

**The Juliette K. and Leonard S. Rakow  
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**The Corning Museum of Glass**

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**The Notebooks of Frederick Carder  
1885–1936**

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## BIOGRAPHICAL SKETCH

Frederick Carder was born on September 18, 1863, the son of Annie and Caleb Carder. He was born in Brockmoor, Kingswinford, Staffordshire, England. He was the second son in a family of five boys and one girl. His father and paternal grandfather owned *Leys Pottery*, which produced salt-glazed stoneware articles. Carder spent the first forty years of his life studying and working within about five miles of his birthplace. By the time he was fourteen, Carder was top of his class. However, later he quit school to go to work at Ley's pottery. He enrolled in night classes at the School of Art in Stourbridge, and took evening classes in chemistry, electricity, and metallurgy at the Dudley Mechanics Institute.

Carder learned that John Northwood (renowned artist and sculptor) the father of a fellow student, had made a copy, in glass, of the celebrated Portland Vase. Carder visited John Northwood's studio. Northwood was impressed by a small marble head that Carder had just finished carving and had brought along. He invited Carder to spend Saturday afternoons at his studio learning the art of cameo glassmaking and Carder accepted. Carder showed such promise that Northwood recommended him to the Brierly Hill firm of Stevens & Williams, for the position of glass designer.

In 1880, Stevens & Williams offered to hire Carder. Carder accepted and began his career in glassmaking. Carder designed original glass forms and cut decorations. Carder also believed in reviving colored glass. Eventually, the principal of the factory consented to have some colored glass designs produced on a trial basis. These were sent to London for sale. Carder's designs sold fast and, for the next two decades, Carder remained at Stevens & Williams.

In 1887, Frederick Carder married Annie Walker at the Parish Church of St. James, Dudley, Worcestershire. They had a daughter and two sons: Gladys, Stanley, and Cyril.

In 1888, Carder won a silver medal in the National Competition of Schools of Science and Art for a vase design, "Cupid and Psyche," modeled in white wax relief on dark amethyst glass. The following year, he won the gold medal in the National Competition for "The Muses," a dark blue glass vase decorated in white wax relief. In 1891, Carder qualified as an entrant in the national art competitions in London and won his Art Master's Certificate and the Gold Medal of the Year for his thirty-inch copy of the heroic bronze, "The Archer," by Hamo Thornycroft. This achievement also entitled him to a national scholarship, which would have enabled him to study for three years in Paris, Rome, or London. However, Stevens & Williams refused to release him from his contract, and so he missed this opportunity. Nevertheless, the scholastic committee arranged for Carder's use of some of the funds during several of his annual vacations. On these trips, Carder was able to study glass collections in museums in England and other parts of Europe.

In 1891, Carder established the Wordsley School of Art and Carder led staff as the Art Master. As a result of this opportunity, the numbers and skills of glassworkers available in the Stourbridge area increased. This was greatly appreciated by the local glass industry. As a token of their appreciation in 1902, the South Staffordshire County Council sent Carder on a tour of the glassmaking centers of Germany, Austria, and later of glassmaking centers in the United States.

In 1903, Carder sailed for the United States and arrived in New York. Other places he visited included Pittsburgh, Washington (for a day or two of sightseeing), and Corning, New York. He met with Corning Glass Works officials, was taken on a tour of the plant, and met with Thomas G. Hawkes. Hawkes was the president of "T.G. Hawkes & Company," a firm that had continued

a glass decorating business in Corning since 1880. Hawkes had been buying glass blanks from Stevens & Williams for many years. It is possible that Carder signed the papers to join on his first day there; all he would ever reveal was that Hawkes was very persuasive.

Steuben Glass Works was run by Carder. He developed the glass formulas, designed the factory and furnaces, designed the product, and supervised sales policies and production. Steuben factory records show a total of over 7,000 varieties of vases, bowls, goblets, candlesticks, and dozens of other decorative and useful shapes which Carder designed for sale from 1903 to 1932. Also, almost 600 designs were made as special orders for wealthy customers and manufacturers.

Frederick Carder died in his sleep on December 10, 1963.

