













505.73

34

493  
N.Y.

THE  
AMERICAN JOURNAL  
OF  
SCIENCE AND ARTS.

---

CONDUCTED BY  
PROFESSOR SILLIMAN  
AND  
BENJAMIN SILLIMAN, JR.

---

VOLUME L.

GENERAL INDEX TO FORTY-NINE VOLUMES.

---

NEW HAVEN:

PRINTED FOR THE EDITORS BY B. L. HAMLEN,  
Printer to Yale College.







## P R E F A C E .

---

THE project of the American Journal of Science and Arts was first suggested by Col. Gibbs, in November, 1817, during an accidental interview on board the steamboat Fulton in Long Island Sound.\* The American Mineralogical Journal, by the late Dr. Archibald Bruce, (our earliest purely scientific journal,) which had been begun a few years before, was most favorably received both at home and abroad, but it never passed beyond one volume of 270 pages; and as the declining health of Dr. Bruce rendered the prospect of its continuance hopeless, it was thought that we ought not to lose the advantage already gained, and that a high demand of duty required that some man devoted to science, should undertake to sustain its interests and those of the connected arts, in our rising country. Although a different selection of an editor would have been much preferred, and many reasons, public and personal, concurred to produce diffidence of success, the arguments of Col. Gibbs, whose views on subjects of science were entitled to the most respectful consideration, and had justly great weight, being pressed with zeal and ability, induced a reluctant assent; and accordingly, after due consultation with many competent judges, the proposals were issued early in 1818, embracing the whole range of physical science and its applications. The Editor in entering on the duty, regarded it as an affair for life, and the thirty years of experience which he has now had, have proved that his views of the exigencies of the service were not erroneous.

This Journal first appeared in July, 1818, and in June, 1819, the first volume of four numbers and 448 pages was completed. This scale of publication, originally deemed sufficient, was found inadequate to receive all the communications, and as the receipts proved insufficient to sustain the expenses, the work, having but

---

\* Vol. xxv, p. 215. Obituary notice of Col. Gibbs.

three hundred and fifty subscribers, was, at the end of the year, abandoned by the publishers.

An unprofitable enterprise not being attractive to the trade, ten months elapsed before another arrangement could be carried into effect, and therefore No. 1 of Vol. ii was not published until April, 1820. The new arrangement was one of mutual responsibility for the expenses, but the Editor was constrained nevertheless to pledge his own personal credit to obtain from a bank the funds necessary to begin again, and from this responsibility he was, for a series of years, seldom released. The single volume per annum being found insufficient for the communications, two volumes a year were afterwards published, commencing with the second volume.

At the conclusion of Vol. x, in February, 1826, the work was again left upon the hands of its Editor; all its receipts had been absorbed by the expenses, and it became necessary now to pay a heavy sum to the retiring publisher, as an equivalent for his copies of previous volumes, as it was deemed necessary either to control the work entirely or to abandon it. The Editor was not willing to think of the latter, especially as he was encouraged by public approbation, and was cheered onward in his labors by eminent men both at home and abroad, and he saw distinctly that the Journal was rendering service not only to science and the arts, but to the reputation of his country. He reflected moreover that in almost every valuable enterprise perseverance in effort is necessary to success. He being now sole proprietor, a new arrangement was made for a single year, the publishers being at liberty, at the end of that time, to retire, and the Editor to resume the Journal should he prefer that course.

The latter alternative he adopted, taking upon himself the entire concern, including both the business and the editorial duties, and of course, all the correspondence and accounts. From that time the work has proceeded without interruption, two volumes per annum having been published for the last twenty years; and its pecuniary claims ceased to be onerous, although its means have never been large.

Forty-nine volumes having been published, ending with Number 100, October, 1845, it was deemed expedient to close the

series with a fiftieth volume, which should contain an ample and well digested INDEX of the whole. This great labor, vastly more arduous and protracted than had been anticipated, is at last accomplished. The strict verification of every reference in this Index, by actual comparison of the proof with the volume and page, has been a labor surpassed only by the toil of constructing the Index itself. The printing was commenced in October, 1846, and so toilsome and time-consuming has been the correction of the proofs, that although the work has gone steadily forward, without interruption, it is only at this late day completed. We may confidently believe that the volume will prove useful, not only to those who may possess the whole series, but to all who are connected in any way with the arts or sciences; for, whatever the department, the reader is directed by it to the various memoirs that have been published in the Journal on the subject that interests him, whether relating to the progress of science, to details of facts in the different departments of knowledge, or to the various resources of this and other countries: with such a guide, the entire copies of the work in public libraries or in those of individuals, become available.

As this volume may be consulted by many who have never seen the plan and prospectus of the Journal with which the first volume began, we republish, on this occasion, both the "Plan of the Work," and also those parts of the "Introductory Remarks" in which our early views were explained. Our readers will thus be able to judge how far we have fulfilled our engagements, and also how far our prospective views have been realized in the course of our now long experience. They will have moreover before them in this Prospectus of 1817, the principles that are still to guide us in our continued editorial labors.

" PLAN OF THE WORK.\*

"This Journal is intended to embrace the circle of the PHYSICAL SCIENCES, with their applications to the ARTS, and to every useful purpose.

---

\* Taken from Vol. i, Am. Jour. Sci. and Arts, pp. v, vi; also pp. 1 to 8, July, 1818.

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 scientific works, and of new Inventions, and Specifications of Patents:—

Bibliographical 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 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."

## “ INTRODUCTORY REMARKS.

“The age in which we live is not less distinguished by a vigorous and successful cultivation of physical science, than by its numerous and important applications to the practical arts, and to the common purposes of life.

“In every enlightened country, men illustrious for talent, worth, and knowledge, are ardently engaged in enlarging the boundaries of natural science; and the history of their labors and discoveries is communicated to the world chiefly through the medium of Scientific Journals. The utility of such Journals has thus become generally evident; they are the heralds of science; they proclaim its toils and its achievements; they demonstrate its intimate connexion as well with the comfort, as with the intellectual and moral improvement of our species; and they often procure for it enviable honors and substantial rewards.

“In England, the interests of science have been, for a series of years, greatly promoted by the excellent Journals of Tilloch and Nicholson; and for the loss of the latter, the scientific world has been fully compensated by Dr. Thomson’s Annals of Philosophy, and by the Journal of Science and the Arts, both published in London.

“In France, the Annales de Chimie et de Physique, the Journal des Mines, the Journal de Physique, &c. have long enjoyed a high and deserved reputation. Indeed, there are few countries in Europe which do not produce some similar publication; not to mention the transactions of learned societies and numerous medical journals.

“From these sources *our* country reaps, and will long continue to reap, an abundant harvest of information: and if the light of science, as well as of day, springs from the east, we will welcome the rays of both; nor should national pride induce us to reject so rich an offering.

“But can we do nothing in return?

“In a general diffusion of useful information through the various classes of society, in activity of intellect, and fertility of resource and invention, producing a highly intelligent population, we have no reason to shrink from a comparison with any coun-

try. But the devoted cultivators of science in the United States, are comparatively few ; they are, however, rapidly increasing in number. Among them are persons distinguished for their capacity and attainments, and, notwithstanding the local feelings nourished by our state sovereignties, and the rival claims of several of our larger cities, there is evidently a predisposition towards a concentration of effort, from which we may hope for the happiest results, with regard to the advancement of both the science and reputation of our country.

“Is it not, therefore, desirable to furnish some rallying point, some object sufficiently interesting to be nurtured by common efforts, and thus to become the basis of an enduring, common interest? To produce these efforts, and to excite this interest, nothing, perhaps, bids fairer than a SCIENTIFIC JOURNAL.

“No one, it is presumed, will doubt that a Journal devoted to science, and embracing a sphere sufficiently extensive to allure to its support the principal scientific men of our country, is greatly needed ; if cordially supported, it will be successful, and if successful, it will be a great public benefit.

“Even a failure, in so good a cause, (unless it should arise from incapacity or unfaithfulness,) cannot be regarded as dishonorable. It may prove only that the attempt was *premature*, and that our country is not yet ripe for such an undertaking ; for *without the efficient support of talent, knowledge, and money, it cannot long proceed*. No editor can hope to carry forward such a work without the active aid of scientific and practical men ; but, at the same time, the public have a right to expect that he will not be sparing of his own labor, and that his work shall be generally marked by the impress of his own hand. To this extent the editor cheerfully acknowledges his obligations to the public ; and it will be his endeavor faithfully to redeem his pledge.

“Most of the periodical works of our country have been short-lived. *This, also, may* perish in its infancy ; and if any degree of confidence is cherished that it will attain a maturer age, it is derived from the obvious and intrinsic importance of the undertaking ; from its being built upon permanent and momentous national interests ; from the evidence of a decided approbation of the design, on the part of gentlemen of the first eminence, ob-

tained in the progress of an extensive correspondence; from assurances of support, in the way of contributions, from men of ability in many sections of the union; and from the existence of *such a crisis* in the affairs of this country and of the world, as appears peculiarly auspicious to the success of every wise and good undertaking.

“As regards the subjects of the contemplated work, it is ~~not~~ in our power to do much in the department of the natural history of this country. Our Zoology has been more fully investigated than our mineralogy and botany; but neither department is in danger of being exhausted. The interesting travels of Lewis and Clark have recently brought to our knowledge several plants and animals before unknown. Foreign naturalists are frequently exploring our territory; and, for the most part, convey to Europe the fruits of their researches, while but a small part of our own productions is examined and described by Americans: certainly, this is little to our credit, and still less to our advantage. Honorable exceptions to the truth of this remark are furnished by the exertions of some gentlemen in our principal cities, and in various other parts of the Union.

“Our botany, it is true, has been extensively and successfully investigated; but this field is still *rich*, and rewards every new research with some interesting discovery. Our mineralogy, however, is a treasure but just opened. That both science and art may expect much advantage from this source, is sufficiently evinced by the success which has crowned the active efforts of a few ardent cultivators of this science: several new species have been added to it in this country; great numbers of American localities of minerals discovered, and interesting additions made to our materials, for the useful and ornamental arts.

“Mineralogy is most intimately connected with our arts, and especially with agriculture. Such are the disguises worn by many most useful mineral substances, that an unskilful observer is liable to pass a thing by, as worthless, which, if better informed, he would seize with avidity; and, still more frequently, a worthless substance, clothed perhaps in a brilliant and attractive exterior, excites hopes altogether delusive, and induces expense, without a possibility of remuneration. A diffusion of correct

knowledge on this subject is the only adequate remedy for either evil.

“Our geology, also, presents a most interesting field of inquiry. A grand outline has recently been drawn by Mr. Maclure, with a masterly hand, and with a vast extent of personal observation and labor: but to fill up the detail, both observation and labor still more extensive are demanded; nor can the object be effected till more good geologists are formed, and distributed over our extensive territory.

“To account for the formation and changes of our globe, by excursions of the imagination, often splendid and imposing, but usually visionary, and almost always baseless, was, till within half a century, the business of geological speculations; but this research has now assumed a more sober character; the science of geology has been reared upon numerous and accurate observations of *facts*; and standing thus upon the basis of induction, it is entitled to a rank among those sciences which Lord Bacon’s Philosophy has contributed to create.

“The outlines of American geology appear to be particularly grand, simple, and instructive; and a knowledge of the important facts, and general principles of this science, is of vast practical use, as regards the interests of agriculture, and the research for useful minerals. Geological and mineralogical descriptions, and maps of particular states and districts, are very much needed in the United States; and to excite a spirit to furnish them will form one leading object of the contemplated journal.

“The science of natural philosophy, with its powerful auxiliary mathematics, and the science of chemistry, the twin sister of natural philosophy, are of incalculable importance to this country. A volume would not suffice to trace their applications, and to enumerate the instances of their utility.

“As one which may be allowed to stand, *instar omnium*, we may mention the steam engine; that legitimate child of physical and chemical science—at once more powerful than the united force of the strongest and largest animals, and more manageable than the smallest and gentlest; raising from the bowels of the earth the massy treasures of its mines, drawing up rivers from their channels, and pouring them, in streams of life, into the



bosom of cities ; and, above all, propelling against the currents, the winds, and the waves, of the ocean, those stupendous vessels, which combine speed with certainty, and establish upon the bosom of the deep the luxuries and accommodations of the land.

“The successful execution of this magnificent design was first effected by Fulton and witnessed upon the waters of the Hudson, but is now imitated in almost every civilized country ; and it remains to be seen whether steam will be applied in war.

“The mechanical inventions of this country are numerous ; many of them are ingenious, and some are highly important. In no way can a knowledge of them be so readily and extensively diffused as in a scientific journal. To this object, therefore, a part of our labors (should there be a call for it) will be devoted, and every necessary aid will be given by plates and descriptions.

“Science and art mutually assist each other ; the arts furnish facts and materials to science, and science illuminates the path of the arts.

“Geometry, and mathematics both pure and mixed, can never cease to be interesting and important to man, as long as the relations of quantity shall exist, as long as ships shall traverse the ocean, as long as man shall measure the surface or heights of the earth on which he lives, or calculate the distances and examine the relations of the planets and stars ; and as long as the iron reign of war shall demand the discharge of projectiles, or the construction of complicated defenses.

“In a word, the whole circle of physical science is directly applicable to human wants, and constantly holds out a light to the practical arts ; it thus polishes and benefits society, and every where demonstrates both supreme intelligence, and harmony and beneficence of design in the CREATOR.”

Such was the pledge which, on entering upon our editorial labors in 1818, we gave to the public, and such were the views which we then entertained, regarding science and the arts as connected with the interests and honor of our country and of mankind. In the retrospect, we realize a sober but grateful feeling of satisfaction, in having, to the extent of our power, discharged these self-

imposed obligations ; this feeling is chastened also by a deep sense of gratitude, first, to God for life and power continued for so high a purpose ; and next, to our noble band of contributors, whose labors are recorded in half a century of volumes, and in more than a quarter of a century of years. We need not conceal our conviction, that the views expressed in these "Introductory Remarks," have been fully sustained by our fellow laborers.

Should we appear to take higher ground than becomes us, we find our vindication in the fact, that we have heralded chiefly the doings and the fame of others. The work has indeed borne throughout "the impress" of editorial unity of design, and much that has flowed from one pen, and not a little from the pens of others, has been without a name. The materials for the pile, have however been selected and brought in, chiefly by other hands, and if the monument which has been reared should prove to be "*ære perennius*," the honor is not the sole property of the architect ; those who have quarried, hewn and polished the granite and the marble, are fully entitled to the enduring record of their names already deeply cut into the massy blocks, which themselves have furnished.

If a retrospective survey of the labors of thirty years, on this occasion, has rekindled a degree of enthusiasm, it is the natural result of an examination of all our volumes, from the contents of which we have endeavored to make out a summary both of the laborers and their works.

We find that there have been about 600 contributors of original matter to the Journal, and we have the unexpected satisfaction of believing that probably five-sixths of them are still living ; for we are not certain that more than fifty are among the dead ; of perhaps fifty more we are without information, and if that additional number is to be enrolled among the "*stelligeri*," we have still 500 remaining. Among them are not a few of the veterans with whom we began our career, and several of these are still active contributors. Shall we then conclude that the peaceful pursuits of knowledge are favorable to long life ? This we think is, *cæteris paribus*, certainly true : but in the present instance, another reason can be assigned for the large amount of survivorship. As the Journal has advanced and death has removed its scientific

contributors, younger men and men still younger, have recruited the ranks, and volunteers have enlisted in numbers constantly increasing, so that the flower of the host are now in the morning and meridian of life.

We have been constantly advancing, like a traveller from the equinoctial towards the colder zones,—as we have increased our latitude, stars have set and new stars have risen, while a few planetary orbs visible in every zone, have continued to cheer us on our course.

The number of articles, almost exclusively original, contained in the Journal is about 1800, and the Index will show how many have been contributed by each individual; we have doubtless included in this number *some few* articles republished from foreign Journals—but we think they are even more than counterbalanced by original communications without a name and by editorial articles, both of which have been generally omitted in the enumeration.

Of smaller articles and notices in the Miscellany, we have not made any enumeration, but they evidently are more numerous than the regular articles, and we presume that they may amount to at least 2500.

Of party, either in politics or religion, there is no trace in our work; of personalities there are none, except those that relate to priority of claims or other rights of individuals. Of these vindications the number is not great, and we could heartily have wished that there had been no occasion for any.

During twenty years from the inception of this Journal, the editor labored alone, although overtures for editorial coöperation had been made to him by gentlemen commanding his confidence and esteem, and who would personally have been very acceptable. It was, however, his opinion that the unity of purpose and action so essential to the success of such a work were best secured by *individuality*; but he made every effort, and not without success, to conciliate the good will and to secure the assistance of gentlemen eminent in particular departments of knowledge. On the title page of No. 1, Vol. xxxiv, published in July, 1838, a new name is introduced: the individual to whom it belongs having

been for several years more or less concerned in the management of the Journal, and from his education, position, pursuits and taste, as well as from affinity, being almost identified with the editor, he seemed to be quite a natural ally, and his adoption into the editorship was scarcely a violation of individual unity. His assistance has proved to be very important:—his near relation to the senior editor prevents him from saying more, while justice does not permit him to say less.

It may be interesting to our readers to know something of the patronage of the Journal. It has never reached one thousand paying subscribers, and has rarely exceeded seven or eight hundred—for many years it fluctuated between six and seven hundred.

It has been far from paying a reasonable editorial compensation; often it has paid nothing, and at present it does little more than pay its bills. The number of engravings and the extra labor in printer's composition, cause it to be an expensive work, while its patronage is limited.

It has a large gratuitous distribution, both at home and abroad, and an extensive good-will exchange with works often having no particular bearing upon its peculiar objects. It has incurred a heavy extra expenditure in reprinting exhausted numbers, for the purpose of furnishing entire sets of the work. No application for an entire set has ever yet been disappointed, and complete sets of the volumes are to be found in many institutions and in the hands of many individuals, both in Europe and in the United States. Entire sets have often been presented gratuitously to our infant colleges and to scientific institutions and distinguished individuals in Europe. A few remain on hand, and it is our intention to furnish them as long as we can afford to republish, or can repurchase numbers that have run out.

The series of volumes must ever form a work of permanent interest on account of its exhibiting the progress of American science during the long period which it covers. Comparing 1817\* with 1847, we mark on this subject a very gratifying change. The cultivators of science in the United States were then few—now they are numerous. Societies and associations of various

---

\* The date of the incipient movements.

names, for the cultivation of natural history, have been instituted in very many of our cities and towns, and several of them have been active and efficient in making original observations and forming collections. The American Philosophical Society at Philadelphia, the American Academy of Arts and Sciences at Boston, and the Academy of Natural Sciences also at Philadelphia, numbered distinguished names among their members, and had published valuable volumes of Transactions before our publication began. The Connecticut Academy of Arts and Sciences had also published a single volume as early as 1813. Since that time the Lyceum of Natural History of New York, the Boston Society of Natural History, the Albany Institute, and the Maryland Academy of Sciences have stood prominent among associations of a like nature, and their memoirs now constitute an important item in our scientific history. Other associations for the departments of history and ethnography have also published memoirs; and we must not omit to mention the American Geological Society, and the Geological Society of Pennsylvania, which has issued one valuable volume.

Of scientific collections we may say, that in the Institution from which we date these remarks, going back only fourteen years from the issuing of our first number, the entire mineralogical and geological collection of the college was transported to Philadelphia in one small box, and there, for lack of information elsewhere, the specimens were named by the late Dr. Adam Seybert, then fresh from the celebrated school of Werner at Freiburg in Germany, perhaps the only man then in this country who could be regarded as a mineralogist scientifically trained. Now, mineralogy and geology are familiar to our legislators and our youth; and the institution which sent forth its little box of unknown mineral treasures, unfolds to its pupils and the world a magnificent collection not surpassed, if equalled, in the United States.

Boston, which at our earliest date presented only the limited collection of the Linnæan Society, now opens to the student a rich and beautiful museum of natural history; and Harvard University at Cambridge has a fine botanical garden under an able and zealous botanist—a well furnished and successful observatory,

and a rich collection of minerals and fossils, including a skeleton of the Mastodon, which is rivalled only by the specimen of unexampled magnitude and perfection, in the private museum of Dr. John C. Warren in Boston.

Philadelphia may also boast of her cabinets of natural history, public and private: and one of the noblest collections of birds in the world,\* bestowed on his country by Mr. Wilson of Delaware, has been, within a few months, added to the valuable collections of the Academy of Natural Sciences at that place.

When we began our Journal, not one of the States had been surveyed in relation to its geology and natural history; now those that have not been explored are few in number. State collections and a United States Museum hold forth many allurements to the young naturalist, as well as to the archæologist and the student of his own race. The late Exploring Expedition with the National Institute, has enriched the capital with treasures rarely equalled in any country, and the Smithsonian Institution recently organized at Washington, is about to begin its labors for the increase and diffusion of knowledge among men.

It must not be forgotten that the American Association of Geologists and Naturalists—composed of individuals assembled from widely separate portions of the Union—by the seven sessions which it has held, and by its rich volume of reports, has produced a concentration and harmony of effort which promise happy results, especially as, like the British Association, it visits different towns and cities in its annual progress.

Astronomy now lifts its exploring tubes from the observatories of many of our institutions. Even the Ohio, which within the memory of the oldest living men, rolled along its dark waters through interminable forests, or received the stains of blood from deadly Indian warfare, now beholds on one of its most beautiful hills, and near its splendid city, a permanent observatory with a noble telescope sweeping the heavens, by the hand of a zealous and gifted observer. At Washington also, under the powerful patronage of the general government, an excellent observatory has been established, and is furnished with superior instruments,

---

\* Late the *Rivoli* collection of Paris.

under the direction of a vigilant and well instructed astronomer—seconded by able and zealous assistants.

Here also (in Yale College) successful observations have been made with good instruments, although no permanent building has been erected for an Observatory.

We only give single examples by way of illustration, for the history of the progress of science in the United States, and of institutions for its promotion, during the present generation, would demand a volume. It is enough for our purpose that science is understood and valued, and the right methods of prosecuting it are known, and the time is at hand when its moral and intellectual uses will be as obvious as its physical applications. Nor is it to be forgotten that we have awakened an European interest in our researches: general science has been illustrated by treasures of facts drawn from this country, and our discoveries are eagerly sought for and published abroad.

While with our co-workers\* in many parts of our broad land, we rejoice in this auspicious change, we are far from arrogating it to ourselves. Multiplied labors of many hands have produced the great result. In the place which we have occupied, we have persevered despite of all discouragements, and may, with our numerous coadjutors, claim some share in the honors of the day. We do not say that our work might not have been better done—but we may declare with truth that we have done all in our power, and it is something to have excited many others to effort and to have chronicled their deeds in our annals. Let those that follow us labor with the like zeal and perseverance, and the good cause will continue to advance and prosper. It is the cause of truth—science is only embodied and systematized truth, and in the beautiful conception of our noble Agassiz—“*it tells the thoughts of God.*”

Although we are writing a preface to our first series already closed, we may, without impropriety, say something of the Second Series now in successful progress. It began on the first of January, 1846; instead of being quarterly like the First Series, it ap-

---

\* Especially our ancient compeer, The Journal of the Franklin Institute at Philadelphia.

pears once in two months—six times in a year, giving two volumes of 450 pages each. In this Series, the name of a third editor appears upon the title page, and the remarks which have been already made are, in their spirit and almost in the letter, applicable in the present instance. The *unity* is still preserved, and both counsel and action—favored by juxta-position and constant intercourse—are almost as if one individual presided alone. It will be perceived, therefore, that we have not departed from the principle which has governed us from the beginning, and when our mantle shall fall, there are those at hand who may, if it be worth the effort, arrest it in its descent and wear it more worthily than we have done.

The portrait prefixed to this volume was engraved for a very different purpose and for others than the patrons of this Journal. It has been suggested by friends, whose judgment we are accustomed to respect, that it ought to find a place here, since it is regarded as an authentic, although, perhaps, a rather austere resemblance. In yielding to this suggestion, it may be sufficient to quote the sentiment of Cowper on a similar occasion, who remarked—“that after a man has, for many years, turned his mind *inside out* before the world, it is only affectation to attempt to hide his face.”

In tracing back the associations of many gone-by years, a host of thoughts rush in, and pensive remembrance of the dead who have labored with us casts deep shadows into the vista through which we view the past.

Anticipation of the hour of discharge, when our summons shall arrive, gives sobriety to thought and checks the confidence which health and continued power to act might naturally inspire, were we not reprov'd, almost every day, by the death of some co-eval, co-worker, companion, friend or patron. This very hour is saddened by such an event,—but we will continue to labor on, and strive to be found at our post of duty, until there is nothing more for us to do; trusting our hopes for a future life in the hands of him who placed us in the midst of the splendid garniture of this lower world, and who has made not less ample provision for another and a better.

Yale College, April 19, 1847.





## EXPLANATIONS.

---

NAMES of authors and subjects are arranged together alphabetically.

References to species of animals described or noticed in the Journal, though to some extent distributed through the Index, are systematically catalogued under the word *Zoology*. The same plan is followed with *Botany*.

Obituary notices are collected together under *Obituary*.

The references under authors' names, when numerous, are sometimes alphabetized, or distributed according to subjects, but often follow the order of the volumes.

Works reviewed are mentioned under the names of their authors, and also under the word *Works*.

When an article is illustrated by figures or plates, the fact is noted by adding to the number of the page, the letter f.

A Supplement, (page 317,) is added, containing some omitted references.

The list of plates and wood cuts, (page 323,) is arranged according to volumes, and the page or article is mentioned which each illustrates. The numbers in this list indicate the proper order of succession in each volume, and not the numbers that may appear on the plates.

---

## ERRATA.

- Page 14, col. 1, line 24 from bottom, for "Lea," read "Lee."  
" 22, " 2, " 22 " " for "368," read "367."  
" 23, " 2, " 12 " " dele "Barnes, D. W."  
" 75, " 1, " 15 from top, for "156," read "157."  
" 86, " 2, " 22 " " for "358," read "354."  
" 98, " 2, " 4 from bottom, for "xxxiii," read "xxxii."  
" 156, " 2, " 12 and 13 from bottom, dele the lines.  
" 185, " 1, " 16 from bottom, for "xxxiii," read "xxiii."  
" 185, " 1, " 21 " " for "271," read "371."  
" 212, " 1, " 12 from top, dele "x, 203; xi, 335," and insert the same  
in the 2d line from top.  
Page 287, col. 2, line 21 from top, insert xliii, 390.  
" 287, " 2, " 3 from bottom, insert xxiv, 151.

# INDEX.

A C A

A C I

- Abbot, J. H.*, Description of some new electro-magnetic, and magneto-electric instruments and experiments, xl, 104.<sup>f</sup>
- , theory of the pneumatic paradox, xxxix, 296<sup>f</sup>; xl, 144.<sup>f</sup>
- Aberration of the fixed stars, *F. Struve*, xlvii, 91.
- Absorption in animals, mechanism of, *F. Magendie*, iii, 288.
- Academy of Sciences of Philadelphia, history of, xlvii, 6.
- — —, notice of, viii, 399; xix, 88, 355; xxii, 183.
- — —, Journal of, when commenced, xix, 91.
- — —, notice of the Catalogue of the Library, xxxiii, 181.
- — —, *Dr. Burrough's* collections, xix, 355.
- — —, *McClure's* donation to, xxx, 187.
- — —, notice of Journal or Proceedings of, xx, 414; xxxix, 395; xlix, 183.
- , Maryland, of Science and Literature, xxx, 192, 395; xxxi, 395; xxxii, 204.
- , Delaware, of Natural Sciences, xxiv, 177.
- , St. Petersburg, of Sciences, xx, 389; xxii, 203.
- , Stockholm, of Sciences, iv, 387.
- Acarus, *Crosse's*, xxxii, 374<sup>f</sup>; xxxv, 125<sup>f</sup>; xlix, 227.
- , experiments of *W. H. Weekes*, xliii, 395.
- Acarus, the supposed microscopic fungus, xliii, 205.<sup>f</sup>
- Acetic acid, a new process for obtaining from alcohol, xxviii, 358.
- — —, on crystallizable, *C. Despretz*, xxvii, 197.
- Achromatic microscope, improvements in, *E. Thomas*, xx, 265.<sup>f</sup>
- Acid, acetic, new process for, from alcohol, xxviii, 358.
- — —, on crystallizable, *C. Despretz*, xxvii, 197.
- , angelicic, xlvii, 196.
- , apocrenic, *Berzelius*, xxviii, 121.
- , argento-cyanic, xviii, 334.
- , aspartic, xvii, 173.
- , benzoic, xlix, 194.
- , of butter, volatile, *J. U. Lezch*, xlix, 202.
- , boracic, of Tuscany, ii, 349; xxviii, 143; xxxvii, 270.
- — —, in the waters of Vulcano, ii, 349.
- , butyric, xlviii, 186.
- , carbonic, see *carbonic acid*.
- , chlorovinic, *A. A. Hayes*, xxii, 142.
- , chlorovinous, xxii, 142.
- , citric, from gooseberries, xvi, 385.
- , citricic, *S. Baup*, xxxiv, 206.
- , columbic, *A. A. Hayes*, xlvi, 166.
- , crenic, *J. Berzelius*, xxviii, 121.
- , cyanic, xvi, 258.
- , formic, see *formic acid*.

- Acid, gallic, new process for, *E. N. Kent*, xlvii, 78.  
 —, hydriodic, preparation of, xvi, 383; xlvii, 192.  
 —, hydrobromic, xlvii, 192.  
 —, hydrochloric, experiments with reference to, *Macaire and de la Rive*, xi, 393.  
 —, hydro-carbo-sulphuric, preparation of, vii, 187.  
 —, hydroxanthic, vii, 376.  
 —, iodic, xx, 185; xxviii, 136.  
 —, —, combinations with vegetable alkalies, xix, 371.  
 —, kinic, detection of, *J. Stenhouse*, xlix, 391.  
 —, malic, *M. Liebig*, xxi, 156.  
 —, meconic, mode of obtaining, *R. Hare*, xii, 293.  
 —, metagallic, *M. Pelouze*, xxviii, 126.  
 —, muriatic, see *Muriatic*.  
 —, nitric, see *Nitric*.  
 —, opianic, xlvii, 196; xlix, 205.  
 —, opiano-sulphurous, xlix, 205.  
 —, oxalic, *Gay Lussac*, xxvii, 400.  
 —, phosphovinic, *M. Pelouze*, xxviii, 129.  
 —, prussic, see *Prussic*.  
 —, pyrocitric, vii, 187.  
 —, pyrogallic, *M. Pelouze*, xxviii, 126.  
 —, pyroligneous, ii, 340; v, 188; ix, 201; xiii, 175.  
 —, rosaic, in urine, xvii, 385.  
 —, saccharic, *M. Heintz*, xlvi, 193.  
 —, silicic, see *Silica*.  
 —, succinic, xlvii, 196.  
 —, sulphacetic, *M. Melsens*, xlvi, 193.  
 —, sulphuric, see *Sulphuric*.  
 —, sulphurous, see *Sulphurous*.  
 —, tartaric, manufacture at Glasgow, xli, 50.  
 —, of tomatos, xvii, 115.  
 — uric, *Liebig*, xxxiv, 40.  
 Acids and salts, *R. Hare's* views on, xxvii, 63; 67.  
 —, on the formation of, in vegetables, *M. Vauquelin*, xviii, 150.
- Acoustic rainbow, xxi, 381.  
 Actinolite, in Canada, viii, 68.  
 —, glassy, from Concord, Penn., analysis of, *H. Seybert*, vi, 331.  
 —, in Connecticut, vi, 226; vii, 253; viii, 259.  
 —, in Maryland, xiv, 12.  
 —, in Massachusetts, i, 114; ii, 236; viii, 48, 235; ix, 54; x, 214.  
 —, in New Jersey, v, 246.  
 —, in New York, ix, 243, 250.  
 —, in North Carolina, v, 261.  
 —, in Pennsylvania, viii, 239; ix, 246; xiv, 9, 12, 13.  
 —, in Rhode Island, iv, 285; viii, 227; x, 10, 226.  
 —, in Vermont, iii, 76; iv, 54; v, 40, 271; xvii, 354.  
*Adams, C. B.*, mollusca of Middlebury, Vt., xl, 266.  
 —, new species of *Thracia*, xliii, 145.<sup>f</sup>  
 —, note on the *Pasithea sordida* of Lea, xlii, 392.  
*Adams, E.*, divisibility of matter, xxviii, 163.  
*Adams, J.*, movement of rocks by ice, ix, 136.  
 —, theory of the construction of the thermometer, viii, 121.  
*Adams, S.*, observations and experiments on light, xlii, 123.  
*Adams, W. A.*, human footprints in rocks, and other artificial impressions, xliv, 200.  
 Adularia, in Connecticut, ii, 239, 240; vi, 221.  
 —, in Massachusetts, v, 41.  
 —, in New York, vii, 57.  
 Adulterations of various substances, on the detection of, *E. D. Faust*, xix, 70.  
 — of alcohol, xix, 71.  
 — of ammonia, xix, 72.  
 — of arrow root, xix, 72.  
 — of calomel, xix, 72.  
 — of castor oil, xix, 77.  
 — of chromate of lead, xix, 73.  
 — of copaiva, xix, 73.  
 — of iodide of potassium, xix, 74.  
 — of lemon juice, xix, 75.

- Adulteration of morphine, xix, 75.  
 — of oil of sweet almonds, xix, 76.  
 — of oil of olives, xix, 76.  
 — of peroxide of manganese, xix, 78.  
 — of peruvian bark, xix, 81.  
 — of phosphate of soda, xix, 82.  
 — of prussic acid, xix, 70.  
 — of soda, xix, 83.  
 — of sulphate of magnesia, xix, 84.  
 — of sulphate of quinine, xix, 84.  
 — of tartrate of potash, xix, 85.  
 — of tartar emetic, xix, 86.  
 — of vinegar, xix, 86.
- Aerial navigation, principles of, *H. Strait*, xxv, 15.<sup>f</sup>
- Aerolite, see *Meteorite*.
- Aerostation, observations made during an ascent, *E. Robertson*, xii, 166, 325.
- Africa, alum and other minerals in a cavern in Southern, xxviii, 290.  
 —, white race of Atlas in, xxxii, 400.  
 —, Journey in Northern, by *Ehrenberg* and *Hemprich*, vii, 195.  
 —, Northern, geological notices of, iv, 32.  
 —, geology of desert between Suez and Cairo, xxxiii, 288.  
 —, geology of Cape of Good Hope, *G. Champion*, xxix, 230.
- African Cold Bokkeveld meteorite, notice of, xl, 199.  
 — dialects, *J. W. Gibbs*, xxxviii, 41; xxxix, 255.
- Afzelius*, obituary notice of, xxxiii, 211.
- Agardh's Systema Algarum*, announced, ii, 363; iv, 200.
- Agaric mineral in N. York, xxv, 347.  
 — —, in Vermont, iii, 234, 242.
- Agassiz* on fossil fishes, notice of, xxviii, 193; xxxiv, 212; abstract of, xxx, 33.  
 —, on the freshwater fishes of Central Europe, xxxix, 390; xlv, 211.
- Agassiz*, on the echinodermata, noticed, xxxiv, 212; xxxvii, 369; xlii, 378; xlv, 399.  
 —, glaciers and bowlders in Switzerland, xli, 59, 190.  
 —, former existence of glaciers in Scotland, xli, 191.  
 —, glacial theory of, xlii, 346.<sup>f</sup>  
 —, visit of, to Mantell's Museum, xxviii, 194.  
 —, Wollaston medal awarded to, xxx, 382.  
 —, notice of the several works of, xli, 194.
- Agate, in Canada, viii, 64.  
 —, in Connecticut, i, 134; v, 44, 45; vi, 216.  
 —, in Massachusetts, i, 113, 115; v, 407; vi, 52.  
 —, in New Jersey, i, 236; ii, 197; v, 239.  
 —, in North Carolina, v, 261, 264.  
 —, in Rhode Island, ix, 46.  
 —, in the Western States, i, 132; iii, 71; vii, 49.  
 —, cause of red color of, xxxvi, 207.  
 —, coralline, in the West Indies, i, 141.
- Agave plant, and cordage from its fibre, xxi, 32.  
 — and other plants used for cordage, *J. Mease* and *H. Perrine*, xxv, 330.
- Agricultural chemistry, remarks on, xli, 262.
- Agriculture, rotation of crops in, *M. Macaire*, xxiii, 138.
- Aikin, W. E. A.*, notices of the country between Baltimore and the Ohio river, xxvi, 219.<sup>f</sup>  
 —, apparent diminution of weight in some circumstances, xxvii, 224.
- Air, on the color of, by *Count Xavier de Maistre*, xxvi, 65.  
 —, currents in, see *Winds*.  
 —, temperature of, see *Meteorology, Heat and Temperature*.
- Airpump, new, *J. H. Patten*, viii, 143.<sup>f</sup>  
 —, remarks upon, with suggestions, *J. F. Dana*, viii, 275.<sup>f</sup>

- Airpump, Patten's, remarks in reply to *J. F. Dana*, ix, 92.
- , new, *M. Thilorier*, xxiv, 379.
- , a new construction, *R. Hare*, xxxiii, 237.<sup>f</sup>
- , improved, *J. Johnston*, xxxiv, 86.<sup>f</sup>
- receiver, improved, *J. Bell*, xxviii, 353.<sup>f</sup>
- Akerly, S.*, on the language of signs, viii, 348.
- Alabaster (gypsum) of the Mammoth Cave, Ky., xlii, 206.<sup>f</sup>
- Alasmodonta and Unio, on the genera and species, *D. H. Barnes*, vi, 107.<sup>f</sup>, 258.<sup>f</sup>
- , descriptions of some, xiv, 289; xxv, 341.<sup>f</sup>
- , see farther under *Zoology, Mollusca.*
- Albite, a distinct species from feldspar, vii, 390.
- of Chesterfield, Massachusetts, analysis of, xxx, 381.
- Albumen, precipitated by phosphoric acid, xvi, 396.
- , solubility of, *A. Wurtz*, xlvi, 184.
- Alcohol, density in different states, xvi, 388.
- , on the colored flame of, xvi, 390.
- , observations on, by *A. Eaton*, xvi, 173.
- , detection of adulterated, xix, 71.
- , rectification of, ii, 358.
- , rectified without heat, x, 378.
- , proportion of, in wines and various fermented liquors, *L. C. Beck*, xxviii, 48.
- , combination with oil of turpentine, viii, 390.
- , action of, on alkalies, xl, 216.
- , action of chloride of lime on, xxiii, 134.
- , action of sulphuric acid on, xvi, 267.
- mixed with water, changes in the volume of, xxiv, 373.
- in bread, xxiii, 194.
- Alcohol not in bread, xxvi, 211.
- Alcyonium, in green sand, Maryland, xvii, 288.
- Alden, T.*, account of descents in a diving bell at Portsmouth, N. H., xxii, 325.
- Alder, J.*, notice of, xxxvii, 168.
- Aldini*, on the preservation of firemen from the action of flame, by asbestos cloth and other means, xx, 96.<sup>f</sup>
- Aldridge*, on vegetable impregnation, xli, 62.
- Alembic for distilling amalgam of gold, *M. F. Maury*, xxxiii, 66.<sup>f</sup>
- Alexander, J. H.*, new form of barometer, xlv, 233.<sup>f</sup>
- Algebraic series, *J. Wallace*, vii, 278.
- —, remarks on, viii, 131.
- —, reply by *J. Wallace*, ix, 98.
- —, reply to *J. Wallace*, ix, 293.
- solutions, by *C. Wilder*, xvi, 271.
- Alger, F.*, Beaumontite and Lincolnite identical with Heulandite, xlvi, 233.<sup>f</sup>
- , mineralogy of Nova Scotia, xii, 227; xiv, 305; xv, 132, 201.
- , minerals of New Holland, xxxix, 157.<sup>f</sup>
- , zinc mines of Franklin, New Jersey, xlvi, 252.
- , mineralogy of, reviewed, xlvi, 333.
- Alkalies, bases of, discovered, by *Davy*, xvii, 228.
- Alkanet, a substitute for litmus or turmeric, *R. Hare*, v, 348.
- Allan, J.*, on coins and medals, with a notice of the New Haven medal, xxxvii, 285.
- Allanite, analysis of, xxviii, 394.
- , of Monroe, N. Y., analysis of, xlvi, 37.
- , in New York, xl, 76.
- Allen, J. A.*, supposed traces of a volcano about West River Mountain, Vermont, iii, 73.

- Allen, J. A.*, luminous appearances in the atmosphere, iv, 341.
- Allen, W.*, on the curves of trisection, iv, 343.
- Allen, Z.*, volume of the Niagara river, xlv, 67.<sup>f</sup>
- Allinson, S. Jr.*, on the atomic weight of mercury, xvi, 183.
- Allomorphite, xlii, 386.
- Allotropism of chlorine, *J. W. Draper*, xlix, 346.<sup>f</sup>
- Alloxan and Alloxantine, preparation of, *W. Gregory*, xli, 54.
- Alloy of tin and antimony, action of, with nitric and muriatic acids, xlix, 206.
- Alluvial district (tertiary and cretaceous) of New Jersey, vi, 237.
- deposits at Malbay, L. C., v, 221.
- of the Mohawk, xxiii, 207.
- Alluvium of the Connecticut valley, vi, 80, 83.
- Alluvium of the valley of the Muskingum, xxix, 9.
- Almonds, bitter, amygdaline in, xix, 384.
- Aloes, medicinal effects, xxiv, 274.
- Alpaca and Alpaca wool, remarks on, xli, 63.
- Alphabet, proposed change in the English, xxxix, 197; xlvii, 420.
- Alpnach, slide of, xxiv, 124.
- Alps, notice of *Hugi's* Travels in, with some account of the geology of, xxviii, 296.
- , Bernese, ascent of the high peak Fisterarhorn, by *Hugi*, xxviii, 301.
- , atmospheric "cannonade" in, xxviii, 303.
- , notice of Forbes's travels in, and account of icebergs, xlv, 172.
- Alum, manufacture of, at Salem, Mass., vi, 372.
- , manufacture of, at Glasgow, xli, 49.
- , used for alabaster, xxx, 168.
- method of coloring crystals of, vii, 194.
- Alum, native, of a cavern in Southern Africa, xxviii, 290.
- , in Connecticut, iii, 240; viii, 256; x, 12.
- , in Massachusetts, i, 114; viii, 235.
- , in New York, vi, 95; ix, 44; xv, 243.
- , in Vermont, viii, 243.
- , in mica slate, xx, 418.
- , magnesian, or Pickeringite, analysis of, *A. A. Hayes*, xlv, 360.
- earth, and alum manufactory, Maryland, xxvii, 12.
- Alumslate, iii, 28.
- Alumstone, iii, 245.
- Alumina, use of, with pigments for the pallet, xvi, 173.
- Aluminium, obtained by *W. W. Mather*, xx, 408.
- , characters of, *F. Wöhler*, xlix, 390.
- , chloride of, *W. W. Mather*, xxvii, 241, 248, 253.
- Amalgam of gold, alembic for distilling, *M. F. Maury*, xxxiii, 66.<sup>f</sup>
- Amber, vegetable origin of, ii, 353.
- , origin of, xxviii, 293.
- , *Berendt* on, xxxvii, 365.
- , from Ava, xxviii, 71.
- , from the Chesapeake and Delaware Canal, xvii, 292.
- , from Maryland, iii, 8.
- , from the island of New Providence, x, 171.
- America, early discovery of, by the Scandinavians, xvii, 410.
- Amethyst, in the Canadas, viii, 63.
- , in Massachusetts, i, 113.
- , in New Jersey, ii, 197.
- , in Nova Scotia, xxx, 348.
- , in Rhode Island, viii, 199, 229.
- , in the Western States, i, 132; vii, 48.
- Amianthus, in Connecticut, vi, 225.
- , in Massachusetts, i, 343.
- , in New Jersey, v, 266.
- , in New York, i, 54; v, 29; ix, 40.
- , in Pennsylvania, viii, 239; x, 219; xiv, 9, 17.

- Ammelide, *M. Liebig*, xxix, 373.  
 Ammeline, *M. Liebig*, xxix, 373.  
 Ammonia, formation of, xiv, 387; xlvii, 193.  
 —, action of iron upon, xviii, 146.  
 —, action of, on butyric ether, xlviii, 191.  
 —, an antidote against poisons, xvi, 182.  
 —, in argillaceous minerals, xv, 182.  
 —, in the rust of iron, ix, 191.  
 —, in native oxide of iron, xxi, 155.  
 —, disengaged from growing plants, x, 190.  
 —, decomposition of salts of, at the ordinary temperature, *H. B. Jones*, xlix, 392.  
 —, bitungstate of, *W. W. Math-er*, xxvii, 264.  
 —, commercial carbonate of, *M. Scanlan*, xxxv, 297.  
 —, preparation of nitrate of, *R. Hare*, v, 346.  
 Ammonia and Magnesia, carbonate of, xlix, 200.  
 Ammonia and Zinc, carbonate of, xlix, 200.  
 Ammoniacal gas, inflammability of, vi, 185.  
 — salts, solvent and oxidating powers of, *J. P. Emmet*, xviii, 255.  
 Ammonites in Canada, viii, 84.  
 —, see farther *Zoology—Mollusca*.  
 Amphide salts, on the existence of radicals of, *R. Hare*, xlv, 52, 247.  
 Amsterdam Canal, v, 181.  
 Amygdaline in bitter almonds, xix, 384.  
 Amygdaloid, origin of minerals of, xlix, 52.  
 —, of the Connecticut river valley, vi, 51.  
 —, of Salem, Mass., iii, 232.  
 — and minerals of Nova Scotia, xiv, 314; xv, 132, 204.
- Amygdaloidal minerals, origin of, *J. D. Dana*, xlix, 49.  
 Analcime, in Connecticut, vi, 224.  
 —, in Massachusetts, i, 114, 115.  
 —, in New Jersey, ii, 191, 197; xl, 69; xlv, 54.  
 —, in New York, xlv, 57.  
 —, in Nova Scotia, xxx, 349.  
 —, of Sicily, viii, 206.  
 Analysis of actinolite, *H. Seybert*, vi, 331.  
 — albite of Chesterfield, xxx, 381.  
 — Allanite, xxviii, 394.  
 — —, of Monroe, N. Y., *L. C. Beck*, xlv, 37.  
 — alum, of Milo, *C. U. Shep-ard*, xvi, 203.  
 — anatase, xlvii, 215.  
 — apophyllite from the Tyrol, and Greenland, vii, 370.  
 — argentine, *C. Dewey*, vi, 333.  
 — arragonite, *M. Stromeyer*, vii, 368.  
 — arsenical iron (Danaite,) *A. A. Hayes*, xxiv, 386.  
 — ashes of two pines, xxvi, 182.  
 — basalt, iv, 230.  
 — Beaumontite, *M. A. Delesse*, xlvii, 216.  
 — —, *C. T. Jackson*, xlvii, 337.  
 — bile, xviii, 162.  
 — bismuth, carbonate of, xviii, 391.  
 — — cobalt ore, xiii, 187.  
 — bog ore, N. Jersey, *H. Seybert*, viii, 298.  
 — bones, xlvii, 131, 419; xlviii, 99, 186.  
 — borate of lime, native, *A. A. Hayes*, xlvii, 215.  
 — Brewsterite, xx, 198.  
 — brine springs of New York, *G. Chilton*, vii, 345.  
 — Brucite, see *Chondrodite*.  
 — bronzite, *T. G. Clemson*, xxiv, 170.  
 — cacoxenite, xviii, 391.  
 — calcareous minerals, determination of carbonic acid in, *J. L. Smith*, xlv, 262f.  
 — calculi, *J. F. Dana*, iv, 149.



- Analysis of calculi, urinary, xvii, 190.
- calstronbarite, *C. U. Shepard*, xxxiv, 161.
- Catlinite, *C. T. Jackson*, xxxv, 388; xxxvii, 393.
- celestine, iv, 324; vii, 369.
- chabazite, *C. Cramer*, xxx, 366.
- chlorophyllite, xlvi, 377.
- chromic iron, of Maryland, *H. Seybert*, iv, 321.
- — —, from Cuba, *R. C. Taylor*, xxxviii, 243.
- chrysoberyl, of Haddam, *H. Seybert*, viii, 105.
- cinnamon stone, of Ceylon, xiv, 204.
- clinkstone, xix, 380.
- coal, *W. R. Johnson*, xxxviii, 382; xxxix, 139; xlix, 166.
- — — of Maryland, *Ducatel and Alexander*, xxvii, 31.
- — — of Virginia, xlii, 369.
- — — of Pennsylvania, *W. Meade*, xiii, 32.
- cobalt and nickel ores of Chatham, *A. A. Hayes*, xxi, 195.
- cobalt ores, *Wöhler*, xxxvi, 332.
- colophonite, v, 113.
- columbite, *Rose*, xlix, 228.
- copper, native of New Jersey, *L. C. Beck*, xxxvi, 107.
- — —, red oxyd, New Jersey, *L. C. Beck*, xxxvi, 107.
- — —, bisilicate, *L. C. Beck*, xxxvi, 107.
- — —, gray sulphuret, N. Jersey, xxxvi, 107.
- coprolites, *S. L. Dana*, xlvi, 46.
- couzeranite, xvii, 183.
- cyanogen, *R. Hare*, xv, 271.<sup>f</sup>
- Danaite, *A. A. Hayes*, xxiv, 386.
- Danburite, *C. U. Shepard*, xxxv, 137.
- Davyne, xi, 255.
- Analysis of Deweylite, *C. U. Shepard*, xviii, 81.
- — —, *T. Thomson*, xxxi, 173.
- diopside, *Damour*, xlvii, 216.
- dolomite, iv, 17.
- dreelite, xxx, 380.
- Emmonite, *T. Thomson*, xxxi, 171.
- eupyrcroite, *L. C. Beck*, xl, 77.
- feldspar from Bytown, *L. C. T. Thomson*, xxxi, 173.
- — —, containing titanium, xii, 187.
- garnet, manganesian of Haddam, Ct., *H. Seybert*, vi, 155.
- gaseous mixtures, *R. Hare*, xv, 279, 283.
- gastric juice, by *Braconnot*, xxx, 378.
- gigantolite, xlii, 387.
- glaucolite, xv, 387.
- Gmelinite, *A. Connell*, xxxv, 195.
- gold of Georgia, *W. W. Mather*, xxvii, 255.
- — —, containing rhodium, from Mexico, xi, 298.
- grains, cereal, *C. T. Jackson*, and *A. A. Hayes*, xlv, 339.
- guano, *J. E. Teschemacher*, xlviii, 181.
- — —, *Girardin and Bidard*, xlviii, 181.
- — —, *W. Francis*, xlviii, 182.
- — —, *J. D. Smith*, xlviii, 183.
- — —, xlix, 200, 391.
- Haydenite, *B. Silliman, Jr.*, xlvi, 380.
- heavy Spar, *G. T. Bowen*, iv, 325.
- heterosite, xix, 371.
- Holmesite, *T. Thomson*, xxxi, 172.
- hops, vi, 393.
- Hudsonite, *L. C. Beck*, xlvi, 32.
- Humboldtite, xi, 251.
- huraulite, xix, 371.
- hydrate of magnesia, Hoboken, vii, 370.

