lochrutton Loch was visited. The primary object of this excursion was to make an examination of the crannog in the loch, and with this in view the party was accompanied by Dr Munro, of Edinburgh, the distinguished authority on lake dwellings, and the author of several works on this and other subjects of antiquarian interest. The crannog is on an artificial island near the west shore of the loch, now almost completely overgrown with vegetation and trees. Unfortunately, the water was too high to permit of proper investigation, but sufficient evidence was found of the fact that the island was the site of an ancient lake dwelling. After slight digging, a stone hammer-head and several pieces of glazed pottery were unearthed, while by a preliminary investigation in more favourable circumstances, conducted by Mr Barbour, architect, the crossing of two of the black oak beams composing the structure had been uncovered, and a hearth with charcoal and brushwood exposed. It was accordingly resolved to have a more thorough investigation at some subsequent period when, by the lowering of the water in the loch, the conditions were more favourable.

Account of the Excavations at Birrenswark, and description of the Plans and Sections.

By James Barbour, Architect, F.S.A. Scot. (Plates III.-VIII.)

[Extracted by permission from The Proceedings of the Society of Antiquaries of Scotland, Vol. XXXIII.]

Birrenswark Hill, in the parish of Hoddom, lies three miles north of the Roman station of Birrens, and ten as the crow flies from end of Hadrian's Wall, at Bowness, in Cumberland. Its base is about 700 feet above sea level, and the summit rises to an altitude of about 920 feet, the highest point reaching 939 (Plate IV.). The hill is isolated, its sides are steep and at places precipitous, and the summit is a nearly level plateau. Owing to the peculiarity of configuration and commanding position, it forms a conspicuous and remarkable feature of the landscape; and the summit affords extensive prospects of the country in all directions, the English hills, the Solway, Bowness, and Birrens being within view and a number of Scottish counties overlooked.

At a place like this it is not surprising that evidences should be found of military occupation; and the remains of artificial works of this description, grouped about the hill, are not less unique than the hill itself.

The remains, as will be seen by referring to the accompanying plan (Plate III.), consist of a number of works lying round the base of the hill, and of others on the hilltop Of the first are a large camp of rectangular type on the south side of the hill; another of similar character, but smaller, on the north side; remains of an entrenched roadway, AB, at the east end, for communication between these; a small fort, C, at the west end of the hill; and an enclosure, D, at the east end; also the minor adjuncts, E and F, on the plan.

The south camp contains a small rectangular redoubt, G, at the north-east corner, and a circular work, H, at the west end.

A circumvallation likewise extended apparently round the base of the hill on the east and south, one end joining the north camp, and the other the west fort. It is yet continuous from the north camp to the east enclosure; between the east enclosure and the south camp, where the site is partly under cultivation, only a fragment, K, is left; west of the south camp the line is again traceable some way, L, and at its junction with the west fort. These, together with the north and south camps, would

embrace two-thirds of the circuit of the hill. Over the remaining one-third there is no trace of entrenchment, and such would hardly be required. The hill there is skirted by land still marshy, although elaborately drained, which would, there is little doubt, be impassable formerly, and the ascent which starts out of it is steep and difficult to climb. In this way the marsh and artificial works together would entirely circumvallate the hill.

In the middle of these works rises the elliptical truncated cone of the hill, the top of which is a large fort, shaped after the outline of the plateau. The west end of the fort is cut off by a transverse rampart so as to form a pear-shaped enclosure, M, within which, towards the west, is a small fortlet, N.

It is a circumstance to be noted that the three larger works are each environed with fortifications provided with gateways on the several sides, and are independently complete and defensible.

With the view of throwing light on vestiges so extensive and apparently important, the Council of the Society of Antiquaries resolved to institute exploratory excavations, and accordingly operations were begun on 20th June last. Three workmen were employed, and sometimes four, under the superintendence of Mr Alexander Mackie, as Clerk of Works; and after three months' labour the investigation had been carried through and was brought to a close.

Obviously, in this case, the excavations must bear an exceedingly small proportion compared with the extent of the surfaces presented for examination. The south camp covers over 13 acres; the area of the north camp is nearly 8 acres; the hilltop fort measures 17 acres; and the total area within the circumvallation would extend to not less than 100 acres. The ground actually turned over in the course of carrying out the exploratory operations, on the other hand, little exceeds an acre in extent. One inference to be drawn is, that the seemingly rather sparse collection of relics recovered must be multiplied many times to represent the volume of objects probably scattered over the unopened ground.

The excavations were directed chiefly to testing the accuracy of General Roy's plan and of the Ordnance map; ascertaining the character and structure of the ditches, ramparts, and gateways; and examining the interior areas for vestiges of work, and for evidences of occupation. The relation the several works bear one to another was also kept in view.

The following operations were conducted:—Sections were made through the entrenchments at a number of places; several of the gateways were excavated, and trenches were cut longitudinally and across the interiors of the enclosures. The interior of the redoubt in the north-east corner of the south camp was wholly uncovered of earth, and in the centre of the camp a considerable extent of ground was opened in making search for a prætorium.

In proceeding to examine the several works in detail, according to the evidence afforded by the exploratory excavations, the nature of the site may be first alluded to. According to the Ordnance Geological Map the rock formation at the base and sides of the hill is Old Red Sandstone, and at the plateau top it is porphyrite. While at the hilltop the rock is harder, it also lies for the most part at the surface or nearly so, and the depth of soil increases gradually lower down. It is suggested that the formation described and other conditions to be noticed in due course may have imposed some of the irregularities of the plan, and variations in the design of entrenchment, which the encampments exhibit; and the constructive methods discovered, wherein stone is largely applied, were probably influenced through the abundance of such material to be readily got by quarrying on the spot.

The South Camp.

This camp, apparently the most important of those at the foot of the hill, lies at its south base. Its surface is slightly undulatory, and steeper at some places towards the north, and according to section X.Y. (Plate IV.) the altitude rises about 70 feet between one side and the other.

The Ground Plan (Plate III.).—The outline of the ground plan may be described as a distorted rectangle, having the sides approximately rectilinear. Some of the divergences from geometrical form of outline exhibited seem, as before suggested, to have resulted from practical considerations, as, for instance, at the south and east sides, where the rampart follows an abrupt elevation of the ground. The south line is straight but for a slight deflection northwards at the west end, and the east side runs in an even course up to its junction with the redoubt; the angle, however, at the south-east corner of the camp is acute. The north boundary, so far as the line lies between the two out-

most gateways, is also straight, but beyond these points it deflects southwards, slightly to the west, and markedly towards the east. The west defence is pushed forward at the centre, forming a knee, from which on either sids it runs in a straight line to join the north-west and south-west corners of the camp respectively; and the deflection is just sufficient to admit the small circular work, H, within the camp without impinging on the rectangle of the area, as it might be defined by a straight line drawn from the extremities at the rear of the rampart. That this is not accidental is further evidenced by the way in which the circular work fits in with the side of the street and with the rampart, which shows a perceptible shoulder concentric with its circumference. All the corners of the camp are rounded.

