V.

ST REGULUS TOWER, ST ANDREWS—WHERE DID THE STONES WITH WHICH IT WAS BUILT COME FROM? BY ALEXANDER THOMS.

In view of the very marked difference as regards the enduring quality of the stones of which the Cathedral and St Regulus ("The Square Tower") in St Andrews have been built—the latter, although reputed about three hundred years older, having stood the effects of the weather so very markedly better than the former,—the question has often been asked as to the locality from where the stone for St Regulus was procured.

The late Dr Heddle, whose opinion undoubtedly carries very great weight, came to the conclusion many years ago that this was a local stone, procured most probably from a spot along the East Cliffs.

In a book published lately by Mr David Henry, F.S.A. Scot., St Andrews, entitled The Knights of St John with other Mediaeval Institutions and their Buildings in St Andrews, it is stated, pp. 84, 85: "Bede tells us that Nechtan, King of the Picts—already alluded to—in 710 wrote to Ceolfrid, Abbot of Jarrow, to send masons to build him a Church as the Romans built (with squared stones), and there are those who think that the ancient tower of Restennet, near Forfar, was built by them. It is just as credible and quite as likely that Constantin, two hundred years later, sought for masons in the same country, where the Roman influence and Roman examples still survived, to build him a church in St Andrews, also in the Roman manner." . . . "Further,
as there is no known quarry in Fife within the historic period that could have produced so many large and durable sandstone blocks, it is a fair inference that these stones came from the Tyne valley also, and that they were dressed and squared in the quarry for water transport to St Andrews."

Nechtan is here said to have written for masons, not for stones—a very different thing, in those days especially.

Having given the subject some consideration, I had come to the conclusion that this was a local stone, but that the builders had known that round the volcanic necks, of which there are so many in this neighbourhood, the sandstone had been more or less hardened by the heat which occurred at the time of these volcanic eruptions, and had carefully selected their material from some of these localities.

On reading Mr Henry's book, I thought it would be advisable that his opinion stated therein (which I considered an unfortunate mistake) should not pass unchallenged, and thus in all probability be generally accepted by the public.

I therefore interviewed Mr Henry, and explained my view, and what I knew to have been the opinion of Dr Heddle. The result of this was that Mr Henry procured for me a piece of the stone from the Northumberland quarry from which he held that the stone had been procured. Having got this, I took pieces from the vicinity of several of our neighbouring volcanic necks, and also from the St Regulus Tower. From all of these I made microscopic slides, and examined them under the microscope with polarised light. The result was that I came to the conclusion that the stone used in the building of St Regulus Tower was not the Northumberland stone, but was from a local source.

However, I did not care to rest on my own judgment, so I wrote to Dr Flett, of the Geological Survey, the highest authority we have on such matters, and whose decision could not be questioned. He very kindly agreed to examine and report on these. I therefore sent him pieces of each of the stones, and the microscopic slides that I had
made, and his decision coincided with my own, giving his reasons for his conclusion that it was not the Northumberland stone, but was similar to two of the pieces which I had sent from our East cliffs. The Tyne stone, besides being finer grained, contains mica (not found in the local stone), and more feldspar.

This, I believe, will finally settle this long-disputed point—a point which had not, as far as I know, been hitherto subjected to a scientific test under the polariscope.

Since the above was written, I have come upon a reference to the subject of the stone used in the building of St Regulus Tower, by Sir Archibald Geikie in p. 346 of Geology of East Fife, 1902. He there says: “The material is one of the more solid, close-grained, grey sandstones of the Lower Carboniferous series, with a distinct bedding, yet not divided by mica-flakes into easily separable layers, so that only exceptionally has it exfoliated or split along the lines of stratification. . . . Though the seam of sandstone has not been identified from which the materials of this building were taken, it no doubt exists close at hand, though possibly now concealed under soil or later buildings. But there must be other seams of similar quality in the district which could be detected after a careful examination of the walls of St Rule”; and he adds in a note at the foot of the page: “A point in the St Regulus masonry deserves notice. The stones, in defiance of a recognised canon of building, have been laid on edge.” Although Sir Archibald does not refer to the probability of the stone having been got from the vicinity of one or more of the volcanic necks near this (from which I took the specimens that were microscopically analysed), he points out the curious but probably important fact of the stones being built “on edge,” and fully corroborates the opinion as to the stone being a local one.
MONDAY, 12th May 1913.