- Analysis of hydraulic limestones, *L. C. Beck*, xlvi, 29.
- hydroboracite, xxviii, 394.
- hydromagnesite, of Hoboken, *M. Wachtmeister*, xviii, 167.
- hydrous anthophyllite of N. York, *T. Thomson*, xix, 359.
- hypersthene of N. York, *L. C. Beck*, xlvi, 35.
- idocrase, *T. Richardson*, xxxviii, 120.
- indigo, xviii, 241.
- iolite, xlvi, 383.
- iron, supposed native of Bedford Co. Pa., xiv, 183.
- iron ore of Pennsylvania, *W. R. Johnson*, xxxviii, 383; xxxix, 142.
- iron ore, bog, in New Jersey, *H. Seybert*, viii, 298.
- iron, native phosphate, of Cornwall, vii, 369.
- iron, titanite, of Baltimore, *T. G. Clemson*, xvii, 42.
- isopyre, xv, 388.
- krolite, of Westchester, N. Y., *L. C. Beck*, xlvi, 34.
- kyanite, *C. H. Rockwell*, xlvi, 383.
- lampblack, xi, 387.
- Latrobite, *Gmelin*, ix, 329.
- lead, native carbonate, of Davidson, Co., N. C., xli, 350.
- —, cupreous sulphato-carbonate of, iv, 29.
- — ore, agentiferous of Lane's mine, Ct., *W. W. Mather*, xxvii, 256.
- Ledererite, *A. A. Hayes*, xxv, 80.
- lepidolite, *Gmelin*, ix, 329.
- Maclureite, *H. Seybert*, v, 336.
- magnesian hydrate of silica, *P. T. Tyson*, xviii, 79.
- — — — — *ibid*, *C. U. Shepard*, xviii, 81.
- magnesite, hard, of Baumgarten, vii, 368.
- manganese ores, *M. Berthier*, vii, 366.
- Analysis of marl from Farmington, Ct., *E. Hitchcock*, xxxvi, 176.
- — — — — from New Jersey, xvii, 277.
- — — — — from Ashley river, S. Carolina, *J. L. Smith*, xlvi, 101.
- marmolite, *T. Nuttall*, iv, 17, 19.
- Masonite, *C. T. Jackson*, xl, 186; xlvi, 218.
- melanite of Franklin furnace, N. J., *H. Seybert*, viii, 300.
- Menardite, xii, 386.
- meteoric iron of Canaan, Ct., *C. U. Shepard*, xii, 155.
- — — — — from Claiborne, Alabama, *C. T. Jackson*, xxxiv, 332; xlvi, 145.
- — — — — *ibid*, *A. A. Hayes*, xlvi, 147.
- — — — — of Oswego, N. Y., *C. U. Shepard*, xl, 366.
- — — — — from Guilford Co., N. Carolina, *C. U. Shepard*, xl, 369.
- — — — — from Buncombe Co., N. Carolina, xxxvi, 81.
- — — — — from Maryland, Feb. 1825, *G. Chilton*, x, 131.
- — — — — from Virginia, *C. U. Shepard*, xvi, 191.
- — — — — from Tennessee, of 1827, xvii, 326.
- — — — — from Tennessee, *G. Troost*, xxxviii, 250.
- — — — — from Tennessee, *C. U. Shepard*, xliii, 354.
- — — — — from Texas, *C. U. Shepard*, xvi, 217.
- meteorite of Juvenas, France, 1821, vi, 397.
- — — — — South African Cold Bokkeveld, xxxvii, 190.
- — — — — France, Chateau Renard, xlii, 403.
- — — — — of U. States, in Maine, August, 1823, ix, 400.
- — — — — in Connecticut, Weston, i, 273.
- mica yellow and lepidolite, xxxvii, 361.

- Analysis of microlite, *C. U. Shepard*, xxxii, 338; xliii, 119.
- —, *A. A. Hayes*, xliii, 33; xlv, 158.
- mineral waters, see Analysis of waters, below.
- molybdena, *H. Seybert*, iv, 320.
- mud, New Haven harbor, *B. Silliman, Jr.*, xlviii, 337.
- Murchisonite, xv, 386.
- needle ore, xxviii, 395.
- nephrite, *G. T. Bowen*, v, 346.
- olefiant gas, *R. Hare*, xv, 270.
- olivine, ix, 379; xiii, 184.
- organic compounds, determination of nitrogen in, xlv, 267.
- Oxahverite, xv, 387.
- pennine, xlvii, 216.
- Pickeringite, *A. A. Hayes*, xlv, 360.
- picropharmacolite, vii, 368.
- platina of Russia, *J. Berzelius*, xviii, 162.
- polymignite, xviii, 392.
- pollen, *M. Prinsep*, xviii, 402.
- pyragillite, *M. Nordenskiöld*, xxvi, 387.
- pyrochlore, xviii, 392.
- —, *M. Wöhler*, xliii, 35.
- —, *A. A. Hayes*, xlv, 163.
- pyromorphite, *C. Kersten*, xxii, 307.
- pyrophyllite, xviii, 392.
- pyroxene, Franklin Iron works, *H. Seybert*, v, 113; vii, 145.
- Rensselaerite, xl, 77.
- rhodium gold, of Mexico, xi, 298.
- sea water, near Brighton, xxxviii, 12.
- seleniuret of lead, xviii, 391.
- — — and mercury, xviii, 391.
- serpentine marble, Vt., *C. T. Jackson*, xxxviii, 198.
- Seybertite, *T. G. Clemson*, xxiv, 171.
- shells, *W. B. Rogers*, xxvi, 361.
- Sillimanite, *G. T. Bowen*, viii, 113.
- Analysis of Sillimanite, xlv, 382; xlviii, 219.
- —, *T. Thomson*, xlix, 396.
- Sismondine, *M. Delesse*, xlvii, 217.
- soda alum of Milo, *C. U. Shepard*, xvi, 203.
- spathic iron, *T. G. Clemson*, xxiv, 170.
- spodumene, Sweden, vii, 371.
- steatitic pseudomorphs, *L. C. Beck*, xlv, 35.
- — —, *C. Dewey*, vi, 333.
- Steinheilite, iv, 377.
- stellite of Bergen Hill, xlv, 54; xlv, 35.
- strontian, sulphate, *G. T. Bowen*, iv, 324.
- tabular spar, *H. Seybert*, v, 113.
- — —, from the Bannat, vii, 370.
- talc, from Chamouni, xlvii, 216.
- titanite iron, from near Baltimore, *T. G. Clemson*, xvii, 42.
- topaz, of Huntington, Ct., x, 352.
- tourmaline, xiv, 384; xv, 389.
- triphylite, xxviii, 394.
- tungstate of lime, *G. T. Bowen*, v, 118.
- upas, juice of, xxxix, 206.
- uranite, *R. Phillips*, vii, 380.
- Vulpinite, *M. Vauquelin*, vii, 368.
- wacke, i, 296.
- Warwickite, *C. U. Shepard*, xxxiv, 313; xxxvi, 85.
- water of the Rio Vinagre, *M. Boussingault*, xxiv, 149.
- — of spouting fountain of Naples, xxv, 195.
- — of Black Sea, xx, 188.
- — of Dead Sea, *B. Silliman, Jr.*, xlviii, 10.
- — of sea near Brighton, *G. Schweitzer*, xxxviii, 12.
- — of Scott Spring, Va., *C. B. Hayden*, xlv, 409.

- Analysis of water of mineral spring near Albany, *W. Meade*, xiii, 145.
- — —, the Clinton, *G. Chilton*, xviii, 346.
- — —, from the Azores, *C. T. Jackson*, xxxi, 94, 96.
- — — sulphur, of Virginia, *C. U. Shepard*, xxx, 100.
- — — wines of Palestine, *E. Hitchcock*, xlvi, 249.
- — —, *L. C. Beck*, xxviii, 42.
- — — Wörthite, *M. Hess*, xxvi, 387.
- — — xanthite, xviii, 359; xxvi, 388.
- — — zinc, red oxide, *A. A. Hayes*, xlviii, 261.
- Analysis of square numbers, *A. D. Wheeler*, xxv, 87.
- Analytical geometry, *C. Wilder*, xx, 285.<sup>f</sup>
- Anamitic and Latin Dictionary of Taberd, xl, 43.
- Anastatic printing, xlix, 401.
- Anatase, analysis and crystals of, xlvii, 215.<sup>f</sup>
- Anauxite, analysis of, xlii, 386.
- Ancram lead mine, notice of, *C. A. Lea*, viii, 247.
- Ancramite, v, 235, 399.
- — —, shown to be of furnace origin and identical with cadmia, vi, 180.
- Andalusite, crystal from Westford, Mass., xlvi, 381.<sup>f</sup>
- — —, in Connecticut, vi, 176, 236.
- — —, in Massachusetts, x, 394; xlvi, 381.<sup>f</sup>
- Andes, general features of, xvii, 47.
- — —, winds at the summit of, xxviii, 310.
- — — of Peru, character of, xviii, 182.
- — —, highest habitations in, xviii, 183.
- — —, height of the principal peaks of, xviii, 183.
- — —, Mexican, ascent of the summit of Popocatepetl, xxviii, 220.
- Andre*, Major, Notice of a sketch of, by himself, ix, 395.
- Angelic acid, xlvi, 196.
- Anglada's* deductions respecting mineral springs, v, 187.
- Animals, living, found in stones and wood, notice of a work on, xii, 395.
- — —, growth of vegetables on living, by *S. L. Mitchell*, xii, 21.
- — —, dead, means of employing, *M. Payen*, xxiv, 326.
- — — produced by galvanism, see *Acarus*.
- Animal fibrine, albumen and caseine, isomeric with vegetable fibrine, *Scheerer*, xliii, 402.
- — — organs, action of barytes, strontian, chrome, &c. on, xiii, 178.
- — — magnetism in France, v, 192.
- — —, notice of a work on, by *Dupau*, xiii, 175.
- Animalcules in snow, xviii, 56.
- Animalcules, see *Infusoria*.
- Animation suspended, iv, 393; xxxiii, 292.
- Animation suspended by drowning, *L. W. Smith*, v, 125.
- Annals of the New York Lyceum, see *Lyceum*.
- Annelids in the slabs of Waterville, Maine, xli, 163.
- Anniversary, centenary, of the American Philosophical Society, Proceedings of, xlv, 231.
- Antarctic regions, discoveries in, by the U. S. Exploring Expedition, xl, 394.
- — — seas, Expeditions to, xxxv, 306.
- Anthony, J. G.*, Calymene Bucklandii, a new species of trilobite, xxxvi, 106.<sup>f</sup>
- — —, fossil encrinite from near Cincinnati, xxxv, 359.<sup>f</sup>
- Anthophyllite in Canada, viii, 69.
- — — in Connecticut, xvii, 144.
- — — in Massachusetts, ix, 248.
- Anthophyllum, xvii, 288; xviii, 249<sup>f</sup>; xxix, 150.<sup>f</sup>
- Anthracite, see *Coal*.
- Antigua, petrified wood of, i, 56.
- Antimony, test for minute quantities of, xliv, 13.

- Antimony, a mode of separating from lead, brass, &c., xv, 188.
- , separation of, from tin, *Gay Lussac*, xxvii, 197.
- , gray, locality of, in Lyme, N. H., xlix, 228.
- , —, *ibid*, in Connecticut, xii, 156.
- and lead, sulphuret, xxx, 177.
- Antimonial nickel, a new mineral species, xxviii, 395.
- Antiparos, description of the grotto of, xvi, 335.
- Antiquarian Society, American, notice of, xviii, 136.
- — —, —, transactions of, iii, 357.
- Antiquaries, Northern, circular of, xl, 212.
- , —, notice of, xl, 403; xlii, 214.
- Antiquities, North American, xxxiv, 47.
- Antiquities, North American, notice of a work on, xxxi, 408.
- , Celtic, of America, by *J. Finch*, vii, 149.
- Antiquities, Peruvian, xvii, 116.<sup>f</sup>
- Ants, habits of, xiii, 177.
- Apalachian Chain, see *Appalachian*.
- Apatite, in Canada, viii, 71.
- , in Connecticut, xii, 161.
- , in Delaware, xiv, 11.
- , in Maryland, v, 256.
- , in Massachusetts, vii, 254; viii, 36; xii, 260.
- , in New Jersey, v, 244.
- , in New York, i, 236; v, 28; ix, 244, 402; xxi, 328, 330; xxiii, 403; xlvi, 34, 366.<sup>f</sup>
- , in Pennsylvania, ix, 45, 246; x, 222; xiv, 6, 8, 13, 14.
- , in Rhode Island, xl, 185.
- , account of, from St. Lawrence Co., N. Y., xlvi, 34.
- , distorted or rounded crystals, xlv, 143; xlvi, 366.<sup>f</sup>
- Apocrenic acid, *Berzelius*, xxviii, 121.
- Apophyllite from Tyrol and Greenland, analysis of, vii, 370.
- Apophyllite, of New Jersey and New York, *L. C. Beck*, xlv, 56.
- , localities of, in Connecticut, vi, 225.
- , —, in New Jersey, xl, 69; xlv, 54.
- , —, in New York, xlv, 56.
- , —, in Nova Scotia, xxx, 345, 348.
- Appalachian chain, physical structure of, *H. D. and W. B. Rogers*, xliii, 177; xlv, 359.
- — —, in Maryland, notices and geological sections, *W. E. A. Aikin*, xxvi, 219.<sup>f</sup>
- Apparatus, chemical, for the combustion of metals in chlorine, *R. Hare*, xiv, 354.<sup>f</sup>
- , —, for procuring nitrogen, *R. Hare*, xiv, 356,<sup>f</sup> xxviii, 263.<sup>f</sup>
- , —, for experimenting with carbonic acid gas, *R. Hare*, xiv, 358.<sup>f</sup>
- , —, substitute for Woulfe's bottles, *R. Hare*, i, 410<sup>f</sup>; xiii, 1.<sup>f</sup>
- , —, for regulating the supply of gas by its absorption, *R. Hare*, xiii, 2.<sup>f</sup>
- , —, cold by the palm glass, *R. Hare*, xiii, 4.<sup>f</sup>
- , —, for showing the effect of a relaxation of pressure on capacity for heat, *R. Hare*, xiii, 5.<sup>f</sup>
- , —, for illustrating capacities for heat, *R. Hare*, xiii, 6.<sup>f</sup>
- for separating carbonic oxide from carbonic acid, *R. Hare*, xxiv, 252.<sup>f</sup>
- for producing ebullition by cold, *R. Hare*, xxxiii, 248.<sup>f</sup>
- for deflagrating carburets, phosphurets, &c., in vacuo, xl, 303.<sup>f</sup>
- for freezing water by means of sulphuric acid, *R. Hare*, xxvii, 132.<sup>f</sup>
- for obtaining specific gravity of gases, *R. Hare*, xvi, 293, 295.<sup>f</sup>
- for transferring or decanting liquids, *R. Hare*, xxvi, 358.<sup>f</sup>

- Apparatus for the evolution of prussic acid, *R. Hare*, xxix, 244.<sup>f</sup>
- for evolving silicon from fluosilicic acid, *R. Hare*, xxiv, 247.<sup>f</sup>
- for decomposition and recombination of water, xxxviii, 336.<sup>f</sup>
- galvano-ignition, xxvi, 352.<sup>f</sup>; xxxii, 282.
- for solidifying carbonic acid, *J. Johnston*, xxxviii, 297.<sup>f</sup>; xlii, 203.
- for illustrating absorption of heat, *A. D. Bache*, xxviii, 320.<sup>f</sup>
- hydrogen gas, vii, 392.
- — self-regulating reservoir, *R. Hare*, xi, 140.<sup>f</sup>
- for experiments on inflection and interference of light and caustics, *E. S. Snell*, xlviix, 24,<sup>f</sup> 26.<sup>f</sup>
- for illustrating waves; *E. S. Snell*, xlix, 20.<sup>f</sup>
- volumeter, *R. Hare*, xii, 36.<sup>f</sup>
- volumescope, *R. Hare*, xv, 275.<sup>f</sup>; xxviii, 264.<sup>f</sup>
- , electrical, see *Electric*.
- , electro-magnetic, see *Electro-magnetic*.
- , eudiometric, see *Eudiometry*.
- Apprentices, manufactory of, iv, 379.
- Aqueducts, on the Roman, *M. Genieys*, xix, 389.
- Arabia, notice of a memoir on the province of Omán in, xxxii, 383.
- Arabic words in English, *J. W. Gibbs*, xxxiii, 324.
- Ararat, Mount, extinct volcano near, xxxvii, 349.
- Araucanian races, remarks on, *S. G. Morton*, xxxviii, 341.<sup>f</sup>
- Arch, some properties of a rampant, *T. Gorton*, xxvii, 303.<sup>f</sup>
- Arches, method of describing curves for, *J. Thomson*, xxiv, 73.<sup>f</sup>
- , on tracing oval, *E. Miller*, xxii, 303.<sup>f</sup>
- Archæologia Americana, iii, 357.
- Archimedes, on the spiral of, by *A. B. Quimby*, ix, 316.<sup>f</sup>
- Archimedes, a fossil coral, *D. D. Owen*, xliii, 19.<sup>f</sup>
- Architecture, notes on, xxiv, 257.<sup>f</sup>
- Architecture, in the United States, xvii, 99, 249.<sup>f</sup>; xviii, 11, 212.
- , Grecian style, the propriety of its application to modern uses, xviii, 218.
- , Gothic style, notice of, xviii, 220.
- Architectural improvements, *E. Lord*, xxv, 304.
- monuments, xviii, 229.
- Arctic regions, sketch of geology of, xvii, 1.
- Argentine, notice of, *C. Dewey*, vii, 248.
- , analysis of, *C. Dewey*, vi, 333.
- , locality of, in Massachusetts, viii, 34.
- Argento-cyanate of silver, for fulminating silver, xviii, 335.
- Argento-cyanic acid, xviii, 334.
- Argillaceous slate, in western Massachusetts, viii, 18, 21, 29.
- Argillite, of the Connecticut valley, account of, vi, 35.
- Aristotle, notice of, *C. Fox*, xxxvi, 217.
- Armature, see *Electro-magnet* and *Magnet*.
- Arragonite, analysis of, *M. Stromeyer*, vii, 368.
- , in Canada, viii, 70.
- , in New York, xxi, 326; xxviii, 172.<sup>f</sup>
- , of New Jersey, *J. Finch*, xviii, 197.
- Arragonite and calc spar, *Becquerel*, xxiii, 387.
- Arsenic, on the detection of, *L. Feuchtwanger*, xix, 339.<sup>f</sup>
- , application of Riench's test, *D. P. Gardner*, xlv, 240.
- , on the detection of, *J. L. Smith*, xl, 278; xlii, 75.<sup>f</sup>
- , tests for, iii, 354; iv, 155; xlv, 213.
- , on the iodide of potassium a test for, *J. P. Emmet*, xviii, 58.
- , tobacco a remedy for, xxxi, 188.
- , oxide of iron an antidote for, xxviii, 135.

- Arsenic, effect of, on vegetation, *Daubeny*, xxxi, 346.  
 Arsenical iron, in N. York, xxi, 326.  
 — — —, (Danaite) in N. Hampshire, analysis of, *A. A. Hayes*, xxiv, 386.  
 — — — —, identical with mispickel, xlvi, 384.<sup>f</sup>  
 Arsenious acid and sulphuric, a new compound of, xli, 47.  
 Artesian wells, see *Wells*.  
 Artificial minerals, *A. Crosse*, xxxi, 374.  
 — — — diamond, pretended, xvi, 394.  
 — — — feldspar, xxviii, 396.  
 — — — sulphate of lime with half an atom of water, *J. F. W. Johnston*, xxxv, 300.  
 — — — minerals, produced by heat, x, 190.  
 — — — oxyd of iron, about furnaces, xxxvi, 237.  
 — — — mineral waters, *S. Morey*, iii, 94.  
 Asbestos, in Connecticut, i, 354.  
 — — —, in Maryland, xviii, 80.  
 — — —, in Massachusetts, i, 114; viii, 47.  
 — — —, in New Hampshire, vi, 245.  
 — — —, in N. York, i, 237; ix, 40, 252.  
 — — —, in Pennsylvania, x, 221.  
 — — —, in Vermont, v, 40; vi, 249.  
 — — —, in anthracite, i, 243, 244.  
 — — — covering for firemen, xviii, 177; xx, 96.<sup>f</sup>  
 Asclepias, on the fibre of, xxviii, 380.  
 Ashes, shower of, at Vesuvius, iii, 374.  
 — — —, volcanic, at sea, west of the Philippines, *P. Parker*, xl, 198.  
 — — —, of two pines, composition of, xxvi, 182.  
 — — —, spontaneous combustion in, *O. P. Hubbard*, xlii, 166.  
 — — —, combustibility of, *J. T. Plummer*, xlii, 167; xliii, 80.  
 — — —, various properties of, *J. T. Plummer*, xliii, 85.  
 Asia, geology of the Deccan, xxxiii, 274.  
 Asia, Caucasus range and Persia, geology of, mines, salt, naphtha springs, &c. of, xxxvii, 348.  
 — — —, Catacecaumene, xxxiii, 95; xxxviii, 207.  
 — — —, shores of Black sea, xxxii, 399.  
 — — —, volcanoes of the continent and islands, in a review of *Daubeny*, xiii, 290.  
 Asparagin, xx, 187.  
 Aspartic acid, xvii, 173.  
 Asparagus, aspartic acid from, xvii, 173.  
 Asphaltic mastic, xxxiv, 383.  
 Assafetida, sulphur in, xv, 185.  
 Association, British, for the promotion of science, plan of, xxi, 373.  
 — — —, — — —, notice of the meeting in 1832, xxiii, 179; 1833, xxv, 411; 1834, xxviii, 55; 1835, xxix, 347; 1836, xxxi, 332; 1837, xxxiii, 265; xxxiv, 1; 1838, xxxv, 275; 1839, xxxviii, 93; 1840, xl, 308; 1841, xli, 391; xlii, 147; 1842, xliii, 367; xliv, 158, 351; 1843, xlvi, 388; xlvii, 182.  
 — — —, — — —, notice of Prof. *Whewell's* address at 11th meeting, xli, 391.  
 — — —, — — —, invitation from, to American men of science, xxxviii, 406.  
 — — —, scientific, or a Congress of Savans at Berlin, 1828, xvi, 386.  
 — — —, — — —, in Germany, in 1830, xx, 175.  
 — — — of American geologists in 1840, xxxix, 189; in 1841, xli, 158; 1842, xliii, 146; 1843, xlv, 135, 310; 1844, xlvii, 94; 1845, xlix, 219.  
 — — — — — — — — —, address before, by *E. Hitchcock*, xli, 232.  
 — — — — — — — — —, *ibid*, by *B. Silliman*, xliii, 217.  
 — — — — — — — — —, address before, by *H. D. Rogers*, xlvii, 137, 247.  
 — — — — — — — — —, constitution and by-laws of, xliii, 149.

- Association of American geologists, publication of transactions of, xlv, 220.
- Asteroid, see *Shooting star*.
- Astronomy, state of, among the Zambians, *J. W. Draper*, xxviii, 203.
- , on the resistance in space to motion of heavenly bodies, xvii, 389.
- , *ibid.*, *R. W. Haskins*, xxxiii, 1.
- , idea of ether in space, when introduced, xxxiii, 1.
- , theory of *Descartes*, xxxiii, 3.
- Astronomical clock, Prof. *Bessel*, xlv, 160.
- , on the stopping of, by *W. Howard*, viii, 277.
- machine, for representing the motions of the earth and moon, *E. C. Leedom*, xlii, 338.<sup>f</sup>
- observatory, to be erected at Abo in Finland, iv, 386.
- observations on Saturn, Jupiter and his satellites, by Prof. *Struve*, xiii, 172.
- at the Cape of Good Hope, *Herschel's*, xxxv, 283.
- and observatory, at Rome, *P. F. de Vico*, xlv, 373.
- at the observatory of Pulkova, xlvii, 88.
- Atlantic steam navigation, *J. Smith*, xxxv, 160.
- coast, gales of, see under *Winds*.
- Atlas, white race of, xxxii, 400.
- Atlee*, *W. L.*, on certain cavities in quartz, xxxv, 139.<sup>f</sup>
- Atmometer, a new, vi, 382.
- Atmosphere, analysis of, *M. Brunner*, xxiii, 280.<sup>f</sup>
- , composition of, xvii, 382.
- , on the carbonic acid of, from a memoir by *Saussure*, xvi, 214.
- , quantity of carbonic acid in, xx, 183.
- , carbonic acid in, *W. H. Watson*, xxviii, 71.
- , pressure of, v, 174; xxiv, 174.
- Atmosphere, compression of, in a mine of Bovey coal, xvii, 38.
- , annual movement in, xlii, 158.
- , extent of, *W. C. Redfield*, xxv, 123.
- , height of, at the equator, *J. P. Espy*, xxxix, 120.
- , general view of, *W. C. Redfield*, xxxiii, 50; average velocity of wind near the surface of the ocean, 52; temperature of elevation, 52.
- , effect of the rarefaction of, on its desiccation and refrigeration, xl, 44; formation of clouds a consequence of, 44.
- , luminous appearance in, iv, 341.
- , Prof. *Lloyd* on the clearness of, at times, xxxiv, 7.
- , deductions with regard to the moon's influence on, xv, 174.
- , mercurial, iii, 386.
- , temperature of, see *Meteorology and Temperature*.
- , during the coal period, *H. D. Rogers*, xlvii, 105.
- , of the planets, remarks on, xxv, 183.
- Atmospheric air, on the dilatation of, *V. Regnault*, xlv, 63.
- pressure, see *Barometer*.
- tides, ix, 195.
- dust, by *C. S. Rafinesque*, i, 397.
- , reply to *C. S. Rafinesque*, ii, 134.
- currents, see *winds*.
- Atomic weights of bodies, *Dr. Thomson* engaged in determining, iii, 396.
- , *Turner's* opinions respecting, xxviii, 70.
- , observations on, Prout's hypothesis of, *J. J. Berzelius*, xlviii, 369.
- , not multiples of that of hydrogen, xlvii, 187.
- of lead, sulphur, nitrogen and carbon, *Clark*, xxxviii, 119.



- Atomic weights of hydrogen, chlorine, potassium, calcium, glucinum, silver, uranium, cerium and lanthanum, *xlvi*, 188.
- of elements, *Marchand and Erdmann*,—oxygen, hydrogen, carbon, nitrogen, calcium, chlorine, silver, lead, *xliv*, 215; of copper, mercury and sulphur, *xlvi*, 402.
- theory, account of, by *J. Finch*, *xiv*, 24.
- Atom, idea of, *J. D. Whelpley*, *xlvi*, 352.
- , *R. Hare*, on the views of Faraday, *xlvi*, 247.
- , nature of the crystalline, *J. D. Dana*, *xxx*, 275.<sup>f</sup>
- Attraction in liquids, inquiries into the principles of, *xvii*, 86.<sup>f</sup>
- , chemical, modified by quantity of matter, *E. Mitchell*, *xvi*, 234.
- , magnetic, see *Magnetic*.
- Atwater, C.*, prairies and barrens of the west, *i*, 116.
- , geology, mineralogy, botany, &c. of Belmont Co., Ohio, *i*, 226.
- , prevailing winds of Ohio and the west, *i*, 276.
- , on the geology, climate and diseases, &c. of Ohio, *xi*, 224.
- Audubon*, work on the birds of N. America, *xvi*, 353.
- , —, notice of, *xlvi*, 130.
- Augite, of Willsboro, New York, analysis of, *H. Seybert*, *v*, 113.
- , analysis of, *H. Seybert*, *vii*, 145.
- , in Connecticut, *ii*, 238; *vi*, 225; *viii*, 258; *xii*, 169.
- , in Maryland, *xviii*, 79.
- , in Massachusetts, *i*, 436; *vii*, 52; *viii*, 47; *ix*, 43; *xii*, 157.
- , in New Jersey, *v*, 243, 246; *vi*, 250.
- , in New York, *viii*, 88; *ix*, 244, 250; *xix*, 224; *xxv*, 347.
- , in Pennsylvania, *viii*, 239; *xiv*, 13, 17.
- Augur, H.*, an American sculptor, notice of, *ix*, 173.
- Aurora Australis, Pacific, S. lat., 58°, seen by *Capt. Cook*, Feb., 1773, *xviii*, 75.
- Aurora Borealis, seen in Brit. America, *Capt. Parry*, *xiv*, 96; *xvi*, 148.
- , —, —, *Capt. Franklin*, 1820, *xxxiv*, 289.
- , —, —, Sept., 1827, *xiv*, 105.<sup>f</sup>
- , —, in Canada, Kingston, and elsewhere, *R. H. Bonnycastle*, Dec. 11, 1835, *xxx*, 131.<sup>f</sup>
- , —, —, at Toronto, May 8, 1836, *R. H. Bonnycastle*, *xxxii*, 393.<sup>f</sup>
- , —, —, at Toronto, May, 1840, *xl*, 337.
- , —, in Denmark, Sept. 1827, *xiv*, 107.
- , —, in Faroe and Shetland, *viii*, 392.
- , —, in France, Sept., 1827, *xiv*, 107.
- , —, —, Aug., 1827, *xv*, 199.
- , —, —, Feb. 18, 1837, *xxxii*, 396.
- , —, —, Jan. 7, 1831, *xx*, 396.
- , —, —, April 1837, *xxxiv*, 285.
- , —, —, Oct., 1836, *xxxiv*, 288.
- , —, —, Aug. 19, 1726, *xxix*, 388.
- , —, in Great Britain, in 1814, 1816 and 1819, *xiv*, 96.
- , —, —, Aug., 1827, *xiv*, 95.
- , —, —, Gosport, Sept., 1827, *xiv*, 108.
- , —, —, Feb. 18, 1837, London, *xxxii*, 396.
- , —, —, Nov. 1837, *xxxiv*, 283.
- , —, —, from Huxham's Auroral Register, 1728—1748, *E. C. Herrick*, *xxxiii*, 297.
- , —, —, May, June, July, Aug., 1837, *Prof. Christie*, *xxxiii*, 300.

- Aurora Borealis seen in Great Britain, September 1839, xxxviii, 264.  
 ————, May, 1840, xl, 338.  
 ———— in Prussia, *M. Feld*, February, 1835, xxxiv, 285.  
 ———— Oswer Zornea, December, 1736, *J. Bowdoin*, xviii, 74.  
 ———— in the U. States, 1741—1757, *J. Winthrop*, xl, 204, 205, 206.  
 ————, November, 1789, Hingham, Mass., *H. Ware*, xxxiv, 204.  
 ————, Aug., 1827, *B. D. Silliman*, xiv, 91.  
 ————, *ibid*, *L. D. Gale*, xv, 199.  
 ————, March, 1781, xiv, 96.  
 ————, Sept., 1827, *J. Bowdoin*, xviii, 72.  
 ————, 1827—1833, at Wilmington, Delaware, *H. Gibbons*, xxxiii, 299.  
 ————, Sept., 1829, *L. Feuchtwanger*, xviii, 393.  
 ————, July, 1830, *M. Field*, (Fayetteville, Vt.) xx, 262.  
 ————, March, 1831, *M. Field*, (Fayetteville, Vt.) xx, 263.<sup>f</sup>  
 ————, April, 1831, Albany, *J. Henry*, xxii, 143.  
 ————, May and July, 1833, *A. D. Bache*, xxvii, 113.<sup>f</sup>  
 ————, 1832—1834, N. Jersey, *J. F. Jenkins*, xxvi, 395, 396.  
 ————, Nov., 1835, *D. Olmsted*, xxix, 388.  
 ————, *ibid*, *A. C. Twining*, xxxii, 227.  
 ————, April, 1836, Emmetsburg, Va., *J. McCaffrey*, xxxi, 85.  
 ————, July, 1837, *E. C. Herrick*, xxxiii, 144.  
 ————, *ibid*, Rochester, N. Y., *C. Dewey*, xxxiii, 143.
- Aurora Borealis in the U. States, Jan., 1837, *D. Olmsted*, xxxii, 176.  
 ————, Nov., 1837, *D. Olmsted*, xxxiii, 393.  
 ————, *ibid*, *F. A. P. Barnard*, xxxiv, 267.  
 ————, July and August, 1837, Burlington, Vt., *J. Dean*, xxxiii, 212.  
 ————, Feb., 1837, New Haven, xxxii, 396.  
 ————, September, 1839, xxxvii, 375.  
 ————, *ibid*, Rochester, *C. Dewey*, xxxviii, 146.  
 ————, *ibid*, *E. C. Herrick*, xxxviii, 260.  
 ————, *ibid*, Middlebury, Vermont, *A. C. Twining*, xxxviii, 376.  
 ————, *ibid*, Princeton, N. J., *Prof. Alexander*, xxxix, 364.  
 ————, May, 1840, *A. D. Bache*, xl, 48.  
 ————, Nov., 1841, Marietta, Ohio, *S. P. Hildreth*, xlii, 346.  
 ————, April, 1842, *E. C. Herrick*, xliii, 213.  
 ————, May and Aug., 1844, New Haven, *E. C. Herrick*, xlvi, 319.  
 ———— in summer, Aug., 1827, xiv, 91; xv, 199.  
 ————, Prof. Christie on, xxxiii, 300.  
 ————, *E. C. Herrick's* citations from Huxham's Auroral Register, xxxiii, 297.  
 ————, *ibid*, from H. Gibbons's register, 1827—1833, xxxiii, 299.  
 ————, from *J. Winthrop's* register, June, 1746, xl, 206.  
 ————, Aug. 19, 1726, xxix, 388.  
 ————, May, 1840, xl, 48, 338.

- Aurora Borealis in summer, July, 1830, *M. Field*, xx, 262.
- — — — —, July, 1837, xxxiii, 143, 144, 212.
- — — — —, August, 1844, *E. C. Herrick*, xlviii, 319.
- — — — — corona, position of, in several auroras, *A. C. Twining*, xxxii, 227.
- — — — —, — — — — —, Prof. Alexander, September, 1839, xxxix, 364.
- — — — —, — — — — —, *D. Olmsted*, Jan., 1837, xxxii, 177.
- — — — —, — — — — —, *ibid*, Nov., 1835, xxix, 389.
- — — — —, — — — — —, *E. C. Herrick*, Sept., 1839, xxxviii, 260.
- — — — —, — — — — —, *C. Dewey*, Sept., 1839, xxxviii, 147.
- — — — —, — — — — —, needle agitated by, *M. Arago*, xiv, 107; xxxiv, 286.
- — — — —, — — — — —, remarks on, xix, 246.
- — — — —, — — — — —, Aug., 1827, *L. D. Gale*, xv, 199.
- — — — —, — — — — —, Apr., 1831, *J. Henry*, xxii, 143.
- — — — —, — — — — —, May and July, 1833, *A. D. Bache*, xxvii, 113.
- — — — —, — — — — —, Feb., 1835, *M. Gauss*, xxxiv, 285.
- — — — —, — — — — —, Nov., 1835, xxix, 390.
- — — — —, — — — — —, April, 1836, *J. McCaffrey*, xxxi, 85.
- — — — —, — — — — —, Jan., 1837, xxxii, 179.
- — — — —, — — — — —, July, 1837, *E. C. Herrick*, xxxiii, 146.
- — — — —, — — — — —, Nov., 1837, *A. B. Haile*, xxxiv, 270.
- — — — —, — — — — —, Sept., 1839, *E. C. Herrick*, xxxviii, 261.
- — — — —, — — — — —, May, 1840, Canada, xl, 337.
- — — — —, — — — — —, wide extent of some, *E. C. Herrick*, xxxiii, 300.
- — — — —, — — — — —, remarks on the number seen in Europe, xxviii, 58.
- Aurora Borealis, remarks on the nature of, by the Ex-King of Sweden, v, 178.
- — — — —, — — — — —, *ibid*, *Thienemann*, x, 187.
- — — — —, — — — — —, *ibid*, xiv, 97; xvi, 290; xix, 235.
- — — — —, — — — — —, *ibid*, *Hansteen's* views, xiv, 109.
- — — — —, — — — — —, *ibid*, *Ideler's* views, xxviii, 289.
- — — — —, — — — — —, *ibid*, *J. Ross*, xxix, 348.
- — — — —, — — — — —, *ibid*, *B. F. Joslin*, attributing it to crystallized vapor, xxx, 390; xxxv, 145.
- — — — —, — — — — —, *ibid*, *F. A. P. Barnard*, xxxiv, 284.
- — — — —, — — — — —, *ibid*, *D. Olmsted*, xxxii, 180.
- — — — —, — — — — —, *Mr. Rowall's* theory of, xli, 41.
- — — — —, — — — — —, height of, *M. Mairan*, xxxiv, 288.
- — — — —, — — — — —, *M. Farquharson*, xxxiv, 288.
- — — — —, — — — — —, *D. Olmsted*, xxxiv, 286.
- — — — —, — — — — —, *M. Wartmann*, xxxiv, 288.
- — — — —, — — — — —, *M. Dalton*, xxxiv, 288.
- — — — —, — — — — —, *Dr. Richardson* of Capt. Franklin's Expedition, xxxiv, 289.
- — — — —, — — — — —, noises of, an illusion, *Capt. Scoresby*, xxviii, 58.
- — — — —, — — — — —, *ibid*, *D. Olmsted*, xxxiv, 289.
- — — — —, — — — — —, periodical, *D. Olmsted*, xxxii, 177.
- — — — —, — — — — —, no polarization by light of, *J. Henry*, xxxix, 366.
- — — — —, — — — — —, work by *Mairan*, alluded to, xxix, 388; xxxii, 177.
- Auroral cloud of Dec., 1835, *A. C. Twining*, height and position of, xxxii, 217.
- Auroral arch of Aug., 1836, *A. C. Twining*, height and position of, xxxii, 220.

- Auroral arch of May, 1836, height of, *A. C. Twining*, xxxii, 224.  
 ——— in Vermont, Sept., 1838, *J. Dean*, xxxv, 380.  
 ——— belt of May, 1840, *E. C. Herrick*, xxxix, 194, 383.  
 Aurum Millium, a new metal, ii, 363.  
 Auscultation, iii, 375.  
 Australia, minerals of, *F. Alger*, xxxix, 157.<sup>f</sup>  
 Australian Boomerang, or Kilee, notice of, xxxvi, 164.<sup>f</sup>  
 Autumnal coloration of leaves, *Ma-caire Prinsep's* view of, xvi, 215.  
 Automolite, locality in Connecticut, xii, 156.  
 ———, ———, New Jersey, v, 402.  
 Aventurine feldspar, *M. Scheerer*, xlix, 394.  
 Avogadro, elastic force of the vapor of mercury, xxiv, 286.  
 Axinite in Canada, viii, 62.  
 Azote, see Nitrogen.
- B.**
- Babbage, C.*, on the decline of science in England, xx, 164.  
 ———, fees of admission to learned societies of Britain, xx, 165.  
 ———, list of men of science who have held offices under governments, xx, 172.  
 ———, number of members of some societies, xx, 173.  
 ———, calculating machine and constants of, xxviii, 64.  
 ———, analytical engine of, xlvi, 205.  
 Babel, tower of, xxxvii, 352.  
*Bache, A. D.*, safety apparatus for steamboats, xx, 317.<sup>f</sup>  
 ———, disturbance of the needle during the aurora borealis, xxvii, 113.<sup>f</sup>  
 ———, on the meteors of Nov. 13, 1833 and 1834, xxix, 383.  
 ———, influence of color on radiation, xxx, 16.  
 ———, radiation and absorption of heat, specific heat, and apparatus for illustrating, xxviii, 320.<sup>f</sup>
- Bache, A. D.*, corresponding magnetic observations by, along with *Prof. Lloyd* of Dublin, xli, 210.  
 ———, effect of deflected current of air, on the results with a rain gauge, xxxv, 287.  
 ———, appointed to the coast survey, xlvi, 213.  
*Bachman, J.*, on the migration of the birds of North America, xxx, 81.  
*Bacon, Lord*, some notice of, *C. Fox*, xxxvi, 220.  
*Baddely, F. H.*, on the red color of the flame from strontian, xviii, 261.  
 ———, a new instrument for taking specific gravities, xviii, 263.<sup>f</sup>  
 ———, on the sulphate of strontian of Kingston, U. C., and on the geology of the vicinity, xviii, 104.  
 ———, buoyancy of boulders at great depths, xxviii, 111.  
 ———, gold in Lower Canada, xxviii, 112.  
 ———, water limerock of Quebec, xxviii, 113.  
 ———, cement of the Castle Rock, Quebec, xxviii, 368.  
*Baily's* method of determining longitude, notice of, *E. Hitchcock*, ix, 107.  
*Bailey, J. W.*, grasshoppers' legs, a substitute for frogs in galvanic experiments, xxxi, 292.  
 ———, washing-bottles, forms of, xxxi, 292.<sup>f</sup>  
 ———, on the common blowpipe, xxxii, 319.<sup>f</sup>  
 ———, excursion to Mt. Katahdin, Me., xxxii, 20.<sup>f</sup>  
 ———, list of some plants in Maine, xxxii, 23.  
 ———, new test for nitric acid, xxxii, 85.<sup>f</sup>  
 ———, locality of hyalite, xxxii, 87.  
 ———, effect of a current of air on flame, xxxii, 88.<sup>f</sup>  
 ———, on the vascular system of ferns, xxxv, 113.<sup>f</sup>

- Bailey, J. W.*, monstrous flower of *Orchis spectabilis*, xxxv, 117.<sup>f</sup>  
 —, on yellow showers of pollen, xlii, 195.<sup>f</sup>  
 —, on a curious fungus, *Craterium pyriforme*, xlii, 195.  
 —, on the crystals in the tissues of plants, xlv, 149; xlviii, 17.<sup>f</sup>  
 —, fossil polythalamia from the upper Mississippi and Missouri, xli, 400.<sup>f</sup>  
 —, —, —, in the U. States, xlviii, 340.<sup>f</sup>  
 —, on fossil infusoria, in peat earth, West Point, N. Y., xxxv, 118.<sup>f</sup>  
 —, infusoria of the family Bacillaria, xli, 284<sup>f</sup>; xlii, 88<sup>f</sup>; xliii, 321<sup>f</sup>; localities, xliii, 328, 329.<sup>f</sup>  
 —, — from Oregon, the Bermudas, Virginia and Maryland, with an extended catalogue, xlviii, 321.<sup>f</sup>  
 —, — of New Haven harbor, xlviii, 337.<sup>f</sup>  
 —, — of Charleston harbor, xlviii, 338.<sup>f</sup>  
 —, — of N. Scotia, xlviii, 339.  
 —, — with bones of Mastodon, xlviii, 339.  
 —, — from Virginia, xlv, 313; xlvii, 137,<sup>f</sup> 300; xlviii, 330.  
 —, — from Maryland, xlvii, 137<sup>f</sup>; xlviii, 330.  
*Baird, W. M.* and *S. F.*, list of birds found near Carlisle, Penn., xlvii, 261.  
 —, two new species of *Tyrannula*, xlvii, 273.  
*Baker, G.*, vibrations of a mercurial pendulum, xlviii, 156.  
 Baking, a machine for accelerating fermentation of flour, ix, 198.  
 Balance, application of the principle of, to milking, churning, &c., *H. Strait*, xxvii, 92.<sup>f</sup>  
 Balance beam, Patten's, ix, 92.<sup>f</sup>  
*Balande's* collections of objects in natural history in Africa, iv, 373.  
*Baldwin, Wm.*, two new species of *Rottböllia*, i, 355.
- Ball, J.*, remarks upon the geology and features of the country west of the Rocky Mountains, xxviii, 1.  
 Ball's cave, Schoharie, notice of, xxvii, 368.  
 Balloon with rarefied air, xii, 372.  
 —, effect of solar heat in raising, *J. Rae*, xxxiii, 196.  
 —, principles of aerial navigation, *H. Strait*, xxv, 15.<sup>f</sup>  
 —, a means of making meteorological observations, xlii, 150.  
 —, observations during an ascent of, by *Eugene Robertson*, xii, 166, 325.  
*Banks, J.*, herbarium of, xl, 9.  
 Bare Hills, Maryland, *H. H. Hayden*, xxiv, 349.<sup>f</sup>  
 Barium, extrication of, *R. Hare*, xxxvii, 267; xxxviii, 115; xxxix, 362.  
 —, method of preparing the deutoxide of, xvi, 395.  
 Bark, Peruvian, experiments on, by *G. W. Carpenter*, ix, 363.  
 Barlow, P., instruments for illustrating the effects of electro-magnetism, v, 396.<sup>f</sup>  
*Barnard, F. A. P.*, aurora borealis of Nov. 14, 1837, xxxiv, 267.  
 —, improvement in the Daguerrotype process, xli, 352.  
*Barnes, D. H.*, geological section of the Canaan Mt., N. Y., v, 8.  
 —, on some doubtful reptiles of North America, xliii, 66.  
 —, notice respecting magnetic polarity, xliii, 70.  
 —, —, reply to, xiv, 121.  
*Barnes, D. W.*, on the genera *Unio* and *Alasmodonta*, vi, 107,<sup>f</sup> 258.<sup>f</sup>  
 —, new species of *Chiton*, vii, 69.<sup>f</sup>  
 Barometer, construction of, in America, *J. Green*, xxvii, 292.  
 —, new construction of, *J. L. Riddell*, xxvii, 223.<sup>f</sup>  
 —, improvement of, *C. F. Durant*, xxvii, 97.<sup>f</sup>  
 —, new form of, *J. H. Alexander*, xlv, 233.<sup>f</sup>

- Barometer, new self-registering, xlix, 400.
- , effect of sound on, xxx, 377.
- , directions regarding, by *E. Mitchell*, xx, 364.<sup>f</sup>
- , siphon, in determining the temperature of the mercury in, by observation, xl, 250.<sup>f</sup>
- , water, constructed in London, xxiv, 198.
- , remarks on, *W. C. Redfield*, xxv, 129.
- , use of, at sea, *W. C. Redfield*, xxv, 198.
- , changes in the column, as connected with the progress of a storm, *W. C. Redfield*, xx, 45; xxv, 117; xxxi, 127; xxxiii, 262.
- , variations of, *W. C. Redfield*, xxxiii, 262.
- , —, semi-diurnal, xxxiii, 263.
- , —, from accumulation of atmospheric pressure owing to obstacles in the course of winds, xxxiii, 264.
- , oscillation of an extensive region in the higher or temperate latitudes, xxxiii, 264.
- , changes during a storm, *E. Loomis*, xl, 34.
- , —, *ibid*, *J. P. Espy*, xxxix, 123.
- , —, *ibid*, *M. Dové*, xlv, 315.
- , —, remarks on, *W. S. W. Ruschenberger*, xxxiii, 345.
- , cause of the daily fluctuations of, *Espy*, xli, 42.
- , at the equator indicating time by its oscillations, ix, 195.
- , a substitute for, in measuring heights, *J. Robison*, xxxv, 294.
- , tube, filled with mercury without using an air pump, *Stevell*, xxxviii, 109.
- , *Hudson's* series of investigations with, xxiv, 393.
- Barometrical observations at New York, for 1833, 1834, by *W. C. Redfield*, xxviii, 157;—for 1832 to 1837, xxxiv, 374;—for 1838, 1839, xxxviii, 325.
- Barometrical observations at Western Reserve College, Sept.—Nov., 1838, *E. Loomis*, xxxvi, 166.
- , —, at Hudson, Ohio, for 1838–1840, with remarks, *E. Loomis*, xli, 311.
- , —, at Hudson, Ohio, 1841–44, *E. Loomis*, xlix, 266.
- , —, at New Orleans, 1833–36, *Prof. Barton*, xxxi, 400.
- , —, in Indiana, 1828, *D. D. Owen*, xxix, 294.
- , —, at Montreal, for 1836, *J. S. M' Cord*, xxxiv, 208;—for 1837, xxxv, 382;—for 1838, xxxvi, 180.
- , —, at St. John's, Newfoundland, 1834–38, xxxviii, 269.
- , —, at Canton, China, 1829–38, xxxviii, 272.
- , —, at St. Thomas, during a storm in August, 1837, xlv, 333.
- , —, at Matanzas, 1835, *A. Mallory*, xxxi, 287.
- , —, at San Fernando, Cuba, *J. H. Blake*, in 1840, xlii, 292.
- , —, at sea, U. S. ship *Peacock*, *W. S. W. Ruschenberger*, xxxiii, 348.
- , —, on a voyage from New York to Rio, 1834, xxix, 237.
- , —, see farther, under *Meteorological observations*.
- , pressure, monthly maximum and minimum for the years 1833–34, at N. York, *W. C. Redfield*, xxviii, 159.
- , —, mean and range of, at N. York, *W. C. Redfield*, xxxviii, 265, 266.
- , —, mean and range of, at St. John's, Newfoundland, *W. C. Redfield*, xxxviii, 265, 266.
- , —, mean of, at Montreal, for 1836–40, xli, 330.
- , —, mean of, at Plymouth, England, xxxviii, 109.
- , —, mean of, horary oscillation, &c., at Plymouth, England, *W. Snow Harris*, xliii, 369.