The dimensions over all, including the redoubt, are:—On the south, 900 feet; on the north, 850 feet; on the east, 600 feet; and on the west, 700 feet; average length, taking into account the forward bend at the west, 900 feet; and width, 670 feet. The interior length extends approximately to 840 feet, and the width to 580 feet.

Three entrances give access to the camp from the north, the centre one being about 50 feet wide, the others 35 feet. Each is guarded by a quasi-circular mound or tower, about 60 feet in diameter at the base. These mounds are known locally as "The Three Brethren." The interspaces, it should be noticed, are equal, evidencing that the work was not set out without line and measure. Central gateways occur also at the south, the east, and the west, each guarded by a traverse, but of oval form.

The redoubt, G (see fig. 8), is rectangular, with rounded corners; and an unprotected gateway at the south gives entrance to it from within the camp. The interior dimensions are:—from north to south about 100 feet, and 70 feet from east to west. The work shows a want of aligment with the camp, which, together with other indications of severance, suggests a possible difference of epoch in relation to the main work.

Within the redoubt again is a small square enclosure, lying diagonally in the centre. It measures about 30 feet each way, and the likelihood seems to be that it was superimposed on the original work at a subsequent period. Unlike the redoubt itself and the camp, it is disposed with true orientation.

The small circular work, H, at the west end of the camp

measures 80 feet in diameter, and shows an entrance about 10 feet wide towards the south.

The streets do not remain so definitely marked, except at the gateways, as to allow of the lines being traced with certainty on the plan. Doubtless they would traverse the camp from east to west and from north to south, in connection with the entrances, and there might be others.

It now only remains in connection with the plan to notice the water supply. The supply is derived from a fine spring known as "Agricola's Well," which rises about midway between the east and the west, and towards the north side of the camp. As a rill it flows in a small and slightly wimpling ravine southwards, and escapes through the south rampart at a point a few feet west of the south gate. Before reaching the rampart, however, it passes through a circular basin of some size, artificially made.

The Defences.—The enceinte of the camp is of the common single ditch and rampart type. The ditch is V-shaped, with steep scarp and counterscarp, and at the north side of the camp, where the earth is of less depth, it dips at the bottom into the rock, or debris of rock, 2 feet or more (Plate V. fig. 1).

The rampart is earth-built and in layers. At the base is a bed of finer earth, about 9 inches thick, probably the original soil on the site with that from the area of the ditch added; over this a bed of clay, $1\frac{1}{2}$ to $3\frac{1}{2}$ inches thick, occurs, and above the clay the mound is carried up and brought to its full height with earth and debris, which increases in roundness of grain as it nears the crown, as if applied in the order it was cast from the ditch. Remains, but scanty, of brushwood bonding occur in the earth composing the rampart, and at two places charcoal was found at the base in some quantity.

Probably, as already suggested, the abundance of stone obtainable on the spot may have induced the builders to adopt methods not previously met with in the Society's excavations of insuring for their work the qualities of strength and endurance. Thus the front of the rampart, from the natural ground surface, or lower, upwards to the crest, was found to be faced with a pitching of stone (Plate V. fig. 1); and the ditch, at the north side of the camp at least, is also lipped with stones, and partially so faced on the counterscarp. The pitching of the rampart varies in the quality of material and workmanship, as if skilled and less

skilled workmen were employed, and it is also more disturbed at some places than others. Where in best form and most perfect, the stones, which are flattish and unshaped, do not lie level on the bed, but slope, so that the lower edge of one overlaps the upper edge of another somewhat after the manner of slates on a roof.

At the rear of the rampart, where the ground was opened, a pavement, about 5 feet wide, was usually found, but at one point kerbing takes its place. Generally the pavement is of heavy material and good workmanship, but, as in the case of the pitching, the quality varies.

Allowing for diversities of the kind alluded to, these ramparts exhibit, so far as opened, uniformity of structural detail. The turf was removed at one or more places on each of the several sides of the camp, and in every case stone pitching was disclosed. The sections cut in the rampart at the north side, and a partial cutting at the south, showed lamination similar in each case, but it was not observed at the west side.

In addition to the stone-work before described, a piece of an exceptional kind occurs. Four feet below the crest of the rampart, at the north side of the camp, there is a single stone, measuring $4\frac{1}{2}$ feet by $2\frac{1}{2}$ feet and 5 inches thick, as from the quarry, lying flat (Plate V. fig. 1). It is pierced with six holes under an inch in diameter, and running in a long slanting direction, in which were pieces of charcoal. The holes are apparently natural.

The fortifications of the redoubt at the north-east corner of the camp are of a different type, and consist of a ditch and double rampart (figs. 2, 3, 4), half the earth got from the ditch having been cast inwards and the other half outwards. There is a structural difference also, in so far as the stone pitching is absent. On the other hand, remains of lamination and brushwood, as previously described, are disclosed in both the front and rear ramparts.

Under the inner rampart of the redoubt, at the north (Plate V. fig. 4), is a layer of stones corresponding with those discovered in similar positions at Birrens and Ardoch. It measures 8 feet in breadth in the direction of crossing the rampart, but how far it extends lengthwise was not ascertained. It is of excellent workmanship, and remains in perfect order. The stones are well fitted, and bedded and cemented together with worked clay.

There is also a layer of very thin stones at the base of the outer rampart, which is not indicated on the drawings.

The counterscarp of the ditch between the ramparts at the same point shows a kerbing at the lip of stones two courses high, and lower down there are three courses, the faces of which are splayed to suit the slope. The stones are bedded and jointed with clay.

The most important piece of masonry, however, in this connection consists of two parallel walls crossing the centre of the north rampart of the redoubt (Plate VI. fig. 5). The walls flank a passage, 4 feet 8 inches wide, which is floored with a hard substance, like concrete. Each wall is 3 feet in thickness, and the remains rise at the highest point to 3 feet and extend 24 feet in length. The length northwards is complete, but at the south, where there is a collection of stone debris, the ends are broken off and imperfect. The walls are fairly built, and towards the passage the faces are finished with greater care. The position this structure occupies in the rampart and its passage-like form seem to mark it as a gateway originally, closed by subsequent alterations.

In regard to the dimensions of the fortifications described, those of the camp are larger at the north than elsewhere, partly resulting from the rearward fall of the site, but doubtless also of design, in order to equalise and adapt the defences in view of the opposing higher ground. The width on that side varies from 42 to 58 feet over all, but on the other sides, where the rampart is reared on a natural bank or on rising ground, it is contracted to from 30 to 35 feet. The double rampart of the redoubt and the intervening ditch together measure 48 feet across.

The ditch of the redoubt is much silted up, but the ramparts do not seem to be materially disturbed. The camp ditch is correspondingly silted, but the rampart, although disturbed more or less, continues for the most part in comparatively good form, and at the section (Plate V. fig. 1) it is apparently perfect, or nearly so, as the stone pitching of the face remains in order up to the crown.

The Gateways.—The east gateway of the camp was first examined, and the work consisted in excavating the traverse ditch and clearing away the earth from the rearward area. As disclosed, the entrance measures about 40 feet in width, and the roadway passing into the interior without depression at the

ditch or rise at the rampart, has been surfaced with pavement of heavy stones (Plate VI. fig. 6), of which about one-half remain on the ground, but in a disturbed state. The oval traverse, measuring about 50 feet in length and rising 9 feet above the bottom of the ditch and 3 feet above the paved roadway, remains apparently of the height it was originally. It is pitched all round, like the front of the rampart of the camp, with flat stones; and the well-formed V-shaped ditch fronting and flanking the traverse, 7 feet in depth below the ground surface outside, is also partially faced in the same way.

