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THE TRANSACTIONS

AND

JOURNAL OF PROCEEDINGS

OF THE

DUMFRIESSHIRE AND GALLOWAY

Natural History & Antiquarian Society.

Sessions 1878-79 and 1879-80

PRINTED AT THE HERALD AND STANDARD OFFICE.

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[The Dumfriesshire and Galloway Natural History and Antiquarian Society was instituted on 20th November, 1862, and continued in a prosperous condition till May, 1875, when its meetings ceased. During this period *Transactions and Proceedings* were published on six occasions, the dates of publication being 1864, 1866, 1867, 1868, 1869, and 1871. The present Society was re-organised on 3d November, 1876, and the first portion of its *Transactions and Proceedings* was published in February, 1879.]

PRINTED AT THE DUMFRIES AND GALLOWAY COURIER OFFICE.

1881.

OFFICE-BEARERS AND COMMITTEE.

SESSION 1880-81.

President.

J. GIBSON STARKE, Esq., F.S.A. Scot., F.R.C.I., of Troqueer Holm.

Vice-Presidents.

Sheriff HOPE, Dumfries.
J. NEILSON, Esq., Dumfries Academy.
T. R. BRUCE, Esq. of Slogarie, New-Galloway.

Secretary.

ROBERT SERVICE, Maxwelltown.

Assistant Secretary.

JAMES LENNOX, Edenbank, Maxwelltown.

Treasurer.

WILLIAM ADAMSON, Broom's Road, Dumfries.

Members of Committee.

A. B. CROMBIE, Architect, Dumfries.
Dr GRIERSON, Thornhill.
WILLIAM HALLIDAY, College Street, Maxwelltown.
J. W. KERR, the Academy, Dumfries.
WILLIAM LENNON, Brook Street, Dumfries
JOHN MAXWELL, King Street, Maxwelltown.
GEORGE ROBB, Rhynie House, Dumfries.
J. WATT, Rotchell, Maxwelltown.

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"The various phases of character exhibited, the pleasing incidents that diversified the walks, the jokes that passed, and even the mishaps or annoyances that occurred—all become objects of interest, and unite the members of the party by ties of no ordinary kind. The feelings thus excited are by no means of an evanescent or fleeting nature: they last during life, and are always recalled by the sight of the specimens which were collected. It is not a matter of surprise that those who have been thus associated in a natural history ramble, who have met in sunshine and tempest, who have climbed together the mountain summits, or wandered through the shady glens, should have such scenes indelibly impressed on their memory."—*Professor Balfour.*

JOURNAL OF THE PROCEEDINGS

OF THE

DUMFRIESSHIRE AND GALLOWAY

NATURAL HISTORY AND ANTIQUARIAN SOCIETY,

FOR SESSIONS 1878-79 AND 1879-80.

SESSION 1878-79.

October 4th, 1878.

The Annual Meeting beginning the Session of 1878-79 was held in the Mechanics' Institute—Mr Rutherford in the chair.

Rev. W. Lytteil, M.A., Kirkmahoe Manse, and Mr Murdoch, Rosemount Terrace, were elected Ordinary Members. Mr P. Cameron, junr., Glasgow, and Mr J. Thomson, Gatelawbridge, were elected Corresponding Members, the latter being transferred from the list of Ordinary Members until his return from Africa, whither he is about to proceed with an Exploring Expedition.

Mr F. W. Grierson exhibited a large Herbarium of Phanerogamic and Cryptogamic Plants collected during the past season, and also an instrument to explain the changes of the seasons, which he named the *Horaphraziter*.

The Secretary read his Annual Report, which showed that the Society had had a very successful session. The membership was now 100, and the average attendance at the Ordinary Meetings had been 27, and at the Field Meetings 16.

The Treasurer read his annual statement, showing a balance of £3 17s 5½d in favour of the Society.

Mr Grierson read the report from the Botanical Section, enumerating the plants and their habitats, which had been met with when at the Field Meetings and elsewhere.

Mr Glover-Anderson read the report of the Archæological Section, briefly going over the objects of antiquarian interest that had been visited by the Society.

The Chairman made some remarks explanatory of two beautiful micro-photographs executed by himself of a fly's tongue, and a specimen of *Pediculus vestimenti*.

Mr Hastings read some "Ornithological Notes," in which, after stating that although he had few opportunities of seeing for himself what is to be seen in wild nature, still many interesting birds that had been collected in the district were sent to him for preservation. He said that last August a young Crossbill had been sent to him from Palgowan, a sheep farm in Penpont, and which no doubt had been bred in that part of the country. They had now entirely disappeared from the Dalswinton woods, where their nests were at one time frequently met with. In the neighbourhood of Palgowan there is a shepherd's house known as the Lorg, situated at the head of the Water of Ken, and here there is a famous breeding-place of the Raven, Buzzard, and Mountain Ouzel. A little further down the Glen, on the hillside, there is a larch plantation, the trees in which are of no great height, but are thickly studded with Herons' nests. Mr Hastings said that during the past year he had received more of the Terns or Sea Swallows than ever before. He had received the Lesser Tern, the smallest species of the genus, from Carsethorn ; the Common Tern, which, although common on some parts of the coast, was not so with us ; from the Solway Firth, very many of the Arctic Tern ; and three specimens of the Caspian Tern from the Scaur, near Dalbeattie, where they had been shot last October.

On the recommendation of the Committee, the following new rule was agreed to :—"That all Members whose subscriptions have been unpaid for fifteen months shall have their names deleted from the roll of membership if, after receiving notice from the Treasurer, they still neglect to pay."

It was also agreed, on the recommendation of the Committee, that a selection of the Society's Proceedings and Transactions be printed for the use of the Members. Messrs Robb, Glover-Anderson, and Service were appointed a committee to make the necessary arrangements for publication.

The election of Office-bearers and Committee was then proceeded with. It was intimated that Dr Gilchrist did not wish to be

re-elected to the office of President ; and, on the motion of Mr James Thomson, it was unanimously agreed to record a special vote of thanks to Dr Gilchrist for his untiring endeavours to promote the interests of the Society during the last two sessions.

Mr J. Gibson Starke, yr. of Troqueer Holm, was unanimously elected President; Mr M'Ilwraith, Vice-President; Mr Robt. Service, Secretary; Mr James Lennox, Assistant Secretary; Mr D. B. Hart, Treasurer.

The following gentlemen were appointed members of Committee :—Dr Gilchrist, Messrs Robb, Lennon, Thomson, Hutton, Maxwell, Glover-Anderson, and Stobie.

November 1st, 1878.

The Second Meeting of the Session was held in the Mechanics' Institute—Mr M'Ilwraith in the chair.

Messrs Jas. W. Kerr, High Street, Dumfries, and Thos. Gracie, Kirkmichael House, were elected Ordinary Members. Mr J. J. King, 207 Sauchiehall Street, Glasgow, was elected a Corresponding Member.

Dr Gilchrist read a "Report on the Geological Features of the Districts visited during the Field Meetings of 1878." (*See Transactions*, 1879.)

Mr Service exhibited a Bread Roller which had belonged to Robert Burns.

Mr Stobbie exhibited a very beautiful Elm Wardrobe Panel, remarkable for great variety of colour and figure.

December 6th, 1878.

The Third Meeting of the Session was held in the Mechanics' Institute—Mr M'Ilwraith in the chair.

Messrs James Williamson, Geddes Place, Maxwelltown, and James Anderson, Glasgow Street, Maxwelltown, were elected Ordinary Members. Mr John A. Harvie-Brown, Dunipace, Larbert, was elected a Corresponding Member.

Mr John Maxwell sent for examination a number of old implements or tools found in a cairn on Walton Park Hill by the tenant. They were pronounced by the antiquaries present to be quite modern. Dr Gilchrist exhibited some fine specimens of Fossil Plants from the Carboniferous Rocks.

The Chairman drew attention to the duplicate copies of the former Society's Transactions now in possession of this Society, and moved—"That complete sets (of six parts) be presented to the Dumfries and Maxwelltown Mechanics' Institute, Kirkcudbright Public Library, Inverness Natural History Society, and the Ayrshire and Wigtownshire Archæological Society; that the two remaining sets be bound for the use of the Members; and that all the other duplicate copies be distributed to the Members present at next meeting, and to any other Members who may apply for them."—The motion was seconded by the Rev. W. N. Dodds, and agreed to.

The Rev. W. Lytteil, M.A., Kirkmahoe, gave a long address on "Standing Stones," in the course of which he referred to the local names in Scotch and Gaelic by which many of these rude, upright pillars are designated. With regard to the testimony of our forefathers, he alleged that they spoke of the ancient standing stones as the work of the Peaghts or Picts, and as indicating the graves of heroes and distinguished persons. Many of the names of standing stones were in old Scotch, and the signification of such names was generally intelligible. Other names were in the Gaelic tongue, and by his study of that language he found that these names usually spoke of the standing stones and circles of rude pillar-stones as the burial places of heroes, warriors, and distinguished persons.

Mr J. Glover-Anderson read a paper on the "Provosts of Lincluden," with special reference to the Provost whose coat-of-arms was sculptured on the stone recently unearthed at Nithside.

On the conclusion of Mr Glover-Anderson's paper, Mr Thomson reminded the meeting that the gate and other protection at Lincluden Abbey had been erected by Capt. Maxwell, as suggested by the Society, and moved that the President be requested to convey to Capt. Maxwell the thanks of the Society for so kindly meeting its wishes.—The motion was seconded by Dr Gilchrist, and unanimously agreed to.

January 3*rd*, 1879.

The Fourth Meeting of the Session was held in the Mechanics' Institute—Mr J. Gibson Starke in the chair.

Mr Henry Hutchison Lennox was elected an Ordinary Member.

The Chairman then delivered his Presidential Address on the subject of "The Scope and Spirit of Scientific and Antiquarian Inquiries." The address was listened to with much interest by the very full meeting, and at the close Dr Gilchrist proposed a special vote of thanks to Mr Starke, which was heartily accorded.

Dr Gilchrist read "Notes on the [so-called] Druids' Circle at Holywood," in which he gave an account, with the aid of a diagram, of its measurements, the positions of the stones, and of the geological formation to which each of them belongs. A short discussion followed, and Dr Gilchrist promised to refer more fully to the subject on an early date.

Mr F. W. Grierson exhibited some very neat preparations of the Dentition of the Echinodermata. The Secretary exhibited a Falcon's Hood, belonging to Dr Grierson, Thornhill; a Female Goosander, recently captured at Arbigland; a pair of the Little Grebe; and a Kingfisher. The last two species, he explained, had within the past two months become numerous in the locality. The Secretary also exhibited specimens of a number of birds he had picked up dead during last month, and which had doubtless been killed by privation in the severe frost. These consisted of the Wren, Longtailed Tit, Water Hen, Fieldfare, and Redwing.

A number of duplicate copies of the former Society's Transactions were then distributed to the Members present.

By the kindness of the President, coffee and cakes were then served, after which the Rev. Mr Dodds expressed the great satisfaction with which the Members had partaken of the good things provided for them by Mr Starke.

February 7th, 1879.

The Fifth Meeting of the Session was held in the Mechanics' Institute—Mr J. Gibson Starke in the chair.

Messrs John Rutherford, Pleasance, Kirkmichael, and T. R. Bruce of Slogarie were elected Ordinary Members.

Mr Houston exhibited a curious old document, being "a Report presented to His Most Excellent Majesty King James I. of all the Christenings and Burials within the City of London, and the liberties thereof." Mr Lennon exhibited a specimen of *Sphodrus leucophthalmus*, which is a rather scarce beetle in this district.

Dr Gilchrist exhibited a Prescription Book of 1731, and pointed out that the medicines of those days were generally made up of from ten to twelve different articles. Mr James Gibson exhibited a specimen of the fossil *Productus giganteus*. Mr M'Veigh, Castlebrae, sent an interesting collection of old books, coins, &c., amongst which may be mentioned "The Lives of the Popes," 1588; St. Jerome's Version of the Bible, 1498; an edition of the Bible in six little volumes, 1671; and Hamilton of Gilbertsfield's "Wallace," in old Scottish verse, 1721. Specially noticeable amongst the coins and seals were the Great and Small Seals of James VI.; two Seals of William, Duke of Douglas and Turenne; the Seal of the Duke of Albany, Fife, and Monteith, 1396; some silver pieces of Isabella the Catholic, of Spain; a coin of Pope Pius V.; and a beautiful coin, of which six only were struck, to commemorate the acquisition by George III. of the title of King of Man. The remaining five are known to be—one in the Mint, another in Windsor Castle, the third in the British Museum, the fourth belongs to the Earl of Derby, and the fifth to the Duke of Athole. The one in Mr M'Veigh's possession was presented to him by Lady Margaret Murray, daughter of the last King of Man.

Dr Gilchrist read an account of "Our Bird-feeding Experiences," consisting of some interesting notes on the habits of the birds which had resorted to the Crichton Royal Institution to be fed during the recent severe weather.

Mr Davidson read a paper on "Alchemy and the Alchemists," in which he gave an account of the numerous discoveries that had been made by the alchemists whilst engaged in their investigations.

March 3rd, 1879.

The Sixth Meeting of the Session was held in the Mechanics' Institute—Mr J. Gibson Starke in the chair.

Mr Watt, Victoria Terrace, was elected an Ordinary Member.

The Secretary read a report from the Committee regarding the distribution of the *Proceedings and Transactions*, 1877-78 (printed copies of which were laid on the table), recommending that one copy should be presented to each Ordinary and Honorary Member of the Society, and that extra copies be supplied at 6d each to

any Member who might wish to have them.—On the motion of Mr M'Ilwraith, the report was unanimously adopted.

Mr Rutherford read a paper, entitled "Ingenuity of a Spider," in which an account was given of the habits of *Theridion lineatum (Walck.)* when providing for the safety of its egg cocoon.

Mr Rutherford also read a paper on "Instinct of the Wasp," detailing the behaviour of the inmates of a nest of one of the social wasps when their nest-hole was obstructed with a wisp of hay or dock leaves.

Mr Rutherford next read "Microscopic Notes," consisting of observations on the habits and anatomy of various microscopic subjects living in muddy ditches at Jardineton. The paper concluded with an account of experiments with frosted potatoes, in which the various changes that take place in a potato when exposed to frost were clearly described. A long conversation followed upon the reading of the several papers, and some interesting information was elicited.

The Chairman exhibited a fine specimen of *Mygale fasciatus (Koch)* from Ceylon. Mr Rutherford showed in his microscope an interesting series of objects, including crystals from a frosted potato. Mr James Lennox exhibited a copy of Allan Ramsay's Works (original edition), which had belonged to Robert Burns for eight years prior to his death.

April 5th, 1879.

The Seventh Meeting of the Session was held in the Mechanics' Institute—Mr M'Ilwraith in the chair.

Messrs R. Chrystie, Samuel Chrystie, John Neilson, J. Arnott, and Provost Shortridge were elected Ordinary Members.

The Secretary then submitted the following list of Field Meetings, to be held on the first Saturday of each month as formerly, as proposed by the Committee:—May, Kirkmichael; June, Corsock; July, Slogarie; August, Annan Waterfoot to Brow Well; September, Arbigland.—On the motion of Mr Thomson, the list was approved of.

A review of the lately issued *Transactions*, as contained in the *Scottish Naturalist*, was read by Mr Moodie. An animated conversation ensued as to the best mode of extending the operations of the Society, and it was agreed that preparations should be

commenced with a view to compiling a *Flora and Fauna* of the district. The Secretary was instructed to make such arrangements with members from time to time as would further this desirable aim.

The Secretary read a paper, communicated by Mr Charles Black, on the "Introduction of Badgers at Arbigland," giving an interesting account of their mode of life as observed by him there. In 1876 Col. Blackett, the proprietor of Arbigland, desirous of keeping down the rabbits on his estate, had procured three badgers—one male and two females—and turned them out. They had since bred upon the estate, and had been found to be very useful in destroying the young rabbits. When they came upon a hole containing a brood of young rabbits, they did not go in at the entrance, but dug right down on the top of the nest, and never failed to hit the exact spot, no matter how far it was from the mouth of the burrow. They were not observed to harm any rabbits, except those in the youngest stage.

This concluded the business of the evening and of the Winter Session.

SESSION 1879-80.

October 2nd, 1879.

The Annual Meeting commencing a new Session was held in the Mechanics' Institute—Mr J. Gibson Starke in the chair.

The Rev. R. W. Weir, minister of Greyfriars'; Messrs W. J. Maxwell, Terregles Banks; Murdoch, Netherlea; Gillespie, Queen's Place; J. Fergusson, Queen Street; Smith, Commercial Bank; Tennant, the Academy; L. M. Dinwiddie, Greenbrae; Allan, Albany Place; M'Andrew, New-Galloway; and M'Veigh, Kimmeter Cottage, Annan, were elected Ordinary Members.

The Chairman presented to the Society, on behalf of Mr John Allan Broun, F.R.S., five volumes and paper-covered supplement of the *Makerstoun Observations*, another volume entitled *Trevandrum Observations*, and six small separate papers on astronomical subjects, all edited by Mr Broun. It was moved and agreed that the special thanks of the Society be transmitted by the Chairman to Mr Broun for his valuable donations.

The Chairman presented to the Society a copy of his *History of the Parish of Troqueer.*

The Secretary laid on the table twelve Norwegian publications, presented by Charles Holst, Court Paymaster, Christiana, on behalf of the Royal Literary Exchange of Norway.

The following Office-bearers and Committee of Management were then elected for the ensuing session :—President, Mr J. Gibson Starke; Vice-President, Mr Thomas Jackson; Secretary, Mr R. Service; Assistant Secretary, Mr James Lennox; Treasurer, Mr William Adamson. Members of Committee—Dr Gilchrist, Messrs Robb, Lennon, James Thomson, Hutton, John Maxwell, J. W. Kerr, and P. Stobie.

Mr D. B. Hart submitted a statement of his accounts for the past session, and Messrs Kerr and Moodie were requested to audit the statement. Mr Hart stated that a large number of Members were in arrears with their subscriptions, and he could not at present find time to collect them. At the request of the meeting, Mr Moodie kindly undertook to collect as many of these subscriptions as possible.

The Secretary read his Annual Report, which showed that in every respect the progress of the Society had been satisfactory during the past session.

On the recommendation of the Committee, it was agreed that the Annual Subscription be raised to 2s 6d, and that in future new Members be charged an entrance fee of 2s 6d.

November 7th, 1879.

The Second Meeting of the Session was held in the Mechanics' Institute—Mr J. H. Maxwell in the chair.

Mr John Newbigging, Kirkbank, and Mr M'Kill, Coal Agent, were elected Ordinary Members. Mr J. Allan Broun, F.R.S., was elected an Honorary Member. Mr William M'Ilwraith, being about to proceed to Queensland, was transferred to the list of Corresponding Members.

The Secretary announced that the valuable collection of nearly 200 species of Zoophytes, Crustacea, Echinodermata, Spongia, Marine and Fresh Water Shells, which were arranged on the table, had been presented to the Society by Dr Gilchrist. A special vote of thanks was passed to Dr Gilchrist for his valuable

donation, and the Secretary was requested to take charge of them in the meantime.

The Secretary intimated that he had received another portion of the *Trevandrum Observations* from Mr J. Allan Broun; and from the Rev. D. Honeyman, Halifax, N.S., copies of *Notes on Nova Scotian Geology* and *Transactions of the N.S. Institute of Natural Science.*

Mr M'Ilwraith read a paper on "Local Anthropology." *(See Transactions.)*

The Secretary read a paper entitled "Effects of the Weather of the Past Twelve Months upon Animal Life." *(See Transactions.)*

After the papers had been read and discussed,

Mr Moodie submitted the following resolution:—"That in view of the departure of Mr William M'Ilwraith, late editor of the *Dumfries Courier*, for Australia, this Society expresses its best thanks for the unwearied interest he has taken in its behalf. Having been a member of Committee since its commencement, and having acted as Vice-President during that time, the Members would express their sense of the great benefits he has bestowed on the Society by his constant endeavours to maintain and extend its usefulness. In expressing their great regret at the loss of his valuable assistance, the Members assure him that he has their best wishes for his future welfare in his new sphere of labour." He thought he need add nothing to the resolution. He had been told that Mr M'Ilwraith since he was a child had taken an interest in scientific research. He knew that he had at least taken an active interest in it since he came to manhood, in Ayrshire, in Wigtownshire, and in Dumfriesshire. Assisting to promote many scientific associations, he was, he believed, largely instrumental in forming the Ayrshire and Wigtownshire Archæological Association.

Mr J. Maxwell had much pleasure in seconding the resolution. Mr M'Ilwraith had read a paper to-night which would be a credit to any society in Scotland; and he thought it ought to be engrossed in their *Transactions.*

The Chairman was sure they all felt exactly what had been stated in the resolution. The interest which Mr M'Ilwraith had taken in this and similar societies had been gratifying to the Members; and in the land to which he was about to proceed he trusted the same feeling he had evinced here might animate him

there, and that they would hear in future years that he was still taking an active interest in antiquarian and other researches. He had known Mr M'Ilwraith professionally for a number of years, and he was sorry he was leaving this district, but he trusted that it was for his own benefit, and that of his family. They would all be glad to hear of his success.

Mr M'Ilwraith begged to thank them for this expression of their kind feelings. The pursuit of natural history and antiquarian subjects had engaged a considerable portion of his leisure. It had not been his fortune to command a great deal of time to devote to those pursuits to which he felt a natural inclination, but it had seemed to him that in devoting what leisure he had to the study of the works of Nature and kindred subjects he was in the first place cultivating his own faculties and furnishing his own tastes with pleasure, and, in the next place, assisting somewhat in promoting the welfare of our race. For if men would turn their attention more to the things that lay around them, and study them systematically and carefully, they would find therein a source of joy—not mere pleasure, but something higher, purer, holier—which those who followed lower pleasures had no conception of. One of the concerns he had in leaving this country was that in a new land he might not be able to meet with so many people of kindred tastes in these respects. It was an opinion pretty prevalent here that in the Australian colonies there was a pretty strong thirst for gold; that people were entirely abandoned to making money, and had little regard to the finer enjoyments and amenities of life. He had, however, been somewhat disabused of that idea by reading in the *Queenslander* an account of a meeting of an Acclimatisation Society. The subject of discussion was the introduction of a number of our home birds there, and it was resolved that some efforts should be made to introduce such birds as the Goldfinch, Bullfinch, and Chaffinch, but not the Sparrow. The Sparrow was introduced at Melbourne, and his presence there had not been so agreeable as to induce them to wish for him in Queensland. In the report of the proceedings he found a long, intelligent, and interesting speech on the subject made by a pressman; and when he read it and the remarks of the other members he thought to himself—Well, this could not be quite so outlandish a place as he had anticipated after all. He hoped he might be the means of assisting to keep up the

interest of the people of this district in Queensland by sending home a few notes occasionally.