Notes:

John F. Hotchkiss, *Carder's Steuben Glass Handbook & Price Guide* (New York: Hotchkiss House Inc, 1972)

Paul V. Gardner, *Frederick Carder: Portrait of a Glassmaker* (New York: The Corning Museum of Glass, 1985)

Paul V. Gardner, *The Glass of Frederick Carder* (New York: The Corning Museum of Glass, 1971)

## SCOPE AND CONTENT NOTE

The collection holds 33 of the personal notebooks of Frederick Carder, including 3 diaries. These notebooks are mainly filled with notes and formulas for making glass. This collection also includes the 1902 travel diary, which consists of a collection of diary entries from Carder's visits to various glassmaking centers around Europe.

There are loose-leaf data sheets and loose pages with data and results. In addition to this, there are letters, clippings, and a publication entitled "The Art of Ornamental & Figure Modelling," 1867.

The notebooks also provide additional information including: formulas and notes for making flint and colored glass; trials; sandblasting and etching; chemistry notes; and an analysis of different compounds.

## SERIES DESCRIPTION

### Series I: Notebooks & Loose Pages

There are notes and formulas for making glass, including colored glass. There is also additional information including: notes on acids; notes from lectures on types of casting; annotated sketches of the human body; analysis of different compounds; sketches of designs; data and results, including results for etching and engraving; chemistry notes; and a few notes from Carder's travels. Details on the contents of each notebook are provided below.

### Box 1

#### BLACK NOTEBOOK: FREDERICK CARDER, 1894

1887–1907

Includes formulas and notes between 1887–1907, on the following: “waterproof paint,” “transferring designs,” “glass,” “opal glass,” “bronze casting,” “new polishing material for glass,” “paint for preserving metals,” “aurora color,” “new yellow glass,” “new pink color,” “new ruby color,” small sketch of “new cutting off machine, 1893,” “alterations to modeling,” “yellow silver glass from the pottery gazette,” “from Binns ceramic technology; table of combining weights; examples of analysis & synthesis,” “analysis of lead glass,” “composition of putty powder,” “amber,” “casting from clay models with wax,” “solution for coloring plaster casts,” and “staining plaster casts bronze.”

#### LOOSE-LEAF POCKET MEMO BOOK: FREDERICK CARDER, 1926

This book includes a numbered list of compounds. Other pages provide these numbers, together with the amount of each, under the following headings: “blue bulbs,” “dark turquoise blue,” “azulite,” “alabaster,” “amber for flint,” “amber dark red,” “aurene,” “blue aurene,” “brown for flint,” “flemish blue for flint,” “blue lunar white,” “black,” “celestine blue,” “cintra black,” “cintra celestine blue,” “hard French blue,” “French blue,” “calcite,” “celestine blue,” “flint,” “hard flint,” “green medium,” “antique green,” “light green,” “pomona green,” “green,” “green aurene,” “jade green,” “noviweld,” “noviol,” “marina,” “opaline, aurene,” “purple royal,” “Pyrex,” “Pyrex white,” “optical,” “ruby,” “cinnamon for flint,” “red,” “hard amethyst ruby,” “torquoise blue for flint,” “topaz,” “white for flint,” “white opal for bulbs,” “citron yellow,” “yellow alabaster,” “carbon yellow” and “yellow or orange.” End of this notebook contains an “index” for “flint glasses” and “aurene glasses.”

#### LOOSE-LEAF NOTEBOOK

1883–1924

This notebook contains notes on the following: “new color effects, Dec 1920,” “Pate d' Verre,” “decorated vases, Dec 1920,” “glass tiles, Jan 1921,” “domes or shades,” “moulds,” and “stencil's.” Also includes formulas under the following headings: “alabaster,” “amber carbon + s,” “actinic glass,” “bulb glass,” “calcite,” “daylight glass,” “etching paste,” “frosting bath,” “glass for spectacles,” “noviol,” “opal,” “orange color,” “orange amber,” “Pyrex,” “ruby glass,” “rose tinted glass,” “topaz amber,” “ultra violet glass,” “zinc glasses,” “wax-coating for glass,” “window glass” and “Bristol yellow-1924, as made for Hawkes.” There are also two tables of figures on trials. Additional notes include Carder's observations from his travels. For example, in July 1920 he writes: “When in Paris saw bowls and vases made in somewhat the same idea by Scheider...” In November 1921 he writes: “After visiting Chicago & New York, saw that other factories as well as Europe were flooding the market with colored glass after our styles, decided to make new departure with flint and colored decorations such as blue, green, amethyst, rose and other colors...”

