

Andrews Manuscripts
MS2

A collection of scientific papers and correspondence by and addressed to Thomas Andrews, Vice-President of Queen's College, Belfast, and Professor of Chemistry, 1849-79; chiefly in his own hand or copied by his daughters Elizabeth Andrews and Mary K. Andrews, and forming part of the documents used on the preparation of *The Scientific Papers of the Late Thomas Andrews*. With a memoir by P.G. Tait and A. Crum Brown. (London, 1889).

Presented by his grand-daughters in 1935. The following catalogue is abridged from descriptions made in 1937 by Professor W. B. Morton.

1-10 Scientific memoirs, papers and addresses presented by their authors to Andrew.

Printed. 10 vols.

MS. 2/11 **I.** Parcel marked [erroneously] "Notes taken by T. A. in Paris about 1830", containing four bound note-books.

A. "Lectures on Astronomy."

68ff., paged 3-62, 1-40, 1-32. 190 x 155mm.

Written in a youthful hand and style. Pages 1, 2, 63, 64 of the first pagination and 33-36, 39-42 of the third are missing. On ff. 67 verso and 68 verso are lists of names, perhaps made by Andrews as a school monitor.

B. A similar note-book entitled on the front cover "Conic Sections and Differential Calculus" and on the back cover "Differential Calculus and Conic Sections".

The date "Friday. Sep: 26. 1828." Occurs on folio 44 verso.

C, D.

Two commonplace-books, headed respectively "Note Book. A. Physics" and "Note Book. B. Chemistry". Each contains 24ff. and measures 310 x 195 mm.

The contents are abstracts of papers by contemporary authors, from L'Institut and elsewhere. The dates range from 1836 to 1843 for physics and from 1837 to 1840 for chemistry. The paper is watermarked 1835.

MS. 2/12 **II.** Roll containing two drawings, inscribed "Original Drawings made by Mrs. Andrews for Dr. Andrews' Papers. "On the Heat developed during the formation of the Metallic Compounds of Chlorine, Bromine & Iodine" and "Heat disengaged during the Combination of Bodies with Oxygen & Chlorine." Plates I and II facing pp. 94 & 130 of Andrews' Scientific Papers."

MS. 2/13 **III.** Parcel marked "Copies of Letters to Dr Andrews on Scientific Problems."

Contents:

A. Correspondence with Faraday

1. F. to A., 3 Oct. 1842
2. F. to A., 18 Oct. 1842
3. F. to A., 2 Feb. 1843
4. F. to A., 26 Oct. 1843
This and nos. 5-8 refer to Andrews' paper "On the thermal changes accompanying basic substitutions" (Scientific Papers, pp. 107-128).
5. A. to F., 28 Oct. 1843
6. A. to F., 1 Dec. 1843
7. F. to A., 19 Dec. 1843
8. A. to F., 11 April 1844
9. F. to A., 20 April 1852
10. F. to A., 14 August 1852
11. F. to A., 30 August 1852
12. A. to F., 4 July 1853
Refers to Faraday's letter to The Times on table-turning; see his Researches in Chemistry and Physics, p. 382.
13. F. to A., 12 August 1856. Incomplete.

B. Sir John Herschel to Andrews, 21 April 1843

C. James McCullagh (1809-1847) to Andrews, 19 Nov. 1844.

D. C. F. Schoenbein to Andrews, 2 May 1847.

E. Letters from Elie Wartmann

1. 3 Jan. 1851
Referring to the French Academy's award of 1000fr. To Andrews in 1849 (see Scientific Papers, p. xxiv), and to Wartmann's paper "Sur les courants electriques qui existent dans les vegetaux", in Archives des Sciences Physiques et Naturelles, vol. 15, 1850.
2. 17 Jan. 1851

F. Letters from Sir Edward Sabine

1. 1 March 1852.
2. 27 March 1852.
3. 16 Nov. 1852.

G. A. Delesse to Andrews, 7 Oct. 1854.

H. Thomas Graham (1805-1869) to Andrews, 25 Nov. 1856.

I. Baron Justus von Liebig to Andrews, 20 June 1871.

J. A. W. Hofmann to Andrews, 30 May 1871.

K. Notes from Sir George Gabriel Stokes

1. 11 Feb. 1871
2. 20 Feb. 1871
3. 15 June 1871
4. 12 Oct. 1872

I. James Thomson (1822-1892) to Andrews, 8 Jan. 1872

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IV. Packet marked "Dr Andrews' Papers to Lit & Phil Soc Belfast".

