

Calendar of the Edinburgh Association for the University Education of Women, lecture rooms, 15 Shandwick Place. Session 1890-91.

Contributors

Edinburgh Association for the University Education of Women.
Royal College of Physicians of Edinburgh

Publication/Creation

Edinburgh : J. Thin, [1890]

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CALENDAR
OF THE
EDINBURGH ASSOCIATION
FOR THE
UNIVERSITY EDUCATION OF WOMEN.

LECTURE ROOMS, 15 SHANDWICK PLACE.

SESSION 1890-91.

EDINBURGH:
JAMES THIN, 55 SOUTH BRIDGE,
PUBLISHER TO THE UNIVERSITY.

1890.

PRICE ONE SHILLING.

EDINBURGH ASSOCIATION FOR THE UNIVERSITY EDUCATION OF WOMEN,
15 SHANDWICK PLACE, EDINBURGH.

PROGRAMME OF CLASSES.

SESSION 1890-91.

CLASSES.	DAYS AND HOURS OF ATTENDANCE.	COMMENCING.	PROFESSORS.
ASTRONOMY, . . .	Tues., Thurs., 12 noon.	Oct. 28th.	Professor COPELAND.
LATIN, . . .	Mon., Wed., 12 noon.	Oct. 29th.	Mr JAMIESON.
ENGLISH LITERATURE,	Wed., Frid., 2.30 p.m.	Oct. 29th.	Professor MASSON.
MATHEMATICS, . . .	Mon., Wed., 3.30 p.m.	Oct. 29th.	Mr ALLARDICE.
LOGIC AND MENTAL PHILOSOPHY, . . . }	Mon., Thurs., 3 p.m.	Oct. 30th.	{ Prof. CAMPBELL FRASER'S Assistant.
FINE ART (THE ARTS OF GREECE), . . . }	Friday, 12 noon.	Oct. 31st.	Prof. BALDWIN BROWN.
HISTORY, . . .	Monday, 12 noon.	Nov. 3rd.	Prof. KIRKPATRICK.

Fee for each Course of Lectures, twice a week, £2, 2s.; once a week, £1, 1s. Entrance Fee, including Subscription to Library and Reading Room, 5s. Opening Lectures Free. For Syllabus of Lectures and particulars regarding Bursaries, Examinations, &c., see Calendar (1s.; by post 1s. 1½d.), to be had at 15 SHANDWICK PLACE, or from Mr THIN, 55 SOUTH BRIDGE.

LOUISA STEVENSON, *Hon. Secretary.*

CALENDAR OF THE EDINBURGH ASSOCIATION

FOR THE

UNIVERSITY EDUCATION OF WOMEN.



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EDINBURGH:
JAMES THIN, 55 SOUTH BRIDGE.

Turnbull & Spears, Printers, Edinburgh.

ROYAL COLLEGE OF PHYSICIANS EDINBURGH	
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INTRODUCTION.

THE EDINBURGH ASSOCIATION FOR THE UNIVERSITY EDUCATION OF WOMEN was founded, under the name of the EDINBURGH LADIES' EDUCATIONAL ASSOCIATION, in the winter of 1867-68, for the purpose of providing for women means of the higher education as nearly as possible equivalent to that provided for men by the Scottish Universities. Its arrangements at the outset were modelled after the system of the University of Edinburgh, more especially in the Faculty of Arts.

The Association has, continuously or occasionally, afforded instruction to ladies in the following subjects:—English Literature, Logic and Mental Philosophy, Mathematics, Natural Philosophy, Moral Philosophy, Latin, Greek, Botany, Chemistry, Geology, Zoology, Physiology, Political Economy, Biblical Criticism, the Science and History of Education, Fine Art, Music, and Philology. One of its principles is that the regular teaching in every subject shall be by the Professor of that subject in the University of Edinburgh, or by a Lecturer whose teaching in that subject is recognised as qualifying for a University degree. The classes are taught as nearly as possible on the University

methods, by lectures,—with illustrative diagrams and experiments, where needful,—by prescribed courses of reading, and by class examinations and exercises.

At the end of each session Prizes are awarded in the various classes, with Certificates of Honour and Certificates of Attendance. These, which may be called CLASS CERTIFICATES OF THE ASSOCIATION, are signed by the Professors and Lecturers individually, and attest excellence in the work of a particular class and session. There are, however, Special Regulations of the University of Edinburgh, by which Students who have attended a certain number of the Association classes, and have passed the Local Examinations of this or some other University, are admitted to examinations for farther distinctions, in the form of ORDINARY and HONOUR CERTIFICATES IN ARTS, granted by the University itself and signed by the Vice-Chancellor. A sufficiently extensive course of study in the classes, thus stamped with the approval of the University, entitles to the full DIPLOMA OF THE ASSOCIATION.

The Calendar.

1890—MAY, 31 DAYS.

1	Th	
2	Fr	
3	Sa	
4	S	
5	M	<i>Girton College Easter Term begins about this date.</i>
6	Tu	
7	W	
8	Th	
9	Fr	
10	Sa	
11	S	
12	M	
13	Tu	
14	W	
15	Th	Whitsunday Term.
16	Fr	
17	Sa	
18	S	
19	M	
20	Tu	
21	W	
22	Th	HOLIDAY. General Assembly meets.
23	Fr	
24	Sa	Queen Victoria born, 1819.
25	S	
26	M	
27	Tu	
28	W	
29	Th	
30	Fr	<i>Meeting of Senatus Academicus at 3 P.M.</i>
31	Sa	

1890—JUNE, 30 DAYS.

1	S	
2	M	
3	Tu	<i>University Local Examinations begin.</i>
4	W	
5	Th	
6	Fr	
7	Sa	
8	S	
9	M	
10	Tu	
11	W	
12	Th	
13	Fr	
14	Sa	
15	S	
16	M	
17	Tu	
18	W	
19	Th	
20	Fr	<i>Accession of the Queen, 1837.</i>
21	Sa	
22	S	
23	M	
24	Tu	<i>Midsummer Day.</i>
25	W	
26	Th	
27	Fr	<i>Meeting of Senatus Academicus.</i>
28	Sa	<i>Queen's Coronation, 1838.</i>
29	S	
30	M	

1890—JULY, 31 DAYS.

1	Tu
2	W
3	Th
4	Fr
5	Sa
6	S
7	M
8	Tu
9	W
10	Th
11	Fr
12	Sa
13	S
14	M
15	Tu
16	W
17	Th
18	Fr
19	Sa
20	S
21	M
22	Tu
23	W
24	Th
25	Fr
26	Sa
27	S
28	M
29	Tu
30	W
31	Th

Summer Session ends.

Meeting of Senatus Academicus at 3 P.M.

1890—AUGUST, 31 DAYS.

1	Fr
2	Sa
3	S
4	M
5	Tu
6	W
7	Th
8	Fr
9	Sa
10	S
11	M
12	Tu
13	W
14	Th
15	Fr
16	Sa
17	S
18	M
19	Tu
20	W
21	Th
22	Fr
23	Sa
24	S
25	M
26	Tu
27	W
28	Th
29	Fr
30	Sa
31	S

1890—SEPTEMBER, 30 DAYS.

1	M
2	Tu
3	W
4	Th
5	Fr
6	Sa
7	S
8	M
9	Tu
10	W
11	Th
12	Fr
13	Sa
14	S
15	M
16	Tu
17	W
18	Th
19	Fr
20	Sa
21	S
22	M
23	Tu
24	W
25	Th
26	Fr
27	Sa
28	S
29	M
30	Tu

Edinburgh Holiday.

1890—OCTOBER, 31 DAYS.

1	W	<i>St George's Training College opens at 5 Melville St.</i>
2	Th	
3	Fr	
4	Sa	
5	S	
6	M	
7	Tu	
8	W	<i>St George's Hall Classes open to-day.</i>
9	Th	
10	Fr	
11	Sa	
12	S	
13	M	
14	Tu	{ <i>Certificate in Arts Examinations commence: Latin, 9 to 11, and 11.30 to 1.30; Mathematics, 2.30 to 4.</i>
15	W	{ <i>Mathematics, 9 to 11; Greek, 11.30 to 1.30, and 2.30 to 4.30.</i>
16	Th	{ <i>Logic and Mental Philosophy, 9 to 12; Experimental Physics, 1 to 4.</i>
17	F	{ <i>Moral Philosophy, 9 to 12; English Literature, 1 to 4.</i>
18	S	
19	S	
20	M	<i>Council of the Association meets at 2.30.</i>
21	Tu	
22	W	
23	Th	
24	F	
25	Sa	
26	S	
27	M	
28	Tu	WINTER SESSION OPENS.
29	W	
30	Th	
31	Fr	

1890—NOVEMBER, 30 DAYS.

1	Sa
2	S
3	M
4	Tu
5	W
6	Th
7	Fr
8	Sa
9	S
10	M
11	Tu
12	W
13	Th
14	Fr
15	Sa
16	S
17	M
18	Tu
19	W
20	Th
21	Fr
22	Sa
23	S
24	M
25	Tu
26	W
27	Th
28	Fr
29	S
30	S

1890—DECEMBER, 31 DAYS.

1	M	
2	Tu	
3	W	
4	Th	
5	Fr	
6	Sa	
7	S	
8	M	
9	Tu	
10	W	
11	Th	
12	Fr	
13	Sa	<i>Meeting of Senatus at 2 P.M.</i>
14	S	
15	M	
16	Tu	
17	W	
18	Th	
19	Fr	<i>Classes meet for last time before Christmas Vacation.</i>
20	Sa	
21	S	
22	M	
23	Tu	
24	W	
25	Th	CHRISTMAS DAY.
26	Fr	
27	Sa	
28	S	
29	M	
30	Tu	
31	W	

1891—JANUARY, 31 DAYS.

1	T	<i>Members' Subscriptions due.</i>
2	Fr	
3	Sa	
4	S	
5	M	
6	Tu	<i>Classes meet after Christmas Vacation.</i>
7	W	
8	Th	
9	Fr	
10	Sa	
11	S	
12	M	
13	Tu	
14	W	
15	Th	
16	Fr	
17	Sa	
18	S	
19	M	
20	Tu	<i>Council of the Association meets at 2.30 P.M.</i>
21	W	
22	Th	
23	Fr	
24	Sa	
25	S	
26	M	
27	Tu	
28	W	
29	Th	
30	Fr	
31	Sa	<i>Meeting of Senatus Academicus at 2 P.M.</i>

1891—FEBRUARY, 28 DAYS.

1	S	
2	M	
3	Tu	
4	W	
5	Th	
6	Fr	
7	Sa	
8	S	
9	M	<i>Holiday in Faculty of Arts.</i>
10	Tu	
11	W	
12	Th	
13	Fr	<i>Reid Commemoration Concert.</i>
14	Sa	
15	S	
16	M	
17	Tu	
18	W	
19	Th	
20	Fr	
21	Sa	
22	S	
23	M	
24	Tu	
25	W	
26	Th	
27	Fr	
28	Sa	<i>Meeting of Senatus Academicus at 2 P.M.</i>

1891—MARCH, 31 DAYS.

1	S
2	M
3	Tu
4	W
5	Th
6	Fr
7	Sa
8	S
9	M
10	Tu
11	W
12	Th
13	Fr
14	Sa
15	S
16	M
17	Tu
18	W
19	Th
20	Fr
21	Sa
22	S
23	M
24	Tu
25	W
26	Th
27	Fr
28	Sa
29	S
30	M
31	Tu

{ *Last day for names of Candidates for Certificates in
Arts to be given in, and Fees paid.*

GOOD FRIDAY—HOLIDAY.

EASTER SUNDAY.

1891—APRIL, 30 DAYS.

1	W	
2	Th	
3	Fr	
4	Sa	
5	S	
6	M	{ <i>Council of the Association meets at 2.30 P.M.</i> <i>Certificate in Arts Examinations commence: Latin,</i> <i>9 to 11 and 11.30 to 1.30; Mathematics, 2.30 to 4.30.</i>
7	Tu	{ <i>Mathematics, 9 to 11; Greek, 11.30 to 1.30, and 2.30</i> <i>to 4.30.</i>
8	W	{ <i>Logic and Mental Philosophy, 9 to 12; Experimental</i> <i>Physics, 1 to 4.</i>
9	Th	<i>Moral Philosophy, 9 to 12; English Literature, 1 to 4.</i>
10	Fr	
11	Sa	
12	S	
13	M	
14	Tu	

1891—APRIL—*continued.*

15	W	
16	Th	
17	Fr	{ ANNUAL MEETING OF THE ASSOCIATION AT 3.30 P.M. <i>Graduation Ceremonial in Divinity, Law, Arts, and Science, at 10 A.M. Com- memoration Service in St Giles's at 12.</i>
18	Sa	
19	S	
20	M	Edinburgh holiday.
21	Tu	
22	W	
23	Th	
24	Fr	
25	Sa	
26	S	
27	M	
28	Tu	
29	W	
30	Th	

ARTICLES OF CONSTITUTION.

1. The General Committee of the Edinburgh Association for the University Education of Women shall consist of all Subscribers to its funds, together with those Professors of the University of Edinburgh who teach, or have at any time taught, in connexion with the Association, and the Extra-Academical Lecturers of the current year.

2. There shall be a Council, consisting of the Professors and twenty-one Members, elected (for three years) from its own body by the General Committee.

3. Of the elected Members of Council, seven shall each year retire by rotation ; and of these, four (but no more) shall be eligible for re-election.

4. The Council shall choose (also for a term of three years) from among its Members an Executive Committee of nine—five ladies and four gentlemen—three of whom must be Professors.

5. The Office-Bearers of the Association shall be a President, two Vice-Presidents (the one a lady, the other a Professor), a Secretary, and a Treasurer.

6. The President shall hold office for three years, and be *ex-officio* a Member of the Executive Committee ; the other Office-Bearers shall be chosen from the Executive Committee.

7. Donors of £10, 10s. shall be Life Members of the General Committee. Annual Subscriptions shall be payable on and after the 1st January of each year.

STANDING ORDERS.

1. The General Committee shall meet once a year, on the day of the Edinburgh University Graduation Ceremonial, at 3.30 P.M., to receive the Annual Report, and to elect Members of Council.

2. Three Ordinary Meetings of the Council shall be held during the year, on the third Monday of January, the first Monday of April, and the third Monday of October, at 2.30 P.M. Special Meetings may be called by the Executive Committee, or on a requisition signed by not less than five Members of Council—which requisition must state the reasons for such Meeting being desired, and must be sent to the Secretary one week before the day of proposed Meeting.

3. At Extraordinary Meetings no business shall be transacted but that for which the Members were called together.

4. Notices of Ordinary Meetings shall be sent to Members at least three days before the day of Meeting. This shall also apply to Special Meetings, except in cases of urgency, when such reasonable notice shall be given as will be sufficient to enable the Members to attend.

5. The notices shall in all cases specify the Place, Day, and Hour of Meeting, and detail the business to be transacted.

6. No discussion shall be allowed on the reading of the Minutes, except on the question whether they are a correct record of the business transacted.

7. Notices of Motion must be sent to the Secretary at least ten days before the date of Meeting.

8. No Motion not directly arising out of the discussion regularly before the Council shall be taken up, unless with the consent of three-fourths of the Members present.

9. When only one Amendment has been proposed to a Motion, the vote shall be taken betwixt the Motion and the Amendment. When there is more than one Amendment, the last Amendment shall be put against the one immediately preceding; the one which is carried shall then be put against the next preceding; and so on, till there remains only one Amendment, betwixt which and the original Motion the vote shall be taken.

10. In discussion of a Motion no Member shall speak more than once, unless with consent of a majority of the Members present.

11. The Council shall have power from time to time to appoint Committees for the transaction of special business; such Committees to report either to the Executive Committee or to the Council, as circumstances may require.

12. At Meetings of Council, nine shall form a quorum; at Executive Meetings, three.

EXECUTIVE COMMITTEE.

President.

THE MOST HON. THE MARCHIONESS OF LOTHIAN.

Vice-Presidents.

MISS HOULDSWORTH, SPRINGFIELD HOUSE, POLTON, MID-LOTHIAN.

PROFESSOR MASSON, LL.D., 58 GREAT KING STREET.

REV. PROFESSOR CALDERWOOD, LL.D., CRAIGROWAN, MERCHANTSTON.

PROFESSOR CAMPBELL FRASER, D.C.L. Oxford, LL.D., GORTON, LASSWADE.

F. R. JAMIESON, ESQ., 9 DUNCAN STREET, NEWINGTON.

MISS GAIR, THE KILNS, FALKIRK.

MISS URQUHART, 5 ST COLME STREET.

Honorary Treasurer.

MISS GUTHRIE WRIGHT, 2 LANSDOWNE CRESCENT.

Honorary Secretary.

MISS LOUISA STEVENSON, 13 RANDOLPH CRESCENT.

Trustees.

REV. PROFESSOR CALDERWOOD, LL.D.

MISS HOULDSWORTH.

PROFESSOR MASSON, LL.D.

MISS LOUISA STEVENSON.

Bankers.

NATIONAL BANK OF SCOTLAND, WEST END BRANCH.

Law Agents.

MESSRS BLAIR & FINLAY, W.S.

Auditor.

JAMES BROWN, ESQ., C.A.

MEMBERS OF COUNCIL.

EX OFFICIO.

The Most Hon. The MARCHIONESS OF LoTHIAN.
 The Right Hon. The COUNTESS OF ABERDEEN.
 R. E. ALLARDICE, Esq., 16 Nile Grove.
 Professor BLACKIE, 9 Douglas Crescent.
 Professor BALDWIN BROWN, 3 Grosvenor Street.
 Professor CRUM BROWN, 8 Belgrave Crescent.
 Professor BUTCHER, LL.D., 27 Palmerston Place.
 Professor CALDERWOOD, LL.D., Craigrowan, Napier Road.
 Professor CHARTERIS, D.D., 4 Greenhill Gardens.
 Professor CHRYSTAL, LL.D., 5 Belgrave Crescent.
 Professor COSSAR EWART, Belfort Park.
 Professor EGGELING, Ph.D., 15 Hatton Place.
 Professor CAMPBELL FRASER, D.C.L., LL.D., Gorton,
 Lasswade.
 A. GEIKIE, Esq., F.R.S., LL.D., 28 Jermyn Street, London.
 Professor GEIKIE, LL.D., 31 Merchiston Avenue.
 F. R. JAMIESON, Esq., 9 Duncan Street, Newington.
 Professor LAURIE, LL.D., Nairne Lodge, Duddingstone.
 Professor MASSON, LL.D., 58 Great King Street.
 Professor NICHOLSON, D.Sc., Eden Lodge, Newbattle Ter.
 Professor Sir HERBERT OAKELEY, Mus. Doc., Music Class
 Room, Park Place.
 Professor SELLAR, LL.D., 15 Buckingham Terrace.
 Professor TAIT, D.Sc., 38 George Square.

ELECTED.

- *Miss GAIR, The Kilns, Falkirk.
- *ALEXANDER FORBES IRVINE, Esq. of Drum, LL.D., 25
 Castle Terrace.
- *Miss LOUISA STEVENSON, 13 Randolph Crescent.
- *Miss GUTHRIE WRIGHT, 2 Lansdowne Crescent.
- *Miss FLORA C. STEVENSON, 13 Randolph Crescent.
- *Miss SIMSON, 9 Eton Terrace.
- *Miss WALKER, 1 Coates Place.

* These Members will retire by rotation on Thursday, April 18th, when the General Committee holds its Annual Meeting. Four are eligible for re-election. The vacant places must be filled from the list of Members who constitute the General Committee—(see pp. 77 to 81)—and nominations must be in the hands of the Hon. Secretary not later than April 12th.

Miss BARBARA DEMPSTER, 4 Glenfinlas Street.

Miss HOULDSWORTH, Springfield House, Polton.

Miss KERR, 9 Great Stuart Street.

Hon. GEO. WALDEGRAVE LESLIE, LL.D., Leslie House,
Leslie, Fife.

Hon. Mrs PATRICK BLAIR, 19 Ainslie Place.

Mrs WHALEY NUTT, Grange House.

{ Mrs WARDLAW BURNET, 6 W. Circus Place.

{ Miss S. E. S. MAIR, 5 Chester Street.