The gateways at the west end and the south side of the camp are of similar design, and the partial clearing of the earth from the west one disclosed a roadway surfaced with pavement.

The three gateways of the north side of the camp, as previously stated, differ from those just described in so far as the protecting mounds are circular and of larger dimensions, being so designed, it is presumed, in order to adapt them to the particular circumstances of the situation.

With a view to investigate the centre one, the roadway and half the traverse ditch were cleared, and a section was carried from the south side half-way through the mound (Plate VI. fig. 7). The roadway, like those at the east and west, had been surfaced with pavement, of which, however, only a fragment remains. The traverse, or tower, which is built over a rough pavement, exhibits nothing special in the disposition of the earth composing it, but, like the oval traverses, it is stone pitched all round, and seems to be of the full original height. The ditch, which dips 2 feet into the rock, is also partially stone-faced. The mound rises 12 feet above the surface of the gateway, 10½ above the bottom of the traverse ditch, and about 2 above the surface at the outside of the ditch.

Of the two others, the east one was excavated, and discovered to be similar to that just described, and the one on the west, so far as appears, also corresponds.

The Interior of the Camp, as disclosed by the excavations, appears to have been widely surfaced with pavements. The pieces, however, are in such a disturbed and imperfect state as to preclude inference regarding their purpose or meaning. Remains of stone-work exist also all along the margins of the rivulet; the circular basin near the south of the camp, through which the water flows, is stone-faced in thin receding courses,

and there are stone remains adjacent to where the rivulet passes through the rampart. But the most important vestiges of this description were discovered in the centre of the camp, and consist of walling, pavement, and debris, evidently of large and important buildings, &c. (S). The traces were followed 180 feet in length from north to south, but both ends were broken off, and no idea of what the full length or the width might be could be obtained. A part of the front wall, which is sufficiently well defined, measures 2½ feet in thickness, and 30 feet backwards is another marking of a wall of similar thickness. The remains lie on the east side of the main cross street, and 30 feet back from its centre; they block the main longitudinal street, and while not parallel with the former, the front lies at right angles with the latter. The position is very similar to that of the Prætorium at Birrens.

At the centre of the main cross street, and opposite the south end of the remains just described, there is a small fragment of stone-work (T) disposed as a segment of a circle, and measuring about 12 inches in thickness. It is mentioned in relation to another fragment of similar form in the redoubt to be presently noticed.

The interior of the redoubt (fig. 8) showed patches of pavement and a good deal of stone debris, as if the whole area had been so floored; possibly other purposes also may have been served. Two drains disclosed should be noticed as resembling in construction one found within the hill-fort. One starts at the north of the area and runs eastward a short way, and then southwards at the rear of the east rampart; and the other, starting at the same point, with a space of 18 inches of uncut earth between them, runs north-west, and falls into the ditch between the ramparts. The depth is about 4 feet, and the trench is filled with angular quarried stones of good size tumbled in. Towards the west of the area there is a group of four post-holes and the piece of stone-work of segmental form before alluded to, and at the north-east corner is another group of three post-holes. The holes are not sufficiently numerous to define the form of enclosure the posts may have served to support; but so far as they lend themselves in that direction, a circular plan 17 feet in diameter would best fit in with their disposition. The circumference of such a circle applied to the first group would describe the outer curve of the segment of stone-work, pass through three

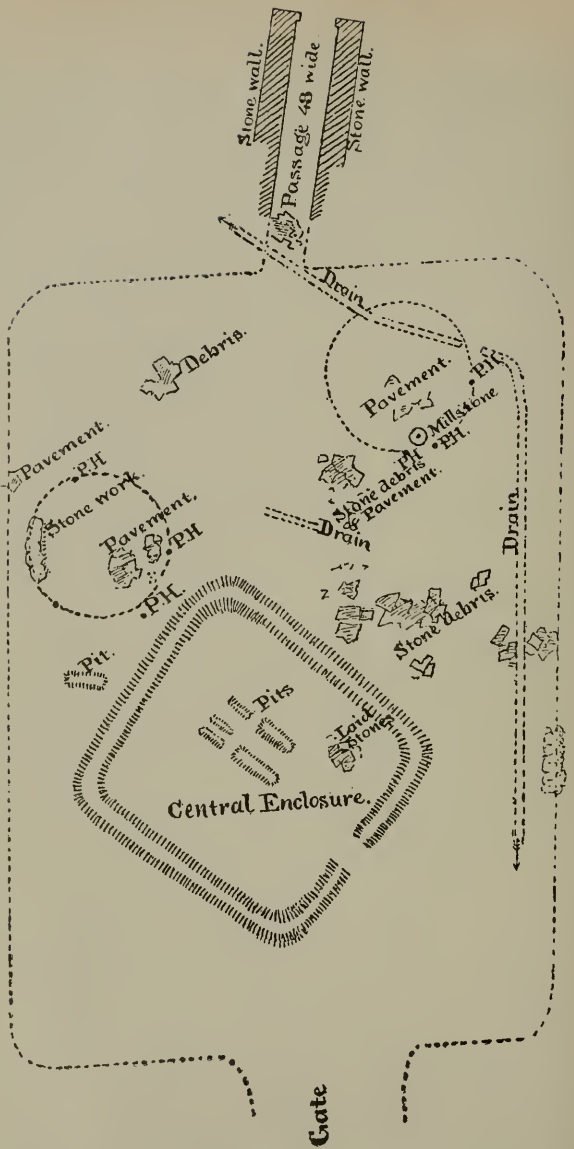

Figure 8—Interior of Redoubt.

of the holes, and leave the fourth outside at a distance of 1 foot, and applied to the last group the circle would pass through all the three post-holes. Within the area of the latter circle a granite under-millstone lies, apparently *in situ*, and near it are fragments as of the upper stone.

It remains in connection with the redoubt to notice a group of small pits, six in number; five are within the central enclosure, and one is outside. Of those within, two lie side by side with an interspace of 2 feet, and measure 5 feet 6 inches by 2 feet 3 inches, and 7 feet by 2 feet 3 inches respectively; the remaining three, which measure about 3 feet 6 inches by 1 foot 6 inches, lie immediately west of the two first, and are all disposed lengthwise, due east and west. The one outside the enclosure is similar to the two first described, but shows a little departure from the orientation. The pits, which are about 3 feet 6 inches deep, were filled with soft sandy earth sufficiently distinct from the surrounding till, and in one was a quantity of quarried stones.

The small circular enclosure (H) within the west end of the camp, when examined by cross-trenches, showed a hollowed and saucer-like interior, the deepest part of which reached the rock and appeared slightly sunk into it. A small mound of earth, dressed roughly on the face and rear with stones, surrounds the hollow, rising a little above the outside surface mostly, but at the north it is sunk so that the top falls below the level of the camp floor.