- Barometrical pressure, comparison of, with pressure in India, &c., xliii, 371.
- —, mean of, at Perth, Scotland, xl, 342.
- —, mean and range of, at Malvern, in Worcestershire, xxxviii, 102.
- —, mean of, at Canton, China, *W. C. Redfield*, xxxviii, 267.
- —, mean of, in different parts of the world, *E. Loomis*, xli, 312.
- —, at the level of the Dead Sea, xlii, 214.
- —, minima of, Feb. 16–19, 1842, xlii, 403.
- oscillations at Inverness contrasted with those at London, xliv, 158.
- determination of heights, simple method of, *O. Byrne*, xliv, 12.<sup>f</sup>
- compensation of the pendulum, xlv, 393.
- Barrows, Indian, see *Mounds*.
- Barton, D. W.*, geology of the Catskills, iv, 249.<sup>f</sup>
- Barton, Prof.*, meteorological register at N. Orleans, xxxi, 400.
- Bartlett, W. H. C.*, experiments on the expansion and contraction of building stones by changes of temperature, xxii, 136.<sup>f</sup>
- Bartram, Wm.*, notice of, *A. Gray*, xlii, 1.
- Baryta, test for, iv, 372.
- , distinguished from strontia by means of chromate of potash, *J. L. Smith*, xxxvi, 183.
- , native carbonate of, see *Witherite*.
- , native sulphate of, see *Heavy spar*.
- Basalt, analyses of, iv, 230.
- , characters of, xv, 32.
- , of the Caucasus range, xxxvii, 348.
- Basaltic columns, in N. Jersey, v, 240.
- rocks of the Labrador coast, *R. H. Bonnycastle*, xxx, 236.
- Basilosaurus, xxvii, 354; xxxvii, 231.
- Basilosaurus, named Zygodon, *R. Harlan*, xli, 179.
- Basin of mines, Nova Scotia, minerals of, xv, 132.
- Bath, Russian vapor, *T. S. Traill*, xxiii, 295.
- Battery, galvanic, see *Electricity*.
- Beaches, ancient, about Lake Huron, iii, 257.
- , —, of Lake Ontario, *G. E. Hayes*, xxxv, 89.
- , elevated, of Canadian lakes, *C. Lyell*, xlvi, 314.
- , four, to the river Malbay, L. C., v, 221.
- Bead manufactory at Venice, xxvii, 78.
- Beaufoy, M.*, notice of a work on nautical and hydraulic experiments, by, xxviii, 340.
- Beaumont, W.*, experiments on the gastric juice, xxvi, 193; xxvii, 405.
- Beaumont, E. de*, observations on Etna, xxxi, 168.
- Beaumontite from Baltimore, analysis of, *M. A. Delesse*, xlvii, 216.
- —, identical with Heulandite, *F. Alger*, xlvi, 233.<sup>f</sup>
- , a crenato-silicate of copper, xxxvii, 398; xlvii, 337.
- Beche, H. F. de la*, classification of the European rocks by, xviii, 26.
- Beck, J. B.*, influence of salt storms on vegetation, i, 388.
- Beck, L. C.*, contributions to the botany of Illinois and Missouri, x, 257; xi, 167; xiv, 112.
- , ferns and mosses of the U. States, xv, 287.
- , on the formation of phosphureted hydrogen, xii, 294.
- , on the nature of the chlorides of soda, lime, xiv, 251.<sup>f</sup>
- , on the office of nitrogen in respiration, xviii, 52.
- , on the commercial potash of N. York, xxix, 260.
- , researches on wines and other fermented liquors, xxviii, 42.
- , on the tornado or water-spout of New Brunswick, xxxvi, 115.<sup>f</sup>

- Beck, L. C.*, on the Eupyrchorite and Rensselaerite of Emmons, xl, 77.
- , notices of trap minerals in New Jersey and New York, xlv, 54.<sup>f</sup>
- , on the occurrence of bituminous or organic matter in some N. York limestones and sandstones, xlv, 335.
- , remarkable example of force of expansion and contraction, xlv, 49.
- , on antediluvian climate, xlv, 144.
- , on igneous action, as deduced from the appearance of crystals, &c., in N. Y., xlv, 143; xlvi, 333.
- Beck, L. C.*, and *E. Emmons*, description of a new moss, *Grevillea serratum*, xi, 183.<sup>f</sup>
- Beckwith, J.*, dikes or natural walls in North Carolina, v, 1.
- Bequerel*, on combinations and crystallizations by the action of weak electric forces, xvii, 383.
- , crystallization of galena and other substances by galvanism, xxviii, 291.
- , electro-chemical reduction of metals, xxxi, 164.
- Bed, made of crystal for the Shah of Persia, xv, 186.
- Bees, honey, of America, *J. A. Vanden Heuvel*, iii, 79.
- , *Huber's* observations on, xxiii, 120.
- , a notice of, *E. Burgess*, xxii, 164.
- , mode of taking swarms of, in Corsica, xxiii, 202.
- , parasite among, *M. Field*, xxv, 213.
- Beets, large amount of alkali in, xv, 180.
- , nutriment for domestic animals, xxii, 200.
- , cultivation of, and manufac. of sugar, *M. Girardin*, xxiii, 392.
- Beet sugar in France, vi, 388; xv, 394.
- Belemnite, animal of, xlv, 403.
- Belemnites *americanus*, xvii, 281; xviii, 249.<sup>f</sup>
- , *Raspail's* opinion, xvii, 184.
- Bell, J.*, improved airpump receiver, xxviii, 353.<sup>f</sup>
- Bellows, theory of, *H. Strait*, xxvii, 88.<sup>f</sup>
- , exploded by inflammable gas, xxiv, 182.
- Bellows Falls, scenery of, vii, 12.
- —, granite of, vi, 11.
- Belzoni's gift of two statues to Padua, v, 177.
- Benedict, A.*, on the vegetation of the Ottawa and some of its tributaries, xviii, 349.
- Benedict, Prof.*, on conic sections, xxxi, 258.<sup>f</sup>
- Benedict, F. N.*, on determining the temperature of the mercury in a siphon barometer, xl, 250.<sup>f</sup>
- Benzoyle, hydruret of, xlix, 194.
- Benzoic acid, xxvi, 267; xlix, 194.
- Benzoic compounds, researches on the radical of benzoic acid, *Wöhler* and *Liebig*, xxvi, 261.
- —, benzoic acid, xxvi, 267.
- —, benzoin, xxvi, 279.
- —, benzamid, xxvi, 274.
- —, chlorobenzoyle, xxvi, 270, 277.
- —, cyanobenzoyle, xxvi, 273.
- —, iodobenzoyle, xxvi, 273.
- —, bromobenzoyle, xxvi, 272.
- —, hydrobenzoyle, xxvi, 270.
- —, bitter almond oil, xxvi, 263.<sup>f</sup>
- —, formulas for, and the ethers, xxvi, 285.
- Bennet, E. T.*, obituary notice of, xxxii, 215.
- Berkshire Co., Massachusetts, geology of, viii, 1.
- Berlin, notice of the city, xx, 389.
- Bertero, C.*, Chilian plants, xix, 63, 299; xx, 248; xxiii, 78, 250.
- Berthierite, xv, 386.
- Beryl, broken crystal, xlvi, 366.<sup>f</sup>



- Beryl, of Haddam, forms of crystals, viii, 395.
- Beryl, forms of crystals, *J. Johnston*, xl, 401.<sup>f</sup>
- , —, *ibid*, xlvi, 381.<sup>f</sup>
- of Acworth, N. H., *C. U. Shepard*, xvii, 355.
- , localities in Canada, viii, 61.
- , — in Connecticut, i, 242, 354; ii, 142; vi, 222; viii, 258; x, 206.
- , — in Delaware, xiv, 11.
- , — in Maine, xiii, 373; xviii, 291.
- , — in Mass., vi, 222; vii, 255; viii, 43; xii, 259; xiv, 219.
- , — in New Hampshire, xv, 358; xvii, 354.
- , — in New York, ix, 244.
- , — in Pennsylvania, iv, 39; viii, 236; x, 222; xiv, 3, 14.
- , — in R. Island, viii, 226; ix, 46.
- Berzelius, J. J.*, on chemical nomenclature, xxii, 248.
- , on isomeric bodies, xxvi, 178.
- , on crenic and apocrenic acids, xxviii, 121.
- , on tellurium, xxviii, 137.
- , on Prout's hypothesis of atomic weights, xlviii, 369.
- , festival in honor of, xlvii, 218.
- Bevan, B.*, notice of, xxxvii, 120.
- Bewick, T.*, notice of the works of, xxxvii, 158.
- Bidard*, analysis of guano, xlviii, 181.
- Bigbone Lick, bones of, xviii, 139.
- , —, report on, xx, 370.
- Bigelow, J.*, forwardness of the spring in the U. S., i, 76.
- , documents and remarks respecting the sea serpent, ii, 147.
- Bigsby, J. J.*, on the environs of Carthage bridge near the mouth of the Genesee river, ii, 250.<sup>f</sup>
- , geology and mineralogy of the N. W. portion of Lake Huron, iii, 254.
- , outline of the mineralogy and geology of Malbay, L. C., v, 205.<sup>f</sup>
- Bigsby, J. J.*, minerals and organic remains in Canada, viii, 60.
- Bile, analysis of, xviii, 162.
- , test for, *M. Pettenkoffer*, xlix, 206.
- Binney, A.*, climate of the post-pleiocene period of the U. States, xlvii, 259.
- Binomial theorem, demonstration of, *T. Strong*, xii, 132.
- , —, *D. Gould*, xix, 50.
- Biot*, optical properties of saccharine juices, xxiv, 379.
- , views on auroras, xxv, 357.
- Biotine, xi, 264.<sup>f</sup> [anorthite.]
- Birch, white, chemical examination of the bark of, *O. Mason*, xx, 282.
- Birds, songs of, innate, xxi, 164.
- , remarks on the notes of, x, 390.
- , gigantic struthoid from New Zealand, xlv, 417; xlv, 185; xlviii, 194; xlix, 219, 403.
- of N. America, on the migration of, *J. Bachman*, xxx, 81.
- , see farther under *Zoology*.
- nests, large, of New Holland, xlvii, 217, 312; xlviii, 61.
- tracks, see *Footprints*.
- Births of male and female children, comparative number of, in France, xiv, 372.
- Bischof, G.*, natural history of volcanoes and earthquakes, xxxvi, 230;<sup>f</sup> xxxvii, 41.<sup>f</sup>
- , elevations from earthquakes, xxxvi, 273; xxxvii, 49.
- Bismuth, native, Huntington, Ct., i, 316; vi, 210.
- , expansion of, on cooling, xxi, 371.
- , new sulphurets of, *W. W. Mather*, xxiv, 189, 196.
- , disulphuret of, *W. W. Mather*, xxvii, 264.
- , fusible alloy of, xxi, 371.
- , carbonate of, analysis of, xviii, 391.
- cobalt ore, analysis of, xiii, 187.
- Bitter-spar, in Massachusetts, i, 137, 343; ii, 236.

- Bitter-spar, in Maryland, v, 256.  
 —, in R. Island, iv, 285.  
 —, in Vermont, v, 272; xvii, 353.  
 Bitterness of vegetables, *M. Guillemin*, xxiv, 273.  
 Bitumen in stones, xii, 147.  
 — or petroleum oil spring of Allegany Co., N. Y., xxiii, 97.  
 — in the valley of the Little Kenawha, xxix, 86; valley of the Kenawha, 121; of Sandy river, 129.  
 — in N. Jersey, xxxvi, 114.  
 — from Barbadoes, v, 406.  
 — of Africa, i, 147.  
 —, elastic, of France and England, xiv, 371.  
 Bituminized wood in the recent era, *W. M. Carpenter*, xxxv, 345; xxxvi, 118.<sup>f</sup>  
 — —, partly silicified, Texas, xxxvii, 216.  
 Bituminous or organic matter in the N. York limestones, *L. C. Beck*, xlv, 335.  
 — coal; see *Coal*.  
 Black lead; see *Graphite*.  
 Black mountain, Vt., geology of, vi, 7.  
 Black sea, anal. of waters of, xx, 188.  
 — —, height of, above the Caspian, xl, 320.  
 — —, on the shores of, xxxii, 399.  
 Blacking, preparation of, xiii, 163.  
 Blagden, Sir Charles, obituary notice of, ii, 344.  
 Blake, *E. W.*, on the forms of cog-wheels, vii, 86.<sup>f</sup>  
 —, blasting rocks, xvii, 134.<sup>f</sup>  
 —, theory of the resistance of fluids, xxix, 274; xxx, 359.  
 Blake, *J. H.*, meteorological observations in 1840, at San Fernando, Cuba, xlii, 292.  
 —, coal mines of Cuba, xlii, 388.  
 —, geological and miscellaneous notices of the province of Tarapaca, xlv, 1.<sup>f</sup>  
 Blanc, Mt., journey up, *J. Van Rensselaer*, ii, 1.  
 Blasting of rocks, danger and remedies, xvii, 132.<sup>f</sup>  
 — —, an improved method of, by firing several blasts at once, with a Leyden jar, xvi, 372.<sup>f</sup>  
 — —, by using as a plug, a cone of wood, *E. W. Blake*, xvii, 134.<sup>f</sup>  
 — —, on the premature explosion of powder in, xix, 199.  
 — —, by galvanism, *R. Hare*, xxi, 139; xxvi, 352<sup>f</sup>; xxxviii, 188.  
 — — —, *H. K. G. Morgan*, xxxviii, 33.  
 Bleaching, remarks on, xv, 64.  
 — oils, xlvii, 196.  
 — powder, see *Chloride of lime*.  
 Blende, in Canada, viii, 76.  
 —, in Connecticut, v, 41, 44; xxxiii, 162.  
 —, in Massachusetts, i, 437; vi, 201.  
 —, in N. Hampshire, xxxiv, 114.  
 —, in N. Jersey, v, 30.  
 —, in N. York, viii, 249; ix, 244.  
 —, western states, iii, 63.  
 Blind, New England asylum for, xxiv, 175.  
 Blind fish, from a cave in Ky., *J. Wyman*, xlv, 94.  
 Blood, remarks on the circulating system, xxviii, 79.  
 —, rapidity of the circulation of, xvi, 388.  
 —, new mode of analyzing, *L. Figuier*, xlix, 201.  
 —, coloring matter of, xix, 381.  
 —, on the iron in, xv, 169.  
 —, manganese in, xxi, 370.  
 —, gases contained in, and on respiration, *G. Magnus*, xxxv, 198.  
 —, peculiar principle of, xviii, 148.  
 —, mode of preserving, xxi, 370.  
 — of a dog, Filariæ in, xlv, 228.  
 Bloodgood, *S. D.*, on the Hudson and Mohawk railroad, xxi, 141.  
 Blowing machinery of a furnace, investigations respecting, by *A. B. Quimby*, xii, 128.

- Blowing machinery of a furnace, phenomenon exhibited by, xiii, 395; xiv, 395.
- , —, *ibid*, explanation of, xv, 362.<sup>f</sup>
- Blowpipe, common, *J. W. Bailey*, xxxii, 319.<sup>f</sup>
- , simplified, xvii, 163.
- , mineral supports, ix, 201.
- , reaction of fluxes with metallic oxides, xxxii, 323.
- , new, *J. Green*, iv, 164.<sup>f</sup>
- , alcoholic, improved, *R. Hare*, vii, 110.<sup>f</sup>
- , compound, of *R. Hare*, i, 97; ii, 281.<sup>f</sup>
- , —, fusion of refractory substances by, iii, 87.
- , —, hydrogen burned in water by, v, 347 *bis*.
- , —, experiments with, on diamond, anthracite and graphite, vi, 349.
- , —, mouth for, xxxv, 187.
- , —, large mass of platina fused by, *R. Hare*, xxxiii, 195.
- , —, a form of, xi, 142.<sup>f</sup>
- , Clarke's, strictures on an account of, ii, 281.<sup>f</sup>
- , hydrostatic, *R. Hare*, xi, 135.<sup>f</sup>
- , chloro-hydrogen, xvii, 211.
- Boat, iron, iii, 371.
- Boiling point of water, different in vessels of different material, xlvii, 190.
- , — of liquids, ii, 361.
- Bog ore, see under *Iron ore*.
- Boletus igniarius analogous to animal substances, *A. Eaton*, vi, 177.
- Bolles's trigonometer, ix, 401.<sup>f</sup>
- Bolton limestone quarry and its minerals, vii, 52.
- Bombay, geology of the province of the Deccan, xxxiii, 274.
- , climate of the province of the Deccan, xxxiii, 275.
- Bone, strength of, xiii, 189.
- , gelatine from, i, 170; xxii, 369.
- , used for soups, &c., x, 388; xvii, 169.
- Bones of the Kirkdale caverns, viii, 158, 317.
- , in caves, in England, ii, 144; viii, 158, 317; xxxi, 341; xxxiii, 106; xxxv, 304.
- , —, in France, xxi, 56; xxiii, 388.
- , —, in Germany, viii, 319, 321.
- , —, in N. Holland, xx, 380.
- , —, in Canada, ix, 354.
- , —, on the Susquehannah, xxxix, 399.
- , fossil, in the red sandstone of the Connecticut valley, ii, 146; vi, 43.
- , —, in France, vi, 199; xiv, 203; xx, 382.
- , —, human, skull of Guadaloupe, xxxii, 361.
- , —, —, in S. America, xlv, 277.
- , —, —, in Upper Saxony, v, 171.
- , —, see farther under *Fossil* and under *Zoology*.
- , fluorine in, xlvii, 131, 419.
- , —, *C. Daubeny*, xlviii, 187.
- , —, source of, *J. L. Smith*, xlviii, 99.
- , comparative composition of recent and fossil, xlviii, 186.
- Bonnets, Italian, material and manufacture of, iv, 166.
- Bonnycastle, R. H.*, on the transition rocks of the Cataraqui, xviii, 85; xx, 74<sup>f</sup>; xxiv, 97<sup>f</sup>; xxx, 233.<sup>f</sup>
- , earthquakes near the Saguenay, xxx, 236.
- , halo, solar, seen at Kingston, xxx, 136.
- Bonnycastle*, explanation of a collapse of a reservoir, (*Dr. Hare's*), xl, 32.
- , effect of instantaneous, as compared with accumulative, pressure, xl, 32.
- Bonpland*, in S. America, iv, 197.
- Books and memoirs of 1833, number of, xxviii, 295.

- Books of France per year, as compared with those of Germany, xviii, 185.
- , noticed, see *Works*.
- Boomerang of Australia, xxxvi, 164.<sup>f</sup>
- Booth, J. C.*, on the white nickel of Riechelsdorf, in Hessa, xxix, 241.
- , analysis of ores from Davidson Co., N. C., xli, 348.
- Boracic acid, from the lakes of Cherchaio, ii, 349.
- —, in the waters of Vulcano, ii, 349.
- —, of Tuscany, xxviii, 143.
- —, *ibid.*, *J. Bowring*, xxxvii, 270.
- —, reduced by hydrogen, xvii, 176.
- —, to detect, in tourmaline, vi, 157.
- —, on the origin of, in native compounds, *J. D. Dana*, xlix, 61.
- ether, xlviii, 189.
- Borate of lime, description of, xvi, 377.<sup>f</sup>
- —, analysis of, *A. A. Hayes*, xlvii, 215.
- Boring for freshwater, see *Wells*.
- Boron, method of evolving, *R. Hare*, xxiv, 249.<sup>f</sup>
- Boston, forts around, viii, 338.
- BOTANY.**
- American, remarks on, *W. J. Hooker*, ix, 263.
- , notices of European herbaria, important to, *A. Gray*, xl, 1.
- , of Alabama, new species, *M. C. Leavenworth*, vii, 61.
- , —, list of rare plants, *M. C. Leavenworth*, ix, 74.
- , —, new species, *S. B. Buckley*, xlv, 170.
- , of the Cherokee country, new species, *Mrs. Gambold*, i, 245.
- , of Connecticut, Litchfield, *J. P. Brace*, iv, 292.
- American, of Florida, *T. Nuttall*, v, 286.
- , —, *H. B. Croom*, xxv, 74; xxvi, 313.
- , of Illinois and Missouri, contributions to, *L. C. Beck*, x, 257; xi, 167; xiv, 112.
- , —, —, catalogue, *G. Engelmann*, xlv, 94.
- , of the Lakes, and headwaters of the Mississippi, *D. B. Douglass and J. Torrey*, iv, 56.
- , of Maine, list of some plants in, *J. W. Bailey*, xxxii, 22.
- , of N. York, *Cylactis*, *Nemopanthus*, *Polanisia*, three genera, *C. S. Rafinesque*, i, 377.
- , of New England, observations on some plants in, *E. Tuckerman*, xlv, 27.
- , of North Carolina, notes on an excursion, *A. Gray*, xlii, 1.
- , —, new and rare plants, *M. A. Curtis*, xlv, 80.
- , of Ohio, three undescribed species in, *W. S. Sullivant*, xlii, 49.
- , —, Belmont Co., *C. Atwater*, i, 226.
- , of the Ottawa river and tributaries, *A. Benedict*, xviii, 349.
- , of Pennsylvania, Easton, list of rare plants, *L. de Schweinitz*, viii, 267.
- , —, Northampton Co., *J. Wolle and A. L. Hübener*, xxxvii, 310.
- , of the southern states, remarks and new localities, *H. B. Croom*, xxviii, 165.
- of Brazil, number of species, xv, 390.
- of Chili, lists of, *C. Bertero*, xix, 63, 299; xx, 248; xxiii, 78, 250.
- of Ireland, geographical distribution, xxxi, 367.
- of the Pyrenees, xiv, 377.
- , see farther under *Plants and Vegetation*.

## BOTANY.

*Genera and species described or noticed.*

- Acacia cavenia, xix, 66.  
 Aconitum reclinatum, xlii, 34.  
 Actinomeris pauciflora, v, 301.  
 Agrimonia suaveolens, xiv, 112.  
 Agrostis altissima, xlv, 44.  
 — concinna, xlv, 42.  
 — laxiflora, xlv, 43.  
 — perennans, xlv, 44.  
 — Pickeringii, xlv, 442.  
 — scabra, xlv, 45.  
 Allium striatum, xi, 177.  
 Alnus crispa, xlv, 33.  
 — incana, xlv, 32.  
 — rubra, xlv, 32.  
 Amorpha caroliniana, xxv, 74.  
 Amphianthus, genus of plants,  
*M. C. Leavenworth*, xlix, 127.  
 — pusillus, xlix, 127.  
 Amyris floridana, v, 294.  
 Anantherax viridis, xi, 174.  
 Andromeda montana, xlv, 172.  
 — polifolia, iv, 62.  
 — recurva, xlv, 172.  
 — rosemary-leaved, iii, 283.<sup>f</sup>  
 Angelica Curtisii, xlv, 173.  
 Antiaris toxicaria, or Upas tree,  
 analysis of the juice of, xxxix,  
 206.  
 Apocynum cannabinum, xi, 172.  
 — hypericifolium, xi, 172.  
 Arabis rhomboidea, iv, 66; xviii,  
 358.  
 — patens, xlii, 49.  
 Arbutus uva-ursi, iv, 62.  
 Argemone georgiana, xxv, 75.  
 Arum polymorphum, xlv, 173.  
 Asarum, characters of the genus,  
 xlii, 18.  
 Asclepias, amæna, xi, 173.  
 — incarnata, xi, 173.  
 — lanceolata, i, 252.<sup>f</sup>  
 — longifolia, xi, 173.  
 — obtusifolia, xi, 173.  
 — quadrifolia, xi, 172.  
 — verticillata, xi, 173.  
 Aspidium aculeatum, xlv, 46.  
 Astilbe, characters of the genus,  
 xlii, 39.  
 — decandra, xlii, 39.

## BOTANY.

- Astilbe japonica, xlii, 39.  
 — rivularis, xlii, 39.  
 Atheropogon apludoides, iv, 58.  
 Avicennia tomentosa, v, 296.  
 Azalea nudiflora, size of, in Flor-  
 ida, xxvi, 319.  
 Baptisia simplicifolia, xxv, 74;—  
 mollis, xlv, 81.  
 Batschia canescens, xi, 168.  
 Betula glandulosa, xlv, 30.  
 — Littelliana, xlv, 30.  
 — nana, xlv, 31.  
 — papyracea, xlv, 31.  
 — pumila, xlv, 29.  
 Boletus igniarius, analogous to ani-  
 mal substance's, *A. Eaton*, vi, 177.  
 Botrychium simplex, vi, 103.<sup>f</sup>  
 Boykinia aconitifolia, xlii, 21.  
 Campanula rotundifolia, xlv, 27.  
 Capsicum baccatum, v, 289.  
 Cardamine rotundifolia, xviii, 356;  
 xlii, 30.  
 — uniflora, vii, 63.  
 Caricography, *C. Dewey*, vii, 264;  
 viii, 93, 264; ix, 60, 257<sup>f</sup>; x,  
 30, 265<sup>f</sup>; xi, 147, 304<sup>f</sup>; xii,  
 296<sup>f</sup>; xiv, 351<sup>f</sup>; xxv, 140<sup>f</sup>;  
 xxvi, 107, 376; xxvii, 236<sup>f</sup>;  
 xxviii, 270; xxix, 245<sup>f</sup>; xxx,  
 59<sup>f</sup>; xxxix, 50<sup>f</sup>; xliii, 90<sup>f</sup>;  
 xlvi, 140<sup>f</sup>; xlix, 42.<sup>f</sup>  
 Carices, systematic arrangement  
 of, *C. Dewey*, xi, 319.  
 —, list of, in northern parts of  
 America, *C. Dewey*, xxviii, 271.  
 —, in the herbarium of Muh-  
 lenberg, *C. Dewey*, xxv, 143.  
 —, three new species in Ala-  
 bama, *S. B. Buckley*, xlv, 173.  
 —, four new species in New  
 England, *E. Tuckerman*, xlv, 39.  
 Carex acuta, x, 265.  
 — æstivalis, xlii, 28.  
 — affinis, xi, 305.  
 — alba, vii, 266; x, 280; xi,  
 316.<sup>f</sup>  
 — alopecoidea, xlv, 39.  
 — alpestris, vii, 268.  
 — ampullacea, vii, 266.  
 — anceps, x, 36.<sup>f</sup>

## BOTANY.

- Carex aquatilis*, x, 267.<sup>f</sup>  
 — *arctica*, xxvii, 239.<sup>f</sup>  
 — *aristata*, vii, 277.<sup>f</sup>; xi, 161;  
 xxvii, 240.<sup>f</sup>  
 — *atrata*, x, 271.  
 — *attenuata*, xi, 305.  
 — *Backana*, xxix, 250.<sup>f</sup>  
 — *Backii*, xlix, 46.<sup>f</sup>  
 — *Baldwinia*, xxvi, 107.<sup>f</sup>  
 — *Barrattii*, xi, 162; xii, 297.<sup>f</sup>  
 — *binervis*, xxx, 61.  
 — *blanda*, x, 45.<sup>f</sup>  
 — *blepharophora*, xxx, 59.<sup>f</sup>  
 — *bromoides*, viii, 264.  
 — *Buckleyi*, xlvi, 143.<sup>f</sup>  
 — *bullata*, ix, 71; xi, 315.  
 — *Buxbaumii*, x, 39.  
 — *canescens*, viii, 93; xlv, 39.  
 — *capillaris*, xi, 149; xxxix, 51.  
 — *capitata*, xxxix, 51.  
 — *Careyana*, xxx, 60.<sup>f</sup>  
 — *Carltonia*, xxvii, 238.<sup>f</sup>  
 — *caroliniana*, xlv, 173; xlvi, 142.<sup>f</sup>  
 — *castanea*, ix, 73.  
 — *cephalophora*, vii, 269; x, 268; xliii, 92.  
 — *cespitosa*, x, 266; xi, 318; xii, 297.  
 — *cherokeensis*, xi, 160.<sup>f</sup>  
 — *chordorrhiza*, xlix, 44.  
 — *collecta*, xi, 314.<sup>f</sup>  
 — *columbiana*, xxx, 62.<sup>f</sup>  
 — *compacta*, xxvii, 237.<sup>f</sup>  
 — *concinna*, xi, 152.  
 — *concolor*, xi, 309.  
 — *Cooleyi*, xlvi, 144.<sup>f</sup>  
 — *crinita*, x, 270.  
 — *cristata*, x, 44.<sup>f</sup>  
 — *cryptocarpa*, xxix, 245.<sup>f</sup>  
 — *dasycarpa*, xi, 148.<sup>f</sup>  
 — *Davalliana*, x, 283.  
 — *Davisii*, x, 279.<sup>f</sup>  
 — *decomposita*, xxv, 140.<sup>f</sup>  
 — *Deweyana*, ix, 62.<sup>f</sup>  
 — *digitalis*, xi, 147.  
 — *dioica*, x, 283.  
 — *disperma*, viii, 266.<sup>f</sup>  
 — *Drummondiana*, xxix, 251.<sup>f</sup>  
 — *Elliottii*, xi, 151.<sup>f</sup>

## BOTANY.

- Carex exilis*, xiv, 351.<sup>f</sup>;  $\beta$  *squamacea*, xiv, 351.<sup>f</sup>  
 — *festiva*, xxix, 246.<sup>f</sup>  
 — *festucacea*, viii, 96.  
 — *filifolia*, xi, 150; xii, 296.<sup>f</sup>  
 — *filiformis*, vii, 268.  
 — *flava*, ix, 65.  
 — *flexuosa*, x, 40.  
 — *floridana*, x, 45.<sup>f</sup>  
 — *foenea*, x, 284; xxv, 142.<sup>f</sup>  
 — *folliculata*, x, 32.  
 — *formosa*, viii, 98.<sup>f</sup>  
 — *Fraseri*, xi, 155.  
 — *fuliginosa*, xi, 152.  
 — *fulvicoma*, xxix, 249.<sup>f</sup>  
 — *gigantea*, xi, 164.  
 — *glaucescens*, xi, 150.<sup>f</sup>; xlv, 84.  
 — *gracillima*, viii, 98.<sup>f</sup>  
 — *granularis*, vii, 272; xi, 156.  
 — *granularioides*, ix, 262.<sup>f</sup>  
 — *Grayana*, xxv, 141.<sup>f</sup>  
 — *Greeniana*, xxx, 61.<sup>f</sup>  
 — *Halseyana*, xi, 313.<sup>f</sup>  
 — *hirsuta*, ix, 260; xi, 315.  
 — *Hitchcockiana*, x, 274.<sup>f</sup>  
 — *Hoodii*, xlix, 42.<sup>f</sup>  
 — *Hookerana*, xxix, 248.<sup>f</sup>  
 — *Hoppneri*, xlix, 46.<sup>f</sup>  
 — *Houghtoniana*, xxx, 63.<sup>f</sup>  
 — *hystericina*, x, 35.  
 — *incurva*, xxvi, 376.  
 — *intumescens*, x, 33.  
 — *lacustris*, x, 43.  
 — *lagopodioides*, viii, 95.  
 — *lanceata*, xxix, 249.<sup>f</sup>  
 — *laxa*, xxvi, 376.  
 — *laxiflora*, x, 31.  
 — *lenticularis*, vii, 273.<sup>f</sup>  
 — *leucoglochis*, x, 42.  
 — *Liddoni*, xlix, 45.<sup>f</sup>  
 — *limosa*, x, 41.  
 — *loliacea*, xi, 306.  
 — *longirostris*, ix, 257.<sup>f</sup>  
 — *lupulina*, xi, 165.<sup>f</sup>  
 — —, var. *polystachia*, xi, 166.<sup>f</sup>  
 — *Lyoni*, xlix, 42.<sup>f</sup>  
 — *macrocephala*, xliii, 91.<sup>f</sup>  
 — *marcida*, xlix, 43.<sup>f</sup>  
 — *marginata*, xi, 163.  
 — *marina*, xxix, 247.<sup>f</sup>

## BOTANY.

- Carex Martensii*, xxx, 62.  
 — *Meadii*, xliii, 90.<sup>f</sup>  
 — *media*, xi, 309.  
 — *membranacea*, xxix, 247.<sup>f</sup>  
 — *Michauxii*, x, 273.<sup>f</sup>  
 — *miliacea*, x, 30.  
 — *miliaris*, x, 36.  
 — *mirabilis*, xxx, 63.<sup>f</sup>  
 — *misandra*, xi, 153.  
 — *miser*, xlv, 173; xlviii, 141.<sup>f</sup>  
 — *Mitchelliana*, xlv, 84; xlviii, 140.<sup>f</sup>  
 — *monile*, xlix, 47.<sup>f</sup>  
 — *Muhlenbergii*, viii, 265.  
 — *multiflora*, ix, 60.<sup>f</sup>; xi, 317.  
 — *muricata*, xi, 307.  
 — *muskingumensis*, x, 281.<sup>f</sup>  
 — *mutica*, xi, 310; xxix, 252.<sup>f</sup>  
 — *neglecta*, xlv, 40.  
 — *nigricans*, xxix, 249.<sup>f</sup>  
 — *nigro-marginata*, x, 282.<sup>f</sup>  
 — *novangliæ*, ix, 64.<sup>f</sup>  
 — *Nutallii*, xliii, 92.<sup>f</sup>  
 — *Æderi*, x, 38.  
 — *Okesiana*, xiv, 351.<sup>f</sup>  
 — *oligocarpa*, x, 281.<sup>f</sup>  
 — *ovalis*, vii, 276; xxvi, 377.  
 — *ovata*, x, 44.  
 — *pallescens*, vii, 267.  
 — *panicea*, xxv, 140.  
 — *paniculata*, x, 275.  
 — *Parryana*, xxvii, 239.<sup>f</sup>  
 — *pedunculata*, ix, 259.  
 — *petasata*, xxix, 246.<sup>f</sup>  
 — *petricosa*, xxix, 246.<sup>f</sup>  
 — *plantaginea*, vii, 272; xi, 155.<sup>f</sup>  
 — *podocarpa*, xi, 162; xxix, 251.<sup>f</sup>  
 — *polytrichoides*, ix, 258.  
 — *pseudo-cyperus*, ix, 71; xi, 318.  
 — *pubescens*, ix, 73.  
 — *pyriformis*, ix, 69.<sup>f</sup>  
 — *Redowskiana*, xxix, 250.<sup>f</sup>  
 — *remota*, xi, 309.  
 — *retroflexa*, vii, 271; x, 277.  
 — *retrorsa*, ix, 67.<sup>f</sup>  
 — *Richardsonii*, xi, 152.  
 — *rigida*, xlv, 40; xlix, 45.<sup>f</sup>

## BOTANY.

- Carex riparia*, xlix, 47.  
 — *rosea*, x, 276.<sup>f</sup>  
 — *rostrata*, xxxix, 52.  
 — *Sartwellii*, xliii, 90.<sup>f</sup>  
 — *saxatilis*, xi, 310; xxvii, 236.  
 — *scabrata*, ix, 66.<sup>f</sup>  
 — *Schkuhrii*, xxvii, 238.  
 — *Schweinitzii*, ix, 68.<sup>f</sup>  
 — *scirpoides*, viii, 96.  
 — *scoparia*, viii, 94.  
 — *setacea*, ix, 61.<sup>f</sup>  
 — *Shortiana*, xxx, 60.<sup>f</sup>  
 — *siccata*, x, 278.<sup>f</sup>; xiv, 353.  
 — *Sparganioides*, viii, 265.  
 — *spectabilis*, xxix, 248.<sup>f</sup>  
 — *spherostachya*, xlix, 44.<sup>f</sup>  
 — *squarrosa*, vii, 270.<sup>f</sup>; xi, 316.  
 — *stellulata*, xi, 306.  
 — *stenolepis*, xxx, 59.<sup>f</sup>  
 — *stenophylla*, xxvii, 237.  
 — *sterilis*, xi, 304.  
 — *Stuedelii*, xlix, 46.<sup>f</sup>  
 — *stipata*, vii, 271; x, 277.  
 — *straminea*, vii, 276; xi, 157, 318.<sup>f</sup>  
 — *stricta*, x, 269.  
 — *styloflexa*, xlv, 174; xlviii, 141.<sup>f</sup>  
 — *Sullivantii*, xlii, 29; xlix, 44.<sup>f</sup>  
 — *supina*, xxvi, 376.  
 — *sylvatica*, x, 40.  
 — *tenera*, viii, 97.<sup>f</sup>  
 — *tenuiflora*, xxxix, 51.  
 — *teretiuscula*, vii, 265.  
 — *tentaculata*, x, 34.  
 — *tetanicæ*, xi, 312.<sup>f</sup>  
 — *Torreyana*, x, 47.  
 — *Torreyi*, xlix, 43.<sup>f</sup>  
 — *triceps*, xlviii, 142.<sup>f</sup>  
 — *trichocarpa*, vii, 274; xi, 158.<sup>f</sup>  
 — *trisperma*, ix, 63.<sup>f</sup>  
 — *Tuckermanii*, xlix, 48.<sup>f</sup>  
 — *umbellata*, x, 31.<sup>f</sup>; xi, 316.  
 — *ursina*, xxvii, 240.<sup>f</sup>  
 — *ustulata*, xi, 149.  
 — *Vahlîi*, xxvi, 377.  
 — *varia*, xi, 162.  
 — *venusta*, xxvi, 107.<sup>f</sup>  
 — *verna*, xi, 314.

## BOTANY.

- Carex verrucosa*, xi, 159<sup>f</sup>; xlviii, 140.<sup>f</sup>  
 — *vesicaria*, x, 273.  
 — *vestita*, ix, 261.  
 — *virescens*, ix, 259.  
 — *viridula*, xi, 153.  
 — *Washingtoniana*, x, 272<sup>f</sup>; xii, 296.  
 — *Willdenovii*, ix, 258; xi, 311.  
 — *Wormskioldiana*, xi, 154; xiv, 352.<sup>f</sup>  
 — *xanthophysa*, vii, 274<sup>f</sup>; xiv, 353.  
 — — *β nana*, 353.<sup>f</sup>  
 — — *γ minor*, 353.<sup>f</sup>  
*Catalpa syringifolia*, x, 259.  
*Cerastium*, *n. sp.*, iv, 63.  
*Ceratiola ericoides*, northern limit of, *H. B. Croom*, xxvi, 315.  
*Cetraria Tuckermanii*, xlv, 48.  
*Chamærops palmetto*, locality of, xxvi, 315.  
 Charæ of North America, by *A. Braun*, xlv, 92.  
*Clematis reticulata*, xiv, 115.  
*Corydalis formosa*, and *canadensis*, xxvi, 114.<sup>f</sup>  
*Cranichis multiflora*, v, 302.  
*Craterium pyriforme*, *J. W. Bailey*, xlii, 195.  
 — —, shown to be an *Acarus*, xliii, 205.<sup>f</sup>  
 Cryptogamia of Chelmsford, notice of a memoir on, by *J. L. Russel*, xxxix, 183.  
*Cuscuta cephalanthi*, xliii, 336<sup>f</sup>; xiv, 73.  
 — *coryli*, xliii, 337<sup>f</sup>; xlv, 73.  
 — *hispidula*, xlv, 75.  
 — *neuropetala*, xlv, 75.  
 — *pentagona*, xliii, 340<sup>f</sup>; xlv, 76.  
 — *polygonorum*, xliii, 342<sup>f</sup>; xlv, 76.  
 — *saururi*, xliii, 339<sup>f</sup>; xlv, 74.  
 — *verrucosa*, xliii, 341<sup>f</sup>; xlv, 74.  
 — *vulgivaga*, xliii, 338<sup>f</sup>; xlv, 73.

## BOTANY.

- Cuscutineæ*, N. American, monograph of, *G. Engelmann*, xliii, 333; xlv, 73.  
*Cycadeæ*, remarks on, with descriptions of the ovula and seeds of *Cycas revoluta*, by *A. J. Downing*, xxxii, 45.<sup>f</sup>  
*Cylactis*, i, 377.  
*Cynanchum scoparium*, v, 291.  
*Cyrilla paniculata*, v, 290.  
*Dalea violacea*, iv, 66.  
*Datura*, two species in the United States, vi, 254.  
*Delphinium tricome*, xiv, 114.  
*Dentaria dissecta*, vii, 62.  
*Diervilla sessilifolia*, xlv, 174.  
*Dionæa muscipula*, xxvi, 315.  
*Diphylleia cymosa*, xlii, 23.  
*Diplocea barbata*, i, 252.  
*Dracena borealis*, iv, 61.  
*Eleocharis compressa*, xlii, 50.  
*Elymus hystrix*, iv, 58.  
*Equiseta*, North American, *A. Braun's* monograph, with additions by *G. Engelmann*, xlv, 81.  
*Equisetum arvense*, xlv, 83.  
 — *boreale*, xlv, 90.  
 — *eburneum*, xlv, 84.  
 — *giganteum*, xlv, 91.  
 — *hyemale*, xlv, 89.  
 — *lævigatum*, xlv, 87.  
 — *limosum*, xlv, 86.  
 — *palustre*, xlv, 85.  
 — *pratense*, xlv, 85.  
 — *robustum*, xlv, 88.  
 — *scirpoides*, xlv, 91.  
 — *sylvaticum*, xlv, 84.  
 — *variegatum*, xlv, 90.  
*Erythronium albidum*, xi, 177.  
*Eupatorium huaco*, xxiv, 279.  
*Fedia radiata*, iv, 57.  
 — *umbilicata*, xlii, 50.  
*Flørkea*, on the genus, *C. S. Rafinesque*, i, 373.  
*Geum agrimonoides*, iv, 64.  
 — *geniculatum*, xlii, 35.  
*Gnaphalium*, *decurrens*, i, 310, 330.  
*Gratiola micrantha*, v, 287.



## BOTANY.

- Gratiola missouriana*, x, 258.  
*Grevilleanum serratum*, xi, 183.<sup>f</sup>  
*Gyropodium coccineum*, ix, 56.<sup>f</sup>  
*Hedeoma hirta*, x, 260.  
*Hedyotis purpurea*, xlii, 27.  
*Helianthus Dowellianus*, xlv, 82.  
*Herniaria americana*, v, 291.  
*Heterotropa*, characters of the genus, xlii, 18.  
 — *arifolia*, xlii, 19.  
 — *asaroides*, xlii, 19.  
 — *virginica*, xlii, 19.  
*Hibiscus pentaspermus*, v, 298.  
*Hoteia*, characters of the genus, xlii, 39.  
*Houstonia minima*, x, 262.  
 — *ciliolata*, x, 263.  
 — *cœrulea*, x, 263.  
 — *longifolia*, x, 263.  
 — *purpurea*, x, 263.  
*Hypericum Buckleii*, xlv, 80.  
 — *graveolens*, xlv, 174.  
 — *rosmarinifolium*, xiv, 115.  
*Hyssopus anisatus*, iv, 65.  
*Ilex laurifolia*, v, 289.  
*Iris Duerinckii*, xlv, 176.  
 — *lacustris*, iv, 57.  
*Jatropha manihot*, v, 303.  
*Juncus cylindricus*, xlv, 83.  
 — *Greenei*, xlv, 37.  
*Juniperus repens*, iv, 69.  
*Jussieua tenuifolia*, v, 294.  
*Justicia lætivirens*, xlv, 176.  
*Kalmia cuneata*, xxvi, 314.  
*Kobresia filiformis*, xxix, 253.<sup>f</sup>  
 — *globularis*, xxix, 253.<sup>f</sup>  
*Lilium canadense*, xi, 177.  
 — *Catesbæi*, xi, 177.  
*Lepidanche*, new genus, *C. Engelmanni*, xliii, 343.  
 — *appressa*, xlv, 77.  
 — *compositarum*, xliiii, 344<sup>f</sup>; xlv, 77.  
*Liatris flexuosa*, xxxvii, 388.<sup>f</sup>  
 — *fruticosa*, v, 299.  
 — *oppositifolia*, v, 299.  
 — *scariosa*, iv, 67.  
 — *squarrosa*, iv, 66.  
*Ligustrum vulgare*, x, 258.

## BOTANY.

- Limonia acidissima*, v, 295.  
*Lindernia saxicola*, xlv, 83.  
*Lobelia aphylla*, v, 297.  
*Lodoicea sechellarum*, notice of, *J. E. Teschemacher*, xxxvii, 396.  
*LychNOPora*, a new genus from South America, notice of, ix, 375.  
*Lycoperdon tuber*, or Indian bread, ii, 369.  
 — *giganteum*, xxxviii, 391.  
*Lycopodium annotinum*, xlv, 46.  
 — *inundatum*, xlv, 47.  
 — *selago*, xlv, 48.  
*Magnolia grandiflora*, xxvi, 314.  
*Malva Lecontii*, xlv, 176.  
 — *Nutalloides*, xxvi, 313.  
 — *triangulata*, vii, 62.  
*Maranta arundinacea*, v, 302.  
*Matelea lævis*, v, 291.  
*Melanthium virginium*, xi, 178.  
*Monarda allophylla*, iv, 56.  
 — *Bradburiana*, x, 260.  
 — *scabra*, x, 260.  
 Mosses and Ferns of the United States, by *L. C. Beck*, xv, 287.  
*Mucedinea*, on vines, xxix, 367.  
*Muhlenbergia filipes*, xlv, 83.  
*Mylocarium ligustrinum*, xxvi, 319.  
*Myosotis inflexa*, xlv, 98.  
 — *macrosperma*, xlv, 98.  
 — *stricta*, xlv, 98.  
 — *verna*, xlv, 97.  
*Myosurus Shortii*, i, 379.  
*Myrrhis canadensis*, xi, 175.  
 — *longistylis*, xi, 175.  
*Nelumbium luteum*, iv, 64.  
*Nemopanthus*, i, 377.  
*Nemostyles cælestina*, xlix, 130.  
 — *gemmaiflora*, xlix, 131.  
*Neottia gemmipara*, xlvii, 185.  
*Oakesia Conradii*, xlv, 215.  
*Oenothera sinuata*, xi, 180.  
*Olea americana*, northern limit of, *H. B. Croom*, xxvi, 315.  
*Oligostachyum*, iv, 58.

## BOTANY.

- Orchis tribe, synonymy of some species of, *A. Gray*, xxxviii, 306.
- Orchis spectabilis*, monstrous flower of, *J. W. Bailey*, xxxv, 117.<sup>f</sup>
- Oxyria reniformis*, xlv, 29.
- Panicum longisetum*, iv, 58.
- Passiflora Warei*, v, 297.
- Peaches growing on an almond tree, ii, 363.
- Penstemon Nuttalli*, xiv, 120.
- Petalostemon roseum*, v, 298.
- *villosum*, iv, 66.
- Peucedanum ternatum*, xxviii, 165.
- Phacelia brevistylis*, xlv, 172.
- *fimbriata*, xlv, 171.
- *Purshii*, xlv, 171.
- *pusilla*, xlv, 172.
- Philadelphus hirsutus*, xlix, 130.
- Phalangium esculentum*, iv, 60.
- Phlox bifida*, xi, 170.
- *divaricata*, xi, 169.
- *glutinosa*, xlv, 177.
- *pilosa*, xi, 169.
- Physalis pubescens*, xi, 170.
- Piper leptostachyum*, v, 287.
- Planera* or Siberian elm, xx, 377.
- Plumbago floridana*, v, 290.
- Poa modesta*, xlv, 45.
- Polanisia*, i, 378.
- Potamogeton Claytoni*, xlv, 38.
- *pulcher*, xlv, 38.
- Potentilla supina*, xiv, 114.
- Prenanthes aphylla*, v, 299.
- Primula farinosa*, iv, 59.
- Prinos coriaceus*, v, 293.
- Prosartes maculata*, xlvii, 201.
- Protococcus kermesinus*, analogies of, with the red particles of the blood, xxxvi, 206.
- Prunus pennsylvanica*, xiv, 112.
- Psychotria lanceolata*, v, 290.
- Pteris alabamensis*, xlv, 177.
- Pycnanthemi*, conspectus of, xlii, 44.
- Pycnanthemum albescens*, xlii, 45.
- *aristatum*, xlii, 44.
- *clinopodioides*, xlii, 45.
- *dubium*, xlii, 45.