{ Miss URQUHART, 5 St Colme Street.

1890. { Miss WRIGHT, 7 Chester Street.

{ Mrs CUNNINGHAM, 14 Inverleith Gardens.

{ Mrs MILLER MORISON, 3 Douglas Crescent.

{ Miss OSWALD, Southbank, Morningside.

{ Miss M. NAIRN, 29 Abercromby Place.

HONORARY MEMBERS.

-
- ALLMAN, Q. J., Esq., M.D., F.R.S.
BEGBIE, W. M., Esq.
FLINT, The Rev. R., D.D., Professor of Divinity in the University of
Edinburgh.
GRANT, J. DUNDAS, Esq.
KUNZ, JULES, Esq.
LINDSAY, JAMES, Esq.
LINDSAY, The Rev. T. M., D.D., Professor of Divinity and Church
History, Free Church College, Glasgow.
MACLAGAN, Sir DOUGLAS, M.D., Professor of Medical Jurisprudence,
University of Edinburgh.
MACPHERSON, The Rev. RANALD, St Luke's.
M'MURTRIE, The Rev. JOHN, M.A.
MITCHELL, Sir ARTHUR, M.D., K.C.B., Commissioner in Lunacy.
MONCREIFF, The Right Hon. Baron, of Tullibole, Lord-Justice-Clerk.
NICOLSON, ALEXANDER, Esq., Sheriff-Substitute of Renfrewshire.
OLIPHANT, THOMAS, Esq.
PLAYFAIR, The Right Hon. Sir LYON, C.B., M.P., &c.
RAINY, The Very Rev. R., D.D., Principal of the New College, Edinr.
SMITH, J. CAMPBELL, Esq.
TURNER, Sir WILLIAM, M.B. Lond., Professor of Anatomy, University
of Edinburgh.
TYTLER, J. S., Esq., Professor of Conveyancing, University of Edinr.
WEIR, THOMAS GRAHAM, M.D., F.R.C.P.E.

GENERAL TABLE OF ATTENDANCE IN THE CLASSES OF THE EDINBURGH
ASSOCIATION FOR THE UNIVERSITY EDUCATION OF WOMEN.

CLASSES.	1867-68.	1868-69.	1869-70.	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.
English Literature, .	265	129	141	84	64	55	78	67	93	71	97	105	83	75	85	68	66	83	75	84	58	44	45
Natural Philosophy, .	..	141	72	70	43	..	..	..	..	..	76	..	45	..	..	64	..	..	..	..	..	31	..
Logic and Mental Philosophy, .	..	65	..	49	52	35	..	25	20	..	..	39	39	..	..	36	22	..	..	31	..	11	..
Mathematics,	35	17	..	17	..	17	..	10	7	6	13	6	15	13	8	16	6	14	..	11	7
Moral Philosophy,	45	30	29	29	19	46	37	..	..	52	39	..	..	33	26	..	15	..	23
Greek,	18	..	10	8	8	..	8	..	..	..	..	..	10	..	..
Latin,	18	9	16	5	8	13	10	11	17	11	10	13	7	13	4	7	6	11
Chemistry,	35	..	..	..	..	12	..	..	46	..	..	..	..	..	..	..	63
Geology,	64	43	..	..	..	..	42	..	..	..	..	71	..	..	71	..	..	..
Physiology,	97	19	26	..	..	..	..	..	..	..	49	..	..	..	..
Zoology,	34	..	..	..	22	..	..	..	31	..	..	..	..	..
Economic Science,
Theory of Educa- tion,	25	14	..	..	..	..	..	..	..	..	..	..	..	..
Biblical Criticism,	141	85	..	..	..	36	..	..	..	..	..	..	..	..	..	..	..
Botany,	28	19	..	..	..	..	..	..	..	..	..	40	..	..	..	..	..	..	59	33	..
Fine Art,	99	132	91	..	66	..	66	70	41
Music,	27	..	..	..	..	..
Philology,	25	..
Total, .	265	335	320	239	204	219	335	239	252	213	280	258	199	212	303	323	305	197	235	204	215	231	190

CLASS HONOUR LISTS.

The following ladies received prizes and first class honour certificates of merit at the close of the Session, 1889-90 :—

CLASS OF ENGLISH LITERATURE—45 STUDENTS.

1. Frances H. Simson—First Prize. 2. Elizabeth Thompson—Second Prize. 3. Jane P. Ednie—Third Prize. 4. Marion J. Newbigin—Fourth Prize. 5. Lillian Stevenson. 6. Henrietta Hutchison. 7. Agnes Middlemass. 8. Elizabeth S. Norrie.

CLASS OF LATIN—11 STUDENTS.

1. Elizabeth Thompson—Prize. 2. Mary B. Douie. 3. Helen C. Higgins. 4. E. Edith Sangster. 5. Elizabeth B. Norrie.

CLASS OF MATHEMATICS—7 STUDENTS.

1. Ellen C. Higgins—Prize. 2. Susannah S. R. Kennedy.

CLASS OF MORAL PHILOSOPHY—23 STUDENTS.

1. Margaret Nairn—First Prize. 2. Marion J. Newbigin—Elizabeth Hamilton Prize. 3. Harriet Reid—Special Prize. 4. Marion T. Stevenson—Special Prize. 5. Agnes B. Alison—Special Prize. 6. Elizabeth Thompson. 7. May Gibb. 8. Jessie M. Dickson. 9. Elizabeth Gordon. 10. Thekla Dickson.

CLASS OF GEOLOGY—62 STUDENTS.

1. Maud Jackson and Katherine M. Loudon, equal—First Prize. 3. Annie Mackintosh—Second Prize. 4. Joanna Jackson and Amelia Hutchison Stirling—equal. 6. Marion S. Stevenson. 7. Annie L. Wilson and Marion J. Newbigin—equal. 9. Isabella Gilkison and Jessie R. MacGibbon—equal. 11. Margaret Ferguson.

CLASS OF FINE ART—41 STUDENTS.

1. Edith Balfour—First Prize. 2. Jessie R. MacGibbon—Second Prize. 3. Rae R. MacGibbon. 4. Annie J. Tod.

BURSARY HOLDERS, 1889-90.

The Houldsworth.—Elizabeth Macdonald—(*Second Instalment*).

The Mair.—Marion T. Newbiggin—(*First Instalment*).

The Zetland—Amy H. Cameron.

The Crudelius.—Susannah S. R. Kennedy—(*First Instalment*).

The Students'.—Euphemia L. Adam.

The Victoria Jubilee Bursary.—Agnes E. F. Allardice.

of 40 £
The Victoria Jubilee Bursary, founded by His Excellency Dr Gunning, is offered for 1890-91, to a Holder of the Edinburgh University Certificate in Arts for Women, who intends to enter St George's Training College for Women, Edinburgh, in October 1890.

Teachers.

CURRICULUM OR ORDER OF STUDY.

STUDENTS may join any one, or more, of the classes at their option, either merely attending the lectures or taking part in the work of the class. The classes may also be taken in any order that suits the convenience of Students. Ladies, however, who would take full advantage of the education for which the Association affords means are earnestly recommended so to combine and arrange their classes that, in the course of three or four successive sessions, they may have gone through a curriculum in Arts as varied and substantial as that required for the degree of M.A. in the Scottish Universities. It may aid them in making their arrangements to observe that the classes hitherto held in the Association, permanently or at intervals, group themselves generally, by the nature of their subjects, into three Departments—*Language and Literature*, *Science*, and *Philosophy*, thus:—

I.—LANGUAGE AND LITERATURE—English Literature, Latin, Greek, Biblical Criticism, Fine Art, Philology.

II.—SCIENCE—Mathematics, Natural Philosophy, Chemistry, Physiology, Botany, Geology, Zoology.

III.—PHILOSOPHY—Logic and Mental Philosophy, Moral Philosophy, Political Economy, Education.

Attendance in *seven* of these classes, with proficiency in their subjects as tested by Examinations, is the qualification for the full DIPLOMA OF THE ASSOCIATION, which is the nearest equivalent possible at present to the University degree of Master of Arts ; and such attendance may spread over three, or even four, sessions. But the first step towards the diploma is to obtain the UNIVERSITY CERTIFICATE IN ARTS, granted after attendance and satisfactory examination in *three* subjects. It seems highly desirable that Students, in choosing the subjects in which they are to obtain this University Certificate, should not confine themselves to any one Department, but should avail themselves at least of the variety of study afforded by two ; after which, in working for the full Diploma, they may proceed to four more subjects, as their special tastes and requirements dictate. Although the Association cannot, at present, have classes in all the subjects every session, it has been, and will be, the endeavour of the Council and the Executive to arrange classes so as to represent each of the three Departments every session adequately to the demand, and, when a subject in any department has been omitted in one session, to bring it in again after a due interval.

COURSES IN THE CLASSES, SESSION 1890-91.

Class of ENGLISH LITERATURE.

Professor MASSON.

The business of this Class will include :—

I. A Course of Lectures on the History of English Literature, from the earliest time to the year 1688, with special attention to the greatest Authors in their succession, and with a view of the History of the English Language.

II. Examinations in the Lectures, and in books or parts of books prescribed for private reading in connection with the Lectures.

III. Exercises in English Composition.

Class of LATIN.

FRANCIS R. JAMIESON, Esq.

OUTLINE OF COURSE.—The work of the Class will consist of readings and explanations of such authors as Cicero, Horace, Virgil, Tacitus, &c.; of lectures on Roman Literature and History; and of exercises in Latin Composition. Written examinations will be held on the lectures and on the authors read, and on any books prescribed for private reading. The books selected will be chiefly those required for the examination for the Ordinary University Certificate in April 1891. The Lecturer will endeavour to direct the reading of those who are studying for the Honours Certificate, and to give them as much assistance as possible.

Class of MATHEMATICS.

R. E. ALLARDICE, Esq.

In this Class, Lectures will be given twice a week on the subjects required for the Ordinary Certificate in Arts in the Department of Mathematics, namely, Theory of Arithmetic;

Plane Geometry equivalent to Euclid, Books I., II., III., IV., and VI.; and the Elements of Algebra. Special Lectures may also be given occasionally. The Lecturer will also endeavour to direct the reading of those who are studying for the Honours Certificate, or wishing more advanced work.

Text Books.—Wilson's Elementary Geometry, and Chrystal's Algebra.

Class of MENTAL PHILOSOPHY AND LOGIC.

Professor CAMPBELL FRASER'S ASSISTANT.

This Course of Lectures is intended to be a preparation for the Examination for the Ordinary University Certificate, and will consist of a general introduction to Philosophy.

The following subjects will be discussed :—

- (1.) Logic.
- (2.) Psychology: chiefly the part that is concerned with Knowing.
- (3.) The Theory of Knowledge: with special reference to Berkeley and Kant.
- (4.) The outlines of the Philosophy of History and the Philosophy of Art.

The Text Books used will be those that are set for the Examination. Essays and Examinations will be set from time to time.

The Lecturer will give any help that may be desired by Students who are reading for the Honours Certificate.

Class of ASTRONOMY.

Professor COPELAND.

In this Class two Lectures will be delivered each week on the fundamental branches of the subject, including Chronology and the application of Astronomy to Geography.

Arrangements will be made for occasional visits to an Observatory for the purpose of studying the more remarkable celestial objects, and obtaining some knowledge of astronomical instruments. These visits will be supplemented by short open-air descriptions of the chief constellations visible in winter.

Class of FINE ART.

(The Arts of Greece.)

Professor BALDWIN BROWN.

The Lectures will be designed to exhibit the connection of Art in its various forms with the social and political life, and with the religion of the Greeks, and will, at the same time, afford a general survey over the field of study known as "Classical Archæology."

Class of HISTORY.

A Course of Twenty Lectures on the Four Georges.

Professor KIRKPATRICK.

I. GEORGE I. (1714-27). *Dramatis Personæ*—Politics—Rebellion—Religion, &c.

II. GEORGE II. (1727-60). (1.) From 1727 to 1742: Royal Family—Politics—Foreign Affairs—Religion.

(2.) From 1742 to 1760: Statesmen—Politics—Foreign Affairs.

III. GEORGE III. (1760-1820). (1.) From 1760 to 1784: The King—Statesmen—Domestic Affairs—Wars with America, Spain, and France.

(2.) American War of Independence (1775-83).

(3.) History of India (down to 1784).

(4.) Pitt's Administration (1783-1801). Politics—Union of Ireland—Foreign Affairs—Religious Toleration.

(5.) From 1801 to 1820: Statesmen—Reform—Foreign Policy—Catholic Relief.

IV. GEORGE IV. (1820-30). *Dramatis Personæ*—Domestic and Foreign Affairs—Catholic Emancipation.

Each course of study will extend over a period of twenty weeks. Text-books and practical arrangements will be mentioned in the opening lectures.

The fee for each class is, twice a week, £2, 2s.; once a week, £1, 1s. Every Student is required to pay an Annual Entrance Fee of 5s., which includes admission to the Library and Reading-Room.

No class of fewer than twenty Students will be held, except in Greek, Latin, Mathematics, and Education. Should, therefore, less than that number of intending Students be present at any opening Lecture, it is to be understood that the course will not be continued.

In each class it is proposed to offer one Prize for every ten working Students. The Prizes will be books ; but any winner of a first prize will be allowed to choose a class-ticket instead of a book, provided that she intimates her preference for the former at the time when the names are announced.

A free ticket, for the use of a Governess accompanying not fewer than two pupils, will be granted to any Ladies' School, on application to the Secretary. This privilege extends to all Classes.

Students under seventeen years of age will be admitted only on passing a preliminary examination, or on producing a Certificate from the Edinburgh or other University Local Examiners, or from the Society of Arts. Foreign Certificates of a satisfactory nature will be accepted.

N.B.—Class Tickets may be obtained from the HONORARY SECRETARY in the Library, 15 SHANDWICK PLACE, before the opening, and at the close of each class. Students are particularly requested to give their full names and addresses on enrolment, in order to prevent confusion at the close of the Session.

Money Prizes to be competed for in the Association Classes, Session 1890-91, and held on condition of Studying for the Edinburgh University Certificate in Arts for Women.

*1. £5. The Elizabeth Hamilton Class Prize, to be won by the best Student in the Class of Logic and Mental Philosophy.

*2. £5. The gift of the Countess of Aberdeen, to be won by the best first year's student in the Class of English Literature.

** Payable when Tickets are taken for the Association Classes in November 1891.*

UNIVERSITY CERTIFICATES IN ARTS FOR WOMEN.

I. Candidates, before they can receive Certificates, must have studied in *at least three* of the Classes of the "Edinburgh Association for the University Education of Women," that are recognised by the Senatus Academicus; and they must also have passed the Senior Local Examinations of the University of Edinburgh, or of one of the other Scottish Universities, or of the Universities of Oxford or Cambridge.

II. Candidates who have passed any of the aforesaid Local Examinations may present themselves at the Edinburgh University Examinations for the Certificate in Arts, either in *April* or in *October*—in the subjects of any one or more, or of all of the Classes attended by them. After they have passed in not less than three subjects, they are entitled to receive a University Certificate in Arts.

III. The Classes at present sanctioned and approved by the University are the following:—*Department of Languages and Literature*—English Literature, Latin, Greek, Biblical Criticism, Science and History of Language; *Department of Philosophy*—Logic and Mental Philosophy, Moral Philosophy, Political Economy, Theory of Education, Fine Art; *Department of Mathematics and Physical Science*—Mathematics, Experimental Physics, Chemistry, Geology, Botany, Zoology, Physiology, and Science of Language.

IV. The University Certificates in Arts for Women are of two grades—Pass Certificates and Honour Certificates.

V. Honour Certificates in Arts are awarded to those Candidates who, having passed a satisfactory Examination in at least three subjects, have, in a farther and Special Examination for Honours, exhibited high proficiency in any *one* of these three subjects.

VI. Candidates for the *Local Examinations* of the University, which are held annually in June, may obtain, on application to the Clerk of Senatus, University, Edinburgh, printed forms, which are required to be filled up and returned to him, with the fees, on or before 13th May.

VII. Candidates for *Ordinary* and for *Honour* University Certificates in Arts must send their names and addresses, and the subjects in which they wish to be examined, to the *Clerk of Senatus*, together with the fee and proof that they have passed the Local Examinations—before the 13th March or the 1st October in each year.

VIII. The fee for the *Senior Local Examinations Certificate* is

£1, 10s., and that for the *University Certificate in Arts* two guineas—to be paid to the Clerk of Senatus. No additional fee is required for an Honour Certificate.

PASS CERTIFICATE.

In accordance with the Regulations for "University Certificates in Arts for Women," the following days and hours are fixed for Examinations for the PASS CERTIFICATE, viz., in October 1890:—

<i>Tuesday,</i>	<i>14th October .</i>	Latin (9-11, and 11.30-1.30) ; Mathematics (2.30-4.30).
<i>Wednesday,</i>	<i>15th October .</i>	Mathematics (9-11) ; Greek (11.30-1.30, and 2.30-4.30).
<i>Thursday,</i>	<i>16th October .</i>	Logic and Mental Philosophy (9-12) ; Experimental Physics (1-4).
<i>Friday,</i>	<i>17th October .</i>	Moral Philosophy (9-12) ; English Literature (1-4).

And in April 1891:—

<i>Monday,</i>	<i>6th April .</i>	Latin (9-11, and 11.30-1.30) ; Mathematics (3-5).
<i>Tuesday,</i>	<i>7th April .</i>	Mathematics (9-11) ; Greek (11.30-1.30, and 2.30-4.30).
<i>Wednesday,</i>	<i>8th April .</i>	Logic and Mental Philosophy (9-12) ; Experimental Physics (1-4).
<i>Thursday,</i>	<i>9th April .</i>	Moral Philosophy (9-12) ; English Literature (1-4).

The above are the Seven Subjects of Examination necessary for the Degree of Master of Arts.

The days and hours of Examination, in October and April, for Candidates who may select a subject not included in the above subjects, will be arranged after Candidates have given in their names.

The heads of Examination in October 1890 and April 1891 are:—

Latin.—Horace, *Odes*, iii., iv. ; *Epistles*, ii., and *Ars Poetica* ; Virgil, *Eclogues*, *Georgics*, i., ii. ; Cicero, *Philippic*, ii. ; Tacitus, *Annals*, xiv. A passage from a Latin Author not prescribed. Latin prose composition. *Roman History*—A general knowledge of the History of the Republic, and a special knowledge of the periods embraced in the books prescribed. *Roman Literature*—A general knowledge of the course of Roman Literature till the end of the Augustan age, and a more special knowledge of the lives and works of Virgil, Horace, Cicero, and Tacitus. *Translation from English into Latin prose is required of every Candidate.*

Greek for October 1890 and April 1891.—Homer, *Odyssey*, iv. ;

Aeschylus, *Agamemnon*; Demosthenes, *De Corona*. A passage from a Greek Author not prescribed. Greek prose composition. *Greek History*.—A general knowledge of Greek History to the death of Alexander, and a more minute knowledge of the period embraced by the life of Demosthenes. *Greek Literature*.—The works of the prescribed Authors. Laws of Hexameter and Iambic verse.

Psychology and Logic.—The Class Lectures in Logic and Psychology. Fowler's *Deductive Logic* and *Inductive Logic*. The Professor's "Locke" in *Philosophical Classics* (Blackwood); *Selections from Berkeley* (third edition),—Editor's "Introduction;" "Principles of Human Knowledge," (Part I. sect. 1-84); "Divine Visual Language: A Dialogue," with the Prefatory Notes (pp. 3-7; 147-153; 309-12), and the footnotes to the "Principles" and to the "Dialogue."

Moral Philosophy.—The Class Lectures—"Handbook of Moral Philosophy;" Butler's Sermons, i., ii., iii., xi.; Sidgwick's "Outlines of the History of Moral Philosophy," chaps. ii. and iv.

Political Economy.—Fawcett's *Manual*, and the Lectures of the Professor.

English Literature.—Class Lectures of the Course attended. History of the English Language: the first Five Chapters of Morris's "Historical Outlines of English Accidence." History of English Literature, more particularly from 1350 to 1688: Morley's Text-Book, and the portions of Hallam's "Literature of Europe" that relate to English writers of the times mentioned. Special Readings required:—Shakespeare's *Tempest* and *Julius Cæsar*; Milton's *Areopagitica* and Books i. and ii. of *Paradise Lost*; Johnson's *Life of Cowley*; Wordsworth's *Prose Prefaces*, &c., to his *Poems*.