In closing the description of this camp, one or two of the more outstanding characteristics it exhibits may be recalled. In tracing out the ground plan, it seems to have been the design of the builders to utilise whatever advantages the site might afford with a view to securing the greatest strength at the least expenditure of labour, although involving some irregularity of outline. The defences, also, are varied in form and dimensions, and otherwise adjusted according to the particular circumstances obtaining at the several parts of the camp. At the north, where the opposing ground is high, they are larger than elsewhere, and the gate defences appear to be designed specially to meet the requirements of the situation. It is a characteristic that both scarp and counterscarp are very steep; and in order apparently to sustain the built-up earth in such form, a pitching of stones is

applied to the former, and partially, to the extent presumably found requisite, to the latter also.

The entrances are skilfully designed, so that approach to the interior can be had only through narrow openings on either side, flanked right and left by the rampart and the traverse; and the traverses, while rising but little above the opposing ground, together with the formidable ditches, seem effective barriers.

In regard to the degree of permanency characterising the camp, it has hitherto been classed as a temporary one. The structural details of the fortifications, as before described, do not, however, afford any support for this, but for the contrary view, and the large central buildings and extensive heavy pavements of the interior evidence intended occupation more or less prolonged.

Coming to the evidence of occupation, which is not plentiful, regard must be had to the very small proportion of the area examined, and to the probable disappearance of much in former times. At a point in the interior, opposite the buildings and on the other side of the rivulet, the earth showed abundant traces of charcoal, and more limited traces of it were met with at several other places. A millstone has already been mentioned as lying in the redoubt, where several small fragments of grey pottery, the bottom of a bronze vessel, a whetstone, a piece of slag, and a considerable quantity of iron in shapeless pieces, one of them attached to remains of an oak plant, were also recovered, as were likewise two stone balls, one of them in the east trench, and several leaden sling-bolts. Within the camp were recovered a number of these sling-bolts, ten in one group, others singly, one from the counterscarp of the north ditch, a number of stone balls, singly, an iron spear-head and fragments of another weapon, an iron axe-head and part of another, quantities of shapeless iron, slag, a bronze ring, half of a small stone disc, a bead, a worked flint flake, and a fragment of red pottery, horseshoe of iron, several whetstones, leaden whorl, and two fragments of glass or paste, probably bracelets. The relics will be more particularly described by Dr Anderson.

There has doubtless been occupation, but any idea of the probable duration cannot be inferred. The impression formed on the evidence revealed by the excavations is that a period which might be described as temporary would hardly satisfy the conditions; and there does not, on the other hand, seem to be any

reason requiring the conclusion that the occupation was not of extended duration.

The North Camp.

This camp, which lies at the north base of the hill, opposite and out of view of the south one, is partially destroyed, the entrenchments on the north and west sides being almost obliterated. On the south and east, however, they remain in good form, and short returns at the north and west serve to define the lengths of the sides. With the aid of these returns and the marks of the destroyed works remaining, the plan of the camp has been followed (Plate III.). While fairly rectangular, it presents several peculiarities. The line of the north side, starting from the north-east corner, runs westwards nearly halfway, where there is a southward set-off, diminishing the width of the westward area, and giving the appearance of two camps of ordinary proportions but different widths conjoined. The south side also shows a curious inward bend in connection with the west gateway there, which is also peculiar. From the southwest corner the line runs straight but with an inward slant until it reaches the gate, on the opposite side of which there is a corresponding slant, so that the gate recedes rearward, and the divergence is just sufficient to provide for the projection of the traverse, which in this instance is attached to the rampart.

The site has a slight inclination northwards, and part of the north side follows a natural bank, on which the rampart has been built.

The dimensions over all are: length, 1000 feet; width of east portion, 400 feet; and of west part, 300 feet.

There are six gateways, one at the east and west respectively, and two at each side.

The entrenchments unaccountably differ in type, for whereas the single ditch and rampart prevails on the south, east, and west sides, the double rampart with intervening ditch is found on the north.

Generally the works exhibit constructive methods similar to those described as prevailing at the south camp, but they are not always well marked. The layers of finer earth and clay found in the base of the rampart of the south camp were here well marked in one section (Plate VI. fig. 9). The stone pitching of the front, however, is not generally well defined, which may be accounted

for by the circumstance that a great part of the ditch is cut in hard splintry rock, which seems to have been applied partially as a substitute. One section was exceptional (Plate VI. fig. 10). At the rear of the ditch is a narrow berm, and a perpendicular facing of well-built stone-work about 18 inches high, behind which is the earthen rampart.

The rampart of the north side where it is double (Plate V. fig. 11), like that of corresponding form at the redoubt of the south camp, gives no indication of stone pitching on the front.

A pavement similar to that disclosed at the rear of the rampart in the south camp was found here also.

The gateways are all sufficiently distinct, but in the case of the west one on the north side no mark of the traverse remains.

As already stated, the west gateway (Plate III.) on the south side is peculiar. The rampart is pushed rearwards upon the camp, so that the gate stands at the apex of a broad but shallow triangular recess, and the traverse, instead of being as usual a separate mound with a passage on either side, is formed by turning the end of the rampart on the east side of the gate southwards, and swelling it into a beak-like shape with an elevated centre. There is an entrance on the west side of the traverse only. The gateway had a surfacing of gravel over a heavy stone pavement, partly wanting, below which was another pavement of stone-work of some kind. The lower part of the traverse ditch has been quarried out of very hard rock, the northward projection of which may possibly account for the rearward divergence of the entrenchments. Several large detached blocks of stone remain in the ditch.

The other gateways, which appear all to be of one design, have projecting oval traverses similar to those of the east, west, and south gates of the south camp.

In the interior of the camp were discovered at several places pavements, but nothing of definite form.

Apparently, the source of water supply has been a small stream which runs northwards through the camp. It rises under a perpendicular cliff of rock at the north side of the higher part of the hill.

A stone ball and two pieces of iron were recovered at this camp. The excavations in the interior were very limited, and so far little evidence of occupation was discovered.

The Fort at the west base of the hill (C, Plate III.) is peculiar in regard to shape and some other circumstances. The plan, which is inaccurately represented by Roy, and imperfectly at least on the Ordnance Map, is triangular, the base being at the south and rectilinear, but with a knee towards the west end, while the sides are unequal and show an outward curve. The enclosing defences consist of double ramparts and an intervening ditch (Plate VII. figs. 12 and 13), identical in type with those of the redoubt of the south camp and the north side of the north camp, and corresponding also in structure with the former. The interior area is hollowed out so that the floor in the centre is lower than the ground outside, and at the rear of the rampart it is paved or laid with stones, the work being carried some way up the rampart. An opening through the ramparts, towards the east, shown on Roy's plan as an entrance, was examined, but the result was inconclusive.

At the west corner there is a narrow opening in the inner rampart, giving access from the interior of the fort to the ditch; and by passing through and following the ditch a few feet southwards, an opening is reached on the right hand which leads into a narrow passage running westwards a distance of 20 yards. It is 4 feet wide, and the outer ramparts of the camp are carried along it, one on either side. The floor is laid with stones, one of which showed a small cut-out water channel. This seems to have been the entrance.

The finds recovered here—a broken quern and a piece of bracelet of opaque glass—were of the same character as those found in the other camps.