## BOTANY.

- Pycnanthemum hyssopifolium*, xlii, 44.
- *incanum*, xlii, 45.
- *lanceolatum*, xlii, 46.
- *linifolium*, xlii, 46.
- *montanum*, xlii, 47.
- *muticum*, xlii, 46.
- *nudum*, xlii, 47.
- *pilosum*, xiv, 117; xlii, 46.
- *Torrei*, xlii, 46.
- *Tullii*, xlii, 45.
- Rafflesia*, iii, 377.
- Ranunculus*, new species, near *collinus*, xiv, 116.
- Rosa rubifolia*, xiv, 113.
- Rottboellia ciliata*, i, 357.
- *corrugata*, i, 355.
- Ruellia ciliosa*, xiv, 119.
- Sabal Adansoni*, xxvi, 315.
- *hystrix*, v, 293.
- *minima*, v, 293.
- Salix ambigua*, xlv, 35.
- *Cutleri*, xlv, 36.
- *myrtilloides*, xlv, 34.
- *phylicifolia*, xlv, 35.
- Sanguinaria canadensis*, xlix, 130.
- Sanicula marilandica*, xi, 174.
- Sarracenia*, remarks on the genus and species of, *H. B. Croom*, xxvi, 316.
- *pulchella*, xxv, 75.
- Saxifraga Careyana*, xlii, 32.
- Schœnus effusus*, northern limit of, *H. B. Croom*, xxvi, 315.
- Scutellaria arguta*, xlv, 175.
- *saxatilis*, xlii, 18.
- *parvula*, xiv, 117.
- Selloa nudata*, v, 300.
- Shortia*, characters of the genus, xlii, 48.
- Silene axillaris*, vii, 62.
- *regia*, xi, 182.
- Silphium*, v, 301.
- Sium tricuspidatum*, xi, 175.
- Smilax grandifolia*, xlv, 171.
- Solorina saccata*, xlv, 49.
- Sophora affinis*, xlix, 130.
- Squamaria rubina*, notice of, xxxix, 183.
- Stachys aspera*, iv, 65.

## BOTANY.

- Stanleya amplexifolia*, v, 297.  
*Stillingia ligustrina*, xlix, 129.  
 — *oblongifolia*, xlix, 128.  
*Streptopus maculatus*, xlv, 170.  
*Sullivantia*, characters of the genus, xlii, 22.  
 — —, *ohioensis*, xlii, 22.  
*Swertia deflexa*, found in Maine, xxxii, 23.  
*Thalictrum clavatum*, xlii, 17.  
 — *debile*, xlv, 175.  
 — *filipes*, xlii, 17.  
*Thermopsis caroliniana*, xlv, 80.  
 — *fraxinifolia*, xlv, 81.  
*Thyrsanthus floridana*, xxv, 75.  
*Tiarella cordifolia*, iv, 63.  
*Tillandsia Bartrami*, v, 292.  
 — *monostachya*, v, 292.  
*Tradescantia virginica*, iv, 60.  
*Trillium recurvatum*, xi, 178.  
 — *viride*, xi, 178.  
*Tullia pycnanthemoides*, xx, 343.<sup>f</sup>  
*Ulmus crassifolia*, xlix, 129.  
 — *racemosa*, xix, 170.<sup>f</sup>  
*Usnea acharius*, from N. South Shetlands, vi, 104.<sup>f</sup>  
*Utricularia intermedia*, xlv, 28.  
 — *nelumbiifolia*, xlv, 215.  
 — *striata*, xlv, 29.  
*Uvularia lanceolata*, xi, 178.  
 — *perfoliata*, iv, 61.  
*Vaccinium hirsutum*, xlv, 175.  
 — *ursinum*, xlv, 82.  
*Valeriana ciliata*, xlii, 51.  
*Verbena bracteosa*, xiv, 118.  
 — *lanceolata*, xiv, 118.  
 — hybrids of different species, xlv, 99.  
*Vicia Douglassii*, iv, 66.  
*Viola*, monograph of the American species of the genus, by L. D. de Schweinitz, v, 48.  
 — *asarifolia*, v, 54.  
 — *bicolor*, v, 78.  
 — *blanda*, v, 65.  
 — *canadensis*, v, 68.  
 — *clandestina*, v, 65.  
 — *concolor*, v, 79.  
 — *cordifolia*, v, 62.  
 — *cucullata*, v, 59.

## BOTANY.

- Viola debilis*, v, 71.  
 — *eriocarpa*, v, 75.  
 — *hastata*, v, 77.  
 — *lanceolata*, v, 64.  
 — *Nuttalli*, v, 77.  
 — *obliqua*, v, 60.  
 — *ochroleuca*, v, 69.  
 — *ovata*, v, 58.  
 — *palmata*, v, 51.  
 — *pedata*, v, 50.  
 — *primulifolia*, v, 64.  
 — *pubescens*, v, 74.  
 — *punctata*, v, 67.  
 — *repens*, v, 70.  
 — *rostrata*, v, 72.  
 — *rotundifolia*, v, 63.  
 — *sagittata*, v, 56.  
 — *striata*, v, 76.  
 — *triloba*, v, 57.  
 — *tripartita*, v, 73.  
 — *uliginosa*, v, 72.  
 — *villosa*, v, 61.  
*Xanthium maculatum*, i, 151.  
*Zizia pinnatifida*, xlv, 175.
- BOTANY, FOSSIL.  
 — of the coal strata, *A. Brongniart*, iv, 266.<sup>f</sup>  
 —, — —, *H. Witham*, xviii, 110.<sup>f</sup>  
 —, — — of England, iii, 246.  
 —, — — of Ohio, at Zanesville, *E. Granger*, iii, 5.<sup>f</sup>  
 —, — — of Ohio valley, *S. P. Hildreth*, xxix, 1, 151.<sup>f</sup>  
*Abies Benstedii*, xlv, 402.  
*Carpolithus Smithii*, xlv, 402.  
*Culmites*, vii, 180.  
*Ficoidites scabrosus*, xxxi, 31.<sup>f</sup>  
*Filicites*, generic characters of, vii, 181.  
*Fucoides bilobata*, xlviii, 307.<sup>f</sup>  
 — *demissa*, xlvii, 360.<sup>f</sup>  
 — *Harlani*, xlviii, 299.<sup>f</sup>  
 —, of New York, xxxvi, 46.  
 —, of Indiana, xlv, 290.<sup>f</sup>  
 —, of Pennsylvania, xx, 415; xxvii, 347.  
 —, remarks on, by *Brongniart*, ix, 375.

- BOTANY, FOSSIL.**  
 Palmacites, generic characters of, vii, 182.  
 Palm, Ohio, xxxi, 35.<sup>f</sup>  
 — trees, Indiana, *D. D. Owen*, xlv, 336.  
 Sigillaria, vii, 180.  
 — in coal fields near Liverpool, xlv, 403.  
 —, relation to Stigmariæ, xlix, 227.  
 — marineria, xxxi, 30.<sup>f</sup>  
 Stigmaria, vii, 180.  
 —, relation to Sigillariæ, xlix, 227.  
 Strobilus caryophyllus, xxxi, 32.<sup>f</sup>  
 Syringodendron, vii, 180.  
 — Kirtlandius, xxxi, 29.<sup>f</sup>  
 — trees and wood, see under *Fossil*.  
 Zamia sussexiensis, xlv, 401.  
 —, fossil fruits of, *G. A. Mantell*, xlv, 401.
- Botanical collections, notice of several, xlv, 225.  
 —, fêtes in France, ix, 154.  
 — garden, in Russia, at St. Petersburg, xx, 175.  
 — —, in Austria, ii, 340.  
 — press, *J. Locke*, xxx, 54.<sup>f</sup>  
 — works of *Rafinesque*, xl, 221.  
 — —, notices of various, see under *Works*.
- Bottles, glass, strength of, xix, 197.  
 —, for washing, in chemical manipulations, xxxi, 292.<sup>f</sup>
- Botto, G. D.*, on electro-chemical action, xxiv, 197; xxix, 369.
- Boulders over the northern parts of England, *Prof. Phillips*, xxxi, 360.  
 — *ibid*, *R. I. Murchison*, xxxi, 375.  
 — and glaciers in Switzerland, *Agassiz*, xli, 59, 190.  
 — of the North of Germany, xxviii, 389.  
 —, large, in Invernesshire, vi, 158.  
 — and diluvial scratches, in the U. States, xli, 174.
- Boulders in New England, their positions attributed to a retiring ocean, ix, 28.  
 — in R. Island, *C. T. Jackson*, xl, 184.  
 — in Maine, *C. T. Jackson*, xxxvi, 152.  
 — in the Connecticut valley, vi, 85.  
 — in western N. York, xxxvi, 39.  
 — in New York, about the sources of the Hudson and to the southward, xxxiii, 304, 315.  
 — on Long Island, xxxvi, 20.  
 — of Labrador feldspar, near Pompton, N. J., v, 241.  
 — of Ohio, *D. and I. A. Lapham*, xxii, 300.  
 — in the valley of the Muskingum, xxix, 11.  
 — in Illinois, xxxiv, 141.  
 — in Indiana, *J. S. Plummer*, xlv, 296, 303.  
 — of gneiss and granite on the Côteau des Prairies, *G. Catlin*, xxxviii, 142.  
 — of the Canadian lakes and valley of the St. Lawrence, *C. Lyell*, xlvi, 314.  
 —, the origin of, remarks on, *P. Dobson*, x, 217.  
 —, *Murchison's* citation of *Dobson's* views on, xliii, 200.  
 —, transported by ice, in the polar current, *W. C. Redfield*, xxxii, 351.  
 —, on the supposed transportation of, *J. E. DeKay*, xiii, 348.  
 —, buoyancy of, at great depths, xxviii, 111.  
 —, gravel, &c., remarks on, *Sedgwick*, xxxiii, 287.  
 —, or erratic blocks, theory of, *B. Struder*, xxxvi, 326.  
 —, glacial theory of *Agassiz*, xlii, 352.<sup>f</sup>  
 —, see farther under *Drift* and *Scratches*.
- Boundaries of empires, affected by Physical Geography, xiv, 18; xvi, 99.

- Bourne, A.*, manufacture of glass for optical purposes, xl, 207.
- , prairies and barrens of the west, ii, 30.
- , presentation of shells to Yale College, xxxix, 195.
- , resistance of liquids, xxviii, 231.
- Bourne, W. O.*, Bergen Hill minerals, xl, 69.
- Bowditch, N.*, life and character of, *A. Young*, xxxv, 1.<sup>f</sup>
- , obituary notice of, xxxiv, 220.
- , notice of, by the Duke of Sussex, xxxvi, 214.
- , list of the scientific papers of, xxxv, 46.
- , *Mecanique Celeste*, publication of, xxxv, 17.
- , *Treatise on Navigation*, by, origin of, xxxv, 9.
- Bowdoin, J.*, account of an irised aurora, xviii, 72.
- Bowen, A. W.*, Floral Calendar for 1826-7, as kept in Herkimer Co., N. Y., xvi, 48.
- Bowen, G. T.*, analysis of a siliceous hydrate of copper from New Jersey, viii, 118.
- , — the tungstate of lime, of Huntington, Ct., v, 118.
- , description and analysis of Sillimanite, viii, 113.
- , localities of spodumene in Massachusetts, viii, 121.
- , magnetic effects produced by *Hare's* calorimeter, v, 357.
- Bowman, J. E.*, infusorial vegetable remains in England, xl, 174.
- Boué*, geological journey, ix, 23.
- Bowring, J.*, on the boracic acid lagoons of Tuscany, xxxvii, 270.
- Boyé, M. H.*, production of a perchloric ether, xl, 50.
- , on perchloric ether, xlii, 63.
- Brace, J. P.*, list of plants growing in Litchfield Co., Conn., iv, 69, 292.
- , on the minerals of Litchfield Co., Ct., i, 351.
- Brace, J. P.*, on the *Phalæna devastata* or cut-worm, i, 154.
- Braconnot*, on xiloidine, xxviii, 131.
- Brady, Samuel*, legend of, xxxi, 43.
- Brady's Hill, legend of, xxxi, 20.
- Brain of idiots, defective, xxxiv, 31.
- Brandes, H. W.*, notice of, xxviii, 97.
- , observations on shooting stars, xv, 168; xxviii, 97; xxxiii, 361; xxxv, 231, 361.
- Brandy from potatoes, *Siemen's* process for making, ix, 386.
- Braun, A.*, Charæ of North America, xlvi, 92.
- , on North American Equiseta, xlvi, 81.
- Brazil, number of known plants in, xv, 390.
- Bread, on alcohol in, xxiii, 194; xxvi, 211.
- , use of sulphate of copper and other saline materials in making, *M. Kuhlmann*, xx, 269.
- Breast wheels, *A. B. Quimby*, xi, 333.
- Breathing, voluntary, v, 203.
- Breccia, cemented by hematitic iron, viii, 18.
- , quartzose, in western Massachusetts, viii, 18.
- Breislakite, xi, 250.
- Breithaupt's* specific gravities of minerals, table of, xxxi, 268.
- Bremicker's* comet, xl, 207.
- Brevicite, a new mineral species, xxx, 178.
- Brewster, D.*, on the distribution of the coloring matter and the optical properties of the Brazilian topaz, vii, 364.
- , a new fluid in minerals, vii, 186.
- , new structure in the diamond, xxxiv, 37.
- , monochromatic lamp, vii, 363.
- , double refraction resulting from pressure, xxi, 296.
- , cause of double refraction in crystals, xxi, 299.
- , on the polarization of light by reflection, xxii, 277.<sup>f</sup>

- Brewster, D.*, on the action of second surfaces of transparent plates upon light, xxiii, 28.<sup>f</sup>
- , laws of the polarization of light by refraction, xxiii, 225<sup>f</sup>.
- , a new property of light, xxxiv, 20.
- , a new kind of polarity in homogeneous light, xxxv, 292.
- , new discoveries with the spectrum, xlv, 163, 164.
- , dichroism of some palladiochlorides, xlv, 165.
- , on the cause of muscæ volitantes, xl, 333.
- , on the decomposition of glass, and on the polarization of decomposed glass, xl, 324, 325.
- , on the line of visible direction, along the axis of vision, xl, 334.
- , cause of increase of color when objects are seen with the head inverted, xl, 343.
- , action of gaseous and other media on the solar spectrum, xlii, 157.
- Brewster's (Gilbert) frame* for spinning wool, notice of, x, 130.
- Brewsterite*, xx, 198.
- Bricks of the ancients*, xxvi, 234.
- made near Jamaica, N. Y., xxxvi, 21.
- made by a press, vi, 396.
- , use of anthracite in the making of, *W. Meade*, xviii, 118.
- , fire, made at Bennington, Vt., xxxii, 195; xxxiii, 202.
- Bridge-building, Town's new mode* of, iii, 158<sup>f</sup>; xxxviii, 276.<sup>f</sup>
- Bridge, description of, G. W. Long*, xviii, 123.<sup>f</sup>
- , chain, in progress, over the Menai, an arm of the Irish sea, vi, 384.
- Brines*, see *Salt and Springs*.
- Bringier, L.*, geology, mineralogy, aboriginal inhabitants, &c. of the regions of the Mississippi, iii, 15.
- Bromine, discovery of, by M. Balard*, xii, 198.
- Bromine, nature of*, xiii, 398.
- , new compounds of, xiv, 386.
- , preparation of, xviii, 154.
- and iodine, atomic weight of, *Berzelius*, xix, 383.
- , hydrate of, xx, 194.
- combinations of, *C. Löwig*, xviii, 153.
- and iodine in mineral waters, remarks on, *Prof. Daubeny*, xxi, 366.
- and iodine in the Baltic, xix, 382.
- in the Salina brines and Saratoga waters, xviii, 142.
- in the Kenawha waters, xviii, 260.
- in the Hingham salt works, Mass., xx, 161.
- and iodine in the salt springs at Athens, Ohio, *W. W. Mather*, xlix, 211.
- Brongniart, Al.*, miscellaneous geological and mineralogical observations, iii, 216.
- , on the art of pottery and vitrification, new work of, xxxi, 134.
- , on organized remains, notice of, i, 71; iv, 396.
- , seven classes of rocks, xxxix, 149.
- , zoological characters of rocks, and the application of these characters to determining some strata of the chalk era, viii, 213.
- Brongniart, Ad.*, on the nature of the vegetables of the earth at different epochs of its formation, xxxiv, 315.
- Bronzing iron and gun barrels*, method of, xxx, 173.
- Bronzite, analysis of, (Seybertite), T. G. Clemson*, xxiv, 171.
- , locality of, in New York, xvi, 185; xxi, 327.
- Brookite*, xviii, 392.
- Brown, S.*, substance accompanying the native nitre of Kentucky, i, 146.
- Brown, production of silicon from paracyanogen*, xli, 208.

- Brown's* active molecules, xvii, 390.  
 Brown spar in Massachusetts, viii, 235; in New York, ii, 237.  
*Browne, J. B.*, impression in marble, xix, 361.<sup>f</sup>  
*Bruce, Archibald*, biographical notice of, i, 299.<sup>f</sup>  
 Brucite, see *Chondrodite*.  
 Bubbles, blown in melted rosin, ii, 179.  
*Buckland, Prof.*, Bridgewater Treatise of, noticed, *C. Lyell*, xxxiii, 112.  
 —, instructions for conducting geological investigations and collecting specimens, iii, 249.  
 —, on the vitality of toads enclosed in stone or wood, xxiii, 272.  
*Buckley, S. B.*, botanical labors of, xlii, 12.  
 —, new species of plants, xlv, 170.  
 —, skeleton of a *Zygodon*, xlv, 409.  
*Buel, J.*, excrementitious matter thrown off by plants, xxviii, 267.  
 Buhrstone in Indiana, i, 132.  
 —, in Missouri, iii, 28.  
 —, of Ohio, xxix, 142; xxv, 233.  
 Building stone, expansion and contraction of, by variations of temperature, *W. H. C. Bartlett*, xxii, 136.<sup>f</sup>  
 — — in western New York, xxxvi, 45.  
*Burden's* boat, introduced into France, xxx, 174.  
*Burgess, A.*, a notice of bees, xxii, 164.  
*Burnett, G. T.*, on the functions of vegetable life, xxi, 153.  
 Burning well, Ohio, xlix, 406.  
 Burns, a tried cure, xxvi, 188.  
*Burritt, E. H.*, on the elements of the solar system, xxvi, 129.  
 Bustamite, xviii, 392.  
 Butter, depuration of, xxiv, 200.  
 —, preservation of, xviii, 145.  
 —, volatile acids of, *J. U. Lezch*, xlix, 202.  
 Butterflies, emigration of, xiv, 387.  
 Butyric acid from fibrin, xlvi, 186.  
 — ether, action of ammonia on, xlvi, 191.  
*Byrne, O.*, mode of determining heights, xlv, 12.<sup>f</sup>
- C.**
- Cacoxenite, analysis of, xviii, 391.  
 — in New York, xl, 76.  
 Cadmia in the Salisbury furnace, viii, 57.  
 — in N. Jersey, of furnace origin, called ancramite, v, 235, 399; vi, 180.  
 — in a furnace at Bennington, Vt., xii, 168.  
 Cadmium, sulphuret of, associated with prehnite, xli, 52.  
 Caffeine, viii, 381.  
 Calamine in Virginia, xliii, 169.  
 — with the lead ore of the west, xii, 376.  
 — in Michigan, xli, 185.  
 —; electric, in Michigan, xli, 185.  
 Calamites, vii, 180.  
 Calc spar, formation of, v, 405.  
 — — and arragonite, *Becquerel*, on the different formation of, xxiii, 387.  
 — —, in Connecticut, vi, 246.  
 — —, Massachusetts, i, 115; vii, 255; viii, 32.  
 — —, New Jersey, ii, 194; xl, 69; xlv, 60.  
 — —, New York, iv, 45; ix, 251; xxv, 346; xl, 76.  
 — —, Nova Scotia, xxx, 347.<sup>f</sup>  
 — —, Pennsylvania, x, 222.  
 — —, western states, iii, 67; vii, 47.  
 — —, of Rossie, N. Y., with figures of crystals, xlvi, 33.<sup>f</sup>  
 — tufa in Massachusetts, viii, 34.  
 — — in New York, vii, 252.  
 — — in Western States, vii, 47.  
 Calcium, atomic weight of, xlvii, 189.

- Calcium, obtained by *R. Hare*, xxxvii, 267; xxxviii, 115, 181, 189; xxxix, 362; xl, 293.<sup>f</sup>
- Calculating machine, Constants, *Babbage's*, xxviii, 64.
- Calculi, chemical examination of, by *J. F. Dana*, iv, 149.
- , urinary, composition of, xvii, 190.
- , gouty, xlvii, 197.
- , in the ovary of a turtle, *J. E. Muse*, xxvii, 163.
- Calculous affections, *E. D. Smith*, iii, 300.
- —, use of alkaline pastils in, xi, 388.
- Calculus, higher, fundamental principle of, demonstrated by the method of indeterminates, xvii, 74.
- , differential, first principles of, *T. Strong*, xlv, 269.
- California, climate of, *J. Ball*, xxviii, 15.
- , elevation of, during the tertiary epoch, *T. A. Conrad*, xxxv, 245.
- Calligraphy, method of, by *M. Le Roy*, vii, 377.
- Calomel, remarks on, xlvii, 193.
- Caloric, a cause of galvanic currents, *J. P. Emmet*, xxv, 269.
- , the cause of all kinds of attractions, *S. L. Metcalf*, xxvii, 153.
- , see farther, *Heat*.
- Calorificator, xxx, 168.
- Calorimeter, new, *A. Ure*, xxxviii, 109.
- Calorimotor, *R. Hare*, i, 413<sup>f</sup>; v, 94.
- , magnetic effects of, v, 357.
- , remarks on *Dr. Hare's*, v, 364.
- , for galvano-ignition, *R. Hare*, xxxii, 284.<sup>f</sup>
- , mode of increasing shocks, *C. G. Page*, xxxi, 137.<sup>f</sup>
- Calstronbarite, supposed new mineral, *C. U. Shepard*, xxxiv, 161.
- , not a mineral species, xliii, 366.
- Cambrian system, *Sedgwick*, xxxvii, 220.
- Cambridge, England, improvements in, xlvi, 403.
- Cambridge course of mathematics, review of, v, 304.
- Cameos, from shell, xxxii, 257.
- Campbell, A. W.*, an electro-magnetic engine, xxxv, 343.<sup>f</sup>
- Camphor, crystallization of, *M. John*, xiii, 175.
- , odor of, destroyed temporarily by electric action, xix, 380.
- Canada, maps of, in course of preparation, xvi, 380.
- Canada, vegetable coloring materials in, xviii, 186.
- , cave containing bones at Larnark, ix, 354.
- , supposed volcano in, xxx, 238, 241.
- , highest mountain in Lower, xxx, 239.
- , geology and minerals of the vicinity of Kingston, xviii, 104.
- , transition rocks of the Cata-raqui, *R. H. Bonnycastle*, xviii, 85; xx, 74<sup>f</sup>; xxiv, 97<sup>f</sup>; xxx, 233.<sup>f</sup>
- , various fossils in, *J. Bigsby*, viii, 60.
- , geological survey of, ordered, xlviii, 404.
- Canals, mathematical problems relating to contents of, *D. C. Lap-ham*, xxvii, 127.<sup>f</sup>
- , navigable, *Girard on*, iv, 102; vii, 286.
- , Amsterdam, v, 181.
- in the U. States, extent of, *Prof. Henry*, xxxiii, 296.
- , method of conducting surveys of, in the state of New York, *E. F. Johnson*, xxiv, 19.<sup>f</sup>
- , Erie, tolls on, x, 398.
- of Ohio, xx, 416; xxv, 241.
- , Ohio and Pennsylvania, xxxi, 40.
- of Pennsylvania, *E. Miller*, xxv, 85; xxvi, 108.
- , route of the Michigan and Illinois, *C. U. Shepard*, xxxiv, 138.
- , Louisville and Shippingsport, Ky., xiv, 65.<sup>f</sup>



- Canal, Welland, U. C., account of, *W. H. Merritt*, xiv, 159.<sup>f</sup>
- , to connect Lake Superior with Lake Huron, xlv, 213.
- locks at Cincinnati, Ohio, plan of, *D. Lapham*, xxiv, 70.<sup>f</sup>
- navigation, mode of, vii, 190.
- Cancer, fossil, in New Jersey, xvii, 287.
- Cancers, cured by surgery, xii, 386.
- Candle, motion of the melted grease in warming, *C. Fox*, xxxiii, 198.<sup>f</sup>
- , —, —, note on, xl, 148.
- Candlenut tree, of the Sandwich Islands, xxxiv, 209.
- Cannel coal, see *Coal*.
- Canova, statue of, by *Ceccarini*, iv, 197.
- Cantharides, vesicating principle of, *G. W. Carpenter*, xxi, 69.
- Cantharidin, in the potato fly, *J. F. Dana*, ii, 137.
- Caoutchouc, electrical properties of, xx, 404.
- , *Mitchell's* mode of working, xix, 195.
- , sheet, xvii, 399.
- , cloth coated with, xxxiii, 400.
- , rendered impermeable to gas, xlvii, 194.
- , mineral, vi, 370; xl, 215.
- , —, in Connecticut, vi, 370.
- Cape of Good Hope, geology, scenery, &c., *G. Champion*, xxix, 230.
- — —, fossils of, xlix, 213.
- Capillary attraction, *T. Strong*, xviii, 70.
- —, influence of electricity on, *J. W. Draper*, xxvi, 399.
- action of different solutions, xiv, 384.
- — of fissures, viii, 377; ix, 193.
- —, a singular instance of the passage of mercury along a lead bar, *J. Henry*, xxxviii, 180.
- tubes, electricity produced by ascent of fluids in, ix, 193.
- Capitol, at Washington, dimensions of, xvi, 168.
- Carbon, supposed crystallization of, *C. C. C. Cohen*, xx, 167.
- , combustibility of, increased by platina and copper, xviii, 147.
- , electro-magnetic property of, xviii, 175.
- , fused, see *Charcoal*.
- , on the supposed conversion of, into silicon, xli, 208; xlii, 193.
- , a compound body, *R. Rigg*, xlvii, 211.
- battery, xxxix, 132.
- —, *B. Silliman, Jr.*, xliii, 393; xlv, 180.<sup>f</sup>
- Carbonates and calcareous marl, apparatus for analyzing, *W. B. Rogers*, xxvii, 299.<sup>f</sup>
- , new means of analyzing, *W. B.* and *R. E. Rogers*, xlv, 346.<sup>f</sup>
- , alkaline, decomposition by the light of the sun, *J. W. Draper*, xlv, 398.
- Carbonate of lime in calcareous substances, new instrument for estimating, *J. L. Smith*, xlv, 262.<sup>f</sup>
- — and arragonite, *Becquerel*, xxiii, 387.
- of potash, free from silica, preparation of, xlix, 195.
- of potash and soda, mixture of pure, xlix, 195.
- Carbondale coal mine, xviii, 319.
- Carbonic acid of the atmosphere, from a memoir by *Saussure*, xvi, 214.
- —, amount of, in the atmosphere, xx, 183.
- — of wells, means of removing, xxxviii, 206.
- —, on the removal of, from wells, *O. P. Hubbard*, xlii, 165.
- —, decomposition of, *C. Despretz*, xx, 186.
- —, —, by the light of the sun, *J. W. Draper*, xlv, 398.
- —, disengaged by the roots of plants, xlv, 227.

- Carbonic acid, non-decomposition of, by plants, xxxiv, 44.
- —, condensation of, *M. Faraday*, vii, 354.
- —, liquid, properties of, *M. Thilorier*, xxxi, 402.
- —, solidification of, *M. Thilorier*, xxxi, 163, 404.
- —, —, *J. Torrey*, xxxv, 374.
- —, liquefaction and solidification, and apparatus for, figured, *J. K. Mitchell*, xxxv, 346.<sup>f</sup>
- —, apparatus for solidifying, *J. Johnston*, xxxviii, 297<sup>f</sup>; xlii, 203.
- —, — —, *R. Adams*, xxxv, 301.
- —, new instrument for solidifying, *E. N. Horsford*, xlix, 206.<sup>f</sup>
- —, heat from solid, xlvi, 215.
- oxyd, mode of preparing, xiii, 186.
- —, obtained free from carbonic acid, *J. D. Mitchell*, xxv, 344.
- —, free from carbonic acid, on *Prof. Mitchell's* mode of preparing, *L. D. Gale*, xxvii, 129.
- —, method of separating carbonic acid from, *R. Hare*, xxiv, 252.<sup>f</sup>
- —, disease attributed to, in a manufactory, vi, 199.
- Carbonicometer, by *R. Hare*, xii, 48.<sup>f</sup>
- Carboniferous formation, see under *Coal*.
- Carburet of sulphur decomposed by weak electric action, xviii, 153.
- Carburetted hydrogen, combinations of, *M. Dumas*, xxiii, 377.
- — in balls of carbonate of lime, xlii, 214.
- —, source of, in N. York state, xv, 236.
- — from a mill-pond near West Town, Chester Co., Penn., xxxix, 200.
- Caricography, see under *Botany*.
- Carnelian, vegetable matter in, xxiv, 200.
- , localities in Connecticut, i, 135.
- , in Massachusetts, i, 113, 115.
- Caroline Islands, account of, by a Russian expedition, xxviii, 114.
- Carpenter, G. W.*, experiments on the varieties of cinchona bark, ix, 363.
- , on common salt, and on the brine springs of the U. States, xv, 1.
- , on the use of Piperine, xiii, 326.
- , on rhubarb, xiv, 33.
- , on opium, xiii, 17.
- , on Peruvian bark, xvi, 28.
- , on a new preparation of Copaiva Balsam, xvi, 40.
- , the vesicating principle of Cantharides, xxi, 69.
- , some new medical preparations, xxii, 293.
- , inflaming of a quantity of alcohol in the store of, xxiii, 401.
- Carpenter, W. M.*, bituminization of wood in the recent era, xxxvi, 118.<sup>f</sup>
- , fossil tooth in Louisiana, xlii, 390.<sup>f</sup>
- , fossil teeth of mastodon and horse, in Louisiana, xxxiv, 201.<sup>f</sup>
- , notices in Opelousas, Attakapas, &c., xxxv, 344.
- , hailstorm in Louisiana, xxvii, 171.
- , formation of fogs, xliv, 40.
- , meteorological register at Jackson, La., 1839-1841, xliv, 49.
- , methods used in obtaining the mean temperatures of places, and on the supposed difference between temperature of the air and of the earth, xliv, 50.
- Carpolithes Smithii, xlv, 402.
- Carrara marble, shown to be altered oolite, xxx, 176.
- Carson, A. W.*, on currents in water, xxix, 340.<sup>f</sup>

- Carver, S. D.*, notice of a meteoric stone which fell in Maryland, Feb., 1825, ix, 351.
- Caryophyllia in marl, New Jersey, xvii, 288.
- Caspian sea, height of the Black sea above, xl, 320.
- Cassius, purple powder of, ii, 350; xx, 192; xxviii, 145; xlvi, 192.
- Castings, metallic, improvement in, vii, 190.
- Casts, plaster, method of coating, xxx, 171.
- Caswell, A.*, on zinc, as a covering for buildings, xxxi, 248.
- Catacecaumene, volcanic region of, xxxiii, 95.
- Catalytic action, *Mercer* on, xliv, 351.
- Caterpillars, destruction of, iv, 392; xxvi, 189.
- , emigration of a colony of, *J. Skene*, ix, 284.<sup>f</sup>
- Catlin, G.*, account of a journey to the Côteau des Prairies, and description of the red pipestone quarry and granitic bowlders there found, xxxviii, 138.
- Catlinite, or Indian pipestone, analysis of, *C. T. Jackson*, xxxv, 388; xxxvii, 393.
- Catskill mountains, account of, *H. E. Dwight*, ii, 11.
- , —, scenery, geology, &c. of, *J. Pierce*, vi, 86.
- , —, *D. W. Barton*, iv, 249.<sup>f</sup>
- Cattle of Chillingham Park, xxxv, 316.
- Caustics by reflection, instruments for illustrating, *E. S. Snell*, xlix, 24.<sup>f</sup>
- Caucasus range, geology and floods of, xxxvii, 348.
- , —, basalt of, xxxvii, 348.
- Caves in Tennessee, *J. H. Kain*, i, 428.
- in Kentucky, nitre in, viii, 323.
- of the Greenbrier, Virginia, xxix, 93.
- in Maryland, containing saltpetre, xxvii, 33.
- Caves, at Sunderland, Connecticut, vii, 19.
- , Ball's, Schoharie, notice of, xxvii, 368.
- in the limestone of Western Massachusetts and Vermont, viii, 15.
- , Wier's, in Virginia, i, 59, 64.
- at Malbay, L. C., v, 212.<sup>f</sup>
- , freezing, in Russia, *R. I. Murchison*, xlv, 206.
- , —, explanation of, *J. Herschel*, xlv, 206.
- , bone, at Kirkdale, Yorkshire, *W. Buckland*, viii, 158, 317.
- , —, at Mendip Hills, *M. Long*, xxxv, 304.
- , —, of Cefn, in Denbighshire, xxxi, 341.
- , —, at Plymouth, England, ii, 144; xxxiii, 106.
- , —, at Kuhloch, and elsewhere, in Germany, viii, 319, 321.
- , —, in France, xxi, 56; xxiii, 388.
- , —, in New Holland, xx, 380.
- , —, bank of the Susquehanna, xxxix, 399.
- , —, at Lanark, Upper Canada, ix, 354.
- Cavolinite, xi, 259.<sup>f</sup>
- Celestine, analysis of, vii, 369.
- of Lake Erie, ii, 241, (called heavy spar);—iii, 363; iv, 279.
- , —, analysis of, *G. T. Bowen*, iv, 324.
- of Sicily, viii, 205.
- Cellules, germination of, *M. Vogt*, xlv, 213.
- Celtic antiquities of America, *J. Finch*, vii, 149.
- Cement, fusible, *H. F. Löwitz*, xvii, 81.<sup>f</sup>
- , Roman, ix, 192.
- of Seyssel, xxxiv, 383.
- for glass, &c., xxiii, 201.
- for porcelain, &c., xviii, 145; xxi, 149.

- Cement for iron water pipes, xviii, 394.  
 —, as a covering of houses, ii, 220.  
 — from shells and oil, xxx, 168.  
 — from iron filings, xix, 190.  
 —, water, lime for, iii, 230.  
 —, —, from Southington, Ct., xiii, 382.  
 — of the Castle Rock, Quebec, *F. H. Baddeley*, xxviii, 367.  
 —, *Fuchs* on, xxxii, 200.  
 Census, earliest, of the U. States, xxxiii, 278.  
 Central forces, *T. Strong*, xvi, 293; xvii, 69, 329; xviii, 67; xix, 46; xx, 65, 291; xxi, 66, 334; xxii, 132, 343; xxiv, 40.  
 Cerium, atomic weight of, xlvii, 190.  
 — and didymium, method of separating the oxides of, xlvi, 206.  
 Cetine, a new carburetted hydrogen, xxx, 180.  
 Ceylon, mineralogy of, vi, 192.  
 —, notices of, viii, 186.  
 Chabazite, analysis of, *C. Cramer*, xxx, 366.  
 —, localities of, in Canada, viii, 65.  
 —, in Connecticut, xxxv, 179.  
 —, in Massachusetts, i, 114, 134; vi, 224; vii, 254; viii, 45.  
 —, in New Jersey, v, 239; xlv, 58.  
 —, in New York, ix, 41.  
 —, in Nova Scotia, xxx, 349.  
 —, in Pennsylvania, xiv, 7.  
 —, supposed, from Maryland, near Baltimore, (*Haydenite*), i, 307; xlvi, 379.<sup>f</sup>  
 Chæropotamus, xxxvii, 231.  
 Chalcedony, stalactites of, New South Shetland, iv, 26.  
 —, localities of, in the U. States, i, 132, 134; ii, 197; iii, 71; vii, 49; viii, 64; x, 219, 224; xviii, 78.  
 Chalk, coralline animalcules in, xxxix, 205.  
 —, corals and entomostraca in, xxx, 382.  
 Chalk of France, viii, 216.  
 —, see farther, *Cretaceous*.  
 Chalybeate waters, action of cork on, viii, 390.  
 — —, artificial mode of making, viii, 105; xi, 392.  
 Chameleon, change of color, xxviii, 79.  
*Champion, G.*, 'geology, scenery, &c., of the Cape of Good Hope, xxix, 230.  
*Channing, W. F.*, observations on photographic processes, xliii, 73.  
*Chapin, A. B.*, junction of trap and sandstone, at Wallingford, Ct., xxvii, 104.<sup>f</sup>  
*Chaptal, J. A.*, biography of, xxvi, 127.  
 Charcoal, remarks on, xii, 389.  
 —, manufacture of, xxi, 156.  
 —, a cheap mode of manufacturing, xxvi, 188.  
 —, decoloring action of, xvi, 393.  
 —, bitterness of some substances removed by, xxi, 374.  
 —, report on Dumont's prepared, xxiii, 346.<sup>f</sup>  
 —, animal, effect of, in preventing the putrefaction of stagnant water, x, 189.  
 —, —, action of, *R. Warrington*, xlix, 393.  
 —, fusion of, *B. Silliman*, v, 108, 361; vi, 341, 349, 378; viii, 147; x, 109, 119.  
 —, —, *J. Griscom*, v, 364.  
 —, —, *R. Hare*, viii, 288; x, 111, 118; xxxviii, 190.  
 —, —, *L. Vanuxem*, viii, 292; x, 102.  
 Charlatanism, or selling pharmaceutical preparations under false denominations, in Paris, xviii, 401.  
 Charring wood, new mode of, by *I. Doolittle*, xvii, 395.<sup>f</sup>  
 — — at low temperatures, xx, 189.  
 Chart, magnetic, of the U. States, *E. Loomis*, xxxiv, 290<sup>f</sup>; xxxix, 41.<sup>f</sup>  
 Chathamite, xlvii, 350; xlviii, 175, 179.

- Chauvenet, W.*, solution of a problem in sailing, xlvii, 79.
- Cheirotherium, footprints of, in England, xxxvi, 394, 397; xxxvii, 223.
- Chemical attraction, modified by quantity of matter, *E. Mitchell*, xvi, 234.
- classification, *O. W. Gibbs*, xlix, 384.
- equivalents, Wollaston's scale of, xvi, 371.
- —, scale of, improved, by *L. C. Beck* and *J. Henry*, xiv, 202.
- —, circular scale of, *J. Finch*, xviii, 196.
- examination of some morbid animal products, *J. F. Dana*, iv, 149.
- — of the odorous fluid of the skunk, iv, 391.
- force of the indigo-tithonic rays, instrument for measuring, *J. W. Draper*, xlvii, 217.<sup>f</sup>
- manipulation, washing bottles in, xxxi, 292.<sup>f</sup>
- nomenclature, *Berzelius* on, xxii, 248.
- —, *R. Hare*, xxvii, 63; xlix, 249.
- science, state of, in 1826, *D. Olmsted*, xi, 349; xii, 1.
- symbols, *Whewell's*, xxi, 369.
- theory, and a notice of *Gorham's Chemistry*, iii, 330.
- Chemistry, *Dumas's* theory of substitution in, xxxviii, 114.
- , remarks on *Berzelius's* treatise, *R. Hare*, xxvii, 61.
- , *Gorham's*, notice of, iii, 330.
- Cheese, potato, xviii, 395; xxiii, 202.
- Chené, and the oil it affords, ii, 264.
- Chert and siliceous petrifications, Antigua, *S. Hovey*, xxxv, 79.
- Chevallier, A.*, on the uses of chlorides and chlorine, xxiii, 129.
- Chevet, F.*, experiments on bichloruret of sulphur, and certain carburets of hydrogen, xlii, 71.
- Chiastolite, analysis of, xxviii, 395.
- , in Massachusetts, vii, 51.
- , in Vermont and New Hampshire, v, 40.
- Chile, *Bartero* on some of the plants of, translated by *W. S. W. Ruschenberger*, xix, 63, 299; xx, 248; xxiii, 78, 250.
- , on the rise of the coast of, xxviii, 236; xxx, 110.
- Chilton, G.*, improved raingauge, vii, 326.<sup>f</sup>
- , analyses of the principal brine springs of New York, vii, 345.
- , analysis of the Clinton mineral water, xviii, 346.
- Chiltonite, a variety of prehnite, xlvii, 32.
- Chimneys, moveable hood for, xxx, 170.<sup>f</sup>
- China, on the language of, *Du Ponceau*, xxxviii, 398.
- Chinese collection, *Dunn*, xxxv, 391.
- fire, composition and properties of, *J. Cutbush*, vii, 118.
- dictionary, by *Morrison*, iii, 377.
- epicures, tongues of ducks eaten by, xxxi, 193.
- frontier, notice of, xvii, 32.
- metallic alloy called *packfong*, composition of, xv, 396.
- paper, xiii, 171.
- process for making sheet lead, vii, 391.
- tea hills, excursion to, xxxi, 194.
- Chios, college of, iii, 381.
- Chipman, N.*, on moving stones in lakes and ponds, xiv, 303.
- Chitteningo fossil tree, v, 251; xviii, 354.
- Chlorate of potash, economical process for, *A. A. Hayes*, xvii, 408.
- —, as made by *S. Guthrie*, xxi, 92.
- Chloric ether, new mode of preparing, *S. Guthrie*, xxi, 64; xxii, 105.
- —, properties and medical effects of, xxi, 405.

- Chloric ether, preparation of, *A. A. Hayes*, xxii, 163.
- Chlorine, theory of, ii, 362.
- , controversy regarding the nature of, xvii, 230.
- , *Davy's* views respecting, xvii, 230.
- , atomic weight of, xlvii, 188.
- , allotropism of, as connected with the theory of substitution, *J. W. Draper*, xlix, 346.<sup>f</sup>
- , an antidote to prussic acid, xxi, 157.
- , explosive reaction of, with hydrogen, *R. Hare*, xxix, 243.<sup>f</sup>
- , — — —, —, iii, 341.
- , a remedy in phthisis, xviii, 161.
- , remedy against the dangers of inspiration of, xiii, 393.
- , solubility in water, xlvii, 191.
- , relations of, with hydrogen, *J. W. Draper*, xlix, 355.<sup>f</sup>
- and chlorides, remarks on, xiv, 382.
- — —, uses of, *A. Chevallier*, xxiii, 129.
- , new compound of, with phosphorus and sulphur, by *M. Serullas*, xix, 382.
- Chlorides, alkaline, a means of disinfection, xi, 197; xiii, 169.
- , efficacy of, xviii, 159.
- and chlorine, uses of, *A. Chevallier*, xxiii, 129.
- , experiment to determine the nature of, xxi, 368.
- Chloride of lime, xv, 391; xvi, 387.
- — —, or chlorine, test of the strength of, xvii, 170.
- — —, manufacture of, at Glasgow, *T. Thomson*, xli, 48.
- — —, manufacture of, *G. W. Carpenter*, xvi, 177.
- — —, use of, in bleaching, in making paper, xix, 166.
- — —, estimation of the bleaching power of, xxii, 354.
- — —, disinfecting powers of, xix, 177.
- — —, disinfection at the Morgue at Paris, xxi, 149.
- Chloride of lime, used in psora, xvi, 395.
- — —, use of, in the navy, xix, 164.
- — —, action of, on alcohol, *E. Soubeiran*, xxiii, 134.
- of silver, discolored, experiments on, xxi, 369.
- — —, on the change of color of, xx, 193.
- of soda, *Labarraque's* method of using, xix, 365.
- of soda, lime, &c., on the nature of, *L. C. Beck*, xiv, 251.
- of sulphur, xxiii, 382.
- Chlorite, in Connecticut, i, 354; vi, 228; viii, 259; xxxiii, 165.
- , in Massachusetts, i, 113; iv, 42; vi, 228, 248; viii, 52.
- , in New York, ix, 44.
- , in New Jersey, v, 239.
- , in Pennsylvania, iv, 54; viii, 238; x, 222.
- , in Rhode Island, viii, 228, 232.
- , in Vermont, iv, 276; vi, 228.
- , remarks on, xlvii, 342.
- slate of Connecticut and Vermont, vi, 27.
- — — in New Jersey, v, 29.
- Chlorobenzoyl, xxvi, 270, 277.
- Chlorohydric acid, experiments by *Macaire* and *de la Rive* with reference to, xi, 393.
- — —, mode of preparing pure, from the muriatic acid of commerce, *R. Hare*, xxxix, 371.
- — —, fumigations with, at Plattsburg in 1819, viii, 200.
- , see *Hydrochloric*.
- Chloro-hydrogen blowpipe, xvii, 211.
- Chlorophæite, iv, 245.
- at Turner's Falls, Mass., x, 393.
- Chlorophyl, production of, by yellow light, *D. P. Gardner*, xlvi, 1.<sup>f</sup>
- Chlorophyllite, *C. T. Jackson*, xli, 161.
- , description and analysis of, xlvi, 377.
- , a decomposed variety of iolite, *C. U. Shepard*, xli, 357.
- Chlorovinic and chlorovinous acids, *A. A. Hayes*, xxii, 141.

- Cholera, *Mackintosh* on, xxxiv, 49.  
 —, miscellaneous notices respecting, xxv, 174.
- Cholesterine, action of potash on, *J. L. Smith*, xlv, 60.
- Chondrodite, account of, v, 203, (called yellow mineral); v, 245.  
 —, crystal of, *J. D. Dana*, xlvi, 381.<sup>f</sup>  
 — in New York, v, 30; viii, 92; ix, 244; xix, 223; xxi, 325.<sup>f</sup>  
 — in New Jersey, v, 30, 245; vi, 250.  
 — in Pennsylvania, viii, 239; xiv, 17.
- Christianite (anorthite), xi, 261.<sup>f</sup>
- Chromate of potash, to test the purity of, *S. Zuber*, xxiv, 372.  
 — —, (bichromate,) manufacture of, at Glasgow, xli, 50.
- Chromatype, *R. Hunt*, xlvi, 396.
- Chromic iron of Maryland, analysis of, *H. Seybert*, iv, 321.  
 — — from Cuba, analysis of, *J. C. Booth*, xxxviii, 243.  
 — —, remarks on, xxvii, 18, 20.  
 — — in Massachusetts, ii, 374.  
 — — in Delaware, iv, 53.  
 — — in Maryland, xxiv, 349, 355.<sup>f</sup>; xxvii, 18, 20.
- Chromium, *Vauquelin's* process for obtaining, xxi, 375.  
 —, on the combinations of, *A. A. Hayes*, xiv, 136.  
 — oxide, crystals of, xxviii, 396.  
 —, sulphate of oxide, *M. E. Kopp*, xlvi, 189.
- Chronometers, remarks on, xxix, 297.  
 —, *Dent's* improvements, xlv, 161.  
 —, errors of, *E. J. Dent*, xlv, 83.<sup>f</sup>  
 —, sea and land rates of, *Parkinson* and *Frodsham*, xxvi, 121.  
 —, rate varied by the density of the medium containing, x, 185.  
 —, purification of olive oil for, xx, 166.
- Chronometers, new compensation-balance for, *E. J. Dent*, xlv, 83.<sup>f</sup>  
 —, glass balance for, xxxii, 330.<sup>f</sup>
- Chrysoberyl of Haddam, analysis of, *H. Seybert*, viii, 105.  
 — in Connecticut, ii, 142, 240; iv, 52.  
 — in New York, iv, 37.
- Chrysopraxe, viii, 234; xvii, 353.  
*Churchill*, S., notice of a double fish, xxvi, 116.<sup>f</sup>
- Chyrometer, mode of determining specific gravities with, xi, 126.<sup>f</sup>
- Cicada septendecim, or seventeen year locust, habits of, xiii, 224.  
 — —, account of, *S. P. Hildreth*, xviii, 47.<sup>f</sup>  
 — —, remarks on, *D. Thomas*, xxi, 188.
- Cinchona, on the different kinds of bark confounded with, *De Candolle*, xvii, 388.  
 — bark, experiments on, *G. W. Carpenter*, ix, 363.
- Cinchovatine, xlvii, 196.
- Cinnabar in Michigan, i, 433; ii, 170; xxxvii, 185.
- Cinnamon stone of Ceylon, analysis of, xiv, 204.
- Cipher, new diplomatic, iv, 377.
- Circulation of the blood, regulation of, *T. J. Aikin*, xxviii, 79.  
 — in plants, xix, 393.  
 — —, *E. Emmons*, xxvi, 99.
- Cist*, Z., mines of anthracite about Wilkesbarre, Pa., iv, 1.
- Cist*, J., on the Melolontha or May bug, viii, 269.<sup>f</sup>
- Cisterns for water, mode of constructing, xxv, 301.
- Citric acid from gooseberries, xvi, 385.
- Citric acid, *S. Baup*, xxxiv, 206.
- Civilization, connection of, with mental aberration, xxii, 379.
- Clam, eatable, of N. Y., facts regarding, x, 287.
- Clark*, D. A., singular appearances of snow and hail, ii, 132.