Mathematics.—Arithmetic. Euclid, Books i., ii., iii., iv., and vi., or their equivalent. Algebra, to Quadratic Equations, including the Progressions.

Experimental Physics.—The Class Lectures.—Balfour Stewart's *Elementary Physics*.

Chemistry.—The Class Lectures—Bloxam's *Chemistry*.

Geology.—The Class Lectures—Geikie's *Outlines of Geology*.

Botany.—The characteristic features of the following groups and classes of the Plant Kingdom:—Thallophyta [Algæ, Fungi], Muscineæ [Hepaticæ, Musci], Pteridophyta [Filicineæ, Equisetineæ, Lycopodineæ], Phanerogamæ [Gymnospermæ, Angiospermæ (Monocotyledones, Dicotyledones)]. The characters of the Natural Orders, Ranunculaceæ, Cruciferae, Leguminosæ, Rosaceæ, Umbelliferae, Compositæ, Labiatae, Urticaceæ, Orchidaceæ, Liliaceæ, Gramineæ, Coniferae. The fundamental facts of Morphology and Physiology as they are illustrated in the life histories of:—Bacterium, Saccharomyces, Mucor, Vaucheria, Eurotium, Funaria, Aspidium, Pinus, Scilla, Helianthus. Prantl and Vines' "Text-Book of Botany;" Bower and Vines' "Practical Botany."

Zoology.—(a.) The Principles of Classification, and the distinctive

characters of the Classes of the Animal Kingdom. (b.) The principles of Geographical Distribution of Animals, and a general knowledge of the Geographical Distribution of the Mammalia. (c.) The structure and habits of the following forms:—Amœba, Hydra, Actinia, Asterias, Lumbricus, Anodonta, Sepia, Homarus, Blatta, Ascidia, Gadus, Rana, Lacerta, Columba, Ornithorhynchus, Macropus, Lepus. (d.) The Life-History of Aurelia, Ascidia, and Rana. *Text-Books*—Lloyd Morgan's "Biology," and Packard's "Zoology."

Physiology.—The Class Lectures—Huxley's *Physiology*.

Biblical Criticism.—Class Lectures for One Session: Apocryphal Gospels—Hammond's *Outlines of Textual Criticism applied to the New Testament* (or Scrivener's *Introduction* so far as regards MSS. and Versions).

Science of Language.—The Class Lectures.

HONOUR CERTIFICATE.

The following days are appointed for Examinations for HONOUR CERTIFICATES, when any who have passed the Ordinary Examinations in *at least three Subjects* may present themselves. Candidates may select, as the Subject of an Honour Examination, any *one* of the three Subjects in which they have passed the Ordinary Examination. (See Regulation V.)

Latin—10th April, 9 to 12, and 1 to 4; 11th April, 9 to 12. *Greek*—11th April, 1 to 4; 13th April, 9 to 12, and 1 to 4. *Logic and Metaphysics*—10th April, 9 to 12, and 1 to 4; 11th April, 9 to 12. *Moral Philosophy*—11th April, 1 to 4; 13th April, 9 to 12, and 1 to 4. *Mathematics*—10th April, 9 to 12, and 1 to 4. *Natural Philosophy*—11th April, 9 to 12, and 1 to 4.

The days and hours of Examination for any subject not included in the above will be arranged after Candidates have given in their names.

The heads of Examination are as follows:—

Latin for April 1891.—Lucretius, i., ii., iii., v.; Virgil, *Eclogues* and *Georgics*; Horace; Cicero, *Epist. ad Famil.* v.-viii.; *Orationes, Pro Murena, Pro Cn. Plancio, Pro P. Sestio*; Tacitus, *Annals*, i.-vi.; Latin prose composition; Translation from Authors not prescribed. *Roman History*.—From B.C. 90 to A.D. 37; A general knowledge of the previous history will be expected. *Roman Literature*.—A general knowledge of the course of Roman Literature, and a more minute knowledge of the Authors prescribed.

Latin for April 1892.—Plautus, *Pseudolus, Rudens*; Terence, *Phormio*; Horace; Juvenal, with omission of ii., vi., ix.; Martial, Selections for the Use of the Humanity Classes, i., ii., ix.-xii.; Cicero, *Epistolæ ad Q. Fratrem ad Atticum*, i.-iv., and vii., viii.; Tacitus, *Annals*, xi.-xvi.; Latin prose composition, and translation from Authors not prescribed. *Roman History*—First century, B.C. and first century A.D. A general knowledge of the previous history will be expected.

Roman Literature.—A general knowledge of the course of Roman Literature, and a more minute knowledge of the Authors prescribed.

Greek for April 1891.—Homer, *Iliad*, xiii.-xxiv. ; Pindar, *Olympian and Pythian Odes* ; Thucydides, Books v.-vii. (inclusive) ; Plato, *Gorgias* (Thompson's Edition) ; Aristotle, *Poetics* (Vahlen's text) ; Greek Prose Composition ; Translation from Authors not prescribed. *Greek History*.—A general knowledge of Greek History to the death of Alexander, and a minute knowledge of the period embraced by the Peloponnesian War. *Greek Literature*.—A general knowledge of the course of Greek Literature, with a more minute knowledge of the Authors prescribed. The principles of Comparative Philology as applied to Latin and Greek. Text-book recommended, "Sounds and Inflexions in Greek and Latin," by King and Cookson.

Greek for April 1892.—Homer, *Odyssey*, i.-xii. ; Sophocles, *Ædipus Col.* and *Antigone* ; Theocritus ; Thucydides, Books vii., viii. ; Plato, *Gorgias* (Thompson's Edition) ; Aristotle, *Poetics* (Vahlen's text). Greek Prose Composition ; Translation from Authors not prescribed. *Greek History*.—A general knowledge of Greek History to the death of Alexander, and a minute knowledge of the period embraced by the Peloponnesian War. *Greek Literature*.—A general knowledge of the course of Greek Literature, with a more minute knowledge of the Authors prescribed. *Greek Grammar*.—As a special subject *Monro's* Homeric Grammar ; The principles of Comparative Philology as applied to Latin and Greek. Text-book recommended, "Sounds and Inflexions in Greek and Latin," by King and Cookson.

Logic and Metaphysics.—The Lectures, including those in the Class of Metaphysics ; The Professor's "*Berkeley*," in "Philosophical Classics" (Blackwood) ; also the "*Selections*" (third edition) ; Plato, *Theætetus* ; Descartes, *Meditations* ; Locke, *Essay on Human Understanding*, in connection with "Locke" in "Philosophical Classics" (Blackwood) ; Hume, *Inquiry concerning Human Understanding* ; Kant, *Critique of Pure Reason* ; Hegel in "Philosophical Classics" (Blackwood). Exercises in Hamiltonian as well as in the ordinary logical forms. A competent knowledge of the History of Philosophy.

Moral Philosophy.—The Class Lectures for Advanced Students. Plato, *Republic*, i.-vii. ; Aristotle, *Ethics* (omitting v., vi., vii.) ; Spinoza, *Ethics* ; and Reid's *Active Powers*, Ess. ii., iv., v. ; Kant, *Metaphysic of Ethics* ; Hegel's *Philosophy of the State* (Griggs's *German Philosophical Classics*) ; Sidgwick, *Methods of Ethics*, Books iii. and iv. ; Green's *Prolegomena*.

English Literature.—(a.) History and Structure of the English Language : Morris's *Historical Outlines of English Accidence*, first Five Chapters, with Chapter XII. (entitled "Pronouns"), and Appendices I. and III. (b.) History of English Literature, more particularly from 1250 to 1400, and from 1580 to 1688 : Craik's larger *History of English Literature* and Taine's *History of English Literature* recommended, in addition to readings in the chief authors of the two periods mentioned.

(c.) Special Readings required:—Spenser's *Faery Queene*, Book I. (Clarendon Press Edition); Bacon's *Advancement of Learning* (Clarendon Press Edition); Shakespeare's *Tempest* and *Julius Cæsar*; Milton's *Lycidas* and *Samson Agonistes*; Johnson's Life of Pope; Wordsworth's Prose Prefaces, Appendix, &c., to his Poems; Tennyson's *Maud* and *In Memoriam*. (d.) English Composition.

Mathematics.—Euclid, I., II., III., IV., VI., and XI., or their equivalent; The advanced portions of the Elements of Algebra; Trigonometry; and Conic Sections, treated geometrically and analytically.

Experimental Physics.—A general knowledge of the subject, such as may be acquired from Stewart's *Elementary Physics*, or from Lectures of the Three Year Course. In addition, Maxwell's *Heat*, or Tait's *Properties of Matter*.

Chemistry.—Bloxam's *Chemistry*.

Geology.—J. Geikie's *Outlines of Geology*; Lyell's *Principles of Geology*.

Botany.—Consult Professor as to books.

Physiology.—Candidates will be examined on all the subjects treated of in Kirke's "Physiology," except the Physiology of the Reproductive Organs and Development.

Biblical Criticism.—Candidates who desire Honours in these subjects may consult the Professors as to Books, &c.

Science of Language.—The Class Lectures.

Candidates who propose to present themselves at the Ordinary Examinations in October 1890 must intimate their names and addresses to the "Clerk of Senatus, University of Edinburgh," before the 1st of October; and at either the Ordinary or the Honour Examinations in April 1891, before the 13th of March—specifying the Subject or Subjects in which they offer themselves, and also the Classes which they have attended, with the Sessions in which they have done so. The Fee should be paid when the Candidate announces her name.

Evidence of having passed the Local Examinations, and also certificates of the necessary attendance in the Classes of the "Association for the University Education of Women" must be produced in the Examination Room when the candidate appears to be examined.

A. CAMPBELL FRASER, D.C.L., LL.D.

Dean of the Faculty of Arts.

The following ladies have obtained Certificates in Arts from the University of Edinburgh:—

ORDINARY CERTIFICATES.

APRIL 1874.

CHARLOTTE CARMICHAEL (English Literature, Logic and Mental Philosophy, Moral Philosophy, Geology, Chemistry).

FLORA MASSON (English Literature, Latin, Chemistry).

MARGARET MITCHELL (English Literature, Mathematics, Experimental Physics).

APRIL 1875.

ANNETTE C. DOYLE (English Literature, Mathematics, Chemistry).

APRIL 1876.

AGNES E. BRAND (English Literature, Mental Philosophy, Moral Philosophy).

MARY CONSIDINE (English Literature, Mental Philosophy, Mathematics).

ELIZA J. HUTCHISON (Latin, Logic, Moral Philosophy).

KATHERINE RALEIGH (Logic, Moral Philosophy, Mathematics).

CHARLOTTE CARMICHAEL (Botany and Experimental Physics, in addition to Subjects passed in formerly).

OCTOBER 1877.

EMMA I. SMITH (English Literature, Latin, Mathematics).

AGNES E. BRAND (Latin, in addition to Subjects passed in formerly).

APRIL 1878.

DORA C. E. CLARK (Latin, Mathematics, Greek, Education).

JANE MENZIES (English Literature, Latin, Education).

ISABELLA P. MIDDLETON (English Literature, Mathematics, Education).

EMMA E. OFFORD (Moral Philosophy, Mathematics, Experimental Physics).

CHARLOTTE CARMICHAEL (Education, in addition to Subjects passed in formerly).

OCTOBER 1878.

MARIA MURRAY (English Literature, Moral Philosophy, Logic and Mental Philosophy).

MARGARET STALKER (English Literature, Moral Philosophy, Latin).

APRIL 1879.

JANE CRAIGIE (Mathematics, English Literature, Logic and Mental Philosophy, Physiology).

MARGARET M. HOGG (Experimental Physics, Physiology, English Literature, Education).

JESSIE J. M'KEAN (Mathematics, English Literature, Chemistry).

JESSIE F. RIACH (English Literature, Moral Philosophy, Experimental Physics).

MATHILDE A. SCHWABE (Moral Philosophy, Logic and Mental Philosophy, English Literature).

OCTOBER 1879.

- JESSIE DOBIE (English Literature, Latin, Mathematics).
 GRACE FAIRLEY (English Literature, Latin, Logic and Mental Philosophy, Experimental Physics).
 JANE ROBERTSON (English Literature, Latin, Mathematics).
 GRACE B. THOMSON (Logic and Mental Philosophy, Moral Philosophy Physiology).

APRIL 1880.

- M. A. CORSON (English Literature, Logic and Mental Philosophy, Mathematics).
 J. E. KENNEDY (English Literature, Logic and Mental Philosophy, Experimental Physics).
 HANNAH C. LORIMER (Logic and Mental Philosophy, Moral Philosophy, Geology).
 AGNES C. THOMSON (Logic and Mental Philosophy, Mathematics, Experimental Physics).
 HELEN B. THOMSON (English Literature, Logic and Mental Philosophy, Experimental Physics).
 MARY R. WALKER (English Literature, Logic and Mental Philosophy, Latin).

OCTOBER 1880.

- JANE B. BUCHAN (English Literature, Mathematics, Experimental Physics).
 THEODORA GEHRICH (English Literature, Biblical Criticism, Logic and Mental Philosophy, Experimental Physics).
 MARGARET M. LAING (English Literature, Logic and Mental Philosophy, Experimental Physics).
 MARGARET LITTLE (Latin, Logic and Mental Philosophy, Mathematics).
 MARY SHEPHERD (English Literature, Logic and Mental Philosophy, Experimental Physics).
 MARY WILSON (English Literature, Logic and Mental Philosophy, Mathematics).

APRIL 1881.

- SARAH B. BALFOUR (English Literature, Experimental Physics, Botany).
 ALICE DRYSDALE (English Literature, Logic and Metaphysics, Mathematics).
 MARGARET T. TODD (English Literature, Moral Philosophy, Botany).

OCTOBER 1881.

- JESSIE COUTTS (English Literature, Logic and Mental Philosophy, Moral Philosophy).

APRIL 1882.

- CECILY C. CLARK (Latin, Mathematics, Botany).
 JANET M. DUNCANSON (English Literature, Logic and Mental Philosophy, and Moral Philosophy).

BARBARA J. PATERSON (English Literature, Moral Philosophy, and Mathematics).

AMELIA HUTCHISON STIRLING (English Literature, Latin, and Greek).

MARY SYMON (English Literature, Moral Philosophy, and Mathematics).

ELIZABETH THOMSON (English Literature, Logic and Mental Philosophy, and Moral Philosophy).

JANE HELEN WRIGHT (English Literature, Botany, and Geology).

APRIL 1883.

JANE G. BALFOUR (Moral Philosophy, Logic and Mental Philosophy, and Economic Science).

GRACE M. CAMERON (English Literature, Logic and Mental Philosophy, and Latin).

BARBARA DEMPSTER (English Literature, Logic and Mental Philosophy, and Geology).

GRACE R. DONALDSON (English Literature, Latin, and Mathematics).

EUPHEMIA FOOTE (Logic and Mental Philosophy, Natural Philosophy, and Mathematics).

FRANCES GAIR (Logic and Mental Philosophy, Moral Philosophy, and Natural Philosophy).

JANE RENTON (English Literature, Logic and Mental Philosophy, and Mathematics).

ALICE M. UMPHERSTON (Natural Philosophy, Mathematics, and Geology).

JESSIE ANN YOUNG (English Literature, Latin, and Mathematics).

APRIL 1884.

ANNIE F. BURNET (English Literature, Physiology, and Latin).

ELIZA JAPP (English Literature, Mathematics, and Physiology).

APRIL 1885.

JESSIE BARRON (English Literature, Moral Philosophy, and Mathematics).

BERTHA J. M. CROALL (English Literature, Moral Philosophy, and Mathematics).

JANE B. HENDERSON (Logic and Mental Philosophy, Physiology, and Political Economy).

JANE C. LAMBERT (English Literature, Latin, and Mathematics).

RACHEL MARY MASON (English Literature, Logic and Mental Philosophy, and Latin).

ELIZABELLA MURRAY (Logic and Mental Philosophy, Moral Philosophy, and Political Economy).

FLORA PHILIP (English Literature, Moral Philosophy, Physiology, and Mathematics).

AGNES SUTHERLAND (English Literature, Moral Philosophy, and Mathematics).

APRIL 1886.

- IDA E. M. AITKEN (English Literature, Moral Philosophy, Political Economy, and Zoology).
 CHRISTINA M. ALEXANDER (English Literature, Mathematics, and Moral Philosophy).
 ANNIE GRAY FERRIER (Mathematics, Moral Philosophy, and Latin).
 EVELYN M. FRASER (Physiology, Natural Philosophy, and Zoology).
 C. LOUISE LORIMER (English Literature, Political Economy, and Moral Philosophy).
 SARAH MANSON (English Literature, Physiology, and Mathematics).
 ELIZABETH K. ROBERTSON (English Literature, Mathematics, and Zoology).
 LOUISA KATHLEEN TROTTER (Geology, Physiology, and Zoology).

APRIL 1887.

- MAY ANNA G. ANGUS (Latin, Mathematics, and Zoology).
 DORA J. ATKINSON (Latin, Moral Philosophy, and Mathematics).
 R. MARY BARCLAY (English Literature, Logic and Mental Philosophy, and Mathematics).
 ELIZABETH BUCHAN (English Literature, Logic and Mental Philosophy, and Mathematics).
 MARY BUCHAN DOUIE (Logic and Mental Philosophy, Moral Philosophy, and Mathematics).
 AGNES J. FLEMING (English Literature, Logic and Mental Philosophy, and Moral Philosophy).
 ANNA M. HARRISON (English Literature, Moral Philosophy, and Physiology).
 LILIAS MAITLAND (English Literature, Latin, Logic and Mental Philosophy).
 AGNES MARWICK (English Literature, Moral Philosophy, and Zoology).
 SOPHIA E. MOFFAT (Moral Philosophy, Physiology, and Economic Science).
 AGNES K. RUDD (English Literature, Mathematics, and Physiology).
 HELEN B. YOUNGER (English Literature, Mathematics, and Physiology).

OCTOBER 1887.

- CHARLOTTE LIGERTWOOD (English Literature, Moral Philosophy, and Mathematics).

APRIL 1888.

- ROBINA G. BALFOUR (English Literature, Logic and Mental Philosophy, and Moral Philosophy).
 MARIE SCOTT DALGLEISH (English Literature, Moral Philosophy, and Physiology).
 JANE GIBB (English Literature, Mathematics, and Botany).

- KATHERINE M. LOUDON (English Literature, Logic and Mental Philosophy, Moral Philosophy, Physiology, and Botany).
 MARGARET B. PATERSON (English Literature, Logic and Mental Philosophy, and Botany).
 FRANCES H. SIMSON (Latin, Logic and Mental Philosophy, Greek, Moral Philosophy, and Mathematics).
 ANNIE C. SUTHERLAND (English Literature, Moral Philosophy, and Botany).
 ANNIE TAYLOR (English Literature, Latin, and Greek).
 JULIA M. WAUGH (English Literature, Moral Philosophy, and Mathematics).

APRIL 1889.

- AGNES E. F. ALLARDICE (English Literature, Latin, and Mathematics).
 JANE COWIE (English Literature, Botany, Logic and Mental Philosophy).
 ANNIE B. CROAL (English Literature, Botany, Logic and Mental Philosophy).
 ELIZABETH GARDINER (Logic and Mental Philosophy, Moral Philosophy and Natural Philosophy).
 MARY S. LIDDELL (English Literature, Mathematics, and Philology).
 CHRISTINA T. RENTON (English Literature, Latin, Mathematics, and Philology).
 E. EDITH SANGSTER (English Literature, Botany, Mathematics, and Natural Philosophy).
 NELLY STARK (English Literature, Botany, Mathematics, and Natural Philosophy).
 KATHERINE F. SYMINGTON (English Literature, Botany, and Philology).

APRIL 1890.