LARGE LOOSE-LEAF NOTEBOOK: FREDERICK CARDER, 1912

1901–1919

Includes formulas on the following: “aurene,” “au blue,” “au green,” “aurene brown,” “alabaster,” “yellow alabaster,” “amethyst ruby,” “golden amber,” “blue turquoise for flint,” “brown or amber for flint,” “calcite,” “flint,” “hard flint for enameling,” “olive green,” “pomona green,” “jade green,” “ivory,” “royal purple,” “putty powder,” “pomona green,” “soda batch,” “topar” and “mandarin yellow.”

BLACK SQUARE-SHAPED NOTEBOOK: FREDERICK CARDER 1907, RECIPES FOR MAKING FLINT & COLORED GLASS

1884–1908

Includes formulas on the following: “amethyst,” “aventurine,” “amber,” “alabaster,” “aurora,” “aurene,” “brown,” “lead crystal,” “lead batch,” “copper lustre glass,” “green,” “pomona green,” “ruby,” “ruby from gold,” “purple,” “turquoise,” “opaque yellow,” “topar” and “gold”. There are notes under the headings of “Peacock blue,” “crackled glass,” “etching glass,” “onyx glass,” “poppy red,” “new rose color from selenium,” “silver leaf,” “turquoise,” “cryolite glass,” “yellow,” and “opaque yellow.”

FLIP-OPEN NOTEBOOK: GLASS MANUFACTURE, RECIPES & QUESTIONS, 1902

1902–1903

“Wordsley School of Art Glass Manufacturer”.

The notebook includes formulas on the following: “turquoise blue,” “flint batch,” “green,” “pomona green,” “topar,” “purple from  $MnO_2$ ,” “copper luster,” “copper ruby,” “alabaster,” “opalescent,” “spinell,” “ruby from gold,” and “trial for spinell to form opaque”. The notebook also holds a list of 23 questions (no answers) including the following: “when & under what condition does glass become crystalline?”; “what conditions are necessary to ensure the durability of glass?”; “how would you tell the quality of white sand?”; and “why is the gas furnace not generally used in England?”

FLIP-OPEN NOTEBOOK

n.d.

This notebook is partially filled with notes, calculations and equations. It includes information on copper, iron, ferric compounds, calcium, barium, nitric acid, hydrochloric acid and carbonic acid. Also, Carder writes about tests for an unknown substance and his findings.

NOTEBOOK: COLORS

1904

This notebook contains half a single page of writing that includes formula under the title of “flint trial.”

SMALL BLACK FLIP-OPEN NOTEBOOK

1881

This notebook contains a few pages of rough notes.

## Box 2

### FLIP-OPEN NOTEBOOK

1885–1893

This notebook contains notes and sketches of designs. There are notes taken from lectures, notes on designs, notes on: “figure casting in plaster,” “gelatine casting” and “casting with wax.” End of notebook has a diagram and notes on: “scale for modelling figures from life” and annotated sketches of the human body.

### NOTEBOOK: C, 1909

1909–1915

This notebook contains some notes and formulas, including formula on the following: “au green,” “blue for casing inside 21 ml,” “light blue green to match hock glass,” “white for prism,” “celadon green to match sample,” and “lime glass” (only 6 pages of information).

### BROWN NOTEBOOK: TRIALS MADE BY CYRIL, 1913–1914, & SOME BY MYSELF AFTER

1917, 1919

Includes formula on the following: “light blue effect,” “light ruby,” “white glass,” “soda btch,” “opal for glass eyes.” Most of the formulas have been given a number including those that are untitled. Notebook is only partly filled.

### BLACK NOTEBOOK OF LOOSE-LEAF DATA SHEETS I

1931–1947

“Frederick Carder, 249 Pine Street, Corning, NY”

Notebook contains a typed and numbered list of different compounds. Includes formulas for the following: “flint amethyst ruby,” “flint ruby,” “aurene ruby,” “flemish blue,” “opalescent,” “light topaz,” “Hawks dark topaz,” “refractory casting composition,” “transfer ink for etching,” “gelatine moulds,” “white wax for casting in bronze,” “red stain for bottles,” “transfer ink for copper plates” and “etching paste.” There is also additional information on “trials in powder colors” and “trials in composition molds.”

