THE

AMERICAN

JOURNAL OF SCIENCE,

MORE ESPECIALLY OF

MINERALOGY, GEOLOGY,

AND THE

OTHER BRANCHES OF NATURAL HISTORY;

INCLUDING ALSO

AGRICULTURE

AND THE

ORNAMENTAL AS WELL AS USEFUL

ARTS.

CONDUCTED BY

BENJAMIN SILLIMAN,

PROFESSOR OF CHEMISTRY, MINERALOGY, ETC IN YALE COLLEGE; AUTHOR OF TRAVELS IN ENGLAND, SCOTLAND, AND HOLLAND, ETC.

VOL. I.

New-York:

PUBLISHED BY J. EASTBURN AND CO. LITERARY ROOMS, BROADWAY, AND BY HOWE AND SPALDING, NEW-HAVEN.

Abraham Paul, printer.

1818.

PLAN OF THE WORK.

THIS Journal is intended to embrace the circle of the PHYSICAL SCIENCES, with their application to the ARTS, and to every useful purpose.

It is designed as a deposit for *original American communications;* but will contain also occasional selections from Foreign Journals, and notices of the progress of Science in other countries. Within its plan are embraced

NATURAL HISTORY, in its three great departments of MINERALOGY, BOTANY, and ZOOLOGY.

CHEMISTRY and NATURAL PHILOSOPHY, in their various branches: and MATHEMATICS, pure and mixed.

It will be a leading object to illustrate AMERICAN NATURAL HISTORY, and especially our MINERALOGY and GEOLOGY.

The APPLICATIONS of these sciences are obviously as numerous as *physical arts*, and *physical wants;* for no one of these arts or wants can be named which is not connected with them.

While SCIENCE will be cherished *for its own sake*, and with a due respect for its own *inherent* dignity; it will also be employed as the *handmaid to the Arts*. Its numerous applications to AGRICULTURE, the earliest and most important of them; to our MANUFACTURES both mechanical

and chemical; and, to our DOMESTIC ECONOMY, will be carefully sought out, and faithfully made.

It is also within the design of this Journal to receive communications on MUSIC, SCULPTURE, ENGRAVING, PAINTING, and generally on the fine and liberal, as well as useful arts.

On Military and Civil Engineering, and the art of Navigation.

Notices, Reviews, and Analyses of new and scientific works, and of new Inventions, and Specifications of Patents.

Biographical and Obituary Notices of scientific men; essays on COMPARATIVE ANATOMY and PHYSIOLOGY, and generally on such other branches of medicine as depend on scientific principles.

Meteorological Registers, and Reports of Agricultural Experiments: and we would leave room also for interesting miscellaneous things, not perhaps exactly included under either of the above heads.

Communications are respectfully solicited from men of science, and *from men versed in the practical arts.*

Learned Societies are invited to make this Journal, occasionally, the vehicle of their communications to the Public.

The editor will not hold himself responsible for the sentiments and opinions advanced by his correspondents; but he will consider it as an allowed liberty to make slight *verbal alterations*, where errors may be presumed to have arisen from inadvertency.

CONTENTS.

Page

Introductory Remarks 1

Art. I. Essay on Musical Temperament, by Professor Alex. M. Fisher 9

MINERALOGY AND GEOLOGY.

Art. II. Review of Cleaveland's Mineralogy 35

Art. III. New Locality of Fluor Spar, &c. 52

Art. IV. Carbonat of Magnesia, &c. discovered by J. Pierce, Esq. 54

Art. V. Native Copper, near New-Haven 55

Art. VI. Petrified Wood from Antigua 56

Art. VII. American Porcelain Clays, &c. 57

Art. VIII. Native Sulphur from Java 58

Art. IX. Productions of Wier's Cave, in Virginia . . 59

Art. X. Mineralogy and Geology of part of Virginia and Tennessee, by Mr. J. H. Kain 60

Art. XI. Notice of Professor Mitchill's edition of Cuvier's Geology 68

Art. XII. Notice of Eaton's Index to the Geology of the Northern States, &c. 69

Art. XIII. Notice of M. Brongniart on Organized Remains 71

BOTANY.

Art. XIV. Observations on a species of Simosella, by Professor E. Ives 74

Art. XV. Notice of Professor Bigelow's Memoir on the Floral Calendar of the United States, &c. . 76

Art. XVI. Journal of the Progress of Vegetation, &c. by C. S. Rafinesque, Esq. 77

ZOOLOGY.