- A. MAY GIBB (Mathematics, Natural Philosophy, and Moral Philosophy).
 ELIZABETH MACDONALD (English Literature, Logic and Mental Philosophy, and Latin).
 JESSIE C. MACDONALD (English Literature, Philology, and Geology).
 ANITA M. MACHATTIE (English Literature, Logic and Mental Philosophy, and Moral Philosophy).
 RACHEL C. MACKENZIE (Latin, Natural Philosophy, and Mathematics).
 MARION T. NEWBIGIN (English Literature, Moral Philosophy, and Geology).
 ELIZABETH S. NORRIE (English Literature, Logic and Mental Philosophy, and Latin).
 KATHERINE M. STEWART SANDEMAN (English Literature, Logic and Mental Philosophy, and Moral Philosophy).

- MARION S. STEVENSON (Logic and Mental Philosophy, Moral Philosophy, Natural Philosophy, and Geology).
 ELIZABETH THOMPSON (English Literature, Latin, and Moral Philosophy).
 MARY WRIGHT (Moral Philosophy, Botany, and Geology).

HONOUR CERTIFICATES.

First Class in English Literature, FLORA MASSON,	April 1879
First Class in English Literature, CHARLOTTE CARMICHAEL,	„ 1878
Second Class in English Literature, MARIA MURRAY,	„ 1875
First Class in Mathematics, JESSIE J. M'KEAN,	„ 1879
First Class in Mathematics, JESSIE DOBIE,	„ 1879
First Class in Mathematics, JANE ROBERTSON,	„ 1880
First Class in Mathematics, MARGARET LITTLE,	„ 1881
Second Class in Mathematics, AGNES EVA BRAND,	„ 1881
Second Class in Mathematics, ISABELLA P. MIDDLETON,	„ 1881
First Class in Latin, GRACE FAIRLEY,	„ 1881
First Class in Latin, AMELIA H. STIRLING,	„ 1882
First Class in Moral Philosophy, EMMA J. SMITH,	„ 1882
First Class in English Literature, MARGARET M. HOGG,	„ 1882
Second Class in English Literature, MARY SHEPHERD,	„ 1882
First Class in Moral Philosophy, FRANCES GAIR,	„ 1883
Second Class in Latin, CECILY C. CLARK,	„ 1883
Second Class in Moral Philosophy, JANET DUNCANSON,	„ 1883
First Class in Logic and Mental Philosophy, JANE G. BALFOUR,	„ 1884
First Class in Logic and Mental Philosophy, FRANCES GAIR,	„ 1884
First Class in Latin, ANNIE F. BURNET,	„ 1886
First Class in English Literature, C. LOUISE LORIMER,	„ 1886
First Class in Mathematics, FLORA PHILIP,	„ 1886
First Class in Mathematics, AGNES SUTHERLAND,	„ 1886
Second Class in English Literature, IDA E. M. AITKEN,	„ 1887
Second Class in Mathematics, ELIZABETH K. ROBERTSON,	„ 1887
Physiology, SARAH B. BALFOUR,	„ 1888
Second Class in Greek, ANNIE F. BURNET.	„ 1889
First Class in Moral Philosophy, MARY B. DOUIE,	„ 1889
Second Class in Logic and Mental Philosophy, MARY B. DOUIE	„ 1890
First Class in Logic and Mental Philosophy, LILIAS MAITLAND,	„ 1890
First Class in Latin, FRANCES H. SIMSON,	„ 1890
Second Class in Mathematics, AGNES K. RUDD,	„ 1890

DIPLOMAS OF THE ASSOCIATION.

1878.

CHARLOTTE CARMICHAEL [Mrs STOPES] (English Literature, Logic and Mental Philosophy, Moral Philosophy, Natural Philosophy, Chemistry, Geology, Botany, and Education).

1881.

AGNES EVA BRAND (English Literature, Logic and Mental Philosophy, Moral Philosophy, Latin, Education, Mathematics, Political Economy).

THEODORA GEHRICH (English Literature, Logic and Mental Philosophy, Biblical Criticism, Experimental Physics, Moral Philosophy, Latin, and Political Economy).

1882.

GRACE FAIRLEY (English Literature, Latin, Greek, Logic and Mental Philosophy, Moral Philosophy, Experimental Physics, Mathematics).

MARGARET M. HOGG (English Literature, Latin, Biblical Criticism, Moral Philosophy, Experimental Physics, Zoology, Physiology, and Education).

JANE B. BUCHAN (English Literature, Moral Philosophy, Mathematics, Experimental Physics, Botany, Geology, Economic Science).

1883.

JANE CRAIGIE (English Literature, Mathematics, Physiology, Logic and Mental Philosophy, Moral Philosophy, Geology, and Natural Philosophy).

1885.

AMELIA HUTCHISON STIRLING (English Literature, Logic and Mental Philosophy, Natural Philosophy, Moral Philosophy, Greek, Latin, and Mathematics).

1886.

JANET M. DUNCANSON (English Literature, Logic and Mental Philosophy, Moral Philosophy, Physiology, Mathematics, Political Economy, and Natural Philosophy). (Latin 1889.)

MARIA MURRAY (English Literature, Logic and Mental Philosophy, Moral Philosophy, Natural Philosophy, Botany, Physiology, and Zoology).

1887.

FRANCES GAIR (English Literature, Latin, Greek, Logic and Mental Philosophy, Moral Philosophy, Experimental Physics, and Economic Science).

ALICE M. UMPHERSTON (English Literature, Logic and Mental Philosophy, Moral Philosophy, Mathematics, Experimental Physics, Geology, and Economic Science).

1888.

JANE G. BALFOUR (English Literature, Logic and Mental Philosophy, Moral Philosophy, Botany, Physiology, Economic Science, and Fine Art).

FLORA PHILIP (English Literature, Latin, Greek, Logic and Mental Philosophy, Moral Philosophy, Mathematics, and Physiology).
(Natural Philosophy 1889.)

1889.

JESSIE BARRON (English Literature, Latin, Logic and Mental Philosophy, Moral Philosophy, Mathematics, Botany, and Physiology).

KATHERINE M. LOUDON (English Literature, Logic and Mental Philosophy, Moral Philosophy, Botany, Physiology, Natural Philosophy, and Philology).

LILIAS MAITLAND (English Literature, Latin, Greek, Logic and Mental Philosophy, Moral Philosophy, Mathematics, and Natural Philosophy).

1890.

FRANCES H. SIMSON (English Literature, Latin, Greek, Mathematics, Logic and Mental Philosophy, Moral Philosophy, and Natural Philosophy).

MARY B. DOUIE (English Literature, Latin, Greek, Mathematics, Logic and Mental Philosophy, Moral Philosophy, and Natural Philosophy).

UNIVERSITY OF EDINBURGH.

EXAMINATIONS FOR ORDINARY CERTIFICATES IN
ARTS FOR WOMEN.

LATIN.

FIRST PAPER.

Tuesday, 15th October 1889.—9 to 11 o'clock.

I. Translate into Latin :—

Tell me by the way (if you ever had any speculations on the subject) what is it you suppose Homer to have meant in particular, when he ascribed his blindness to the muse ; for that he speaks of himself under the name of Demodocus in the eighth book, I believe, is by all admitted. How could the old bard study himself blind, when books were either so few, or none at all ? And did he write his poems ? If neither were the cause, as seems reasonable to imagine, how could he incur his blindness by such means as could be justly imputable to the muse ? Would mere thinking blind him ? I want to know : “ Call up some spirit from the vasty deep ! ”

II. Translate into English :—

Themistocles post victoriam eius belli, quod cum Persis fuit, dixit in contione se habere consilium rei publicae salutare, sed id sciri non opus esse : postulavit ut aliquem populus daret, quicum communicaret ; datus est Aristides. Huic ille, classem Lacedaemoniorum, quae subducta esset ad Gytheum, clam incendi posse, quo facto frangi Lacedaemoniorum opes necesse esset. Quod Aristides cum audisset, in contionem magna expectatione venit dixitque perutile esse consilium, quod Themistocles adferret, sed minime honestum. Itaque Athenienses, quod honestum non esset, id ne utile quidem putaverunt totamque eam rem, quam ne audierant quidem, auctore Aristide repudiaverunt. Melius hi quam nos, qui piratas immunes, socios vectigales habemus.

SECOND PAPER.

Tuesday, 15th October 1889.—11.30 to 1.30 o'clock.

I. Translate :—

- (1) Caelo supinas si tuleris manus
Nascente Luna, rustica Phidyle,
Si ture placaris et horna
Fruge Lares avidaque porca,

Nec pestilentem sentiet Africum
Fecunda vitis nec sterilem seges
Robiginem aut dulces alumni
Pomifero grave tempus anno.

Nam quae nivali pascitur Algidio
Devota quercus inter et ilices
Aut crescit Albanis in herbis
Victima pontificum secures

Cervice tinguet : te nihil attinet
Temptare multa caede bidentium
Parvos coronantem marino
Rore deos fragilique myrto.

Inmunis aram si tetigit manus,
Non sumptuosa blandior hostia
Mollivit aversos Penates
Farre pio et saliente mica.

- (2) Nec modus inserere atque oculos inponere simplex.
Nam qua se medio trudent de cortice gemmae
Et tenuis rumpunt tunicas, angustus in ipso
Fit nodo sinus : huc aliena ex arbore germen
Includunt udoque docent inolescere libro.
Aut rursum enodes trunci resecantur, et alte
Finditur in solidum cuneis via, deinde feraces
Plantae immittuntur ; nec longum tempus, et ingens
Exiit ad caelum ramis felicibus arbos
Miraturque novas frondes et non sua poma.

(3) Quis ergo iste optimus quisque ? De numero si quaeris, innumerabiles—neque enim aliter stare possemus—: sunt principes consilii publici, sunt qui eorum sectam sequuntur, sunt maximorum ordinum homines, quibus patet curia, sunt municipales rustique Romani, sunt negotii gerentes, sunt etiam libertini optimates. Numerus, ut dixi, huius generis late et varie diffusus est : sed genus universum, ut tollatur error, brevi circumscribi et definiri potest. Omnes optimates sunt, qui neque nocentes sunt nec natura improbi nec furiosi nec malis domesticis impediti. Est igitur ut ii sint, quam tu nationem appellasti, qui integri sunt et sani et bene de rebus domesticis constituti.

(4) Placitum dehinc, quia, commeantibus invicem nuntiis, nihil in summam pacis proficiebatur, conloquio ipsorum tempus locumque destinari. Mille equitum praesidium Tiridates adfore sibi dicebat ; quantum Corbuloni cuiusque generis militum adsisteret, non statuere, dum positis loriceis et galeis in faciem pacis veniretur. Cuicumque mortalium, nedum veteri et provido duci, barbarae astutiae patuissent, ideo artum inde numerum finire, et hinc maiorem adferri, ut dolus

pararetur : nam equiti, sagittarum usu exercito, si detecta corpora obiicerentur, nihil profuturam multitudinem. Dissimulato tamen intellectu, rectius de his quae in publicum consulerentur totis exercitibus coram dissertaturos, respondit.

II. Translate *five* of the following, with short notes on the words italicized :—

- (1) Quin et Prometheus et *Pelopis parens*
Dulci *laborem* decipitur sono. [*al. laborum.*]
- (2) Haec ego procurare et idoneus *imperator* et non
Invitus, ne turpe toral, ne sordida mappa
Corruget nares.
- (3) Haec tibi *dictabam* post fanum putre *Vacunae*,
Excepto quod non simul esses cetera laetus.
- (4) Dic quibus in terris inscripti *nomina* regum
Nascantur *flores*, et Phyllida solus habeto.
- (5) *Ut vidi, ut perii!* ut me malus abstulit error!
Incipe *Maenaios* mecum, mea tibia, versus.
- (6) Nec fuit indignum superis, *bis* sanguine nostro
Emathiam et latos Haemi pinguescere campos.
- (7) *Isdemque consulibus* sedentibus atque inspectantibus lata lex
est ne quis *obnuntiaret*, ut *lex Aelia*, *lex Fufia* ne valeret.
- (8) Quos *vindicta* patronus non liberaverit, velut vinclo servitutis attineri.

III. Answer any *three* of the following questions :—

- (1) What metre has Horace employed in the Ode quoted in Question 1? Scan the first verse.
- (2) What was Virgil's purpose in writing the Georgics?
- (3) Compare modern forensic oratory with the forensic oratory of Rome, as exemplified in the *Pro Sestio*.
- (4) Distinguish carefully between (a) the *legal* and (b) the *political* questions involved in the banishment of Cicero.
- (5) Sketch briefly the career and character of Corbulo.
- (6) Show clearly, by means of a table or otherwise, the relationship between Augustus and each of his successors down to and including Nero.

LATIN.

FIRST PAPER.

Monday, 7th April 1890.—9 to 11 o'clock.

I. Translate *one* of the following passages into Latin :—

1. After the surrender of Segni, Alva effected a junction with the Italian forces, and marched to the town of Colona, in the Campagna, where for the present he quartered his army. Here he formed the plan of an enterprise, the adventurous character of which it seems difficult to

reconcile with his habitual caution. This was a night assault on Rome. He did not communicate his whole purpose to his officers, but simply ordered them to prepare to march on the following night, the 26th of August, against a neighbouring city, the name of which he did not disclose. It was a wealthy place, he said, but he was most anxious that no violence should be offered to the inhabitants, in either their persons or their property. The soldiers should be forbidden even to enter the dwellings ; but he promised that the loss of booty should be compensated by increase of pay.

2. I find Paris tolerable, and that is all. There appears to be something rotten in the state of this country ; the system stands on unstable foundations, the people are demoralised ; in vain we look for fixed principles or deep convictions. Some are indifferent to the fate of the monarchy because they hate the monarch, others rejoice at attempts on the monarch from aversion to monarchy, and as far as my cursory observation and casual observation instruct me, I see only a confusion and caprice of passions, prejudices, and opinions, which are only reduced to anything like order by the strong, sober sense and the firmness of the king, who is by far the ablest man among them.

II. Translate :—

Ubi dies quae dicta erat advenit, arma equosque ostenderunt. Tum Scipio renuntiari sibi dixit, quosdam equites Siculorum tamquam gravem et duram horrere eam militiam. Si qui ita animati essent, malle eos sibi iam tum fateri quam postmodo querentes segnes atque inutiles milites reipublicae esse : expromerent, quid sentirent ; cum bona venia se auditurum. Ubi ex iis unus ausus est dicere, se prorsus, si sibi utrum velit liberum esset, nolle militare, tum Scipio ei, “ quoniam igitur, adulescens, quid sentires non dissimulasti, vicarium tibi expediam, cui tu arma equumque et cetera instrumenta militiae tradas, et tecum hinc extemplo domum ducas, exerceas, docendum cures equo armisque.” Laeto condicionem accipienti unum ex trecentis, quos inermes habebat, tradit.

SECOND PAPER.

Monday, 7th April 1890.—11.30 to 1. 30 o'clock.

I. Translate :—

- (1) Si bene qui cœnat bene vivit : lucet, eamus
 Quo ducit gula ; piscemur, venemur, ut olim
 Gargilius, qui mane plagas, venabula, servos,
 Differtum transire forum populumque iubebat,
 Unus ut e multis populo spectante referret
 Emptum mulus aprum. Crudi tumidique lavemur,
 Quid deceat quid non obliti, Caerite cera
 Digni, remigium vitiosum Ithacensis Ulixei,
 Cui potior patria fuit interdicta voluptas.

- (2) Nec minus ex imbri soles et aperta serena
 prospicere et certis poteris cognoscere signis :
 nam neque tum stellis acies obtunsa videtur,
 nec fratris radiis obnoxia surgere Luna,
 tenuia nec lanae per caelum vellera ferri ;
 non tepidum ad solem pinnae in litore pandunt
 dilectae Thetidi alcyones, non ore solutos
 immundi meminere sues iactare maniplos.
 at nebulae magis ima petunt campoque recumbunt,
 solis et occasum servans de culmine summo
 nequiquam seros exercet noctua cantus.

(3) Atque etiam hoc videbat : quoniam illa in re publica macula regni publicati maneret, quam nemo iam posset eluere, quod ex malis boni posset in rem publicam pervenire, id utilius esse per se conservari quam per alios. Atque ille etiam si alia quapiam vi expelleretur illis temporibus ex hac urbe, facile pateretur. Etenim qui superiore anno senatu caruisset, quo si tum veniret, me tamen socium suorum in republica consiliorum videre posset, is aequo animo tum me expulso et meo nomine quum universo senatu tum sententia sua condemnata in hac urbe esse posset ? Ille vero eidem tempori cui nos, eiusdem furori et iisdem consulibus, iisdem minis, insidiis, periculis cessit. Luctum nos hausimus maiorem, dolorem ille animi non minorem.

(4) Deferuntur dehinc consensisse Pallas ac Burrus, ut Cornelius Sulla claritudine generis et adfinitate Claudii, cui per nuptias Antoniae gener erat, ad imperium vocaretur. Eius accusationis auctor extitit Paetus quidam, exercendis apud aerarium sectionibus famosus et tum vanitatis manifestus. Nec tam grata Pallantis innocentia quam gravis superbia fuit : quippe nominatis libertis eius, quos conscios haberet, respondit nihil umquam se domi nisi nutu aut manu significasse, vel si plura demonstranda essent, scripto usum, ne vocem consociaret. Burrus quamvis reus inter iudices sententiam dixit. Exiliumque accusatori inrogatum, et tabulae exustae sunt, quibus oblitterata aerarii nomina retrahebat.

II. Translate *five* of the following, with short notes on the words italicised :—

- (1) Vivet extento *Proculeius* aevo,
 Notus in fratres *animi* paterni :
 Illum aget penna metuente solvi
 Fama superstes.
- (2) I, pete unguentum, puer, et coronas
 Et cadum *Marsi* memorem *duelli*,
Spartacum si qua potuit vagantem
 Fallere testa.
- (3) Nunc *oblita* mihi tot carmina ; vox quoque Moerim
 Iam fugit ipsa ; *lupi* Moerim videre *priores*.

(4) An memorem portus *Lucrinoque addita claustra*
Atque indignatum magnis stridoribus aequor?

(5) Ipse dies agitat festos, fususque per herbam
Ignis ubi in medio et *socii cratera coronant*,
Te, libans, Lenaeae, vocat.

(6) Caedem vero tantam, tantos acervos corporum exstructos, nisi forte *illo Cinnano atque Octaviano die*, quis unquam in foro vidit?

(7) Ferebaturque degrediente eo magna prosequentium multitudine non absurde dixisse ire Pallantem ut *ejuraret*.

(8) Manet tamen *abolitio quadragesimae quinquagesimæque*, et quae alia exactionibus illicitis nomina publicani invenerant.

III. Answer any *three* of the following questions:—

(1) Give some account of Maecenas and his relations with the poets of the Augustan Age.

(2) "The history of pastoral poetry shows how easily the most simple form of composition may pass into the most artificial." Explain this statement.

(3) Give a brief account of the life and writings of Tacitus.

(4) State the main charges brought against Sestius, and explain the line of Cicero's defence.

(5) Tacitus says: "Manebat nihilominus quaedam imago reipublicae" (*Annals*, xiii. 28). How far was this true of the reign of Nero?

(6) Who were—Narcissus, Gallus, Milo, Thrasea, Gabinius?

PURE MATHEMATICS.

FIRST PAPER.

Monday, 7th April 1890.—3 to 5 o'clock.

1. Any two sides of a triangle are together greater than the third.

Construct a triangle having given two of its angles, and the sum of two of its sides.

2. Find the locus of all points equidistant from two given points; and hence show that the three perpendicular bisectors of the sides of a triangle are concurrent.

3. Show how to construct a triangle equal in area to a given rectilinear polygon.

Show that any line through the centre of the circle circumscribing a regular hexagon bisects the area of the figure.

4. Divide a straight line internally in *medial section*. Prove that when the smaller segment of a line so divided is turned over on the greater, then the greater segment is also divided in medial section.

5. The sum of the squares on two sides of a triangle is double of the sum of the squares on half the base, and on the median to the base.

If one diagonal of a quadrilateral inscribed in a circle is bisected by

the other, show that twice the square on the latter is equal to the sum of the squares on the four sides.

6. If two circles touch either internally or externally, the line joining their centres passes through the point of contact.

Two circles touch internally at A . CD is a chord of the outer circle which touches the inner at P ; show that CP and PD subtend equal angles at A .