Notebook is only partially filled with information.

### BLACK NOTEBOOK OF LOOSE-LEAF DATA SHEETS II

1926–1931

“Frederick Carder, Steuben Glass Works, Corning NY”

This notebook contains data and information on the following: “trials for white,” “trials with C.R. batch,” “sp amber M.M.” and “pale bristol yellow.” Also includes formulas, for the following: “pale bristol yellow,” “royal purple,” “amber topaz,” “dark olive green,” “celadon,” “soda batch,” “special white,” “ivory” and “burmese”. In each formula, the names of ingredients are substituted for numbers. There is data under the following titles: “alexandrite,” “Pyrex ruby,” “cardinal red,” “flint ruby experiments,” “smoke crystal experiments,” “opaque yellow experiments,” “blue-black for Tiffany M.M.,” “jade blue,” “pink ivrene” and “special calcite.”

### BLACK NOTEBOOK COMPRISED OF 2 NOTEBOOKS OF LOOSE-LEAF DATA SHEETS n.d.

First notebook is entitled “flint” and pages in this notebook include data/results on the following: “flint,” “soda flint,” “amber,” “amber, lavender or red brown,” “cel. blue,” “flemish blue,” “dark flem blue (Russell),” “vigil blue,” “cintra blue,” “citron yellow,” “flint brown,” “vigil light green,” “antique green,” “canterbury,” “lavender,” “black,” “flint ruby,” “dark topaz,” “hard flint soda,” “hard flint,” “flint white” and “flint white blue.” Second Notebook is entitled



“Calcite” and includes data/results on the following: “calcite,” “ivory,” “aurene brown,” “au. opalene,” “aurene ruby,” “alabaster,” “dome yellow,” “solid jade green new,” “sp. blue Pyrex,” “sp. white Pyrex I,” “Pyrex white II,” “amethyst ruby,” “antique green” and “special white.”

### Box 3

#### POCKET-SIZED NOTEBOOK: RESIST FOR SANDBLASTING & ETCHING, 1936

Partially filled notebook that includes formulas and notes on the following: “gesso,” “transfer ink” and “for copper depositing.”

#### POCKET-SIZED NOTEBOOK: FREDERICK CARDER, 1903–4

“Frederick Carder, Corning NY, USA, 1903–1904.”

This notebook includes formulas for the following: “flint,” “olive green,” “olive green for casing,” “olive green for vases solid color,” “blue green for casing,” “ruby,” “aurora,” “amethyst,” “blue cobalt,” “aurene,” “aurene green,” “aurene blue,” “aurene white,” “white for casing with flint,” “ivory,” “pink,” “citron yellow,” “amethyst” and “turquoise for flint.” Under “trials” there are formulas for the following: “flint,” “nitre glass,” “crystal,” “yellow silver glass,” “opalescent glass,” “copper luster glass,” “iradesent,” “brown for casing,” “poppy,” “copper ruby,” “light green,” “amethyst for flint” and “pomona.”

This notebook also holds clippings under the following titles: “Recently Issued Patents,” “Brief Business Laws” and “Weights and Measure.” These clippings are in the folder entitled Items In Pocket Sized Notebook: Frederick Carder, 1903–4.

#### BLACK POCKET-SIZED FLIP-OPEN NOTEBOOK

1913, 1919

Includes formulas for the following: “hard glass,” “pomona,” “soda glass,” “etching paste,” “polishing,” “golden amber,” “yellow alabaster,” “flint brown or amber,” “royal purple” and “pomona green.”

#### NOTEBOOK: FREDERICK CARDER 1912, FORMULA GIASS

1908–1919

“Fredrick Carder, formula used at the Steuben Glass Works from 1903 to 1920.”