The Enclosure at the east base of the hill (D, Plate III.) is divided into two compartments, and there is an entrance from the south. The shape is not correctly represented either on Roy's plan or the Ordnance map. The enclosing and dividing mound, composed of a mixture of earth and rock debris dug out of the interior, which, as regards the west division, is hollowed out, measures 12 feet across and 2 feet in height. There is no ditch. The west part exhibits no artificial flooring, but the east division, which is on a higher level, is floored with flat stones of irregular shape, well fitted together. The back of this enclosure rests on a natural bank.

THE CIRCUMVALLATION.

Between the north-east corner of the north camp and the east enclosure, D, the line as indicated on Roy's plan remains well marked. There is a ditch in front with a rampart in the rear, built on rising ground. At a section made through the rampart (Plate VIII. fig. 14), a small fragment of moulded and colour-decorated glass, being probably part of a bracelet, was recovered in the earth at the base. A little south of the east enclosure another fragment of the work, K, also shown on Roy's plan, is still distinguishable. It stands on a height, and the interspace, which is a hollow, is so commanded by the works on either side as to suggest that it may have served as an entrance to the fort tress. The continuation of the circumvallation L, from the wes-end of the south camp towards the west fort, as indicated by a single line on Roy's plan, is also traceable on the ground. The branch ends of the rampart remain, one joining the south camp and the other the west fort, and perceptible lines indicate its prolongation from the south camp some way westwards. A section showed a slight mound outside the ditch and higher ground inside, as if this part had been of the double rampart and intervening ditch type.

Referring to the small rectangular work of three apartments, E, at the east end of the hill, shown on Roy's plan, these and several other similar works (not marked on the plan) were examined, but without result, and it is impossible to say whether they were part of the military works or not. One lies near the south-west corner of the south camp, a group of three of large size are situated some distance south of the same camp, and one of curious design is placed between the west fort and the "Roman Road."

Outside the south-east corner of the north camp is another small work, F. It is circular and about 45 feet in diameter. The interior has been hollowed out, and the earth and rock-shivers therefrom used in building a small enclosing mound about 12 feet wide and 2 feet high.

Roy's plan shows traces of a work, B, starting from the south-east corner of the north camp and extending southwards along the east end of the hill, and after an interval a fragment of a mound, A. The first is discernible, but with difficulty; the second, which remains in good form, was examined and found to be the protecting rampart on the east side of a road which has

evidently joined the south and north camps (Plate VIII. fig. 15). The roadway, which is 10 feet wide and surfaced with flat stones laid as pavement, is cut out of the slope of the hillside, and between it and the rampart is a ditch, the only one in connection with the work; a sandstone ball was recovered from the ditch.

An ancient road passes a few yards south of the west fort, running west and north-west, as indicated on the Ordnance Map. It is known as the "Roman Road." Its surface was exposed at six different places, disclosing stone pavement composed of flat laid quarried stones, but the work was more or less disturbed. At one point the trimmed edging remained, of which, however, the stones were not materially larger than those in the body of the work. The best preserved part showed a roadway about 10 feet wide, with a hollowed continuation or water channel along the side next the hill, 2 feet wide. The work is fairly similar to the pavements within the camps and with the piece of roadway at the east end of the hill before described.

Another piece of road, Q, R, also paved and apparently branching from the last, runs in an easterly direction along the north side of the west fort, and touching the end of its narrow entrance. Marks, not very clear for some way, but distinct further on, can be traced of its continuation to the south-west shoulder of the hill, where it passes by a clearly-marked track round to the main gateway on the south side of the hill fort.

Two conclusions may be suggested as following on the circumstances described. The shape of the west fort may be consequent on its position in the angle between the two roads; and its purpose probably was to serve as a guard-room for the entrance to the fortress, which here apparently branched off the "Roman Road."

Hill Fort.

The hill fort (Plate III.) occupies the whole plateau, measuring from east to west about 1700 feet, and from north to south 700 feet at the west part; while the east part, owing to an abrupt contraction near the middle, is reduced to about 400 feet in breadth. At the point where the contraction is, a depression of the surface crosses the plateau, and another slight hollow occurs near the middle of the east part. The outline is sinuous; in particular, a recess marks the north side at the point where the contraction of the width occurs. One not so deep lies opposite

on the south side, and there are two others on the same side further east, the interspaces being about equal. The sides of the hill are everywhere steep near the top, and at several places the face is perpendicular. A stretch of precipitous rock margin, known as "The Fairy Craig," occurs at the east end of the hill, another at the north side near the point of contraction of width, and at the west end also there is a good deal of rock falling abruptly from the crest. The ascent to the plateau is easiest on the south side.

The Defences.—The plateau is entirely encircled with an artificial rampart, which follows the sinuosities of the crest; and on the south side, where the ascent is not so steep, there is a second line, in front of the first, which also follows the windings of the ground, maintaining, except at the gateway returns, an approximately uniform difference of level, but not an equal distance from the first.

In addition to the encircling ramparts, a mound (O, Plate III.) is built over the crest of the natural bank on the west side of the surface depression before mentioned, dividing off the broader part of the camp at the west end into a separate fort, within which, at the west side, is a small heart-shaped fortlet, N; and at the eastmost recess of the south side, where the slight hollow is, an artificial work, P, crosses the hill in nearly a straight line.

Four gateways afford entrance to the plateau, situated, respectively, one at the west end, one in the recess on the north side, one in the middle recess, and another in the west recess on the south side. The east recess on the south side, although now crossed by the rampart, had probably been a gateway also.

The encircling and outward ramparts do not in this case stand up materially above the surface in the rear (Plate VII. figs. 16, 17), and to the ordinary observer are not very apparent; but the slight elevation, greener tint, and protruding stones sufficiently mark the position. The encircling rampart may be described as a trimming of the crest of the hill, the artificial work being generally 30 feet wide at the base and 4 feet high in the centre, and the scarp dies into the slope of the hillside. There is no ditch, which is the main differentiating feature of the hilltop defences. Possibly this circumstance is consequent on the builders' methods, but more probably it was compelled by the nature of the site, with its steep scarp and rock structure. The most outstanding characteristic these ramparts present is the

stone pitching of the front. While absent, or partially, at one or two places, it has doubtless been constant, both in the case of the encircling rampart and the outer one on the south side of the hill. The best sections show the work in very complete form, and continuous from the base to the crown. The ramparts here, while not so steep on the front as those of the camps below, equal in this respect the mounds at Birrens. A number of sections made at intervals revealed the inner structure of the mounds. At the east recess of the south side of the hill, the core was found to consist of large stones heaped together. At other two places it was formed of heaps of earth and stone intermixed. These conditions, however, were probably accidents or disturbances, as the other sections all exhibited earth structure; and in one section a peculiar description of bonding occurs, which seems to evidence tenacity on the part of the builders to this mode of treatment, whatever the material at command for the purpose might be. It consists of a row of roundish flat stones, very regularly disposed in a straight line from side to side, and with narrow interspaces, about half-way up the mound (Plate VII. fig. 17).

The mound separating the east and west parts of the plateau is built of earth over a ridge of rock, and shows no intermixture with or covering of stone. It is not more than 2 feet high above the rock.