7. The angle in a segment of a circle is greater than, equal to, or less than a right angle, according as the segment is less than, equal to, or greater than a semicircle.

Construct a right-angled triangle of which the base and altitude are given.

8. Give a construction for finding the centres of the inscribed and escribed circles of a triangle.

Show that of the four points so determined each is the ortho centre of the triangle formed by joining the other three.

9. Show how to inscribe a circle in any given equilateral and equiangular polygon, and prove that the same construction enables you to describe a circle about it. If the two regular polygons so described are six-sided, compare their areas.

10. Show that the internal and external bisectors of the vertical angle of a triangle divide the base in the ratio of the sides.

Show how to find a point such that its distances from three given points A, B, C , are proportional to three given lengths a, b, c .

11. The rectangle under two sides of a triangle, is equal to the rectangle under the altitude conterminous with them, and the diameter of the circumscribing circle. Find the radius of the circle circumscribed to the triangle whose sides are 4, 13, and 15.

12. Prove by the theory of *transversals* or otherwise, that the three perpendiculars from the vertices of a triangle upon the opposite side are concurrent. Show that the perpendiculars bisect the angles of the triangle formed by joining their feet.

SECOND PAPER.

Tuesday, 8th April 1890.—9 to 11 o'clock.

1. Expand the product

$$(1+a_1x)(1+a_2x)(1+a_3x) \dots (1+a_nx)$$

to three terms in powers of x , and state the law of the formation of the coefficients.

Expand and simplify

$$(1+x+x^2)(1-x+x^2)(1+x^2+x^4).$$

2. Write down the most general homogeneous integral function of x, y, z of the second degree, and find the result of substituting $\lambda x_1 + \mu x_2, \lambda y_1 + \mu y_2, \lambda z_1 + \mu z_2$ for x, y, z respectively in the function.

Prove the identity

$$[x^3 - y^3 + 6xy(2y+x)]^2 - [y^3 - x^3 + 6xy(2x+y)]^2 \\ = 36xy(x+y)(x-y)^3.$$

3. Show that every integral function of x of the second degree can be resolved into two linear factors; and point out the condition that the coefficients of these factors be real.

Factorise the following : (a) $6x^2 + 59x + 105$;

$$(\beta) (x^4 - y^4)^2 + (x^2 - y^2)^4 ; (\gamma) 2xy + 7x + 6y + 21.$$

4. Simplify the fraction

$$\frac{x^4 + x^2 + 1}{(x+1)^4 + x^2(x+1)^2 + x^4}.$$

Show that

$$\Sigma \frac{(x-a)(y-a)(z-a)}{(a-b)(a-c)} = (x+y+z) - (a+b+c).$$

where Σ refers to the variables a , b , and c .

5. Explain the principle of Indeterminate Coefficients.
Express in partial fractions

$$\frac{x}{(x-1)(x-2)} \text{ and } \frac{1}{(x-1)^2(x^2+1)}.$$

If $x^3 - x + r = (x-a)^2(x+b)$, show that $r^2 = \frac{4}{27}$, and find the values of a and b .

6. Find the square root of

$$1 + 4x + 10x^2 + 12x^3 + 9x^4, \text{ and find the value of}$$

$$\frac{\sqrt{7} - \sqrt{3}}{\sqrt{7} + \sqrt{3}} \text{ to 4 places of decimals.}$$

7. Find the condition that

$$Ax^2 + Bx + C = 0 \\ \text{and } A'x^2 + B'x + C' = 0$$

should have the same solutions.

Solve the following

$$(\alpha) x/(x+a-b) - x/(x+a+b) = 2b/x ;$$

$$(\beta) 3x - 4y^2 = 14, 2x + 3y^2 = 32.$$

8. Find the values of λ between which the roots of the equation $\lambda x^2 - 2(\lambda - 1)x + \lambda + 1 = 0$, are (1) both real, (2) both imaginary.

Solve the equations

$$(1) \quad x\sqrt{x^2+1} + x\sqrt{x^2-1} = 2.$$

$$(2) \quad \begin{cases} x^2+y^2+3xy=79. \\ x+y+2xy=38. \end{cases}$$

9. Find the present worth of an annuity of £100 to continue for ten years at $3\frac{1}{2}$ per cent. per annum.

Given $(1.035)^{-10} = .70892$.

10. Show that the Geometric Mean of two quantities a and c is the Geometric Mean of the Arithmetic and Harmonic Means between a and c .

If x, y, z are in $A.P.$, then

$x^2+xy+y^2, x^2+xz+z^2, y^2+zy+z^2$ are also in $A.P.$

11. Find the sum of n terms of an Arithmetic Series.

Sum to n terms the Series

$$aa + (a+b)(a+\beta) + (a+2b)(a+2\beta) + \dots$$

12. Find the sum to n terms of the Geometric Series

$$1+4+16+\dots$$

Find also the sum of the Series

$$\frac{1}{5} + \frac{2}{5^2} + \frac{3}{5^3} + \frac{1}{5^4} + \frac{2}{5^5} + \frac{3}{5^6} + \dots$$

to $3n$ terms, where the numerators recur with the period 1, 2, 3.

LOGIC, PSYCHOLOGY, AND METAPHYSICS.

FIRST PAPER.

Friday, 11th April 1890—9 to 12 o'clock.

1. The Province of Logic—how viewed (1) by Hamilton, (2) by J. S. Mill, (3) by Hegel?

2. In what case may the Universal Affirmative proposition (A) and the Particular Negative proposition (O) be converted simply? Give the correct logical inference from "Seest thou a man wise in his own conceit? there is more hope of a fool than of him." Turn the proposition into categorical form, and state its converse, its obverse (permutation), and its contra positive.

3. Enumerate the Categories of Aristotle, and give Aristotle's own interpretation of their meaning. Compare and contrast with the Categories of Kant.

4. Discuss J. S. Mill's view of the function and value of the Syllogism. Also, examine the position that Hypothetical Syllogisms are simply forms of Immediate Inference.

5. Give a brief historical account of the rise and progress of Induc-

tive Logic. How far is Inductive Logic bound up with the Logic of Definition?

6. Bring the following Darwinian argument to the test of Inductive Method and examine :—"Where many cats are, there should be many violets and much red clover. For violets and red clover are dependent on the humble-bee for their fertilization; and humble-bees are scarce where field-mice (which rob their nests) abound, while field-mice are few where cats are plentiful."

7. "The reason why we place any credit in witnesses and historians, is not derived from any *connexion*, which we perceive *à priori*, between testimony and reality, but because we are accustomed to find a conformity between them." Use this text as the basis of an exposition of the nature and rules of Historical evidence.

SECOND PAPER.

Friday, 11th April 1890—1 to 4 o'clock.

1. Is the Mind adequately viewed as an "association of mental atoms"? If not, why not? State any other view that seems to you more conformable to psychological fact. How far, and in what sense, is it true that "psychology depends for its progress on that of the physical sciences"?

2. State and examine the views of Leibnitz and of Locke, respectively, as to the origin of Knowledge.

3. Explain the nature of Philosophical Scepticism, and distinguish its varieties. Examine critically Hume's "sceptical solution of sceptical doubts."

4. Examine critically Locke's "demonstration of the existence of God," and in doing so consider carefully whether it consists with the account he gives of the origin of our ideas and knowledge, and especially of our ideas of Causality and Power.

5. "Except in abstract truth no judgment rises higher than probability." Explain this, and discuss the statement carefully.

6. Argue the question of the origin and genesis of Space and Time as metaphysical notions.

7. Discuss the problem of an *independent* external world, giving historical references. What element in Berkeley's treatment of this problem may, not inappropriately, be termed Comtist, and why?

8. Trace in detail the Dialectic Method of Plato, and compare it with that of Aristotle. How does it stand related to the Hegelian process?

THIRD PAPER.

Saturday, 12th April 1890.—9 to 12 o'clock.

1. Distinguish, with Descartes, between the Understanding and the Will, and argue the question of the Seat of Error. Enumerate Descartes' proofs of the existence of God, and supplement your exposition with relevant criticisms.

2. What is meant by Infinite? To what ideas is it restricted by Locke, and why? Test the validity of Locke's doctrine by Hegelian standards.

3. Is Kant's Apriorism identical with the doctrine of Innate Ideas? If not, state its precise nature, and support your statement by references to the *Critique of Pure Reason*.

4. "A man must be very sagacious, who could discover by reasoning, that crystal is the effect of heat, and ice of cold, without being previously acquainted with the operations of these qualities." Explain clearly the doctrine of Causation that is implied here. What is the exact bearing of the doctrine of the Conservation of Energy on the metaphysical conception of Causality?

5. Is there any way out of the following conclusion:—"If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, *Does it contain any abstract reasoning concerning quantity or number?* No. *Does it contain any experimental reasoning concerning matter of fact and existence?* No. Commit it then to the flames: for it can contain nothing but sophistry and illusion"? Argue the point precisely.

6. "The absolute is not substance but subject." Give a clear exposition of this dictum. Distinguish between Spinoza's "Substance" and Hegel's "Spirit," and show in what respects the doctrine of the latter is an advance upon Kant's teaching.

MORAL PHILOSOPHY.

Thursday, 10th April 1890.—9 to 12 o'clock.

1. "Thought is the key to all real knowledge." Explain the meaning of this, and indicate the various philosophical bearings of the truth it implies. Why not say that "Thought is *identical with* all real knowledge," or that "Thought and Reality are one"?

2. How far, and in what respect, is it true that Conscience is a *Social* product? Is man's social nature incompatible with the claims of Conscience to be superior to external authority? Explain. Does Self-love necessarily imply "disregard to the good of others"?

3. Enumerate the leading characteristics of Desire; and distinguish it from (1) Appetite, (2) Affection, (3) Will.

4. Set forth, with some degree of fulness, the Deterministic and the Libertarian theories of Will.

5. Give a classification of Duties, with clear statement of the grounds on which the classification rests, and examples of the leading Duties themselves. Indicate, with precision, the true place of Self-respect in a Scheme of Duties, and show under what laws Moral Character is formed.

6. Explain the nature and conditions of Remorse; and give some account of different theories of its appearance in consciousness.

7. How can there be such a thing as Casuistry in Morals? Is the possibility of Casuistry a defect or the opposite? How so? Exemplify Casuistry, and show whether there be any ground for the popular notion that Casuistry is identical with Sophistry.

8. What is meant by saying that Virtue is Knowledge? Trace the ethical consequences of this position, and give historical references.

9. "The ethics of Plotinus represent, we may say, the moral idealism of the Stoics cut loose from nature." Fully explain this. What lines of philosophic thought, other than Hellenic, go to constitute Neo-Platonism?

10. Define "The Law of Nature," (1) as ethically, (2) as juridically, conceived. Give some account of Grotius's teaching, and show its importance as affecting English ethical philosophy.

11. Enumerate the characteristic points in Hartley's philosophy. Trace the influence of Hartley in later British ethics.

12. What is Hegel's conception of Self-realization? Give a brief outline of German Pessimism, with critical remarks.

ENGLISH LITERATURE.

Examiners—Professor MASSON and Rev. Dr W. L. DAVIDSON.

FIRST PAPER.

Friday, 18th October 1889.—1 to 2 o'clock.

Write an Essay on either of the following subjects :—

1. Shakespeare's character of Coriolanus.
2. The Argument of the *Areopagitica*.

SECOND PAPER.

Friday, 18th October 1889.—2 to 4 o'clock.

1. Give examples of the influence on English Literature (1) of Celtic themes, (2) of Norman-French literary forms.

2. Sketch the scheme of subjects adopted in the Historical Course for the Elizabethan Period of English Literature, mentioning representative names under each division.

3. Describe, with examples, the effects of the Celtic and Scandinavian Influences on the English Vocabulary, and those of the Norman Conquest on English Grammar.

4. Give some account (1) of Barbour and his writings, (2) of *The Vision of Piers Plowman*, (3) of Gower's *Confessio Amantis*.

5. In what respects is *Samson Agonistes* modelled on Greek Plays? Explain the Italicized portions of the following :—

- (1) Light, the prime work of God, to me is extinct.
- (2) Hid in her vacant interlunar cave.
- (3) See how he lies at random, carelessly diffused.

- (4) The bold Ascalonite . . . fled from his *lion ramp*.
 - (5) . . . of wisdom nothing more than *mean*.
 - (6) And with confusion *blank* his worshippers.
 - (7) Haughty, as is his *pile* high-built and proud.
 - (8) And lamentation to *the Sons of Caphtor*.
6. *Either* :—
- (A) Characterize Dr Johnson's style ; and give a reasoned estimate of his powers as a critic, with special reference to his *Life of Dryden* ;

Or,

- (B) State from what source the plot of *As You Like It* was derived ; and explain the connexion and the significance of the following phrases in the Play :—

- (1) "There they live like the old Robin Hood of England."
- (2) "Sir, you have wrestled well, and overthrown More than your enemies."
- (3) "I love to cope him in these sullen fits, For then he's full of matter."
- (4) "And then he drew a dial from his poke."
- (5) "Dead shepherd, now I find thy saw of might, 'Who ever loved that loved not at first sight?'"
- (6) "It is a melancholy of mine own, compounded of many simples."
- (7) "The poor world is almost six thousand years old."
- (8) "If I heard you rightly, The Duke hath put on a religious life."

7. Give the substance of Wordsworth's views of Poetry (1) as respects *themes*, (2) as respects *language*.

8. No. 1 of the following is a piece of blank verse, printed as prose ; the others are lines from English poems. Arrange No. 1 in its proper verse form, without changing a word or the order of the words ; and give the metrical formula and prosodic name of each of the others :—

- (1) "How steadily that cragsman climbs while winds are whistling past him, billows raging hundreds of feet beneath ! one single slip would dash him down to death ; but every step is planted firmly, and he makes each cleft the means to reach a higher, till he stands in triumph on the top."
- (2) "Here awa, there awa, wandering Willie."
- (3) "The one only dwelling on earth that she loves."
- (4) "With flames and flashing lights that thousand changes make."
- (5) "Home they brought her warrior dead."
- (6) "Hide me from my deep emotion, O thou wondrous Mother-Age."

- (7) "For the Heathen have lost, and the Christians have won."
 (8) "Scarcely does any discover his one true mate among thousands."

FIRST PAPER.

Thursday, 10th April 1890.—1 to 2 o'clock.

Write an Essay under *either* of the following titles, introducing a characteristic quotation if you can :—

1. A Scene in *Coriolanus*.
2. The Chorus and Its Function in *Samson Agonistes*.

SECOND PAPER.

Thursday, 10th April 1890.—2 to 4 o'clock.

1. Either (a) State the general classification of Literature proposed in the Course, with the main sub-distribution proposed under each kind ; or (b) Mention, and briefly describe, the chief remains of the Anglo-Saxon Literature.

2. Either (a) Give some account of the Danish influence on the English Language, with reasons for the necessity of caution in distinguishing Danish words and forms ; or (b) Note the stages in the influx of the Latin of the Third Period, specifying the non-Latin elements that were introduced during the process.

3. Either (a) Give some account of the chief English Prose-writers and Prose-writings of the second half of the fourteenth century ; or (b) Name and describe some of Chaucer's Minor Poems, and the various works now reckoned as certainly or possibly Barbour's.

4. Either (a) Sketch the literary life of any *one* of the following :—Spenser, Bacon, Ben Jonson ; or (b) Add a brief note of literary description and information to any *ten* of the following names :—John Napier, Richard Hooker, John Lyly, Sir Philip Sidney, George Chapman, Robert Greene, Michael Drayton, Joshua Sylvester, Christopher Marlowe, Sir John Davies, Dr Donne, Bishop Hall, Robert Burton, Thomas Dempster, The Earl of Stirling, Phineas Fletcher, George Wither, Robert Herrick, George Herbert, James Shirley.

5. Either (a) Note some of the more peculiar phenomena of the Literary History of the British Islands during the twenty years of the Puritan Ascendancy from 1640 to 1660, illustrating by the life of Milton ; or (b) Describe the most notable effects of the Restoration on the subsequent Literature from 1660 to 1688, illustrating by the life of Dryden.

6. Either (a) Give the substance of Dr Johnson's estimate of Dryden's poetry, comparing it with the implied estimate of the same by Wordsworth ; or (b) Distinguish between the *objective* and the *subjective* genius in literature, illustrating the difference by examples from the history of English Poetry.

7. Explain, by indicating the context or otherwise, as many as you can of the following phrases and allusions in the prescribed readings :—

- (1.) "The burning of those Ephesian books by St Paul's converts."
- (2.) "I cannot praise a fugitive and cloistered vertue."
- (3.) "An oligarchy of twenty ingrossers."
- (4.) "We do not read that either Epicurus, or that libertine school of Cyrene, or what the Cynick impudence utter'd, was ever punished by the laws."
- (5.) "Settle's is said to have been the first play embellished with sculptures."
- (6.) "Charles could not run continually parallel with David."
- (7.) "Triplets and Alexandrines, inserted by caprice, are interruptions of that constancy to which science aspires."
- (8.) "My gracious silence, hail!"
- (9.) "ridges horsed
With variable complexions."
- (10.) "He lurched all swords of the garland."
- (11.) "He'll go, he says, and sowl the porter of Rome gates by the ears: he will mow all down before him, and leave his passage polled."
- (12.) "They say many young gentlemen flock to him every day, and fleet the time carelessly, as they did in the golden world."
- (13.) "It is a melancholy of mine own, compounded of many simples."

8. Arrange No. 1 of the following in its proper form of blank verse, without changing a word or the order of the words; and give the metrical formula and the prosodic name of each of the others :—

- (1.) "Thou art all that war and change have left me: years ago
I saved thee from the wreck; and for thy welfare since
then I have dragged on my pilgrimage in penitence
upon the hated shores I else had left for ever. I can
teach thee that there is healing in the sorest wounds
which friendship gives."
- (2.) "And feeding on herbs as a Nebuchadnezzar."
- (3.) "But still his passion grew more violent and strong."
- (4.) "And he asketh a seat 'mong the Peers of Great Britain."
- (5.) "Angel forms beside him run."
- (6.) "Nothing their blandishments move me, nothing their
prattle of comfort."
- (7.) "No—she never loved me truly: love is love for ever-
more."

N.B.—For No. 5 of the above the following may be substituted at the option of the Candidate :—

5. Either (a) Name, define, and exemplify any *six* of the Figures of

Speech ; or (b) Explain the quality of style called Propriety or Good Taste, and mention some common faults in Vocabulary and Syntax that interfere with this quality.

GEOLOGY.

Not more than Three Questions in each Division to be attempted.

A.

1. Give some account of the geological action of *Rain* and *Frost*.
2. What are the chief characteristics of *littoral marine deposits* ?
3. Describe the theories advanced by Darwin and J. Murray to explain the origin of *Coral Islands*.
4. Describe the influence of *Joints* in the formation of *cliffs*.
5. Give some account of *Natural Springs*.

B.

6. What is the mineralogical composition, origin, and geological habitus of the following rocks :—*Granite, Gneiss, Basalt, Serpentine, Greywacké, Marble, Anthracite* ?
7. Distinguish between *Slaty cleavage, Foliation, and Lamination*.
8. What are the characteristic features and origin of *Boulder Clay*, and what relation does that accumulation bear to the rocks of the district in which it occurs ?
9. Describe how *Granite, Limestone, and Basalt* are affected by “weathering.”
10. What is a *Comby Loae* ?

C.

11. Draw a section to illustrate the following structures :—*Overlap, Unconformity, Outlier, Fault, Dyke, Isoclinal strata*.
12. Describe the phenomena that usually accompany *intrusive sheets*.
13. Distinguish between *Local and Regional Metamorphism*.
14. Define the following :—*Boss, Neck, Slickensides, Prismatic joints, Segregation veins*.
15. What is meant by the “fan-shaped structure” of mountain-chains ?

D.

16. In what systems do *Foraminifera* play a prominent part as limestone-formers ?
17. What is the earliest known appearance of the following forms :—*Corals, Insects, Fishes, Amphibians, Marsupials, Birds, Primates* ?
18. Give some account of the *Flora* of the *Carboniferous* period.
19. Under what physical conditions were the *Eocene* strata of Europe deposited ?
20. What are *Trilobites, Ammonites, Belemnites, Enaliosaurs, Pterosaurs* ?