- Clark, S.*, on the infinite divisibility of a finite quantity of matter, ix, 356.
- , notice of, xli, 217.<sup>f</sup>
- Clarke, E. M.*, magnetic electrical rotating machines by, xxxiii, 213.<sup>f</sup>
- , electropeter by, xxxiii, 224.<sup>f</sup>
- Clary, R. E.*, parhelia seen at Green Bay, xxviii, 304.<sup>f</sup>
- Classification, chemical, remarks on, *O. W. Gibbs*, xlix, 384.
- , —, *R. Hare*, xxvii, 63; xxxii, 260.
- , mineral, remarks on, *J. D. Dana*, xlvi, 374.
- of clouds, *E. Loomis*, xli, 325.
- Clay of Pownal, Vt., xii, 298.
- , pipe, in New Jersey, ii, 198.
- , potter's, in Massachusetts, i, 344.
- for sculptors, xxiv, 200.
- Cleaveland's Mineralogy, review of, i, 35, 308.
- —, second edition announced, ii, 375.
- Cleavelandite, (Kieselspath,) a variety of albite, vii, 370, 390.
- Clemson, T. G.*, analysis of a titanite iron ore from near Baltimore, xvii, 42.
- , analysis of American spathic iron and bronzite, xxiv, 170.
- , notice of piperin, xviii, 352.
- , method of making sulphuric acid, xx, 347.<sup>f</sup>
- , physical geography, industry, &c. of the Hartz, xix, 105.<sup>f</sup>
- Climate, connection with atmospheric and oceanic currents, *W. C. Redfield*, xxv, 133.
- , liable to change permanently or not, *S. Forry*, xlvii, 226.
- , effect of clearing land on, *S. Forry*, xlvii, 237.
- , effect of, on distribution of plants in the United States, *S. Forry*, xlvi, 221.
- , on a change of, *Bishop Heber*, xx, 130.
- Climate of the earth, *Lyell's* views on the changes undergone, xx, 377.
- , antediluvian, *L. C. Beck*, xlv, 144.
- of the post pleiocene period in the U. States, *H. D. Rogers*, xlvii, 257.
- ibid, *A. Binney*, xlvii, 259.
- of North America, *E. Mitchell*, xix, 283.
- of North America, *Daubeny* on, xxxv, 288.
- of U. States, remarks on the amelioration of, by *D. Thomas*, xix, 361.
- of the U. States, *S. Forry*, xlvii, 18,<sup>f</sup> 221.
- west of Alleghanies milder than east, *S. Forry*, xlvii, 230.
- of Florida, xxxv, 63.
- of the Kenawha valley, *S. P. Hildreth*, xxix, 89.
- of Ohio, xi, 224, 231.
- and productions of Washington Co., Ohio, *S. P. Hildreth*, xii, 206.
- of Columbia, South America, with general meteorological observations, *R. Wright*, xxxvii, 1.
- —, effect on human life, xxxvii, 12.
- of the south of France, v, 173.
- of Palestine, xxxi, 183.
- , productions, &c., of Singapore, xlv, 151.
- of the province of Deccan, Bombay, xxxiii, 275.
- , see farther under *Meteorology*.
- Clinkstone, remarks on the composition of, xix, 380.
- Clock, an improved, xiii, 182.
- affected by the state of the atmosphere, xiv, 375.
- , astronomical, *Prof. Bessel*, xlv, 160.
- , —, on the stopping of, *W. Howard*, viii, 277.
- , see *Chronometer*.
- Cloth of amianthus or asbestos, xviii, 401.



- Cloth, cotton, printing of, in Manchester, England, xxiii, 220.
- , —, singeing, in the manufacture of, xxiii, 217.
- made of glass, xxxix, 386.
- , incombustible, v, 188; viii, 390.
- , woollen, remarks on the manufacture of, xxiii, 218.
- Clouds, fogs and rain, account of, *W. C. Redfield*, xxxiii, 54.
- , how sustained, *Stevelly*, xxxviii, 105.
- , formation of, *Stevelly*, xxxviii, 105.
- , application of the law of definite proportions to the stratification of, xliv, 172.
- , register of, at Nantucket, Mass., xlix, 406.
- , —, at Hudson, Ohio, *E. Loomis*, xli, 323; xlix, 280.
- , classification of, *E. Loomis*, xli, 325.
- Clypeaster, in the blue marls of N. Jersey, xvii, 287.
- Coal, analyses of, *W. R. Johnson*, xxxviii, 382; xxxix, 139; xlix, 169.
- , —, of Maryland, *Ducatel* and *Alexander*, xxvii, 31.
- , —, of Virginia, *Chesterfield*, *B. Silliman* and *O. P. Hubbard*, xlii, 369.
- , —, of Pennsylvania, *Tioga Co.*, *W. Meade*, xiii, 32.
- , —, indicating iodine, *M. Bussy*, xl, 217.
- , passage of anthracite into bituminous, *M. C. Lea*, xl, 370.
- , cannel, xviii, 376; xxix, 39; xxxi, 79.
- , economical uses of anthracite, x, 331; xi, 78.
- , — — —, in smelting iron, xxxiii, 266.
- , — — —, in blacksmith's shops, *G. Jones*, xviii, 303.
- , — — —, when first used in blacksmithing, xviii, 307.
- Coal in the arts, heating power of, *W. R. Johnson*, xlvii, 126; xlix, 166.
- , —, consumption of, in steam engines, xxix, 351.
- , —, comparative value of American, for steam navigation, *W. R. Johnson*, xlix, 310.
- , —, amount consumed at Pittsburg, xxix, 79.
- , —, comparative character of European and American anthracites, *W. Meade*, xii, 75.
- fossils, vegetable, *A. Brongniart*, iv, 266<sup>f</sup>; analysis of the works of *Ad. Brongniart* on, vii, 178.
- — —, —, *H. Witham*, xviii, 110.<sup>f</sup>
- — —, —, in England, iii, 389.
- — —, —, at Wilkesbarre, Pa., ix, 165.
- — —, upright trees, Nova Scotia, *C. Lyell*, xlv, 353.
- — —, Ohio valley, *S. P. Hildreth*, xxix, 1, 151.<sup>f</sup>
- — —, marine shells, England, xxv, 199.
- — —, freshwater shells, Lancashire, England, xxxiv, 26.
- , origin of, xii, 87; xviii, 321.
- , — anthracite, xxiv, 172.
- , — bituminous, xvii, 397.
- period, probable constitution of the atmosphere during, *H. D. Rogers*, xlvii, 105.
- , peat converted into, xxxiv, 395.
- , specific gravities and combustible qualities of Ohio coals, *S. P. Hildreth*, xxix, 147.
- Coal Mines and Formations, characters and localities of.*
- Coal in Alabama, bituminous, xxvi, 190.
- on Arkansas river, iii, 41.
- in Connecticut, i, 239; iii, 248; v, 44<sup>f</sup>; xxxiii, 163.

- Coal in Cuba, *J. H. Blake*, xlii, 388.
- in England, remarks on the strata, xxxiii, 79.
- —, *Prestwich's* observations on the alternation of marine and freshwater beds, xxxiii, 80.
- —, *Murchison* on dislocations in beds, xxxiii, 84.
- —, *Prof. Phillips* on the carboniferous limestone of Yorkshire, xxxiii, 84.
- —, marine shells in deposits, xxv, 199.
- —, mines of Dudley, visit to, xxxvii, 390.
- in Illinois, *C. U. Shepard*, xxxiv, 142.<sup>f</sup>
- —, *D. D. Owen*, xlv, 151.
- —, Kentucky, *S. P. Hildreth*, xxix, 140.
- in Maine, formation of, *C. T. Jackson*, xxxvi, 149.
- in Maryland, *J. T. Ducatel* and *J. H. Alexander*, xxvii, 29.
- —, chemical analysis of, *ibid*, xxvii, 31.
- in Massachusetts, *E. Hitchcock*, xxii, 41; xxxvi, 377.
- —, anthracite, in Wrentham, xxiii, 405.
- —, —, of Mansfield, *C. T. Jackson*, xxxiv, 395.
- —, —, in mica schist, probable age of, *C. Lyell*, xlvii, 214.
- at Mt. Lebanon, Syria, beds of, xxviii, 32.
- in Negropont, Grecian Archipelago, xxxi, 176.
- in New York, in the Catskills, vi, 95.
- —, Washington Co., *A. Eaton*, xvi, 299.
- —, connection of, with coal beds of Pennsylvania, xix, 21.
- in Nova Scotia, bituminous, xv, 149.
- —, the coal formation, *C. Lyell*, xlv, 356.
- —, upright trees in strata, *C. Lyell*, xlv, 353.
- Coal in Ohio, i, 227, 239.
- —, observations on, *S. P. Hildreth*, xiii, 38.
- —, deposits of the Ohio valley, xxix, 1, 123.
- —, of the falls of the Cuyahoga, xxxi, 47.<sup>f</sup>
- —, of Newcastle, xxxi, 63.
- —, of Coshocton, xxxi, 69.
- —, bituminous, near Waterford and Zanesville, xxv, 220, 229.
- —, extent of beds in, xxxiv, 348, 357.
- —, Zanesville, vegetable impressions in, *E. Granger*, iii, 5.<sup>f</sup>
- —, cannel, xviii, 376.
- —, —, in Licking Co., xxxi, 79.
- —, —, in Guernsey Co., xxix, 39.
- of Panama isthmus, xliii, 207.
- in Pennsylvania, beds of, remarks on, *S. W. Pomeroy*, xxi, 342.
- —, —, the equivalent of those of Europe, *A. Eaton*, xxiii, 399.
- —, —, in southern, with analyses, *M. C. Lea*, xl, 370.
- —, model of the southern field of, *R. C. Taylor*, xli, 80.<sup>f</sup>
- —, on the general character, limits and relations of the beds, *J. Hall*, xlii, 52.
- —, on the anthracite, xi, 91.
- —, —, *J. Pierce*, xii, 55.
- —, — of the Belmont mines, Penn., xii, 301.
- —, — mine of Carbondale, xviii, 319.
- —, — of Mauch Chunk, *B. Silliman*, xix, 12.<sup>f</sup>
- —, beds of, *ibid*, notice of, xx, 163.

- Coal in Pennsylvania; mines of Wyoming valley, *Z. Cist*, iv, 1.<sup>f</sup>
- — —, — of Wyoming, on the rocks accompanying, vii, 260.
- — —, — of Wyoming and Lackawanna valleys, account of, *B. Silliman*, xviii, 308.<sup>f</sup>
- — —, on Tioga river, analysis and description of, *W. Meade*, xiii, 32.
- — —, in the Monongahela valley, *S. P. Hildreth*, xxix, 58.<sup>f</sup>
- — —, Carbon Creek deposit, some account of, *W. R. Johnson*, xxxix, 137.
- — —, *ibid*, analysis of coal from, xxxix, 139.
- — —, bituminous, xii, 69.
- — —, —, *S. P. Hildreth*, xxix, 77.
- — —, Lehigh company, xxiv, 173.
- — —, in Rhode Island, anthracite, on the uses and characters of, *B. Silliman*, xi, 78.
- — —, *C. T. Jackson*, xl, 187.
- — —, in Tennessee, xxix, 141; xxx, 391.
- — —, in Virginia, beds of, *J. Grammer*, i, 125.
- — —, bituminous, remarks on, *J. Pierce*, xi, 54.
- — —, mines near Richmond, statistical and geological account of, *A. S. Wooldridge*, xliii, 1.
- — —, bituminous, of Chesterfield Co., analysis of, *B. Silliman* and *O. P. Hubbard*, xlii, 369.
- — —, Kenawha valley, xxix, 108<sup>f</sup>, 109.<sup>f</sup>
- — —, Wheeling, *S. P. Hildreth*, xxix, 80.<sup>f</sup>
- — —, porous anthracite or natural coke, *W. B. Rogers*, xliii, 175.
- — —, in eastern Virginia, of the lower oolite epoch, *W. B. Rogers*, xliii, 175.
- — —, of the Western states, characters, limits, &c. of the beds, *J. Hall*, xlii, 52.
- Coal mines, explosions in American, xxxvii, 387.
- — —, accident in the Bovey, in consequence of the compression of the air, xvii, 38.
- — —, burning of, at New Sauchie, xix, 386.
- — —, fire damp, at Newcastle, chemical examination of, *E. Turner*, xxxvii, 201.
- Coast survey, U. States, xlix, 229. †
- Coat of mail, found in Vermont, xiii, 199.
- Coates, *B. H.*, on the *Uvularia perfoliata*, as a remedy for poisoned wounds, xxxv, 270.
- Cobalt, modes of detecting, *Prof. J. F. Dana*, viii, 301.
- — —, spontaneous combustion of, xv, 188.
- — —, and nickel, *Döbereiner's* mode of separating, v, 188.
- — —, and nickel ores, of Chatham, Ct., analyses of, *A. A. Hayes*, xxi, 195.
- — —, [iron,] arsenical, of N. H., *J. F. Dana*, viii, 301.
- — —, oxide of, near Silver Bluff, S. Carolina, *J. L. Smith*, xlvi, 131; xlvi, 103.
- — —, ores, analyses of two, *Wöhler*, xxxvi, 332.
- — —, localities of, in Connecticut, vi, 209, 235; xxi, 195.
- — —, in Maryland, iv, 283.
- — —, in Missouri, xii, 378.
- — —, in N. Hampshire, viii, 301, 198.
- Coca of Peru, iii, 397.
- Coccolite in N. York, v, 269; vii, 57; ix, 40, 250; xix, 224.
- — —, in Canada, viii, 70.
- Coffee, consumption of, in Europe, iv, 392.
- — —, the *Astragalus balticus* in Sweden, a substitute for, v, 180.
- — —, tree, leaves of, used for tea, xlix, 401.
- Coffin, *J. H.*, secular acceleration of the moon's mean motion, xlvi, 324.<sup>f</sup>

- Cog-wheels, on the forms of, *E. W. Blake*, vii, 86.<sup>f</sup>
- Cohesion, experiments with soap bubbles on attraction of, *J. Henry*, xviii, 216.
- Coins, remarks on, and descriptions of some ancient, xxvii, 74.
- and medals, character and composition of, *J. W. Draper*, xxix, 157.
- Coir fibre, used for ropes, xxi, 33.
- Coke, natural, of Virginia, *W. B. Rogers*, xliii, 175.
- Cold, effects of, ii, 177.
- , artificial, produced by mixed metals, xiii, 171.
- , —, a freezing mixture for, xii, 195.
- , extraordinary seasons of, *N. Webster*, xxviii, 183.
- at New Haven in 1766, 1767, xxviii, 183.
- at Hartford in 1780, xxviii, 186.
- , extreme, at Plattsburgh, N. Y., iii, 366; xi, 195.
- in Maine, 1817, mercury frozen by, xxxi, 161.
- on Lake Superior, ix, 395.
- of the winter of 1825-6, x, 399.
- of January, 1835, xxviii, 177.
- winter of 1837, 1838, in England, *J. Lindley*, xxxix, 18.
- Colden, Cadwallader*, correspondence with *Gronovius*, *Linnaeus*, &c., xlv, 85.
- Collapse of a reservoir, *R. Hare*, xxxiii, 242.<sup>f</sup>
- Collins, Z.*, herbarium of, xxiii, 398.
- Collinson, P.*, letters from, to *C. Colden*, xlv, 112.
- Colombia, features of, *R. Wright*, xxxvii, 2.
- , river Orinoco, rise of, xxxvii, 2.
- , climate and seasons of, xxxvii, 2.
- , mists above 12000 feet, xxxvii, 3.
- , llamas and horses of, xxxvii, 14.
- Colombia, vegetation and productions of, xxxvii, 15.
- Colophane, a tree affording an aromatic oil, ix, 386.
- Colophonite, of Willsboro', N. Y., *H. Seybert*, v, 117.
- Color of air and deep waters, and some other analogous fugitive colors, *Count Xavier de Maistre*, xxvi, 65.<sup>f</sup>
- of opaline glass, xxvi, 66.
- of leaves in autumn, *Macaire Prinsep's* views respecting, xvi, 215.
- of the Raphael Tapestries, effect of light and air in restoring, xxxvii, 244.
- of the sea, due in part to iodine and bromine, xvii, 170.
- of wood of certain trees, change of, xviii, 404.
- , blue, from buck-wheat, xxii, 384.
- , carmine, produced on ivory by red lead on the under side, xxvi, 74.
- , increase of, when objects are seen with the head inverted, *D. Brewster*, xl, 343.
- , inability to distinguish, xl, 54.
- Coloring matter for dyeing, experiments on, *M. Persoz*, xxiv, 380.
- of the Lichen rocella, xviii, 151.
- materials for confectioners, xxii, 381.
- Columbic acid, *A. A. Hayes*, xlvi, 166.
- Columbite, investigations on, *Rose*, xlix, 228.
- from New Hampshire, large crystal of, *C. U. Shepard*, xvii, 357.<sup>f</sup>
- , stanniferous, discovered in Massachusetts by *C. U. Shepard*, xvi, 220.<sup>f</sup>
- , a large crystal of, from Middletown, Conn., *J. Johnston*, xxx, 387.<sup>f</sup>
- , localities of, in Connecticut, iv, 52; vi, 236; xxx, 387; xxxiii, 162.

- Columbite, in Mass., xvi, 220.<sup>f</sup>  
 —, in New Hampshire, xvii, 357.  
 —, Torrelite of *Thomson* identical with, *J. D. Dana*, xxxii, 149.<sup>f</sup>  
 Combustion, facts relating to, xxviii, 70.  
 —, observations on, *S. Morey*, xxv, 146.  
 — of chlorine by olefiant gas, x, 365.  
 — of coal strata, products of, viii, 382.  
 — with spongy platina discovered, vii, 387.  
 —, spontaneous, iii, 383 ; v, 201 ; xxii, 161 ; xxvii, 178.  
 —, —, of various substances described, *J. Mease*, xxxiii, 147.  
 — of ashes, xlii, 165.<sup>f</sup>  
 Comet of 1819, ii, 374.  
 — of 1822, notice of, ix, 199, 367.  
 — of 1823, 1824, observations on, viii, 315.  
 —, Olbers's elements of, xiii, 189.  
 —, Biela's, notice of, xxiii, 390.  
 —, —, elements of, 1832, xxiv, 346 ; xxv, 191 ; xxviii, 398.  
 —, —, supposed possibility of collision with Encke's, xxiv, 346.  
 — of July, 1832, *J. J. Littrow*, xxiv, 348.  
 —, discov'd Ap. 8, 1834, xxvi, 402.  
 —, Halley's, 1835, xxix, 155.  
 —, —, *E. Loomis*, xxx, 209.  
 —, —, remarkable phenomena of, xxxv, 285.  
 —, Encke's, remarks on, xxiv, 346 ; xxxiii, 15 ; xxxv, 388.  
 —, —, notice of, xxxvii, 191.  
 —, Dec., 1839, Galle's first, notice of, xxxviii, 378 ; xl, 207.  
 —, Jan., 1840, Galle's second, notice of, xl, 40, 207.  
 —, March, 1840, Galle's third, notice of, xl, 207.  
 —, October, 1840, the third of 1840, *Bremicker's*, xl, 207.  
 —, of October, 1842, discovered by *M. Laugier*, xlv, 211.  
 —, great, of 1843, xlv, 412 ; xlv, 188<sup>f</sup>, 229.  
 Comet, great, of 1843, elements of, *S. C. Walker* and *E. O. Kendall*, xlv, 188.<sup>f</sup>  
 —, second of 1843, xlv, 230.  
 —, third of 1843, xlvi, 210.  
 —, De Vico's, xlviii, 219,\* 402.  
 —, —, first seen in the U. States by *H. L. Smith*, xlvii, 419.  
 —, southern, of December, 1844, observations on, xlviii, 402 ; xlix, 220.  
 —, D'Arrest's, Dec. 28, 1844, xlviii, 403.  
 —, Mauvais's, xlix, 220.  
 —, second of 1845, xlix, 220.  
 —, third of 1845, xlix, 220.  
 —, on the observations of, *P. J. Rodriguez*, xvi, 94.<sup>f</sup>  
 —, nature of, *W. A. Norton*, xlv, 104.  
 —, on the tails of, x, 395 ; xxxiii, 5, 11.  
 —, —, *W. Mitchell*, xxxviii, 35 ; xl, 59.  
 —, — of Halley's, *B. F. Joslin*, xxxi, 142, 324.  
 —, —, formation of, *W. A. Norton*, xlv, 104.<sup>f</sup>  
 —, possible collision of two, *J. J. Littrow*, xxiv, 346.  
 —, medal for discovery of, by the King of Denmark, xxiii, 391.  
*Commun, J. du*, on the causes of fresh water springs, xiv, 174.<sup>f</sup>  
 —, hypothesis on volcanoes and earthquakes, xv, 12.<sup>f</sup>  
 —, — —, objections to, xv, 25.  
 —, — —, strictures on, xvi, 51.  
 Compass, mariner's, on the invention of, *A. Humboldt*, xl, 242.  
 —, microscopic, *J. Locke*, xxiii, 237.<sup>f</sup>  
 —, surveyor's, improvements in, by *T. Kendall*, xix, 337.<sup>f</sup>  
 — pivots, on the use of native alloy for, xli, 67.

\* At this place, erroneously called *Faye's* comet.

- Complaisants, on board a vessel in the Mediterranean, xvi, 171.
- Compression of water, xiii, 189.
- Comptonite, a new species, iv, 28.
- Conant, *M.*, a new magnetic instrument, xlix, 301.<sup>f</sup>
- Conchology, see ZOOLOGY, *Mollusca*.
- Concretions, calcareous, in limestone, in Indiana, *J. T. Plummer*, xlii, 283.<sup>f</sup>
- Condensation of gases, abstract of *Faraday's* experiments on, vii, 352.
- of sulphuretted hydrogen, vii, 354.
- of carbonic acid, vii, 354.
- of euchlorine, vii, 355.
- of nitrous oxide, vii, 355.
- of cyanogen, vii, 356.
- of ammonia, vii, 357.
- of muriatic acid, vii, 357.
- of chlorine, vii, 357.
- of gases, *J. Torrey's* experiments on carbonic, sulphurous and chloro-chromic acids, xxxv, 374; xxxvi, 394.<sup>f</sup>
- —, *J. K. Mitchell*, xxxv, 346.<sup>f</sup>
- —, *Thilorier*, xxxi, 163, 402, 404.
- Conduction of water, *W. W. Mather*, xiii, 368.<sup>f</sup>
- —, as shown by *Murray's* experiments, *C. Dewey*, xxviii, 151; xxxi, 246.
- Confectionary, poisonous, xviii, 157.
- Conglomerate mica slate, in Massachusetts, viii, 244.
- , Potomac marble, xxvi, 221<sup>f</sup>; xxvii, 22.
- Conic sections, new instrument for drawing the curves of, xv, 368.<sup>f</sup>
- —, *Prof. Benedict*, xxxi, 258.<sup>f</sup>
- —, problem in, *Prof. Davies*, vi, 280.<sup>f</sup>
- Conite, a new mineral species, ii, 354.
- Connecticut, on coal in, i, 239; iii, 248; v, 44<sup>f</sup>; xxxiii, 163.
- , geology of *N. Haven* and *Litchfield Cos.*, *B. Silliman*, ii, 201.
- Connecticut, geology of *Salisbury*, *C. A. Lee*, viii, 252.
- , geology of; trap and sandstone in junction at *Wallingford*, *A. B. Chapin*, xxvii, 104.<sup>f</sup>
- , —, trap rocks, *B. Silliman*, xvii, 119.
- , —, section from *Killingly* to *Haddam*, *W. W. Mather*, xxi, 94.<sup>f</sup>
- , —, report on, by *C. U. Shepard*, noticed, xxxiii, 151.
- , —, survey of, authorized, xxviii, 381.
- , ores of, see *under names of the Metals*.
- valley, rocks of, vii, 25.
- —, water courses and geology of, with account of terraces, ancient lakes, &c., xxii, 205.<sup>f</sup>
- —, geological account of, *E. Hitchcock*, vi, 1<sup>f</sup>, 201; vii, 1.<sup>f</sup>
- —, vertebral remains in sandstone of, *E. Hitchcock*, xxix, 330.
- —, fossil footprints in, *E. Hitchcock*, xxix, 307<sup>f</sup>; xxxi, 174; xxxii, 174; xli, 165; xlvii, 113, 292<sup>f</sup>, 390; xlviii, 61.
- —, — —, *J. Deane*, xlv, 178; xlvi, 73<sup>f</sup>; xlvii, 381, 399; xlviii, 158<sup>f</sup>; xlix, 79<sup>f</sup>, 213.<sup>f</sup>
- —, — —, *C. Lyell* on, xlv, 394.
- —, — —, *W. C. Redfield*, xxxiii, 201.
- Reserve, Ohio, notice of, xxxi, 21.
- Conrad, T. A.*, notes on American geology, xxxv, 237.
- , on characteristic fossils, xxxv, 237, 246.
- , temperature of different geological epochs, xxxv, 239.
- , cause of the features of the U. States, xxxv, 244.
- , on the tertiary fossils of America, xxiii, 204, 339.
- , description of tertiary shells, in a paper by *J. T. Hodge*, xli, 344.<sup>f</sup>

- Conrad, T. A.*, on the tertiary of the Atlantic coast, xxviii, 104, 280.<sup>f</sup>
- , new fresh water shells of Alabama, Tennessee, &c., xxv, 338.<sup>f</sup>
- , on the features of the transition or Silurian system, xxxv, 243.
- , on the condition and character of organic life in the transition epoch, xxxvi, 12.
- , characteristic fossils of the N. York rocks, xxxvi, 14.
- , on the Silurian strata, and the characteristic fossils, xxxviii, 86.
- , subdivision of the Silurian system in N. York, xlii, 229.
- , *Calymene senaria*, xlii, 230.
- Conservatory at Boston, destruction of, by fire, xlv, 214.
- Continents, mean height above the sea, *Humboldt*, xlix, 397.
- Conwell, C. C.*, chemical experiments on tobacco, xvii, 369.
- , on the passage of light through small apertures, xx, 350.
- Conybeare and Phillips*, outlines of the geology of England and Wales, vii, 203.
- Cooking apparatus of Lemare, vi, 399.
- Cooling of the earth, a dynamical cause in geology, *W. W. Mather*, xlix, 288.
- Cooley, D.*, floral calendar, ii, 254.
- Cooper*, report on the fossil bones of Big Bone Lick, xx, 370.
- Cooper, T.*, on the tests for arsenic, iv, 155.
- , disclaimer of, with regard to a fossil described by *A. Eaton*, xx, 413.
- , on volcanoes and volcanic substances, iv, 205.
- Cooper's rotative piston, xvi, 313.<sup>f</sup>
- Copaiva balsam, a new preparation of, by *G. W. Carpenter*, xvi, 40.
- Copal, notice of, xlv, 212.
- , solution of, aided by camphor, xliii, 174.
- varnish, *Berzelius*, xvii, 175.
- Copernicus*, monument to, at Warsaw, iv, 387.
- Coprolites, in Connecticut valley, *E. Hitchcock*, xlvii, 113, 308.<sup>f</sup>
- of birds, analysis of, *S. L. Dana*, xlvi, 46.
- Copper, atomic weight of, xlvi, 402.
- , amount produced in Great Britain and Ireland, for the year ending June 30, 1822, viii, 390.
- , determination of, in a binoxide salt, xlvii, 193.
- , partial reduction of the binoxide of, by heat, xlvi, 184.
- , hydride of, *A. Wurtz*, xlvi, 185.
- , silvering of, xxiii, 386.
- , metallic, galvanic formation of, in a mineral vein, xxxiv, 44.
- , protoxide of, xxii, 353.
- , white, artificial, viii, 380.
- , *Witting's* test for, ix, 201.
- , tendency of iron to protect, when exposed to sea-water, xxv, 203.<sup>f</sup>
- , foliaceous, of Vesuvius, xi, 267.
- and potash, sulphate of, xx, 195.
- , native, in Connecticut, i, 55; vi, 230; xxxiii, 160.
- , —, connection with trap in Connecticut and Michigan, xlvii, 132.
- , —, in drift, Massachusetts, *E. Hitchcock*, xlv, 331.
- , —, in N. Jersey, Summer-ville mine, v, 401; xxxvi, 107.
- , —, —, *L. C. Beck*, xlv, 331.
- , —, of Michigan, *D. Houghton*, xli, 185; xlv, 331, 332.
- , —, mass. of, from Lake Superior, *H. R. Schoolcraft*, -iii, 201.<sup>f</sup>
- , —, —, presented to Yale College, xxvii, 381.
- , —, and silver, of Lake Superior, *C. T. Jackson*, xlix, 81.

- Copper, native, in Missouri, iii, 71.
- , —, in the trap and amygdaloidal minerals of Nova Scotia, xv, 134; xxx, 350.
- , —, and ores of, in northern American, at the copper mountains, xvii, 8.
- , carbonate of, in Connecticut, vi, 206.
- , —, in Massachusetts, i, 115; vi, 207.
- , —, in Michigan, xli, 185.
- , —, in Pennsylvania, i, 236; viii, 239.
- , crenate of, analysis, *C. T. Jackson*, xxxvii, 398.
- , oxides of, in Connecticut, vi, 206.
- , —, in Michigan, xli, 185.
- , —, in Pennsylvania, viii, 239.
- , sulphurets of, in Canada, viii, 47, 75.
- , —, in Connecticut, i, 316; vi, 206, 231; xxxiii, 160.
- , —, in Massachusetts, i, 115, 136, 437; vi, 207; x, 215; xxii, 61.
- , —, in Maryland, xviii, 80; xxvii, 20, 23.
- , —, in Michigan, xli, 185.
- , —, in New York, viii, 249.
- , —, in New Jersey, ii, 192, 198; v, 268.
- , —, in North Carolina, xli, 183, 348.
- (See also under *Copper mines*.)
- , phosphate of, in New Jersey, v, 401.
- , silicate, in Michigan, xli, 185.
- , siliceous hydrate in New Jersey, *G. T. Bowen*, viii, 118.
- mines or ores in Massachusetts, account of, vi, 207; xxii, 61.
- —, at Strafford, Vt., xxi, 383.
- Copper mines, in Connecticut, at Cheshire, vi, 206;—*C. U. Shepard*, xxxiii, 160.
- —, —, at Bristol, vi, 231.
- —, in Maryland, xxvii, 22.
- —, in N. Jersey, Schuyler's, v, 239.
- —, —, at Summerville, v, 401.
- —, ores and the minerals of the vicinity of New Brunswick, N. Jersey, *L. C. Beck*, xxxvi, 107.
- —, on Lake Superior, *H. R. Schoolcraft*, vii, 43.
- —, *ibid*, *D. Ruggles*, xlix, 64.<sup>f</sup>
- —, *ibid*, *C. T. Jackson*, xlix, 81.
- —, *ibid*, *D. Houghton*, xli, 183.
- — of Wisconsin and Missouri, *J. T. Hodge*, xliii, 381.
- —, Nova Scotia, xv, 152.
- —, of the Hartz, xix, 113.
- —, at Ekatherinenburg, xvii, 25.
- —, Rio Tinto, Spain, yield of, xxviii, 144.
- mountains, Northern America, xvii, 8.
- ores, on the roasting of, xxix, 374;—in Sweden, xxviii, 145.
- sheathing of ships, on the corrosion of, *H. Davy*, ix, 207.
- —, causes of the destructibility of, *Prideaux*, xlii, 322.
- Copperas manufactured at Strafford, Vt., viii, 180; xxi, 383.
- — from pyrites in Morris Co., N. J., v, 28.
- Coralline agates in the West Indies, i, 141.
- Corallines in chalk, xxxiii, 111; xxxix, 205.
- Corals, opinion of *Quoy* and *Gay-mard* on the depth at which they grow, xv, 357.



- Corals, on the temperature limiting the distribution of, *J. D. Dana*, xlv, 130.
- , distribution of, indicates the areas of subsidence in the Pacific, *J. D. Dana*, xlv, 131.<sup>f</sup>
- , fossil, see *ZOOLOGY Radiata*.
- Coral islands, area of subsidence during the formation of Pacific, *J. D. Dana*, xlv, 131.<sup>f</sup>
- limestone in Ceylon, vi, 194.
- shores of Florida, xxxv, 60.
- limestone raised, in Dominica and other West Indian islands, iv, 218.
- and shell rock of St. Croix, xxxv, 71.
- reefs, formation of, *B. Hall*, xiv, 207.
- Corda, A. J. C.*, on the impregnation of plants, xxxi, 317.<sup>f</sup>
- Cordage, on the vegetable materials used for, *J. Mease*, xxi, 27.
- , material for, from the Rose of Sharon, xxviii, 371.
- from Manilla hemp, xli, 200.<sup>f</sup>
- and nets, strengthened by a solution of glue with oak bark, xxvi, 186.
- Cornelius, E.*, geology, mineralogy, &c., of part of Virginia, Tennessee, Alabama, and Mississippi, i, 214, 317.<sup>f</sup>
- , singular position of a granite rock, ii, 200.<sup>f</sup>
- Cornuti's* plants of Canada, ix, 265.
- Corpo Santo, instances of, xvi, 171.
- Corrosive sublimate, antidote of, iii, 374.
- , detection of, xvii, 181; xxiii, 207.
- , decomposition of, by vegetable substances, xvii, 385.
- , solubility in ether, xvi, 399.
- Corundum, in Connecticut, vi, 219.
- , in New Jersey, xiii, 380; xxi, 319.
- , in North Carolina, iii, 4, 229.
- Cosmogony of Moses, xxv, 26.
- , Mosaic, critical interpretation of *barah* and *asah*, *N. Webster*, xxxv, 375.
- Costa, E. M. da.*, notice of, *C. Fox*, xxxvii, 155.
- Cotarnine, xlix, 205.
- Côteau des Prairies, *G. Catlin*, xxxviii, 138.
- , red clay or Catlinites of, *C. T. Jackson*, xxxv, 388; xxxvii, 393.
- Cotton, use of, in dressing wounds, xxi, 159.
- cloth, see *Cloth*.
- gin, invention of, by *E. Whitney*, xxi, 209.
- seed, illuminating gas from, *D. Olmsted*, viii, 294; x, 362.
- plant, importance of cultivating it, iv, 86.
- , remarks on the cultivation of, with reference to growing it in India, xxxviii, 131.
- stuffs, singeing by the gas flame, x, 359.
- trade, commencement of, in the United States, xxi, 252.
- , case of treatment by, xxiii, 198.
- Couthouy, J. P.*, remarks on icebergs, xliii, 154.
- , remarks on the distribution of corals, as determined by temperature, xlvii, 123.
- , on a charge made by *J. D. Dana*, xlv, 378; xlvii, 122.
- Couzeranite, description and analysis of, xvii, 183.
- Cow tree of Venezuela, xix, 370.
- Cowry, money, xxxii, 250.
- Crag of Norfolk and Suffolk, fossil vertebrated animals of, xxxi, 339.
- Craigleith quarry fossil tree, xxviii, 390.
- Cram, T. J.*, length of a degree, oblateness of the earth and planets, reduction of latitude, xxxi, 222.<sup>f</sup>
- Cramp, cure for, xxx, 169.
- Crania, new work on American, proposed, *S. G. Morton*, xxxii, 207.

- Crania, *ibid*, review of, xxxviii, 341.
- , American, characteristics of, xlvii, 408.
- , Ægyptiaca, *S. G. Morton*, notice of, xlvii, 205.
- , ancient Egyptian, *S. G. Morton*, xlviii, 268.
- , internal capacity in different races of men, *S. G. Morton*, xxxviii, 373.
- Crank motion, *A. B. Quinby*, vii, 316<sup>f</sup>; ix, 317; xi, 338<sup>f</sup>; xii, 124<sup>f</sup>, 344<sup>f</sup>; xiii, 73, 356.
- —, remarks in reply to *Mr. Quinby*, viii, 279; xii, 338<sup>f</sup>; xiii, 75, 350.
- —, *I. Doolittle*, xii, 367; xiv, 60.<sup>f</sup>
- Crayons, red, manufacture of, xvii, 187.
- Crenate of copper, native, *C. T. Jackson*, xxxvii, 398.
- Crenic acid, and apocrenic acid, in water, *Berzelius*, xxviii, 121.
- Creosote, *M. Liebig*, xxviii, 131.
- Cretaceous (ferruginous sand) fossils, U. States, *S. G. Morton*, xvii, 274, 290; xviii, 243, 250<sup>f</sup>; xxiii, 288<sup>f</sup>; xxiv, 128<sup>f</sup>; xlviii, 267.
- formation of the U. States, a division in, *S. G. Morton*, xxviii, 277.
- —, review of *Morton's Synopsis* of the fossils of, xxvii, 377.
- — of the U. States, *E. Hitchcock*, xli, 246, 265.
- — in South America, xli, 265.
- — in America, extent of *C. G. Ehrenberg*, xlvi, 307.
- — of the Upper Missouri, *Nicollet*, xli, 180; xlv, 153.
- strata of New Jersey, *C. Lyell*, xlvii, 213.
- — of New Jersey, (green-sand) foraminifera in, xli, 213.
- — of New Jersey, fossil crocodile in, *S. G. Morton*, xlviii, 265.<sup>f</sup>
- Cretaceous formation in N. Jersey, list of fossils in, *S. G. Morton*, xlviii, 267.
- period in United States, *H. D. Rogers*, xlvii, 251.
- Crichtonite in Connecticut, xxxv, 179.
- (variety Washingtonite) in Connecticut, *C. U. Shepard*, xliii, 364.<sup>f</sup>
- in Rhode Island, xxxv, 180.
- Crinoidea, general remarks on the characters and geological position of, *J. Hall*, xlv, 349.
- , see farther, ZOOLOGY, *Radiata*.
- Crocodile, fossil, in New Jersey, xvii, 289; xxvii, 353; xlviii, 265.<sup>f</sup>
- Croom, H. B.*, plants from Florida, xxv, 74.
- , botanical communications, including botany of Middle Florida, xxvi, 313.
- , new localities of plants at the South, with notes and descriptions, xxviii, 165.
- , organic remains in the marl pits of North Carolina, xxvii, 168.
- Crotalus reliquus, *A. Eaton*, xx, 122.<sup>f</sup>
- Crosse*, some account of galvanic apparatus of, xxxii, 372; xxxv, 125.<sup>f</sup>
- , supposed production of animal life, xxxii, 374<sup>f</sup>; xxxiii, 272.
- , production of crystals and certain insects, xxxv, 125.<sup>f</sup>
- , Acari of, xxxii, 374<sup>f</sup>; xxxv, 125<sup>f</sup>; xlix, 227.
- , —, experiments of *W. H. Weekes* in the production of, xliii, 395.
- Crucible, improved, viii, 389.
- for glass houses, on the manufacture of, xvi, 112.
- for fusion, xxiii, 384.
- Crustaceans in Palæozoic rocks, *J. Phillips*, xlii, 326.
- , see farther under ZOOLOGY, *Articulata*.

- Cryophorus, *Wollaston's*, vii, 140.  
 —, improved, *R. Hare*, xxxiii, 244.<sup>f</sup>  
 Crystals, compound, formation of, *J. D. Dana*, xxx, 275.<sup>f</sup>  
 —, drawing of figures of, *J. D. Dana*, xxxiii, 30.<sup>f</sup>  
 —, models, of mica, xxxviii, 187.  
 —, a new fluid in, vii, 186.  
 —, two new fluids in, xii, 214.<sup>f</sup>  
 —, naphtha in, *C. Dewey*, i, 345.  
 —, pseudomorphous, see *Pseudomorphous*.  
 —, cause of double refraction in, xxi, 299.  
 —, with rounded angles and bent, in New York, deductions from, *L. C. Beck*, xlv, 333.  
 — in plants, discovered by *Turpin*, xix, 177; xx, 382.  
 —, of oxalate of lime, *Turpin*, xxi, 372.  
 —, —, *J. W. Bailey*, xlv, 149; xlviii, 17.<sup>f</sup>  
 — in geodes, facts tending to illustrate the formation of, viii, 282.  
 —, —, *ibid*, *J. D. Dana*, xlix, 52.  
 —, rotation of, while forming, indicating polarity, as seen under the solar microscope, *B. F. Joslin*, xxxv, 150.  
 — of Andalusite from Westford, Mass., xlv, 381.<sup>f</sup>  
 — of apatite, bent and rounded, xlv, 143; xlv, 365.<sup>f</sup>  
 — of anatase, xlvii, 215.<sup>f</sup>  
 — of Beaumontite, xlv, 234.<sup>f</sup>  
 — of beryl, from Haddam, viii, 395; xl, 401.<sup>f</sup>; xlv, 381.<sup>f</sup>  
 —, —, from Monroe, Ct., bent, xlv, 366.<sup>f</sup>  
 — of calc spar, from Rossie, N. Y., *J. D. Dana*, xlv, 33.<sup>f</sup>  
 — of chondrodite, xlv, 381.<sup>f</sup>  
 — of Christianite, (anorthite,) xi, 261.<sup>f</sup>  
 — of chromic oxide, xxviii, 396.  
 — of Columbite, xvi, 220.<sup>f</sup>; xvii, 357.<sup>f</sup>; xxx, 387.<sup>f</sup>  
 — of Danaite, xlv, 384.<sup>f</sup>  
 Crystals of datholite, of Roaring Brook, *J. D. Dana*, xlv, 380.<sup>f</sup>  
 — of epidote, from Haddam, Ct., xlv, 381.<sup>f</sup>  
 —, —, from Franconia, *C. U. Shepard*, xviii, 129.<sup>f</sup>  
 — of eremite, *C. U. Shepard*, xxxii, 341.  
 —, —, *J. D. Dana*, xxxiii, 70.<sup>f</sup>; xlv, 402.<sup>f</sup>  
 — of galena, Rossie, xlv, 366.<sup>f</sup>  
 — of Haydenite, xlv, 379.<sup>f</sup>  
 — of Heulandite, of Paterson and Bound Brook, N. J., *L. C. Beck*, xlv, 59.<sup>f</sup>  
 — of Humboldtite, xi, 251.<sup>f</sup>  
 — of idocrase, from Amherst, N. H., xlv, 381.<sup>f</sup>  
 — of iodic acid, xx, 185.  
 — of iodine, xvii, 168; xviii, 84.<sup>f</sup>  
 — of iron, magnetic, distorted, *J. D. Dana*, xlv, 365.<sup>f</sup>  
 — of Lederite, *C. U. Shepard*, xxxix, 357.<sup>f</sup>  
 —, —, *J. D. Dana*, xlv, 36.<sup>f</sup>; xlviii, 180.  
 — of ferrosilicate of manganese, from Rhode Island, *C. U. Shepard*, xvii, 142.<sup>f</sup>  
 — of microlite, *C. U. Shepard*, xxvii, 361.  
 — of pyrites, Rossie, *J. D. Dana*, xlv, 36.<sup>f</sup>  
 — of quartz, bent, xlv, 366.<sup>f</sup>  
 —, —, soft, from Carara, Italy, v, 394.  
 —, —, distorted, xlv, 365.<sup>f</sup>  
 —, —, containing globules of water, from Elba, iv, 27.  
 —, —, *ibid*, in U. States, ii, 14; ix, 246.  
 —, —, containing naphtha, *C. Dewey*, i, 345.  
 — of serpentine, of Warwick, N. Y., ix, 242.  
 — of Sillimanite, xlv, 382.<sup>f</sup>  
 — of snow, ii, 337.<sup>f</sup>; iii, 367.<sup>f</sup>  
 — of staurotide, macle, *C. T. Jackson*, xlv, 368.<sup>f</sup>

- Crystals of topaz, distribution of coloring matter in, and optical properties of, vii, 364.
- of zircon, tessellated, *J. D. Dana*, xlv, 36.<sup>f</sup>
- Crystalline forms, two, presented by the same substance, viii, 378; xlv, 370.
- substances from the juice of plants, xi, 391.
- Crystallization, tendency to, in matter, xix, 381.
- , on the influence of air on, *M. Graham*, xvii, 373.
- effected by the action of weak electric forces, *M. Becquerel*, xvii, 383; xxviii, 291.
- — — — — *ibid*, *G. Bird*, xxxiii, 267.
- — — — —, *A. Crosse*, xxxv, 125.<sup>f</sup>
- , an instance of instantaneous, *J. Green*, iii, 93.
- of snow, *J. Green*, ii, 337.<sup>f</sup>
- , curved, of gypsum; Mammoth Cave, Ky., *J. Locke*, xlii, 206.<sup>f</sup>
- the cause of the schistose structure and cleavage of some rocks, *J. D. Dana*, xlv, 105.
- of carbonate of potash, viii, 181.
- of the carburets, *S. Brown*, xxxviii, 118.
- of oil of sassafras, remarkable, *A. A. Hayes*, xx, 128.
- of water, light from, xxvi, 178.
- Cuba, coal mines in, *J. H. Blake*, xlii, 388.
- , fossils of, supposed to be oolitic, *J. Lea*, xl, 41.
- , meteorological observations in, *J. H. Blake*, xlii, 292.
- Culmites, vii, 180.
- Cumingtonite, named and described, *C. Dewey*, viii, 59.
- , locality in Massachusetts, viii, 233; ix, 43, 54.
- Cunningham, R.*, obituary notice of, xxxii, 215.
- Cupellation, new method of, *W. W. Mather*, xxxv, 321.
- , a mode of, *G. Engelmann*, xlii, 394.
- Currents in water, remarks on the causes of, *A. W. Carson*, xxix, 340.<sup>f</sup>
- — — — —, a fact relating to, *C. Rumker*, xx, 180.
- — — — —, evidences of them over the surface of the earth, xi, 100.
- , oceanic, v, 132.
- , — — — —, and temperature, xxv, 130.
- , — — — —, from the north polar regions in the Atlantic, *Wm. C. Redfield*, xxxii, 349; xlviii, 373.<sup>f</sup>
- , — — — —, *ibid*, ice boulders and pebbles, transported by, xxxii, 351; xlviii, 373.<sup>f</sup>
- , — — — —, *ibid*, influence of, on the Gulf Stream, *W. C. Redfield*, xlviii, 381.
- , — — — —, Gulf Stream, its limits and relation to the north polar current, *W. C. Redfield*, xxxii, 349; xlviii, 381.
- , — — — —, of the Atlantic, iv, 390.
- , — — — —, — — — —, *W. C. Redfield*, xlv, 295.
- , — — — —, — — — —, causes of, and influence in producing the sedimentary rocks of the United States, *W. W. Mather*, xlix, 1.
- of the Southern and Pacific oceans, xlv, 299.
- , atmospheric, see *Winds*.
- Curtis, M. A.*, new and rare plants of N. Carolina, xlv, 80.
- , botanical labors of, xlii, 12.
- Curves for arches, method of describing, *J. Thomson*, xxiv, 73.<sup>f</sup>
- of conic sections, instruments for drawing, xv, 368.<sup>f</sup>
- of tri-section, *W. Allen*, iv, 343.<sup>f</sup>
- Cuscutineæ, monograph of North American, *G. Engelmann*, xliii, 333<sup>f</sup>; xlv, 73.<sup>f</sup>

- Cutbush, J.*, on the formation of cyanogen, vi, 149.
- , on the composition and properties of the Chinese fire, and on the so-called brilliant fires, vii, 118.
- , an improvement in the electrical lamp, ii, 332.
- , on the Greek fire, vi, 302.
- Cuvier, G.*, essay of, on the theory of the earth, noticed, i, 68.
- , on the freshwater formations of Paris and Rome, vi, 381.
- , memoir of, by *A. De Candolle*, xxiii, 303.
- , statue of, at Montbeliard, xxx, 184.
- Cuyahoga, falls of, xxxi, 45.<sup>f</sup>
- Cyanhydric acid (or prussic,) *Maugendie* on, ii, 81.
- —, memoir on, by *B. L. Oliver*, iii, 182.
- —, —, by *M. Orfila*, xviii, 157.
- —, apparatus for the evolution of, *R. Haré*, xxix, 244.<sup>f</sup>
- —, extraordinary production of, *A. A. Hayes*, xviii, 201.
- —, preservation of, xvi, 260.
- —, effect of muriatic and sulphuric acids on, xviii, 146.
- —, cases in which administered, iii, 187.
- —, efficacy in asthma, vi, 366.
- —, effects of, on a horse, xii, 385.
- —, effects of, on vegetation, x, 190.
- —, chlorine an antidote for, xvii, 174; xxi, 157.
- Cyanic acid, xvi, 258.
- Cyanide of gold, a new, xviii, 191.
- of potassium, xviii, 329.
- —, preparation of, *Liebig*, xlvi, 202.
- Cyanobenzoyl, xxvi, 273.
- Cyanogen, formation of, *Dr. Cutbush*, vi, 149.
- Cyanogen, perchloride of, xvi, 257.
- , compounds of, *W. H. Ellet*, xviii, 329.
- , sulphuret of, xix, 378.
- , remarks on, xlvii, 192.
- Cyathocrinites pyriformis, xviii, 314.<sup>f</sup>

## D.

- Daggett, H.*, on the cutting of steel by soft iron, vi, 336.
- Daguerrotype process, *Daguerre's*, xxxvii, 374; xxxviii, 97.
- —, improvement in, *F. A. P. Barnard*, xli, 352.
- — and its applications, *W. H. Goode*, xl, 137.
- experiment by galvanic light, *B. Silliman, Jr.* and *W. H. Goode*, xliii, 185.
- pictures, mode of fixing, engraving, and printing from, *Dr. Berres*, xxxix, 385.
- , see farther under *Photography*.
- Dahlias, notes concerning, xxiv, 208.
- Daltonism, remarks on, *Prof. Wartmann*, xlii, 162.
- Dalyell, J. G.*, on the propagation of Scottish Zoophytes, xxviii, 77.
- Dams, vibrating, account of, *E. Loomis*, xlv, 363.<sup>f</sup>
- , time of vibration calculated from the dimensions of, xlv, 373.
- Damascus cutlery, v, 182.
- Dana, J. D.*, description of the *Argulus Catostomi*, xxxi, 297.<sup>f</sup>
- , — of the *Caligus Americanus*, xxxiv, 225.<sup>f</sup>
- , — of two species of *Hydrachna*, xxx, 354.<sup>f</sup>
- , metamorphosis of *Anatifæ*, and their relation to Crustacea, xlv, 335.
- , classification of minerals, xlvi, 374.
- , drawing of figures of crystals, xxxiii, 30.<sup>f</sup>
- , crystallographic symbols, xxviii, 250.