December 5th, 1879.

The Third Meeting of the Session was held in the Mechanics' Institute—Mr Watt in the chair.

Mr Moodie read a paper on "Vegetation in 1879," communicated by Dr Gilchrist.

Mr Hastings read a paper on "The Rarer Birds that had lately occurred in the District." *(See Transactions.)*

Short discussions followed the reading of the papers; and, on the motion of the Chairman, votes of thanks were awarded to the authors.

January 9th, 1880.

The Fourth Meeting of the Session was held in the Mechanics' Institute—Mr J. G. Starke in the chair.

The Rev. J. B. Johnstone, Rev. T. Underwood, Messrs Watson and Gray were elected Ordinary Members.

The Secretary reported that a number of books had been received from Dr Gilchrist in gift to the Society, including a complete set of the *Transactions of the Montrose Natural History Society* and a copy of the *Transactions of the Royal Irish Academy* (Vol. XIV.), bearing an inscription which shews it to have once belonged to Sir Walter Scott, who was one of the Honorary Members of that Society.

Dr Grierson exhibited a very fine specimen of Asbestos, brought from Canada by Mr R. Wallace, Auchenbrack, who recently visited the Dominion on an agricultural survey, as the delegate of the Upper Nithsdale farmers. Asbestos, Dr Grierson said, was known to the Romans and used to form a cloth to envelop the bodies of the dead. Thus enveloped, they were placed in the funeral pile; and the cloth being indestructible by fire, the ashes were retained in it. For a long time it seemed to have been put to no other special purpose. In Italy the source of it was Piedmont. Recently it was applied for the first time, and successfully, to a purpose that of course was not thought of in former days. A difficulty had always been experienced in getting a suitable packing for the pistons of steam-engines, until Asbestos was used,

and found to answer the purpose admirably. Steamers crossing the ocean used to shew a failure in speed towards the end of the voyage, caused by the wasting of the packing and the consequent escape of steam at the pistons; but this had been perfectly cured by the employment of Asbestos. The Asbestos bed in Piedmont, it so happened, belonged to monks, and when the demand increased for it the price greatly increased; but about the same time it was discovered to exist in Canada, and much more extensively. He possessed about twenty specimens of Asbestos from different parts of the world, including Piedmont, Russia, and Aberdeenshire; but this was the first specimen of the Canadian that he had seen, and it was of a much finer quality than any of the others. Its fibres were as delicate and flaccid as the finest silk. If it existed in sufficient quantity in Canada—and there were said to be some miles of it in the Primary Rock—it must ultimately prove to be a mine of incalculable wealth.

The specimen was greatly admired for the fineness of its texture. The Chairman produced a ring from his finger which contained a very pretty Catseye stone—that, as he explained, being simply Asbestos in its most beautiful and rarest form; the Catseye, which was found in British India and Ceylon, being indeed much rarer than the diamond.

Dr Grierson also exhibited a specimen of a rabbit's head, of which he had several, but this was the last received, shewing a most abnormal length of teeth. He observed that one side of the jaw had been fractured, probably by a shot, and kindly healed by nature; but the lower jaw having been slightly displaced, the teeth no longer came together, but passed each other without contact. The consequence was that the teeth grew to a great length. Though surrounded with food, the poor creature must have latterly been unable to eat; and in fact he never saw a more starved animal than this was.

The Chairman read a long, interesting, and instructive paper, entitled "Notes on the Stone Age;" and at the close Dr Grierson exhibited, by way of illustration, specimens of celts, axes, arrow-heads, flint flakes or knives, &c. The celts were collected from various quarters, and were in the rough and polished, the latter indicating an advance in civilisation. One of the finest was also one of the smallest, and, alike in its shape and the stone of which it was made, was quite new to Dr Grierson. It was turned up

recently with the plough in the parish of Tinwald; and he could find no drawing resembling it exactly in any of the authorities. Another, which was also one of the coarsest, was from the Island of Aneityum. It was brought here by the Rev. John Inglis, who went out there as a missionary thirty years ago. The natives were then in a state of complete savageness, and were using stone implements. Now they were civilised, and conducting a good trade in various products with New Zealand. It was curious to reflect that the man who made that rude instrument as a savage might still be alive, civilised and a Christian. As Mr Starke had said, celts were discovered in all parts of the world, and were very similar in form; but some of them were made of stone that was not known anywhere to exist, and the discovery of this formation might lead to the discovery of the cradle of the race.

Two celts were exhibited by the Chairman, sent from India by Mr Hope, brother to Sheriff Hope; and two by the Rev. Mr Johnstone, obtained in the Jed district.

Mr Lennon read a paper on "Local Museums," which was much appreciated.

February 6th, 1880.

The Fifth Meeting of the Session was held in the Mechanics' Institute—Mr J. G. Starke in the chair.

Sheriff Hope; Capt. Maxwell of Terregles; Mr Edward Maxwell, Terregles; and Dr Symons were elected Ordinary Members.

The skin of a Canadian wolf (*Canis latrans*), brought by Mr R. Wallace from the Dominion, and presented by him to Dr Grierson for the Thornhill Museum, was forwarded by that gentleman for exhibition. In a letter the Doctor explained that the animal, which is thicker and shorter than the common wolf, is described by Sir John Richardson, and inhabits a northern range to the 55th degree of latitude.

The Chairman read a second and concluding paper on "The Stone Age," speaking of the mineral Jade, the material from which the rarest, most beautiful, and most valuable celts were made, and of the Fauna of the stone period. Jade, he explained, was nowhere found in Europe in the native state, and only, as far as known, in Asia; the principal mines being in the north of Cashmere, and in Turkestan, whence it was obtained by the

Chinese. It also occurred in New Zealand. In China Jade was greatly prized: it was known as "the gem;" and the Oriental imagination had discovered in its properties symbols of all the human virtues. It was sculptured into vases and other ornaments of the most artistic design and exquisite workmanship by Chinese artificers; in India the objects made of it were, after the manner of the Hindoos, set with brilliants. Specimens of Chinese workmanship in Jade were exhibited, kindly lent to Mr Starke by Mr Dudgeon of Cargen. These included a vase of green Jade, with ring ears, the whole sculptured from a solid block, and inscribed with Chinese characters; a mass of white Jade exquisitely carved, and representing in relief pilgrims ascending from the foot of a hill to a pagoda at its summit, and on the other side a forest scene; a piece of brown or tortoise-shell Jade, cut by a Chinese artist into the form of a lotus leaf, with handles fashioned to the shape of lizards; and a seal of white Jade, richly studded with rubies and emeralds set in gold, and having a blood-stone stamp. The vase was a part of the loot of the French soldiery when the summer palace of the Emperor of China was sacked in the war of 1860. Mr Starke also exhibited a New Zealand celt made of native green Jade, lent by Mr E. C. Maxwell, Terregles, who himself brought it from that country. It formerly belonged to a famous chief, who in the Maori War thrice cut down the British standard with his own hand and defeated our troops. Mr Maxwell, in a note, explained that Jade was found in only one portion of New Zealand, that the natives travelled long distances to obtain it, that the clubs or celts were formed from it by being rubbed with sand; and Mr Starke added that this one, which was large, flake-shaped, and beautifully translucent, would probably have engaged a man's whole life-time in the polishing of it, and might have been handed down from generation to generation as a priceless possession in the family of the chief. In Scotland there was a mineral to be found which had many of the properties of Jade, and could not be distinguished from it even by expert mineralogists without the aid of the microscope. This was Prehnite. Referring to some letters in the *Times* regarding Jade celts recently found among the lake-dwellings in Switzerland, Mr Starke remarked that these must have been brought from Asia in far-off times. The paper concluded with an interesting description of the Fauna of that remote period.

The Secretary read a paper, communicated by Mr M'Andrew, New-Galloway, on "The Carices of the Stewartry." *(See Transactions.)* Mr M'Andrew forwarded specimens of all the species mentioned in the paper for presentation to the Society.

March 6th, 1880.

The Sixth Meeting of the Session was held in the Mechanics' Institute—Mr Gibson Starke in the chair.

Messrs Byth, the Academy; J. Broun, Solicitor; J. M'Meekan, Linden Grove; and J. J. Clark, Cintra Villa, were elected Ordinary Members.

The Secretary announced that he had received from Mr Shaw, Tynron, as a donation to the Society's Library, a copy of the *Graphic* of 31st January last, containing an article written by him on "The Appreciation of Beauty by Animals."

The Secretary exhibited a pair of Scaup Ducks *(Fuligula marila)*, male and female, and remarked that the species had occurred in this district during the past winter in unusually large numbers.

Mr Moodie read a paper, communicated by Dr Gilchrist, on "The Effects of a Prevailing Wind on Trees."

Mr Rutherford gave an address detailing his observations on the Salmon Disease *(Saprolegnia ferax)*, the life history of which he fully explained by the aid of several diagrams. A short discussion followed; and Mr Rutherford, in acknowledging the vote of thanks passed to him for his valuable communication, promised to take up the subject more fully at next meeting.

The following communications from Corresponding Members were then read by the Secretary :—

"Notes on a Collection of Trichoptera from the Stewartry," by Mr F. G. Binnie. *(See Transactions.)*

"Notes on a Collection of Neuroptera-planipennia from the Stewartry," by Mr J. J. King.

Small collections of Neuropterous Insects, made by Mr R. Service, formed the subjects of these two communications. Annexed is the list of species named in Mr King's paper: all

were collected in localities in the east of the Stewartry of Kirkcudbright:—

Sialis lutaria, *Linn.*
,, fuliginosa, *Pict.*
Micromus paganus, *Linn.*
Hemorobius micans, *Oliv.*
,, humuli, *Linn.*
,, nervosus, *Fab.*
Hemorobius limbatus, *Wesm.*
Chrysopa flava, *Scop.*
,, vittata, *Wesm.*
,, alba, *Linn.*
Panorpa germanica, *Linn.*

April 23rd, 1880.

The Seventh and last Meeting of the Winter Session was held in the Mechanics' Institute—Mr Neilson in the chair.

The Secretary explained that in the ordinary course this meeting should have been held on the 2nd inst., but owing to the General Election he had taken the responsibility of postponing it till this date.

Messrs R. W. Miller, Queen Street; J. Wilson, Inland Revenue; Alan B. Crombie and James Crombie, architects, were duly elected Ordinary Members.

The Secretary announced that he had received four parts of the *Transactions of the New York Academy of Sciences;* three Annual Reports by the Comptroller of the Currency of the United States; two pamphlets from Mr E. S. Morse, Salem, Mass.—one on *Traces of an Early Race in Japan;* the other on *Dolmens in Japan*—and two papers on "The Salmon Disease," read before the Royal Society of Edinburgh, by Mr A. B. Stirling, curator of the Anatomical Museum—all of which donations were laid on the table. Mr W. G. Gibson sent a Radiometer for exhibition, and the Chairman explained its construction and its scientific value.

The following list of Field Meetings was then agreed to:—First Saturday of May, Thornhill Museum; First Saturday of June, Colvend; Second Thursday of July, Enterkin Pass; Second Thursday of August, Annan District; First Saturday of September, Criffel.

A proposal by Dr Gilchrist, of which consideration had been delayed from the February meeting, to have a Map of the Society's District printed, was taken up; but, after some discussion, it was agreed that owing to the state of the Society's funds the matter should be adjourned *sine die.*

In the absence of Mr Rutherford, through serious illness, the Secretary read a communication from that gentleman, entitled

"Observations on the Salmon Disease." *(See Transactions.)* The paper in part recapitulated in substance some remarks on the same subject made by Mr Rutherford at last meeting, and also stated the result of subsequent observations. Considerable discussion followed, most of the speakers agreeing with Mr Rutherford's conclusions.

Mr J. W. Kerr read a paper, communicated by Dr Gilchrist, on "The Application of the Observant Powers." The subject was treated in a very interesting manner.

Mr Lennon sent a paper, entitled "Notes on Rare Beetles"—second notice *(see Transactions)*—which was read by the Secretary.

Votes of thanks were passed to the authors of the papers, and thereafter the meeting separated, thus concluding the business of the Winter Session.

FIELD MEETINGS OF 1879.

The First Field Meeting was held at Kirkmichael on May 4th, and there was a large attendance of Members. Various antiquarian remains were visited, and Capt. Lyon kindly entertained the party in the mansion house at the close of the meeting. No detailed report of the meeting was handed in.

The Second Meeting was held on June 6th, when, on the kind invitation of Mrs Murray Dunlop, the Society visited the estate of Corsock. There was a large muster of Members, and the weather in the morning was favourable, but at intervals during the day it was very wet and stormy, so that all were more or less drenched before reaching their homes in the evening. Field naturalists as a rule are indifferent to weather, and generally believe the saying that "Nature's frowns are beautiful," faith in which kept them happy under the depressing influence of the cold and rain of Saturday. The party met at Dumfries Station, and proceeded by the 8·32 A.M. train to Parton Station, being joined at Castle-Douglas by some of the Members from that district. Arrived at Parton Station, a small section of the party, against the advice of their more experienced brethren and the plain teaching of the Ordnance Map, determined on going by the road

to the left—a longer and more circuitous route, and, moreover, uncompensated for by flowering hedgerows and overhanging herbage such as botanists and entomologists love to revel in. The larger body, however, walked over the hills by Falbae Moor, past some excellent collecting ground. The first halt was made to admire the beautiful floral display in front of the gamekeeper's cottage at Parton—an effect produced not by expensive plants purchased from a nurseryman, but by the common native denizens of the surrounding woods and meadows. Certainly no finer floral spectacle could have been produced by the costly occupants of the modern flower garden. A little further on was secured from off a hazel bush a fine specimen of *Nemophora pilella*, a member of a genus of moths with long, glistening, thread-like antennæ, popularly known as "Long Horns." The species had not previously been met with in the district. A small bog covered with innumerable spikes of the pretty flowers of the bogbean was next examined, and some nice bunches of the fragrant flowers were gathered for further examination at home. The insectivorous character of the plant was shown in the fact of many small beetles being found adhering to the anthers by the viscid substance exuded from the flowers. On the little knoll the scanty grass was studded with the white flowers of an everlasting *(Gnaphalium dioicum)*, and an abundant supply of specimens was collected, the plants being in fine bloom. Near this place some of the party came upon some patches of a pure white form of the common blue violet, and carefully transferred the plants to their vasculums. A bare and bleak moorland was now entered upon, where flowering plants were as yet scarcely above the ground. Very interesting, however, to those of ornithological tastes were the various birds breeding in this solitude—the Lapwings as they, alarmed for the safety of their young, wheeled about in circles, uttering their melancholy cries; the hoarse calls of the Grouse; the bleating of Snipe; and from every knowe as the party passed arose "the wild scream of the Curlew." A poor little duckling, still retaining some warmth, and which had apparently died from exposure, was picked up and pocketed with the remark that it would make "a specimen." A little farther on and Corsock Moor was reached, crossing which the party entered the grounds of Corsock House, and were met at the garden by those who had gone by the other road with a cheer of triumph on having gained the march—a result which was not

grudged them, as vasculums and other receptacles for specimens were as empty as when they had set out. Under the conduct of the gardener and the forester the party went round the beautiful and well-kept gardens and policies, various fine trees and shrubs being pointed out. Prominent in interest was a fine Silver Fir, which about twenty years ago was broken over about eight feet from the ground. The late Mr Murray Dunlop had lead run into the stem to preserve it, and soon after seven or eight horizontal branches grew out. From these again thirty-five upright, tree-like stems have sprung to a height of about forty feet, forming a very curious and interesting sight. There are several other fine trees, amongst them being a beautiful *Picea nordmanniana*, a handsome *Wellingtonia gigantea*, a Fern-leaved Beech, some fine Copper Beeches, &c. A splendid collection of herbaceous plants occupies a border in the garden, and proved of much interest to the botanists present. The party were next conducted round the outside of the mansion-house, which is of quite modern construction. Built into the northern gable there is an old stone bearing the coat-of-arms of a Mr John Nelson, who was executed in Edinburgh in 1588. Proceeding next to the loch, where the party were joined by the Rev. Mr Sturrock, minister of the parish, and Mr Bruce of Slogarie, boats were launched, and some enjoyable hours were spent in sailing about and in exploring the margin of the loch ; while some others had a turn with rod and line at the trout with which it is well stocked. A good many broods of Wild Duck and Teal were noticed, and most amusing it was to see the consternation of the parents when the boating parties approached too near the reed beds, where the ducklings hid themselves. In rambling over the moor some of the party noted great quantities of eggs which had had their contents abstracted by these enemies of the game preserver, the Carrion Crows, or "corbies," or "hoodies" as they are locally termed. Amongst these eggs we observed Pheasants', Partridges', Wild Ducks', Black Grouse's, and Wood Pigeons', and in no small numbers either. Even the little Sandpipers, breeding along the margin of the loch, had been laid under contribution, as we noticed several of their eggs lying broken and empty. The majority of the party now, on the invitation of Mr Sturrock, proceeded with that gentleman to the manse, where they were shown what was perhaps the most interesting sight of the day—an aviary containing about forty native and foreign birds, all in vigorous

health and song, and most of them nesting. Artificial fish-ponds were also inspected. In these Mr Sturrock has been engaged rearing various sorts of fish for transference to the Urr, which flows close by; but the severity of last winter has somewhat endangered his plans. After being handsomely entertained in the manse, this party left for Castle-Douglas in time to catch the 7.40 train.

The more enthusiastic Members were still engaged in botanising, insect-collecting, and angling at Corsock, and it was several hours after before they thought of home. Some of these gentlemen went to Castle-Douglas to catch the late train; but the others, including all the prominent Members of the Society, walked home to Dumfries, arriving before the others, who preferred the slower mode of progression by train. We need not add anything more as a proof of the healthy vigour induced by an enthusiastic pursuit of natural history.

The Third Meeting was held on July 7th, when the Members, on the invitation of Mr T. R. Bruce, visited Slogarie and the banks of the Dee in the vicinity of Loch Stroan. Mr Bruce is a Member of the Society, and is a keen observer and student of Nature. A visit to his domain was looked forward to with pleasant anticipations, and these were not disappointed. Owing to the school holidays having commenced in Dumfries, the number of Members who left by the seven o'clock morning train was smaller than usual. Some astonishment was felt that Dalbeattie, Castle-Douglas, and Kirkcudbright sent so few accessions to the party. A grand new museum is about to be erected in the county town of the Stewartry, and it does not augur well for the usefulness of such an institution when the burgh could not send a few representatives to such a meeting. Let us express a hope that the votaries of science and students of local history will not be so backward on future occasions. The museum will only be very partially useful unless free intercourse is promoted among scientists and archæologists in the district. At New-Galloway Station the company were cordially received by Mr Bruce, and Mr M'Andrew, New-Galloway, whose success as a student of botany, and valuable contributions to the science as the results of his observations in the Glenkens, have earned for him a considerable reputation. As

soon as they left the railway station the Members began their observations, and soon found objects enough in the wilding flowers and little insects among the rank herbage of the mossy meadows to excite their wonder and cause delight. Of the habitat of anything rare or strange, from a scientific point of view, Mr Bruce informed the curious. On the old bridge, which formerly united the parishes of Kells and Balmaghie, the little Wall Rue Fern *(Asplenium ruta-muraria)* is to be found. Though common in other parts of Galloway, it is here rare. By the way-side, decking the sloping banks with their pretty blossoms, were clusters of the Meadow Cow-wheat *(Melampyrum pratense)*, one of the Scrophulariaceæ, closely related to the Yellowrattle *(Rhinanthus cristagalli)*, which is so profuse in our meadows this moist summer. The Rock Rose *(Helianthemum vulgare)*, a member of the order Cistaceæ, which exhibits the curious phenomenon of vegetable irritability, was also found in great abundance. When touched, the stamens visibly move. It may not be generally known that a sensitive plant is to be found in the wilds of Galloway. Close to the roadside, on the farm of Duchrae, Mr Bruce directed attention to what is called a Roman camp. There is a deep ditch and low dyke, enclosing an area upwards of thirty yards in diameter. It is covered with trees, and a portion of the dyke next the road seems to have been removed. The circular character of the camp at once raised doubts as to the nationality of the warriors by whom it had been built, and these were not dispelled by Mr Bruce remarking that a rocky islet in the adjoining river also bore marks of having been used for defensive or residential purposes. Where the party turned off the parish road towards Slogarie they were called upon to admire the "Duke of Wellington," a detached mass of rock on a brae not far distant. It bears a slight resemblance to a human figure, with a prominent Wellington nose. A little further on the party arrived at the bridge which crosses the stream connecting Woodhall Loch with the Dee; and Mr Bruce stated that, although the water was then running with a rapid current into the Dee, when the latter was in flood it ran as rapidly back into the loch. A meadow was pointed out in which the glow-worm is often seen in warm, moist evenings.

Arrived at Slogarie, the party were entertained to a sumptuous breakfast, after which they had great pleasure in examining a very complete Herbarium belonging to Mr Bruce. A beautiful

collection of birds' eggs and a large number of birds, finely mounted, were also examined with much interest. The birds have been all procured within the last few months, mostly on the estate; and we understand it is Mr Bruce's intention to present them to the new public museum at Kirkcudbright. Amongst the rare or remarkable specimens are a splendid Raven, a Snow Bunting (procured last January), a Purple Sandpiper, a fine pair of Common Buzzards, a pair of magnificent Peregrines, a Little Grebe, a Long-horned Owl, and a Mountain Finch, or "Cock o' the North," as it is locally termed. The party afterwards visited the well-kept gardens, and a great many interesting plants and trees were pointed out. Mistletoe was growing luxuriantly on various trees, particularly on the Apples. There were fine plants also on Limes and Oaks, and a small plant on a service tree, which led to the rather Moody remark about a parasite on Service. A curious little plant of a spruce *(Abies clanbraziliense)*, not above a foot high, but upwards of thirty years old, was next examined.