*EXAMINATIONS FOR HONOURS CERTIFICATES IN
ARTS FOR WOMEN.*

LATIN.

FIRST PAPER.

Friday, 11th April 1890.—9 to 12 o'clock.

I. For Translation :—

C. Plinius Calvinae suae S.

Si pluribus pater tuus vel uni cuilibet alii quam mihi debuisset, fuisset fortasse dubitandum an adires hereditatem etiam viro gravem. Cum vero ego ductus ad finitatis officio dimissis omnibus qui, non dico molestiores, sed diligentiores erant creditor solus exstiterim, cumque ego nubenti tibi in dotem centum milia contulerim praeter eam summam quam pater tuus quasi de meo dixit (erat enim solvenda de meo), magnum habes facilitatis meae pignus, cuius fiducia debes famam defuncti pudoremque suscipere ; ad quod ne te verbis magis quam rebus horter, quidquid mihi pater tuus debuit, acceptum tibi fieri iubebo. Nec est quod verearis ne sit mihi onerosa ista donatio. Sunt quidem omnino nobis modicae facultates, dignitas sumptuosa, reditus propter conditionem agellorum nescio minor an incertior ; sed quod cessat ex reditu frugalitate suppletur, ex qua velut fonte liberalitas nostra decurrit ; quae tamen ita temperanda est ne nimia profusione inarescat, sed temperanda in aliis, in te vero facile ratio constabit, etiamsi modum excesserit. Vale.

II. For Latin Prose :—

The contempt and hatred of the Duke were retaliated by Louis with equal energy, though he used a thicker veil to conceal his sentiments. It was impossible for a man of his profound sagacity not to despise the stubborn obstinacy which never resigned its purpose, however fatal perseverance might prove, and the headlong impetuosity which commenced its career without allowing a moment's consideration for the obstacles to be encountered. Yet the King hated Charles even more than he contemned him, and his scorn and hatred were the more intense, that they were mingled with fear ; for he knew that the onset of the mad bull, to whom he likened the Duke of Burgundy, must ever be formidable, though the animal makes it with shut eyes. It was not alone the wealth of the Burgundian provinces, the discipline of the warlike inhabitants, and the mass of their crowded population which the King dreaded, for the personal qualities of their leader had also much in them that was dangerous. The very soul of bravery, which he pushed to the verge of rashness, and beyond it—profuse in expenditure—splendid in his court, his person, and his retinue, in all which he dis-

played the hereditary magnificence of the house of Burgundy, Charles the Bold drew into his service almost all the fiery spirits of the age whose tempers were congenial ; and Louis saw too clearly what might be attempted and executed by such a train of resolute adventurers, following a leader of a character as ungovernable as their own.

SECOND PAPER.

Friday, 11th April 1890.—1 to 4 o'clock.

I. Translate with short notes :—

- (1) Contemplator item, cum se nux plurima silvis
Induet in florem, et ramos curvabit olentes.
Si superant fetus, pariter frumenta sequentur,
Magnaue cum magno veniet tritura calore :
At, si luxuria foliorum exuberat umbra,
Nequidquam pinguis palea teret area culmos.
Semina vidi equidem multos medicare serentes,
Et nitro prius et nigra perfundere amurca ;
Grandior ut fetus siliquis fallacibus esset,
Et quamvis igni exiguo properata maderent.
Vidi lecta diu, et multo spectata labore,
Degenerare tamen ; ni vis humana quotannis
Maxima quaeque manu legeret : sic omnia fatis
In peius ruere, ac retro sublapsa referri :
Non aliter, quam qui adverso vix flumine lembum
Remigiis subigit, si brachia forte remisit,
Atque illum in praeceps prono rapit alveus amni.

- (2) At saeva e speculis tempus dea nacta nocendi
Ardua tecta petit stabuli ; et de culmine summo
Pastorale canit signum, cornuque recurvo
Tartaream intendit vocem : qua protenus omne
Contremuit nemus, et silvae intonuere profundae.
Audiit et Triviae longe lacus : audiit amnis
Sulfurea Nar albus aqua, fontesque Velini ;
Et trepidae matres pressere ad pectora natos.
Tum vero ad vocem celeres, qua buccina signum
Dira dedit, raptis concurrunt undique telis
Indomiti agricolae : nec non et Troia pubes
Ascanio auxilium castris effundit apertis.
Direxere acies. Non iam certamine agresti
Stipitibus duris agitur, sudibusve praeustis ;
Sed ferro ancipiti decernunt, atraque late
Horrescit strictis seges ensibus, aeraque fulgent
Sole laccessita, et lucem sub nubila iactant :
Fluctus uti primo coepit cum albescere vento,
Paullatim sese tollit mare, et altius undas
Erigit ; inde imo consurgit ad aethera fundo.

(3) Negabat genus hoc orationis quidquam omnino ad levandam aegritudinem pertinere. Id enim ipsum dolendum esse dicebat, quod in tam crudelem necessitatem incidissemus. Nam illam quidem orationem ex commemoratione alienorum malorum ad malevolos consolandos esse accommodatam. Mihi vero longe videtur secus. Nam et necessitas ferendae condicionis humanae quasi cum deo pugnare prohibet admonetque esse hominem, quae cogitatio magno opere luctum levat, et enumeratio exemplorum, non ut animum malevolorum oblectet, adfertur, sed ut ille, qui maeret, ferendum sibi id censeat, quod videat multos moderate et tranquille tulisse. Omnibus enim modis fulciendi sunt, qui ruunt nec cohaerere possunt propter magnitudinem aegritudinis. Ex quo ipsam aegritudinem λύπην Chrysippus, solutionem totius hominis appellatam putat. Quae tota poterit evelli, explicata, ut principio dixi, causa aegritudinis. Est enim nulla alia nisi opinio et iudicium magni praesentis atque urgentis mali. Itaque et dolor corporis, cuius est morsus acerrimus, perfertur spe proposita boni et acta aetas honeste ac splendide tantam adfert consolationem, ut eos, qui ita vixerint, aut non attingat aegritudo aut perleviter pungat animi dolor.

(4) Hic exitus viri haud sane spernendi. Quinque et triginta stipendia in re publica fecerat, domi militiaeque clarus. Innocentiam iustitiamque eius non argueres; sermonis nimius erat: id unam septem annis quibus Moesiam, duodecim quibus praefecturam urbis obtinuit, calumniatus est rumor. In fine vitae alii segnem, multi moderatum et civium sanguinis parcum credidere. Quod inter omnes constiterit, ante principatum Vespasiani decus domus penes Sabinum erat. Caedem eius laetam fuisse Muciano accepimus. Ferebant plerique etiam paci consultum dirempta aemulatione inter duos, quorum alter se fratrem imperatoris, alter consortem imperii cogitaret. Sed Vitellius consulis supplicium poscenti populo restitit, placatus ac velut vicem reddens, quod interrogantibus quis Capitolium incendisset se reum Atticus obtulerat eaque confessione, sive aptum tempori mendacium fuit, invidiam crimenque adgnosuisse et a partibus Vitellii amolitus videbatur.

- (5) Iuppiter, Antiopae nusquam succurris habenti
 Tot mala? corrumpit dura catena manus.
 Si deus es, tibi turpe tuam servire puellam.
 Invocet Antiope quem nisi vincta Iovem?
 Sola tamen, quaecumque aderant in corpore vires,
 Regales manicas rupit utraque manu.
 Inde Cithaeronis timido pede currit in arces.
 Nox erat, et sparso triste cubile gelu.
 Saepe vaga Asopi sonitu permota fluentis
 Credebat dominae pone venire pedes,
 Et durum Zethum et lacrimis Amphiona mollem
 Expertast stabulis mater abacta suis.
 Ac veluti, magnos cum ponunt aequora motus,
 Eurys ubi adverso desinit ire Noto,

Littore sic tacito sonitus rarescit harenae,
 Sic cadit inflexo lapsa puella genu.
 Sera tamen pietas : natis est cognitus error.
 Digne Iovis natos qui tueare senex,
 Tu reddis pueris matrem, puerique trahendam
 Vinxerunt Dircen sub trucidis ora bovis.
 Antiope, cognosce Iovem : tibi gloria Dirce
 Ducitur in multis mortem habitura locis.
 Prata cruentantur Zetho, victorque canebat
 Paeana Amphion rupe, Aracynthe, tua.

THIRD PAPER.

Saturday, 12th April 1890.—9 to 12 o'clock.

I. Translate, with short notes :—

Ut gratas inter mensas symphonia discors
 Et crassum unguentum et Sardo cum melle papaver
 Offendunt, poterat duci quia coena sine istis ;
 Sic animis natum inventumque poema iuvandis,
 Si paullum summo decessit, vergit ad imum.
 Ludere qui nescit campestribus abstinet armis,
 Indoctusque pilae, discive, trochive, quiescit ;
 Ne spissae risum tollant impune coronae :
 Qui nescit, versus tamen audet fingere ! Quidni ?
 Liber et ingenuus, praesertim census equestrem
 Summam nummorum, vitioque remotus ab omni.
 Tu nihil invita dices faciesve Minerva ;
 Id tibi iudicium est, ea mens. Si quid tamen olim
 Scripseris, in Maeci descendat iudicis aures,
 Et patris, et nostras, nonumque prematur in annum,
 Membranis intus positis : delere licebit,
 Quod non edideris ; nescit vox missa reverti.

II. Translate and comment upon the following, with special reference to the words italicised :—

- (1) Quo magis exhaustae fuerint, hoc acrius omnes
 Incumbent generis lapsi *sarcire* ruinas,
 Complebuntque foros, et floribus horrea texent.
- (2) Verum anceps pugnae fuerat fortuna—*Fuisset* ;
 Quem *metui* moritura ? Faces in castra tulissem.
- (3) Tum Phoebus et Triviae solido de marmore *templum*
 Instituam, *festosque dies* de nomine Phoebi.
- (4) Ne quaere doceri,
 Quam poenam, aut quae forma viros, fortunave *mersit*.
- (5) Nec una *cohors togata* defendit nunc Galbam, sed detinet : cum
 vos adspexerit, cum signum meum acceperit, hoc solum erit certamen,
 quis mihi plurimum imputet.
- (6) Pridie idus Martias commendata patribus re publica *reliquias*

Neronianarum sectionum nondum in fiscum conversas revocatis ab exilio concessit, iustissimum donum et in speciem magnificum, sed festinata iam pridem exactione usu sterile.

(7) Onerabat paventium curas *ordo Mutinensis* arma et pecuniam offerendo, appellabatque patres conscriptos intempestivo honore.

(8) Ceterae cohortes ad tuendam urbem L. Vitellio fratri datae: ipse nihil e solito luxu remittens et diffidentia properus festinare comitia, quibus consules in multos annos destinabat; *foedera* sociis, *Latium* externis dilargiri.

(9) Signo ultionis in accusatores dato, petit a Caesare Iunius Mauricus, ut *commentariorum principalium* potestatem senatui faceret, per quos nosceret quem quisque accusandum poposcisset.

III. Answer any *five* of the following questions:

(1) Describe Cicero's attitude towards Julius Cæsar, from the beginning of the Civil War to the murder of the Dictator.

(2) Give a brief account of the revolt of Civilis, pointing out the circumstances under which such an outbreak became possible.

(3) Illustrate from the history of the first century A.D. the various principles that determined the succession to the Empire.

(4) "What do you know of the divisions, officers, and strength of the Roman Army at any particular period? Explain:—*Optio—Evocatus—Speculator—Tessera—Pilum—Hasta Pura—Corona—Civica—Principia—Augurale—Porta Decumana*.

(5) Describe shortly Cicero's attitude towards each of the four chief schools of philosophy, recognised in his time.

(6) In what does the originality of Virgil consist?

(7) Give some account of the history of the legend on which the story of the *Aeneid* is based.

(8) What materials had Tacitus at his disposal for the writing of history?

(9) What can be gathered from the writings of Tacitus as to the religious and moral ideas of the author?

(10) The evidence of Cicero and Horace as to the character and influence of the Roman drama.

MATHEMATICS.

FIRST PAPER.

Friday, 11th April 1890.—9 to 12 o'clock.

1. The distance of the middle point of the square on the hypotenuse of a right-angled triangle from either of the sides containing the right angle is equal to half the sum of the sides.

2. In a cyclic quadrilateral, whose diagonals are at right angles, the feet of the perpendiculars from the intersection of the diagonals upon the sides are the angular points of a second cyclic quadrilateral.

3. State and prove the characteristic property of the radical axis of two circles. Of three equal circles, each touches the other two externally, and touches a fourth circle internally; find the relation between the common radius of the first three circles, and the radius of the fourth circle.

4. Show that the straight lines which join the middle points of opposite edges of a tetrahedron meet in a point.

If the opposite edges are at right angles, two by two, show that the lines joining their middle points are equal.

5. Give a construction for the points in which any straight line cuts a conic of which the focus and directrix are given.

Through a given point draw a secant to a conic, such that the chord intercepted shall subtend a given angle at the focus.

6. The tangents to a conic, from an external point subtend equal angles at the focus.

If a parabola touches the three sides of a triangle, its focus lies on the circumscribing circle.

7. If $\phi(x) = x^3 + px^2 + qx$, find the condition that $\phi(x) - \phi(a)$ should be divisible by $(x-a)^2$.

Prove the identity

$$\Sigma \frac{bc}{(a-b)(a-c)}(x-a)(y-a)(z-a) \equiv xyz - abc,$$

where Σ refers to the variables a, b, c .

8. Prove that the Arithmetic Mean of n unequal positive integers is greater than the Geometric Mean.

Show that

$$(a+b+c)\left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right) > 9,$$

where a, b and c are positive integers.

9. Determine the values of x which will give a maximum or minimum value to the fraction

$$\frac{ax^2 + 2bx + c}{a'x^2 + 2b'x + c'}.$$

If $ax + by = k$, find the minimum value of $x^2 + y^2$.

10. Find an expression for the sum of the cubes of the first n natural numbers.

Sum to n terms the series whose n^{th} terms are

$$(1.) x^2 + x^{2n-2}y^2 + \dots + x^2y^{2n-2} + y^{2n};$$

$$(2.) 1 + 2x + 3x^2 + \dots + nx^{n-1}.$$

11. Find for what values of p the series $\Sigma 1/n^p$ is convergent.

Examine the convergency of the logarithmic and the exponential

series, and of the series $\Sigma \frac{n^3}{(n+1)(n+2)(n+3)}$.

12. If the probabilities of two independent events be p and q , the probability that they will happen together is pq .

Of the 26 letters of the alphabet, 5 are taken at random. Find the probability that this group of 5 letters contains 3 consecutive letters.

SECOND PAPER.

Friday 11th April 1890.—1 to 4 o'clock.

1. Find the value of all the angles which have a given sine.

Show that $\operatorname{cosec} a + \operatorname{cosec} \left(\frac{\pi}{3} - a \right) + \operatorname{cosec} \left(\frac{\pi}{3} + a \right) = 3 \operatorname{cosec} 3a$.

If $\sin (\theta + 2\alpha) + \sin (\theta + 2\beta) + \sin (\theta + 2\gamma) = 3 \sin \theta$, where $\alpha + \beta + \gamma = \pi$; then

$$\cot \theta = \cot \alpha + \cot \beta + \cot \gamma.$$

2. Show that in any triangle $a = b \cos C + c \cos B$.

Hence, or otherwise, show that if $A + B + C = 180$, then $2 \cos A \cos B \cos C + \cos^2 A + \cos^2 B + \cos^2 C - 1 = 0$.

The sides of a quadrilateral are a, b, c, d , and the diagonals h and k . If A be the area of the quadrilateral and ω one of the angles between the diagonals, then

$$\begin{aligned} a^2 - b^2 + c^2 - d^2 &= 2hk \cos \omega; \\ 4A &= (a^2 - b^2 + c^2 - d^2) \tan \omega. \end{aligned}$$

3. Show how to find by means of Demoivre's Theorem, the n values of the n^{th} root of any complex number.

If n is prime, and α is any one of the n^{th} roots of $+1$, show that the n roots may be written $1, \alpha, \alpha^2, \dots, \alpha^{n-1}$; and that, if p is not a multiple of n , $1 + \alpha^p + \alpha^{2p} + \dots = 0$.

4. Sum the following series

$$(1) \sin \alpha + \sin (\alpha + \delta) + \dots + \sin (\alpha + n - 1 \delta)$$

$$(2) \sin \alpha + c \sin (\alpha + \delta) + \dots + \sin c^{n-1} \sin (\alpha + n - 1 \delta)$$

$$(3) \frac{1}{\cos \alpha \cos 2\alpha} + \frac{1}{\cos 2\alpha \cos 3\alpha} + \dots + \frac{1}{\cos n\alpha \cos (n+1)\alpha}$$

5. Write down the middle term of $(1+x)^{2n}$

If S_{pr} denote the coefficient of x^p in the expansion of $(1+x)^{2(n-r)} (1-x)^{2r}$, then

$S_{p0} - n S_{p1} + \frac{n(n-1)}{1.2} S_{p2} - \&c.$ is equal to zero for all values of p except $p=n$, when its value is 4^n .

6. Evaluate $\sum_{n=\infty} \left(1 + \frac{1}{n} \right)^n$ as an infinite series.

Find the value of $\sum_{n=1}^{\infty} \left(1 + \frac{1}{n}\right) n^2$.

Sum to infinity the series whose n^{th} terms are $\frac{a+bn+cn^2}{n!}$ and $\frac{(a+bn+cn^2)x^n}{n!}$.

7. Show by the theory of projections, or otherwise, that if x, y, z be the projections of any line PQ upon the sides of the triangle of reference then the algebraic sum $ax + by + cz = 0$.

Hence find a symmetrical expression in x, y, z for the distance $\overline{PQ^2}$.

8. Find the equation to the radical axis of two given circles; and hence show that the radical axes of three circles taken in pairs are concurrent.

A is a point on the axis of x , and B a point on the axis of y , such that $OA + OB$ is constant. Circles are described with A and B as centres, and with a given radius r . Find the equation of the locus of the intersection of the radical axis of the two circles with their line of centres.

9. In an ellipse the sum of the squares of the reciprocals of two semi-diameters at right angles is constant.

Find the locus of the point of intersection of tangents at the extremities of two diameters at right angles.

10. If the vertices of a conic are given in position, show that the locus of the extremities of the latus rectum consists of two parabolas.

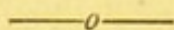
11. Find the equation of the polar of a point with respect to the circle $x^2 + y^2 = 2ax$.

A series of circles touch a given straight line at a given point. Prove that the locus of the pole of any straight line with respect to the circles is a hyperbola.

12. Find the equation of the conic inscribed in the triangle of reference in areal or trilinear co-ordinates.

Determine the condition that it should be a parabola, and find the co-ordinates of its focus.

UNIVERSITY LOCAL EXAMINATIONS.



[*These Examinations were instituted to supply a common test of attainment both for pupils of public schools and for those privately educated. The Junior Certificate qualifies pro tanto for the Medical Preliminary in the University of Edinburgh.*]

REGULATIONS FOR 1891.

The Examinations will commence on Tuesday, 2nd June 1891, at 9 A.M., and will be continued for three days.

The BOARD grant Local Examination Certificates of two grades—JUNIOR and SENIOR Certificates. These Certificates are signed by the Vice-Chancellor of the University, and specify the subjects in which Candidates have passed.

The subjects of examination are divided into three classes,—PRELIMINARY SUBJECTS, to be taken by all Candidates; SPECIAL SUBJECTS, from two departments of which all Candidates must make a selection; and EXTRA SUBJECTS, in which any Candidate may volunteer.

I.—PRELIMINARY SUBJECTS,

In which all Candidates must undergo Examination.

1. *English*.—Writing from Dictation. The elements of English Grammar and analysis. The *analysis* will be limited to pointing out the number of clauses in a sentence, the relations of principal and subordinate clauses, and distinguishing Subject, Predicate, and Object in each clause. English Composition.

2. *History and Geography*.—(a) History of England and Scotland, 1603-1714. (b) The General Geography of Europe. Only the principal capes, mountains, rivers, and the capital of each country required (but in Great Britain—excluding Ireland—the counties, county towns, and principal centres of industry also). *Outline map of Great Britain to be filled up to the extent of the above requirements.*

*3. *Latin*.—Grammar; Cornelius Nepos (the lives in White's "Grammar School Texts"), and *thorough parsing of the same*.