- Dana, J. D.*, on the formation of twin crystals, xxx, 275.<sup>f</sup>
- , crystallization of the so-called Edwardsite, (monazite,) xxxiii, 202.<sup>f</sup>
- , crystals of quartz, magnetic iron, apatite, and calc spar, distorted, xlvi, 365.<sup>f</sup>
- , — pyrites, Rossie, xlvi, 36.<sup>f</sup>
- , — datholite, xlvi, 380.<sup>f</sup>
- , — zircon, tessellated, xlvi, 36.<sup>f</sup>
- , eremite identical with monazite, xlv, 402.<sup>f</sup>
- , Torrelite identical with Columbite, xxxii, 149.<sup>f</sup>
- , measurement of Lederite, showing its identity with sphene, xlvi, 180.
- , minerals in crystallized limestones, produced by heat acting on constituents and impurities of non-crystallized limestones, xlvi, 135.
- , origin of the constituent and adventitious minerals of trap rocks, xlix, 49.
- , — of boracic acid in native borates, xlix, 61.
- , — of mountains, xlv, 128.
- , — of serpentine, xlv, 120.
- , — of zeolites, xlv, 116.
- , observations on pseudomorphism, xlvi, 81, 397.
- , on the analogies between modern igneous rocks, and the so-called primary formations, xlv, 104.
- , schistose structure due to state of crystallization of constituents, xlv, 105.
- , temperature limiting the distribution of corals, xlv, 130, 310.
- , areas of subsidence in the Pacific, indicated by the distribution of coral islands, xlv, 131<sup>f</sup>, 310.
- , notice of Vesuvius, in 1834, xxvii, 281.
- , withdrawal of a charge against *J. P. Couthouy*, xlvi, 122.
- , reply to *Mr. Couthouy*, xlvi, 129.
- Dana, J. D.*, System of Mineralogy by, reviewed, xlvi, 362.<sup>f</sup>
- Dana, J. F.*, on arsenical cobalt, and the modes of detecting cobalt, viii, 301.
- , on cantharadin in the *Lytta vittata*, or potato fly, ii, 137.
- , chemical examination of some morbid animal products, iv, 149.
- , on the connexion of heat, electricity and magnetism, vi, 163.<sup>f</sup>
- , concretion from the tonsil, vi, 165.
- , electrical battery, i, 292.<sup>f</sup>
- , preparation of euchlorine, vi, 164.
- , galvano-magnetic apparatus by, vi, 330.<sup>f</sup>
- , theory of the action of nitrous gas in eudiometry, vii, 338.
- , effect of vapor on flame, i, 401.
- , on the wax of the *Myrica cerifera*, i, 294.
- Dana, S. L.*, analyses of coprolites, xlvi, 46.
- , on the indigo of commerce, xlii, 320.
- Danaite, analysis of, *A. A. Hayes*, xxiv, 386.
- identical with mispickel, xlvi, 384.<sup>f</sup>
- Danburite, analysis of, *C. U. Shepard*, xxxv, 137.
- Darlington, W.*, pluviometrical observations at Westchester, Penn., vi, 326.
- , note on *Cardamine rotundifolia*, xviii, 356.
- , importance of the grasses to man, xli, 365.
- Darling, N.*, hurricane in New England, Sept., 1815, xlii, 243.
- Datholite, crystal from Roaring Brook, Ct., *J. D. Dana*, xlvi, 380.<sup>f</sup>
- , in Connecticut, xxii, 389; xlvi, 380.<sup>f</sup>
- , in New Jersey, ii, 191, 369; v, 400; xl, 69; xlv, 58.
- , in New York, xlv, 58.
- Daubeny, C.*, on the climate of N. America, xxxv, 288.

- Daubeny, C.*, disintegration of the dolomites of the Tyrol, xlii, 321.
- , remarks on iodine and bromine in mineral waters, xxi, 366.
- , geology of N. America, xli, 195.
- , on the thermal springs of N. America, xxxvi, 88.
- , quantity of salt in seawater, xxxvi, 188.
- , on manures as stimulants to vegetation, xlii, 319.
- , effect of arsenic on vegetation, xxxi, 346.
- Daubuisson's Elements of Geology* announced, ii, 166.
- Davenport's* rotating electro-magnetic machine, xxxii, appendix after 216.
- electro-magnetic machine, xxxiii, 193.
- Davies, C.*, demonstration of a problem in conic sections, vi, 280.<sup>f</sup>
- Davyne*, analysis and figure of, xi, 255.<sup>f</sup>
- Day, possible variation in the length of, *W. W. Mather*, xlv, 344.
- Day, G. E.*, on the restoration of the deaf and dumb to hearing, xxx, 301.
- Dead animals, means of employing, *M. Payen*, xxiv, 326.
- bodies, preservation of, i, 307.
- Sea, observations on, ix, 349.
- —, level of, xl, 213.
- —, barometrical observations made to determine the level of, xlii, 214.
- —, account of, *J. D. Sherwood*, xlviii, 1.
- —, analysis of waters of, xliii, 395; *B. Silliman, Jr.*, xlviii, 10.
- Deaf and dumb, observations on the language of signs for, by *S. Ak-erly*, viii, 348.
- Deafness, cure of, ix, 204; xxx, 301.
- Deane, J.*, auroral arch in Vermont, xxxv, 380.
- Deane, J.*, fossil footmarks of Turner's falls, Mass., xlv, 73.<sup>f</sup>
- , — — — the ornithichnites of the Connecticut river sandstone, xlv, 178.
- , — — — in the Connecticut valley, xlvii, 381; xlviii, 158<sup>f</sup>; xlix, 213.<sup>f</sup>
- , — — —, reply to *E. Hitchcock*, xlvii, 399.
- , — — — and rain drops, xlix, 213.<sup>f</sup>
- , — — —, new species of Batrachian, xlix, 79.<sup>f</sup>
- Dearborn, H. A. S.*, on the changes of level in the North American lakes, xvi, 78.<sup>f</sup>
- Deaths, monthly, among infants in France, xix, 192.
- , statistics of, among the white troops in the West Indies, xxxvii, 196.
- , see *Obituary*.
- De Candolle, A. P.*, biographical notice of, *G. B. Emerson*, xlii, 217.
- , anecdote of, iv, 388.
- , *Species Plantarum* announced, i, 435.
- Deccan, geology, &c. of, xxxiii, 274.
- Decomposition of vegetable and animal substances, most favorable circumstances for, xv, 182.
- Decrepitation, cause of, *M. Baudrimont*, xxxi, 162.
- Definitions, remarks on, *D. Wilkie*, xxx, 28, 266; xxxi, 88, 236.
- Deflagrator, *Hare's*, iii, 105<sup>f</sup>; iv, 201; v, 94.<sup>f</sup>
- and calorimotor, their relations to one another, and to other galvanic instruments, vi, 337.
- , its improved forms, deflagrating power, anomalous polarity, *R. Hare*, vii, 347<sup>f</sup>; viii, 99; ix, 181.
- , galvanic, *R. Hare*, xl, 48.
- , improved form of, *M. Faraday*, xxxii, 170.
- Degradation of greenstone in the Connecticut valley, vi, 55.

- Degradation in western New York, *G. E. Hayes*, xxxv, 88.
- De la Beche*, *H. T.*, rocks of Europe, classification of, xviii, 26.
- De Lalande*, notice of, iv, 381.
- , prizes founded by, xxv, 190.
- De la Rive*, *A.*, galvanic instrument by, v, 395.
- and *Macaire*, experiments on muriatic acid, xi, 393.
- , present state (1833) of the principles in electricity, xxvi, 175.
- , on electro-magnetic currents, xxxiv, 6.
- De la Rue*, *W.*, structure of electro-precipitated metals, xlix, 390.
- Delirium, *Dwight's* cases of, i, 431.
- Del Rio*, *A.*, in reply to *Prof. Shepard*, xxx, 384.
- , reply of *Prof. Shepard* to, xxxi, 131.
- De Luc's column, on the construction of, *R. Hare*, xxv, 136.<sup>f</sup>
- De Kay*, *J. E.*, on the Pennatula sagitta of *Lamarck*, iv, 87.<sup>t</sup>
- , on the supposed transportation of rocks, xlii, 348.
- , report on the bones of Big Bone Lick, xx, 370.
- report on the fishes of New York, notice of, *D. H. Storer*, xlv, 275.
- Denderah, zodiac of, removed to France, v, 191; vi, 200.
- Dent*, *E. J.*, a portable mercurial pendulum, xxxv, 289.
- , on the errors of chronometers and on a new compensation-balance, xlv, 83.<sup>f</sup>
- Denudation by Long Lake and Mud Lake, Vt., xi, 39.<sup>f</sup>
- Descartes*, theory of, xxxiii, 3.
- , head, presented to the French Institute, iv, 390.
- Deserts, origin of, *W. C. Redfield*, xxv, 134; xxxiii, 261.
- Desfontaines*, life and writings of, xxvii, 201.
- Deshayes*, Tertiary Fossils, *Cuvier* and *Brongniart's* report on, xxxiii, 196.
- Desmarest*, *A. G.*, notice of, xxxvii, 124.
- Despretz*, *C.*, on crystallizable acetic acid, xxvii, 197.
- Detection of adulterations in alcohol, xix, 71.
- — — in ammonia, xix, 72.
- — — in arrow root, xix, 72.
- — — in calomel, xix, 72.
- — — in castor oil, xix, 77.
- — — in chromate of lead, xix, 73.
- — — in copaiva, xix, 73.
- — — in iodide of potassium, xix, 74.
- — — in lemon juice, xix, 75.
- — — in morphine, xix, 75.
- — — in oil of sweet almonds, xix, 76.
- — — of olives, xix, 76.
- — — in peroxide of manganese, xix, 78.
- — — in Peruvian bark, xix, 81.
- — — in phosphate of soda, xix, 82.
- — — in prussic acid, xix, 70.
- — — in soda, xix, 83.
- — — in sulphate of magnesia, xix, 84.
- — — in sulphate of quinine, xix, 84.
- — — in tartrate of potash, xix, 85.
- — — in tartar emetic, xix, 86.
- — — in vinegar, xix, 86.
- of arsenic, iii, 354; iv, 155; xlv, 213.
- — —, *L. Feuchtwanger* on, xix, 339.<sup>f</sup>
- — —, *Riench's* mode, xlv, 240.
- — —, *J. L. Smith* on, xl, 278; xlii, 75.<sup>f</sup>
- Devonshire, structure of, *Sedgwick* and *Murchison*, xxxi, 349<sup>f</sup>; xxxiii, 85.
- , lines of dislocation in, *De la Beche*, xxxi, 354.
- Dewpoint, remarks on, *A. A. Hayes*, xviii, 63.



- Dewey, C.*, aurora borealis at Rochester, N. Y., July, 1837, xxxiii, 143.
- , — of Sept., 1839, xxxviii, 146.
- , an early autumn indicated by the indigenous plants which blossom late, ii, 255.
- , on making meteorological observations, xi, 59.
- , sunsets in the west, xxxviii, 151; xlii, 200.
- , temperature of Lake Ontario, xxxvii, 242.
- , caricography by, vii, 264; viii, 93, 264; ix, 60, 257; x, 30, 265; xi, 147, 304; xii, 296; xiv, 351; xxv, 140; xxvi, 107, 376; xxvii, 236; xxviii, 270; xxix, 245; xxx, 59; xxxix, 50; xliii, 90; xlvi, 140; xlix, 42.
- , carices in the herbarium of Muhlenberg, xxv, 143.
- , — collected in Arctic America, xxvii, 240.
- , on the conduction of water, xxviii, 151; xxxi, 266.
- , on crystallized steatite, and ores of iron and manganese, v, 249.
- , hydrargillite, iii, 239.
- , Wavellite, from Richmond, Mass., ii, 249; iii, 239.
- , analyses of argentine and crystallized steatite, vi, 333.
- , mineralogy and geology of Williamstown, Mass., i, 337.
- , geology and mineralogy of part of Massachusetts, and some portions of the adjoining states, viii, 1f, 240.
- , geological section from Taconick range in Williamstown, to Troy, ii, 246.
- , notice of the flexible or elastic marble of Berkshire Co., Mass., ix, 241.
- , on the polished limestone of Rochester, xxxvii, 240.
- , striæ and furrows of the polished rocks of western N. York, xlv, 146.
- Dewey, C.*, singular conformation of limestone, ix, 19.<sup>f</sup>
- , on the rocks of New York, xxxiii, 121.
- , naphtha in quartz crystals, i, 345.
- Deweylite from Middlefield, Mass., analysis of, *C. U. Shepard*, xviii, 81.
- , analysis of, *T. Thomson*, xxxi, 173.
- De Witt, S.*, mode of drawing ellipses, xxiv, 369.<sup>f</sup>
- , a conical raingauge, xxii, 321.<sup>f</sup>
- , obituary notice of, xxvii, 395.
- Diabetes, cause of, xlix, 202.
- Diabetic urine, to detect sugar in, xlix, 200.
- Diallage allied to Augite, xx, 168.
- , in Connecticut, vi, 227.
- Diamonds at Algiers, xxviii, 394.
- , pretended artificial, xvi, 394.
- , matrix of, *D. Brewster*, xxix, 366.
- , on the origin and the use of, xvii, 372.
- , remarkable, v, 175.
- , new structure in, *D. Brewster*, xxxiv, 37.
- , supposed locality in the United States, xxix, 394.
- , mines of Russia, xix, 199.
- Diamond Hill, N. Y., ii, 13.
- Diathermancy, *M. Melloni*, xxvii, 228; xl, 313.
- Dichroism of the palladio-chlorides of potassium and ammonium, xlv, 165.
- Dickson, J.*, geology and mineralogy of parts of N. and S. Carolina, iii, 1.
- Dicobune, xxxvii, 232.
- Dictionary of Anamitic and Latin, *Taberd*, xl, 43.
- , Morrison's Chinese, iii, 377.
- , of ancient and modern Greek, in course of publication, iii, 381.
- Didymium, a new metal, xliii, 404.
- , and cerium, method of separating the oxides of, xlvi, 206.

- Differential calculus, on the first principles of, *T. Strong*, xlv, 269.
- equations of the second order, integration of, xlii, 273.
- Dikes, observed to have a crescent shape in Connecticut, *J. G. Percival*, xlvi, 205.
- of trap, cause of crescent form, *H. D. Rogers*, xlv, 334.
- —, in the Connecticut valley, vi, 47, 56.<sup>f</sup>
- —, of Maine, of four different ages, *C. T. Jackson*, xxxvi, 145.
- —, in Massachusetts, near Lowell, and at Nahant, &c., xxvii, 342.
- —, in Michigan, *D. Houghton*, xli, 184.
- —, in granite, New Hampshire, numerous, *O. P. Hubbard*, xxxiv, 105.<sup>f</sup>
- —, or natural walls, of Rowan, N. C, xiv, 242.
- —, in Montgomery, Vt., xxii, 189.
- —, connection of, with the iron ores of Essex Co., N. Y., *E. Emmons*, xl, 81.
- —, effect on limestone, xxix, 351.
- —, action on mica slate, xxvii, 343.
- of porphyry in Nova Scotia, xv, 203, 213.
- Dilatation of gases, *V. Regnault*, xlv, 63.
- Diluvial action, in Sullivan Co., N. Y., facts relating to, *W. A. Thompson*, xxiii, 243.
- scratches, see *Scratches*.
- Dimorphism, viii, 378; xlv, 370.
- Dinornis, notice of, *G. A. Mantell*, xlv, 184, 188.
- —, and on the Ornithichnites, *R. Owen*, xlv, 185; xlviii, 194.
- —, bearing of, on the subject of fossil footprints, xlviii, 199.
- Dinothorium, *R. Harlan*, xli, 178.
- Diophantine problems, solutions of two, *T. Strong*, xxxi, 156.
- Diopase, analysis of, *Damour*, xlvii, 216.
- Dip, magnetic, daily variation in, *M. Kupffer*, xxv, 194.
- —, in different regions, *T. H. Perry*, xlvii, 84.
- —, at St. Petersburg, xxi, 382.
- —, in the U. States, xl, 380.
- —, *ibid*, *J. Locke*, xxxix, 319; xl, 149; xli, 15.
- —, *ibid*, *E. Loomis*, xxxiv, 290<sup>f</sup>; xxxix, 41<sup>f</sup>; xliii, 93.
- —, at Baltimore, *J. Locke* and *Nicollet*, xli, 238.
- —, at Baltimore and Philadelphia, *A. D. Bache*, xl, 375.
- —, at Nantucket, Mass., *W. Mitchell*, xlvi, 157.
- —, in Ohio and Michigan, *E. Loomis*, xxxviii, 397.
- Diplomatic cipher, new, iv, 377.
- Dipping compass, on the manipulations of, *J. Locke*, xlii, 235.
- needle, theory of adjusting, *T. H. Perry*, xxxvii, 277.
- —, see *Magnetic Needle*.
- Dipyre, xlvii, 417.
- Disease among shell fish, *S. P. Hildreth*, xxxii, 97.<sup>f</sup>
- Disinfection by means of alkaline chlorides, xliii, 169.
- — of alcohol, xliii, 174.
- Disintegration of the dolomites of the Tyrol, *Daubeny*, xlii, 321.
- Dislocations, lines of, in Devonshire, *De la Beche*, xxxi, 354.
- of strata in the U. States, *E. Hitchcock*, xli, 268.
- Diving bell, descents in, at Portsmouth, N. H., *T. Alden*, xxii, 325.
- —, heat during descent in, xxv, 196.
- Divining rod, iii, 102; xi, 201.<sup>f</sup>
- Divisibility of a finite quantity of matter, on the infinite, *S. Clark*, ix, 356.

- Divisibility of a finite quantity of matter, remarks on, x, 99.
- Dix, D. L.*, notice of the *Aranea aculeata*, *Philtæna antiqua*, and some *Papiliones*, xix, 61.<sup>f</sup>
- Dixon's* manufacture of lead pots, xxi, 196.
- Döbereiner's* researches respecting platina, xviii, 151.
- , on formic acid, xxviii, 126.
- , new compounds of platinum, xxviii, 130.
- Dobson, P.*, remarks on the origin of boulders, x, 217.
- , views on boulders, *Murchison's* citation of, xliii, 200.
- Dog, tongueless, retaining the power of barking, xxxvi, 194.
- sleds of the Northwest, xiii, 391.<sup>f</sup>
- Dogs, anecdote of, xlvi, 243.
- Dolomisation, theory of von Buch, *Daubeny's* objections to, xxxi, 372.
- , — —, facts in Maine, not confirmatory of, *C. T. Jackson*, xxxvi, 147.
- Dolomite, analysis of, iv, 17.
- Dolomites of the Tyrol, disintegration of, *C. Daubeny*, xlii, 321.
- , in Africa, iv, 33.
- , in Connecticut, ii, 206; v, 36; viii, 255.
- , in Massachusetts, (fetid,) iii, 239; viii, 35.
- , in New York, iv, 17.
- Dominica, raised coral reef of, iv, 218.
- Donium, supposed new metal, *T. Richardson*, xxxi, 163.
- Donovan, E.*, notice of the works of, xxxvii, 163.
- Doolittle, A.*, the earliest American engraver, xxii, 183.
- Doolittle, I.*, on a new method of charring wood, xvii, 395.<sup>f</sup>
- , on crank motion, xii, 367; xiv, 60.<sup>f</sup>
- , gelatine from bones, i, 170.
- , description of a hydrostat, xiii, 64.<sup>f</sup>
- , on the revolving steam engine of Morey, ii, 101.<sup>f</sup>
- Doornik, J. E.*, observations on the use made of fossils in geological science, xv, 90.
- Dorudon, xlix, 216.
- Douglas, D.*, obituary notice of, xxx, 196.
- Douglass, D. B.*, plants from the headwaters of the Mississippi, iv, 56.
- Dové*, on the laws of storms, xlv, 315.<sup>f</sup>
- , — —, strictures on, by *R. Hare*, xlv, 137.
- , — —, reply to *R. Hare's* strictures on, by *W. C. Redfield*, xlv, 384.
- Downing, A. J.*, on the order *Cycadeæ* and the seed of *Cycas revoluta*, xxxii, 45.<sup>f</sup>
- Draining, extensive, in Russia, v, 393.
- Draper, J. W.*, allotropism of chlorine, as connected with the theory of substitutions, xlix, 346.<sup>f</sup>
- , carbonic acid and alkaline carbonates, decomposition of, by the light of the sun, xlvi, 398.
- , coins and medals, xxix, 157.
- , electricity, influence of, on capillary attraction, xxvi, 399.
- , elementary substance, change in, from exposure to the sun's rays, xlvi, 390.
- , idolatry and philosophy of the *Zabians*, xxviii, 201.
- , light, latent, xlv, 202.
- , tithonometer, xlvi, 217.<sup>f</sup>
- Dreelite, analysis of, xxx, 380.
- Drift, discussion on, at the Association of American geologists and naturalists, 1842, xliii, 151.
- , *P. Dobson's* views on the iceberg theory of, xlvi, 169.
- , *J. L. Hayes*, on the probable influence of icebergs on, xlv, 316, 326.
- , *E. Hitchcock*, theory of the U. States, xli, 248.
- , —, singular instance in Berkshire Co., Mass., xlvii, 132; xlix, 258.<sup>f</sup>

- Drift, *E. Hitchcock*, influence of ice on, xlv, 324.
- , —, copper in, Mass., xlv, 331.
- , *C. T. Jackson*, remarks on, xlv, 320.
- , *Nicollet*, remarks in opposition to the glacial theory, xlv, 323.
- , *W. C. Redfield*, influence of ice on, xlv, 325.
- , *H. D. Rogers*, remarks on, xlvii, 263.
- , —, connection of, with earthquake vibrations, xlvii, 273.
- , see farther under *Boulders* and *Scratches*.
- Drowned person, time of, under water, determined, xviii, 170.
- Drowning, resuscitation from, by oxygen gas, xvi, 250.
- Druids were Zabians, xxviii, 214.
- Drummond's mode of lighting light-houses by means of lime, xxi, 366.
- Dry rot, *G. Gibbs*, ii, 114.
- — —, cause of, xxx, 182.
- — —, *P. Rainey*, xxxiv, 169.
- — —, brief strictures on an article on, in vol. xxxiv, *J. T. Plummer*, xlii, 197.
- Drunkenness, remedy for, iv, 385.
- Ducatel, J. T.*, and *J. H. Alexander*, report on the geology of Maryland, xxvii, 1.
- , experiments on potassium and sodium, xxv, 90.
- Dumas, J.*, on the determination of nitrogen in organic compounds, xxviii, 134.
- Dumont's* filter and prepared charcoal, xxiii, 346.<sup>f</sup>
- Duncan, H.*, on the footprints of animals in sandstone in Scotland, xv, 84.
- Dunn's* Chinese collection at Philadelphia, xxxv, 391.
- Durant, C. F.*, improvement of the barometer, xxvii, 97.<sup>f</sup>
- Dwight, H. E.*, account of the Kaatskill mountains, ii, 11.
- Dwight, Benj. W.*, facts illustrative of the powers and operations of the human mind in a diseased state, i, 431.
- Dwight, S. E.*, on the eruption of Long lake and Mud lake, Vt., xi, 39.<sup>f</sup>
- , notice of a meteoric fireball, xiii, 35.
- Dye, new blue, by *Robiquet*, xxii, 197.
- , superior green, vii, 196.
- , pink, from the flower of the sweet balm, xxv, 413.
- , for hats, from oak bark, xxii, 383.
- , employment of iodine as, xv, 394.
- Dyeing, experiments on coloring matter for, *M. Persoz*, xxiv, 380.
- , use of chesnut wood in, i, 312.

## E.

- Eagle, bald, iv, 89.
- Earth, action of gravity variable, and producing errors in the determination of the figure of, xv, 172.
- , *Cordier's* essay on the temperature of, noticed, xv, 109.
- , —, on fluidity of the centre of, xv, 117, 118.
- , —, on tides in the surface of, xv, 123.
- , —, change of level in the crust of, owing to contraction or to tides in the fluid interior, xv, 122, 124.
- , *Fourier* on the temperature of, xxxii, 1.
- , heat of the interior of, *R. Patterson*, xxxvii, 357.
- , remarks on the theory of central heat, *W. Maclure*, xv, 384.
- , deductions from the igneous theory of, *J. H. Lathrop*, xxxix, 90.

- Earth, oblateness and axes of, degree of a meridian, &c., *T. J. Cram*, xxxi, 222.<sup>f</sup>
- Earthenware and porcelain, on the art of, xxvi, 233. History of the art, xxvi, 233.<sup>f</sup>
- Earthquakes in America :  
 — — —, South, *M. Hamilton*, xli, 57.  
 — — —, — — —, in Chili, 1835, xxviii, 336.  
 — — —, — — —, at eruption of Cosiguina, xxviii, 332.  
 — — —, in U. States, i, 93 ; xlv, 419.  
 — — —, — — —, in New England, xxxix, 336 ; xl, 204, 205, 206.  
 — — —, — — —, in Connecticut, Aug., 1840, xxxix, 335.  
 — — —, — — —, at Hartford, Apr. 12, 1837, xxxii, 399.  
 — — —, — — —, E. Had-dam subterranean noises, xxxix, 336.  
 — — —, — — —, Mississippi, notice of, iii, 20.  
 — — —, — — —, *ibid*, from the travels of *Flint*, xv, 366.  
 — — —, — — —, *ibid*, *F. C. Usher*, xxxi, 294.<sup>f</sup>  
 — — —, near the Saguenay, *R. H. Bonnycastle*, xxx, 236.  
 — — —, in West Indies, Feb., 1843, xlv, 419 ; xlvii, 182.  
 — — —, in Europe, in Sicily, 1823, ix, 216.  
 — — —, at Florence, March, 1835, xxviii, 340.  
 — — —, in Asia, in Burmah, 1839, xxxviii, 385.  
 — — —, at Cutch, 16th June, 1819, iv, 315.  
 — — —, in Palestine, xlviii, 14.  
 — — —, at Tabriz, xxxvii, 351.  
 — — —, causes and effects of, *I. Lea*, ix, 209.  
 — — —, remarks on, xiv, 72.  
 — — —, *G. Bischof* on the natural history of, xxxvii, 41.<sup>f</sup>  
 — — —, — — —, instances of, xxxvii, 41, 47.
- Earthquakes, *G. Bischof*, causes of, xxxvii, 42.  
 — — —, — — —, connection with volcanoes, xxxvii, 43.  
 — — —, — — —, propagation of, xxxvii, 46.  
 — — —, — — —, direction of, xxxvii, 47.  
 — — —, — — —, elevation from, xxxvi, 273.  
 — — —, — — —, elevation of the Andes, xxxvii, 49.  
 — — —, — — —, state of the barometer not a cause, xxxvii, 50.  
 — — —, — — —, theory of central heat, xxxvii, 52.  
 — — —, *Necker's* views, xxxvii, 236.  
 — — —, *H. D. Rogers*, characters of some recent, as bearing upon the dynamics of geology, xlv, 341.  
 — — —, — — —, undulatory character of, xlvii, 274.  
 — — —, — — —, on undulations of, a cause of flexure in rocks, xliii, 177 ; xlv, 341.  
 — — —, effects of, on the growth of wheat, ix, 208.
- East and West Rock, N. Haven, Ct., geological structure of, vi, 44.  
 — — —, scenery of, vii, 1.
- Eastman, R.*, improved rotary saw machine, v, 146.<sup>f</sup>
- Eaton, A.*, alcohol, observations on, xvi, 173.  
 — — —, geology of the Highlands, N. York, v, 231.  
 — — —, — — — and meteorology west of the Rocky Mts., xxv, 351.  
 — — —, — — — along the Erie canal, viii, 358 ; ix, 355 ; xiii, 383.  
 — — —, — — —, coal formations of N. York, xix, 21.  
 — — —, — — — of northern states, notice of Index to, i, 69.  
 — — —, — — —, Cherty limerock, xxxvi, 61.  
 — — —, — — —, coal, anthracite, Washington Co., N. Y., xvi, 299.  
 — — —, — — — of Southampton Lead mine, i, 136.  
 — — —, — — —, diluvial deposits in N. York and elsewhere, xii, 17.

- Eaton, A.*, gravel near Troy, v, 22.  
 —, North American localities, showing equivalency of rocks on opposite sides of the Atlantic, xxxix, 149.  
 —, cardinal points in stratigraphical geology, xxi, 199.  
 —, geological equivalents, xxi, 132.  
 —, — nomenclature of rocks, xiv, 145<sup>f</sup>, 359.  
 —, — Prodrômus, xvii, 63.  
 —, gold rock of the south is talcose slate, xviii, 50.  
 —, — — of Mexico equivalent to that of the Carolinas, xx, 124.  
 —, *Boletus ignarius*, analogous to animal substances, vi, 177.  
 —, *Crotalus reliquus*, xx, 122.<sup>f</sup>  
 —, gases and salts forming near Erie canal, xv, 233.  
 —, living antediluvial animals, xv, 233.  
 —, number *five* a favorite in nature, xvi, 172.  
 —, magnetic needles, improvement in manufacture of, xii, 14.  
 —, trilobites, xxii, 165.  
 —, notice of new edition of the Geological Text Book of, xxii, 391.  
 —, remarks by *D. Thomas* on the views of, on the coal formations of New York, xix, 326.  
 Ebullition by cold, apparatus for producing, *R. Hare*, xxxiii, 248.<sup>f</sup>  
*Echinus*, see ZOOLOGY, *Radiata*.  
 Echo, in Virginia, *C. G. Page*, xxxvi, 174.  
 —, in N. York state, *J. B. Church*, xxxvi, 175.  
 — a means of determining the depth of a sea, not effectual, *C. Bonnycastle*, xxxviii, 160.  
 Eclipse, solar, Feb. 12, 1831, xxii, 189.  
 —, —, in 1834, observation on, *L. Brant*, xxvii, 386.  
 —, —, of May, 1836, observations on, xl, 29.  
 Eclipse, solar, of Sept., 1838, observations on, xxxviii, 158, 163, 172, 174; xl, 29.  
 —, —, —, observations on, *D. Olmsted*, xxxv, 174.  
 —, —, —, *ibid*, micrometric measures, *E. P. Mason*, xxxv, 176.  
 —, —, of July, 1842, xlii, 175; xliii, 401; xlv, 211.  
 —, —, —, observations suggested by, xlii, 395.  
 Edinburgh, on the geology of Calton Hill, near, *J. W. Webster*, i, 230.<sup>f</sup>  
 —, freshwater limestone of Burdie House, *S. Hibbert*, xxviii, 365.  
*Edmondson, T.*, modification of *Ampère's* rotating galvanic element, xxvi, 370.<sup>f</sup>  
 —, rotating armatures, xxvi, 205<sup>f</sup>; xxxii, 399.  
 Education in Africa, ii, 343.  
 — —, in Egypt, xii, 389.  
 — in England, number of students at Cambridge and Oxford, xix, 195.  
 — in Europe, by schools of mutual instruction, iv, 199.  
 — —, in Austria, Vienna Polytechnic Institute, x, 379.  
 — —, in Belgium, at Brussels, vii, 382.  
 — —, in Denmark, xii, 189; xiii, 173; xvii, 394.  
 — —, —, at Copenhagen, x, 175.  
 — —, —, —, bequest for, ix, 183.  
 — —, —, —, deaf and dumb, xii, 197.  
 — —, in France, vii, 199; xii, 392.  
 — —, —, in Paris, free commercial school, x, 171.  
 — —, —, —, *M. Cochins's* munificence, xvii, 394.  
 — —, —, at Caen, in prison, v, 382.  
 — —, —, at Lyons, xx, 174.  
 — —, —, at Marseilles, v, 191.

- Education in Europe, in Germany or Prussia, viii, 185; xiii, 159; xx, 388.
- — —, — — —, Halle University, xiv, 381.
- — —, — — —, Berlin Rural School, ix, 187.
- — —, — — —, at Munich, iv, 196.
- — —, — — —, Wurtemberg university, viii, 183.
- — —, in Greece, at Chios, iv, 196.
- — —, in Holland or Netherlands, xviii, 182.
- — —, — — —, at Maestricht, by mutual instruction, v, 386.
- — —, in Hungary, xiii, 165.
- — —, in Poland, at Warsaw, ix, 186.
- — —, in Portugal, vii, 198; ix, 187.
- — —, in Russia, v, 176; xx, 176.
- — —, — — —, St. Petersburg Greek Seminary, vi, 387.
- — —, — — —, endowment of schools by a princess, iv, 386.
- — —, in Sweden, ix, 182.
- — —, in Switzerland, vi, 391; vii, 381; xii, 191; xiii, 397.
- — —, — — —, at Bâle, rural school, ix, 368.
- — —, — — —, at Geneva, v, 179, 380; x, 383.
- — —, in U. States, xx, 413.
- — —, in New York, xv, 401; xxii, 415; xxv, 258; xxvii, 177; xxx, 389; xlix, 176.
- — —, in Connecticut, N. Haven Gymnasium, xiii, 385.
- — —, different systems of, *W. Macclure*, ix, 160, 163.
- — —, mutual instruction schools in Europe, iv, 199.
- — —, M. Ordinaire's method, vii, 199, 383.
- — —, Owen's plan, ix, 383.
- — —, Owen's establishment, x, 165.
- — —, Pestalozzian system, *W. Macclure*, ix, 163; x, 145.
- — —, new method in Latin, v, 182.
- — —, of the poor, iii, 379.
- Education, American Annals of, *W. C. Woodbridge*, xix, 174, 357.
- — — and government of boys, vii, 161.
- — —, original papers relating to a course of liberal, xv, 297.
- Edwards, J.*, observations on spiders, xxi, 109.<sup>f</sup>
- Edwardsite, new mineral, with an analysis, *C. U. Shepard*, xxxii, 162.
- — —, identical with monazite, *G. Rose*, xxxix, 249.
- — —, *ibid.*, *C. U. Shepard*, xxxix, 251.
- — —, crystallization of, xxxiii, 202.<sup>f</sup>
- Eggs, artificial incubation, ix, 196.
- — —, mode of blowing for preservation, xxi, 161.
- — —, means of preserving, v, 379.
- — —, Scotch method of preserving, xxvi, 188.
- Egypt, notices of, xxviii, 23.<sup>f</sup>
- — —, notice of works in, iii, 378.
- — —, — — — the canal of Mahommedie, xxviii, 27.
- — —, — — — the Nile, xxviii, 28.
- — —, — — — Mahomet Ali, xxviii, 30.
- — —, education in, xii, 389.
- — —, embalmed ibis, bat, &c. from, *S. G. Morton*, xli, 187.
- — —, statistics of, vi, 389.
- — —, position of Memphis in, xxxi, 373.
- Egyptian crania, observations on, *S. G. Morton*, xlvi, 268.
- Ehrenberg, C. G.*, on recent and fossil infusoria, xxxiii, 111; xxxv, 371.<sup>f</sup>; xxxvii, 116.
- — —, *ibid.*, American, distribution, extent and influence of, xliii, 393; xlvi, 297.<sup>f</sup>
- — —, — — —, in Virginia, xlvi, 300; xlvi, 201.
- — —, — — —, in New York, at West Point, xlvi, 303.
- — —, — — —, at Berlin, xlii, 388.
- — —, — — —, general results of researches on, xlvi, 208.
- — — and *Hemprich*, journey in northern Africa, vii, 195.
- Elaine from oils, new mode of obtaining, *M. Pechet*, ix, 189.

- Elaine, separation of, from oils, xiii, 186.
- and stearine, vi, 377.
- Elasticity, an experiment on, with wine-glasses, xxii, 190.<sup>f</sup>
- Elatерite, or fossil caoutchouc, xl, 215.
- Electrepeter, *Clarke's*, xxxiii, 224.<sup>f</sup>
- , new form of, *C. G. Page*, xxxiii, 377.<sup>f</sup>
- , magnetic and electrotome, *C. G. Page*, xxxv, 112.<sup>f</sup>
- Electric amalgam, *W. R. Johnson*, xxv, 68.
- battery, i, 292.<sup>f</sup>
- brush, *R. Hare*, xxxii, 277.<sup>f</sup>
- currents along the muscles and nerves different, xix, 180.
- — in the nerves, on the hypothesis of, *M. Matteucci*, xlix, 387.
- —, course of, in electric discharges, *W. R. Johnson*, xxv, 58.
- —, effect of placing a candle between the poles, *W. R. Johnson*, xxv, 59.
- —, two or more over the same conductor without interference, *S. F. B. Morse*, xlv, 418.<sup>f</sup>
- — and sparks from magnets, *J. Henry*, xxii, 403.
- —, ponderable matter transported by, xii, 383.
- discharges, lateral, *J. Henry*, xxxiv, 16.<sup>f</sup>
- discriminator, (electroscope,) *R. Hare*, xxv, 136.<sup>f</sup>
- excitement in leather by friction, xxxvii, 197.
- —, peculiar case of, in a woman, xxxiii, 394; xl, 386.
- experiments, season favorable for, *W. R. Johnson*, xxv, 60.
- fish, on the coast of Cape Cod, *D. H. Storer*, xlv, 213.
- —, *Gymnotus*, xl, 386.
- fluids, the existence of two, opposed by *R. Hare*, vii, 103.<sup>f</sup>
- —, observations on, *C. G. Page*, xxxvi, 353.
- Electric induction, decomposition of water by, *M. Hachette*, xxiv, 142.
- —, currents of electricity from, of different orders, *J. Henry*, xxxviii, 232.<sup>f</sup>
- —, polarity produced by, xxxviii, 3.
- —, *R. Hare*, letters on, to *M. Faraday*, xxxviii, 1, 19; xli, 1.
- —, *M. Faraday*, in reply to *R. Hare*, xxxix, 108; xlii, 291.
- jar, on the discharge of, xxxviii, 6.
- kite, for determining the electricity of the upper currents of the air, *J. Swaim*, xxxii, 304.<sup>f</sup>
- lady, explanation of, xxxiii, 394; xl, 386.
- light, a mode of producing, viii, 380.
- machine, form and arrangement of, *W. R. Johnson*, xxv, 66.
- —, plate, viii, 378.
- —, —, *R. Hare*, vii, 108<sup>f</sup>; xxxii, 272.<sup>f</sup>
- —, communication of, with the earth not necessary, *R. Hare*, xxiv, 253.
- pile, theory of, xix, 375.
- shock from a cat, mode of receiving, viii, 391.
- sound, xlix, 390.
- spark, *W. R. Johnson*, xxv, 57.
- —, length of, as affected by the size of the balls, *W. R. Johnson*, xxv, 60.
- —, perforations by, in a quire of paper or card, *W. R. Johnson*, xxv, 64.
- —, — *ibid*, *C. G. Page*, xxxvi, 353.
- — drawn from a heated stove, xl, 385, 386.
- —, remarks on the so-called positive and negative, *R. Hare*, xxxii, 275.<sup>f</sup>
- —, *Wheatstone's* experiment to determine whether there is a sensible duration to, xxviii, 60.



- Electric spark from magnets, *J. Henry*, xxii, 403.
- — — — —, *J. P. Emmet*, xxiv, 78.<sup>f</sup>
- syringe, *C. G. Page*, xxvi, 110.<sup>f</sup>
- ELECTRICITY.**
- , animal, mode of receiving a shock from a cat, viii, 391.
- , —, peculiar case in a woman, xxxiii, 394; xl, 386.
- , —, of fish on the coast of Cape Cod, *D. H. Storer*, xlv, 213.
- , —, *Matteucci* on, xxi, 156.
- , —, observations on, *Linari* and *Matteucci*, xxxii, 198; xlix, 388.
- , atmospheric, water decomposed by, xx, 179; xxi, 368.
- , —, observations on, *M. Matteucci*, xxx, 376.
- , blasting by means of, xvi, 372.<sup>f</sup>
- , capillary attraction influenced by, *J. W. Draper*, xxvi, 399.
- , — — — — productive of, ix, 193.
- , conducting power of liquid gases, xxi, 374.
- , — — — — of the metals, xii, 199.
- , — — — — of steam, xxvii, 206.
- , — — — — of the solar rays, xvii, 391.
- , the conductibility of, by liquids, increased by adding water, xvii, 165.
- by contact, *Karsten*, xxxi, 159.
- , decomposition of water by atmospheric and common, xxi, 368.
- , discharge, lateral, *J. Henry*, xxxiv, 16.<sup>f</sup>
- , effects of, on vegetation, *M. Baric*, xxxi, 160.
- , fluids of, one or two, *R. Hare*, vii, 103.<sup>f</sup>
- , —, *ibid*, *C. G. Page*, xxxvi, 353.
- ELECTRICITY.**
- , generation of, by the electrical machine, *G. W. Rains*, xlix, 93.<sup>f</sup>
- , evaporation in gilding, producing, v, 198.
- , induced currents of different orders produced by, *J. Henry*, xxxviii, 232.<sup>f</sup>
- , influence of, on the process of beer making, xxxiv, 8.
- , —, on capillary attraction, xxvi, 399.
- , —, on odors, xv, 394.
- , —, on phosphorescence, *T. J. Pearsall*, xxi, 378.
- , light acting on an iodized plate, producing, xlvii, 190.
- , machinery producing, *A. Smith*, xxxix, 134.
- , medical, *J. Hall*, iii, 166.
- , motion producing and motion produced by, *J. Locke*, xxxiv, 130.
- , needle deflected by, xii, 199.
- of peroxide of manganese, xxx, 179.
- , ponderable substances transferred by, *A. Fusinieri*, xxii, 355.
- , principles of, in 1833, *A. de la Rive*, xxvi, 175.
- produced by the action of light on an iodized silver plate, xlvii, 190.
- — — — by machinery, *A. Smith*, xxxix, 134.
- — — — by a separation of parts, or fracture, viii, 379.
- from steam, xl, 382.
- of the tourmaline, xvi, 390.
- retained in a vacuum, xxix, 354.
- , science of, in 1833, *A. de la Rive*, xxvi, 175.
- , theory of, *J. D. Whelpley*, xlviii, 364.
- , —, *Van Marum* on, iii, 385.
- and magnetism; connection between, iii, 386.<sup>f</sup>

## ELECTRICITY.

- , heat and magnetism, on the connection of, *J. F. Dana*, vi, 163.<sup>f</sup>
- , thermo-, see *Thermo-Electricity*.
- , *Galvanic battery*, *E. de Butts*, viii, 271.<sup>f</sup>
- — — of carbon, xxxix, 132.
- — — —, *B. Silliman, Jr.*, xliii, 393; xliv, 180.<sup>f</sup>
- — —, *Crosse's*, some account of, xxxii, 372.
- — —, *De la Rive's*, v, 395.
- — —, dry, xii, 195; xvii, 162.
- — —, *Grove's*, xxxviii, 116.
- — —, —, experiments with, *S. F. B. Morse*, xlv, 390.<sup>f</sup>
- — —, *R. Hare's* new modifications of, iii, 105.<sup>f</sup>
- — —, — calorimotor, i, 413; v, 94, 357, 364; vi, 337; xxxii, 284.<sup>f</sup>
- — —, — deflagrator, iii, 105<sup>f</sup>; iv, 201; v, 94; vi, 337; vii, 347<sup>f</sup>; viii, 99; ix, 181; xl, 48.
- — —, — — —, improved form of, *M. Faraday*, xxxii, 170.
- — —, — — —, combining the advantages of the trough of Cruikshank with the deflagrator, xxxii, 285.<sup>f</sup>
- — — of great power, *F. W. de Moleyns*, xlv, 357.
- — —, *J. Henry*, on a spark from a long conductor uniting the poles of, xxviii, 327.
- — —, — — —, action of a spiral conductor, xxviii, 329.
- — —, *C. G. Page*, on iron or any metal a substitute for copper, xxxii, 197.
- — —, — — —, on the benefit of fresh immersion, xxxvi, 137.<sup>f</sup>

## ELECTRICITY.

- Galvanic battery*, *W. B. and H. D. Rogers*, experimental enquiry into some of the laws of, xxvii, 39.<sup>f</sup>
- — —, — — —, relative influences of the zinc and copper, xxvii, 41.
- — —, — — —, examination of *Ritchie's* law of surface, xxvii, 53.
- — —, — — —, influence of temperature, xxvii, 57.
- — —, *J. B. Rogers* and *J. Green*, *ibid*, xxviii, 33.
- — —, — — —, relative importance of the zinc and copper, xxviii, 34.
- — —, — — —, relative distance of the plates, xxviii, 39.
- — —, — — —, deflecting power from different menstrua, xxviii, 40.
- — —, *W. Sturgeon*, difference in the effects of the two polar wires, xxxix, 31.<sup>f</sup>
- — —, — — —, *Watkins' dry*, xvii, 162.
- — — blasting, *R. Hare*, xxi, 139; xxvi, 352<sup>f</sup>; xxxviii, 188.
- — —, *H. K. G. Morgan*, xxxviii, 33.
- — — calorimotor, *Hare's*, i, 413<sup>f</sup>; v, 94, 357, 364; vi, 337; xxxii, 284.<sup>f</sup>
- — —, for galvano-ignition apparatus, *R. Hare*, xxxii, 284.<sup>f</sup>
- — — circle, theory of, *T. Graham*, xxxviii, 117.
- — — currents, caloric a cause of, *J. P. Emmet*, xxv, 269.
- — —, — — —, remarks on, xviii, 199.<sup>f</sup>
- — — and sparks from the horse-shoe magnet, *J. P. Emmet*, xxiv, 78.<sup>f</sup>
- — — deflagrator, *Hare's*, iii, 105<sup>f</sup>; iv, 201; v, 94; vi, 337; vii, 347<sup>f</sup>; viii, 99; ix, 181; xl, 48.

## ELECTRICITY.

- Galvanic* deflagrator, improved form of, *M. Faraday*, xxxii, 170.
- experiments by *A. Crosse*, producing crystals, and, as supposed, insects, xxxv, 125.<sup>f</sup>
- — by *R. Hare*, viii, 145.
- — with grasshopper's legs, *J. W. Bailey*, xxxi, 292.<sup>f</sup>
- ignition of gunpowder, *R. Hare*, xxxvii, 269.
- induction, *J. P. Emmet*, xxvi, 23.<sup>f</sup>
- lamp, an improvement in, by *Dr. J. Culbush*, ii, 332.
- light, transmission of, through metals of different conducting powers, *J. Thomas*, xxxiv, 205.<sup>f</sup>
- —, daguerrotype experiment by, *B. Silliman, Jr.* and *W. H. Goode*, xliii, 185.
- multiplier, see *Galvanometer*.
- music, production of, *C. G. Page*, xxxii, 396; xxxiii, 118.
- phenomenon, attending the soldering of water pipes in N. York city, xvii, 194.
- protection by the contact of heterogeneous metals, xvi, 263.
- trough, *Watkins's*, xvi, 215.
- Galvanism*, anthracite a conductor of, v, 200.
- , charcoal fused by, v, 108, 361; viii, 147, 288; xxxviii, 190.
- , — —, *L. Vanuxem's* examination of, viii, 292.
- , on colors supposed to be transferred by, through animal substances, *A. Jones*, xxi, 316.
- , *A. Crosse's* experiments in, see *Crosse*.
- , crystallization of metals by, *G. Bird*, xxxiii, 267.
- , —, *M. Becquerel*, xvii, 383.
- , crystals and insects, *A. Crosse*, xxxv, 125.<sup>f</sup>
- , engravings copied by, *von Kobell*, xlvi, 221.<sup>f</sup>

## ELECTRICITY.

- Galvanism*, engravings and medals by, *T. Spencer*, xl, 157.<sup>f</sup>
- , fossils copied by, xlii, 327.
- , gilding by, xli, 402.
- , insects supposed to be produced by, xxxii, 374<sup>f</sup>; xxxiii, 272; xxxv, 125<sup>f</sup>; xlix, 227.
- , — —, *W. H. Weekes*, xliii, 395.
- , grasshopper's legs, a substitute for frogs, *J. W. Bailey*, xxxi, 292.<sup>f</sup>
- , insulation of wires, a mode of, proposed, *A. A. Hayes*, xx, 409.
- , metals precipitated by, structure of, *W. de la Rue*, xlix, 390.
- , minerals changed by, *R. W. Fox*, xxxi, 373.
- , results from heat of, and decomposition, *W. Sturgeon*, xxxix, 29.
- , shocks from the calorimeter, how increased, *C. G. Page*, xxxi, 137.<sup>f</sup>
- , size of plates, influence of, in, xxvii, 189.
- , theory of, *Prof. Pfaff*, xix, 178.
- , theory of, *R. Hare*, i, 413.<sup>f</sup>
- , theory of, *Schönbein*, xxxviii, 119.
- Galvanography*, *von Kobell*, xlvi, 221.<sup>f</sup>
- , *T. Spencer*, xl, 157.<sup>f</sup>
- , fossils copied by, xlii, 327.
- Galvano-ignition* apparatus, *R. Hare*, xxxii, 282.<sup>f</sup>
- Galvanometer*, *R. Hare's* improved, xxvi, 359.<sup>f</sup>
- , —, rotary multiplier, xxxviii, 339.<sup>f</sup>
- , *J. Henry*, on the application of, to electro-magnetic apparatus, xix, 400.<sup>f</sup>
- , *J. Locke*, notice of a new, xxvi, 103<sup>f</sup>, 378.<sup>f</sup>
- , —, large thermoscopic, xxxiii, 365.