Contents:

- A. "Lecture in the Museum on Galvanic Magnets."
22ff. 230 x 181 mm.
[Read to Belfast Natural History and Philosophical Society, 6 April 1836.]
- B. "On electrical conduction."
24pp. 190 x 158 mm.
[Read to B. N. H. P. S., 4 Oct. 1837.]
- C. "Lecture delivered in the Belfast Museum on some recent Applications of Galvanism to the Arts - Session 1839-1840."
12pp. 232 x 192 mm. Incomplete. [Read to B. N. H. P. S., 6 Feb. 1840]
- D. MS. beginning "Heid. Journal 24 June. /54."
8ff. 207 x 128 mm. Containing foreign news translated from newspapers, 24 June to 3 July.
- E. Paper on Heidelberg, without title, beginning "Among the many interesting objects ..."
21 pp. 250 x 200 mm. [Read to Belfast Literary Society, 5 Feb. 1855.]
- F. "On the influence of the Discovery of the American Mines on the value of money."
19pp. 338 x 219 mm. [Read to Belfast Literary Society, 8 March 1858.]

- G. "On the Discoveries & Writings of Faraday. A sketch." 46 pp. 237 x 192 mm. [Read to Belfast Literary Society, 3 Nov. 1862.]
- H. "On the Ancient and Modern Views of the Constitution of Matter." 10ff. 336 x 210 mm. [Read to Belfast Literary Society, 2 Feb. 1874.]
- I. "The Difficulties of France: - - their Cause and Remedy." 22pp. 330 x 210 mm. [Read to Belfast Literary Society, 2 Feb. 1874.]
- J. "Notes of an excursion from Newcastle to the" Long Brae Mountain" lying between the Diamond Rocks and Slieve Donard." 4ff. 207 x 169 mm.
- K. "Notes on the Value of Money." 7ff. 335 x 210 mm.

See Belfast Literary society 1801-1901: historical sketch. (Belfast, 1902), and The Belfast Natural History and Philosophical Society. Centenary volume, 1821-1921, ed. By Arthur Deane. (Belfast, 1924). The unpublished lectures are referred to in Scientific Papers, p. lx.

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- V. A bundle of papers without title.
- A. Report beginning "At the meeting of the Association held in Manchester in 1861 ..." 6ff. 202 x 180 mm.
- A preliminary note dealing with the work described in the Bakerian Lecture (Scientific Papers, xxxviii, 296). No note of its communication to the British Association is to be found in the Reports between 1861 and 1869.
- B. "On the Continuity of the Liquid & Gaseous States of Matter." 18ff. in manuscript, 205 x 129 mm., followed by a printed extract from the Bakerian Lecture of 1869, 4pp., 235 x 120 mm.
- An account of the research adapted for a "general audience." It is the paper given to the Belfast Natural History and Philosophical Society, 23 Feb. 1870, as recorded in the Centenary Volume.
- C1. Bundle of sheets marked in the hand of Mary K. Andrews "M. S. of Part of 'Studium'."

C2. A similar bundle tied with red tape.

C1, C2 contain rough drafts of Andrews' Studium Generale. Many pages marked 'cancelled' and the portions in no regular order.

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VI. Parcel marked by Mary K. Andrews "Important. Manuscripts, Proofs, Calculations of "The Gaseous State of Matter" (Final m.s. in Archives of the Royal society.) Copy of Prof. Clerk Maxwell's Report."

Contents:

A. "Preliminary Notice of Further Researches on the Physical Properties of Matter in the Liquid and Gaseous States under varied Conditions of Pressure and Temperature." 10ff. 250 x 200mm.

Draft of paper XLVII, Proceedings of the Royal society, vol. 23, p.514, 1875.

A1. Fragments of another draft of the same, without title.
6ff. 250 x 200mm.