* This subject will be optional for Female Candidates, except when Latin is taken as a Special Subject for the Junior or Senior Certificate.

4. *Arithmetic, including Fractions, Vulgar and Decimal*.

5. *Scripture History*.—Genesis, Exodus i.-xxiii., and Gospel of St Luke.

Note.—When parents or guardians request that the Scripture paper be omitted, a paper in French Grammar (accidence generally, excluding irregular verbs) will be substituted. Candidates for *Junior* or *Senior* Scripture Knowledge Certificate must have passed the Preliminary Examination, or take it along with the Junior or Senior, as the case may be.

N.B.—The Preliminary Certificates of Glasgow, St Andrews, Aberdeen, Oxford, and Cambridge, the Government Admission Examination in Training Colleges, and the Matriculation Examination of the Royal University, Ireland, are accepted instead of the above Examination. (See also p. 17.)

II.—JUNIOR CERTIFICATE.¹

At least *two*, and not more than *four* of the following subjects are to be selected by the Candidate. The selection must be made from at least two of the Departments A, B, C.

DEPARTMENT A.

1. *Latin*.—A passage for translation into English, with grammatical and general questions. (Cæsar, *De Bello Gallico*, B. IV.; and *Selections from Ovid's Fasti and Epistles*, by Shuckburgh, to p. 30 (Macmillan).

A short easy piece of unprepared Latin will be set.

An easy passage of English, for translation into Latin (unusual words being given). [Special importance is attached to this exercise, and to the grammatical questions on the passages given for translation into English.]

¹ This Certificate is recommended by the *Medical Council to the Licensing Boards* as a sufficient test of Preliminary Education, so far as it includes the subjects demanded by the Council, viz. :—(1) English Language, including Grammar and Composition; (2) English History; (3) Modern Geography; (4) Latin, including Translation from the Original and Grammar; (5) Elements of Mathematics, comprising (a) Arithmetic, including Vulgar and Decimal Fractions; (b) Algebra, including Simple Equations; (c) Geometry, including the first book of Euclid, or the subjects thereof; (6) Elementary Mechanics of Solids and Fluids, comprising the Elements of Statics, Dynamics, and Hydrostatics; Blaikie's "Mechanics" (this paper will be drawn to suit the requirements of Medical Council); (7) One of the following optional subjects:—Greek French, German, Italian, any other Modern Language, Logic.

2. *Greek*.—A passage for translation into English, with grammatical and general questions. (Xenophon's *Anabasis*, B. I.)

Simple sentences to be turned into Greek.

3. *French*.—H. Malet, *Capi et sa troupe* (ed. Tarver), for translation into English, with questions on the accidence of French grammar and parsing.

An easy English passage for translation into French.

4. *German*.—Hachette's Reader *Lust und Lehre*, for translation into English, with questions on the accidence of German grammar.

An easy English passage for translation into German.¹

DEPARTMENT B.

1. *English*.—Keats's *Hyperion*, Book i.²; Bacon's Essays, Nos. xxvii.-xxxiv. inclusive.³ Parsing, analysis (not in great detail), and questions in words and Grammar. Also History of English Literature, 1579-1625. A short Composition.

2. *History and Geography*.—(a) History of England and Scotland, 1714-1837. (b) Europe as in Preliminary examination, and the Geography of the British Islands in more detail, including general, physical, and industrial features. (Outline Map of Great Britain and Ireland to be filled up.)

3. *Scripture History*.—Genesis, Exodus i.-xxiii., Joshua, and Gospel according to St Luke.

DEPARTMENT C.

1. *Mathematics*.—Arithmetic. Euclid, Books i., ii., and iii. or their equivalents. The Elements of Algebra, as far as Simple Equations, inclusive.

2. *Natural Philosophy*.—The properties of Matter. The Laws of Motion. The Parallelogram of Forces and the so-called Mechanical Powers.

A general knowledge of the earth's dimensions and figure; the cause of the seasons; the distances, motions, and physical characters of the heavenly bodies.

Such information may be gained from Balfour Stewart's *Lessons in Elementary Physics*, and Norman Lockyer's *Elementary Lessons in Astronomy*.

3. *Physical Geography*.—The Atmosphere, its composition, pressure, temperature, moisture, and movements. The Sea, its distribution, depths, temperature, and movements. The Land, its form, geysers, volcanoes, movements; the circulation of water over its surface. Life: some of the leading features in the distribution of plants and animals over the globe. Geikie's *Elementary Lessons in Physical Geography*.

¹ The Candidates are recommended to use the German script in writing their papers.

² Clarendon Press edition.

³ Collins's *English Classics*.

EXTRA SUBJECTS,

In which Candidates may volunteer for examination. The values obtained in these will be acknowledged on the certificate granted, but not added to the Candidate's aggregate marks as qualifying for a certificate.

A.—DEPARTMENT OF DRAWING.

Drawing in Outline from the Flat.

B.—DEPARTMENT OF MUSIC.

The Grammar of Music.

III.—SENIOR CERTIFICATE.¹

At least *two*, and not more than *four* of the following subjects are to be selected by the Candidate. The selection must be made from at least two of the Departments A, B, C, and D.

DEPARTMENT A.

1. *Latin*.—A paper consisting of, 1st, a passage of simple English to be translated into Latin; 2d, four passages, such as the Candidate might, without previous preparation in them, be expected to translate; two of these, at the choice of the Candidate, to be translated into English [the passages selected are generally taken from the following authors—Virgil, Horace, Ovid, Cicero, and Livy]; and 3d, grammatical questions, arising out of the passages, or general.

2. *Greek*.—An easy passage (or passages), prose or verse, *e.g.*, from Xenophon, Lucian, Homer, for translation into English, with grammatical questions. A few easy sentences from English into Greek.

3. *French*.—*Ad aperturam* translation and retranslation, with questions on the accidence and syntax of French grammar, and French literature, viz., Montaigne, Corneille, Racine, Molière, Pascal, Bossuet, Fénelon, Lafontaine, Rousseau, Voltaire, Chateaubriand, Staël, Béranger, Lamartine, G. Sand, V. Hugo. Questions on Idioms will be taken from Bué's "First Steps in French Idioms."

¹ This Certificate is recommended by the Medical Council to the Licensing Boards as a sufficient test of Preliminary Education, so far as it includes the subjects demanded by the Council, viz.:—(1) English Language, including Grammar and Composition; (2) English History; (3) Modern Geography; (4) Latin, including Translation from the Original and Grammar; (5) Elements of Mathematics, comprising (a) Arithmetic, including Vulgar and Decimal Fractions; (b) Algebra, including Simple Equations; (c) Geometry, including the first book of Euclid, or the subjects thereof; (6) Elementary Mechanics of Solids and Fluids, comprising the Elements of Statics, Dynamics, and Hydrostatics; Blaikie's "Mechanics" (this paper will be drawn so as to suit the requirements of the Medical Council); (7) One of the following optional subjects:—Greek, French, German, Italian, any other Modern Language, Logic.

4. *German*.—*Ad aperturam* translation and retranslation, with questions on the accidence and syntax of German grammar, and German literature, as follows: Nibelungen-Lied, Luther, Klopstock, Lessing, Wieland, Herder, Goethe, Schiller, Jean Paul F. Richter, Heine, Körner, Uhland, Rückert, Freytag, Auerbach.¹

DEPARTMENT B.

1. *English*.—Composition; Parsing and Analysis of a passage in prose or verse; Grammatical Questions, including Derivation of Words and Prosody; History of English Literature, 1579-1660, and more fully than for the Junior Certificate; Shakespeare's "King Henry V.;"² "Piers the Plowman" (Prologus: Passus i.)³; Trench's "English, Past and Present," Lectures i.-iv. and vii. (latest edition).

2. *History and Geography*.—(a) "Thirty Years' War," or, "Frederick the Great" (Longmans' Series). [*The Candidate is expected to know the Geography of the History.*] (b) Colonies and Dependencies of the British Empire (Outline Maps of Australia, Cape Colony, and Canada to be filled up); or Europe, with outline maps of France, and the German Empire.

3. *Logic*.—Jevons's *Elementary Lessons in Logic* (Macmillan and Co.).

4. *Bible Knowledge*.—Farrar's "Life of Christ," i.-xxxiv.

DEPARTMENT C.

1. *Mathematics*.—Arithmetic. Euclid, Books i.-iv. and vi., or Books i.-iii. and v. of the Text-Book issued by the Association for the Improvement of Geometrical Teaching. Algebra to Quadratic Equations inclusive. Plane Trigonometry.

2. *Natural Philosophy*.—Elements of *Mechanics* and of *Experimental Physics*. (Balfour Stewart's *Lessons in Elementary Physics*; and Blaikie's *Elements of Dynamics*, or Thomson and Tait's *Elements of Natural Philosophy*.)

DEPARTMENT D.

1. *Chemistry*.—The relations to one another of Acids, Bases, Salts, and Metals—Oxidation and Reduction. The physical characters, methods of preparation and chemical characters of the following non-metallic elements and their chief compounds:—Oxygen, Hydrogen, Nitrogen, Carbon, Sulphur, Phosphorus, Chlorine, Bromine, Iodine, Silicon. The oxides and salts of the following metals:—Potassium, Sodium, Barium, Calcium, Magnesium, Iron, Zinc, Manganese, Chromium, Aluminium, Cobalt, Nickel, Copper, Mercury, Lead, Silver, Gold, Platinum, Tin, Arsenic, Antimony, Bismuth.

The following text-books are referred to as indicating the amount and kind of knowledge expected:—Roscoe's *Lessons in Elementary Chem-*

¹ Candidates are recommended to use the German script in writing.

² Clarendon Press edition recommended.

³ Skeat, Clarendon Press, recommended.

istry, Lessons i.-xxvi. ; Williamson's *Chemistry for Students* Chaps. i.-xxxiii. ; Wilson's *Inorganic Chemistry* (Chambers's Educational Course); Brown's *Chemistry* (Chambers's Elementary Science Manuals).

2. *Zoology*.—(a) The principles of Classification, and the distinctive characters of the more important Classes of the Animal Kingdom. (b) The principles of Geographical Distribution of Animals. (c) The general structure and habits of the following forms :—Amœba, Hydra, Actinia, Asterias, Lumbricus, Anodonta, Homarus, Blatta, Ascidia, Gadus, Rana, Columba, Ornithorhynchus, Lepus. (d) The Life-History of Aurelia, Ascidia, Rana. *Text-Books*—Lloyd Morgan's *Biology*; Packard's *Zoology*.

3. *Botany*.—The characteristic features of the following classes of the Vegetable Kingdom :—Algæ, Fungi, Musci, Filicineæ, Monocotyledones, Dicotyledones. An elementary knowledge of the Morphology and Physiology of plants as illustrated in the life-histories of *Helianthus*, *Aspidium*, *Funaria*, *Vancheria*, *Mucor*. The points in the life-histories of these plants to which attention should be directed are :—

Helianthus (*Sunflower*). The structure of the fruit and seed. The embryo and its parts; its position in the seed. Germination; the external conditions required for germination, how they operate; changes which take place within the seed during germination; first appearance of the embryo outside the seed and the general course of its development into the mature plant. The external morphology of the mature plant (sporophyte). The mutual relationships and arrangement of its members,—root, stem (hypocotyl, foliage-leaf-region, bract-leaf-region, floral-leaf-region), leaf (cotyledon, foliage-leaf, bract-leaf, floral-leaf), sporangium (pollen-sac, nucellus). The form and branching of the root; its internal anatomy. The structure of the apex of the root; the root-cap. The origin of lateral roots. The function of the root in fixing the plant and in absorbing nourishment; the form in which and the process by which nourishment is absorbed by the root; the chief substances absorbed by the root. The form and branching of the vegetative stem; its internal anatomy. The structure of the apex of the stem; the apical bud. Function of the stem in supporting leaves and giving passage to nourishment; tissues through which and directions in which nutrient fluids move; characters of nutrient fluids. The inflorescence, its characters. The torus. The form of the cotyledon and the foliage-leaf; the internal anatomy of the foliage-leaf. The function of the foliage-leaf; essential facts of respiration, transpiration, carbon-assimilation; the chief form in which nutrient material appears in the foliage-leaf; essential facts of metabolism. What is meant by growth; how nutrient material is applied in growth. The form of the phyllaries and bracteole. The form of the floral-leaves (sepal, petal, stamen, carpel). The structure of the anther with microsporangia (pollen-sacs) and microspores (pollen-grains), and of the macrosporangium (ovule) and macrospore (embryo-sac). The placenta. Mode of pollination; adaptation to cross-pollination. Germination of micro-

spores (pollen-grain) on stigma. Arrangement of antipodal cell and egg-apparatus in macrospore (embryo-sac). General facts connected with impregnation and formation of fruit and seed with embryo. (*Note*: the details of development will not be required).

Aspidium (*Shield-fern*). The external morphology of the mature sporophyte. The mutual relationships and arrangement of its members; root, stem, leaf (cotyledon, foilage-leaf), sporangium. The form and branching of the root; its internal anatomy. The structure of the apex of the root; the root-cap, the origin of lateral roots. The function of the root in fixing the plant and in absorbing nourishment; the form in which and the process by which nourishment is absorbed by the root; the chief substances absorbed by the root. The form of the stem, its internal anatomy. The structure of the apex of the stem; the apical bud. Function of the stem in supporting leaves, giving passage to nutrient fluids, and serving as a reservoir of reserve material; tissues through which and directions in which nutrient fluids move; characters of nutrient fluids and form in which nutrient material is stored. The form and branching of the cotyledon and foliage-leaf, their internal anatomy. Formation of buds on petiole of foliage-leaf. The function of the foliage-leaf; essential facts of respiration, transpiration and carbon-assimilation; the chief form in which nutrient material appears in the foliage-leaf; essential facts of metabolism. What is meant by growth; how nutrient material is applied in growth. The form and structure of the sporangium; the placenta; paraphyses. The spore, its structure. Rupture and dehiscence of the sporangium. The germination of the spore; conditions of germination of spore; formation of oophyte (prothallium). The external morphology of the mature oophyte. Mutual relationships and arrangement of its members—thallus, rhizoid, sexual organs. The form of the thallus and its mode of growth. Its anatomy. Mode of feeding. The form and structure of the rhizoid; its function. The form and structure of the antheridium; the spermatozoid, its form. The form and structure of the archeogonium; the egg-cell. Process of conjugation. Product of conjugation; the embryo, its parts and attachment to thallus; its growth into mature sporophyte.

Funaria (*Cord-Moss*). The external morphology of the mature oophyte. The mutual relationships and arrangement of its members—rhizoid, stem, leaf, sexual organs. Habit of the plant. The form and structure of the rhizoid. Its function and how performed. The form and internal anatomy of the stem and leaf. Their function and how performed. The perichæcium. The antheridium, its form and structure; the spermatozoid; the paraphysis. The archeogonium, its form and structure; the egg-cell; the paraphysis. Process of conjugation. Product of conjugation; the embryo, its attachment to the oophyte. The external morphology of the mature sporophyte. Its mode of life, as a parasite on the oophyte. Its parts and their relationships—seta, capsule with sporangium, calyptra. The structure

and origin of the calyptra. The structure of the seta. The parts of the capsule, wall, columella, operculum, peristome, their form and structure. The sporangium and spores, their structure. Rupture of sporangium and discharge of spores. Germination of spores; conditions of germination. The protonema, its structure and form. Production of mossbud upon the protonema, formation of mature oophyte.

Vaucheria. The external morphology of the mature plant. The mutual relationships and arrangement of its parts. Habit of the plant. The filamentous thallus; its tubular character and its structure; the rhizoid. Mode in which nutrition is effected; products of nutritive function. The zoosporangium and the zoospore; their structure and function; germination of zoospore. The antheridium, its structure and contents; the oogonium, its structure and contents. Process of conjugation. Result of conjugation; germination of fertilised egg-cell.

Mucor (*White Mould*.) The external morphology of the mature plant. The mutual relationships and arrangement of its parts. Habit and saprophytic mode of life. The tubular branched mycelium; its structure. Mode in which nutrition takes place; products of nutritive function. The gonidangioophore, gonidangium and gonidium—their structure and development. Their function. Mode of rupture of sporangium; the collar. Germination of gonidium. The conjugating gametes and their suspensors. Process of conjugation; the zygospore. Germination of zygospore. Formation of "*Mucor*-yeast"; conditions under which formed. Its functions and mode of life.

Candidates will be expected to have a practical knowledge of the plants above mentioned, and specimens of parts of any of them may be submitted to candidates for description and identification. Flowers from the following families:—Ranunculaceæ, Cruciferae, Leguminosæ, Rosaceæ, Umbelliferae, Compositæ, Scrophularineæ, Labiatae, Liliaceæ, and Graminæ, may also be submitted for analysis, and the candidate will be expected to recognise the inflorescence, the symmetry, and the regularity of parts, to determine the relative position and the amount of union of parts, and to draw the floral diagram. (Prantl & Vines' *Text Book of Botany*; Bower & Vines' *Practical Botany*.)

4. *Physiology*.—The structure and functions of the tissues of the body,—namely, epithelium, fibrous tissues, cartilage, bone, muscle, nerve fibres, and nerve cells. The structure and function of the heart and blood vessels. The circulation of the blood. The structure and function of the blood corpuscles. The composition of the blood and its changes in the capillaries of the lungs, and in those of the system generally. The structure of the lungs, the mechanism by which the air is moved into and out of the lungs during ordinary respiration. The changes of the air during respiration. Food, mastication, secretion and functions of saliva, deglutition. Secretion and functions of the gastric juice, bile, pancreatic and intestinal juices. Matters absorbed from stomach and intestine by radicles of portal vein and lacteals. The glucogenic function of the liver. The functions of the lymphatic system. The functions

of skin and kidneys. The nature of reflex action. The functions of the two roots of a spinal nerve. The functions of the spinal cord, medulla oblongata, and convolutions of the cerebrum. A general knowledge of the structure and functions of the parts concerned in sight, hearing, smell, taste, and touch. Text-book recommended :—Huxley's *Lessons in Physiology*.

5. *Geology*.—Composition, structure, and origin of the more important kinds of Rocks. Structure of the Earth's Crust. Origin of Mountains, Tablelands, and Valleys. The Geological History of the Earth; leading characters of Palaeozoic, Mesozoic, and Cainozoic Periods. (Geikie's *Elementary Lessons in Physical Geography*; Jukes' *School Class-Book of Geology*.)

DEPARTMENT E.

Commercial Certificate.

1. *Arithmetic*.—Arithmetic, including Foreign Weights and Measures, Currencies and Exchange, and the Principles of Book-keeping, by Double Entry.

2. *Commercial Geography*.—Questions will be set of a general kind, including the products of various countries; also more special questions on some selected country. Until further notice, India and Burmah shall be selected.

3. *Commercial History*.—Questions will be set on some selected subject to be changed from time to time. Until further notice Book IV. of Adam Smith's "Wealth of Nations," Chapters I.-VII.

4. *The Elements of Economics*.—Questions will be set on the general principles of the subject, on which candidates are recommended to read "The Economics of Industry," by Professor Marshall, and a "Brief Text-book of Political Economy," by Professor Walker.

5. *Either French or German*.—The examination will include commercial correspondence and translations of passages not specially prepared.

N.B.—In Department E all the subjects must be taken, though not necessarily at one time, and a Special Certificate is given.

EXTRA SUBJECTS,

In which Candidates may volunteer for Examination, the values obtained being acknowledged in the Certificate granted, but not added to the Candidate's aggregate marks.

A.—DEPARTMENT OF DRAWING.

(a.) Shading or Painting from a Model, in Chalk, Sepia, or Colour.

(b.) Model Drawing.

(Candidates should prepare for this examination by drawing ordinary household objects.)

(c.) Perspective.

(A good elementary work on the subject should be studied.)

Also Chesneau's "English School of Painting" in Cassell's Fine Art Library.

B.—DEPARTMENT OF MUSIC.

The Grammar of Music and Harmony.

PRIVILEGES ATTACHING TO THE CERTIFICATES.