## ELECTRICITY.

- Galvanometer, *J. P. Emmet's*, new form of, xxvi, 311.
- , *C. G. Page*, on the use of, xxxii, 354.<sup>f</sup>
- , —, astatic or rotary, xxxiii, 376.<sup>f</sup>
- , —, axial, xlix, 136.<sup>f</sup>
- , —, circular, xxxv, 259.<sup>f</sup>
- , modified, *W. B. and H. D. Rogers*, xxvii, 39.<sup>f</sup>
- Galvanoscope, a means of detecting the failure of water in steam boilers by, *C. G. Page*, xxxvi, 141.<sup>f</sup>
- Galvano-magnetic condenser, v, 394.
- apparatus, *J. F. Dana*, vi, 330.<sup>f</sup>
- , Italian, v, 388.
- Electro-chemical action, *G. D. Botto*, xxiv, 197; xxix, 369.
- odor, ozone the cause of, *Schönbein*, xli, 43.
- Electro-dynamic induction of coils, *J. B. Zabriskie*, xxxii, 308.<sup>f</sup>
- , various experiments in, and principles deduced, *J. Henry*, xxxviii, 170, 209.<sup>f</sup>
- , observations on, *J. Henry*, xli, 117.<sup>f</sup>
- , two kinds of, *J. Henry*, xli, 129.<sup>f</sup>
- , theoretical considerations, *J. Henry*, xli, 135.<sup>f</sup>
- Electro-magnet, *Henry's* large, xix, 408.<sup>f</sup>
- , made for the Laboratory of Yale College, xx, 200.
- , a variety of, proposed, *J. Humbert*, xxxviii, 205.
- , *Mr. Ganby's*, xxix, 354.
- , *C. G. Page's*, xxxv, 253.<sup>f</sup>
- , see farther under *Electro-magnetic apparatus*.
- Electro-magnetic apparatus, *J. H. Abbot*, xl, 104.<sup>f</sup>
- Electro-magnetic apparatus, *P. Barlow*, v, 396.<sup>f</sup>
- , *A. W. Campbell's* engine, xxxv, 343.
- , *E. M. Clarke*, (magneto-electric) xxxiii, 213<sup>f</sup>; —electropeter, xxxiii, 224.<sup>f</sup>
- , —, modes of experimenting with, in decomposing water, xxxiii, 217.<sup>f</sup>
- , —, mode of giving shocks, xxxiii, 216.<sup>f</sup>
- , —, mode of scintillating iron wire, xxxiii, 219.<sup>f</sup>
- , —, mode of adjusting the intensity armature, xxxiii, 218.<sup>f</sup>
- , —, rotation by magnetic electricity, xxxiii, 221.<sup>f</sup>
- , —, mode of igniting charcoal, xxxiii, 222.<sup>f</sup>
- , *T. Davenport*, xxxii, Append. after 216; xxxiii, 193.
- , —, rotary, xxxii, 216<sup>f</sup>, App., and 399.
- , *T. Edmonson*, modification of Ampère's rotating, xxvi, 370.<sup>f</sup>
- , —, rotating armature, xxvi, 205<sup>f</sup>; xxxii, 399.
- , *J. Henry's* application of a galvanic multiplier, xix, 400.<sup>f</sup>
- , —, *J. B. Joslin*, xxi, 86.<sup>f</sup>
- , —, *J. Locke*, and on magneto-electricity, xxxiv, 125.<sup>f</sup>
- , —, *B. R. McConnell's*, rotating, xxxiii, 188.
- , —, *C. G. Page*, xxxiii, 191<sup>f</sup>; xxxiv, 364; xlix, 131.<sup>f</sup>
- , —, double axial reciprocating engine, xlix, 139.<sup>f</sup>
- , —, with revolving armature, xxxvi, 350.<sup>f</sup>

- Electro-magnetic apparatus, *C. G. Page*, compound electro-magnet, xxxv, 253.<sup>f</sup>
- , -----, electro-tome, xxxv, 112<sup>f</sup>, 253.<sup>f</sup>
- , -----, reciprocating armature engine, xxxv, 263.<sup>f</sup>
- , -----, with vibrating armature, xxxv, 267.<sup>f</sup>
- , -----, circular galvanometers, xxxv, 259<sup>f</sup>;— with double helix for inducing magnetism, xxxv, 261.<sup>f</sup>
- , -----, electropeter, new form of, xxxiii, 377<sup>f</sup>; xxxv, 112.<sup>f</sup>
- , -----, *W. H. Pepsy*, vii, 195.
- , -----, *M. Pixii*, xxiv, 144, 146<sup>f</sup>, 196.
- , -----, *J. B. Zabriskie*, model of engine, xxxii, 313.<sup>f</sup>
- , -----, rotating, xxxvi, 129.<sup>f</sup>
- currents, *A. de la Rive*, xxxiv, 6.
- disc of *Arago*, xxiv, 143.
- induction, see *Electro-dynamic*.
- and magneto-electric formula, xxxv, 356.<sup>f</sup>
- properties of metalliferous veins, *R. W. Fox*, xx, 136.
- telegraph, *S. F. B. Morse's*, xxxiii, 185.<sup>f</sup>
- , -----, see farther, *Magneto-electric*.
- Electro-magnetism, early experiments in, iii, 383; v, 391.
- , experiments in, *J. H. Abbot*, xl, 104.<sup>f</sup>
- , -----, *J. P. Emmet's* discoveries (magneto-electric) in, xxiv, 78<sup>f</sup>; xxvi, 311; xxviii, 331.
- , -----, on the cause of voltaic currents in, xxvi, 23.<sup>f</sup>
- , -----, *R. Hare's* experiments, viii, 145.
- Electro-magnetism, *R. Hare's* experiments, in confirmation of *Henry's*, xx, 143.
- , -----, *M. Jacobi* on, as a moving power, xl, 339.
- , -----, ibid, laws of, xl, 340.
- , -----, *G. Moll's* experiments in, xix, 329.
- , -----, ----- experiments to determine how far galvanic surfaces could be diminished and retain magnetic power, xxvi, 177.
- , -----, *C. G. Page's* experiments on the application of, as a moving power, xxxiii, 118, 190<sup>f</sup>; xxxv, 106.
- , -----, *M. Pixii's* experiments in, xxiv, 144, 146<sup>f</sup>, 196.
- , -----, *J. B. Zabriskie*, on the induction of metallic coils, xxxii, 308.<sup>f</sup>
- Electrometers, iii, 372.
- Electrometer, single leaf, *R. Hare*, vii, 351<sup>f</sup>; viii, 99; xxv, 136.<sup>f</sup>
- Electromotors, *S. Dal Negro*, xxvii, 189.
- , new property of elementary, *S. Dal Negro*, xxv, 193.
- Electrography, gilding by, xli, 402.
- , *v. Kobell* on, xlix, 221.
- Electroscope, *R. Hare*, xxv, 136.<sup>f</sup>
- Electrotome, *C. G. Page*, xxxv, 112<sup>f</sup>, 253.<sup>f</sup>
- Electrotype, account of, *T. Spencer*, xl, 157.<sup>f</sup>
- Elephant, death of, iv, 393.
- of Siberia, xxvii, 353.
- , fossil, near Bloomfield, Ohio, xxv, 256.
- , -----, Jackson Co., Ohio, xxxiv, 358<sup>f</sup>, 363.<sup>f</sup>
- , ----- remains, Ironduquet Creek, xxxii, 377.
- bones and Mylodon (?) from Oregon, *H. C. Perkins*, xlii, 136.<sup>f</sup>
- , -----, from near Beering's Straits, xvi, 382.
- tooth, from near the shores of Lake Erie, xiv, 31.

- Elevation above the ocean of some heights in Ohio, Michigan, Pennsylvania and New York, *C. Whitelsey*, xlv, 12.
- — — — — ibid in western New York and of Lake Erie, *C. Dewey*, xxxiii, 122.
- — — — — in Wisconsin, *I. A. Lapham*, xlvi, 258.
- Elevation, *Hopkins'* theoretical views respecting the geological phenomena of, xxxi, 365.
- , *G. E. Hayes*, on the effects of the ocean in western New York, during, xxxv, 86.
- , *W. W. Mather* on causes of, in rise of sedimentary rocks of United States, xlix, 284.
- , *H. D. and W. B. Rogers*, theory of, xlv, 360.
- of Ceylon, evidence of, vi, 194.
- of the coast of Chili, xxviii, 236; xxx, 110.
- — — — — and South America, *C. Darwin*, xxxiii, 100.
- of the banks of the Mississippi, 1811, *F. C. Usher*, xxxi, 294.<sup>f</sup>
- of Sweden, *C. Lyell*, xxviii, 72, 387; xxix, 363.
- of the Scandinavian coast, *L. Beamish*, xlvii, 184.
- of Dominica, St. Christopher's, St. Eustatia and Saba, West Indies, indicated by raised coral reefs, iv, 218.
- Elizabeth Islands, vii, 240.<sup>f</sup>
- Elk of Ireland, iv, 246.
- , fossil bones of, in North Carolina, xxvii, 170.
- Ellet, W. H.*, on the compounds of cyanogen, xviii, 329.
- Ellipses, mode of drawing, *S. DeWitt*, xxiv, 369.<sup>f</sup>
- , on the rectification of, *C. Wilder*, xviii, 38.<sup>f</sup>
- Elliptic motion, *T. Strong*, xxx, 248.
- Elm-tree moth, parasite of the eggs of, xxxviii, 385.
- Elm-tree moth, destruction of the eggs of, by a parasite, *E. C. Herrick*, xl, 211.
- Embalming, remarks on the mode of, xii, 183.
- , *J. N. Gannal's* new process, xl, 194.
- Emerald in Africa, ii, 354.
- Emerson, G. B.*, biographical notice of *A. P. De Candolle*, xlii, 217.
- Emery of Saxony, xxiv, 377.
- Emmet, J. P.*, on formic acid, xxxii, 140.
- , ammoniacal salts, solvent and oxydating powers of, xviii, 255.
- , iodide of potassium a test for arsenic, xviii, 58.
- , electro-magnetism and thermo-electricity, xxvi, 311.
- , —, new discoveries in, xxiv, 78.<sup>f</sup>
- , —, cause of currents in, xxvi, 23.<sup>f</sup>
- , solidification of raw gypsum, xxiii, 209.
- , a mode of producing sparks and galvanic currents from the horse-shoe magnet, xxiv, 78.<sup>f</sup>
- Emmonite, supposed new mineral, *T. Thomson*, xxxi, 171.
- Emmons, E.*, birds of spring, time of appearance in Williamstown, Mass., 1831-33, xxvi, 208.
- , circulation in vegetables, xxvi, 99.
- , granitic veins and beds of Chester, Mass., viii, 250.
- , *Grevilleanum serratum*, a new species of moss, xi, 183.<sup>f</sup>
- , metamorphic changes by artificial heat, in sandstone, xlv, 146.
- , rainmarks in the Potsdam sandstone, xlv, 316.
- , strontianite in the U. States, xxvii, 182.
- Enamel for porcelain, v, 189.
- Enamelled cast iron vessels in Bohemia, xlix, 400.
- Encroachment of the sea, near New York, *W. W. Mather*, xxxvi, 16.
- Endogenites, vii, 179.

- Enfield's Natural Philosophy, review of, iii, 125.
- England, population of, xxiv, 211.
- Engelmann, G.*, Braun's monography of N. American Equiseta, with additions, xlvi, 81.
- , Braun's Charæ of N. America, xlvi, 92.
- , catalogue of a collection of plants in Illinois and Missouri, xlvi, 94.
- , monograph of the N. American Cuscutineæ, xliii, 333<sup>f</sup>; xlv, 73.
- , a mode of cupellation, xlii, 394.
- Engine, explosive, of *S. Morey*, account of, xi, 104.
- , steam, see *Steam engine*.
- English lexicography, contributions to, *J. W. Gibbs*, xxxiii, 324; xli, 28, 32; xlv, 96.
- Engraving, a mode of enlarging, ii, 342.
- , a mode of biting-in, on steel, x, 194.
- , in *taille douce*, iv, 192.
- on steel, *Perkins's* invention, iii, 353.
- Epicycloid, on the, *E. F. Johnson*, xxi, 280.<sup>f</sup>
- Epidemics, in Paris, during past years, xxv, 197.
- Epidote of Franconia, N. H., account of, *C. U. Shepard*, xviii, 129.<sup>f</sup>
- , crystals from Haddam, Ct., xlvi, 380.<sup>f</sup>
- , localities of, in Canada, viii, 62.
- , —, in N. Carolina, v, 262.
- , —, in Connecticut, i, 354; ii, 240; vi, 223; viii, 258; xii, 170; xviii, 361.
- , —, in Delaware, xiv, 11.
- , —, Massachusetts, i, 114; iii, 364; vi, 223; vii, 253; viii, 235; ix, 43.
- , —, New Hampshire, ii, 241; vi, 245; viii, 235; xviii, 129.
- Epidote, localities of, in New Jersey, v, 243.
- , —, in New York, ii, 241; iv, 47; vii, 58; ix, 41.
- , —, in Pennsylvania, viii, 238; xiv, 6.
- , —, in Rhode Island, iv, 285; x, 10.
- , —, in Vermont, vii, 58; xvii, 354.
- Epistilbite and Heulandite, identity of, xiii, 185.
- Equations, differential of the second order, integration of, *T. Strong*, xlii, 273.
- of the fourth degree, on the resolution of, xviii, 276.
- of the third and fourth degree, method of resolving, *A. C. Twinning*, ix, 86.
- Equilibrium between living and dead forces, condition of, *R. H. Fauntleroy*, xlvi, 241.<sup>f</sup>
- Equinoxes, precession of, vii, 323<sup>f</sup>; viii, 132, 139.<sup>f</sup>
- Equiseta, N. American, *A. Braun's* monograph, with additions by *G. Engelmann*, xlvi, 81.
- Equisetum arvense, xlvi, 83.
- boreale, xlvi, 90.
- eburneum, xlvi, 84.
- giganteum, xlvi, 91.
- hyemale, xlvi, 89.
- lævigatum, xlvi, 87.
- limosum, xlvi, 86.
- palustre, xlvi, 85.
- pratense, xlvi, 85.
- robustum, xlvi, 88.
- scirpoides, xlvi, 91.
- sylvaticum, xlvi, 84.
- variegatum, xlvi, 90.
- Equivalents, chemical, *Wollaston's* scale of, xvi, 371.
- , —, —, improved, *L. C. Beck* and *J. Henry*, xiv, 202.
- , —, circular scale of, *J. Finch*, xviii, 196.
- Eremite, a new mineral, *C. U. Shepard*, xxxii, 341.<sup>f</sup>
- , crystallographic examination of, *J. D. Dana*, xxxiii, 70.<sup>f</sup>

- Eremitic, identical with monazite, *J. D. Dana*, xlv, 402.<sup>f</sup>
- Ergot of rye, *W. Tully, M. D.*, ii, 45.
- , remarks on, xii, 398.
- , on the origin of, *M. Field*, ix, 359.
- Erie canal, tolls on, x, 398.
- Erratic blocks, over the northern parts of England, *Prof. Phillips*, xxxi, 360.
- —, *ibid.*, *R. I. Murchison*, xxxi, 375.
- — and glaciers in Switzerland, *Agassiz*, xli, 59, 190.
- — of the North of Germany, xxviii, 389.
- —, large, in Invernesshire, vi, 158.
- — and diluvial scratches, in the U. States, xli, 174.
- — in New England, their positions attributed to a retiring ocean, ix, 28.
- — in Rhode Island, *C. T. Jackson*, xl, 184.
- — in Maine, *C. T. Jackson*, xxxvi, 152.
- — in the Connecticut valley, vi, 85.
- — in western New York, xxxvi, 39.
- — in New York, about the sources of the Hudson and to the southward, xxxiii, 304, 315.
- — on Long Island, xxxvi, 20.
- — of Labrador feldspar, near Pompton, New Jersey, v, 241.
- — of Ohio, *D. and I. A. Lapham*, xxii, 300.
- —, in the valley of the Muskingum, xxix, 11.
- — in Illinois, xxxiv, 141.
- — in Indiana, *J. T. Plummer*, xlv, 296<sup>f</sup>, 303.
- — of gneiss and granite on the Côteau des Prairies, *G. Catlin*, xxxviii, 142.
- Erratic blocks of the Canadian lakes and valley of the St. Lawrence, *C. Lyell*, xlvi, 314.
- —, the origin of, remarks on, *P. Dobson*, x, 217.
- —, *Murchison's* citation of *Dobson's* views on, xliii, 200.
- —, transported by ice, in the polar current, *W. C. Redfield*, xxxii, 351.
- —, on the supposed transportation of, *J. E. DeKay*, xiii, 348.
- —, buoyancy of, at great depths, xxviii, 111.
- —, gravel, &c., remarks on, *Sedgwick*, xxxiii, 287.
- —, theory of, *B. Struder*, xxxvi, 325.
- —, glacial theory of *Agassiz*, xlii, 352.<sup>f</sup>
- —, see farther under *Drift* and *Scratches*.
- Erythronium, supposed new metal, xx, 386.
- Esophagotomy, iv, 383.
- Espy, J. P.*, views on storms, xxxix, 120; xl, 327.
- —, — —, notice of, by *A. D. Bache*, xxxv, 280.
- —, on the causes of the daily fluctuations of the barometer, xli, 42.
- —, meteorological enterprise of, xlv, 212.
- Esquimaux Indians, remarks on, xvi, 145.
- Essential oils, reaction of, with sulphurous acid, *R. Hare*, xxxi, 281.
- Essex county, (N. Y.) mountains of, and the sources of the Hudson, *W. C. Redfield*, xxxiii, 301.<sup>f</sup>
- Etching glass with fluor spar, vi, 354.<sup>f</sup>
- Etna, ascent of, *S. L. Johnson*, xxvi, 1.
- —, crater of, xxvi, 7.
- —, earthquakes in 1823, ix, 216.
- —, observations on, *E. de Beaumont*, xxxi, 168.



- Etna, luminous flames at, xxxi, 169.  
 —, geological structure of, *F. Ferrara*, viii, 201.
- Ether in space, idea of, when introduced, xxxiii, 1.  
 — —, resistance to motion of heavenly bodies, xvii, 389.  
 — —, examination of the theory of, *R. W. Haskins*, xxxiii, 1.  
 —, boracic, xlvi, 189.  
 —, chloric, new mode of obtaining, *S. Guthrie*, xxi, 64.  
 —, hydriodic, *M. Serullas*, xviii, 161.  
 —, hyponitrous, *R. Hare*, xxxv, 329.  
 —, nitrous, new process for, *R. Hare*, ii, 326.  
 —, nitric, process for, *R. Hare*, xxxiii, 241.<sup>f</sup>  
 —, œnanthic, xxxii, 381.  
 —, perchloric, *C. Hare* and *M. H. Boyé*, xl, 50, 382; xlii, 63.  
 —, silicic, xlix, 192.  
 —, sulpho-cyanic, xvii, 377.  
 —, sulphuric, on the manufacture of, xxii, 199.  
 —, sulphurous, *R. Hare*, xxxi, 275.  
 —, —, and sulphate of etherine, *R. Hare*, xxxi, 275.  
 —, vaporization of, vi, 396.  
 —, action of, on sulphate of indigo, xxiv, 371.  
 —, odor of wines due to a peculiar, xxxii, 381 (œnanthic ether.)
- Ethers of the vegetable acids, method of preparing, xlvii, 197.  
 — and benzoic compounds, formulas for, *Wöhler* and *Liebig*, xxvi, 285.
- Etherine, sulphate of, *R. Hare*, xxxi, 275.  
 —, sulphate of, on the destructive distillation of, *C. Hare*, xxxvi, 76.
- Ethule, perchlorate of the oxide of, *C. Hare* and *M. H. Boyé*, xlii, 63.
- Euchlorine, preparation of, vi, 164.
- Eudiometer; improved, *R. Hare*, ii, 312.<sup>f</sup>; x, 67.<sup>f</sup>; xii, 36.<sup>f</sup>; xxxvii, 383.  
 —, barometer gauge, *R. Hare*, xxxii, 280.<sup>f</sup>  
 —, subsidiary, *R. Hare*, xv, 271.<sup>f</sup>
- Eudiometry, theory of action of nitrous gas in, *J. F. Dana*, vii, 338.  
 —, new mode, with nitric oxyd, and apparatus for, *R. Hare*, xv, 262–271.<sup>f</sup>
- Eupatorium huaco, xxiv, 279.
- Europe, northern, rock formations of, xvii, 16.  
 —, physical geography of, *G. F. Schouw*, xxi, 127.  
 —, education in, see *Education*.
- Eupyrchroite of Emmons, a phosphate of lime, *L. C. Beck*, xl, 77; xlv, 32.
- Evaporation, mode of accelerating, ix, 203.  
 — by means of bladders, xv, 392.  
 — of ice, xvi, 390.  
 — of spirits, iii, 376.
- Excavations of basins or pot-holes by water, in the Green Mts., Vt., vi, 252.
- Exhilarating gas, effects of, in two cases, v, 194.
- Exley, T.*, specific gravities of nitrogen, oxygen, chlorine, vapors of carbon, sulphur, arsenic, phosphorus, xxxv, 298.
- Exogenites, vii, 179.
- Exogyra, see *ZOOLOGY, Mollusca*.
- Expansion of solid bodies, instrument for, *W. W. Mather*, xxx, 324.<sup>f</sup>
- Expedition, exploring, under *L. Cass*, ii, 178.  
 —, —, U. States, under *Lieut. Wilkes*, U. S. N., officers of, xxxv, 192.  
 —, —, —, progress of, xxxvi, 195; xxxvii, 189, 398; xxxviii, 387; xxxix, 193.

- Expedition, exploring, U. States, discoveries of, in the Antarctic regions, xl, 394; xlix, 150.
- , —, —, return of, xliii, 208.
- , —, —, course and abstract of results, xliv, 393.
- , —, —, account of, xlix, 149.
- , —, Antarctic, of the Chanticleer, notice of, xviii, 188.
- , —, British Antarctic, under Ross, proposed, xxxvii, 397; xlii, 153; sailed, xxxviii, 204.
- , —, French, to the Antarctic regions, xxxix, 201.
- Explorations, polar, account of, xvi, 124.
- , —, French, of Capt. Freycenet, iv, 391.
- , —, —, of Capt. D'Urville, xxxiii, 206.
- , —, —, *ibid.*, to Antarctic regions, xxxix, 201.
- , —, —, of the Bonite, xxxiv, 219.
- Exploring expedition, see *Expedition*.
- Explosion, singular, iv, 400.
- of hydrogen and oxygen, with remarks on Hemming's safety tube, *J. W. Webster*, xxxvii, 104.
- , from the action of nitric acid on phosphorus, xvi, 366.
- , submarine, ii, 95.
- Explosive engine, by *S. Morey*, xi, 104.
- Eye, mode of accommodation of, to different distances, *W. C. Wallace*, xxvii, 216.<sup>f</sup>
- , mode of exhibiting the blood vessels of, xxi, 166.
- , muscle attached to the lens of, *W. C. Wallace*, xxxv, 291; —remarks on, *D. Brewster*, xxxv, 291.
- , cause of *musca volitantes* in, *D. Brewster*, xl, 333.
- , remarks on the retina, *W. C. Wallace*, xxviii, 278.
- Eye, sensibility of the retina, explanation of facts in natural magic, xxxiii, 258.
- , on cataract or disease of, *D. Brewster*, xxxi, 368.
- of fishes, discovery of a muscle in, *W. C. Wallace*, xxvi, 394.
- of the Halibut, dissection of, *W. C. Wallace*, xxvi, 393.<sup>f</sup>
- of the shark, vitreous humor of, *J. Herschel*, xxxv, 293.
- of the streaked bass, dissection of, *W. C. Wallace*, xxvii, 216.<sup>f</sup>
- of different birds and reptiles, sclerotic bones of, xxxiii, 289.
- infirmaries in U. States, ix, 399.

## F.

- Fac similes of writing taken by means of fusible metal, v, 186.
- Fair at Leipsic, iv, 392; vii, 381.
- , in Russia, iv, 392.
- Falls of the Cuyahoga, xxxi, 45.<sup>f</sup>
- , on the Genesee river, xviii, 209.<sup>f</sup>
- , Niagara and its vicinity, xi, 213.<sup>f</sup>
- , —, on the retrograde movement of, *H. D. Rogers*, xxvii, 326.<sup>f</sup>
- , the Tockoa and Tallulah, in Georgia, notice of, *A. Foster*, xiv, 209.
- , on White River, Green Mountains, Vt., vi, 252.
- Faraday, M.*, deflagrator, improved, xxxii, 170.
- , electric induction, in reply to *R. Hare*, xxxix, 108; xlii, 291.
- , —, —, reply to, of *R. Hare*, xli, 1.
- , gases, condensation of, vii, 352.
- , —, liquefaction and solidification of, xlix, 373.
- , views of, on the nature of atoms, objected to, *R. Hare*, xlvi, 247.

- Faraday, M.*, vaporization, limits to, xxi, 151.
- Farey, J.*, on musical intervals, ii, 65.
- Fasciculite, E. Hitchcock*, vi, 226.<sup>f</sup>
- Fata Morgana at Gibraltar*, xxix, 215.<sup>f</sup>
- Fauntleroy, R. H.*, condition of equilibrium between living and dead forces, xlvi, 241.<sup>f</sup>
- Faust, E. D.*, on the detection of adulterations of various substances, xix, 70.
- Favosites*, see *ZOOLOGY, Radiata*.
- Feathers*, to restore damaged, xxi, 372.
- Featherstonhaugh, G. W.*, geological report on part of the country west of the Mississippi, notice of, xxviii, 379; xxxii, 185.
- Febrifuge*, new, xxiv, 375.
- Fedia radiata*, iv, 57.
- *umbilicata*, xlii, 50.
- Feed for cattle*, xxii, 202.
- —, of beets, xxii, 201.
- Fees for admission to various foreign societies*, xx, 165.
- Feldspar from Bytown, L. C.*, analysis of, *T. Thomson*, xxxi, 173.
- , and serpentine, containing titanium, xii, 187.
- , artificial, xxviii, 396.
- , localities of, in Canada, viii, 65.
- , —, in Connecticut, i, 353; vi, 221; vii, 253.
- , —, in Delaware, ix, 246.
- , —, in Massachusetts, i, 113; vii, 251, 252; xxxv, 192.
- , —, in New Hampshire, xvii, 355.
- , —, in New Jersey, v, 246.
- , —, in New York, iv, 37, 47; xix, 227; xxv, 348.
- , —, in Pennsylvania, x, 220; xiv, 13.
- , green, in Massachusetts, vii, 251, 252; xxxv, 192.
- , iridescent, in Pennsylvania, xiv, 13.
- Fellenberg's, M. de*, colony of little Robinsons, xiii, 165.
- Fence, thorn*, x, 167.
- Fenn, H. N.*, on the manufacture of glass, xvi, 112.<sup>f</sup>
- Fermentation, acetic, process for hastening*, xxii, 195.
- Ferns, on the vascular system of, J. W. Bailey*, xxxv, 113.<sup>f</sup>
- and mosses of the United States, synoptical table of, *L. C. Beck*, xv, 287.
- , see *Botany*.
- Ferro-cyanate (per), of iron, or prussian blue*, xviii, 332.
- —, see *Prussian blue*.
- Ferro-cyanate of potash*, xviii, 331.
- Ferro-cyanic acid*, xviii, 330.
- Fetid odor of limestones, cause of, L. C. Beck*, xlv, 335.
- Feuchtwanger, L.*, remarks on arsenic, xix, 339.<sup>f</sup>
- , on the mode of making vinegar, xxxi, 272.<sup>f</sup>
- Fevers, on remittent and intermittent, J. McCulloch*, xviii, 338.
- Fibrine, albumen and caseine, Scheerer on the isomerism of animal, with vegetable*, xliii, 402.
- , butyric acid from, xlvi, 186.
- Fibrolite, in Delaware*, x, 224.
- Ficoidites scabrosus*, xxxi, 31.<sup>f</sup>
- Field, M.*, on the origin of ergot, ix, 359.
- , meteorological registers, xii, 364; xvi, 288; xviii, 366; xx, 261<sup>f</sup>; xxii, 298; xxiv, 361.
- , profile mountain, in N. H., xiv, 64.<sup>f</sup>
- Figures of crystals, on the drawing of, J. D. Dana*, xxxiii, 30.<sup>f</sup>
- Filicites, generic characters of*, vii, 181.
- Filter, Dumont's, and prepared charcoal*, xxiii, 346.<sup>f</sup>
- Filtration*, xxviii, 150.
- Finch, J.*, atomic theory, remarks on, xiv, 24.
- , chemical equivalents, circular scale of, xviii, 196.
- , celtic antiquities of America, vii, 149.
- , forts about Boston, viii, 338.

- Finch, J.*, geology of Pennsylvania, Easton, viii, 236.<sup>f</sup>
- , —, —, vicinity of Westchester, xiv, 15.
- , —, New York, St. Lawrence Co., xix, 220.
- , —, —, tertiary formations of the borders of the Hudson, x, 227.
- , sandstone, new or variegated, of the U. States, x, 209.<sup>f</sup>
- , U. States tertiary formations, vii, 31.
- , physical geography, influence of, on the boundaries of nations, xiv, 18; xvi, 99.
- Finland, comforts of traveling in, iii, 378.
- Fire, Chinese, on the composition of, *J. Cutbush*, vii, 118.
- , Greek, *J. Cutbush* on, vi, 302.
- in chimneys, extinguishment of, by sulphur, xix, 186.
- , on protection from, or securing houses against, xxv, 290; xxvi, 286.
- , whirlwinds produced by, xxxvi, 50.
- arms, manufacture of, by *E. Whitney*, xxi, 237.
- Firebricks, made at Bennington, Vt., for the iron furnace, xxxii, 195; xxxiii, 202.
- Fire damp, chemical examination of, *E. Turner*, xxxvii, 201.
- Firemen, preservation of, against fire by asbestos, xviii, 177; xx, 96.<sup>f</sup>
- Firestones, used in glass manufactories, notice of, x, 19.
- , localities of, in the U. States, x, 20.
- , —, in Rhode Island, viii, 232; x, 20; xl, 184.
- Fish, double, *S. Churchill*, xxvi, 116.<sup>f</sup>
- of Hudson river, xx, 150.
- , Chinese method of hatching, viii, 381.
- , preserved by sugar, viii, 391.
- , fall of, from the atmosphere in India, *M. Prinsep*, xxxii, 199.
- Fish, the limits of their occurrence in high latitudes, vi, 383.
- , removal from salt to fresh water, xl, 405.
- , see farther under *Zoology*.
- , fossil, remarks on, *R. I. Murchison*, xxxiv, 46.
- , —, of England and Scotland, xxviii, 75.
- , —, American, *W. C. Redfield*, xli, 24.
- , —, —, identified from fossil teeth, *L. Agassiz*, xxviii, 276.
- , —, in the Connecticut valley, *E. Hitchcock*, vi, 76.<sup>f</sup>
- , —, —, at Sunderland, Mass., *E. Hitchcock*, iii, 222, 365.
- , —, —, at Middletown, *D. L. H.*, xxxiv, 198.
- , —, —, at Southbury, xxvii, 358.
- , —, in New Jersey, *W. C. Redfield*, xxxvi, 186; xlv, 134<sup>f</sup>; xlv, 314.
- , —, —, and Connecticut, identical, *W. C. Redfield*, xxxvi, 186.
- , —, —, in red sandstone, *Prof. Gale*, xxxv, 192.
- , —, in Pennsylvania, at Blossburg, *Holoptychus nobilissimus*, xlii, 233.
- , —, in Virginia, *W. C. Redfield*, xxxiv, 201.
- , —, see farther under *Zoology*.
- Fishes, notice of *L. Agassiz's* works on, xxviii, 193; xxxiv, 46, 212; xxxix, 390; xlv, 211.
- , abstract of *Agassiz's* work on fossil, xxx, 33.
- , notice of *W. Yarrell's* British, xxxvii, 167.
- Fish skins, new mode of preserving for museums, xxxvi, 196.
- Fisher, A. M.*, on musical temperament, i, 9<sup>f</sup>, 176.<sup>f</sup>
- , on improvements in the construction of the printing press, and its theory, iii, 311.<sup>f</sup>

- Fisher, A. M.*, on maxima and minima of two variable quantities, v, 82.
- , review of Enfield's Philosophy, iii, 125.
- , obituary of, v, 367.
- Fisher, Lieut. Col.*, discourse by, at Schaff'hausen, ix, 368.
- Fissures, capillary action of, viii, 377.
- of the ground by frost, in Deerfield, Mass., *E. Hitchcock*, i, 286.<sup>f</sup>
- , see farther, *Dike*.
- Five, the most favorite number of nature, xvi, 172.
- Flame, effect of vapor on, *J. F. Dana*, i, 401.
- , theory of, xiii, 179.
- of lamp, curious effect of a current of air on, xxxii, 88.<sup>f</sup>
- Flax, the milkweed a substitute for, xxvii, 384.
- Flexure of rocks caused by earthquake undulations, *H. D. and W. B. Rogers*, xlv, 361; xlv, 345; xlvii, 276.
- Flies, shower of, xxii, 375.
- Flint*, on earthquakes in the Mississippi, xv, 366.
- Floating Islands, *A. Pettengill*, xii, 122.
- Flørkeæ, on the genus, *C. S. Rafinesque*, i, 373.
- Flood in the valley of the Ohio, Feb., 1832, xxiv, 133.
- Flora Cestrica, *W. Darlington*, notice of, xii, 177.
- Græca, *Sibthorp and Smith*, announced, i, 435.
- Lusitanica, *Link and Hoffmannsegg*, i, 435.
- Neapolitana, *Tenore*, announced, i, 435.
- Floral calendar, Massachusetts, at Deerfield, *D. Cooley*, ii, 254.
- — — — —, *S. W. Williams*, i, 359.
- — — — —, at Plainfield, *J. Porter*, i, 254; iii, 273.
- Floral Calendar, Ohio, at Marietta, *S. P. Hildreth*, for 1829, xviii, 368; —for 1840, xl, 347; —for 1842, xlv, 348; —for 1843, xlvi, 278; —for 1844, xlviii, 289; see farther, *Mr. Hildreth's* meteorological registers for other years, for various miscellaneous notices.
- — — — —, in Pennsylvania, *C. S. Rafinesque*, i, 77.
- — — — —, in New York, Herkimer Co., for 1826, 1827, *A. W. Bowen*, xvi, 48.
- Floridas, agriculture, scenery, geology, &c. of, *J. Pierce*, ix, 119.
- , shell rock of, ix, 123.
- , East, account of, *H. Whiting*, xxxv, 47.
- , —, alligators of, xxxv, 52.
- , —, climate, xxxv, 63.
- , —, coral shores, xxxv, 60.
- , —, everglades, xxxv, 53.
- , —, forests with the gray moss, xxxv, 50.
- , —, Fort Taylor, xxxv, 52.
- , —, lagoons of the coast, xxxv, 54.
- , —, mangroves, xxxv, 55.
- , —, productions of, xxxv, 56.
- , —, potato of, xxxv, 60.
- , —, quarries of St. Augustine, xxxv, 61.
- , —, savannahs, xxxv, 52.
- , —, soil, xxxv, 57.
- , —, St. John's river, xxxv, 48.
- , —, sulphur springs, xxxv, 51.
- Flour, potato, used in making bread, xvi, 391.
- , detection of, in wheat, xvii, 173.
- from leguminous fruits, vii, 189.
- Flowers, double, produced by depriving flowers of their anthers, *E. T. Leitner*, xxiii, 45.
- Floyd, J.*, hurricane near Calcutta, of April, 1838, xxxvi, 71.

- Fluidity of the earth's centre, *L. Cordier*, xv, 109, 117.
- — —, *Fourier*, xxxii, 1.
- Fluids, compression of, xxi, 381.
- , revolving motion in, xix, 391.
- , resistance of, *L. R. Gibbes*, xxvii, 135.
- , —, *A. Bourne*, xxviii, 231.
- , resistance of, *E. W. Blake*, xxix, 274; xxx, 359.
- , —, *Russell*, xxix, 351.
- , —, *G. W. Keely*, xxviii, 318<sup>f</sup>; xxx, 164; xxxi, 111.
- , upward forces of, *E. C. Genet*, xi, 110, 339<sup>f</sup>; xii, 94, 310; xiii, 377.
- , — —, *T. P. Jones*, in reply to *E. C. Genet*, xiii, 79.
- Fluor-spar, of Canada, viii, 71.
- , of Connecticut, ii, 141; v, 254; vi, 212.
- , of Indiana, (*Shawneetown*), i, 52; ii, 176; iii, 243, 367.
- , of Massachusetts, i, 136; iv, 50; v, 405, 407; vii, 54.
- , of New Hampshire, xviii, 133, 291; xxxiv, 117.
- , of New Jersey, v, 246.
- , of New York, iii, 235, 367; xxviii, 176.
- , of Pennsylvania, x, 221; xiv, 5.
- , of Rhode Island, viii, 231; ix, 46.
- , of Tennessee, iv, 51.
- , of Vermont, iv, 43, 188; v, 272; vii, 59.
- , of Virginia, iii, 243; iv, 277.
- , of Sicily, viii, 205.
- , chlorophane variety in Connecticut, ii, 141; v, 254; vi, 212.
- , new phenomenon of color in, xxxv, 295.
- Fluoric acid in mica, ii, 376.
- — —, its application to etching glass, vi, 354.<sup>f</sup>
- — — and fluates, xiv, 387.
- Fluoride of iodine, *H. B. Leeson*, xlix, 205.
- Fluorine in bones, notice of investigations regarding, xlvii, 419.
- Fluorine in bones, *J. L. Smith*, xlvii, 131.
- — —, source of, *J. L. Smith*, xlviii, 99.
- in recent bones, *C. Daubeny*, xlviii, 186.
- Fluxions, a theory of, *E. Wright*, xiv, 330<sup>f</sup>; xv, 196; xvi, 53.<sup>f</sup>
- , solution of a problem in, *T. Strong*, xvi, 283; xvii, 69, 329; xviii, 67. (See *Forces*, next page.)
- Fluxional ratio, application of, *E. Wright*, xxiv, 298<sup>f</sup>; xxv, 93.<sup>f</sup>
- Flying in the air, *De Chabrier's* views on, xix, 395.
- Fogs, remarks on, *W. C. Redfield*, xxxiii, 54.
- , on the formation of, *W. M. Carpenter*, xlv, 40.
- , polar, xiv, 378.
- Food for sheep, different kinds of, xxxiii, 393.
- Foot, L.*, on Indian summers, xxx, 8.
- , notices in geology and mineralogy, iv, 35.
- Footprints, American, *E. Hitchcock* on, in Connecticut valley, xxix, 307<sup>f</sup>; xxxi, 174; xli, 165; xlvii, 113, 292<sup>f</sup>, 390; xlviii, 61.
- , —, —, general table of, xxxii, 174.
- , —, —, general review of, with descriptions of species, xlvii, 113, 304.<sup>f</sup>
- , —, —, miscellaneous remarks upon, xlviii, 61.
- , —, —, reply to *J. Deane*, xlvii, 390.
- , —, *J. Deane* on, in the Connecticut valley, xlv, 178; xlvii, 73<sup>f</sup>; xlviii, 158<sup>f</sup>; xlix, 79<sup>f</sup>, 213.<sup>f</sup>
- , —, —, discovery of, xlvii, 381.
- , —, —, at Turner's falls, Mass., xlvii, 73.<sup>f</sup>
- , —, —, batrachian, in the Connecticut river sandstone, xlix, 79<sup>f</sup>, 213.<sup>f</sup>
- , —, —, reply of, to *E. Hitchcock*, xlvii, 399.

- Footprints, American, *C. Lyell* on, in the Connecticut valley, xlv, 394.
- , —, *W. C. Redfield*, notice of fossil, at Middletown, Ct., xxxiii, 201.
- , —, —, in new red sandstone of New Jersey, xlv, 134.
- , —, *anon.*, in sandstone at Middletown, Ct., xxxi, 165.
- , —, *A. T. King* on, in Westmoreland Co., Pa., xlvi, 217, 343<sup>f</sup>; xlix, 216.<sup>f</sup>
- , —, *H. R. Schoolcraft*, on human, in limestone near St. Louis, v, 223.<sup>f</sup>
- , —, *anon.*, remarks on *ibid.*, xxxiii, 398.
- , —, *D. D. Owen*, *ibid.*, xliii, 14.<sup>f</sup>
- , —, *W. A. Adams*, *ibid.*, xlv, 200.
- , foreign, in England, in Cheshire, (*Cheirotherium*), xxxvi, 397; xlv, 370.
- , —, —, near Liverpool, xxxv, 307.
- , —, —, near Shrewsbury, xxxviii, 127.
- , —, —, of *Cheirotherium*, at the Storeton quarries, xxxvi, 394; xxxvii, 223.
- , —, in Germany, at Hildburghausen, xxx, 191.
- , —, in Saxony, *B. Cotta*, xxxviii, 255.<sup>f</sup>
- , —, in Scotland, xiv, 394; xv, 84.
- , remark on localities, xxxi, 164.
- , bearing of the discovery of *Dinornis* on, xlvi, 199.
- Foraminifera in the green sand of New Jersey, xli, 213.
- Forbes, J. D.*, absorption of light by the atmosphere, xlvi, 200.
- , on radiant heat, xl, 313.
- , polarization of heat, and on the claims of discovery, xl, 317.
- , Bakerian lecture, notice of, xlvi, 200.
- , Travels in the Alps, notice of, xlvi, 172.
- Forces, central, of bodies revolving about fixed axes, *J. Martin*, xxxix, 262.<sup>f</sup>
- , —, *T. Strong*, xvi, 283; xvii, 69, 329; xviii, 67; xix, 46; xx, 65, 291; xxi, 66, 334; xxii, 132, 342; xxiv, 40.
- , composition and resolution of, *T. Strong*, xxviii, 85.
- , parallelogram of, *T. Strong*, xxvi, 304; xxix, 345.
- , —, *A. C. Twining*, xlvi, 324.<sup>f</sup>
- , condition of equilibrium between living and dead, xlvii, 241.<sup>f</sup>
- Forgery, a mode of preventing, *J. Atwater* and *S. S. Jocelyn*, xv, 398.
- Forman, J.*, salt formation of Salina and elsewhere, New York, xix, 141.
- Formic acid, artificial, vii, 197.
- , —, on the production of, xix, 374.
- , —, —, *M. Döbereiner*, xxviii, 126.
- , —, —, *Göbel's* observations on, xxviii, 127.
- , —, utility of, and theory of its formation, *J. P. Emmet*, xxxii, 140.
- Forry, S.*, on the climate of the U. States, and general distribution of heat over the globe, xlvii, 18<sup>f</sup>, 221.
- , notice of a work on the climate of the U. States, by, xlv, 193.
- Forshey, C. G.*, Indian mounds and relics near Natchez, xl, 376.
- , —, —, in Louisiana, xlix, 38.<sup>f</sup>
- , on the meteors of April, 1841, xlii, 397.
- Forts around Boston, *J. Finch*, viii, 338.
- Fort Lawrence, account of, *S. P. Hildreth*, xxxi, 57.
- , *Macintosh*, notice of, xxxi, 19.

Fort Taylor, xxxv, 52.  
 — Winnebago, geology of region about, *D. Ruggles*, xxx, 1.<sup>f</sup>  
 Fortifications, ancient Indian, in Missouri, iii, 37.  
 —, —, —, *S. Taylor*, xlv, 35.<sup>f</sup>  
 —, —, —, see farther under *Mounds*.  
 Fossils, means of copying by a galvanic deposit, xlii, 327.  
 —, use of, in geology, *A. Brongniart*, viii, 213.  
 —, observations, on *ibid*, *J. E. Doornik*, xv, 90.  
 Fossil fish, see *Fish* and also under *Zoology*.  
 — footprints, see *Footprints*.  
 — vertebral remains in Connecticut valley sandstone, *E. Hitchcock*, xxix, 330.  
 — trilobites, see under *Trilobites*.  
 — rainmarks, see *Rainmarks*.  
 — human bones in Upper Saxony, v, 171.  
 —, —, — in Guadeloupe, skull, xxxii, 361.  
 —, —, — in South America, xlv, 277.  
 Fossils, no freshwater species, in the Medina sandstone, xlii, 230.  
 —, American, geographical distribution of, in the United States, *J. Hall*, xlv, 157.  
 —, —, remarks on *ibid*, *H. D. Rogers*, *D. Houghton*, xlv, 160.  
 —, —, some species of, *T. Say*, i, 381; ii, 34.  
 —, —, Polythalamia, *J. W. Bailey*, xli, 400<sup>f</sup>; xlv, 313; xlviii, 340.<sup>f</sup>  
 —, —, in Alabama, tertiary, *I. Lea*, xxv, 419.  
 —, —, —, —, *H. C. Lea*, xl, 92.<sup>f</sup>  
 —, —, in Canada, in caves, ix, 354.  
 —, —, in Connecticut, bones in new red sandstone, ii, 146; iii, 247; vi, 43.

Fossils, American, in Connecticut valley, shells, &c., vi, 76<sup>f</sup>, 80.<sup>f</sup>  
 —, —, in Georgia, silicified by thermal waters, xxv, 165.  
 —, American, in Georgia, mammals, Brunswick canal, *R. Harlan*, xliii, 141.<sup>f</sup>  
 —, —, —, bones, *C. U. Shepard*, xxv, 164.  
 —, —, in Kentucky, Big Bone Lick, bones, xviii, 139.  
 —, —, —, report on *ibid*, by Messrs. *Cooper*, *Smith* and *DeKay*, xx, 370.  
 —, —, in Louisiana, tooth, *W. M. Carpenter*, xlii, 390.<sup>f</sup>  
 —, —, in Maryland tertiary, list of, *I. Lea*, xxv, 422.  
 —, —, in Michigan, on Lake Huron, iii, 270<sup>f</sup>, 271.<sup>f</sup>  
 —, —, Mississippi, bones near the river, *R. Harlan*, xiv, 186.  
 —, —, in New Jersey, general remarks on, vi, 240.  
 —, —, —, cretaceous. (See *Cretaceous*, on following page.)  
 —, —, —, corals, xlvii, 213.  
 —, —, in N. York, in review of N. Y. geological reports, xlvii, 354<sup>f</sup>; xlviii, 296.<sup>f</sup>  
 —, —, —, on distribution of, xlv, 143; xlvii, 117.  
 —, —, —, in Kaatskill Mts., ii, 13.  
 —, —, —, at Corlear's hook, ii, 371.  
 —, —, in North Carolina, marl pits, *H. B. Croom*, xxvii, 168.  
 —, —, —, bones, from Lenoir Co., xl, 405.  
 —, —, in Nova Scotia, in iron ore, xv, 201.  
 —, —, in Ohio, and Ohio valley, *S. P. Hildreth*, xxix, 1.<sup>f</sup>  
 —, —, —, microscopic from marl slate near Cincinnati, *J. Hall*, xlviii, 292.  
 —, —, in Oregon, elephant bones and mylodon, *H. C. Perkins*, xlii, 136.<sup>f</sup>



- Fossils, American, in Virginia, infusorial, *J. W. Bailey*, xlv, 313.
- , —, —, polythalamia, *J. W. Bailey*, xlv, 313.
- , —, —, in crystalline limestone, xxvi, 222.
- , —, Upper Mississippi, polythalamia, *J. W. Bailey*, xli, 400.<sup>f</sup>
- , —, near the mouth of the Mississippi, bones, *R. Harlan*, xiv, 186.
- , —, Upper Missouri, bones, *J. N. Nicollet*, xli, 181.
- , —, South, human bones, xlv, 277.
- , —, in Cuba and New Grenada, supposed to be oolitic, *I. Lea*, xl, 41.
- , —, in Peru, on San Lorenzo, xxxviii, 201.
- , —, in Patagonia, Megatherium, &c., *C. Darwin*, xxxiii, 105.
- , —, —, Taxodon, &c., *R. Owen*, xxxiii, 208; xxxv, 196.
- , foreign, in caves, in England, Plymouth, xxxiii, 106.
- , —, —, at Kirkdale, and other places, *W. Buckland*, viii, 158, 317, 319.
- , —, —, in Denbighshire, xxxi, 341.
- , —, —, in Mendip Hills, xxxv, 304.
- , —, —, in France, xxi, 56; xxiii, 388.
- , —, —, in Germany, viii, 319, 321.
- , —, —, in New Holland, xx, 380.
- , —, —, in Britain, marsupial of the Stonesfield slate, xxvii, 412; xxxvii, 228.
- , —, —, microscopic corallines and minute shells in white chalk, *Lonsdale*, xxxiii, 111.
- , —, —, Sussex, number of, xxiii, 171.
- , —, —, vertebrated animals of the crag of Norfolk and Suffolk, xxxi, 339.
- Fossils, foreign, in Britain, shells, &c., of Cornwall, *C. W. Peach*, xlii, 327.
- , —, —, at Cape of Good Hope, xlix, 213.
- , —, —, in France, bones, stags' horns, vi, 199.
- , —, —, bones in eastern part, xiv, 203.
- , —, —, bones from Argenton, xx, 382.
- , —, —, Himalaya Mts., quadrupeds of, xxxiii, 103.
- , —, —, in Saxony, human bones, v, 171.
- , see for species under *Zoology*.
- , cretaceous, of U. States, *S. G. Morton*, xvii, 274; xviii, 243, 249<sup>f</sup>; xxiii, 288<sup>f</sup>; xxiv, 128<sup>f</sup>; xviii, 265<sup>f</sup>, 267;—notice of *S. G. Morton's* synopsis of, xvii, 377.
- , —, —, in New Jersey, foraminifera, xli, 213.
- , coal strata, Wilkesbarre, Pennsylvania, ix, 165.
- , —, —, of Ohio valley, *S. P. Hildreth*, xxix, 1.<sup>f</sup>
- , —, —, Mariner's Mill, xxxi, 28<sup>f</sup>.
- , —, —, *H. Witham*, xviii, 110.<sup>f</sup>
- , —, —, in England, iii, 389; xxxiii, 270.
- , oolitic, remarks on, xxxiii, 107.
- , transition or Silurian, species characteristic of, *T. A. Conrad*, xxxv, 246.
- , —, —, *ibid*, general nature of, xxxvi, 12.
- , —, —, Ludlow rocks, xxx, 48.
- , —, —, in the tertiary of the Atlantic coast, *T. A. Conrad*, xxiii, 339.
- , —, —, enumeration of, *T. A. Conrad*, xxviii, 109.
- , —, —, of Alabama, list of, *I. Lea*, xxv, 419.
- , —, —, *H. C. Lea*, xl, 92.<sup>f</sup>
- , —, —, of Maryland, list of, *I. Lea*, xxv, 422.