Page

Art. XVII. Description of a new Species of Marten, by C. S. Rafinesque, Esq 82

Art. XVIII. Natural History of the Copper-Head Snake, by the same . . . . . .

PHYSICS AND CHEMISTRY.

Art. XIX. On a Method of augmenting the Force of Gunpowder, by Colonel G. Gibbs . . . 87

Art. XX. On the Connexion between Magnetism and Light, by the same 89

Art. XXI. On a new means of Producing Heat and Light, by J. L. Sullivan, Esq. 91

Art. XXII. On the Effects of the Earthquakes of 1811, 1812, on the Wells in Columbia, South Carolina, by Professor Edward D. Smith . 93

Art. XXIII. On the Respiration of Oxygen Gas in an Affection of the Thorax 95

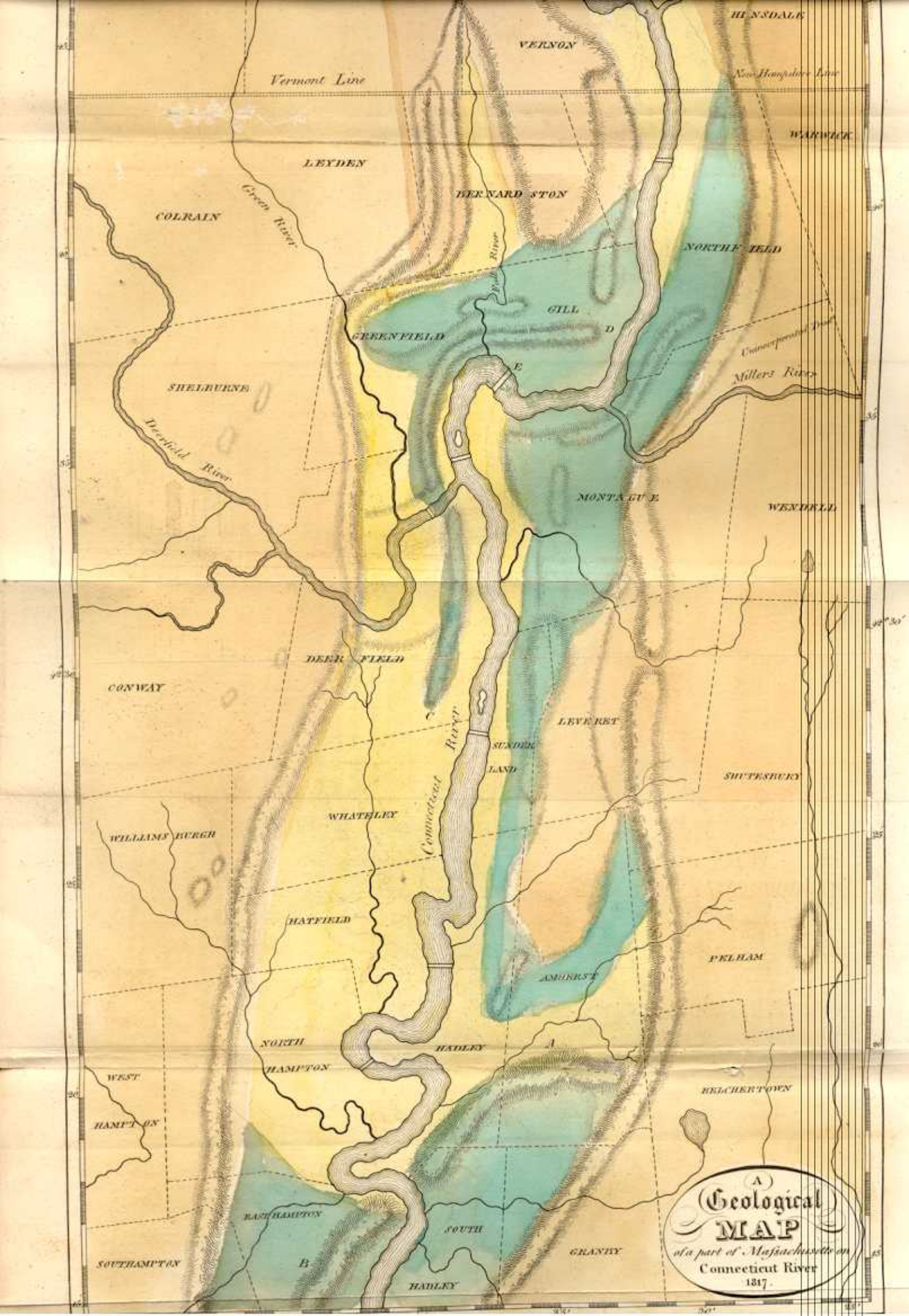
MISCELLANEOUS.