The gateways are no less interesting than the defences just described. Differing, and necessarily, from those below, they are not less skilfully arranged. Traverses are wanting, but advantage is taken of the recesses in the sides of the hill in which to lay out the approaches so that they are dominated and flanked by the returning ramparts on either side.

Of the west gateway, which is a little recessed, nothing remains but broken pavement. Leading from it is a narrow path, 4 feet wide near the gate, and 3½ feet further away, formed by cutting out the hard rock a depth of 2 feet. It passes west and southwards, round a steep escarpment of rock, on which the enceinte returns.

The north gateway is situated in a deep recess of some width, which is flanked by precipitous ramparted heights on either side. In this case, also, only disturbed pavement marks the structure, and on one side is a fragment of a drain 12 feet in length, with a

channel 12 inches square, sides of stone, and covers of whinstone averaging 30 inches long, well fitted together.

In the historical part of the paper, Dr Christison shows that a well, situated on the north side of the hill, has been described as having been fortified. A spring rises at the base of the precipitous rock-face, a little way east of the north gate, and a piece of rampart, earth-built and stone-faced as before, remains, leading from the gate in the direction of the spring, which was probably the source from which the supply of water for the fort was obtained, as nothing of the kind has been discovered on the hilltop. The runner passing through the middle of the north camp is fed from the same spring.

Of the two south gateways, the east one (Plate VIII. fig. 18), which stands behind a small gorge, shows an oblong pavement floor, trimmed on the straight edges, and measuring 15½ feet rearwards by 9½ feet across, constructed of flat unhewn stones embedded in clay. At the south end marks of walling 2½ feet thick and a square outline are visible, and seem to indicate that the gateway was a stone-built superstructure. The approach is by a narrow way in the bottom of the gorge, which for a length of 20 yards is covered with large stones, very unevenly disposed, as if either they had been much disturbed, or were so arranged with a view to impede progress towards the gate; and it is defended by the double line of rampart returning on either side, coalescing at the gate, and maintaining a higher level, and so commanding and flanking the approach.

The remaining gateway (Plate VIII. fig. 19), being the west one on the south side, was probably the main entrance. The approach is of greater width than the others, the gradient is easier and more uniform, and the roadway is better formed. The roadway is partly cut in the rock, which is dressed to form the surface, depressions being made up with pavement. It curves from the west, northwards, round the east side of a steep escarpment, on the top of which the outer rampart of the fort returns, flanking the entrance on that side. There being no natural flanking on the other side, the builders have supplied artificial defences, consisting of a double tapering mound, carried alongside the roadway. The gateway stands in line with the encircling rampart of the fort, which in this instance has no returning bend. It shows stone foundations consisting of stumps of flanking walls in front of the gate; a threshold, with a

scuntion on one side and broken walling on the other, from which the opening would seem to be about 4 feet in width; an interior space measuring 3 feet 6 inches rearwards by 6 feet across, marked with fragments of enclosing walls and paved with flat stones. The remains indicate that this gate also was probably a stone-built structure.

The Interior.—The dividing rampart has already been described and the line of artificial work crossing from south to north near the east end has also been mentioned. The latter shows a rounded surface like a roadway, the crown 9 inches higher than the sides, but of soft earth. Under or alongside is a drain of good depth, constructed similar to those found in the redoubt of the south camp, previously described.

In regard to the small west fortlet (N, Plate III.), when carefully surveyed, the plan is found to be symmetrical, and resembles a horseshoe, pointed at the north, and with a base at the south composed of two straight lines, which retire towards the centre and from a re-entering angle (Plate III). No apparent reason for this peculiar shape has been discovered, and it seems as if it were simply fanciful. The extreme length over all from north to south is about 130 feet, and the greatest width is equal to the length. The enclosing mound, measuring about 12 feet across and 3 feet 6 inches in height, exhibits exceptional modes of construction (Plate VIII. figs. 20, 21). On either side is a face wall about 2 feet in height, and varying from 1 foot to 3 feet 9 inches in thickness, resting on the rock surface. The walls are well built of large quarried stones, disposed in courses of one to three in the height, cleft fair and clean on the face, and roughly squared in the joints. While no tooling appeared on the face, unmistakable marks of the mason's pick were discovered on the bed of a displaced stone. The space between the faced walls is filled, and the mound is carried up to its full height with earth, built in layers in the following order: earth mixed with charcoal or decayed brushwood, 6 inches thick; red soil, 3 inches thick; peat or turf, black and very distinct, 2 inches thick; a mixture like iron rubbish, but probably moor-band, 6 inches thick; and the remainder earth, and the surface turf.

The entrance (Plate VIII. fig. 22), which is on the west side, is much destroyed. Its width is about 4 feet, and several flat stones mark the floor.

Another kind of structure has now to be noticed. It is a

tumulus 70 feet in diameter (Plate VIII. fig. 23), standing at the highest point of the middle part of the plateau. While the artificial work at the centre is only 5½ feet high, owing to the fall of the ground it stands 10 feet or more above the level of the outer circumference. A section was opened through the cairn from east to west, when it appeared that the cist had been destroyed. One stone, 4 feet long and 2 feet 4 inches high, remained in position, and five others lay at hand which had evidently belonged to it, also some fragments of charred bone. Orientation does not seem to have been observed; the cist lies nearly parallel with the length of the hill. The construction of the tumulus shows the rock surface under it slightly sunk for the reception of the cist; over the cist was a small mound of clay rounded so as to carry off the water, and above the clay rose the wide, flat cairn of stones, disposed as if in layers concentric with the clay core. The pieces which composed the cist, as well as the smaller and more angular stones making up the cairn, correspond with the description of rock on the hillside, whence it is presumed the material was obtained.

At the east end of the plateau the rock surface seems to have been utilised as a floor, the depressions being levelled up by stone pavement. Stone pavements are very extensive, both at the east and the west parts. Some vestiges, but uncertain, as of walling, were also disclosed. These remains, however, furnish no definite information, further than showing how elaborate the preparation of the camp has been.

Charcoal and fragments of charred bone were plentiful, and generally appearances of occupation were much more abundant here than in the lower camps.

Among the relics discovered were a considerable number of leaden sling-bolts, singly and in groups, twenty at one of the south gates, and twelve at the other; one or two stone balls; scraps of iron not plentiful; leaden whorl, similar to one found in the south camp; at the east end, two small transparent glass discs; in the fortlet, a bead similar to one found in the south camp; two fragments of glass bracelets, one in the substance of the enclosing mound of the fortlet; and outside the fortlet, on the rock, and covered by a stone, a small intaglio.

All the details disclosed by the excavations have now been described, and it only remains to say a word regarding General Roy's plan and the Ordnance map, both of which have proved

very serviceable in connection with the carrying out of the exploratory works. On the former, many vestiges appear, not indicated on the latter, and which are not now readily observable on the ground. The plan is generally, although not strictly, accurate. The only points requiring notice are the gateways at the south side of the south camp. At the centre there is shown on the plan a projecting return of the fortifications, which does not exist, and which evidently has arisen through joining the line of a modern drain with the traverse of the gate. Two small openings like gates, but without traverse, are shown, one on either side of the centre projection, but no opening exists corresponding with the west one; and in regard to the east one, while an opening for drainage exists, no indication of a gateway could be discovered there.