Professor T. H. Bryce, M.D., Vice-President, in the Chair.

A Ballot having been taken, Miss Elizabeth Stout, Hamnavoe, Burra Isle, Shetland, proposed by the Council, was duly elected a Corresponding Member of the Society.

The following were duly elected Fellows:

John R. W. Clark, Westbank, Arbroath.
R. Rannoche Stewart, 12 Lorne Terrace, Maryhill, Glasgow.

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


2. By Dr Aitchison Robertson, F.S.A. Scot. Uniform of the Royal Midlothian Yeomanry Cavalry.


4. By Mrs K. L. MacDonald, Portobello. A Collection of Implements of neo-archaic types, still in use in the Hebrides and North of Scotland—ripping combs or heckles for carding wool; thread winder; horn used for sowing turnip seed; pair of
wooden callipers; carpenter's brace and bit; wooden cutting gauge; tailor's goose; goffering iron; iron crook; pot hooks; tongs; thistle axe; whin axe; potato digger; reaping hook; flail; peat spade; wooden beetle; and wooden-handled knife.

(5) By Angus Mackay.

Leith Token (copper), payable at the house of John White, Kirkgate, Leith—Success to the port of Leith, 1796.

(6) By David Smith, F.S.A. Scot.

Old Fishing-rod Reel, found on Kinnoul Hill, Perth.

(7) By Wm. Stevenson, Burntisland.

A Brass Spigot, and three Seventeenth-Century Tobacco Pipes, from Kirkbank, Burntisland.

(8) By Mrs Duff-Dunbar, F.S.A. Scot., of Ackergill Tower, Wick.

A pair of old Goggles with horn mountings.

(9) By James Lyle, F.S.A. Scot.

A Hunting Crop, used by the donor's father in 1808; two Eighteenth-Century Wine Glasses with façon de Venise stems; two Goblets of glass—one engraved with a wreath of oak-leaves and acorns, and the other with a genre study etched with fluoric acid; a pair of Toddy Ladles with twisted whalebone handles and silver bowls, London hall-mark, E.C. 1798; and a Staffordshire brown Jug.

(10) By the Master of the Rolls.

A series of Calendars of State Papers for Ireland, America, West Indies; also Calendars of Patent Rolls, Papal Registers, Close Rolls, etc., comprising in all fourteen volumes.
Leisure Hours of a Scottish Minister, being papers on various subjects. 8vo. 1913.

(12) By David MacRitchie, F.S.A. Scot., the Author.
Gypsies at Geneva in the Fifteenth to Seventeenth Centuries. 8vo.

(13) By Walter J. Kaye, B.A., F.S.A. Scot., the Author.
Grasse (Riviera) and its Vicinity. 8vo. 1912.

(14) By T. J. Westropp, F.R.I.A., the Author.
Early Italian Maps of Ireland. 8vo. 1913; and Promontory Forts of Co. Clare. 8vo. 1909.

(15) By the First Commissioner of His Majesty's Works.

(16) By the Indian Archaeological Survey.
Archaeological Survey of India, Frontier Circle, for 1911–1912. 4to; and Annual Progress Report, Northern Circle, 1912. 4to.

A Series of Publications by the Curator of Hull Museum. 8vo. 1912.

(18) By Gilbert Goudie, F.S.A. Scot., the Author.
The Ecclesiastical Antiquities of the Southern Parishes of Shetland. Reprint from the Transactions of the Scottish Ecclesiological Society. 4to. 1912.

(19) By Professor F. J. Haverfield, M.A., LL.D., Hon. F.S.A. Scot., the Author.
The Romanisation of Roman Britain. New edition. 8vo. 1912.
(20) By **John Glas Sandeman**, M.V.O., F.S.A. Scot., the Author.

The Spears of Honour and the Gentlemen Pensioners. 8vo. 1912.