This notebook includes formula for the following: “aurene,” “aurene white or calcite,” “aurene amethyst,” “aurene yellow,” “brown special,” “alabaster,” “amethyst for flint,” “royal purple,” “amber for flint,” “golden amber,” “azulite,” “brown for flint,” “brown for aurene,” “black for aurene,” “black,” “ivory,” “Burmese,” “etching paste,” “polishing glass,” “frosting bath,” “acid for etching steel plates,” “flint,” “soda flint,” “barium flint,” “dark aurene green,” “light green,” “olive green,” “purple from nickel,” “poppy,” “pomona green,” “ruby,” “aurora,” “soda glass,” “turquoise for flint” and “yellow alabaster.”

#### DARK BLUE NOTEBOOK I

n.d.

Includes information on the following: “mineralogy” and the subtitle of “glass compound oxides,” “silicates,” “sulphates,” “nitrates,” “carbonates,” “phosphates,” “borates,” “sulphides” and “fluorides & chlorides.”

Notebook is only partially filled.

DARK BLUE NOTEBOOK II: NOTES ON GLASSMAKING, FREDERICK CARDER & OTHER SUBJECTS AS OCCURRED, 1888

1888–1904

Includes notes on the following: “on the proper working of the new process moulds,” “paste for moulds,” “cryolite glass,” “glass,” “white modeling wax,” “peacock blue,” “turquoise,” “trials for aventurine,” “amber,” “ruby from gold,” “new pink” and “copying documents”. There are recipes for “modeling wax,” “rough sketch of Benzine glory hole ...” and a “sketch of lathe used for cutting off glass with wire”. There is also a sketch and notes for “New furnace heated with gas for glory hole.” The notebook includes formulas for the following: “pomona green,” “alabaster,” “opaque yellow,” “violet,” “turquoise,” “opal,” “dark green,” “white enamel,” “transparent red,” “white,” “black,” “dark amber,” “light amber,” “wax red,” “best green,” “canary color,” “purple,” “enamel green,” “blue,” “flint batch,” “ruby,” “ruby gold,” “opalescent,” “straw opalescent,” “blue opalescent,” “best mixture for pressed glass,” “lemon opalescent” and “aurora”. Under title “Glass Made at the Steuben Glass Works from Sept-1903” is the formula for “flint crystal.” End of the notebook includes formulas for the following: “topaz,” “green,” “citron yellow,” “white,” “opaque yellow,” “blue from cobalt,” “amber,” “copper luster glass,” “copper ruby,” “opaque yellow,” “opalescent” and “ruby from gold.” There is also a short “list of patents for glass.”

This notebook is partially filled and contains some sketches.

NOTEBOOK: ANALYSIS OF DIFFERENT COMPOUNDS

n.d.

“Cyril Carder, Corning NY”

Includes notes on the following: “lead analysis,” “silicate analysis,” “silica filtrate” and “analysis of white glass.” End of notebook includes the following tables of information: “Table A, for the separation of bases into groups,” “Table B for examination of group I,” “Table C-for examination of group II” and “Table D-examination of groups III.” A few pages in this notebook are completed.

NOTEBOOK: ORDER SHEET “WEEKLY” ACCOUNT

1913–1914

Notebook includes numbers under “etching” and “engraving.” A few pages in the beginning of the notebook are completed.

Box 4

FLIP-OPEN NOTEBOOK

1885

Includes notes on the following: “chemistry class notes,” “examination for acids” and “glass making.” Notes found in the beginning and end of notebook.

TWO NOTEBOOKS ORIGINALLY JOINED TOGETHER:

NOTEBOOK 1: CHEMISTRY NOTES

1886–1887

Includes notes on the following: “chemistry notes,” “manufacture of acids on a large scale,” “metals,” “spectroscope,” “metallurgy,” “classification of furnaces,” “fuel-classification” and “blast furnace.”

TWO NOTEBOOKS ORIGINALLY JOINED TOGETHER:

NOTEBOOK 2

n.d.

Includes notes on the following: “analysis of sand & lead,” “analysis of sample of lead,” “preliminary examination for acids,” “examination for groups III” and “examination of substance” (white powder).

FOUR NOTEBOOKS ORIGINALLY JOINED TOGETHER

NOTEBOOK 1: FREDERICK CARDER 1897–1899

“F. Carder, 1897.”

This notebook has diary entries of Carder’s visit to Paris. Includes notes on “deep rich colors” and “Renaissance.” Also has the formula for “glass with copper luster” and “opalescent glass.”