There were so many objects of interest in the precincts of Slogarie that the party were tempted to linger in the grounds; but the day was fair and pleasant, though the wind was strong and cold for July. A move was made along the banks of "stately Dee." Two of the Members, having their rods with them, proceeded to investigate the ichthyological characteristics of the river. After a few casts of a spinning minnow one ardent student of the gentle art was rewarded with a splendid rise and run from a heavy fish, and congratulated himself on having hooked a splendid Sea-trout. After a little, however, he was disgusted to discover that his captive was a Pike fully two pounds weight. Another small Pike was taken; and the other angler believed he touched a Salmon, of which there are now plenty in the Dee. On the meadows, by the river and grassy flats on the hillside, were countless wild flowers, charming the eye with their beauty of form and colour. Among these were several specimens of the Orchidaceæ—native flowers that rival those of the tropics in their style and beauty of colouring. Among them were found the Early Purple Orchis *(Orchis mascula)*, Spotted-leaved Orchis *(O. maculata)*, Fragrant-scented Orchis *(Gymnadenia conopsea)*, Butterfly Orchis *(Habenaria bifolia)*, and the White Fragrant-scented Orchis *(G. albida)*. Among the first find of more than ordinary interest in the botanical department were some fine specimens of

Polyporus betulinus growing on an old, rotten Birch. Along the Dee the little Sundews were growing in great abundance, with the remains of their insect food adhering to their viscid leaves. Great quantities of the Scented Fern *(Lastrea oreopteris)* grow on the hillsides, and perfumed the air with delightful fragrance as the party trod the fronds down in walking through them. Insects were rather scarce, owing to the strong wind. There were very few butterflies abroad : a single specimen of the Common Blue, a few of the Little Heath, were secured, and several of *Cœnonympha Tiphon var. Philoxenus*, which adds Slogarie as a new locality for this interesting variety, the only previously known locality in Scotland being Cloak Moss, Colvend, where it was found by Dr Buchanan White, of Perth. Several other Lepidoptera were subsequently captured, amongst them being *Melanippe hastata*, *Noctua plecta*, a very high-coloured example of the Clouded Buff Moth *(Euthemonia russula)* by Mr Bruce, *Agrotis porphyrea* by Mr Moodie, *Acronycta rumicis*, *Tanagra chœrophyllata*, *Pyrausta purpuralis*, &c. At Loch Stroan the party were rowed across to Clachrum Wood, now the only remaining portion of the great forest which in primitive times is supposed to have covered the whole of Galloway with an almost impenetrable thicket. The trees are not very lofty; indeed, the sorts are not tall growers, being, with the exception of a few Ashes, principally Rowan, Hawthorn, Birch, and Sloe. One of Rowan is the largest we have seen or heard of, measuring at three feet from the ground nearly nine feet in girth. In wandering through the wood a Roe Deer was started, and one of the party killed a fine Adder. A "Game-keeper's Museum" on a small scale was found on one of the trees, the specimens comprising skulls of the Hoodie Crow, Hawks, and Weasels, nailed up in the usual fashion. A little further down, on the side of Loch Stroan, some large boulders were shown that had been carried across the loch by the ice last winter.

After a short time spent here, the party again embarked and rowed a few miles further up the Dee, the journey being enlivened by some well rendered songs by the well-known editor of the *Kirkcudbrightshire Advertiser*. At the bend of the Dee, not far from Gairloch, the party left the boat to pursue their studies afield. A few of the Members started across the moor to visit the Martyrs' Monument on Auchencloy, which was reached after a stiff walk of several miles amongst bogs and morasses. The

monument is an obelisk about thirty feet high, about seven feet square at the base, and built of the granite of the district. The side bears the following inscription :—

Erected in
Memory of the Martyrs
R. Fergusson, J. M'Mechan
R. Stuart and J. Grier
who fell on this spot 18 Dec. 1684
from a collection made here
on the 16 Aug. 1835
and the profits of the sermon
afterwards published
preached on that day
by the
Rev. R. Jeffray of Girthon
Daniel III. 17 and 18

About a dozen yards off, at the foot of the knoll on which the monument stands, there is a little tombstone about two feet high, the inscription on which is still very easily read, thanks to the labours of "Old Mortality," who renewed the letters. The inscription is as follows on one side of the stone :—

'Here lyes Robert Ferguisson who was surprised and instantly shot to death on this place by Graham of Claverhouse for his adherence to Scotland's——'

And on the other side surmounted by a skull and cross bones, and the legend—

'Mementi Mori'
Reformatione Covenants Nationall and Solemn
League 1684.

As we stood on the steps of the monument we could not help picturing to ourselves the scene enacted here on that cold December morning on this desolate moorland as Claverhouse hunted his poor victims to death. The view from the spot is singularly bleak and wild, and there is not a single dwelling within sight. Numerous Swifts were flying about; and it was thought likely, as there are no other suitable breeding places within miles, that they have their nests in the granite cliffs on the other side of the glen, which are yet occupied by the Raven and Peregrine Falcon. The whole party met again at the boat, the white waterproof of a non-working antiquary being, as at other times during the day, a useful rallying point for wandered Members. Notes were compared, and it was found that some interesting specimens had been obtained. Mr M'Andrew had gathered a large number of Carices,

including *Carex binervis, flava, fulva, pallescens, vulgaris, pilulifera, canescens, vesicaria,* and *ampullacea.* At Loch Stroan the rare moss *Grimmia commutata* was found growing on a stone. *Sanicula Europœa* was found in a wood, where also was captured the rare sawfly *Trichiosoma betuleti* under a birch tree. The Narcissus grows abundantly here, and a number of bulbs were dug up. Perhaps the best find of the day, however, was a clump of *Orobus sylvatica,* an exceedingly rare plant, which was gathered, not in a wood as its name would indicate, but on the meadows close to the water edge. Another plant, *Vicia angustifolia,* was found near the same place. Once more embarking, the whole party of sixteen were rapidly borne down the "dark, rolling Dee" into Loch Stroan, where the stiff breeze had raised waves high enough to have endangered the safety of a less substantial boat. Beneath the viaduct the party partook of luncheon, again kindly provided by Mr Bruce. One of the party, wandering about, came upon an envelope containing two Stonechat's eggs, pinned to a door, and labelled "eggs, with care;" but the mystery was soon solved when Mr Bruce's servant explained that he had taken them from a deserted nest near by.

After luncheon, Mr M'Ilwraith, vice-president of the Society, expressed the thanks of the Members to Mr Bruce for the very handsome way in which he had entertained them, and for the opportunity he had given them of enjoying the splendid scenery amidst which he had guided them during the day, and which had appreciably extended their knowledge of the natural productions of the district.

Rev. Mr Dodds said that much of the day's enjoyment, he fancied, was due to the kind way in which they had been received by Miss Bruce in the morning, and moved a vote of thanks to that lady, which was very heartily accorded.

Dr Gilchrist wished to add, as the oldest Member of the Society, that since he had joined it he never remembered a party receiving such hospitable treatment at a Field Meeting as they had that day experienced.

Mr Moodie said there was another mode of expressing their feelings, and proposed three cheers for Mr Bruce, which were at once most enthusiastically given, the surrounding hills taking up the echoes with "three times three."

Bidding good-bye to Mr Bruce, the party proceeded along the

railway to New-Galloway Station, picking up several plants and a few insects by the way. One of the plants was *Gnaphalium diocum*, which was growing abundantly on the ledges of the rock cuttings; and the most remarkable insect was *Eudorea atomalis*, which has hitherto been found in Perthshire only. The party arrived at Dumfries at 6.30 P.M., having spent a most enjoyable and instructive day.

The Fourth Meeting was held on August 2nd, the place chosen on this occasion, through the kind permission of the agents, Messrs Walker & Sharpe, being the estate of Mabie. Few estates in the Society's district can boast of greater attractions for the naturalist, for whether he be devoted to Geology, Botany, or Zoology, he will never fail to find something to gratify his tastes. Through the extensive copses the Roe Deer still wanders unrestrained; and the Buzzard breeds amongst the rocks on the hill tops. The ledges of the Blackcraig once held the eyrie of the lordly Peregrine, where also not many years ago a Golden Eagle was seen sitting on each successive morning for about a week. A fact of great interest also for the ornithologist is that the Woodcock has been known to breed here in former years. This season is no exception, for only a few days ago a brood of four young Woodcocks was seen there by the Secretary and another Member of the Society.

The party, having travelled by train to Lochanhead Station, proceeded first to Lochaber, where an hour or two was pleasantly spent in collecting botanical and entomological specimens. Foremost of course in interest were the various "insect-eating" plants, the *Droseras* and *Pinguiculas*. Of the former genus the scarce *D. anglicum* was growing along the loch margin in comparative abundance. A somewhat unusual but extremely pretty sight was the numerous groups of small Dragon Flies *(Agrion elegans)*, of a pulverulent blue colour, which were glancing about in the bright sunshine literally "seeking whom they could devour," for more voracious creatures it would be difficult to find. Near Craigbill the party passed amongst a number of ice-borne granite boulders, each or all of which would have furnished Dr Gilchrist with a text for a geological discourse had he been present. Many regrets were expressed at the Doctor's absence, and much sympathy with

him in his severe illness, arising partly from over-exertion at the last Field Meeting. On reaching the top of the hill, the party found a brilliant floral spectacle spread out all around, over many acres, the summits of the surrounding hills being completely covered with the beautiful purple flowers of the ling *(Erica tetralix)*. Here the party rested for a short time, and a more charming place at this season of the year could scarcely be imagined. The view from this point is most striking, and includes a wide stretch of country of richly picturesque features. The Nith directs the eye southward amongst lands diversified as a garden, and points to the deep blue mass of Criffel, at whose feet sleeps in calm beauty the silvery Loch Kindar, and beyond to the wide expanse of the Solway and the dim outlines of Skiddaw and other Cumberland mountains. To the northward a broad valley stretches away till it becomes narrowed and shut in by cultivated hillsides, and overhung at the extremity by the dark, conical form of Queensberry. Towards the west, Lochaber and Lochrutton are the most striking points of the landscape, which is engirdled by a confused mass of hills stretching far away on the horizon. Proceeding down the glen towards Mabie House, numerous insects were secured, amongst the butterflies being the Grayling *(Satyrus semele)*, which nowhere in this locality occurs more abundantly than on Mabie; the Ringlet *(Epinephele hyperanthus)*; Small Heath *(Cœnonympha pamphilus)*; the Meadow Brown *(E. Janira)*; Dark Green Fritillary *(Argynus aglaia)*; the Pearl-bordered Fritillary *(A. Euphrosyne)*; the Small do., do. *(A. Selene)*; the Common Blue *(Lyceana icarus)*; and Scotch Argus *(L. Artaxerxes)*. Amongst the moths the best were the Mountain Carpet *(Larentia cæsiata)*, the Concolorous *(Tapinostola fulva)*, and the Purple and Gold *(Pyrausta purpuralis)*. A fine specimen of the Viviparous Lizard *(Zootoca vivipara)* was also secured, and the best finds made by the botanists were some pretty lilac and white varieties of *Polygala vulgaris*. At Mabie House the party were shown over the premises, and some parts of the ancient dwelling-place, on which the present mansion is built, were pointed out. The party next examined the fine old canoe which was found when draining Mabie Moss. It is in fine preservation, and a new hut has recently been erected over it, which will enable it the better to resist time's destroying hand. It is of oak, and measures about fourteen feet in length and about three feet in

breadth, and, from some peculiarities of construction, apparently was the property of a chief or person of distinction. Some fine trunks of Bog Oak were dug out near the same place where the canoe was found; one of the trunks which was measured was over 70 feet in length and about 2½ in diameter. After a walk through the fine gardens at Mabie, which are in the occupation of Mr James Service, nurseryman, the party next visited the Picts' Knowe, an ancient British camp still in fine preservation, as when Mabie Moss was reclaimed, near the centre of which it is situated, the camp was fenced off so as to secure it intact. On the hilltop to the westward can still be traced a similar-shaped fort or camp, which very probably was the "watch tower" or "look out" of the family or tribe dwelling at the Picts' Knowe, then surrounded with water, as is evident from the finding of a canoe of the above dimensions in close proximity.

The party next visited St. Queran's Well, and the stone seats and the cooling water were very welcome after so much walking. St. Queran (or Querdon, Guerdon, Quergan, or Jardan, &c., as it is variously given) was a Scottish saint, supposed to have been connected with the earlier forms of the Abbey of Holywood, and the date assigned to him by Butler is 9th September, 876. The Society possesses a number of coins found in the well many years ago by the then tenant of the farm of Barbush, which were doubtless the offerings of invalids, as was usual at the holy wells of old times. After about an hour's further walking, the party reached Troqueer Holm, where they were received by the President, J. Gibson Starke, Esq. After partaking of refreshments, Mr Starke's private museum was inspected, catalogues of the collection being presented to those present. A magnificent collection of Coins; of Land and Fresh-water and Marine Shells from various parts of the world; a very complete collection of British Ferns, Sedges, and Grasses; Curiosities from Jamaica and Ceylon; and a vast number of rare old Books, Autographs, and other objects of interest too numerous to mention were examined; and after an hour or two had been thus pleasantly and profitably spent, Mr J. H. Maxwell of the *Kirkcudbrightshire Advertiser* proposed a vote of thanks to Mr Starke for his great kindness in throwing open his museum to the Society, which was very cordially awarded. Mr Starke having briefly responded, the party took leave of him, highly gratified with the day's proceedings, which were of the most pleasant description.

The last Meeting was held on September 4th at Comlongan Castle, and was well attended; but there were no notes taken of the day's proceedings.

FIELD MEETINGS OF 1880.

The First Field Meeting was held on May 4th at the Thornhill Museum, to which the Society had kindly been invited by Dr Grierson. The party left Dumfries by the mid-day train, and were joined at the museum by those Members residing in the Thornhill district. They were first conducted through the grounds, which are profusely studded at the present time with immense numbers of Daffodils. Many varieties are grown here of these beautiful spring flowers, which are seldom met with nowadays. It was yet too early in the season for a proper examination of the many rare and curious plants cultivated by Dr Grierson. The fine series of ancient Querns and old Celtic Crosses was minutely inspected, and much interesting information as to the history of the various specimens was given. The party were next conducted over the vast collection of Natural History and Art specimens, and of Antiquities contained in the museum buildings. Prominent in interest was a large assortment of articles recently obtained from British Guiana, consisting of some very formidable Boa Constrictors and other serpents, many of them over twenty feet in length; numerous brilliantly coloured birds and insects; and strange reptiles and rare quadrupeds. Some of the specimens in this collection are unique in European museums. A small box of the deadly Wourali (or Wourari) poison was also sent amongst the other things. The composition of this celebrated poison is now well known as the product of various species of *Strychnos*; but it for a very long time baffled the most experienced travellers and naturalists, the secret being so well kept by the "medicine men." So deadly is it in operation that the slightest prick of an arrow previously dipped in it is sufficient to cause death in any animal in two or three minutes; and a strange thing is that these animals thus killed are used as food. A beautiful collection of birds, reptiles, and mammals has also been recently added to the museum from South Africa. Amongst these there is a very fine specimen of the "Bushmaster," a ferocious serpent, which has the singular

habit of boldly advancing against anyone approaching its haunts. It is greatly dreaded by the natives, who will not face it at all. Round the front of the gallery is arranged a large number of skulls of animals, amongst which we noticed fine skulls of the Wapitu Deer, the Irish Elk (found in the bed of the Nith below Dumfries), the ancient Caledonian Ox *(Bos primigenius)*, Lions, Tigers, Leopards, and a beautiful series of skulls of the various breeds of sheep. The bearing of the latter on the theory of natural selection was pointed out very clearly. At the east end of the gallery are hung some very fine specimens of the singular weapons of the Sword-fish, Saw-fish, and other monsters of the "briny deep." We must not omit to mention the very large "tooth" of a Rorqual also exhibited here. It resembles a flag-staff in size and appearance, and we fancy would be very effective indeed even against the largest whales. After the party had feasted their eyes on the many wonderful things around them, they were called to the central table, where the Doctor unwrapped from a nice clean towel what he stated was the most wonderful "thing" he had ever possessed. We may call it a lamb, but a further description must come from Dr Grierson himself. Such description and deduction to be made from this physiological curiosity we will doubtless have shortly. Adjourning to the garden again, the party were served with coffee and tea, and an enjoyable hour was spent in scientific discussions. On again entering the museum, Mr J. H. Maxwell of the *Kirkcudbrightshire Advertiser* expressed the great delight which the Members had felt in examining the many objects before them, and thanked the worthy Doctor for his hospitality. Dr Grierson, in replying, said that his object in maintaining the museum was purely an educational one, and that he felt amply rewarded when he saw that his endeavours to spread a knowledge of the wondrous things of creation were appreciated. He had never conducted a party over his museum that showed more sympathy with his work, and he hoped that not only those Members who had visited him that day, but all those prevented from coming, would not miss an opportunity of waiting on him. Refreshments were again served; and after bidding the Doctor good-bye and taking another look round, the party retired, having spent a pleasant and most instructive afternoon.

The Second Meeting was held on June 2nd, the place selected for a visit on this occasion being the beautiful shore of Colvend. The weather being somewhat unfavourable at Dumfries, there was a smaller attendance of Members than on previous visits of the Society to this very interesting district. The day cleared up well in the afternoon, however, and the weather became warm and pleasant, and as no rain had fallen at Colvend the grass was quite dry and comfortable to walk upon. The party left Dumfries by the 12.20 train, and at Dalbeattie were joined by contingents from that neighbourhood and from Castle-Douglas. The latter included Mr David Kennedy, son of the world-famous Scottish vocalist. Mr Kennedy is sojourning at present in Castle-Douglas, and proceeds shortly to the Cape to become manager of the *Natal Witness*. Entering the waggonette from the Maxwell Arms, the journey towards Colvend commenced just as the rain stopped, and the sun peeped out for a little. The first halt was made at Richorn to inspect a place where grows a large quantity of the Lily of the Valley *(Convallaria majalis)*. Whether it is a true wilding here or an "escape" is disputed. We have seen it growing in a similar situation at Slogarie, but there also it has not been definitely ascertained to be a true native. We were informed that the patch at Richorn very rarely flowers: this is probably the case, as only one or two little sprays could be found. The next interesting incident was the discovery, as the waggonette passed underneath the tree, of a nest of a Golden-crested Wren attached to an overhanging branch of a Silver Fir. The beautifully constructed pensile nest of this the smallest of British birds is seldom seen except by those interested in these matters, and very rarely indeed is it to be seen so near a frequented road. We were glad to observe that it was out of the reach of mischievous boys. On passing the farm of Auchenhill, Mr Matthewson, Dalbeattie, informed the party that on the barn wall there is (or was) a female bust built in, which used to be an object of dread to the children of the locality. It was known as the "Lady Blanche;" and Mr Matthewson suggested that very probably there was some connection between this figure and the well-known effigy of the "Nun Slab" in Dundrennan, which has been so often under discussion. We trust that Mr Matthewson will investigate the subject; and as he is so intimately acquainted with the folk-lore of the district, he will doubtless be able to throw some light

upon what is confessedly obscure. A stoppage was made at the manse, where the party was received in the kindest possible way by Mr and Mrs Fraser. After partaking of a bounteous supply of refreshments, Mr J. H. Maxwell of the *Kirkcudbrightshire Advertiser* expressed the keen pleasure of the Members at being again amongst the "Craigs o' Co'en' "—one of the most beautiful portions of the Stewartry—and returned on behalf of the Society their grateful thanks for the hospitable manner in which they had been entertained by Mr and Mrs Fraser. Mr Fraser, in replying, said that when the Society first visited him (on 4th August, 1863) there were upwards of thirty Members present, but not one of those who were there on that occasion did he see before him. Most of those then present were dead now, but he was glad to see another generation arising with all the old enthusiasm and with the great advantages of increased facilities for gaining a knowledge of their local natural history and antiquities. Adjourning to the garden, Mr Fraser's interesting collection of hardy plants was examined, but for the majority of them the season was yet too young to see them in flower. *Aquilegia glandulosa,* a rare Columbine, was in beautiful bloom. Another fine plant in flower was the *Ramondia pyrenaica,* with large purple flowers rising from rosettes of deep green foliage. A grand specimen of the *Araucaria imbricata* was much admired, but the arboricultural feature of the garden is a fine row of Hollies with straight, well-grown stems thirty to forty feet in height. We also noticed a fine plant of *Lilium scovitzianum* in flower, the delightful fragrance of which was quite perceptible all over the place. The valuable collection of Auriculas—we believe the only one in the South of Scotland—was just out of bloom, and only one or two flowers remained. Its inspection would have added another to the many attractions of this "manse garden." Again seeking the waggonette, the party were driven to Rockcliffe, where the magnificent house in course of erection for Christopher Morris, Esq., was visited, and described by the Clerk of Works. Leaving here, the Members broke into detachments to follow their particular inclinations—some to visit the site of the Fort on the Castlehill Point; and others to collect Mollusca, Insects, Plants, &c. Two of the Members, both enthusiastic ornithologists, stripped off coats, boots, and other *impedimenta,* and scaled the cliffs like practised cragsmen. They were soon busy high up on the rocks examining the contents of sundry Jackdaws' and other birds'

nests placed on various points inaccessible to all but those possessed of strong nerves and strong muscles. The Jackdaws have become extremely numerous there, and we are afraid have now driven from this part of the Stewartry coast the last stragglers of that interesting bird the Chough. This bird is probably a fast-decreasing species in every part of Britain which it yet occupies, and it is the prevailing opinion that the Jackdaw, though a member of the same family, is in some way inimical to it. In these cliffs, living in close proximity and apparently in harmonious friendship, were the households of Owls and Kestrels. The crevices at the bottom were evidently in some instances occupied by the Shieldrake (or *Stockannet*, as it is locally termed). We have every reason to believe that these beautiful ducks are increasing in number, thanks to the benignant clauses of the Wild Fowl Protection Act. A good many pairs were seen during the afternoon. The breeding place once occupied by the Cormorants, and still known as the "Cormorants' Roost" or "Doucker's Bing," has been deserted by these birds for many years, and is now tenanted by the Common Gulls *(Larus canus)* in large numbers. Until lately a number of the Herring Gulls *(L. argentatus)* also bred here; but they have shifted their habitation to other quarters nearer Douglas Hall. At the latter place we observed several Rock Doves, and one of the party had the good fortune to see a pair of Peregrine Falcons. Under the experienced guidance of Mr Fraser, the botanists secured specimens of most of the peculiar plants of the shore, but it was just early enough to find them in good condition. The scarce plants to be found betwixt Rockcliffe and Douglas Hall have been so often enumerated that it would be superfluous to give a list now. We may, however, state on the authority of Mr Matthewson that the Royal Fern is still found in Colvend, but to prevent its threatened extinction we will not divulge the exact locality. A goodly number of Mollusca were picked up during the walk, amongst which were the following, viz.:—Mya truncata, M. arenaria, Solen ensis, Tellina solidula, Mactra solida, Artemis exoleta, Cyprina islandica, Cardium edule, C. echinatum, Mytilus edulis, Pecten opercularis, P. varius, Ostrea edulis, Pattella vulgata, Littorina littoralis, L. littorea, L. rudis, L. neritoides, Turritella communis, Purpura lapillus, Nassa reticulata, and Buccinum undatum. All the members of the party having reassembled at Douglas Hall, leave was taken of Mr Fraser,

and the homeward journey was begun by way of St. Lawrence's Chapel and Cloak Moss. The latter had the appearance of a newly-fallen shower of snow from the abundance in which the white panicles of the Cotton Grass *(Eriophorum)* were displayed. With song and joke time passed quickly enough, and the Maxwell Arms Hotel was reached about nine o'clock.

Before the Castle-Douglas Members left to catch the train, the Secretary (Mr R. Service) said that, as most of them were aware, it had been resolved at the previous Field Meeting to present Dr Grierson, Thornhill, with a copy of "Waterton's Wanderings in South America," as a very slight acknowledgment of his kindness in allowing Members of the Society to visit the Thornhill Museum free of charge, or, in other words, refusing to take any admission fee from Members. The money subscribed had been left in his (Mr Service's) hands, and he had procured and forwarded the volume to Dr Grierson, and he had received a reply, of which the following is an extract :—"How very kind it is of the Members of the Society to send me 'Waterton's Wanderings,' and I accept of their kindness with a feeling of special gratitude. I take it as a token of sympathy with the aim of my Museum. The study of Nature has its own reward, but sympathy with the study is as gleams of sunshine. Waterton's book will be of material use to me ; I will find described in it most of the objects I have got from British Guiana."

The Dumfries Members afterwards partook of tea together, and came home by the late train, highly delighted with the day's proceedings and laden with huge bundles of ferns, wild flowers, and other spoils.

The Third Meeting was held on July 10th, the place selected for a visit on this occasion being the romantic parish of Durisdeer. A large party left Dumfries by the 8.25 A.M. train for Carronbridge, and were joined at Thornhill Station by several Members of the Society of Enquiry, whose aid as experienced botanists was much appreciated during the day. Much regret was expressed at the absence of Dr Grierson, whom an unfortunate engagement prevented from being present. At Carronbridge Station the party were met by Mr Thomson, Durisdeer Village, who had kindly consented to act as guide, and whose services amongst these apparently interminable hills were indispensable. The

route lay over the farm of Drumcruil (permission to traverse which had been readily granted by Mr Dickson), where an ancient fort was pointed out at Langknowe. The old Church of Kirkbride was seen on the left above the farm of Coshogle. It is now in ruins, only a small portion of the walls remaining; and it is very desirable that the unique features of this interesting relic of the past should be preserved from further decay. A little further on the beautiful Glen of Enterkin was reached. The majority of the Members descended this deep ravine with the intention of visiting the cairn of Lagdow, which is said to commemorate the spot where a Covenanter of the name of Dow was shot by Sir Robert Grierson of Lag; but the majority of antiquaries doubt this tradition, and think that the name of Lagdow Cairn simply means "the cairn of the black hollow." They were, however, diverted from their purpose by a drenching rain, which came down in torrents, and they took refuge up the glen of Auchenlon Burn. Here they had the good fortune to fall in with a profuse growing mass of the rare Filmy Fern *(Hymenophyllum Wilsoni)*, which was collected with great delight, as several of the party had gone for the sole purpose of gathering this interesting species. Enterkin and other glens in that neighbourhood have long been famous for producing this fern, and the locality is given in all the old "Floras." A little further up, in a beautifully situated nook, was found a nest of the Dipper, from which the young "white breasts" rather unceremoniously fled as soon as disturbed. On the boulders over which the water was dashing a number of pretty Fresh Water Sponges were secured of the same species as was found in the Dee a year or two ago, when the Society visited Threave Castle. That scarce and beautiful snail the *Helix arbustorum* occurred in this glen also in great profusion, and a number were collected. We saw a quantity of this species recently in Dr Grierson's garden, where they had quite acclimatised, and thrive well. During a blink of sunshine, as the party emerged from this glen on to Thirstane Hill, vast numbers of the "Chimney Sweep" Moth *(Tanagra chaerophyllata)*—a little species, sooty black in colour—was very noticeable. As far as the eye could reach they were to be seen in myriads flying about amongst the bracken. At the foot of Steygail the two parties again met, and notes were exchanged. The Devil's Dyke had been examined—that portion of it which runs towards Dalveen. It is difficult to imagine what this dyke could

have been intended for, unless it was a mere tribal boundary in pre-historic times. Fragments of it are numerous in Durisdeer and neighbouring parishes. A small quarry of the new red sandstone was also visited. The rain still kept pouring on in torrents, and it was discussed anxiously whether the party should go further or return. The majority resolved on the former course, and most of the party decided on going to the head of Enterkin Pass at any rate, as all were as wet as they could be. A cairn at the foot of Steygail was pointed out as marking the spot where a shepherd was killed by falling down the mountain in a snow storm a short time since. Near the Kelpie's Linn some very fine bunches of the Parsley Fern were secured. The Moonwort Fern also grows there in some abundance. The curious Fescue Grass *(Festuca vivipara)* was also met with. Dotting the pathway up to the head of Enterkin were many little tufts in full bloom of the pretty, pink-flowered *Sedum villosum.* The only other plant met with of note was the Cut-leaved Saxifrage. After passing the Kelpie's Linn the pass became very steep, and the party had to look after their footing, for a single slip would have sent them down hundreds of feet to the bottom of the glen. Dr John Brown, as quoted in Ramage's "Drumlanrig and the Douglases," thus describes it in language which we cannot hope to imitate :— "A few steps and you are on its edge, looking down giddy and amazed into its sudden and immense depths. We have seen many of our most remarkable glens and mountain gorges—Glencroe and Glencoe, Glen Nevis (the noblest of them all), the Sma' Glen, Wordsworth's Glen Almain (Glenalmond)—where Ossian sleeps—the lower part of Glenlyon, and many others of all kinds of sublimity and beauty ; but we know nothing more noticeable, more unlike any other place, more impressive, than this short, deep, narrow, and sudden glen. There is only room for its own stream at the bottom, and the sides rise in one smooth and all but perpendicular ascent to the height, on the left, of 1895 feet—Thirstane Hill ; and, on the right, of 1875 feet—the exquisitely-moulded Steygail, or Steep Gable, so steep that it is no easy matter keeping your feet, and if you slip you might just as well go over a *bona fide* mural precipice." The place where a small party of Covenanters rescued some of their brethren from the hands of a large body of dragoons was passed near the top of the ascent. The dragoons, if we are to believe the somewhat traditionary accounts of the affair which have been handed down,

had to surrender their prisoners at discretion, and were glad to escape with their own lives. We can well believe that dragoons would be rather hampered in their movements in such a place. The rain had ceased when the party reached the summit, and a halt was made and luncheon disposed of. The view from this exalted station is enchanting in the extreme, and lovers of fine scenery may here feast their eyes to their hearts' content. The clouds, coming down in great masses right on the heads of the party, warned them not to dally, and the "vigorous brigade" determined on going further still, and off the half of the party went for the lead mining works at Leadhills. Here they were kindly received, and through the courtesy of the manager (Mr Newbigging) they were shown the "crushing" and "washing" process. Some fine specimens of ores were presented to them, which excited the envy of the Members that lagged behind. Meanwhile the party left at the head of the pass had turned down the glen again and made for Dinabid Linn, at the head waters of the Carron. This is one of the most charming spots in this beautiful district, and the array of wild flowers along the side of the Linn was very tempting; but time was pressing, and the party hastened on into Dalveen Pass near the farm of Upper Dalveen. The rain here had been excessive, and all the little burns had become torrents of turbid water, which came rolling down the glens in all directions. The treeless character and bright green sward of these majestic mountains give them a very peculiar appearance, and the burns can be seen up to their fountain-heads. The foaming torrents that were falling over some of the linns were extremely beautiful. Getting on to the turnpike road which runs along the Dalveen Glen, the party were able to walk in comparative comfort, as so many swollen burns had to be jumped or waded as to become very laborious. Burns was connected intimately with this district, and Dalveen Pass has been immortalised in his song :—

> "Last May a braw wooer cam' doon the lang glen,
> And sair wi' his love he did deave me."

And in a subsequent verse he takes notice of the farm of Gateslack :—

> "But what wad ye think ? in a fortnight or less,
> The deil tak' his taste to gae near her !
> He up the Gateslack to my black cousin Bess ;
> Guess ye how, the jad ! I could bear her, could bear her ;
> Guess ye how, the jad ! I could bear her.

As the party came down the glen many birds peculiar to such localities were met with. We have seldom seen the Wheatear so numerous, and the family parties flitting about were very conspicuous, as the white tails turned up when flying. Large numbers of Whinchats and Stonechats sat "chacking" at the party from the tops of the stone dykes. We were surprised to find the Common Sandpiper numerous here. Several of the Common Bunting were noticed, although it is anything but a common bird in Dumfriesshire. Several pairs of the Ring Ouzel, or Mountain Blackbird, were also seen; and one could not help noting how well their wild musical calls harmonised with their surroundings. When this party arrived at Durisdeer Mill they found to their disgust that another detachment had been there before them and cleared out all the "refreshments." Some of the Members had by this time gone up to see the marble tombs at Durisdeer Kirk, and it is to be regretted that so few of the members of the large party that set out in the morning had an opportunity of seeing such beautiful specimens of the sculptor's art. It is believed that the figures are the work of Roubilliac, who was the most distinguished sculptor of the period (1711) when James, Duke of Queensberry and Dover, died, and of whom and his Duchess these splendid figures are a memorial. Another party of Members had an opportunity of seeing the little round camp on the farm of Drumcruil, and which was probably a rallying place of the ancient Selgovæ. This finished the special work of the day, and in twos and threes the party again became united, and all reached their destinations in a decidedly fagged condition.

The Fourth Meeting should have been held on August 12th, when it was intended to visit the shoreline from Cummertrees to Clarencefield; but only two or three Members put in an appearance at the time appointed, and the meeting did not take place.

The last Field Meeting of the season took place on September 5th, and proved in every way a fitting termination to a successful and enjoyable series. The Newabbey district was chosen for a visit on this occasion, and the weather being as bright and hot as could be desired, the largest party of the season turned out,

leaving Maxwelltown shortly after eleven o'clock in two waggonettes. The fields being for the most part cleared of stooks, the large flocks of migratory birds occupying them, preparatory to leaving for southern climes, were seen to advantage. At one part of the way a curious habit of the Starling, and very unlike the bird's usual habit, was being briskly indulged in. We refer to that myotherine habit of this bird, which is said to be developed only in hot seasons, of hawking backwards and forwards for flies after the manner of swallows. Several times the Blackheaded Gulls were noticed at the same business, but with them the habit is confirmed. While passing the extensive woods of Shambellie a brisk look-out was kept for the Siskin, which is known to breed there, but it was not seen on this occasion. After a brief halt at Newabbey village, the party drove on till the farm of Ardwall was reached. Here the vehicles were left, and the company divided—the corpulent and weakly to explore the banks of Loch Kindar and vicinity; and the vigorous and enthusiastic to make the ascent of Criffel. The latter party were rewarded by finding a small colony of the Parsley Fern *(Allosorus crispus)* shortly after the ascent commenced. It is rather remarkable that this fern, although abundant in Dumfriesshire, is comparatively rare in the Stewartry; but the different geological formation doubtless explains this. The climb to the summit was a most toilsome one, owing to the suffocating heat; at least one of the party had to own himself beaten and return; and several others, it was apparent, preferred punishing themselves rather than be the subjects of the jokes of their more muscular companions. There was little of more than ordinary interest to be noted, with the exception of the unusual abundance of the Titlark *(Anthus pratensis)*. A flock of more than sixty was seen together, and smaller parties were very numerous. The ascent having taken up so much time, but a short stay was made at the top, and the descent was of the usual hurried description. The other party meanwhile had been employing the time in botanising and other congenial pastimes near Loch Kindar. Application for the use of a boat to examine the two small islands had unfortunately been omitted in the arrangements for the meeting, so that the numerous Cormorants (or "Co'en' Elders," as they are locally termed) were left in undisturbed possession of their resting place. These birds evidently find here an abundance of food; but it is to be hoped they confine their attention to the eels, and leave alone the

famous trout so well known to local anglers. However, on a previous visit of the Society to Loch Kindar (in May, 1867) these islands were examined, and in a report of the meeting it is stated that "on one of the islands stand the remains of one of the few pre-Reformation churches, while the other may have been a lake dwelling." A number of the Members, on returning to the village, visited the magnificent ruins of Sweetheart Abbey. We are glad to say that these ruins are now being cared for in a manner which we would be glad to see imitated by the proprietors of all the other ancient buildings in the district. A little past five o'clock all the Members had again assembled at the Commercial Hotel, where they sat down to tea, and it is needless to say that after the exertions of the afternoon the repast was done ample justice to. The return journey was made by way of Lotus, where the old canoe was inspected. It was discovered in the loch there about twelve years ago, when the water was unusually low. The bow was taken off and sent to the National Institution in Edinburgh, and it is a matter for regret that the remaining portion is fast disappearing—partly owing to the weather, and partly to the vandalism of visitors, who have been chipping pieces of it away. [Mrs Hyslop of Lotus, a few days after the meeting, kindly presented the canoe to the Society.] The crannoge on the north end of the loch was to have been visited, but owing to the lateness of the hour it was agreed to defer its examination till a future opportunity. We understand that on one side the oak piles on which it was built are quite visible. It is of large extent and some large timber is growing upon it. It can be reached from the side when the water is low by means of a row of stepping stones. Quite close to it a bronze pot and some other things were fished out lately. It is desirable that these articles should be seen and reported on by some competent antiquary. We believe that Loch Arthur, and in fact nearly all the Stewartry lochs, would well repay systematic explorations. Crannoges can be detected in a great many of them; and if they were carefully examined, much light would be thrown on the pre-historic inhabitants of the district. On the way home the party were much interested in watching the frequent discharges of lightning from a cloud which was just visible over the Mabie hills. From this point it is very probable the widely extended thunderstorms of Sabbath morning and Saturday night originated. The party reached Dumfries about half-past eight

o'clock, thoroughly pleased with the day's enjoyment, for which the Society's thanks are due to Mr Oswald of Cavens, Capt. Stewart of Shambellie, and Mrs Hyslop of Lotus, for kindly granting permission to visit their respective estates.

Mr Lennon, Brooke Street, handed in the following memorandum with reference to the insects he collected :—"I never remember seeing the wild bees and other insects so very scarce as they have become this season since the hot, dry weather set in. On Saturday the only bees visible were *Bombus lapidarius*, *B. muscorum*, *B. lucorum*, and *B. virginalis*. Along with the scarcity of insects, a scarcity of the usual flowers of the autumn months is noticeable; almost the only wild flower in bloom just now is the *Scabiosa arvensis*—a very favourite flower with various orders of insects. The prevailing lack of insect life extends to the Coleoptera, which are not usually much affected by extremes of temperature; and the following were nearly all the species I could find :—*Elaphrus riparius*, *E. cupreus*, *Broscus cephalotus*, *Anchomenus albipes*, and *A. marginatus*. These were all collected under the stones at the water edge. The water beetles were fairly plentiful, and of this interesting class I dredged the following scarce species :—*Haliplus fulvus*, *H. flavicollis*, *Hydroporus quinquelineatus*, *H. novemlineatus*, *H. pictus*, *H. lepidus*, *H. depressus*, and *H. assimilis*. The Lepidoptera, with the solitary exceptions of *Polia chi* and the Little Copper butterfly, were conspicuous by their absence."

TRANSACTIONS.

The authors of the following papers are alone responsible for the opinions expressed.

LOCAL ANTHROPOLOGY. By WILLIAM M'ILWRAITH.

Read November 7th, 1879.

* * * * * *

From this brief historic sketch it will be apparent, we think, that the archæological remains of this district should possess more than ordinary interest. Eskdale and Annandale, for instance, were on the highway between the southern and northern parts of the kingdom. Through their dales the successive invading races would advance northwards; and then, as their power waned and they retired, the more ancient tribes would stream southwards. Nithsdale, stretching more westwards than northwards, was debateable ground forming the eastern boundary of Galloway; and the latter district, though always Celtic in the main, and preserving a kind of individuality and independence, was frequently invaded. Of all this, interesting evidence should be found in the character of the people, in their language and customs, and in the archæological remains to be found in the district. So it has; but much remains to be gathered, and sifted, and utilised by this and kindred local societies. Let us look for a little at the evidence we now possess. In the course of time the races of men in the south-west counties have become amalgamated, but the close observer cannot fail to notice that there is a general difference between the people of Dumfriesshire and Galloway. The former possess more of the Anglo-Saxon elements in their constitutions. This is especially noticeable in the common people, among whom wide changes of residence have not been frequent. Red-haired, fair-haired, fair-skinned, blue-eyed, tall men and women are more frequently to be met with in Eskdale and Annandale than in Galloway; and we have a majority of the people in the latter district dark-haired, swarthy, black-eyed. In their temperaments also a difference may be discerned. And

so also in the prevailing patronymics : such cognomens as Beattie, Bell, Carruthers, Carlyle, Graham, Halliday, Irving, Johnstone, Jardine, Kellock, Scott, Telford, are common on the Western Border ; while in Galloway M'Culloch, M'Creadie, M'Dowall, M'Ilwain, M'Meekan, M'Lelland, M'Quisten, are more frequently to be found. It is interesting, in daily intercourse with those around us, to study in persons bearing Anglo-Saxon or Celtic names the characteristics of race.

When we come to consider the language of the district, a most attractive field of study is revealed. Were a collection made of words and phrases peculiar to, but fairly recognised as belonging to the popular speech of Dumfriesshire, and compared with a similar list from Galloway, it would be seen that a considerable and marked difference obtains. In M'Taggart's *Gallovidian Encyclopedia* many words and phrases will be found which an Annandale man would think strange ; and Wigtownshire men, attending Lockerbie Lamb Fair to purchase stock, remark upon the uncommon expressions of the shepherds who there have charge of the hirsels. The history of the various localities indeed may be traced in the words used to denominate their features or the prominent natural objects in the landscapes. These have in many cases remained unchanged since the earliest times. The word Urr, for instance, the name of the dividing stream between two of the nations of Glasgow University, is said to be a fragment of the language of the most ancient inhabitants of Galloway. It lies, indeed, in our modern language like a boulder on the surface of the ground, with its antiquity recognised, but its history concealed in the past. *Urr* means "water." So does *Esk*, *Ae*, and *Dee*—the names of other local rivers—but why is there such a distinction? Combined with other words, and in use in names of places, we find such Celtic root-words as *Gleann*, "a glen," in Glenzier in Canonbie, Glenæ in Tinwald, Glenskelly in Tynron, Glenlee in Kells, Glenkitten in New Luce, and Glengyre in Kirkcolm : the prefix, you will observe, ranges from the eastern confines of Dumfries to the western side of Wigtownshire. *Ard*, meaning "high," and used to indicate "a height," is found in the Ardwells of Galloway. *Dun* or *don*, "a hill-fort," is common ; *pol*, "a pool or burn," is found in that form in Poltanton, Wigtownshire, and used generally in Dumfriesshire in the softened form "pow;" *Corse*, "a bog or marsh;" *Car* or *caer*, "a fort;" *Knock*, "a hill;" *Bal* and *Bar*, "a dwelling-place" (?), &c. It

would weary you to multiply illustrations; but bear these words in mind, and you will not go far till you come upon them in use. We have shown that different kinds of Celtic words are used to designate rivers. So in regard to hills we have the forms *Pen* and *Coomb*. White Coomb is the highest hill in Dumfriesshire: it is in the upper part of Moffat parish. In the same range of hills is the lofty peak of Ettrick Pen. In Galloway the loftiest hills are *Cairns*—Cairnsmore of Dee, Fleet, and Carsphairn; Cairnpyat in the Rhins; and *Meouls*—the Meoul in the Kells range, and Mid Moile, the highest hill in Wigtownshire. In regard to the leading features of the principal districts of the country similar differences in the distinguishing appellations may be traced. Now, just as the geologist by examining a piece of rock from any of our lofty hills is able to tell its probable age and the manner of formation, so the philologist by analysing the place-names is able to state the probable age of each, and give us some account of the race by which it was conferred. In this way it is determined that "Coomb" and "Pen" are ancient British, and must have been applied to the heights bearing them at a very remote period. Just, however, as the lapse of time has smoothed and rounded the beautiful green hills around them, leaving the bare peaks, so has it worn away the old place-names, leaving "Coomb" amd "Pen" standing out alone in suggestive prominence.

When we come to examine the titles used to distinguish hillocks, dwelling-places, burns, little glens, and fields, we find a marked difference between those common in Dumfriesshire and Galloway. In the former, words used for the lesser eminences are—*hill, fell, law, berry, dod, head, top;* for dwelling-places—*town, by, fauld, hay, head,* and *park;* for streamlets—*water, burn, syke,* and *grain;* for deep clefts in the hills—*cleuch, heugh,* and *scaur;* for more open vales—*hope, gill, beck, syke;* for a plain—*holm, haugh, lea,* and *field*. In Galloway such place-names are comparatively unknown. There the eminences are *cairns, craigs,* and *duns. Bal, tor, bar,* is the prefix used to indicate heights and fortified homesteads. Within a short distance of each other, in Penninghame parish, we have the farmsteads of Barraer, Barwhirran, Barlauchlan, Barvennan, Barburchany, Barnean, Barskeoch, Barnearnie, Bartrostan, and Bar. It is to be remarked that words indicating different kinds of enclosed, cleared, and cultivated ground are absent, from which it may be inferred that those who used the language (Celts) were not familiar with agriculture. Words

distinguishing the different kinds of glens and pastures are also awanting. The first set of names, it is plain, are Teutonic, and the second Celtic. There is thus, in the distribution of these place-names, clear evidence furnished that the Teutons at some time drove out the Celts from Dumfriesshire, and that the latter made a stand in Galloway. But in Dumfriesshire we have British or old Celtic, Anglo-Saxon, Danish, and Norwegian names all commingled. In Galloway, Anglo-Saxon names are applied to modern localities, such as churches, villages, and farms recently formed; and Norwegian and Danish names occur on the coast, having been deposited there by the Vikings when they possessed the Isle of Man and Galloway. In Nithsdale we find Celtic and Teutonic names side by side: Drumlanrig, Auchenbainzie, and Barjarg on one side of the river; Thornhill, Closeburn, and Auldgirth on the other. It would be an interesting pursuit to find out how far west certain names are to be found. *Grain*, for instance, as the name of a stream, or the valley through which one runs, is to be found in the Hen Grain, a tributary of the Æ: we do not think it occurs in Nithsdale or Galloway. In like manner, it would be interesting to trace the positions of the Anglo-Saxons and Scandinavians in Galloway, and to find out how far inland they penetrated. That some attention should be paid to this subject of the philosophy of place-names is apparent, because, like the land to which many of them apply, they are being reclaimed and cultivated —broken up and made conformable to modern ideas in regard to the mode of spelling and pronouncing them. In their new form it is impossible to distinguish their derivation or meaning. *Poultrybuie*, for instance, suggests fowls; but if we make it *pultre-buaigh* Celtic scholars may be able to draw the proper meaning from it. The fashion is to spell many of these old names, not as they are written in ancient documents, the learned ecclesiastical scribes of which knew their composition and interpretation, but as they are now pronounced. No one would think that Neowklie was *Knevock-law*, or Carnbee, *Cairn-buagh*. Now were members in country districts to note down the names of farms, fields, glens, knowes, &c., in their respective localities, a list might be formed from which much interesting information regarding place-names could be obtained. It must not be forgotten that language has become the medium by which the migration of the early races of mankind, from the primal home of humanity—"the Roof of the World" in Central Asia—can be traced; and has been of great service in throwing light on pre-historic times.

Commending this branch of the subject to your careful consideration, I would call your attention to the desirability of preserving a record of local customs. However trivial these may appear, they should not be lost sight of. When a vessel is for sale the owner hoists a broom at her masthead. When a country lad comes into Dumfries market, offering his services on hire, he wears a straw in his bonnet. When my wife crossed the threshold of her own dwelling for the first time a friend broke a farl of oat cake over her head for good luck. There was an old woman in Mochrum, who was reputed to be a witch, and boys, now men, in passing her kept the thumb of one hand close clenched in the loof with the fingers hiding it, to protect them from the influence of her evil e'e. To marry in May is deemed foolish. Enquiry into such peculiar customs as I have alluded to, and into belief in the efficacy of "Rowan-tree and red-thread" to "put the witches to their speed;" of four-leaved clover to qualify the eyes to see fairies and wraiths; and of a horse-shoe on the stable-door, &c., belong to the study of Folk-lore. These matters, however, are intimately associated with the history of man. Many of our popular customs and beliefs; children's games handed from one generation of youngsters to another; nursery tales listened to eagerly in youth, and repeated in the decline of life to grand-children, with which we are familiar, are also to be met with in various forms among people widely separated by time and space. The existence of these things, however, point to a common origin. Where local customs are found to exist notice of them should be taken, and preserved by our Society. In the upper part of Eskdale, at the confluence of the White and Black Esk, was held an annual fair, where multitudes of each sex repaired. The unmarried looked out for mates, made their engagement by joining hands, or by *handfisting*, and went off in pairs, cohabited till the next annual return of the fair, appeared there again, and then were at liberty to declare their approbation or dislike of each other. If each party continued constant, the handfisting was renewed for life; but if either party dissented, the engagement was void, and both were at full liberty to make a new choice; but with this proviso, that the inconstant was to take charge of the offspring of the year of probation. The record of this curious local custom has been preserved for us by a passing traveller, and it acquires a peculiar interest when we learn that matrimonial alliances were made in a similar fashion at several places in the northern part of Europe.

Another means by which light is to be thrown on pre-historic times is by studying the remains of man's handiwork, which are to be found *upon* and *in* the ground. No one can travel far in Galloway, especially in the moorland parts of it, without coming upon standing stones, cairns, camps, or kilns. While the purpose or meaning of single and circles of standing stones, like those at Holywood in the immediate neighbourhood of Dumfries, and at less known places in both Dumfries and Galloway, is still involved in obscurity, they are nevertheless objects of much interest. Many circles have been destroyed within the present century, and others doubtless will disappear. Speaking to a farmer about a large stone standing in a field, he remarked—"Aye, there was a ring o' them at ae time, but that's the only ane left. The rest were ta'en to big dykes and mak' yett posts." Such is the succinct history of too many Druidical circles. And so with cairns: we know places in Galloway where the stones have been carried away to build dykes, and the sepulchral kists—the last resting places of mighty dead—are uncovered and desolate. Cairns are still being used as quarries. Only their sites remain in Dumfries; so in Galloway, unless some respect is paid to "the auld grey cairns," they will no more be found, and only scarcely visible grassy spots among the heather will mark the tombs of heroes. Camps, forts, and clusters of stones, supposed to be kiln-floors, but which we think have been the floors of bee-hived shaped houses, will also be swept away before the march of agriculture. Of these remains the study is very interesting, and is all the more delightful that it has to be followed in the wildest and most remote parts of the district. A large volume might be written on the cairns, camps, &c., of Dumfries and Galloway. On the beautiful hills of Nithsdale and Annandale we have little round forts on hill tops and commanding eminences. These are within sight of each other from one end of the district to the other, so that if an enemy approached any point the rising pillar of cloud by day, or the ruddy flame of burning whins by night, would spread an alarm far and wide. At Burnswark square Roman and round British and Norse forts are to be found side by side. At Holmains Fort the defending ditch has been cut out of the solid rock: who did it, and how did they do it? What kind of implements did they use? At the mote of Urr we find Roman, Celtic, and Saxon remains combined. Was it the Caerbantorigum mentioned by Ptolemy? is a question calling for settlement. While the Society might

endeavour to prevent the demolition of these interesting relics of our forefathers, it should at any rate preserve as complete a record as possible of their situation, dimensions, and characteristics. A map with their positions accurately and carefully marked and numbered, and a book in which, under the number of each, all that could be ascertained regarding them should be set down, would be of great permanent value. The compilation of such a work would reflect credit on the Society.

What may be done in collecting tools and implements has been fully demonstrated by the Rev. G. Wilson, Glenluce. That gentleman, by careful search among the Sandhills near the mouth of the river Luce, has made a most instructive collection of flint tools and implements, including saws, chisels, knives, arrow-heads, scrapers, &c. The greater number of them is now in the Antiquarian Museum, Edinburgh. As to the significance that attaches to these articles let me remark that flint implements have been found at such a depth in the crust of the earth—in the "boulder clay"—as to lead geologists to conclude that man has existed in the world for 200,000 years. Indeed remains have been found of such a character, and in such circumstances, as to give rise to the opinion that man is of even greater antiquity, and that there were two other kinds of men in the world before the present species came on the scene. Every now and then we read of the finding of flint and stone implements, especially in Galloway. What becomes of them? A few we have rescued from the coal house. Some find their way into local museums, but in many cases they might as well be in the pawnshop. Articles of the kind we refer to lose much of their value unless the precise history of their discovery is known. An arrow-head found in an ocean-fronting cave on the coast of Galloway several feet below accumulated *debris* and soil, and beside the bones of long extinct animals and human teeth, is much more interesting than one picked up in the open fields on the farm of Glengyre, Wigtownshire. Our Society therefore should not only foster the collection and preservation of tools and implements, but should studiously ascertain and record the history of those found in the district. Upon the promoters of public and possessors of private museums they should impress the fact that a mere collection of pre-historic tools and implements without any history of the circumstances under which the articles have been found is of comparatively little scientific or educational value.

OBSERVATIONS ON THE EFFECTS OF THE WEATHER OF THE PAST TWELVE MONTHS UPON ANIMAL LIFE. By Robert Service.

Read November 7th, 1879.

Mr Buchan, Secretary of the Scottish Meteorological Society, in a paper read before his Society on March 7th, 1879, stated that "The parts of the British Islands where the cold last December was severest was in Dumfriesshire, Cumberland, and part of Kirkcudbrightshire, where the mean temperature was 28°, which was 13° below the average: they had had no previous approach to that, so far as they had had observations made with thermometers in Scotland for 115 years. In the month of January they had a state of things somewhat similar, the month being the coldest January of which they had any record in Scotland. In February the cold still continued in a modified form, the mean being 40°—5° below the average. Taking Dumfriesshire, and comparing these three months, the mean was 9° below the average of the last 115 years."

After a period of such extreme low temperature, it became very interesting to trace its effects upon animal life. The Fauna of our district—that part of the country where, according to the statement I have quoted, the cold was the most intense—has indeed been greatly disarranged. In some respects the pleasure of becoming acquainted with and seeing in a state of nature, or in greater numbers than before, certain species which were previously scarce or altogether absent, was very desirable; but, on the other hand, it was sad to see the ravages made in the ranks of so many of our resident birds and animals. During the past twelve months I have endeavoured by my own observations, and by means of correspondence with other observers residing in different parts of Dumfriesshire and the Stewartry, to gain as much information as possible as to the effects of the long-continued cold weather, and which even yet continues to exert its influence. These effects have been such that it will be many years to come ere they will be completely obliterated from the eye of the observant naturalist.

I have arranged my notes under the various classes of quadrupeds, birds, and insects—the other departments of animal life I

leave to more competent observers. I will be glad if the following details, given as concisely as possible, are of sufficient interest to sustain your attention for a short time:—

Quadrupeds.

About the quadrupeds not much is to be said. Squirrels were all but exterminated, and since last December I have seen only two. Hares and Rabbits suffered greatly, and fully a half of the latter perished on some estates. On Mabie their skeletons could have been picked up actually in hundreds. The Alpine or White Hare was frequently seen in the upland districts during the storm. The few Roe Deer of our district received a considerable accession to their number, and they committed much damage in the young plantations. I saw one in January on the Larchhill which had the hind quarters wholly white. All the Stoats I saw had without exception "assumed the ermine," which is not always the case in this locality. Otters had to emigrate to tidal waters, where their tracks were often seen on the shores of the Solway and along the side of the estuaries of the various rivers. They are but seldom seen there in ordinary winters. Owing to the cold spring, the hybernation of Bats was unusually prolonged, and their general absence throughout the summer was the subject of remark.

Birds.

Amongst the raptorial birds affected by the severe weather the Merlin may be mentioned, which became quite common. A fine Hen Harrier was seen on Auchencloy Moor by Mr Bruce of Slogarie. It might be supposed that the birds of prey would be exempt from the prevailing distress amongst the feathered tribes through want of food; but, so far as my experience goes, this was not the case in our district, for all the Hawks and Owls that I examined during the winter were in a greatly emaciated condition. I found the skeleton of a Kestrel on Marthrown; but whether the bird had died of hunger or been shot I am unable to say, although I could find no traces of shot marks on any of the bones; and if it had been shot, its head would have been taken for the "Gamekeeper's Museum."

The Common Dipper was a decidedly "uncommon" bird ere the winter had run its course. More than two-thirds of them,

I believe, either perished or migrated, and I have seen very few indeed since winter.

Missel Thrushes, for as long as I can remember, have been gradually increasing in number until this last fatal winter set in. They then disappeared, but I am unable to assign their disappearance either to death from starvation or to migration, as I found only one of their skeletons. In the past summer their absence has been very noticeable. In former years a nest or two might have been easily got in almost every plantation, but this year the only nest I met with was one near Lochanhead Station.

Fieldfares and Redwings suffered almost total extermination. Liable as these birds are in severe weather to death by starvation, yet I think their destruction must have been quite unprecedented. Instead of the usual large flocks which annually leave us in spring, a small flock of thirty Fieldfares was all I saw during the spring months. These were flying eastwards one morning in March. I will be surprised if either of these species puts in an appearance here this season. Their arrival is now six weeks overdue, and as yet I have not seen or heard of a single bird. The flocks arriving in the autumn of 1878 were unusually early, and also unusually large. Many of these flocks left after a stay of a few weeks, but those remaining were over the average in numbers. The first dead Redwings were found about the 8th December, and in a day or two afterwards the destruction of these large flocks may be said to have been completed. As those intensely cold nights set in the poor things crept underneath clumps of whins and bushes, into holes, or anywhere affording cover, in a vain endeavour to procure shelter sufficient to preserve them from the cold; and when the snow melted, their bleached skeletons were found—in many instances huddled together in little parties of twos and threes. I got as many as four lying together in one rabbit hole. Amongst the large boulders near the south end of Lochaber a considerable flock had perished. On an afternoon in April I spent about an hour in seeking them out from the various crevices into which they had crept, and found upwards of twenty skeletons, both Redwings and Fieldfares. Without exception the skulls and larger bones were either entirely eaten off or partly nibbled away. I suppose this to have been done by some species of mouse. On the 8th December I saw a flock of about two dozen Redwings and Fieldfares sitting on a hedge near Moss-side of Mabie. Six weeks

afterwards, on searching the rubbish at the bottom of the same hedge, I found the remains of nine birds, and at a distance of a few yards I got six more. Apparently they had never been able to stir from the spot; and I believe if I had had time to look for them, I could have found the remainder of the flock. I have notes of other similar incidents, but let these suffice to show the immense destruction of Redwings and Fieldfares. The Thrushes and Blackbirds did not suffer to the same extent as their congeners, the two species last named, but this was in great measure due to the unstinted "outdoor relief" which was extended to them in all our gardens. Their depredations amongst the fruit crops were forgotten, and no thought remained save that of pity for their present sufferings. Even with this help, they in most places gradually disappeared until only a few of the hardiest remained. Their skeletons were to be found in holes of trees and various other similar places. So small was the stock of breeding birds left that during the nesting season I did not see a dozen nests of both species put together, and I need scarcely tell you what a terrible decrease of their numbers this represents. However, in the third week of July I observed a sudden increase of both Blackbirds and Thrushes. The new comers were all young birds, and this immigration was observed in several other parts of our district. Of the Robins, I think numbers died more from cold than hunger. I picked up several dead ones; and the gardener at the Newtown told me that on going to his hothouse stokehole on the morning of the 14th December, after a night in which the thermometer sank to below zero in some places near Dumfries, he found three Robins—two dead and one dying—quite close to the fire. Perhaps they had crept to the heat, and the sudden change had been too much for them. Amongst the summer warblers some curious changes resulted from the ungenial weather of the summer months. The Sedge Warbler, Blackcap, Chiff Chaff, Wood Warbler, and Willow Wren were all, so far as my observation goes, in augmented numbers; while the (usually) Common Whitethroat was very scarce, and the Garden Warbler seemed to be altogether absent. In the autumn of 1878 the Golden Crested Wren, Great Tits, Blue Tits, Cole Tits, and Longtailed Tits passed through the district in larger numbers than usual—getting out of the way, as the sequel proved, of the coming severe weather, which unerring instinct, or whatever it may be called, was prompting them to avoid. The first-named left entirely; but a good number of all

the others remained during the winter, and of all of them, except the Cole Tit, I picked up starved birds. I found a Longtailed Tit near Nethertown on the 14th December, sticking with head and shoulders buried in the snow, its tail upright and just visible above the snow; and as neither wings nor feet had made the slightest marks of struggling, I concluded that its death had been sudden, and that it had fallen frozen from the beech tree above.

The Pied and Grey Wagtails were exceptionally numerous in October and November of 1878, and continued so until the watercourses were all frozen, when they took their departure southwards, and no more was seen of them till March, when they again returned. I saw more of their nests this season than usual.

The Tree Pipits were very scarce all summer, and the few that were in the district lingered unusually late. I shot a fine pair in the middle of last month—a later date than I have seen them hitherto. The Meadow Pipits left the district entirely at the beginning of December, but towards the end of that month some flocks again appeared, probably coming from some more northerly region. Skylarks were not conspicuously numerous until the beginning of January. As you are aware, the Larks have become very scarce hereabouts as a resident species, and I was therefore glad to see that this last spring and summer there were rather more of them nesting than for the past few years.

Several Snow Buntings were procured in November, and one was shot by Mr Bruce of Slogarie in January. The Blackheaded Buntings, the Yellow Buntings, Sparrows, Chaffinches, and Greenfinches made up some vast flocks, which during the continuance of the storm made the farmyards their home, finding there abundance of grain and other food.

I have always been accustomed to look out for some large flocks of the Lesser Redpoll about the middle of March, and which would remain for a few weeks. I saw only one of these flocks, and it remained on Mabie and Dalscairth all summer, and is there yet. I found nine of their nests, and was very pleased to have an opportunity of seeing them, as the Lesser Redpoll has not to my knowledge bred in Troqueer since 1873, when there were a few nests near Cargen. It is somewhat remarkable that each of the nests I examined was thickly lined with feathers, and had many feathers woven into the general structure, and probably we may find a reason for this in the desire of the birds to have a comfortable nest during the ungenial weather of May and June.

I saw no Starlings after the 30th November until the beginning of March. I believe about the usual numbers returned, but from some unexplainable impulse they have kept flying about in flocks ever since. Only about five per centum occupied their nesting sites. Just now there are great numbers of them in the district associating with Lapwings.

The Rooks and Jackdaws need not be mentioned farther than to state, what was apparent to all observers, that these birds had great difficulty in keeping themselves just above starvation point. It was noticed in some parts of the country that they sought out and devoured those birds that had died of starvation. The little Tree Creeper has evidently been killed out: I have seen only one since last November, and they were comparatively common before. The Wren suffered severely, and I picked up several dead ones. Mr Bruce tells me that at Slogarie the Wrens gathered into parties of seven or eight, and as they flew from one clump of brushwood to another they presented a striking resemblance to coveys of miniature partridges. These were doubtless the parties that had gathered overnight and huddled together in some hole for mutual warmth. Those who notice the various calls of birds would remark the scarcity during the past summer of the familiar calls of the Cuckoo and the Landrail and the "jarr" of the Fern Owl. The two former birds were actually very scarce; but the latter, although its loud, jarring notes were less frequently heard, was about as often seen as formerly.

In the late autumn months we had a remarkable immigration of Kingfishers. On the Nith, Urr, and Dee these birds appeared commonly where one, or at most a pair, were previously to be met with at wide intervals. They disappeared for the most part about the middle of December, when the frost became so excessively severe.

The various members of the Swallow tribe, although later in coming in spring, stayed on an average about a fortnight beyond their usual time for departure in autumn. Wood Pigeons endured the storm longer than others, and it was the second week in January before dead ones were seen. The stronger birds were mere bundles of feathers and bones. Hunger overcame their natural timidity, and they came to feed in the cottage gardens on the remains of cabbage and kail stumps. When thus feeding many of them were easily caught. It is rather strange that such a bird as a Wood Pigeon should have remained to suffer hunger,

when its powerful flight, one would think, could in a few hours have conveyed it to where food was plentiful.

The Golden Plovers arrived in some very large flocks in October, and remained till the end of November. A few of them paid us a lengthened visit in spring before moving to their breeding grounds.

Lapwings disappeared entirely at the end of November, and were not seen again until the beginning of March—a fact quite unprecedented, as they were not known to have left the district altogether in winter before.

Many Herons fell victims to hunger, and a splendid plumaged female came into my possession, which was picked up unable to fly at Burnside of Mabie. I have notes of about a dozen others found in various parts of the district. Curlews left entirely for the shore in November. Even there, where one would have thought food for them could easily be got, they became very emaciated; and those I examined in December and January, which had been procured at the shore, were extremely thin. About the middle of January a good many were picked up on the shores of the Solway Firth either dead or in a dying state.

I know of one or two Woodcocks being picked up dead. Of course feeding grounds for these birds would be scarce enough. A number of pairs bred this season in the district. On Mabie there would be at least four pairs that bred; and I started a brood of young ones there, just able to fly, in the first week in August. I mention this not as a result of the bad weather, but simply because the great majority of gamekeepers and others who ought to know better always assert that the Woodcocks all go to Norway and Sweden to nest.

The Water Rail is a bird which even those who are supposed to have an intimate knowledge of such matters seldom suspect of being a regular inhabitant of this locality. When the frost became so severe these birds began to wander about, and many fell victims to the gun. It was rather astonishing to see how few persons recognised the species. Of all our resident birds I believe the Water Hens suffered most severely. In some cases they took their meals with the poultry in the farmyards. Mostly, however, they were to be seen sitting disconsolately on the ice, or being chased about by boys, who appeared to derive a certain satisfaction in dragging them forth from rat-holes, whither they had crept for safety from their pursuers. Many wandered out into the fields,

where they were found lying dead or helpless in all directions. So scarce have they become that only one nest rewarded my keenest search during the breeding season. In former years it would have been an easy matter to find sixty or seventy nests in Troqueer alone. All the Coots went off at the end of November, but only a pair or two here and there returned in March.

On the Solway Firth indications of an approaching severe winter were early seen in the shape of immense flocks of different kinds of Geese, Ducks, and other wild fowls, and towards the end of the storm the flocks of Geese and Ducks became larger than the oldest fisherman on the Solway remembers to have seen. Just at the beginning of the storm, on the 2d or 3d December, I was going to Southerness in the Kirkbean 'Bus. The evening was intensely frosty, and the thick fog was converted into ice crystals, which seemed to chill one to the very bones. The passengers were talking about the weather, and one old lady remarked to the rest of us that "—— (a well-known gunner resident at Carsethorn) has seen some awfu' big flocks o' geese oot on the banks, and he says we're gaun tae have a terrible winter!"—a prediction you will allow that was fulfilled to the letter. The most plentiful species of Goose was the Barnacle Goose, of which I saw some immense flocks. During the winter these flocks went backwards and forwards between the fields and the Solway banks as the tides ebbed and flowed. Numbers of them were shot—a friend of mine at Cargen getting fifteen to his own hand in one afternoon in February. A correspondent, writing from Port Mary, states that he came upon a large flock sitting in a field near the shore. He adds that they were the tamest "wild" birds he ever saw, as they allowed him to walk right up to them and examine them at his leisure. The Grey Lag and the Bean Goose were numerous on Lochar Moss in the beginning of the storm, but they did not remain long, and did not return until March and April. One of the keepers on the moss told me he observed in March a flock of fifteen Geese remarkable for their pure white colour; but as he had no gun with him at the time, the species was not identified. He was very close to them, and felt quite certain they were none of the species in the habit of visiting Lochar. The various Ducks were in great abundance, driven here from their usual northern haunts by the extreme severity of the storm. Amongst the scarcer species Pintails and Longtailed Ducks were tolerably frequent. During the winter months, and even till comparatively late in

the spring, the Golden Eyes were abundant on the Nith. I had the pleasure of seeing a group of six beautiful adult males on the water a little below Mavisgrove at daylight on the morning of the last day of January. Scoters came much nearer the shore than is their usual habit, and at Southerness I was within shot of a considerable flock of them at the point of the Black Rocks. The Mallard, Teal, Wigeon, and Pochard were very numerous until after the first week of the hard weather, when they mostly migrated shorewards. About the end of December and early in January they could easily have been struck with a stone, as they sat about the shore in a weak, almost helpless state, resulting from privation. A specimen of the Garganey was shot at Kirkmichael House in December; and Mr Hastings received a Smew which was shot at Lochmaben.

Goosanders were exceptionally numerous on the Solway, and some fine specimens were procured. Numbers of the Little Grebe made their appearance on the rivers of the Stewartry, remaining most of the winter. This was also the case in the hard winters of 1874 and 1870. The last birds I shall mention as affected by the severe weather are the Blackheaded Gulls *(Larus ridibundus)*. You scarcely need to be reminded of the straits they were apparently reduced to to procure food. I saw them often on the public streets (Buccleuch Street, White Sands, Kirkgate, and Galloway Street), and it was no unusual thing to see a dozen of them fighting together for offal in the ashpits. They disputed with Sparrows and Robins for possession of the crumbs laid out for the benefit of the starving birds in little back gardens, and yet they were in good condition and very fat. About half a dozen which I examined were the best conditioned birds I handled during the winter.

Insects.

Coming now to the insect tribes, we have quite a different set of facts to set forth. In the vertebrated animals we see how all were more or less affected to an injurious extent. Amongst the insects all the cold weather we had only seemed to make them livelier, and to set them forth, when milder weather came, on their various destructive missions with a redoubled energy, if that were possible. The deeply-rooted, popular idea is that the frost kills the "grubs," but there can be no greater delusion. During the coldest part of the winter I collected a quantity of both larvæ and

pupæ of moths, a few gall insects, and several species of beetles in the larval stage, for the purpose of observing if the frost had had any injurious effect upon them. In every species experimented with no fewer were reared than after the mildest of winters. I need not go into details, as it was abundantly apparent in the case of the Turnip Fly, the Corn Grub, the Wireworm, the Gooseberry Sawfly, the Carrot Worm, the Onion Fly, and others, which were all at their destructive work this season as usual, that the cold had little or no injurious effect upon them.

NOTES OF THE OCCURRENCE OF SOME SCARCE BIRDS. By William Hastings.

Read December 5th, 1879.

The past year (October, 1878, to October, 1879, inclusive) has been one of much suffering amongst the birds, several species, particularly the Fieldfares and Redwings, having been entirely killed out during the long-continued frost that we had during the months from November to March. I have made many enquiries as to whether these two species of birds have made any appearance this autumn, but I cannot hear of any having been seen. How our common resident birds, even including the Rooks, managed to subsist is beyond my comprehension. Next to the Fieldfares and Redwings, the Herons, Water Hens, Coots, and Teals seemed to have been the greatest sufferers, and very many of these were sent me that had died of starvation. Amongst the rarer species sent me for preservation I may mention the Longtailed Duck *(Harelda glacialis, L.)*, which is seldom met with in this locality, and I have only had one other specimen of it previously through my hands. It is the only Duck I have ever seen that admits of being skinned over the head without the necessity of making an incision in the nape or throat so as to get the skull cleaned. Another rare species that I had was the Smew *(Mergus albellus, L.)*, very handsome in form and colouring. Goosanders were very numerous—more than I ever had in any previous winter. I also received several Pintails *(Dafila acuta, L.)*, and many more than usual of Wigeons *(Mareca penelope, L.)*, Pochards *(Fuligula ferina, L.)*, and male Golden Eyes *(Clangula glaucion, L.)* Most of these species did not seem to have suffered much on account of the frost, as they were generally in good condition. I had also a few specimens of the Tufted Duck *(Fuligula cristata, Leach)*, which is by no means common in our two counties. In the beginning of August a specimen of the Shoveller Duck *(Spatula clypeata, L.)*, shot in Kirkmahoe, was sent me. This is a most unusual time for the Shoveller to be met with here ; and as it was a young bird (female), I believe it must have been bred in the locality. I had also a specimen of the Great Crested Grebe *(Podiceps cristatus)* from Wigtownshire, in winter plumage : I

have rarely seen it. A specimen of the Sclavonian Grebe *(P. cornutus, Gm.)* was sent from Lochmaben in December. I had numerous Little Grebes *(P. minor, Gm.)*—some of them were sent alive, but in a dying condition. Several Manx Shearwaters *(Puffinus anglorum, Temm.)* were sent me from the Solway Firth: this species seems to be more frequently met with these last few years.

In October I had an immature Richardson's Skua *(Stercorarius crepidatus, Gm.)*, which was procured in Hensol meadows. Some specimens of the Chough were sent from the neighbourhood of Stranraer. This bird used to be not infrequently met with on the Colvend shore, but it is now extinct there. I had two fine female Peregrines—birds of the year from Auchencairn. They also are becoming scarcer on our coast. Two specimens of the Grey Phalarope *(Phalaropus fulicarius, L.)* were received from the Glenkens. I had a large number of Snow Buntings; they seemed to be plentiful in several localities. One specimen of the Greater Spotted Woodpecker *(Picus major, L.)* and one of the Lesser Spotted Woodpecker *(P. minor, L.)* passed through my hands during the winter. In March a Wryneck from near Kirkcudbright was sent to me for preservation. A Hawfinch, the only one I ever possessed, was sent from Wigtownshire; a few of the Bartailed Godwit *(Limosa lapponica, L.)* from the Solway Firth. Water Rail *(Rallus aquaticus, L.)* and Spotted Crake *(Porzana maruetta, Leach)* have been sent during the season. None of these are of common occurrence here. I had also a young Cuckoo, nearly white, from Slogarie—a great curiosity so far as colour was concerned. An unusual number of Kingfishers *(Alcedo ispida, L.)* have been sent in during the winter. The Long-eared Owl *Asio otus, L.)* seems to have been unusually plentiful, and many specimens of the Short-eared Owl *(Asio accipitrinus, Pallas)* have also been procured. The last-named species has almost invariably in its stomach remains of the Field Vole and Wood Mouse. A few Common Buzzards *(Buteo vulgaris, Leach)* were sent in, but none of the Rough-legged species, which I have not seen since 1874.

THE CARICES OF THE STEWARTRY.

By James M'Andrew.

Read February 6th, 1880.

Carices or Sedges belong to the class of Monocotyledons, division *Glumaceæ*, and order *Cyperaceæ*, and tribe *Caricineæ*.

As sedges greatly resemble grasses, a little practice and observation is required to distinguish them. Sedges differ from grasses in the following particulars:—In sedges the leaves are more commonly glaucous; the stem is angular instead of round, solid or full of pith, and not hollow, and not jointed where a leaf arises, as in grasses; and where sedges have sheaths to their leaves, these sheaths are never split. These prominent distinctions between sedges and grasses will enable an amateur to know a sedge from a grass almost without examining the inflorescence. Grasses afford nutriment to cattle, because they contain starch and sugar; sedges are very deficient in these substances; and though Carex Ampullacea and Carex Vesicaria when cut young and tender are used as fodder in this part of Scotland, under the name of "star-grass," from the prickly leaves, yet they cannot give much nourishment. Growing almost everywhere, sedges are looked upon as worse than useless, and take up ground which, if drained and cultivated, would produce excellent crops. Some foreign Carices are useful, either for their medicinal or esculent roots. The earliest kind of writing paper was made from the Papyrus, a Carex growing on the banks of the Nile in Egypt. In our own country some are used as rushes for chair bottoms; and along the sandy shores of our coasts and the embankments of canals the roots of such species as Carex Arenaria bind the sands and prevent their shifting. Though not a very useful class of plants, they are extensive, and botanically very interesting. Owing, however, to the minuteness of their inflorescence and the great similarity existing between some of the species, they are very difficult of determination. A good lens is absolutely necessary in their examination. In their determination every part of the plant must be taken into account and examined—the roots, stems, leaves, sheathes or none, flowers, barren and fertile spikes, bracts, glumes, perigynium or sac containing the seed or fruit, the num-

ber of stigmas, and even the beak of the perigynium and the seed. For the proper examination of some of these parts the plant must be got in flower; but it must also be had in fruit, when the very form of the matured plant is a material aid to the identification. There is often a considerable difference in appearance between a Carex in flower and the same plant in fruit, as, for instance, Carex Pulicaris. From the foregoing remarks you will see that it is not surprising that different botanists have adopted different modes of classification of the Carices. These can be seen in the various manuals of British Botany. The barren and fertile flowers are, with one exception, Carex dioica, Monœcious—that is, on the same plant—the spikelets either bearing all the flowers barren or all fertile, or partly of both, with the barren spikelet the highest. Carices, though possessing no gay or attractive inflorescence, have yet a wavy and graceful elegance of their own, not inferior to the gracefulness of Graminæ; and when growing among the latter, as they very often do, they afford a very pleasing mixture of both form and colour. We find Carices in all sorts of waste ground, especially where it is wet or marshy. They are found in wet or dry situations—on rocks, on hills, on plains, by river sides, in marshes, meadows, woods, lakes, and on the sandy sea-shore. The Stewartry, from its diversified surface, contains good examples of all these kinds of ground, and consequently the county contains a very large proportion of the British Carices. Though my gatherings are confined to the Glenkens, the parish of Colvend, part of the parish of Rerrick, and along the shore from Creetown to Ravenshall, yet these districts are sufficient to enable one to know the Carices of the county, for they are excellent representatives of the different characters of ground in which Carices are found growing. In my botanical rambles in the places I have mentioned I have gathered thirty-four species of the British Carices; but from the nature of the ground and the distribution of the British Carices as regards latitude, the following eight species should be found either in Dumfriesshire or in the Stewartry:—*C. vulpina*, *Bœnninghauseniana*,* *Atrata*, *Rigida*, *Stricta*, *Capillaris*, *Paludosa*, and *Riparia*. I shall esteem it a favour if any Member of our Society will acquaint me with the finding of any

* After this paper was read the Rev. Thomas Bell, Keig, Aberdeenshire, and formerly of Tongland Parish School, wrote me saying that he had gathered *C. Bœnninghauseniana* in the parish of Borgue, and also, he thinks, in Twynholm.

of the above-mentioned eight species. The names given to the species of Carices, as seen from the etymology, are appropriate and descriptive as far as they go.

I shall now give my list, with specimens, stating anything striking or peculiar about each. Of course full botanical descriptions I need not give, for these are found in any manual of British Botany. The order of the names is from *Hooker's Flora.*

1. *Carex Pauciflora*—Few-flowered Carex.—Only 4-6 flowers; deflected in fruit; pale yellow, almost white; in damp places among the hills; not common.

2. *C. Pulicaris.*—Flea Carex, from the resemblance of the deflected ripe fruit to insects clustering round the stem. The upper portion with male flowers is not deflected. Common in boggy places.

3. *C. Dioica.*—Peculiar in being dicecious—that is, male and female flowers on different plants. It has a very neat, compact spikelet; fruit not deflected. It grows in the same boggy places as *C. pauciflora*, and I have found it to be as rare.

4. *C. Intermedia* or *Disticha.*—Soft brown sedge. I have only found it in a damp meadow at the head of Loch Ken, though I have no doubt it is common. The spike is composed of spikelets. This Carex is peculiar in appearance. In all stages of its growth the middle portion of the spike differs in appearance from the two extremities, owing to its being separated by the remains of the barren spikelets; hence the term *Intermedia.*

5. *C. Arenaria.*—Sand Carex; very like *C. intermedia*, but only about half the size; very useful in binding the sand; has subterranean stems, which send up other plants from the joints. Common in sandy places along the Solway.

6. *C. Paniculata.*—A large Carex, with spike thrice compound; fruit spreading when ripe, giving the spike a very rough and prickly feeling. One peculiarity of this Carex is that it grows in large tussocks. In the Glenkens I have found it only at Bogue, Dalry; I have also got it in Rerrick.

7. *C. Teretinscula.*—Like a small *Paniculata*, but with no tussocks; has a compound spike, but neater, smaller, and more compact-looking than *Paniculata.* Found at south end of Carlingwark Loch, in meadows, and in Rerrick.

8. *C. Muricata.*—Great Prickly Carex. I have only found it along the shore. Fruit spreading when ripe, giving it a very prickly appearance and feeling.

9. *C. Stellulata.*—Like Prickly Carex ; spikelets contain 7-8 seeds, like a little star. Very common in boggy meadows.

10. *C. Remota.*—One of those Carices which, once seen, cannot be easily mistaken for another; not very common; in wet and shady copses; more slender in the shade. The lower bract often exceeds the stem. Spikelets small, neat, and remote; leaves long, narrow, and channelled. *C. Axillaris*, an English species, is very like this one ; and *C. Bœninghauseniana* is very likely a hybrid between the two species.

11. *C. Ovalis.*—A very common Carex, with egg-shaped spikelets—one terminal, and the others inserted a little below each other; brownish-green shining spikelets; long, grassy leaves ; and a triangular, hollow stem.

12. *C. Canescens* or *Curta.*—A very neat sedge, and pretty common in wet and boggy places. It has a greyish-white appearance, caused by the whitish colour of the glumes; neat, egg-shaped spikelets. It has somewhat the appearance of *Ovalis*, but paler and neater.

13. *C. Acuta.*—In outward appearance this Carex is like a large form of *C. Vulgaris*. *Acuta* I have only found along the river Ken. It has bracts with long, pale auricles; spikes long and a little drooping ; leaves inserted in three rows ; stems triangular and rough ; barren spikelet at the top.

14. *C. Aquatilis.*—I have only found this Carex in one place, near Ken Bridge. It was growing along with *C. Pendula*, which it somewhat resembles, but is smaller and later in flowering. This year, from the extra quantity of water in the pool, I did not get a single specimen. It is a rare Carex in the south of Scotland, but abundant—at least, the variety *Watsoni*—on the river Tweed. Discovered in Britain by Mr Drummond, Dr Greville, and Dr Hooker in the Clova Mountains.

15. *C. Vulgaris.*—This in its various forms is a very common Carex; dark, obtuse glumes, sometimes with green mid-rib; and the lower bract has a dark auricle at the base. The fruit is so much compressed that it is nearly flat.

16. *C. Limosa*—Mud Sedge.—This is only found in a ditch at Barscraigh Loch, in Colvend. It is very rare in this district. Once seen, with its large glumes, it can be easily recognised again. Egg-shaped spikes are gracefully pendulous. Sometimes called the green and gold Carex, from its glumes. Variety *Irrigua* is found in Dumfries, but where I cannot say.

17. *Glauca* or *Recurva.*—Common, with glaucous leaves, perigynium rough, caused by depressed points. Spikes pendulous when ripe.

18. *C. Pallescens.*—Very neat—as neat as *Canescens*; pale green hue; fertile spikes short and sessile, with inflated perigynia; leaves slightly hairy. Common in drier situations than most Carices.

19. *C. Panicea.*—Very common in damp places. Like *C. Glauca*, but spike not so compact. Leaves so glaucous that it is called the pink-leaved sedge. Only to be confounded with *Glauca.* Perigynium dotted.

20. *C. Pendula.*—Great pendulous sedge, 3 to 5 feet high. Fertile spikes distant, very long, cylindrical, and drooping. Pedicels concealed in the long, leafy bracts. One barren and sometimes six fertile spikes. Not very common. On banks of river Ken, and some very large specimens on the Dropping Craig, Rerrick.

21. *C. Praecox.*—This, with the next three—*Pilulifera, Hirta*, and *Filiformis* — has the perigynium downy. *Praecox* and *Pilulifera* very like each other; distinguished by *Pilulifera* having no bract sheath. Leaves in tufts. Spikelets crowded, sessile, and short, the female being oblong; while *Pilulifera* has them almost globular. Fruit crowned by a minute ring; yellow anthers. Very common and very early; in dry places.

22. *C. Pilulifera.*—Very common, like *Praecox*, but no bract sheath; fruit sub-globose, while that of *Praecox* is trigonous; root tufted, while that of *Praecox* is creeping.

23. *C. Hirta.*—Whole plant downy; several male and several female spikelets. Easily known by its broad, downy leaves and spikes, and cannot be mistaken for any other Carex. In abundance between Creetown and Ravenshall.

24. *C. Filiformis.*—Rare and local. Loch of the Lowes, Balmaclellan, and ditches among the hills. Very long, channelled, narrow, involute leaves; very long bract.

25. *C. Extensa.*—Only found on the shore, as in Colvend and Rerwick; like a large form of *C. Flava.* Leaves long, narrow, and bracts very long, and so called the long-bracteated Carex; stem more or less curved; fertile spikes short and sessile. In *Flava* they are stalked, though the stalk is concealed by the sheaths of the bracts; the lowest bract in *Extensa* is almost horizontal—perigynium is dotted.

26. *C. Flava.*—Yellow Carex, very common in wet places; like *Extensa*, but smaller. Bracts have short sheaths hiding the stalks

of the spikes ; beak of perigynium is recurved ; fertile spikes distant. Var. *Œderi* is smaller, and has the spikes close together.

27. *C. Distans.*—This, with *Fulva, Binervis,* and *Lævigata,* form a group of which it is difficult to catch the specific characters. *Distans* (proper) is found near the sea in brackish marshes ; distant interval between the two lower fertile spikes ; Colvend.

28. *C. Fulva.*—In damp places in the hills ; known by its leafy stem and by the long sheath which accompanies the lowest bract. Some consider it a form of *Distans.*

29. *C. Binervis.*—So called from two green nerves or ribs on the outside of the perigynium. Very like *Distans,* but larger and stouter, often 4 feet high. Very common on dry moors and similar places. The slender stems droop on all sides ; male spike is neat and spindle-shaped ; bracts leafy, except the upper one, which is very minute, forming scarious or callous tips to the slightly slit sheath.

30. *C. Lævigata.*—Like a large form of *Binervis,* but its male spike is trigonous, while that of *Binervis* is round ; stem smooth, while that of *Binervis* is rough at the top. I have only found it on Airds, a farm on the river Dee opposite Hensol.

31. *C. Punctata.*—This is the rarest Carex I have gathered in the Stewartry. The Rev. Mr Fraser, Colvend, found it in his parish some time ago, and specimens sent by him from Colvend are still, I understand, in the Herbarium of the British Museum. Two years ago he showed Dr Gilchrist and me the plant. I do not think that any other person has found it in Scotland. Grows only near the sea.

32. *C. Sylvatica.*—An elegant Carex ; flat, broad, soft leaves ; long-pedicelled, lax-flowered spikes ; very slender and drooping. In woods in damp places—Holm Glen, &c., and at Kirkdale, and at Rerrick. Linnæus tells us that the Laplanders dress it, and use it for keeping their feet dry.

33. *C. Vesicaria.*—This and *C. Ampullacea* are very like each other, both having inflated perigynia—called the bladder Carex—stem rough, while *Ampullacea* has it smooth ; light green leaves, and *Ampullacea* has long, channelled, glaucous leaves. Often these two grow together, and are very common in bogs and marshes, by the sides of lakes, rivers, &c.

34. *C. Ampullacea.*—Bottle Carex. The principal points of difference between this and *Vesicaria* have been noted above.

NOTES ON A COLLECTION OF TRICHOPTERA FROM THE STEWARTRY.

By F. G. Binnie, Glasgow, Corresponding Member.

Read March 6th, 1880.

I am very glad to have had the opportunity of examining a collection from a district hitherto, I believe, unworked as regards this group, and I hope Mr Service will continue his work in this neglected order. The majority of the species represented are characteristic of running water, although stagnant water species are not absent, as those of the genera *Phryganea*, *Limnophilus*, *Anabolia*, and in part the genus *Leptocerus*. I miss, however, among the stagnant water forms such common species as *Limnophilus marmoratus*, *flavicornis*, and *vitatus*, associated almost invariably in this district with *Limnophilus lunatus*. Doubtless they will be found on further search. All the British families are represented, except the *Hydroptilidæ*, which is composed of small species difficult to resolve. It would be premature, with the existing paucity and inadequacy of material, to institute any comparison between the present collection and the species of the Glasgow districts. I may note, however, that with the exception of *Limnophilus auricula*, *Leptocerus annulicornus*, and *Chimarrha marginata*, all are represented in the district. The various species of Caddis-flies do not yet possess popular and familiar English names like the Lepidoptera. Perhaps this is no loss if we consider how unmeaning many of these English names are. Their life histories, where worked out, offer little that is striking, and only interest the enthusiastic Trichopterist or the student of Evolution. Anglers use their larvæ, when extracted from their cases, as ground-bait, and also make use of the wings of some species, as *Halesus radiatus*, in the manufacture of the artificial fly. Mr J. J. King, during a visit to your district in 1879, captured several species not represented in the present collection. These I have marked with an asterisk. I have followed the nomenclature of Mr M'Lachlan in his "Monographic Revision of the Trichoptera of the European Fauna;" but, for the convenience of any one who may not possess the work, I have placed within parenthesis the

name used in the same gentleman's "Catalogue of British Neuroptera" wherever this differs from the one here adopted. The arrangement followed is that of the catalogue.

Fam. Phryganeidæ.

Phryganea varia, Fab.—A common species.

Fam. Limnophilidæ.

**Colpotaulius incisus*, Curt.—Maxwelltown Loch.

**Glyphotaelius pellucidus*, Oliv.—Maxwelltown Loch.

Limnophilus rhombicus, L.—Cargen Water (Conhuith).

„ *lunatus*, Curt.—Terreglestown Meadows.

* „ *xanthodes*, M'L. *(borealis)*.—Maxwelltown Loch. In this individual (a male) the pale apical space of the anterior wings is obsolete. In England it is local, but not uncommon in the fens of the east.

* „ *griseus*, L. — Maxwelltown Loch. An extremely variable species: it is even possible to mistake small forms for the next species.

„ *auricula*, Curt.—This species has not yet been found in the Glasgow district; but Mr King has taken it further north—at Aviemore.

„ *luridus*, Curt.—Slogarie.

„ *spursus*, Curt.—An exceedingly variable species.

Anabolia nervosa, Curt.—Cargen Water, Crooks Pow.

Stenophylax stellatus, Curt.—Glen Mills.

Halesus radiatus, Curt. (*digitatus* in part).—Mr M'Lachlan, while compiling materials for his "Monographic Revision," found that three species were confused by authors under *digitatus*, Schr.—viz., *rudiatus*, Curt.; *tesselatus*, Ramb.; and true *digitatus*. Of these *radiatus* and *digitatus* are British, the former being the more usual form. Both occur in the Glasgow district, and doubtless will also be found, on further investigation, in the Stewartry.

Drusus annulatus, Steph.—This species is, so far, confined to Britain.

Fam. Sericostomatidæ.

Serocostoma personatum, K. & S. *(Spenceii).*—Belongs to a difficult genus. M'Lachlan, in his latest work, admits provisionally 16 species. This is the only British species.

Silo pallipes, Fab.—A common species.

Lepidostoma hirtum, Fab. *(Mormonia hirta).*—River Nith.

Fam. Leptoceridæ.

Odontocerum albicorne, Scop.—Lochaber.

Leptocerus annulicornis, Steph.—A local species: it has not been found in the Glasgow district; but I have taken it by the Forth, near Stirling.

„ *dissimilis*, Steph.—Near Loch Kindar.

„ *bilineatus (bifasciatus).*—This and the next species are very similar, but are readily distinguished by the present species having the fore wings covered with a dense black pubescence, and more especially by the absence of white vertex.

„ *Albifrons*, L.—Has the vertex clothed with snow-white hairs—hence its name—and the pubescence of the fore wings is dark brown.

Mystacides azurea, L. *(nigra).*—The nomenclature in this genus has been entirely changed by M'Lachlan in his "Revision." The other two British species both occur in our district.

Œcetis testacea, Curt. *(Setodes testacea).*—Conhuith. The only other recorded Scottish locality is in the Glasgow district.

Fam. Hydropsychidæ.

Hydropsyche instabilis, Curt.—Cargen Water.

Polycentropus flavomaculatus, Pict.—Lochaber.

Fam. Rhyacophilidæ.

Rhyacophila dorsalis, Curt.—An abundant species by every burn and running stream.

Glossosoma boltoni, Curt.—Lochaber. Mr King has also taken this species at Maxwelltown Loch.

Agapetus comatus, Pict.—In one of the specimens sent fork No. 3 of anterior wing is equal to fork No. 4, and in another individual it extends much farther inwardly. Normally it should be shorter, and this aberration is a character of another species, *fuscipes*, from which, however, it is easily separated by the short and stout process of the sixth ventral segment of the abdomen, as well as by the other anal characters. In *fuscipes* this process is long and slender, extending as far or beyond the apex of the ninth segment. These specimens, however, preserve the small fork at termination of radius of posterior wings. It is not forked, or only aberrantly so, in *fuscipes*.

Chimarrha marginata, L.—Slogarie. A beautiful and strikingly marked species. According to M'Lachlan, "it especially delights in torrents in which are mossy boulders, upon which it rests."

OBSERVATIONS ON THE SALMON DISEASE.

By J. Rutherford.

Read April 23d, 1880.

As my communication to this Society last month was oral, I thought it might perhaps be as well to write a paper on the subject, including most of the remarks I then made, as well as some little work I have done since.

1st. I will describe the appearance of the disease as I have seen it, as clearly and plainly as I possibly can, which I have had confirmed by the examination of a good number of fish. The conclusions that I have arrived at from those facts and appearances may not be correct, as I do not consider my physiological knowledge sufficient to warrant my assuming that of an authority on the subject. As to the appearance of the diseased fish when seen in the water I need say little, as it must be so well known to the most of you. When they are first seen to be affected they have one or two small spots generally near or on one of the fins, often the dorsal or tail fins. Those spots gradually extend, until in a number of cases the fish is nearly covered. In the course of time, when the disease begins to affect the constitution of the fish, they begin to look languid, and gradually draw into the smooth and shallow water at the sides of the river—I believe from a feeling of weakness to resist the current of the stream. The white spots when seen in the river look like mould, such as is generally seen growing on decaying animal or vegetable matter. I have seen it when it looked to be about an inch or so in length. When the fish is taken out of the water that mouldiness assumes a sort of matted, slimy appearance, and can easily be scraped from the scales with a sharp knife or razor, and in most cases leaves no trace by which the eye could detect that it had ever been there. A little of the mouldy-looking substance placed under the microscope reveals at once the fact that it is a fungus—viz., *Saprolegnia ferax*, the filaments of which take all sorts of forms. The most of other plants can be at once known by the form which they almost universally take, but not so with *S. ferax*. This fungus takes all imaginable forms for its filaments. I have made (partly

by Camera Lucida) rough drawings of some of the forms that I have met with, although they by no means complete the variety. I think the tubes or cells of the filaments are oval, not circular; at least, I am led to think so by the appearance presented. They are generally built up of two, and sometimes of three, large cells. Some of the filaments are filled with a protoplasmic-looking substance. "That," says Mr Worthington Smith, the eminent fungologist, "gradually changes to the granular form," which indeed is the form most commonly met with; and those granules, which are the spores of the fungus, begin to have a motion of their own inside the parent cell, and when the proper time comes they are discharged by the sporangia at the apex of the filament. After these filaments have discharged part of their living freight, those spores then take the form of Zoospores, "having two cilia," moving about in the water like true Animalculæ, ready to attach themselves to any proper substance that may come in their way on which to germinate, and throw out filaments similar to those from which they came; indeed, so prone are they to grow that it has been supposed that filaments having the form represented in the diagram are those in which the spores have actually germinated in the parent cell. Now, when we look at the thousands of filaments on one single spot of disease, and consider that each of those filaments gives off a numberless quantity of spores, we will begin to have some idea that the quantity of Zoospores lodged in and floating down an affected river must be beyond all calculation. One feature I noticed in connection with those Zoospores—that if, when under observation, a stream of liquid was made to flow across the slide, they could attach themselves to the glass, so that they were not carried away by the stream, and by the same means will attach themselves to the stones, &c., in the river, or the dorsal fin of a Salmon. I have not been able to trace the roots of the fungus beyond the skin that covers the scales. In making a cut into the fish through the fungus, the eye at once is attracted by an inflamed, unhealthy-looking stratum of muscle below the skin, of varying thickness. In one fish that I examined it extended right through to the inside. Sections of that muscle when placed under the microscope were seen to be literally one mass of life—that life being a species of Bacteria. If I am asked the question, What are Bacteria? I cannot answer it. Some philosophers call them vegetable forms of life, and some seem to doubt it; but this I can say, that they are small, discoid-looking bodies, which in

this case I find embedded and moving amongst the striated muscle fibre of the fish; and when by pressure or otherwise they are forced into the surrounding fluid, they have a power of motion, moving mostly in a sort of circular direction. In some fish that I have examined I observed that the muscle was almost detached from the strong fibro-muscle layer of the skin, and the muscle fibres of that layer were not adhering together as in their natural state, and could be separated from each other like threads by the needle. Whether the diseased condition of that part of the skin was caused by the state of the muscle immediately below it or by the fungus on its surface I am not in a position to say. By looking at the very rough drawing of a transverse section of Salmon skin made by the Camera Lucida, you will observe a dark layer marked "opaque muscle layer." That is the fibro muscle layer of the skin that I have been alluding to, and to which is attached the true muscle of the fish; and should the fish live long enough, ulceration of those affected parts must take place. As I did most of this work in the winter, when the frost was so hard, I took advantage of it to freeze parts of fish in the section instrument, and by this means I got some capital sections of fungus, scales, skin, and muscle. I preserved one of those sections, which is a very fine one, showing the forms of the Bacteria still in and around the muscle. After examining a number of fish, and finding the conditions alike in each, I then began to speculate a little as to the nature of the disease I have just described, and the idea at once suggested itself, after what I had seen, that the disease was located in the muscle of the fish; and I also have some idea that when it is really known it will be found to commence in the blood, caused either by the food they eat or by some deleterious solution in the water which passes through the gills, and that the unhealthy, decaying fluid or matter, which will naturally pass off from those Bacteria and exude through the pores of the skin, forms a healthy and proper *nidus* for the germination of the Zoospores of the fungus, which, as I have shewn you, must be in those affected rivers in myriads. Now, let us look for a little at what authorities say on the subject in support of my theory. I have been told by persons having an aquarium that previous to the growth of the fungus on a fish it exhibits signs of indisposition. Then Dr Carpenter says, when speaking of fungi, "there are various diseased conditions of the human skin and mucus membranes, in which there is a combination of fungoid

vegetation and morbid growth of the animal tissues, such as *Tinea favosa*," and various others he names. Then he goes on to say "that it is a disputed point whether the morbid condition or the fungus is the disease," but closes by saying that the first or morbid condition being the disease is rather consistent with general analogy, and especially with what is known of the conditions under which the various kinds of fungoid "blights" develop themselves in or upon living plants. When speaking of potato and vine disease, he says "that the fungus on those plants will not grow on those which are perfectly healthy, but that a disordered condition is necessary as a predisposing cause. Again, if you refer to those excellent papers presented to the Society to-night by Mr Stirling, he gives a long account of some very interesting experiments (p. 247) where he placed fish or parts of fish covered with *S. ferax* in water along with healthy fish, and the healthy fish were not contaminated by the fungoid disease, although the germs of that disease must have been in the water in thousands. There are various other parts in those papers I would have liked to have noticed as proving my theory, but I have lent my copies to a friend and cannot remember the parts. Those experiments I have alluded to clearly prove that, unless there is a predisposing cause, fish will not contract the fungoid part of the disease; they must have a disease or decay in their body on the products of which the fungus germinates and grows. In fact, it is contrary to anything I have either read or know for fungus to grow on either healthy animal or vegetable. As far as I have been able to decide by a number of experiments, I am rather inclined to believe that salt water is not very favourable to the growth of *S. ferax*; but as far as the Bacteria in the muscle are concerned, no washing by any solution will affect them. I have cut sections of muscle containing them, and placed one in a saturated solution of salt and one in clean water, and kept them for several days. Those in the salt solution were as lively at the end of the period as when taken from the fish; in fact, they did not die until they were placed in a preservative fluid containing arsenic. If this disease is cured by the return of fish to the sea, it must be ascribed to the food they get there and the general invigorating influences, and not to the fact of their being washed externally by sea or salt water. As to how diseased fish are to be cured in the rivers I cannot even concoct a theory; but I have no faith in putting salt, acetic acid, or any other chemical in the water, as I believe by the time that

the diseased fish were expected to be cured they and all other fish in the river would be killed. On the 22d of March last I was again favoured by Mr Fenton sending me two diseased Grayling and a cut from a Salmon. The cut from the Salmon had no trace of fungus. Skin and scales were all clean and perfect, but the muscle below the skin for from one-half to three-quarters of an inch had that inflamed-looking appearance, and was swarming with Bacteria, while the muscle of normal colour was quite free from them. Both of the Grayling were females, full of healthy-looking roe: both had fungus on the same part—from the ventral fin round behind the dorsal fin—and both had the same condition of muscle that I have already described. One had heart, liver, and all internal organs healthy, so far as I could judge, with a very small quantity of digested food in the large intestine. The other had an inflamed patch on the side of the stomach. Sections of that part on examination were found full of Bacteria. Its liver also was in the same diseased condition, and it had no trace of food in it, and no doubt would very soon have died. I have seen it stated that the act of spawning so weakened or lowered the condition of the fish that they became a prey to the disease. But that cannot be so, as I have seen at least three female fish full of healthy-looking roe, seemingly ready for being deposited in the spawning bed. I have given something like a description of the disease as I have seen it; and if the theory I have formed regarding it is correct, the next point to be studied is its cause. At present I am of opinion that the cause must be looked for in the water by examining chemically, microscopically, and experimentally, quantities of water taken from the river in the autumn when it is very small, after a long absence of rain.

NOTES ON RARE BEETLES, No. II.

By William Lennon.

Read April 23d, 1880.

A year or two since I had the pleasure of preparing a paper for the Society, giving an account of the rare or local species of Coleoptera I had met with in this district. The paper to which I allude was subsequently printed in the last published part of the Society's *Transactions*. I now propose to give, in the following remarks, a continuation of my former paper, giving the names of those species I have met with lately and the localities where they were found. First then comes

Sphodrus leucophthalmus.—Found in several of the shops and houses in Galloway Street, Maxwelltown. I am indebted to Mr Service for specimens of this beetle; I have never found it myself.

Perileptus crolatus.—Not common; the only locality I know for it is under stones on both sides of the Cairn between Hawhill and Irongray Kirk.

Hydroporus novemlineatus.—A very scarce species; I have found it only in the White Loch, Colvend.

H. picipes.—Also very scarce; found in Maxwelltown Loch, and also near Kelton.

H. rufifrons.—Is very rare; found once in the Cairn, near Gribton, and once in Lochar, near Sandyknowe.

H. quinquelineatus.—Also very rare; the only locality I know for it is a deep, stagnant pool on the east side of the Cargen Pow, between the Dalbeattie road and the Castle-Douglas road.

Agabus solieri.—Rare; I found three specimens in the Cairn, near Gribton, and a few near Kelton in flood refuse.

A. nitidus.—A very scarce insect; found in running streams—the Cairn, near Gribton.

A. brunneus.—A rare insect; I have not met with it elsewhere than at Kelton in flood refuse.

Helophorus tuberculatus.—I have taken one specimen of this, and it may be considered almost unique, as, so far as I know, only one other has been got in Britain. I found mine at Kelton in flood refuse. I am indebted to Dr Sharp for naming this insect for me.

Berosus spinosus.—Found only in the salt marsh opposite Caerlaverock Castle. It is not common even there.

Hydrœna pulchella.—The best locality for this little species is under stones on both sides of the Cairn near Hawhill.

Myrmedonia collaris.—A very scarce species; found only at Kelton in flood refuse. Its proper habitat is said to be in Ants' nests, but I have been unsuccessful in finding it in the hundreds I have examined. Those found at Kelton have of course come down the river or some of the smaller streams flowing into it.

Gymnusa brevicollis.—A very rare species, of which I possess only a type, found at Kelton last summer in flood refuse.

Lesteva muscorum.—Very scarce; I have found it only at Dalscairth.

Syncolypta setigera.—Found along the shore opposite Caerlaverock Castle and near Kelton.

Aphodius zenkeri.—In flood refuse near Kelton; not common.

Trachypleus laticollis.—Exceedingly rare; only one specimen, near Kelton, in flood refuse.

Magdalinus carbonarius.—A very scarce species; found near Dalscairth House.

Liopus nebulosus.—Also a rare species, and also found at Dalscairth.

Strangalia quadrifasciata.—Very scarce; I met with a specimen once in a wood near Caerlaverock Castle many years ago. Last August Mr Service captured two on flowers of the Goutweed near Mabie; and Mr M'Ilwraith took another about the same time, which flew into the boat in which he was fishing at Lochaber.

Donacia menyanthidis.—Not common; last summer I took one at Lochaber, and another at the White Loch of Colvend.

Chrysomela marginata.—The only specimen of this I have met with I captured last June at Kelton in flood refuse.

Procrustes coriaceus.—This was taken in the Troqueer Mills and given to Mr Service. It is very probable, however, that it had been introduced in foreign wool, as it has occurred before in Britain in similar circumstances. It is a common species in Central Europe, as I learn from Dr Sharp, who kindly named the specimen.

APPENDICES.

APPENDIX A.

LIST OF MEMBERS OF THE SOCIETY IN THE SESSION OF 1880-81.

ORDINARY MEMBERS.

(Those Members who joined the Society when it was re-organised on November 3d, 1876, are indicated by an asterisk).

Date of Election.

*John Adair, Jeweller, High Street, Dumfries.
*William Adamson, Broom's Road, do.
*James Aitken, The Hill, Dumfries.
Oct. 6th, 1879—Charles Allan, Albany Place, Dumfries.
Feby. 1st, 1878—George Armstrong, Corberry Cottage, Maxwelltown.
March 4th, 1879—James Arnott, High Street, Dumfries.
Decr. 3rd, 1880—James Barbour, Architect, do.
Jany. 5th, 1877—James Beattie, Ironmonger, do.
*James Bell, Seedsman, do.
Jany. 4th, 1878—Charles Black, Arbigland, do.
Decr. 1st, 1876—Major Bowden, Lochfield, do.
April 5th, 1878—Sir William Broun, Bart. of Colstoun.
March 5th, 1880—J. Broun, Solicitor, Dumfries.
Oct. 8th, 1880—J. Brown, Drumsleet School, Troqueer, Dumfries.
April 1st, 1881—Tom Brown, Auchenhessnane, Penpont, Thornhill.
Jany. 5th, 1877—Dr W. A. F. Browne, Crindau, Dumfries.
Feby. 7th, 1879—T. R. Bruce, of Slogarie, New-Galloway.
March 5th, 1880—W. Byth, The Academy, Dumfries.
Jany. 4th, 1878—John Callander, High Street, Dumfries.
Nov. 5th, 1880—Rector Chinnock, The Academy, Dumfries.
April 4th, 1879—Robert Chrystie, Buccleuch Street, Dumfries.
April 4th, 1879—Samuel Chrystie, do. do.
March 5th, 1880—John James Clark, Market Hall, do.
Jany. 5th, 1877—J. Gilchrist-Clark of Speddoch, do.
March 1st, 1878—W. B. Coupland, Nithsdale Mills, do.
Oct. 8th, 1880—John Costin, 3 Buccleuch Street, do.
*Dr Coupland, Brook Street, do.
*Dr Cranstoun, St. Michael Street, do.
April 23d, 1880—A. B. Crombie, Architect, do.
April 5th, 1878—James Culton, Dildawn, Castle-Douglas.
*Dr J. Cunningham, Buccleuch Street, Dumfries.
Decr. 3d, 1880—W. Dair, Crichton Royal Institution, do.
*J. Davidson, of Summerville, Maxwelltown.
*W. A. Dinwiddie, Greenbrae, Dumfries.
Oct. 6th, 1879—L. M. Dinwiddie, do. do.
Decr. 1st, 1876—P. Dudgeon of Cargen, do.
Decr. 3d, 1880—John Dalziell Fairley, Cape Coast Castle, West Africa.
Oct. 6th, 1879—J. Fergusson, Queen Street, Dumfries.
Oct. 5th, 1877—Rev. J. Fraser, Colvend Manse, Dalbeattie.
*Robert French, Coldstream.
*W. G. Gibson, Clerkhill Cottage, Dumfries.
Decr. 7th, 1877—J. Gibson, Bank of Scotland, do.

Date of Election.

Oct. 6th, 1879—D. A. Gillespie, Kingholmbank Cottage, Dumfries.
*Dr Gilchrist, Linwood, Dumfries.
Novr. 1st, 1878—T. Gracie, Kirkmichael House, Dumfries.
Feby. 1st, 1878—Rev. W. Graham, Maxwelltown Manse.
Jany. 5th, 1877—J. A. Greig, 15 Royal Crescent, Edinburgh.
*F. W. Grierson, Chapelmount, Maxwelltown.
*Dr Grierson, Thornhill.
*J. D. Grierson, Rhonehouse, Castle-Douglas.
April 6th, 1877—William Halliday, College Street, Maxwelltown.
Jany. 4th, 1878—Malcolm M'L. Harper, Castle-Douglas.
*Douglas Baird Hart, Friars' Vennel, Dumfries.
*William Hastings, English Street, do.
Decr. 7th, 1877—J. Hutton, Ramsay Cottage, Maxwelltown.
Feby. 1st, 1878—J. Hogg, Saughtree, Dumfries.
*W. S. Hogg, do. do.
Feby. 6th, 1880—Sheriff Hope, do.
Novr. 2d, 1877—J. Houston, Greyfriars' Street, Dumfries.
Decr. 1st, 1876—Thomas Jackson, Nith Place, do.
*James Jardine, *Echo* Office, Sunderland.
March 2d, 1877—George Johnstone, Castlemilk, Lockerbie.
Jany. 9th, 1880—Rev. J. B. Johnstone, Glebe Terrace, Dumfries.
*Dr Kerr, Castle Street, do.
Novr. 1st, 1878—J. W. Kerr, The Academy, do.
March 2d, 1877—J. Landells, *Herald* Office, do.
Decr. 3d, 1880—A. Lawson, English Street, do.
*William Lennon, Brook Street, do.
*James Lennox, Edenbank, Maxwelltown.
*John Lennox, do. do.
Oct. 8th, 1880—J. Longmore, Industrial School, Dumfries.
April 5th, 1878—T. Low, Chemist, do.
Oct. 8th, 1880—W. Martin, Town Clerk, do.
Jany. 4th, 1878—J. Matthewson, Dalbeattie.
*John Maxwell, King Street, Maxwelltown.
April 5th, 1878—J. H. Maxwell, *Kirkcudbrightshire Advertiser*, Castle-Douglas.
Oct. 6th, 1879—W. J. Maxwell, Terregles Bank, Dumfries.
Feby. 6th, 1880—Capt. Maxwell of Terregles, do.
Feby. 6th, 1880—E. Constable Maxwell, Terregles, do.
Mar. 23d, 1880—R. W. Miller, Queen Street, do.
Novr. 5th, 1880—G. Milne, Cintra Villa, do.
*James Moodie, Schoolmaster, Maxwelltown.
Oct. 6th, 1879—N. Murdoch of Netherlea, Dumfries.
*Dr Murray, Castle Street, do.
Oct. 6th, 1879—James M'Andrew, The Schoolhouse, New-Galloway.
*Dr MacDonald, Castle Street, Dumfries.
April 4th, 1881—John M'Kie of Anchorlee, Kirkcudbright.
Novr. 7th, 1879—P. B. M'Kill, Rae Street, Dumfries.
*John M'Lean, Jeweller, do.
March 5th, 1880—John M'Meekan, Linden Grove, Dumfries.
Oct. 6th, 1879—James M'Veigh, Glencaple, do.
March 4th, 1879—John Nelson, The Academy, do.
Novr. 7th, 1879—John Newbigging, Kirkbank, do.
*J. H. Nicholson, Chemist, Maxwelltown.
Decr. 7th, 1877—A. Paterson, High Street, Dumfries.
Oct. 8th, 1880—Gray Philips, Rosefield, Troqueer.
*J. Reid, Greystone Cottage, Dumfries.
Jany. 4th, 1878—G. Robb, Rhynie House, do.
*J. Rutherford of Jardineton, do.
Feby. 7th, 1879—John Rutherford, Pleasance, Kirkmichael.
Oct. 8th, 1880—W. Scott of Broomlands, Dumfries.
Decr. 3d, 1880—James Scott, Castle Street, do.