Art. XXIV. On the Priority of Discovery of the Compound Blowpipe, and its Effects 97

Art. XXV. On the Northwest Passage, the North Pole, and the Greenland Ice 101

ERRATA.

Page 13, line 20, for Ea, read Ee.
18, 1, for gain, read give.
ib. 12, for Farcy, read Farey.
24, 1, dele 3.
ib. 7 from bottom, for composed, read compounds.
26, 19, for hormonious, read harmonious.
35, 21, for effadiuntur, read effodiuntur.
49, 30, for analieme, read analcime.
59, 12, for Bognia, read Bagnia.
ib. 5 from bottom, for concavtice, read concentric.
70, 7 and 18, for anthraite, read anthracite.
80, 11, for Festudo, read Testudo.


HINSDALE
VERNON
Vermont Line
New Hampshire Line
WARWICK
LEYDEN
BERNARDSTON
COLRAIN
Green River
NORTHFIELD
Falls River
GILL
D
GREENFIELD
Connecticut River
E
Millers River
SHELBURNE
Deerfield River
MONTAGUE
WENDELL
DEERFIELD
CONWAY
C
LEVERET
SUNDERLAND
SHUTESBURY
Connecticut River
WHATELEY
WILLIAMSBURGH
HATFIELD
PELHAM
AMHERST
NORTH HADLEY
A
HAMPTON
WEST HAMPTON
BELCHERTOWN
EAST HAMPTON
SOUTH
GRANBY
SOUTHAMPTON
B
HADLEY
A Geological MAP of a part of Massachusetts on Connecticut River 1817.

CALORIMOTOR.

Fig. 1.

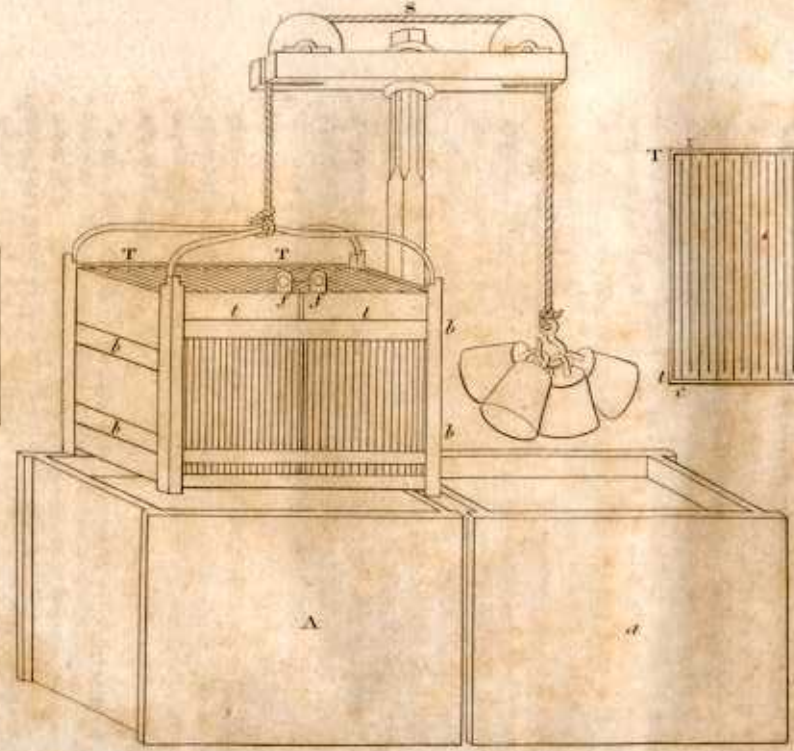


Fig. 4.

Fig. 2.

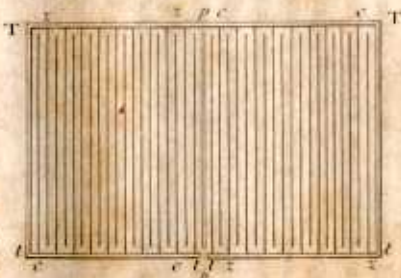
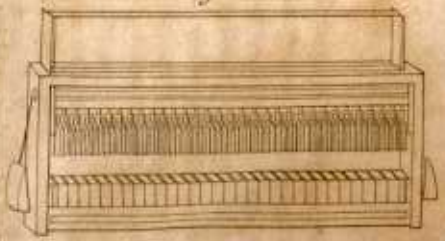


Fig. 3.



Drawn & Engraved for Rees's Cyclop. &c.