FOUR NOTEBOOKS ORIGINALLY JOINED TOGETHER

NOTEBOOK 2: PRACTICAL CHEMISTRY

n.d.

Notebook includes information on the following: “examination for acids,” “examination of mixture, a white powder” and “examination of group IV ppt dissolved ppt in acitic acid.” Also includes formula for: “optical glass flint,” “optical glass crown,” “flint glass,” “plate glass,” “window crown & sheet,” notes under “estimation of ash in coal” and “estimation of sulphur in coal.”

FOUR NOTEBOOKS ORIGINALLY JOINED TOGETHER

NOTEBOOK 3

1895–1897

Includes notes on payment under “Paid to Models Life Class.” This notebook only holds a few pages of information.

FOUR NOTEBOOKS ORIGINALLY JOINED TOGETHER

NOTEBOOK 4

n.d.

Includes equations, calculations and notes.

LOOSE PAGES

1922–1930

There are tables of data and notes on these pages. The pages include information on the following: “green,” “clear glass,” “yellow,” “blue,” “brown & ruby,” “miscellaneous,” “amber” and “misc. colors & general information.”

**Series II: Diaries**

The travel diary holds a collection of diary entries from Carder’s visits to various glassmaking centers around Europe. Other diaries contain notes and lists of amounts/expenses. Details on the contents of each diary are provided below.

## Box 2

### FLIP-OPEN NOTEBOOK/1902 TRAVEL DIARY 1902–1903

This notebook holds a collection of diary entries from Carder's visits to various glassworks around Europe. This includes Prague, Vienna, Dresden, Berlin, as well as other places in Germany. Also includes information on furnaces in Austria and Germany.

## Box 3

### BLACK POCKET-SIZED DIARY, 1918–1919

There are a few pages with amounts/expenses listed and a few notes. Only seven pages contain information.

### BLACK POCKET-SIZED DIARY 1921–1923

"Frederick Carder, Corning NY"

Holds a list of organizations to which Carder belonged: "What I belong to, 1921, F.C. Art Director, Corning Glass Works." Under cash accounts, there are a few pages with amounts received.

### **Series III: Publications & Clippings**

"The Art of Ornamental & Figure Modelling" is a 16-page publication with 39 "lithographic sketches". It includes "The principles & practice of modeling, for the use of beginners and artists in twenty easy lessons." It contains directions for making piece moulds, chip moulds, elastic moulds, and wax moulds. Also includes instructions on how to make modeling wax, directions for taking casts in plaster of Paris from a person's face and taking casts of leaves. "The Lefax price list" 1921 contains price lists on items such as: loose-leaf data sheets; forms; binders; filing boxes and cabinets. There are clippings including those on "White Acid," "Arabian Enamels," "Lustrous Metallic Surfaces for Glass and Glazed Porcelain," "Glass for optical purposes" and "Ruby Glass." There is also a clipping in French & German on a machine(s) used for detaching glass.

### **Series IV: Letters**

Memo to Carder from "Holdcroft & Co. Patentees & Sole Manufacturers of the Patent Thermoscope"; letter to Carder with recipe; letter from the Carr-Lowrey Glass Company requesting advice from Carder and a letter with Carder's response; letters to Carder in French with translations, including one with an invitation and ticket to a banquet from the American Chamber of Commerce in France; and a letter from the war department with information on Carder's son.

## BOX AND FOLDER LIST

### **Series I: Notebooks & Loose Pages**

#### Box 1

-BLACK NOTEBOOK: FREDERICK CARDER, 1894

-LOOSE-LEAF POCKET MEMO BOOK: FREDERICK CARDER, 1926

-LOOSE-LEAF NOTEBOOK

-LARGE LOOSE-LEAF NOTEBOOK: FREDERICK CARDER, 1912

-BLACK SQUARE-SHAPED NOTEBOOK: FREDERICK CARDER, 1907, RECIPES FOR MAKING FLINT & COLORED GLASS

- FLIP-OPEN NOTEBOOK: GLASS MANUFACTURE, RECIPES & QUESTIONS, 1902
- FLIP-OPEN NOTEBOOK
- NOTEBOOK: COLORS
- SMALL BLACK FLIP-OPEN NOTEBOOK

Box 2

- FLIP-OPEN NOTEBOOK
- NOTEBOOK: C, 1909
- BROWN NOTEBOOK: TRIALS MADE BY CYRIL, 1913-1914 & SOME BY MYSELF AFTER
- BLACK NOTEBOOK OF LOOSE-LEAF DATA SHEETS I
- BLACK NOTEBOOK OF LOOSE-LEAF DATA SHEETS II
- BLACK NOTEBOOK COMPRISED OF 2 NOTEBOOKS OF LOOSE-LEAF DATA SHEETS

Box 3

- POCKET SIZED NOTEBOOK: RESIST FOR SANDBLASTING & ETCHING, 1936
- POCKET SIZED NOTEBOOK: FREDERICK CARDER, 1903-4
- BLACK POCKET SIZED FLIP-OPEN NOTEBOOK
- NOTEBOOK: FREDERICK CARDER 1912, FORMULA GLASS
- DARK BLUE NOTEBOOK I
- DARK BLUE NOTEBOOK II: NOTES ON GLASSMAKING, FREDERICK CARDER & OTHER SUBJECTS AS OCCURED, 1888
- NOTEBOOK: ANALYSIS OF DIFFERENT COMPOUNDS
- NOTEBOOK: ORDER SHEET "WEEKLY" ACCOUNT

Box 4

- FLIP-OPEN NOTEBOOK

TWO NOTEBOOKS ORIGINALLY JOINED TOGETHER:

- NOTEBOOK 1: CHEMISTRY NOTES
- NOTEBOOK 2

FOUR NOTEBOOKS ORIGINALLY JOINED TOGETHER:

- NOTEBOOK 1: (POCKET-SIZED), FREDERICK CARDER 1897-1899
- NOTEBOOK 2: PRACTICAL CHEMISTRY
- NOTEBOOK 3
- NOTEBOOK 4

LOOSE PAGES

**Series II: Diaries**

Box 2

- FLIP-OPEN NOTEBOOK/ 1902 TRAVEL DIARY

Box 3

- BLACK POCKET-SIZED DIARY, 1918-1919
- BLACK POCKET-SIZED DIARY, 1921-1923

**Series III: Publications & Clippings**

Box 1

ITEMS IN BLACK SQUARE-SHAPED NOTEBOOK: FREDERICK CARDER 1907, RECIPES FOR MAKING FLINT & COLORED GLASS include the following clippings: "White

Acid”; “Arabian Enamels”; “Lustrous Metallic Surfaces for Glass and Glazed Porcelain”; “Glass for Optical Purposes”; “Ruby Glass.”

ITEMS IN BLACK NOTEBOOK: FREDERICK CARDER, 1894; clipping in French & German on a machine(s) used for detaching glass.

Box 2

“The Art of Ornamental & Figure Modelling,” 1867.

Box 3

ITEMS IN POCKET-SIZED NOTEBOOK: FREDERICK CARDER, 1903–4 include the following clippings: “Weights & Measure” on one side and “Brief Business Laws” on the other; “Recently Issued Patents.”

Box 4

ITEMS IN LOOSE PAGES including “Lefax Price List, November 1, 1921.”

**Series IV: Letters**

Box 1

ITEMS IN BLACK SQUARE-SHAPED NOTEBOOK: FREDERICK CARDER 1907–  
RECIPES FOR MAKING FLINT & COLORED GLASS includes: memo to Carder from “Holdcroft & Co. Patentees & Sole Manufacturers of the Patent Thermoscope,” 1901; letter to Carder that includes a recipe for ruby-colored glass as made in France & Belgium, 1912.

Box 2

ITEMS IN BLACK NOTEBOOK OF LOOSE-LEAF DATA SHEETS II include: letter to Carder from the Carr-Lowrey Glass Company, 1930; letter from Carder to the Carr-Lowrey Glass Company, 1930.

Box 4

1 letter to Carder in French exchanging pleasantries for the New Year, 1921 (a translation is enclosed).

1 letter to Carder in French placing an order of Pyrex glass for a development, 1920 (a translation is enclosed).

1 letter and ticket to a banquet in celebration of Independence Day, from the American Chamber of Commerce, in France, 1920.

1 letter to Carder from War Department, 1920.