(21) By **Professor W. M. Flinders Petrie**, D.C.L., LL.D., the Author.

The Formation of the Alphabet. 4to. 1912.

The following Purchases acquired by the Purchase Committee for the Museum and Library during the session, 30th November 1912 to 12th May 1913, were exhibited:

- A collection of Flint and Stone Implements, from Ruberslaw, Roxburghshire.
- Stone Axe and faceted Stone Ball, from West Linton.
- Oval flat Ring of Jet, from Holy Island.
- Dirk with deer-horn handle, from Aberdeenshire.
- Two Stone Axes and a perforated Stone Hammer, from Aberdeenshire.
- Gold Armlet, discovered in the Isle of Oxna, Shetland. (See the subsequent paper by Mr G. Goudie.)
- Seven Trade Tokens—Forfar Halfpenny, 1797; Ayrshire Halfpenny, 1797; Lanark Halfpenny, 1796; Lothian Halfpennies, 1796, 1790, and 1791; Glasgow Farthing, 1781.
PURCHASES FOR THE MUSEUM AND LIBRARY.

Two Penannular Gold Armlets, and the Stone Bowl in which they were found, from Hillhead, Caithness. The following account of the finding of this interesting hoard is contributed by Mr A. O. Curle, Secretary:

In February of this year there was turned up by the plough on the farm of Hillhead, near Wick, a stone bowl containing the two gold armlets recently purchased for the Museum and illustrated in fig. 1. The site of the find lies about half a mile to the north-north-west of the Hillhead broch near Broadhaven, and half way between that ruin and the farm of Inkerman, and the exact spot is described by our Corresponding Member, Mr John Nicolson (through whose good offices the relics were obtained), as a small mound with an elevation of about 2 feet, made up of black earth, grey surface stones, and some slaty stones, "fire-burnt red from end to end and broken in the middle." The area covered by the debris of the mound, according to information supplied by Mr Nicolson, had an extreme length of 78 feet, a breadth, at the south-west end, of 30 feet, and gradually diminished towards the north-east. To what extent these dimensions are due to the spreading action of the plough it is impossible to say, but no doubt the effect of that action has been considerable. The bowl, which is semi-globular in form, has been hollowed out of a block of sandstone, and bears all over its surface, both internal and external, the marks of a small, round, pointed tool, with which it has been dressed. It measures across the orifice, over all, 6 inches, and in the interior 4 1/2 inches; in depth, over all, 4 3/4 inches, and in the interior 2 3/4 inches.

The armlets are elliptical and penannular, each formed from a single rod of gold, round in section. In both, the extremities show a slight discoid termination, the disc being more regularly fashioned on the lighter of the two. They weigh respectively 607 grains and 381 grains, and measure within the curve 2 1/2 inches by 1 7/8 inches, and 2 3/8 inches by 1 7/8 inches, while the rods at thickest have a thickness of 3/16 of an inch and 1/8 of an inch.
Fig. 1. Two Gold Armlets and the Stone Cup in which they were found at Hillhead, Wick, Caithness.
Such penannular bracelets, both in gold and bronze, have been brought to light from time to time in this country, and examples in both metals are already in the National Collection, while similar bracelets are to be seen in other museums in England and on the Continent.

The associated relics with which the type has been found in Britain clearly connect it with the later bronze age. The stone bowl bears a general resemblance in character and finish to similar objects which have been found in brochs.

The following Books for the Library:

- Lyell's Bibliographical List of Romano-British Architectural Remains in Britain;
- Barbe's In Bye-ways of Scottish History;
- Renwick's Burgh of Peebles, Gleanings from its Records, 1604–1652;
- Wilson's Silverwork and Jewellery;
- Schank's La Suisse Préhistorique;
- Tour from Edinburgh, 1787;
- Prior's Mediaeval Figure Sculpture in England;
- Wakeling's Forged Egyptian Antiquities;
- Litchfield's Pottery and Porcelain;
- Ffoulke's Armourer and his Craft;
- Lacy's History of the Spur;
- Drake's History of English Glass Painting;
- Yorkshire Church Plate;
- and The Haigs of Bemersyde.

The following Communications were read: