Session 1919 – 20.

Thirty – Eighth Session.

14.11.19. Minutes of meeting held on Friday, 14th November, 1919, in the University, Edinburgh, Mr McArthur, Vice-President, in the Chair. The following papers were read :- 1. A new basis for graduation, by Professor Whittaker; 2. A geometrical proof of Morley's extension of Feuerbach's theorem, by H.W. Richmond, communicated by the secretary.

Dr Horsburgh, Hon. Treasurer, submitted his report, which showed balances in favour of the society of £79..13..1 on the Capital Account and £1..2..9 on the Cash Account. For this result the Society was greatly indebted to the generosity of Messrs Lidstone and Lowe, and Professors Whittaker, Gibson, and Scott Lang, who by their handsome donations had helped to carry the society through a difficult situation.

Mr Gibb submitted his report as Librarian, which showed that the society was again receiving most of the periodicals which it was accustomed to receive. Many foreign societies had ceased

Meeting: 14th November 1919

distribution of their publications during the war, but most of them had begun again to send them. In addition, several pamphlets had been presented by their authors. The binding of these periodicals had been allowed to fall into arrears, and Mr Gibb concluded by moving that a special fund be opened to allow of this work being taken in hand. Dr Horsburgh seconded the motion, which was agreed to.

On the motion of the Chairman, the reports were adopted, and Dr Horsburgh and Mr Gibb thanked for their services.

The following office-bearers were elected for session 1919-20 :-

President — Neil McArthur, M.A., B.Sc.

Vice-President — David Gibb, M.A., B.Sc.

Hon. Secretary — Peter Ramsay, M.A., B.Sc.

Hon. Treasurer — E. M. Horsburgh, M.A., D.Sc., Assoc. M. Inst. C.E.

Editors of Proceedings — { Archibald Milne, M.A., D.Sc.
{ G. D.C. Stokes, M.A., D.Sc.

Committee        C. G. Knott, D.Sc., LL.D.,

                 Professor Whittaker, Sc.D., F.R.S.

                 Peter Comrie, M.A., B.Sc.

                 G. D. Valentine, M.A.,

Glenny Smeal, B.Sc.,

Margaret P. White, M.A., B.Sc.,

Mr Gibb, Mr Smeal and Miss White to form the Library Committee.

Mr Edward Press was elected an Ordinary Member of the Society.

The following were candidates for membership:-

Mr T. J. Cunnison, M.A., B.Sc., Boroughmuir H.G. School,

Mr D. Jeffrey, M.A., B.Sc., George Watson's College,

Mr W= Peebles, M.A., B.Sc., "  "  "

Mr ~~Frank~~ Marsials, B.A., Loretto, Musselburgh,

Dr Raymond W. Brink, Ph.D., Mathematical Department, Edinburgh University,

Mr Thomas A. Lumsden, M.A., B.Sc., 42 Dalkeith Road, Edin.

Dr Horsburgh gave notice that at next meeting he would move, on the recommendation of the committee, that the annual subscription should be increased to ten shillings and the composition fee of life-members to £6·6s.; also that members who had been serving with H.M. Forces should be exempted from payment of subscriptions during the period of their service.

Neil McArthur
Pres.

3

Minutes of meeting held on Friday, 12th December, 1919 in the University, Glasgow, Mr McArthur, President, in the chair. The following papers were read :-

1. A proof of the Binomial Theorem, with some applications, by Professor Gibson.

2. Extension of Frenet's formulae to $n$ dimensions, and 3. A version of Hagen's proof of the Law of Error, by Dr R. F. Muirhead.

Dr Horsburgh moved, on behalf of the committee, that the annual subscription to the Society should be increased to ten shillings and the composition fee to £6·6s ; also that members who had been serving with H.M. Forces should be exempted from payment of subscriptions during the period of such service. Dr Stokes seconded the motion, which was unanimously carried.

Messrs Cunnison, Jeffrey, Peebles, and Marjials and Lumsden, and Dr Brink were elected as ordinary members.

The following were candidates for membership:- Mr William Arthur, M.A., 149 Stanmore Road, Mount Florida, Glasgow ; Mr A. H. Miller, M.A., 2 Hayburn Crescent,

Meeting: 12th December 1919

Partickhill, Glasgow.

The President announced that it was the intention of the committee to issue an appeal for funds to friends in and outside of the Society.

On the motion of the President, Professor and Mrs Gibson were thanked for their hospitality to members of the Society.

Neil McArthur.

Pres.

Minutes of meeting held on Friday, 16th January, 1920, in the University, Edinburgh, Mr McArthur, President, in the chair.

The following papers were read:—

1. Note on the Polynomials which satisfy Weiler's Equation, by the President;

2. The Slip Surface and Failure of Metal in Tension, by Dr. Horsburgh;

3. Geometrical Note on the Orthopole, by R. F. Davis, communicated by G. Smeal.

Messrs Arthur and Millar were elected Ordinary Members of the Society.

The following were nominated for membership—Miss J. G. Dunlop, M.A., B.Sc., 2 East Savile Road, Edinburgh,

Meeting: 16th January 1920

and Mr George S. Mill, M.A., B.Sc., Professor of Mathematics, Scottish Churches' College, Calcutta.

Neil McArthur, Pres.

13.2.20.

Minutes of meeting held on Friday, 13th February 1920 in the University, Edinburgh, Mr McArthur, President, in the chair. The following papers were read —

1. On the modified Bessel Function $K_n(z)$, by Dr T. M. MacRobert;

2. A radial transparent scale for use with an abacus, by Dr E. M. Horsburgh;

3. Nomograms for financial formulae, by Mr W.A. Barclay.

Miss Dunlop and Mr Mill were elected ordinary members of the Society.

David Gibb, Vice-Pres.

12.3.20.

Minutes of meeting held on Friday, 12th March 1920 in the University, Edinburgh, Mr Gibb, Vice-President, in the Chair.

A paper by C. Tweedie on The Life of James Stirling, the Jacobite mathematician, was communicated by Dr Horsburgh. Captain Archibald Stirling of Garden

Meetings: 13th February 12th March 1920

was present and exhibited some relics of his distinguished ancestor, including autograph letters by N. Bernouilli, Clairaut, Cramer, Euler, Maclaurin and Stirling.

A paper on the Arrangement of the signs of the terms in a certain double series given by Arndt, by J. Mitchell, was communicated by W.S. Catto.

Neil McArthur, President

Minutes of meeting held on Friday, 14th May 1920, in the University, Glasgow, Mr McArthur, President, in the Chair. The following papers were read —

1. Some recent developments in curve-fitting and the calculus of differences, by Professor Whittaker.

2. Robert Hooke on molecular interplay, by Dr C.G. Knott.

On the motion of the Secretary Mr Horace Todd, B.A., Lecturer in Mathematics, University College, Nottingham, was nominated for membership.

Neil McArthur, President

Meeting: 14th May 1920

11·6·20

Minutes of meeting held on Friday, 11th June 1920, in the University, Edinburgh, Mr McArthur, President, in the chair. A paper was read by Mr Glenny Sneal, on Direct and Inverse Interpolation by Divided Differences.

Mr Horace Todd, B.A., was elected an ordinary member.

The following were candidates for membership —
Mr Charles A. Lee, M.A., Robert Gordon's College, Aberdeen
Mr Robert R. Stewart, M.A.,   "   "   "   "

Neil McArthur, Pres.

Meeting: 11th June 1920

# Edinburgh Mathematical Society.

## THIRTY-EIGHTH SESSION, 1919-20.

THE SECOND ORDINARY MEETING for the Session will be held on *Friday, 12th December, at 6.30 p.m.*, in the MATHEMATICAL CLASSROOM, THE UNIVERSITY, GLASGOW.

### BUSINESS.

1. A Proof of the Binomial Theorem, with some Applications - - - - - - - Professor GIBSON.

2. Extension of Frenet's Formula to $n$ dimensions  $\Big\}$ Dr R. F. MUIRHEAD.
3. Version of Hagen's Proof of the Law of Error

Professor and Mrs Gibson "At Home," 10 The University, Glasgow, from 5.30 to 6.30.

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### Office=Bearers for Session 1919=20.

| | |
|---|---|
| *President* - - - | NEIL M'ARTHUR, M.A., B.Sc. |
| *Vice-President* - - | DAVID GIBB, M.A., B.Sc., F.R.S.E. |
| *Hon. Secretary* - - | PETER RAMSAY, M.A., B.Sc., F.R.S.E. |
| *Hon. Treasurer* - - | E. M. HORSBURGH, M.A., D.Sc., Assoc.M.Inst.C.E. |
| *Editors of Proceedings* - | ARCHIBALD MILNE, M.A., D.Sc., F.R.S.E. |
| | GEORGE D. C. STOKES, M.A., D.Sc. |

*Committee.*

C. G. KNOTT, D.Sc., LL.D., Gen. Sec. R.S.E.
PETER COMRIE, M.A., B.Sc., F.R.S.E.
Professor E. T. WHITTAKER, Sc.D., F.R.S.
GEORGE D. VALENTINE, M.A.
GLENNY SMEAL, B.Sc.
MARGARET P. WHITE, M.A., B.Sc.

*Library Committee.*

Mr GIBB (Convener), Mr SMEAL, and Miss WHITE.

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Subscriptions for the current Session are now due. Members in arrears with their Annual Subscriptions will greatly oblige by paying these at an early date to the Hon. Treasurer,

E. M. HORSBURGH, M.A., D.Sc., A.M.I.C.E.,
11 GRANVILLE TERRACE, EDINBURGH.

PETER RAMSAY, *Hon. Sec.*,
63 COMISTON DRIVE.

Committee Meeting at 6 p.m.

# FINANCIAL STATEMENT FOR SESSION 1918-19

## CAPITAL ACCOUNT.

| | | | |
|---|---|---|---|
| Nov. 1918. Balances— | | | |
| { Bank | £32 | 3 | 7 |
| { Bond | 55 | 2 | 4 |
| Interest, Bank | 0 | 19 | 2 |
| Interest, Bond | 2 | 12 | 0 |
| Four Life Subscriptions | 16 | 16 | 0 |
| | £107 | 13 | 1 |

| | | | |
|---|---|---|---|
| Interest to Cash Account | £3 | 0 | 0 |
| Loan to Cash Account (Third) | 25 | 0 | 0 |
| Bond | 57 | 14 | 4 |
| Nov. 1919. Bank Balance | 21 | 18 | 9 |
| | £107 | 13 | 1 |

## CASH ACCOUNT.

| | | | |
|---|---|---|---|
| Nov. 1918. Balance | £21 | 9 | 9 |
| Subscriptions (140) | 52 | 12 | 6 |
| For Printing and in Donations | 2 | 5 | 0 |
| Sale of *Proceedings*, including *Notes* and Arrears | 12 | 8 | 7 |
| Bank Interest | 0 | 2 | 4 |
| Interest from Capital | 3 | 0 | 0 |
| Special Appeal Fund | 39 | 10 | 0 |
| | £131 | 8 | 2 |

| | | | |
|---|---|---|---|
| Printer (Jan. 1919) | £43 | 10 | 10 |
| Bookbinder's Account | 2 | 5 | 0 |
| Janitor's Fees and Upkeep of Rooms | 1 | 15 | 0 |
| Insurance | 0 | 7 | 6 |
| Postages and Sundries | 1 | 9 | 7 |
| Printer's Account (Nov. 1919) | 80 | 17 | 6 |
| Nov. 1919. Bank Balance | 1 | 2 | 9 |
| | £131 | 8 | 2 |

E. M. HORSBURGH, *Hon. Treasurer*.

November 1919 —Audited and found correct.

(Signed) ARCH. MILNE, } *Auditors.*
GLENNY SMEAL, }