Two points only need to be mentioned in regard to the Ordnance map. There is no tumulus near the small fortlet at the west end of the hilltop as indicated; and the fort at the east end of the hilltop is at least inaccurate, and it is doubtful whether there is any separate fort here at all.

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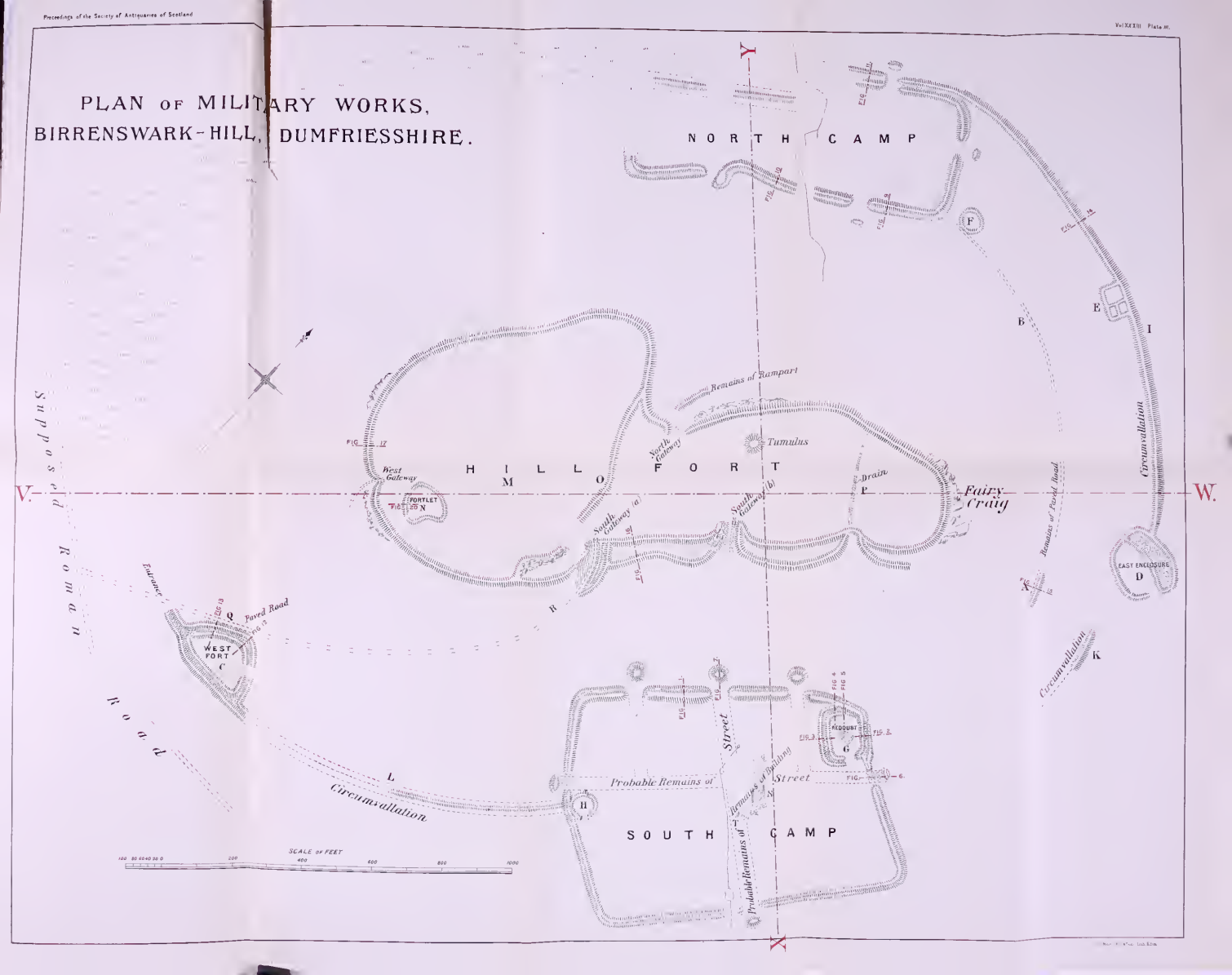
PLAN OF MILITARY WORKS, BIRRENSWARK-HILL, DUMFRIESSHIRE.



R

68·85

SECT

CIRCUMVALLATION
RAMPART I.

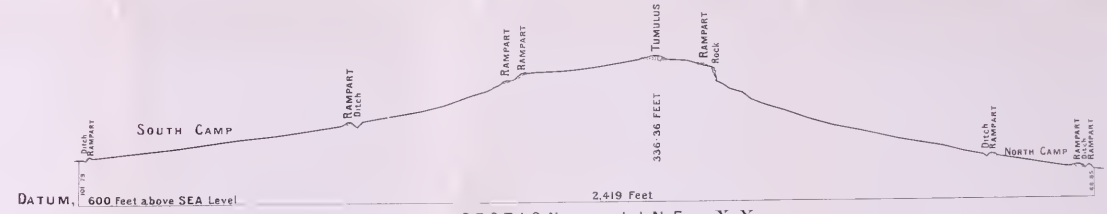
101 FEET

SECT

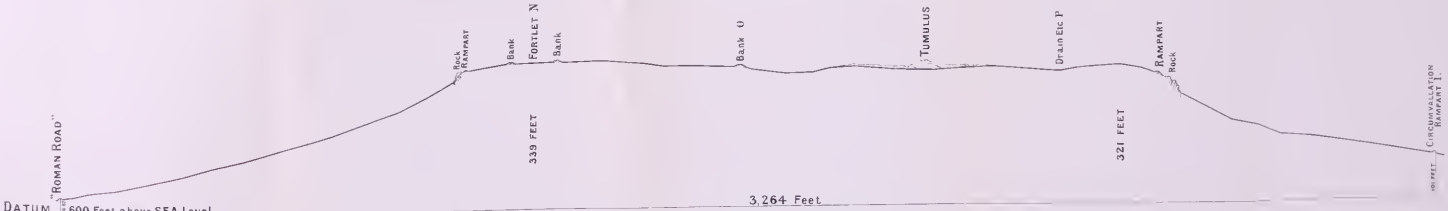
200

leo Waterston & Sons, Lith Edin

BIRRENSWARK - HILL.



SECTION ON LINE X.Y.



SECTION ON LINE V. W.

SCALE OF FEET

100 50 0 200 400 600 800 1000

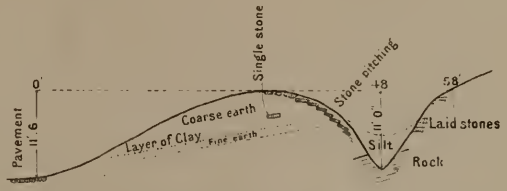


FIG. I. SECTION OF NORTH RAMPART SOUTH CAMP.

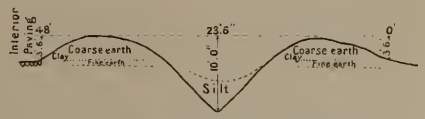


FIG. 2. EAST RAMPARTS OF REDOUBT.