B. "Note of Formula for Calibration of small irregular piece at sealed End of tube." 2ff. 256 x 205 mm.

C. Rough draft of a summary of some paper, beginning "After referring to certain modifications ..." 4ff. 338 x 210 mm. Folio 4 is a fragment of the second Bakerian Lecture of 1876 (Philosophical Transactions, 1876, p. 421)

D. Laboratory readings and calculations. 8ff. 340 x 210 mm.

E. "On the Gaseous State of Matter." Copy of the second Bakerian Lecture in the hand of Elizabeth Andrews. 55ff. 330 x 193 mm.

F. Corrected proof of E, with attached sheet of instructions to the printer in Thomas Andrews' hand. 17ff. 238 x 181 mm. & 288 x 222 mm.

G. Paper headed "6. Apparatus for determining the amount of heat produced ..." 2ff. 229 x 180 mm.

H. List of errata, in the hand of Mary K. Andrews. 2ff.
238 x 192 mm.

- I. "Report on Dr. Andrews' paper "On the Gaseous State of Matter." 7ff. 317 x 183 mm. In a wrapper inscribed "Copy of Profr. J. Clerk Maxwell's Report on Dr. Andrews' paper "On the Gaseous State of Matter".

MS. 2/17

VII. Proof of part of an unpublished article by P.G. Tait, intended for the Proceedings of the Royal Society of Edinburgh, and headed "From Dr. Andrews' "Notes of Experiments" (MSS.), Vol. VII. Book 9."

See Nature, vol. 59, pp. 318, 503 (1899), and Proceedings of the Royal Society of Edinburgh, vol. 30, pp.1-23 (1910).

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VIII. Parcel marked "Very valuable Working Drawing of Dr. Andrews' contemplated Apparatus for determining true pressures, also Drawings of Curves of Mixed Gases. Drawing of 1869 Bakerian Lecture Curves." &c. &c.

Contents (all single leaves unless otherwise stated):

- A. Envelope inscribed "Original Draft by Professor Tait of what he probably intended to be the opening paragraphs of his projected paper regarding Dr. Andrews' measurements of comparative compression of air & of Carbonic Acid at various temperatures."

Contents:

1. Explanatory note by Mary K. Andrews.
2. P.G. Tait's manuscript.
3. Typed copy of (2), with introductory note by C.G. Knott.
4. Letter from C.G. Knott to Mary K. Andrews, 14 Oct. 1910.
5. Offprint of C.G. Knott's supplementary note to his paper on "Andrews' Measurements, &c." (Proceedings of the Royal Society of Edinburgh, vol. 30, p. 290, 1910).

- B. Packet inscribed "Large Drawings of Curves for Mixed Gases Reductions from which have gone to Dr. Knott May 1910." [The drawings illustrate paper 60 in Scientific Papers, pp. 457-471.]

Contents:

1. Explanatory note by Mary K. Andrews.
2. Fig. 1 in rough form.

3. " smoothed for reproduction.
4. Fig. 2. Rough sketch in ink, large scale.
5. " " " in pencil, " "
6. " Reduced, as published.
7. Fig. 4.

C. Packet inscribed "Very Valuable Working Drawings of Dr. Andrews' contemplated Apparatus for determining true pressures. Also Drawings of Curves of Mixed Gases."

Contents [the descriptions, where quoted, are by Mary K. Andrews unless otherwise stated]:

1. "Dr. Andrews' Working Drawing of part of proposed Apparatus for determination of true pressures."
2. Envelope inscribed "Mem. By Dr. Everett regarding his recollections of Dr. Andrews' projected apparatus for measuring very high pressures." Containing the following papers:
 - a. "Memorandum by Prof. Everett. Nov. 12, 1888." 3ff. With two diagrams on separate sheets. All in J.D. Everett's hand.
 - b. Rough pencil diagram by Andrews, on the back of a paper containing notes on organic chemistry. 2ff.
3. "Large drawing of Carbonic Acid Curves. Nearly all reproduced in Dr. Andrews' Bakerian Lecture for 1869 ... experiments noted by pin pricks." A calibration curve on the back.
4. Envelope inscribed "Private. Report on Dr. Andrews' Paper "On the Gaseous State of Matter", containing a transcript of J. Clerk Maxwell's report recommending publication (Scientific Papers, no. 49, pp. 418-456). 8ff. Ff. 1-4 in the hand of Elizabeth Andrews, ff. 5-8 in that of Mary K. Andrews.

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IX. MS. among them early notes in Paris 1836.