*Robert Service, Lauricknowe, Maxwelltown.
*Dr Sharp, Eccles, Thornhill.
*James Shaw, Tynron School, Thornhill.
April 4th, 1879—Provost Shortridge, Dumfries.
Oct. 6th, 1879—J. Smith, Commercial Bank, Dumfries.
*John Smith, *Courier* Office, do.
Oct. 8th, 1880—T. Stansfield, Inland Revenue, do.
March, 2d, 1877—J. Gibson Starke of Troqueer Holm, Dumfries.
*P. Stobie, Assembly Street, do.
Feby. 6th, 1880—Dr Symons, Buccleuch Street, Dumfries.
Oct. 6th, 1879—John Tennant, The Academy, do.
Decr. 1st, 1876—Dr Thomson, Castle Street, do.
April 5th, 1878—A. Thompson, Ironmonger, do.
*James Thompson, Jeweller, do.
Oct. 8th, 1880—Alfred Edgar Truckell, College Street, Maxwelltown.
Jany. 9th, 1880—Rev. T. Underwood, Irongray Manse.
March 7th, 1879—J. Watt, Rotchell House, Maxwelltown.
Jany. 9th, 1880—T. Watson, Castlebank, Dumfries.
Oct. 6th, 1879—Rev. R. W. Weir, Dumfries.
J. Welsh, Waterloo Place, Dumfries.
March 2d, 1877—J. Williamson, Terregles Street, Maxwelltown.
March 23d, 1880—J. Wilson, Inland Revenue, Dumfries.

CORRESPONDING MEMBERS.

J. A. Harvie-Brown of Dunipace, Larbert.
Peter Cameron, Willowbank Terrace, Glasgow.
John Dunsmore, Bridport, Conn., U.S.A.
Dr Battershell Gill, Regent's Park, London.
George Hastie, National Institution, Edinburgh.
J. J. King, Sauchiehall Street, Glasgow.
J. W. Lancaster, Birmingham.
Wm. M'Ilwraith, Rockhampton, Queensland.
R. W. MacFadzean, Co. Galway, Ireland.
John Starforth, Architect, Edinburgh.
Joseph Thomson, Exploring in Eastern Africa.

APPENDIX B.

Minute of Agreement between Patrick Dudgeon of and residing at Cargen, in the Parish of Troqueer and Stewartry of Kirkcudbright, President of the Dumfries and Maxwelltown Astronomical Society, and the said Patrick Dudgeon and David Barker of Woodlands, residing at Arundel House, Maxwelltown, in said Parish of Troqueer; William Halliday, Cabinet-maker, Maxwelltown; James Sloan of Barbeth, residing at Elmbank, Dumfries; James Hairstens M'Gowan, James M'Whir Hairstens, and Henry Gordon, all Writers in Dumfries; James M'Gill, Banker, there; and James Hutton, sometime residing at Charter House, Maxwelltown, now at Glencaple, Dumfries, the Members of the Committee of Management of said Society, and Robert Sharpe, Writer in Maxwelltown, the Secretary thereof, all for and on behalf of, and as representing said Society, of the first part, and James Gibson Starke of and residing at Troqueer Holm, Maxwelltown, President of the Dumfriesshire and Galloway Scientific, Natural History, and Antiquarian Society, and the said James Gibson Starke, William Lennon, residing in Brooke Street, Dumfries; Thomas Jackson, Nith Place, Dumfries; Peter Stobbie, Nith Street, Dumfries; William Adamson, Brooke Street, Dumfries; George Robb, Rhynie House, Dumfries; James Lennox, Edenbank, Maxwelltown; James Hutton, Glencaple, Dumfries; John Maxwell, King Street, Maxwelltown; James Watson Kerr, The Academy, Dumfries; James Moodie, David Street, Maxwelltown; and James Gilchrist, Doctor of Medicine, Linwood Villa, Dumfries, the Members of the Committee of Management of said last-mentioned Society, and Robert Service, Laurieknowe, Maxwelltown, the Secretary thereof, all for and in behalf of, and as representing said last-mentioned Society, of the second part.

The parties hereto considering that negotiations have for some time been in progress between the two above-mentioned Societies for depositing in the Museum of the said Astronomical Society of certain Antiquarian and Natural History Specimens and Books, at present belonging to, or in the possession of, or which may during the subsistence of this Agreement come into the possession of the said Natural History and Antiquarian Society; that on Sixth August, Eighteen Hundred and Eighty, a deputation from the said Natural History and Antiquarian Society attended a Meeting of the Committee of Management of the said Astronomical Society, at which Meeting Draft Proposals for the carrying out of the said object were submitted and considered, and the parties having now arrived at an agreement regarding the matter, it is right and proper the same should be reduced to writing, and made binding on both sides. Therefore it is agreed between said Societies as follows:—

First.—That the said Natural History and Antiquarian Society shall deposit in the Museum of the said Astronomical Society (the buildings containing which Museum are commonly known and called by the name of "The Observatory") such of the Antiquarian and Natural History Specimens and Books presently belonging to, or in the possession of, or which may during the subsistence of this Agreement come into the possession of the said Natural History and Antiquarian Society, as shall be selected by the President for the time being of the said Astronomical Society, for exhibition or perusal in the same way and under the like conditions as articles of a similar nature at present in the Museum, the property of the said Astronomical Society, a duplicate list of said Specimens and Books shall, when the same are selected and deposited in the said Museum, be prepared and signed by the Presidents or Secretaries of the two Societies,

one of which lists shall be kept by each of the said Societies, and to these lists shall be added from time to time such other Specimens and Books as may come into the possession of said Natural History and Antiquarian Society, and be selected as aforesaid and deposited in said Museum.

Second.—The said Specimens and Books shall, before being deposited, be labelled as the property of said Society second above-mentioned. Further, the said Natural History and Antiquarian Society shall not be called upon to furnish cases or other accommodation for the depositing of any of its Antiquarian and Natural History Specimens; but with regard to the Books to be deposited, it shall be at the expense of providing a case therefor, which shall be placed in such portion of the Museum as shall be selected by the President of the said Astronomical Society.

Third.—That the Members of the said Natural History and Antiquarian Society shall assist to the best of their ability the said Astronomical Society in forming and maintaining a Natural History collection, representative of the natural productions of Dumfriesshire and Galloway.

Fourth.—Members of the said Natural History and Antiquarian Society desirous of pursuing their study of Natural History, &c., shall be admitted gratis to the Museum on presentation to the Curator or Curatrix of a written order to that effect, duly signed by the Secretary of either Society; but every such Member so admitted gratis shall on each occasion of admission sign his name in a book to be kept in the Observatory for the purpose, in which the date of each visit shall also be entered. Other Members of said Natural History and Antiquarian Society shall be admitted to the Observatory and Museum on any lawful day of the week (Saturdays excepted) on production of their Ticket of Membership and payment by them of one-half the usual admission fee for such day, with all privileges open to other public visitors. Further, Books and Specimens of Natural History, &c., belonging to the said Natural History and Antiquarian Society shall be temporarily borrowed by Members of that Society only on application to the Curator or Curatrix of the Observatory, to whom they shall grant a borrowing receipt for the same.

Fifth.—This Agreement shall be terminable by either party on giving three months' notice in writing to the other party of the intention so to terminate it, on the expiry of which period the said Natural History and Antiquarian Society shall forthwith remove the whole property belonging to it in said Museum, and that at its own expense. Further, a letter addressed by the Secretary of the one Society to that of the other Society intimating such intention of terminating this Agreement, and duly posted, shall be considered as sufficient notice thereof.

Sixth.—The said Astronomical Society is expressly understood to undertake no responsibility for the safe custody of the articles which may be deposited, as before-mentioned, in virtue hereof, nor for any damage which may be done to them by fire or otherwise—the said Natural History and Antiquarian Society, however, being entitled to insure against loss by fire or otherwise the property belonging to it, but that always in its own name and at its own expense.

Seventh.—This Agreement shall be signed in duplicate, and one copy kept by each of the said Societies. In witness whereof these presents written upon this and the three preceding pages of stamped paper by William M'Dowall, apprentice to Walker & Sharpe, Writers in Maxwelltown, are subscribed on each page by the parties hereto as follows, videlicet:—By the said James Gibson Starke, as President of the said Dumfriesshire and Galloway Scientific, Natural History, and Antiquarian Society, and also as a Member of the Committee of Management thereof, George Robb (otherwise named George H. Robb), William Lennon, James Watson Kerr, William Adamson, James Lennox, and Robert Service, all at Dumfries, upon the Fourth day of March, One Thousand Eight Hundred and Eighty One Years, before these Witnesses—William Alexander

Francis Browne Coupland, Manager of the Nithsdale Mills, Dumfries, and residing in Dumfries, and Alfred Edgar Truckell, Clerk to the said Walker & Sharpe; by the said James Gilchrist, James Moodie, John Maxwell, Peter Stobbie (otherwise named Peter Stobie), and Thomas Jackson, all at Maxwelltown, upon the Thirtieth day of said month of March and year last mentioned, before these Witnesses—John Gibb, Seedsman's Apprentice, residing in Maxwelltown, and the said Alfred Edgar Truckell; by the said Patrick Dudgeon, as President of the said Astronomical Society, and also as a Member of the Committee of Management thereof, William Halliday, James Hairstens M'Gowan, and James M'Gill, and by the said James Hutton, as a Member of the Committee of Management of each of the said Societies, all at the Observatory, Maxwelltown, upon the First day of April and year last mentioned, before these Witnesses—Murray Little, Apprentice to the said Walker & Sharpe, and the said Alfred Edgar Truckell; by the said James M'Whir Hairstens, at Dumfries, upon the Second day of said month of April and year last mentioned, before these Witnesses—the said Murray Little and Alfred Edgar Truckell; by the said Henry Gordon, at Dumfries, upon the Seventh day of said month of April and year last mentioned, before these Witnesses—the said Murray Little and Alfred Edgar Truckell; by the said James Sloan and Robert Sharpe, both at Maxwelltown, upon the day, month, and year all last mentioned, before these Witnesses—the said Alfred Edgar Truckell and Murray Little; and by the said David Barker, at Moffat, upon the Twenty-sixth day of said month of April and year last mentioned, before these Witnesses—William Tait, son of and residing with Thomas Tait, Solicitor at Moffat, and Alexander Henderson, Teller in the Bank of Scotland, Moffat.

(Signed) J. Gibson Starke; Geo. H. Robb; W. Lennon; James W. Kerr; William Adamson; James Lennox; Robert Service; Peter Stobie; J. Gilchrist; Jas. Moodie; John Maxwell; Thomas Jackson; P. Dudgeon; William Halliday; James Hutton; James H. M'Gowan; Jas. M'Gill; James Hutton; J. M'W. Hairstens; H. Gordon; James Sloan; Ro. Sharpe; D. Barker; W. A. F. B. Coupland, Witness; A. Edgar Truckell, Witness; A. Edgar Truckell, Witness; John Gibb, Witness; Murray Little, Witness; A. Edgar Truckell, Witness; Murray Little, Witness; A. Edgar Truckell, Witness; A. Edgar Truckell, Witness; Murray Little, Witness; A. Edgar Truckell, Witness; Murray Little, Witness; William Tait, Witness; Alex. Henderson, Witness.

APPENDIX C.

CATALOGUE OF NATURAL HISTORY AND ANTIQUARIAN SPECIMENS, BOOKS, PAMPHLETS, &c., DEPOSITED IN THE OBSERVATORY MUSEUM, IN ACCORDANCE WITH THE MINUTE OF AGREEMENT *(See Appendix B)* BETWEEN THE SOCIETY AND THE OBSERVATORY SHAREHOLDERS.

LIST OF NATURAL HISTORY AND ANTIQUARIAN SPECIMENS, &c.

Specimens.	Presented by	No. in Observatory Record Book.
Two Casts of Armorial Bearings, from Sweetheart Abbey	Mr J. Faulds	5 and 6
Boss of Groined Arch (Cast), from Melrose Abbey	Mr Milne	7
Block Wood, from Lochar Moss	The late Sir W. Jardine, Bart.	8
Samian Ware, dug from the Ashpit of a Roman villa at Carlisle	Mr W. G. Gibson	9
Pick Axe, found when digging foundations of Greyfriars' Church	No record	10
Old Sword Blade, found in Lochar Moss	The late Mr Thorburn, Barnkin	11
Manacles, "Figure 8," found in Glasgow Street, at a depth of 6 feet, 1880	Mr Dickson, V.S.	12
Two Framed Cases Micro-photographs	Mr F. W. Grierson	13 and 146
Piece of Wild Boar (Clavicle, &c.), found in Lochar Moss, at a depth of 15 feet, December 4th, 1862	The late Mr Thorburn, Barnkin	14
Down from Protoma's Nest, from Central Australia	.....	15
Hedgehog (Troqueer), mounted	.....	16
Angel Fish, mounted	The late Sir W. Jardine	17
Fifteen species Crustacea	Dr Gilchrist	18 to 32
Seventeen species Marine Animals (Serpulæ, &c.)	Do.	33 to 50
Five specimens Ova of Mollusca	Do.	51 to 55
Three species of Asteridæ	Do.	56 to 58
Two skeletons Cuttle Fish	Do.	59-60
Nineteen species Zoophytes, &c.	Do.	61 to 79
Two *Echinus sphæra*	Do.	80-81
Collection of Graptolites, from Kirkmichael	Mr T. Gracie	82
Stone Hammer, Kirkmichael, 1880	Mr John Rutherford	83
Do. Irongray	.....	84
Do. (broken), Barncleuch	.....	85
Pestle Stones	.....	86-88
Stone Hammer, Carmaddie	.....	89
Cast of Skull of *Simia satyrus*	Mr Moore, Liverpool	90
Grass Mat	No record	91
Box of Lead in various stages of manufacture	The late Mr Niven, Leadhills	92

Specimens.	Presented by	No. in Observatory Record Book
Two Boxes of Bronze Spearheads, &c. (Casts), from the Originals in the Museum of the Crichton Royal Institution	Dr Gilchrist	93-94
Casts of Fossil Footprints (*Labyrinthodon*, *Iguanodon*, &c.), from originals in the Liverpool Museum	Mr Moore	95 to 99
Slab Sandstone, from Locharbriggs, showing Footprints, 1880	Mr John Rutherford	100
Fragments of Cinerary Urn, found on Broomhill, near Lochmaben, 21st August, 1867	Mr Thomas Corrie	101
Piece of Ashwood, from Arbigland, showing the burrowings of the beetle *Hylesinus fraxinus*	Mr C. Black	102
Ball, from a Horse's stomach, concreted round a gas burner; Auchenskeoch, 1881	Mr Dickson, V.S.	103
Two portions Antlers (Red Deer ?), found at the mouth of river Urr, along with the remainder of the skeleton, in 1860	Capt. Wilson, Orchardton	104
Eggs of the Rhea and Emu, laid by domesticated birds at Castle O'er, near Langholm, 1880	Mr Bell	105-106
Models Sculptured Stones (Scottish)	Mr W. G. Gibson	110
Courier (London), 1813	Mr C. Anderson	111
Grain Tin, used by dyers	Mr M'Kinnell	112
Set of "Blackfellows" Weapons, consisting of Spear, Boomerang, Nulla Nulla, Heilamon, and Dilla Bag, from Queensland	Mr Edgar, Rockhampton	113
Rusty Hoof Fungus (*Polyporus ignarius*); Troqueer	Mr W. G. Gibson	114
Thirty species Local Birds' Eggs in Eighty specimens; intercalated with the Observatory Collection	Mr Sam. Chrystie	135
Celt of Porphyry; Auchenhessnane, 1881	Mr Shaw	147
"Comb" of White Ants; Cachar, Bengal. This specimen was formed by the Ants between the tin lining of a box and its outer casing	Mr J. Inglis	148
Silver Cup and Apron, found with the mummy of an Inca; Lima, Peru	Miss Sutherland	149
Two Pennies, George IV., 1797	Mr Scott and Mr Williamson	150
Paris Miners' Halfpenny	Mr Bailey	151
Fragments Cinerary Urn	.....	...
Tray of twelve Coins, found in St. Querdon's Well	Mr Dudgeon	152
Collection of Marine and Fresh-water Mollusca (British)	Dr Gilchrist	...
Collection of Marine Mollusca, from Portugal	Mr J. J. Clark	...
"A Wasp's Nest, and the Wasp that built it."	Mr Rutherford	...

Specimens.	Presented by	No. in Observatory Record Book.
Two Boxes Microscopic Preparations	Miss Mitchell	...
Fasciculus of Lichens	Dr Gilchrist	...
Two Portfolios Dried British (Local) Plants	Mr W. S. Hogg	...
Forty-three species "Carices of the Stewartry"	Mr M'Andrew	...
Six Coins—Chinese Coin; Irish Halfpenny, George III., 1781; Halfpenny, George III., 1817; Halfpenny, Victoria, 1854; Halfpenny, George III., 1807; and Un Decime, L'an 8, Republique Francais	Mr Wilson	...

List of Books,

Exclusive of Pamphlets, Books in Paper Covers, &c.

No.		Presented by
1.	Communion Sermons. By J. C. 1685	No record
2.	Culpeper's (Nicholas) Catalogue of Simples. 1653	Do.
3.	Den Norske Træskjærkunst. 1878	Royal Society of Christiana
4.	Flava Vegeti de re Militari. 1634 This volume belonged to the late Dr Wightman, Kirkmahoe	J. Rutherford, Esq. of Jardineton
5-9.	Makerstoun Magnetical and Meteorological Observations. By John Allan Broun, F.R.S. In 5 volumes—1841-42, 1843, 1844, 1845-46 (Part I.), 1845-46 (Part II.)	The late J. A. Broun, F.R.S.
10.	Mineralogy of Dumfriesshire. By Robert Jamieson. 1805	J. G. Starke, Esq.
11	Parish of Troqueer, a Short History of. By J. Gibson Starke, Esq. of Troqueer Holm. 1878	Do.
12-25.	Smithsonian Institution, Annual Reports. In 14 volumes—1864, 1866, 1867, 1868, 1869, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879	Smithsonian Institution, Washington, U.S.A.
26.	The King's Quair, a Poem, by James I., King of Scots. By Ebenezer Thomson. Ayr, 1815	No record
27.	Transactions of the Society of Antiquaries of Scotland. Vol. I. 1782-92	J. G. Starke, Esq.
28.	Transactions of the Royal Irish Academy. Volume XIV., Part I. 1825. This volume belonged to Sir Walter Scott	Dr Gilchrist
29.	Trevandrum Magnetical and Meteorological Observations. By John Allan Broun, F.R.S. Vol. I. 1874	The late J. A. Broun, F.R.S.
30.	Do. do. Supplement. By John Allan Broun, F.R.S. 1874	Do.
	Reports of the United States Geological Survey of the Territories—	
31.	First, Second, and Third Annual Report, embracing Nebraska, Wyoming, Colorado, and New Mexico. 1867, 1868, and 1869	Dr F. V. Hayden

No.		Presented by
32.	Preliminary Report of Wyoming and Portions of Contiguous Territories. 1870	Dr F. V. Hayden
33.	Sixth Annual Report on Portions of Montano, Idaho, Wyoming, and Utah. 1872	Do.
34.	Survey of Colorado. 1873	Do.
35.	Do. and Parts of adjacent Territories. 1874	Do.
36.	Survey of Idaho and Wyoming, 1877	Do

List of Pamphlets, Unbound Volumes, &c

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	American Publications.	
37-40.	Annals of the Lyceum of Natural History of New York. Vols. VIII., IX., X., and XI.	The Lyceum
41-45.	Proceedings of do. 5 Parts	Do.
46.	Annals of the New York Academy of Sciences (late the Lyceum), &c. Vol. I.	The Academy
47.	Annual Report of the Comptroller of the Currency of the United States for 1878	John Jay Knox, Comptroller
48-49.	Do. do. for 1879 (two copies)	Do.
50.	Board of Public Education, City of Philadelphia, 55th Annual Report. 1873	The Board
51.	Bulletin of the United States Geological and Geographical Survey of the Territories. No. I. 1874.	Dr F. V. Hayden
52.	Dolmens in Japan. By Prof. E. S. Morse	Prof. E. S. Morse, Salem, Mass.
53.	List of Elevations West of the Mississipi River. By H. Gannett, M.E.	Dr F. V. Hayden
54.	Natural History and Distribution of Yellow Fever in the United States. By J. M. Toner, M.D.	Do.
55.	Nova Scotian Geology. By Rev. D. Honeyman, D.C L., &c.	Rev. D. Honeyman
56-60.	Nova Scotian Institute of Natural Science. Part I. of Vol I.; Part IV. of Vol. I.; Part I. of Vol. II.; Part III. of Vol. II; Part IV. of Vol. IV.	.....
61.	Omori Shell Mounds, and some recent publications on Japanese Archæology. By Prof. E. S. Morse.	Prof. E. S. Morse
62-65.	Peabody Museum of American Archæology and Ethnology — 8th Annual Report, 1875; 9th do, 1876; 12th and 13th do., 1880; 14th do., 1881	F. W. Paterson, Curator of the Museum
66-67.	Proceedings of the American Philosophical Society. Nos. 92 and 93 of Vol. XIV.	The Society
68.	Synopsis of the Flora of Colorado. 1874	Dr F. V. Hayden
69.	Traces of an Early Race in Japan. By Prof. E. S. Morse. 1879.	.....

Norwegian Publications.

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71 Broholtfundet. By C. A. Holmboe
72 Catalogum Lepidopterum Norvegicorum. By H. Siebke
73 Catalogum Coleoptorum Norvegicorum. By H. Siebke
74 Christianiafjordens Dybvandsfauna. By G. O. Sars
75 Criminal Statistics. 1877
76 Det Kongelige Norske Frederiks Universitets Aaroberetning for Aaret. 1867
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