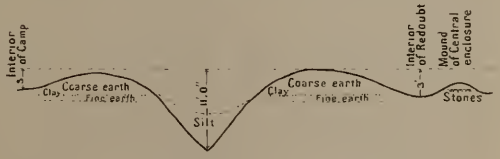


FIG. 3. WEST RAMPARTS OF REDOUBT.

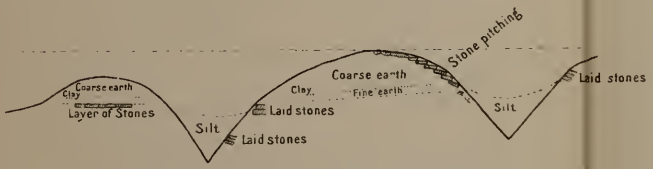


FIG. 4 NORTH RAMPARTS OF REDOUBT. (DOUBLE PART).

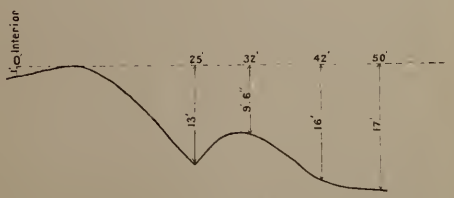


FIG. II. NORTH RAMPART, NORTH CAMP (DOUBLE).


BRITISH MUSEUM
NATURAL HIST

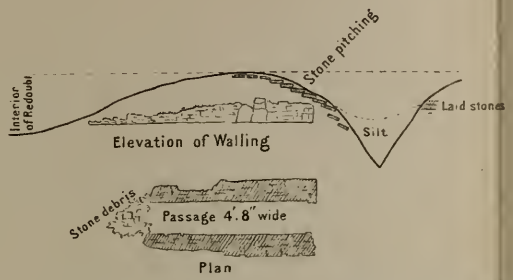


FIG. 5. NORTH RAMPART OF REDOUBT (SINGLE PART)

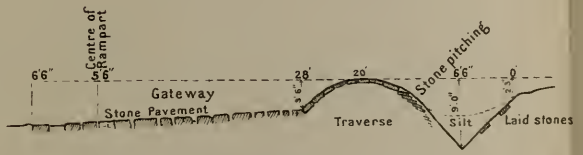


FIG. 6. EAST GATEWAY, SOUTH CAMP.

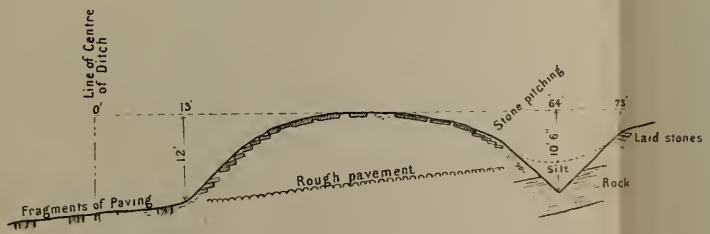


FIG. 7. TOWER OF CENTRE NORTH GATEWAY SOUTH CAMP.

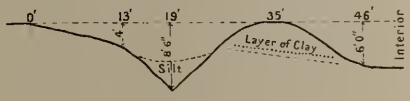


FIG. 9. SOUTH RAMPART OF NORTH CAMP.

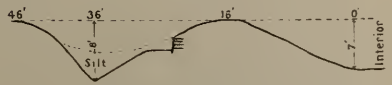


FIG. 10. SOUTH RAMPART, NORTH CAMP.

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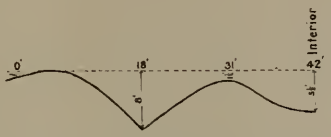

FIG. 12. EAST RAMPART, WEST FORT.

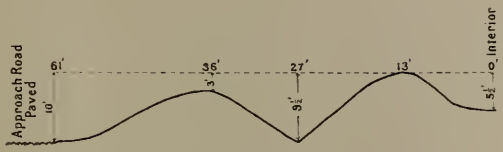

FIG. 13. NORTH RAMPART, WEST FORT.

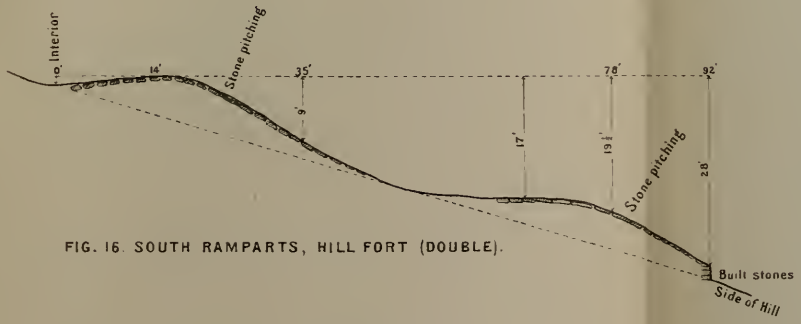

FIG. 16. SOUTH RAMPARTS, HILL FORT (DOUBLE).

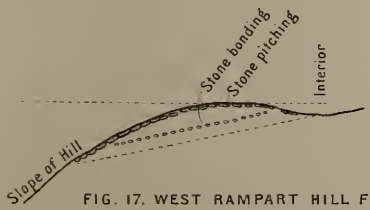

FIG. 17. WEST RAMPART HILL FORT.

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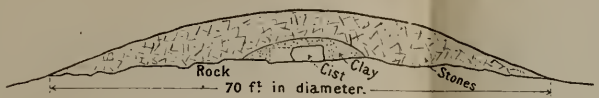

FIG. 23. HILL TUMULUS.

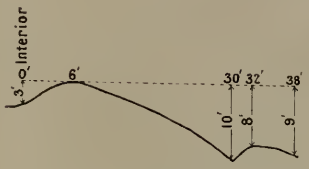

FIG. 14. EAST CIRCUMVALLATION MOUND.

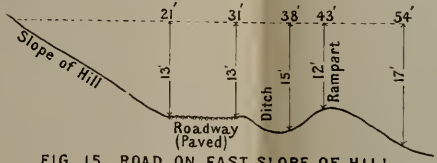

FIG. 15. ROAD ON EAST SLOPE OF HILL.

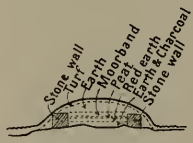

FIG. 20. MOUND OF HILL FORTLET.

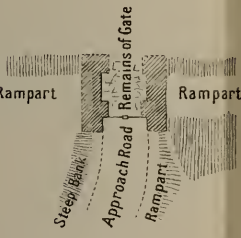

FIG. 19. SOUTH GATE (A) HILL FORT.

FIG. 21. ELEVATION OF MOUND
$\frac{1}{8}$ inch scale.

FIG. 22. REMAINS OF GATE.
$\frac{1}{8}$ inch scale.

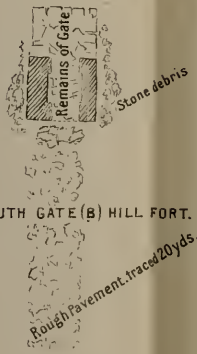

FIG. 18. SOUTH GATE (B) HILL FORT.

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