1. The Senior Certificate, when it bears that the holder has passed in Latin, Greek, and Mathematics, may be presented by a Student at the time of his entrance to the University, and will be accepted by the Professors in the Faculty of Arts as evidence of qualification to attend the higher classes in these subjects. The holder will thus have the advantage of entering for the *Curriculum of Three Sessions in Arts without further examination*.

N.B.—The Senior Certificate is thus equivalent to a recognised *Schools Leaving Certificate* for the Universities of Scotland. It is approximately on the same level as the Government "Higher Grade."

2. The Junior Certificate is *pro tanto* equivalent to the Medical Preliminary Examination.

3. Ladies who hold the Senior Certificate are exempted from the Entrance Examination for Girton College, Cambridge.

4. Holders of the Senior Certificate above eighteen years of age are recognised as Assistants in State-aided Schools.

BURSARIES.

IN CONNECTION WITH THE ASSOCIATION FOR THE UNIVERSITY EDUCATION OF WOMEN—JUNE 1891.

To be competed for at the Edinburgh University Local Examinations, and held on condition of studying for the University Certificate in Arts for Women. (Payable when tickets are taken for the Association Classes in November 1891.)

N.B.—These Bursaries cannot be held along with any other Bursary or Scholarship whatsoever. Holders of two years' Bursaries must study in the Association Classes for at least two years.

For Candidates taking Honours in Senior Subjects.

1. The Mair Bursary, about £30 for two years, for Candidates intending to follow a profession, to be won by the Candidate who takes the highest number of marks in three subjects, provided that she has taken Latin as a preliminary subject. If Teaching be chosen as a

profession, the Candidate must undertake to qualify at St George's Training College, Edinburgh.

2. The Earl of Zetland's Bursary, about £20 for one year, to be won by the Candidate who takes the highest number of marks in three or more subjects, one of which must be Latin or Mathematics.

3. The Crudelius Bursary, £15 for two years, to be won by the Candidate who takes the highest number of marks in three or more subjects, one of which must be English and another Latin or Mathematics, and who undertakes to study for the Honour Certificate in Arts for Women in English Literature.

4. The Students' Bursary, £5 for one year, the gift of the Association Students, to be won by the Candidate who takes the highest number of marks in three or more subjects.

BURSARIES OFFERED THROUGH THE COMMITTEE OF THE ST GEORGE'S ORAL AND CORRESPONDENCE CLASSES (LATE ST GEORGE'S HALL CLASSES).

For Oral and Corresponding Students of the St George's Classes and Pupils of the St George's High School for Girls.

1. £10 offered by Miss Urquhart, to the Girl (holder of no other Bursary) who takes the highest marks, not under an average of 70 per cent., in three Senior Subjects, one being Latin or Mathematics, and agrees to study for the Edinburgh University Certificate in Arts for Women.

Competitors must have studied two of the Subjects in the St George's Classes, during the session 1890-91, for the entire course of the time during which instruction is given in those selected, and must intend to become teachers.

2. £10 offered by the Students of the St George's Classes, to the Girl (holder of no other Bursary) who takes the highest marks, not under an average of 70 per cent., in *three* Junior Subjects, including Latin or Mathematics, and agrees to study for the Senior Certificate.

Competitors must have studied two of the Subjects in the St George's Classes, during the Session 1890-91, for the entire course of the time in which instruction is given in those selected.

3. £5 offered by Miss Houldsworth to the Girl who having, previous to June 1891, passed in the Preliminary Subjects, takes the highest marks, not under an average of 70 per cent., in Logic, Senior French, and Senior History and Geography.

Competitors must have studied two of the above Subjects in the St George's Classes, during the Session 1890-91, for the entire course of the time in which instruction is given, and the winner must agree to continue her studies in a way approved by the Committee.

4. The M'Glashan Bursary of £5, tenable for two years, to the Girl (holder of no other Bursary) who takes the highest marks, not under an average of 70 per cent., in the Preliminary Subjects, including Latin and Scripture.

Competitors do not necessarily require to be members of the Scripture Class, but must have studied Preliminary Grammar, Arithmetic, History, Geography, and Latin in the St George's Classes during the entire course of the time in which instruction is given. The winner, if over eighteen years of age, must agree to study for the Senior Certificate; but, if under eighteen, she may agree to study either for the Junior or the Senior Certificate. Candidates taking Special Subjects are not eligible for this Bursary.

All particulars relating to the above Bursaries may be obtained on application to the Secretary, St George's Classes, 5 Melville Street, Edinburgh.

BURSARIES OFFERED BY THE UNIVERSITY LOCAL EXAMINATION BOARD.

1. A Bursary of £5 to the Candidate, Boy or Girl (not gaining any other bursary or scholarship, from whatever source derived), who takes the highest aggregate of marks in three Junior subjects, including English and either Latin or Mathematics (the aggregate of marks not being under 70 per cent.).

2. A Bursary of £5 to the Boy (not gaining any other bursary or scholarship, from whatever source derived) who takes the highest aggregate of marks in three Junior subjects (the aggregate of marks not being under 70 per cent.).

3. A Bursary of £10 for one year to the Boy standing highest in the Senior Examination (the aggregate of marks not being under 70 per cent.), and who desires to enter the University of Edinburgh. If he does not purpose entering the University, a prize of £5 will be given.

ABSTRACT OF THE RECEIPTS AND PAYMENTS OF MISS GUTHRIE WRIGHT, HONORARY TREASURER OF THE EDINBURGH ASSOCIATION FOR THE UNIVERSITY EDUCATION OF WOMEN, from 31st March 1889 to 31st March 1890.

I.—*Ordinary Income.*

RECEIPTS.

Balance at Credit at 31st March 1889,	.	.	£92 19 10
Annual Subscriptions from Members,	.	£110 13 6	
Tickets sold for Lectures,	.	396 18 0	
Interest,	.	42 10 3	
Subscriptions to Library,	.	40 15 0	
Hire of Rooms,	.	9 15 0	
		<hr/>	600 11 9
			<hr/>
			£693 11 7

PAYMENTS.

Professors' Fees,	.	.	£353 2 0
Rent,	.	.	165 0 0
Wages and Cleaning,	.	.	35 4 8
Taxes, Coals, Gas, and Insurance,	.	.	32 4 1
Stationery, Printing, &c.,	.	.	24 14 0
Furnishings and Repairs,	.	.	6 12 9
Books for Library,	.	.	10 3 10
Prizes,	.	.	7 9 5
Advertising,	.	.	9 2 0
Auditor's Fee,	.	.	4 4 0
Postages and Incidents,	.	.	4 5 5
		<hr/>	652 2 2
			<hr/>
Balance at credit at 31st March 1890,	.	.	£41 9 5
			<hr/>

2.—*Bursary Fund Account.*

Balance at credit at 31st March 1889,	.	.	£60 7 10
Subscriptions towards Bursaries and Class Prizes,	.	£68 16 8	
Interest on capital for Bursaries,	.	86 3 11	
		<hr/>	155 0 7
			<hr/>
			£215 8 5
Deduct—Bursaries and Class Prizes paid,	£155 0 0		
Special Grant for Philosophical Books,	.	3 4 5	
		<hr/>	158 4 5
			<hr/>
Leaving balance at credit at 31st March 1890,	.	.	£57 4 0
			<hr/>

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BALFOUR, Hon. Mrs, 6 Rothesay Terrace.
BELL, Mrs GLASSFORD, 1 Douglas Crescent.
T. R. BUCHANAN, Esq., M.P., 10 Moray Place.
CHAPMAN, Mrs, St Mary's House, Dumfries.
D. F. DEMPSTER, Esq., 4 Glenfinlas Street.
DUNCAN, Mrs MORISON, Naughton, Newport, Fife.
DUNCAN, Miss MORISON, Naughton, Newport, Fife.
DUNDAS, Miss, Polton, Lasswade.
EDINGTON, Miss, 2 Grosvenor Crescent.
FINDLAY, J. R., Esq., 4 Rothesay Terrace.
HOULDSWORTH, Miss, Springfield, Polton.
JENNER, C., Esq., Easter Duddingston Lodge.
MAIR, Miss S. E. S., 5 Chester Street.
MENZIES, Miss, 70 Thirlestane Road.
PATTISON, Mrs DUNN, Oban.
ROBERTSON, Miss, 76 Great King Street.
RUTHERFURD, JOHN, Esq., W.S., 14 Albany Street.
SMITH, Miss RAMSAY, 13 Bruntsfield Crescent.
SPRAGUE, T. B., Esq., 29 Buckingham Terrace.
STEVENSON, Miss FLORA C., 13 Randolph Crescent.
STEVENSON, Miss LOUISA, 13 Randolph Crescent.
STEVENSON, Mrs J. J., 4 Porchester Gardens, London, W.
STEWART, Miss MARGARET, Ashcraig, Wemyss Bay.
URQUHART, Miss, 5 St Colme Street.
WHYTE, Rev. ALEX., D.D., 7 Charlotte Square.
WHYTE, Mrs, 7 Charlotte Square.
WRIGHT, Miss GUTHRIE, 2 Lansdowne Crescent.

LIST OF MEMBERS' SUBSCRIPTIONS AND DONATIONS.

From March 31st, 1889, to March 31st, 1890.

Alban, Miss, 37 Manor Place,	£0	10	6
Balfour, Miss, Spring Bank, Lasswade,	0	5	0
Barclay, Miss Jane, F.C. Manse, Canonbie,	0	5	0
Blackie, Mrs, 9 Douglas Crescent,	1	0	0
Blair, The Hon. Mrs Patrick, 19 Ainslie Place,	1	0	0
Blyth, Miss, 3 South Mansionhouse Road,	0	5	0
Brown, Professor Baldwin, 3 Grosvenor Street,	0	5	0
Brown, Mrs Baldwin,	0	5	0
Bryden, Mrs, 72 Great King Street,	0	5	0
Buchan, The Dowager Countess of, 27 Park Street, London, W.,	2	0	0
Buchan, Miss, 37 Gt. King Street,	0	5	0
Buchanan, T. R., Esq., M.P., 10 Moray Place,	1	0	0
Burnet, G. Wardlaw, Esq., 6 W. Circus Place,	0	5	0
Burnet, Mrs Wardlaw,	0	5	0
Burnet, Miss, 29 Great King Street,	0	5	0
Burton, Mrs Hill, 6 Montpelier, Viewforth,	0	5	0
Burton, Miss, Liberton Bank,	0	5	0
Butcher, Mrs, 27 Palmerston Place,	1	0	0
Calderwood, Mrs, Craigrowan, Merchiston,	0	10	0
Charteris, Mrs, Bilston Lodge, Loanhead,	0	5	0
Clapperton, Mrs, 9 Strathearn Road,	0	5	0
Collins, Miss, 38 Moray Place,	0	5	0
Cox, Mrs, 34 Drumsheugh Gardens,	1	0	0
Crossley, Mrs, Fairlie, Bowden, Cheshire,	2	0	0
Cunningham, Mrs, 2 Ainslie Place,	1	0	0
Cunningham, Mrs, 14 Inverleith Gardens,	0	5	0
Dalmahoy, Miss, 69 Queen Street,	0	5	0
Dalmahoy, Miss Elizabeth,	0	5	0
Dalmahoy, Miss Fanny,	0	5	0
Dempster, Miss Barbara, 4 Glenfinlas Street,	0	5	0
Douglas, Mrs, 22 Drummond Place,	0	5	0
Douie, Miss M., 34 Carlingford Road, Hampstead, London, N.W.,	0	5	0
Dowell, Mrs, 13 Palmerston Place,	0	10	6
Duncan, Miss, Viewpark, Lasswade,	0	5	0
Duncanson, Miss, 24 Inverleith Row,	0	5	0

Carry forward, £17 11 0

	Brought forward,	£	17	11	0
Dundas, Lady Jane, 9 Atholl Crescent,	.	1	1	0	
Edington, Miss, 2 Grosvenor Crescent,	.	1	1	0	
Fairley, Miss G., Trafalgar Institute, Montreal,	.	0	10	6	
Findlay, Mrs, 3 Rothesay Terrace,	.	1	0	0	
Finlay, William, Esq., 16 Belgrave Crescent,	.	0	10	0	
Finlay, Mrs,	.	0	10	0	
Forman, Mrs, 51 Great King Street,	.	0	10	0	
Fraser, A. M., Esq., 8 Walker Street,	.	0	10	0	
Fraser, Mrs, 8 Moray Place,	.	1	0	0	
Fraser, Mrs Campbell, Gorton, Lasswade,	.	0	10	0	
Friend, A, Portobello,	.	0	5	0	
Gair, Miss, The Kilns, Falkirk,	.	0	5	0	
Geddes, Mrs, 7 Douglas Crescent,	.	1	0	0	
Harvey, Miss, 21 Regent Terrace,	.	0	5	0	
Harvey, Miss E.,	.	0	5	0	
Houldsworth, Mrs, Coltness, Wishaw,	.	1	0	0	
Houldsworth, Mrs W., Mount Charles, Ayr,	.	1	0	0	
Houldsworth, John M., Esq., Brougham Place, Ayr,	.	5	0	0	
Houldsworth, Miss, Springfield, Polton,	.	5	0	0	
Irvine, Alex. Forbes, Esq., of Drum, 25 Castle Terrace,	.	1	0	0	
Irvine, Mrs Forbes,	.	0	5	0	
Jeffrey, David, Esq., 14 Randolph Crescent,	.	1	0	0	
Jeffrey, Mrs,	.	1	0	0	
Jex-Blake, Dr Sophia, Bruntsfield Lodge,	.	0	10	0	
Kennedy, Mrs Joseph, Jessore, India,	.	1	0	0	
Kerr, Miss, 9 Great Stuart Street,	.	2	0	0	
Lang, Miss, Viewpark, Lasswade,	.	0	5	0	
Lauder, Miss Dick, Lauder House,	.	1	1	0	
Leslie, Miss, 2 Charlotte Square,	.	1	0	0	
Leslie, The Hon. G. Waldegrave, Leslie House, Leslie,	.	1	0	0	
Lorimer, Professor, 1 Bruntsfield Crescent,	.	1	0	0	
Lorimer, Mrs,	.	1	0	0	
Lorimer, Miss,	.	0	5	0	
Mair, Miss, 5 Chester Street,	.	1	1	0	
Mair, Miss S. E. S., 5 Chester Street,	.	1	1	0	
Matheson, Miss, 12 Coates Crescent,	.	0	10	0	
Melville, Miss, 18 Heriot Row,	.	0	10	0	
Menzies, Miss, 70 Thirlestane Road,	.	1	1	0	
Millar, W. White, Esq., W.S., 16 Regent Terrace,	.	1	1	0	
Millar, Miss, 60 Castle Street,	.	0	5	0	
Mitchell, Lady, 34 Drummond Place,	.	0	5	0	
Mitchell, Miss,	.	0	5	0	
Moir, Miss, Fenton House, Alloa,	.	1	0	0	
Morison, Mrs Miller, 3 Douglas Crescent,	.	1	0	0	
Carry forward,		£	58	18	6

MEMBERS' SUBSCRIPTIONS.

89

	Brought forward,	£58	18	6
Murray, T. Graham, Esq., 11 Randolph Crescent,	.	1	0	0
Murray, Mrs T. Graham,	„	1	0	0
Murray, Miss, 15 Bernard Terrace,	.	0	5	0
M'Bride, Dr, 16 Chester Street,	.	1	0	0
M'Candlish, John M., Esq., 27 Drumsheugh Gardens,	.	1	0	0
M'Dowell, Miss, 11 Blackford Road,	.	1	0	0
M'Ewen, Mrs, 2 Rothesay Place,	.	0	5	0
Maclagan, Mrs Douglas, 5 Eton Terrace,	.	1	0	0
Maclagan, Miss, 28 Heriot Row,	.	0	5	0
M'Laren, Mrs, Newington House,	.	1	0	0
M'Laren, Mrs John, 46 Moray Place,	.	1	0	0
M'Laren, Miss, 13 Morningside Place,	.	0	5	0
M'Laren, Miss E. T.,	.	0	5	0
M'Laren, Agnes, M.D., Bruntsfield Lodge,	.	0	10	0
M'Lean, Miss, The Cottage, Cambus,	.	0	10	0
Macpherson, Mrs, 2 Randolph Cliff,	.	1	0	0
M'Queen, Mrs, 3 Lansdowne Crescent,	.	0	10	0
Nelson, Thomas, Esq., St Leonard's,	.	1	0	0
Nelson, Mrs Thomas,	„	1	0	0
Nelson, Miss, Abden House,	.	1	1	0
Nichol, Mrs, Huntly Lodge, Napier Road,	.	1	1	0
Norie, Mrs, Coltbridge Hall, Murrayfield,	.	1	0	0
Nutt, Whaley, Esq., Grange House,	.	0	5	0
Nutt, Mrs Whaley,	„	0	5	0
Ogilvie, Miss, 13 Buckingham Terrace,	.	1	0	0
Ogilvy, Mrs Hamilton, Biel,	.	2	0	0
Oldham, Miss, 87 Great King Street,	.	0	5	0
Oswald, Miss, Southbank, Morningside,	.	1	0	0
Palmas, Madame de, and Miss Findlay, 13 Buckingham Terrace,	.	0	5	0
Paterson, Dr, 4 Coates Crescent,	.	1	1	0
Portal, Miss K., Laverstoke House, Hants,	.	0	5	0
Roths, The late Countess of, Leslie House, Leslie (in memoriam),	.	1	0	0
Sellar, Professor, LL.D., 15 Buckingham Terrace,	.	1	1	0
Simson, Miss F. C., 9 Eton Terrace,	.	0	5	0
Simpson, Miss, Selville, Portobello,	.	0	5	0
Smith Rev. W. C., D.D., 20 Royal Circus,	.	0	10	0
Somerville, W. A., Esq., Kevoek Paper Mill, Lasswade,	.	0	5	0
Sprague, Mrs, 29 Buckingham Terrace,	.	1	1	0
Stevenson, Miss Elisa C., 13 Randolph Crescent,	.	1	0	0
Stevenson, Miss Flora C.,	„	1	0	0
Stevenson, Miss Louisa,	„	3	0	0
Stirling, Miss A. Hutchison, 4 Laverock Bank,	.	0	5	0
	Carry forward,	£91	13	6

	Brought forward,	£91	13	6
Stodart, Miss, 1 Bruntsfield Crescent,	.	1	0	0
Stopes, Mrs, Kenwyn, Cintra Park, Upper Norwood, London, S.E.,	.	0	5	0
Tait, Mrs, 38 George Square,	.	0	5	0
Thin, James, Esq., 22 Lauder Road,	.	1	1	0
Thomson, Mrs, 6A Bruntsfield Place,	.	0	5	0
Thomson, Miss Grace, 14 York Place,	.	0	5	0
Trayner, Mrs, 27 Moray Place,	.	1	0	0
Trotter, Coutts, Esq., 17 Charlotte Square,	.	1	0	0
Trotter, Mrs Coutts,	„	0	10	0
Trotter, Miss,	„	0	5	0
Umpherston, Miss A. M., 13 Claremont Crescent,	.	0	5	0
Urquhart, Miss, 5 St Colme Street,	.	1	0	0
Urquhart, Miss,	„ (donation),	5	0	0
Urquhart, Miss M.,	„	1	0	0
Walker, Miss, 1 Coates Place,	.	0	7	6
Watson, Mrs, 45 Charlotte Square,	.	1	0	0
Watson, Mrs, Wetherby Gardens, South Kensington,	.	0	10	0
Wood, Mrs, 12 Strathearn Place,	.	0	5	0
Wood, Mrs, Elie, Fife,	.	0	5	0
Wright, Miss Guthrie, 2 Lansdowne Crescent,	.	1	1	0
Wright, Miss A. Romley, 9 Addison Terrace, Victoria Park, Manchester,	.	0	10	6
Wright, Miss, 7 Chester Street,	.	0	5	0
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Wyld, Mrs,	„	0	10	0
Wyld, Miss, 11 Lennox Street,	.	1	0	0
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		£110	13	6

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Miss Houldsworth, Mathematics Class Prize, competed for Session 1889-90, .	5	0	0
Miss S. E. S. Mair, to make Mair Bursary up to £30,	0	10	8

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		4	5 6
		<hr/>	
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