- Fossil fruits of *Zamia*, *G. A. Mantell*, xlv, 401.
- plants, of coal regions of Wilkesbarre, Pa., ix, 165.
- — — — — of Ohio valley, *S. P. Hildreth*, xxix, 1.<sup>f</sup>
- — — — —, in Ohio, at Mariner's Mill, xxxi, 28.<sup>f</sup>
- — — — —, in England, iii, 389.
- — — — —, in new red sandstone of England, remarks on, xxxiii, 270.
- — — — —, below the coal in England, xxxiii, 87.
- — — — —, *A. Brongniart* on, iv, 266.<sup>f</sup>
- — — — —, analysis of *Ad. Brongniart's* work on, vii, 178.
- — — — —, *H. R. Göppert's* views on the lapidification of, xxxiii, 109.
- — — — — wood or trees, silicification of, xxxiii, 108.
- — — — —, *ibid.*, *J. D. Dana*, xlviii, 83.
- — — — —, in Connecticut, near Southbury, a trunk of a tree, xiv, 228.
- — — — —, in England and France, *A. Brongniart*, iv, 269.<sup>f</sup>
- — — — —, — — — — —, Craikleith quarry trees, xxviii, 390.
- — — — —, at Granton, near Edinburgh, xxxvii, 363.
- — — — —, in Indiana, palm trees, *D. D. Owen*, xlv, 336.
- — — — —, — — — — —, trees with axe marks, *J. T. Plummer*, xlv, 303.
- — — — —, in Louisiana, trees with axe marks, *W. M. Carpenter*, xxxvi, 118.<sup>f</sup>
- — — — —, Michigan, tree near lake, iv, 285.
- — — — —, in New York, at Chittenango, calcareous tree, v, 251; xviii, 354.
- — — — —, in N. Carolina, v, 261.
- — — — —, — — — — —, tree, siliceous, vii, 249.
- — — — —, in Nova Scotia, xxx, 340.<sup>f</sup>
- Fossil wood, in Nova Scotia, upright trees, xlv, 353.
- — — — —, in Ohio, *S. Gazlay*, xxv, 104.
- — — — —, — — — — —, trees near Gallipolis, *S. P. Hildreth*, xii, 205.
- — — — —, in Russia, vi, 398.
- — — — —, in Scotland, near Glasgow, a tree, iii, 382.
- — — — —, in Texas, silicified, xxxvii, 215.
- — — — —, — — — — —, part silicified and part bituminized, xxxvii, 216.
- — — — —, in Virginia, i, 216.
- — — — —, in West Indies, i, 56; *S. Hovey*, xxxv, 79.
- — — — —, *W. M. Carpenter* on, recently bituminized, xxxvi, 118.<sup>f</sup>
- — — — —, *Nicoll's* sections, xxviii, 74.
- — — — —, *H. Witham's* sections and investigations, xxv, 108; xxvii, 415.
- — — — — forest near Glasgow, xxix, 352.
- Foster, A.*, notice of the falls of Tockoa and Tallulah, in Georgia, xiv, 209.
- Foster, J. W.*, fossil mastodon, Crawford Co., Ohio, xxxvi, 189.<sup>f</sup>
- Foster, W.*, easy method of filling a long syphon, xxviii, 268.
- — — — —, on the culture of the potato in France, xxvii, 176.
- Fountains, origin of, x, 394.
- Fourier*, temperature of the terrestrial globe and planetary spaces, xxxii, 1.
- Fowler, S.*, minerals of Warwick, N. Y., ix, 242.
- Fox, R. W.*, questions on mineral veins, xxxiii, 135.
- — — — —, on the electro-magnetic properties of metalliferous veins, xx, 136.
- — — — —, on the changes in minerals by galvanism, xxxi, 373.
- Fox, C.*, some notice of British naturalists, xxxvi, 217.
- — — — —, notice of some American birds, xxix, 291.
- France, botanical fêtes, ix, 154.

- France, fires in, few, xxv, 291.  
 —, mortality of infants, xix, 192.  
 —, phthisis in, 1828, xix, 193.  
 —, population of, xv, 397.  
 —, scenery in some parts of, x, 167.
- Franconia iron works, viii, 180.
- Franklin, B.*, original letters of, iv, 357; v, 157.
- Franklinite, ii, 323; v, 41, (shot ore,) 242, 400.
- Fraser, John*, botanical labors of, *A. Gray*, xlii, 9.
- Fresco painting, means of detaching, iv, 384.
- Fredonia gas works, xvii, 398.
- Freestone of Sugar Loaf mountain, Maryland, xxvii, 21.
- Freezing mixture, *Boutigny's*, xxx, 168.  
 — — —, xii, 195.  
 — point, influenced by pressure, *L. C. Beck*, xlv, 49.  
 — water, effect from, in a Leyden jar, viii, 374.  
 — — —, by the aid of sulphuric acid, apparatus for, *R. Hare*, xxvii, 132.<sup>f</sup>
- Frodsham, W. J.*, on the vibration of pendulums with different suspending springs, xxxvii, 278.  
 —, elected a member of the Royal Society, xxxvi, 195.
- Frogs, introduction of, into Ireland, xxviii, 398.  
 —, in rocks, remarks on, *D. Thomas*, xix, 167.
- Fromont garden, account of, xx, 83.
- Frozen wells, xxxvi, 184.
- Fruit, method of preserving without sugar, xv, 381.  
 —, fossil, of *Zamia*, &c., *G. A. Mantell*, xlv, 401.  
 — trees, to destroy worms attacking, xxvii, 197.  
 — — —, propagation of, xxvi, 183.  
 — — —, time of flowering and other memoranda for different seasons, at Marietta, Ohio, see *Floral Calendar* and *Meteorological Register*.
- Fucoids and other marine plants, *Ad. Brongniart*, ix, 375.  
 — in Indiana, *J. T. Plummer*, xlv, 290.<sup>f</sup>  
 — in rocks of western N. York, xxxvi, 46.  
 — in Pennsylvania, xx, 415; xxvii, 347.
- Fucoides Harlani, xxxvi, 46; xlviii, 299.<sup>f</sup>  
 — bilobata, xlviii, 307.<sup>f</sup>  
 — demissa, xlvii, 360.<sup>f</sup>
- Fuego, Tierra del, rush of, xviii, 189.
- Fuel, *E. North* on, xi, 66.  
 —, amount of, consumed in New York city, xvi, 360.  
 —, economy of, *W. R. Johnson*, xxiii, 318.<sup>f</sup>  
 —, of coal tar and water, *C. Daubeny*, xxviii, 71.
- Fulgurites, or lightning tubes in sand, xx, 396.  
 —, siliceous tubes, Rome, N. Y., *C. E. West*, xlv, 220.  
 —, near Dresden, remarkable, xlv, 210.  
 —, in chalk, cause of, *C. Lyell*, xxxviii, 122.
- Fuller's earth in Connecticut, ii, 217.
- Fulminating compounds, preparation of, *S. Guthrie*, xxi, 288, 293.  
 — gold, ii, 350; xlviii, 142.  
 — silver, xviii, 335.  
 — — —, of *Berthollet*, xviii, 155.  
 — — —, *Mitscherlich's* mode of preparing, xix, 379.  
 — — —, injury to *R. Hare* from the explosion of, xxii, 185.  
 — powders, caution against, i, 168.  
 — — —, use of crackers of, xxvi, 187.  
 — — —, of cyanogen and calcium, *R. Hare*, xxxvii, 268.  
 — — —, new, made with saltpetre, sulphur, &c., xvi, 397.
- Fulminic acid, composition of, x, 191.
- Fumigation, x, 379.  
 —, in Sweden, vii, 188.

- Functions, relation of *Sturn's*, auxiliary to the roots of an algebraic equation, *Prof. Sylvester*, xlii, 163.
- Functional equation, solution of, *G. R. Perkins*, xlii, 69.
- Fungi, composition of, xlix, 393.
- Furnace for ventilating sewers, *R. Bulkley*, vii, 177.
- , hot blast, *T. Clark*, xxxi, 180.
- , —, —, saving by, xxviii, 71.
- , chimneys of, containing cadmia, xii, 168.
- , —, containing titanium crystals, xii, 189.
- Furrows in rocks, see *Scratches*.
- Fur trade and fur-bearing animals, xxv, 311.
- Fusibility of mixture of carbonate of potash and carbonate of soda, xix, 379.
- Fusible metal, xxi, 371.
- Fusion of charcoal and anthracite, *B. Silliman*, v, 108, 361; vi, 341, 349, 378; viii, 147; x, 109, 119.
- — —, *J. Griscom*, v, 364.
- — —, *R. Hare*, viii, 288; x, 111, 118; xxxviii, 190.
- — —, *L. Vanuxem*, viii, 292; x, 102.
- by compound blowpipe, see *Blowpipe*.
- Fustic, yellow wood resembling, on the Red river, iii, 44.
- Fyfe*, *A.*, photographic processes, xxxvii, 175.
- G.**
- Galactin, *T. Thomson*, xxxv, 303.
- Gale*, *L. D.*, apparatus for obtaining potassium, xxi, 60.<sup>f</sup>
- , on the preparing and preservation of potassium, xix, 205.<sup>f</sup>
- , on *T. D. Mitchell's* mode of preparing carbonic oxide, xxvii, 129.
- Galena, crystallized by galvanism, *Becquerel*, xxviii, 291.
- , localities of, see *Lead ore*.
- Galindo*, *J.*, eruption of the volcano of Cosiguina, xxviii, 332.
- Galle's first comet, xxxviii, 378; xl, 207.
- second, observations on, xl, 40; xl, 207.
- three, notice of, xl, 207.
- Gallic acid, new process for obtaining, xvi, 395.
- —, new process for; *E. N. Kent*, xlvi, 78.
- —, *Döbereiner's* method for, xxviii, 358.
- —, *Pelouze*, xxviii, 125.
- Galvanic battery, *E. de Butts*, viii, 271.<sup>f</sup>
- — of carbon, xxxix, 132.
- — —, *B. Silliman, Jr.*, xliii, 393; xlv, 180.<sup>f</sup>
- — —, *A. Crosse's*, some account of, xxxii, 372; xxxv, 135.<sup>f</sup>
- — —, *A. De la Rive's*, v, 395.
- — —, dry, xii, 195; xvii, 162.
- — —, *Grove's*, xxxviii, 116.
- — —, —, experiments with, *S. F. B. Morse*, xlv, 390.<sup>f</sup>
- — —, *R. Hare's* new modifications of, iii, 105.<sup>f</sup>
- — —, — calorimotor, i, 413<sup>f</sup>; v, 94, 357, 364; vi, 337; xxxii, 284.<sup>f</sup>
- — —, — deflagrator, iii, 105<sup>f</sup>; iv, 201; v, 94<sup>f</sup>; vi, 337; vii, 347<sup>f</sup>; viii, 99; ix, 181; xl, 48.
- — —, — — —, improved form of, *M. Faraday*, xxxii, 170.
- — —, — — —, combining the advantages of the trough of Cruikshank with the deflagrator, xxxii, 285.<sup>f</sup>
- — — of great power, *F. W. de Moleyns*, xlv, 357.
- — —, *J. Henry*, on a spark from a long conductor uniting the poles of, xxviii, 327.
- — —, — — —, action of a spiral conductor, xxviii, 329.
- — —, *C. G. Page*, on iron or any metal a substitute for copper, xxxii, 197.

- Galvanic battery, *C. G. Page*, on the benefit of fresh immersion, xxxvi, 137.<sup>f</sup>
- —, *W. B. and H. D. Rogers*, experimental enquiry into some of the laws of, xxvii, 39.<sup>f</sup>
- —, —, relative influences of the zinc and copper, xxvii, 41.
- —, —, examination of *Ritchie's* law of surface, xxvii, 53.
- —, —, influence of temperature, xxvii, 57.
- —, *J. B. Rogers and J. Green*, *ibid*, xxviii, 33.
- —, —, relative importance of the zinc and copper, xxviii, 34.
- —, —, relative distance of the plates, xxviii, 39.
- —, —, deflecting power from different menstrua, xxviii, 40.
- —, *W. Sturgeon*, difference in the effects of the two polar wires, xxxix, 31.<sup>f</sup>
- —, *Watkins's* dry, xvii, 162.
- blasting, *R. Hare*, xxi, 139; xxvi, 352.<sup>f</sup>; xxxviii, 188.
- —, *H. K. G. Morgan*, xxxviii, 33.
- calorimotor, *Hare's*, i, 413.<sup>f</sup>; v, 94, 357, 364; vi, 337; xxxii, 284.<sup>f</sup>
- —, for galvano-ignition apparatus, *R. Hare*, xxxii, 284.<sup>f</sup>
- circle, theory of, *T. Graham*, xxxviii, 117.
- currents, caloric a cause of, *J. P. Emmet*, xxv, 269.
- —, remarks on, xviii, 199.<sup>f</sup>
- — and sparks from the horse-shoe magnet, *J. P. Emmet*, xxiv, 78.<sup>f</sup>
- deflagrator, *Hare's*, iii, 105.<sup>f</sup>; iv, 201; v, 94.<sup>f</sup>; vi, 337; vii, 347.<sup>f</sup>; viii, 99; ix, 181; xl, 48.
- —, improved form of, *M. Faraday*, xxxii, 170.
- Galvanic experiments by *A. Crosse*, producing crystals, and, as supposed, insects, xxxv, 125.<sup>f</sup>
- — by *R. Hare*, viii, 145.
- — with grasshopper's legs, *J. W. Bailey*, xxxi, 292.<sup>f</sup>
- ignition of gunpowder, *R. Hare*, xxxvii, 269.
- induction, *J. P. Emmet*, xxvi, 23.<sup>f</sup>
- lamp, an improvement in, *J. Cutbush*, ii, 332.
- light, transmission of, through metals of different conducting powers, *J. Thomas*, xxxiv, 205.<sup>f</sup>
- —, daguerrotype experiment by, *B. Silliman, Jr.* and *W. H. Goode*, xliii, 185.
- multiplier, see *Galvanometer*.
- music, production of, *C. G. Page*, xxxii, 396; xxxiii, 118.
- phenomenon, attending the soldering of water pipes in New York city, xvii, 194.
- protection by the contact of heterogeneous metals, xvi, 263.
- trough, *Watkins's*, xvi, 215.
- Galvanism, anthracite a conductor of, v, 200.
- —, carbon fused by, v, 108, 361; vi, 341, 349, 378; viii, 147, 288; x, 109, 119; xxxviii, 190.
- —, —, *L. Vanuxem's* examination of, viii, 292; x, 102.
- —, on colors supposed to be transferred by, through animal substances, *A. Jones*, xxi, 316.
- —, *A. Crosse's* experiments in, see *Crosse*.
- —, crystallization of metals by, *G. Bird*, xxxiii, 267.
- —, —, *Becquerel*, xvii, 383.
- —, crystals and insects produced by, *A. Crosse*, xxxv, 125.<sup>f</sup>
- —, engravings copied by, *von Kobell*, xlvi, 221.<sup>f</sup>
- —, engravings and medals copied by, *T. Spencer*, xl, 157.<sup>f</sup>
- —, fossils copied by, xlii, 327.
- —, gilding by, xli, 402.

- Galvanism, insects supposed to be produced by, xxxii, 374<sup>f</sup>; xxxiii, 272; xxxv, 125.<sup>f</sup>
- , —, —, *W. H. Weekes*, xliii, 395.
- , grasshopper's legs, a substitute for frogs, *J. W. Bailey*, xxxi, 292.<sup>f</sup>
- , insulation of wires, a mode of, proposed, *A. A. Hayes*, xx, 409.
- , metals precipitated by, structure of, *W. de la Rue*, xlix, 390.
- , minerals changed by, *R. W. Fox*, xxxi, 373.
- , results from heat of, and decomposition, *W. Sturgeon*, xxxix, 29.
- , shocks from the calorimotor, how increased, *C. G. Page*, xxxi, 137.<sup>f</sup>
- , size of plates, influence of, in, xxvii, 189.
- , theory of, *Prof. Pfaff*, xix, 178.
- , theory of, *R. Hare*, i, 413.<sup>f</sup>
- , theory of, *C. F. Schönbein*, xxxviii, 119.
- Galvanography, *von Kobell*, xlvi, 221.<sup>f</sup>
- , *T. Spencer*, xl, 157.<sup>f</sup>
- , fossils copied by, xlii, 327.
- Galvano-ignition apparatus, *R. Hare*, xxxii, 282.<sup>f</sup>
- Galvanometer, *R. Hare's* improved, xxvi, 359.<sup>f</sup>
- , —, rotary multiplier, xxxviii, 339.<sup>f</sup>
- , *J. Henry*, on the application of, to electro-magnetic apparatus, xix, 400.<sup>f</sup>
- , *J. Locke*, notice of a new, xxvi, 103<sup>f</sup>, 378.<sup>f</sup>
- , —, large thermoscopic, xxxiii, 365.
- , *J. P. Emmet's*, new form of, xxvi, 311.
- , *C. G. Page*, on the use of, xxxii, 354.<sup>f</sup>
- , —, astatic, or rotary, xxxiii, 376.<sup>f</sup>
- , —, axial, xlix, 136.<sup>f</sup>
- Galvanometer, *C. G. Page*, circular, xxxv, 259.<sup>f</sup>
- , modified, *W. B. and H. D. Rogers*, xxvii, 39.<sup>f</sup>
- Galvanoscope, a means of detecting the failure of water in steam boilers by, *C. G. Page*, xxxvi, 141.<sup>f</sup>
- Galvano-magnetic condenser, v, 394.
- - — apparatus, *J. F. Dana*, vi, 330.<sup>f</sup>
- - — —, Italian, v, 388.
- Gambey*, notice of, vii, 374.
- Gambold*, on the botany of the neighborhood of the Connasarga river, Cherokee country, i, 245.
- Gannal, J. N.*, new process of embalming, xl, 194.
- Garden of Fromont, account of, xx, 83.
- Gardens, botanic, in Austria, ii, 340.
- , —, in Russia, xx, 175.
- , to destroy weeds in, xxii, 381.
- Gardner, D. P.*, on the application of Riench's test for the detection of arsenic, xlv, 240.
- , action of light on plants, xlvi, 1.<sup>f</sup>
- Gardner, J.*, meteorological register for 1832-43, at Rio de Janeiro, xlvii, 290.
- Garnet, manganesian, of Haddam, analysis of, *H. Seybert*, vi, 155.
- , localities of, in Canada, viii, 62.
- , —, in Connecticut, i, 354; ii, 142, 205; iii, 241; v, 36; vi, 155, 222, 246; vii, 253; viii, 7, 258; x, 12.
- , —, in Delaware, v, 41; xiv, 11.
- , —, in Maryland, xviii, 79.
- , —, in Massachusetts, i, 114; iv, 55; vi, 24, 222; vii, 30; viii, 7, 44; xii, 259.
- , —, in Pennsylvania, x, 221; xiv, 6, 8, 10.
- , —, in New Hampshire, vi, 245; xviii, 126, 132.<sup>f</sup>
- , —, in New Jersey, v, 243; ix, 245.

- Garnet, localities of, in New York, iv, 38.
- , —, in R. Island, ix, 49.
- , —, in Vermont, iii, 76; vii, 58; xvii, 353.
- Gas, capacity of, for heat, iv, 372.
- , condensation of, *M. Faraday*, vii, 352; xlix, 373.
- , —, —, sulphurous acid, vii, 353.
- , —, —, sulphuretted hydrogen, vii, 354.
- , —, —, carbonic acid, vii, 354.
- , —, —, euchlorine, vii, 355.
- , —, —, nitrous oxide, vii, 355.
- , —, —, cyanogen, vii, 356.
- , —, —, ammonia, vii, 357.
- , —, —, muriatic acid, vii, 357.
- , —, —, chlorine, vii, 357.
- , —, *Thilorier*, xxxi, 163, 402, 404.
- , —, *J. K. Mitchell*, xxxv, 346.<sup>f</sup>
- , — of carbonic, sulphurous and chloro-chromic acid, *John Torrey*, xxxv, 374; xxxvi, 394.<sup>f</sup>
- , apparatus for regulating the supply of, by its absorption, xiii, 2.<sup>f</sup>
- , conducting power of liquid, xxi, 374.
- , on the dilatation of, *V. Regnault*, xlv, 63.
- , expansion of, xix, 397.
- , mode of obtaining the specific gravity of, *R. Hare*, xvi, 293, 295.<sup>f</sup>
- , apparatus for saturating a liquid with, xvi, 387.
- , caoutchouc rendered impermeable to, xlvii, 194.
- , native, different localities, near the Erie canal, N. York, *A. Eaton*, xv, 233.
- Gas, native, Fredonia, New York, used for lighting a village, xvii, 398.
- , —, at Gasport, N. York, xv, 236; xxxi, 246.
- , —, at Kenawha, *J. A. Lewis*, xlix, 209.
- , —, at a Nova Scotia coal mine, xxx, 184.
- , —, from a pond, v, 199.
- , —, from the water pipes in New York, xxi, 386.
- , —, nitrogen, Hoosic, N. York, xv, 234.
- lamps, portable, iii, 371.
- lights, iii, 170, 385.
- —, in England, iv, 373.
- —, at Glasgow, ii, 365; v, 141.<sup>f</sup>
- —, from cotton seed, *D. Olmsted*, viii, 294; ix, 170; x, 362.
- —, from peat, xxx, 189.
- —, from rosin, xxviii, 147.
- —, from wood, xix, 383.
- —, for light-houses, xxviii, 355.
- , portable, xv, 189.
- , illuminating powers of, viii, 181.
- Gaseous mixtures, analysis of, *R. Hare*, xv, 279, 283.
- Gasometers, new mode of suspending, *R. Hare*, iv, 312.<sup>f</sup>
- Gasometer, *J. H. Patten's*, ix, 92.<sup>f</sup>
- Gasport, gas of, xv, 236; xxxi, 246.
- Gastric juice, notice of *Wm. Beaumont's* work, containing experiments on, *A. St. Martin*, xxvi, 193; xxvii, 405.
- —, *ibid*, *J. J. Berzelius* on, xxvii, 406.
- —, analysis of, *H. Braconot*, xxx, 378.
- Gauss's* theory of terrestrial magnetism, examination of, *E. Loomis*, xlvii, 278.
- Gavial of Caen, analysis of the scales of, *A. Connell*, xxxiv, 201.
- Gay Lussite, xii, 187.

- Gay Lussac*, explanation of volcanic action, xxxvi, 236.
- Gaylord, W.*, influence of the great lakes on our autumnal sunsets, xxxiii, 335.<sup>f</sup>
- , mechanical vaporization of earths, xxxvii, 398.
- , account of a tornado in Onondaga Co., N. Y., xxxvii, 90.
- , formation and dispersion of a thunder shower, xxxix, 54.
- , parhelia seen at Otisco, New York, January, 1840, xxxix, 61.<sup>f</sup>
- , average temperature, weather and winds, for 1838 and 1839, at Otisco, N. Y., xxxix, 63.
- Gazlay, S.*, fossil wood in Ohio, xxv, 104.
- Gebhard, J.*, geology and mineralogy of Schoharie Co., N. York, xxviii, 172.<sup>f</sup>
- Geddes, J.*, geological features of the south side of the Ontario valley, xi, 213.<sup>f</sup>
- Gelatine from bones, i, 170; xxii, 369.
- Genesee river, account and view of upper falls of, xviii, 209.<sup>f</sup>
- Gems, practical remarks on, *T. Taber*, xxxviii, 61.
- Geodes, facts tending to illustrate the formation of crystals in, viii, 282.
- , *ibid*, *J. D. Dana*, xlix, 49.
- Geography, distribution of land and water, xiv, 375.
- , physical, *G. F. Schouw*, xxi, 127.
- , —, influence of, on the boundaries of empires, *J. Finch*, xiv, 18; xvi, 99.
- Geogony of Leibnitz, xx, 56; xxxix, 15.
- , or on the probable origin and systematic arrangement of rocks, *W. Maclure*, vii, 261.
- , or on the formation of the universe, *I. Orr*, vi, 128.<sup>f</sup>
- Geological arrangement, outlines of, *Wm. Maclure*, i, 209.
- Geological Association, American, notice of meeting in 1840, xxxix, 189; in 1841, xli, 158; in 1842, xliii, 146; in 1843, xlv, 135, 310; in 1844, xlvii, 94; in 1845, xlix, 219.
- , —, —, address by *E. Hitchcock*, xli, 232.
- , —, —, *ibid*, by *B. Siliman*, xliii, 217.
- , —, —, *ibid*, by *H. D. Rogers*, xlvii, 137, 247.
- , —, —, constitution and by-laws of, xliii, 149.
- , —, —, transactions of, published, xlv, 220.
- coloring and symbols, system of, *D. D. Owen*, xlv, 351.
- equivalents, *A. Eaton*, xxi, 132.
- essays by *H. H. Hayden*, notice of, iii, 47.
- investigations, mode of conducting, *W. Buckland*, iii, 249.
- nomenclature, classes of rocks, &c., *A. Eaton*, xiv, 145<sup>f</sup>, 359.
- and mineralogical observations, *A. Brongniart*, iii, 216.
- paintings for class illustration, *D. D. Owen*, xlv, 136.
- poem, including geological cookery, v, 272.
- Prodrumus, *A. Eaton*, xvii, 63.
- reasoning, remarks on difficulties that attend some of the modes of, xxx, 114.
- Report, of Connecticut, by *C. U. Shepard*, noticed, xxxiii, 151.
- —, —, by *J. G. Percival*, xxxii, 399; xlv, 187.
- —, of Indiana, by *D. D. Owen*, noticed, xxxiv, 193; xl, 133.
- —, of Maine, by *C. T. Jackson*, noticed, xxxii, 193; xxxv, 387; xxxvi, 143; xxxvii, 376.
- —, of Maryland, by *J. T. Ducatel*, noticed, xxvii, 1; xxx, 393; xxxiii, 191.
- —, of Massachusetts, by *E. Hitchcock*, xxii, 1<sup>f</sup>; xxiii, 389; xxvi, 213; xxxvi, 363; xli, 384.



Geological Report, of Michigan, by *D. Houghton*, xxxiv, 190; xl, 136.

— —, of New Hampshire, by *C. T. Jackson*, noticed, xli, 383; xlviii, 393; xlix, 27.

— —, of New York, annual, noticed, xxxii, 186; xxxvi, 1; xxxix, 95; xl, 73; xlii, 227.

— —, —, final, reviewed, xlvi, 143; xlvii, 354<sup>f</sup>; xlviii, 296.<sup>f</sup>

— —, of Ohio, noticed, xxxii, 190; xxxiv, 196, 347<sup>f</sup>; xl, 126.

— —, of Pennsylvania, by *H. D. Rogers*, noticed, xxxii, 192; xxxiv, 188; xxxvii, 380.

— —, of Rhode Island, by *C. T. Jackson*, noticed, xl, 182.

— —, of Tennessee, by *G. Troost*, noticed, xxx, 391; xxxiv, 187.

— —, of Virginia, by *W. B. Rogers*, noticed, xxxii, 192; xxxvii, 380.

— society of London, anniversary address by *W. Whewell*, xxxvii, 218.

— — —, number of fellows of, in 1837, xxxiii, 76.

— — of Dublin, xxviii, 368.

— — of France, notice of, xxiv, 192.

— — —, transactions of, noticed by *C. U. Shepard*, xxviii, 283.

— —, American, notice of, ii, 139; iii, 360; iv, 191; v, 403; vi, 377; vii, 358; viii, 187, 392; ix, 387; x, 201.

— — of Pennsylvania, notice of transactions of, xxix, 391.

— systems, observations upon, *W. Maclure*, ix, 253.

— Theory of the Earth, *G. Cuvier's* Essay on, noticed, i, 68.

— — of Leibnitz, xx, 56; xxxix, 15.

**GEOLOGY.**

—, on the study of, iii, 363.

—, Mosaic, *W. Maclure*, ix, 157.

—, connexion with the Mosaic history, xxv, 26.

**GEOLOGY.**

—, on the progress of, for 1833, xxviii, 294.

—, queries in, proposed by the geologists of the survey of New York, xxxiii, 124.

—, principles of, xxi, 1.

—, principles of Catastrophists and Uniformitarians, xxxvii, 234.

—, stratigraphical, cardinal points in, *A. Eaton*, xxi, 199.

—, volcanic, see *Volcano*.

—, *Foreign*.

—, —, Africa, northern, notices of, iv, 32.

—, —, —, between Suez and Cairo, account of the desert, xxxiii, 288.

—, —, —, Cape of Good Hope, *G. Champion*, xxix, 230.

—, —, —, southern, cave, minerals in, xxviii, 290.

—, —, Asia, Bombay, province of the Deccan, xxxiii, 274.

—, —, —, Minor, *Mr. Hamilton*, xxxvii, 226.

—, —, —, mines of Tokat, xxxvii, 352.

—, —, —, Naphtha springs, xxxvii, 353.

—, —, —, Taurus mountains, xxxvii, 351.

—, —, —, Silurian strata, *H. E. Strickland*, xxxiii, 95.

—, —, —, volcanic region of the Catacecaumene, xxxiii, 95.

—, —, —, Black sea shores, xxxii, 399.

—, —, —, Caucasus range basalt, xxxvii, 348.

—, —, —, ibid, floods, xxxvii, 349.

—, —, —, Persia, earthquakes at Tabriz, xxxvii, 351.

—, —, —, Naphtha springs, xxxvii, 354.

—, —, —, marble of Tabriz, xxxvii, 355.

GEOLOGY, *Foreign.*

- , —, Asia, Persia, salt near Tabriz, &c., xxxvii, 350.
- , —, —, —, volcano, extinct, near Mt. Ararat, xxxvii, 349.
- , —, —, —, volcano in the Kourdish country, xxxvii, 350.
- , —, Europe, remarks on, by *Boué*, vii, 188.
- , —, —, —, classification of rocks of, *H. T. de la Beche*, xviii, 26.
- , —, —, —, northern, geological notice of, xvii, 16.
- , —, —, Great Britain, boulders over northern parts of England, *Phillips*, xxxi, 360.
- , —, —, —, changes of level in, xxxiii, 97.
- , —, —, —, *ibid*, *R. I. Murchison*, xxxi, 375.
- , —, —, —, Burdie House, freshwater limestone, xxviii, 365.
- , —, —, —, coal formation, xxxiii, 79.
- , —, —, —, *ibid*, alternation of marine freshwater beds in, xxxiii, 80.
- , —, —, —, *ibid*, faults and dislocations of strata, Dudley, xxxiii, 82.
- , —, —, —, *ibid*, limestone of Yorkshire, xxxiii, 84.
- , —, —, —, *ibid*, marine shells, xxv, 199.
- , —, —, —, *ibid*, Dudley, xxxvii, 390.
- , —, —, —, Calton Hill near Edinburgh, and on the aqueous origin of wacke, *J. W. Webster*, i, 230.<sup>f</sup>
- , —, —, —, Cambrian system of Sedgwick xxxvii, 220.
- , —, —, —, caves in, see *Caves*.
- , —, —, —, crag of Suffolk and Norfolk, vertebrated remains in, xxxi, 339.

GEOLOGY, *Foreign.*

- , —, Europe, Great Britain, Devonshire, structure of, *Sedgwick* and *Murchison*, xxxi, 349<sup>f</sup>; xxxiii, 85.
- , —, —, —, *ibid*, lines of dislocation, *H. T. de la Beche*, xxxi, 354.
- , —, —, —, Ludlow rocks of Wales, remarks on the fossils of, *L. Agassiz*, xxx, 48.
- , —, —, —, recent sandstone on the northern coast of Cornwall, *J. A. Paris*, i, 234.
- , —, —, —, plastic clay of the southeast part, xxxiii, 92.
- , —, —, —, Silurian system of *Murchison* and others, xxxvii, 219.
- , —, —, —, Silurian rocks of Denbigshire, *J. E. Bowman*, xlii, 325.
- , —, —, —, formations of Wales below the coal, remarks on, *L. Agassiz*, xxx, 46.
- , —, —, —, fossil plants below the coal, xxxiii, 87.
- , —, —, —, Isle of Wight freshwater formation, xxxvii, 225.
- , —, —, —, review of the "Outlines," of *Conybeare* and *Phillips*, vii, 203.
- , —, —, —, France, freshwater formations of Paris and Rome, remarks upon, from *Cuvier's* work on organic remains, vi, 381.
- , —, —, —, Auvergne, in a letter by *C. Daubeny*, ii, 351.
- , —, —, —, Breccia of Mt. D'Or, ii, 356.
- , —, —, —, Pyrenees, south of France, &c., in a letter from *Boué*, ix, 23.
- , —, —, —, Germany, erratic blocks of north of, xxviii, 389.

GEOLOGY, *Foreign.*

- , —, Europe, Germany, notices of the Hartz, *T. G. Clemson*, xix, 105.<sup>f</sup>
- , —, —, Greece, Cephalonia, tertiary of, Messrs. *Hamilton* and *Strickland*, xxxiii, 211.
- , —, —, —, in the Morea, *Boblaye* and *Virlet*, xxxiii, 96.
- , —, —, Hungary, *Beudant's* travels in, vii, 256.
- , —, —, Iceland, iv, 370; xvii, 15.
- , —, —, Italy, formations of, vii, 186.
- , —, —, Portugal, notice of, xxxvii, 226.
- , —, —, Russia, Altai, *M. P. de Tchihatcheff*, xlix, 378.
- , —, —, —, Northern, including Pargas Islands, Lake Onega, Siberia, Siberian Steppes, &c., xvii, 16.
- , —, —, —, salt district, xvii, 19, 20.
- , —, —, —, mines of, see *Russia*.
- , —, —, Sicily, from a work by *F. Ferrara*, viii, 201.
- , —, —, —, sketch of, *C. Daubeny*, x, 230.<sup>f</sup>
- , —, —, —, see further under *Volcano*.
- , —, —, Sweden, rise of land in, *C. Lyell*, xxviii, 387.
- , —, —, —, subsidence of south part of, *Nilsson*, xxxiii, 102.
- , —, —, Switzerland, Alps, from *F. J. Hugi's* travels, xxviii, 296.
- , *North American.*
- , —, Arctic regions, xvii, 1.
- , —, Bay of Fundy, terraces of, xli, 55.
- , —, Canada, alluvial deposits at Malbay, v, 221.<sup>f</sup>
- , —, —, various fossils in, *J. J. Bigsby*, viii, 61.

GEOLOGY, *North American.*

- , —, Canada, supposed volcano in, xxx, 238, 241.
- , —, —, N. W. portion of Lake Huron, *J. J. Bigsby*, iii, 254.<sup>f</sup>
- , —, —, Kingston, *F. H. Baddely*, xviii, 104.
- , —, —, geology and mineralogy of Malbay, *J. J. Bigsby*, v, 205.<sup>f</sup>
- , —, —, transition rocks of the Catarqui, *R. H. Bonnycastle*, xviii, 85; xx, 74<sup>f</sup>; xxiv, 97<sup>f</sup>; xxx, 233.<sup>f</sup>
- , —, Great Bear lake and vicinity, xvii, 2, 3.
- , —, Greenland, xvii, 14.
- , —, —, subsidence of, xxx, 379.
- , —, Hudson's Bay and vicinity, xvii, 11.
- , —, Melville Island, xvii, 10.
- , —, Nova Scotia, mineralogy and geology of, *C. T. Jackson* and *F. Alger*, xiv, 305<sup>f</sup>; xv, 132<sup>f</sup>, 201.
- , —, —, *ibid.*, *F. Alger*, xii, 227.
- , —, Rocky Mts., northern termination, xvii, 2.
- , —, United States.\*
- , —, —, early state of the science in, *B. Silliman*, xliii, 224.
- , —, —, progress and condition of, in an address before the Geol. Assoc., *H. D. Rogers*, xlvii, 137, 247.
- , —, —, State surveys in progress, xxx, 203, 393; xli, 235.

\* We have arranged the references under this head according to the States, placing first a few of a general character. The references to *mines*, will be found under the names of the several metals; those of fossils, under *Fossil*, the names of the species, and also *Zoology*; those of tracks of animals under *Footprints*; of coal, under *Coal*; of boulders, under *Boulders* and *Drift*; of scratches or furrows, under *Scratches*.

GEOLOGY, *North American.*

- , —, United States, account of, with conjectures upon, *W. Maclure*, vi, 98.
- , —, —, causes of general features, &c., *W. W. Math-er*, xlix, 1, 284.
- , —, —, *ibid*, *T. A. Conrad*, xxxv, 237, 244.
- , —, —, elevation during the tertiary epoch, *T. A. Conrad*, xxxv, 245.
- , —, —, remarks on, *H. D. Rogers*, xxviii, 74; xlvii, 140, 247.
- , —, —, general review of, *E. Hitchcock*, xli, 239.
- , —, —, *ibid*, *C. Daubeny*, xli, 195.
- , —, —, relation to Russian, *R. I. Murchison*, xli, 208.
- , —, —, equivalency of rocks with European, *A. Eaton*, xxxix, 149.
- , —, —, oolites not occurring in, xxxviii, 126.
- , —, —, rocks characteristic of, *L. Vanuxem*, xvi, 254.
- , —, —, boulders in, see *Boulders and Drift*.
- , —, —, scratches in, see *Scratches*.
- , —, —, cretaceous formation and its fossils, *S. G. Morton*, xvii, 274, 290; xviii, 243; 249<sup>f</sup>; xxiii, 288<sup>f</sup>; xxiv, 128<sup>f</sup>; xlviii, 267.
- , —, —, *ibid*, a division in, *S. G. Morton*, xxviii, 277.
- , —, —, plastic clay in, *T. A. Conrad*, xxxviii, 91.
- , —, —, secondary formations of the southern states, *J. T. Hodge*, xli, 332.
- , —, —, Silurian system, and its characteristic fossils, *T. A. Conrad*, xxxv, 243; xxxviii, 86.
- , —, —, *ibid*, *H. D. Rogers*, xlvii, 145.
- , —, —, Taconic system, xlvii, 149; xlviii, 150.

GEOLOGY, *North American.*

- , —, United States, tertiary, essay on, *J. Finch*, vii, 31.
- , —, —, *ibid*, remarks on, *E. Hitchcock*, xli, 246.
- , —, —, *ibid*, *H. D. Rogers*, xlvii, 254.
- , —, —, *ibid*, of Atlantic coast, *T. A. Conrad*, xxiii, 204, 339; xxviii, 104, 280<sup>f</sup>; xli, 344.<sup>f</sup>
- , —, —, *ibid*, of the Southern States, *J. T. Hodge*, xli, 332.
- , —, —, oyster shell deposits of the Atlantic coast, *L. Vanuxem*, xli, 168.
- , —, —, structure of the Appalachian chain, *W. B. and H. D. Rogers*, xliii, 177; xlv, 359.
- , —, —, notice of *Eaton's* Index of the Northern States, i, 69.
- , —, —, notice of *I. Lea's* contributions to geology, xxv, 413.
- , —, —, trap of New England, volcanic origin of, *T. Cooper*, iv, 239.
- , —, —, **Maine**, notice of geological reports of, *C. T. Jackson*, xxxii, 193; xxxv, 387; xxxvi, 143; xxxvii, 376.
- , —, —, —, remarks on, *C. T. Jackson*, xxxiv, 69.
- , —, —, —, anthracite coal formation, *C. T. Jackson*, xxxvi, 149.
- , —, —, —, dikes of trap of different ages, and limestones transformed by the same, *C. T. Jackson*, xxxvi, 145, 147.
- , —, —, —, dolomization theory of *von Buch* not confirmed, *C. T. Jackson*, xxxvi, 147.
- , —, —, —, iron ore veins, *C. T. Jackson*, xxxvi, 147, 150.
- , —, —, —, changes of level in, *C. T. Jackson*, xxxvi, 154.

GEOLOGY, *North American.*

—, —, United States, Maine, segregation theory of veins not sustained, *C. T. Jackson*, xxxvi, 148.

—, —, —, —, fossiliferous rocks near Moose river, xxxvii, 378.

—, —, —, —, **New Hampshire**, excursion to White Mountains, *J. Pierce*, viii, 172.

—, —, —, —, Geological Report of *C. T. Jackson*, noticed, xli, 383; xlvi, 393; xlix, 27.

—, —, —, —, account of a section of, *E. Hitchcock*, i, 105<sup>f</sup>; vi, 1.<sup>f</sup>

—, —, —, —, observations on the White Mountains, with accounts of trap dikes, granite veins, minerals, &c., *O. P. Hubbard*, xxxiv, 105.<sup>f</sup>

—, —, —, —, **Vermont**, dike of trap in Montgomery, xxii, 189.

—, —, —, —, supposed volcano of West River Mountain, *J. A. Allen*, iii, 73.

—, —, —, —, account of section of, *E. Hitchcock*, i, 105<sup>f</sup>; vi, 1.<sup>f</sup>

—, —, —, —, **Massachusetts**, account of, *C. Dewey*, viii, 1<sup>f</sup>, 240.

—, —, —, —, *ibid.*, *E. Hitchcock*, i, 105<sup>f</sup>; vi, 1.<sup>f</sup>

—, —, —, —, *ibid.*, *A. Smith*, xxii, 205.<sup>f</sup>

—, —, —, —, vicinity of Lowell, xxvii, 340.

—, —, —, —, Hampshire Co., with an account of the lead mines, *A. Nash*, xii, 238.<sup>f</sup>

—, —, —, —, vicinity of Williams College, *C. Dewey*, i, 337.<sup>f</sup>

—, —, —, —, Martha's vineyard and the Elizabeth Islands, vii, 240.<sup>f</sup>

—, —, —, —, economical review of, *E. Hitchcock*, xxxvi, 363.

GEOLOGY, *North American.*

—, —, United States, Massachusetts, granite veins and beds of Chester, *E. Emmons*, viii, 250.<sup>f</sup>

—, —, —, —, report on, *E. Hitchcock*, xxii, 1<sup>f</sup>; xxiii, 389; xxvi, 213; xxxvi, 363; xli, 384.

—, —, —, —, sandstone of Connecticut valley, *E. Hitchcock*, vi, 39; xli, 244.

—, —, —, —, *ibid.*, cause of dip, xliii, 170; xlvi, 107.

—, —, —, —, terraces and ancient lakes, *A. Smith*, xxii, 214, 216.

—, —, —, —, syenite and amygdaloid, Salem, iii, 232.

—, —, —, —, changes produced by the Saxicava, in Plymouth sound, xlii, 326.

—, —, —, —, **R. Island**, some notice of the rocks of, from *C. T. Jackson's* report, xl, 182.

—, —, —, —, **Connecticut**, rocks of the Connecticut valley, vii, 25.

—, —, —, —, water courses and geology of the Connecticut valley, terraces, ancient lakes, &c., xxii, 205.<sup>f</sup>

—, —, —, —, account of the Connecticut valley, *E. Hitchcock*, vi, 1<sup>f</sup>, 201; vii, 1.

—, —, —, —, New Haven and Litchfield Cos., *B. Silliman*, ii, 201.

—, —, —, —, Salisbury, Conn., *C. A. Lee*, viii, 252.

—, —, —, —, map of New London and Windham Cos., *W. Lester, Jr.*, xxiii, 404.

—, —, —, —, junction of trap and sandstone at Wallingford, *A. B. Chapin*, xxvii, 104.<sup>f</sup>

—, —, —, —, section from Killingly to Haddam, *W. W. Mather*, xxi, 94.<sup>f</sup>

—, —, —, —, trap rocks, igneous origin of, *B. Silliman*, xvii, 119.

GEOLOGY, *North American.*

- , —, United States, Connecticut, survey authorized, xxviii, 381.
- , —, —, —, report of *C. U. Shepard*, noticed, xxxiii, 151.
- , —, —, —, *ibid.*, of *J. G. Percival*, xxxii, 399; xlv, 187.
- , —, —, **New York**, annual reports of survey, noticed, xxxii, 186; xxxvi, 1; xxxix, 95; xl, 73; xlii, 227.
- , —, —, —, final report of survey, reviewed, *D. D. Owen*, xlvi, 143; xlvii, 354<sup>f</sup>; xlviii, 296.<sup>f</sup>
- , —, —, —, account of the rocks of, *C. Dewey*, xxxiii, 121.
- , —, —, —, oolite in Orange Co., xix, 398.
- , —, —, —, *ibid.*, of Saratoga and elsewhere, *J. H. Steele*, ix, 16.<sup>f</sup>
- , —, —, —, the secondary region, *J. Pierce*, ii, 181.
- , —, —, —, western New York, *G. E. Hayes*, xxxi, 241; xxxv, 86.<sup>f</sup>
- , —, —, —, Albany county, iii, 239.
- , —, —, —, Canaan Mts., section, *H. D. Barnes*, v, 8.<sup>f</sup>
- , —, —, —, *ibid.*, subsidence about, v, 15.
- , —, —, —, Carthage bridge, near the mouth of Genesee river, *J. I. Bigsby*, ii, 250.
- , —, —, —, Catskill Mts., *H. E. Dwight*, ii, 11.
- , —, —, —, *ibid.*, *D. W. Barton*, iv, 249.<sup>f</sup>
- , —, —, —, *ibid.*, *J. Pierce*, vi, 86.
- , —, —, —, Erie canal route, *A. Eaton's* survey noticed, vi, 373; viii, 358; ix, 355; xiii, 383.

GEOLOGY, *North American.*

- , —, United States, New York, Essex Co., and northern sources of the Hudson, some remarks on, *W. C. Redfield*, xxxiii, 301.<sup>f</sup>
- , —, —, —, Highlands, *A. Eaton*, v, 231.
- , —, —, —, *ibid.*, *W. W. Mather*, xxi, 97.
- , —, —, —, *ibid.*, *J. Pierce*, v, 26.
- , —, —, —, Hudson river region, iv, 33.
- , —, —, —, *ibid.*, tertiary, *J. Finch*, x, 227.
- , —, —, —, Mohawk alluvial deposits, xxxiii, 207.
- , —, —, —, Niagara region, iv, 35; xi, 213.<sup>f</sup>
- , —, —, —, recession of the falls, *G. E. Hayes*, xxxv, 100.<sup>f</sup>
- , —, —, —, *ib.*, *J. B. Gibson*, xxix, 204.
- , —, —, —, *H. D. Rogers*, xxvii, 326.<sup>f</sup>
- , —, —, —, Ontario valley, *J. Geddes*, xi, 213.<sup>f</sup>
- , —, —, —, Orange Co., oolite in, xix, 398.
- , —, —, —, Portage, two sections, *J. Hall*, xlv, 329.
- , —, —, —, Rensselaer Co., survey in progress, iv, 189;—*ibid.*, noticed, v, 203.
- , —, —, —, Rochester, polished limestone of, *C. Dewey*, xxxvii, 240.
- , —, —, —, Salina salt formation, *J. Forman*, xix, 141.
- , —, —, —, salt springs, see *Springs*.
- , —, —, —, Saratoga lake, and its environs, with Snake Hill, *J. H. Steele*, ix, 1.<sup>f</sup>
- , —, —, —, Schoharie Co., *J. Gebhard*, xxviii, 172.<sup>f</sup>
- , —, —, —, St. Lawrence Co., *J. Finch*, xix, 220.

GEOLOGY, *North American.*

- , —, United States, New York, St. Lawrence and Jefferson Cos., *J. B. Crawe* and *A. Gray*, xxv, 346.
- , —, —, —, Sullivan Co., xxiii, 243.
- , —, —, —, Taconic range, section of, to Troy, *C. Dewey*, ii, 246.
- , —, —, —, Troy, *M. Hale*, iii, 72.
- , —, —, —, Troy, gravel near, *A. Eaton*, v, 22.
- , —, —, **New Jersey**, alluvial district of, with remarks on the marl, *J. Pierce*, vi, 237.
- , —, —, —, secondary region of, *J. Pierce*, ii, 181.
- , —, —, —, cretaceous formation, *S. G. Morton*, xxii, 90; xxiii, 288; xlvi, 265<sup>f</sup>, 267.
- , —, —, —, *ibid*, *C. Lyell*, xlvii, 213.
- , —, —, —, Hoboken serpentine rocks, *T. Nuttall*, iv, 16.
- , —, —, **Pennsylvania**, coal regions and mines of, see *Coal*.
- , —, —, —, western, *S. P. Hildreth*, xxix, 51, 71, 74, &c.
- , —, —, —, Wyoming, &c., *B. Silliman*, xviii, 309<sup>f</sup>; xix, 1.<sup>f</sup>
- , —, —, —, near Easton, *J. Finch*, viii, 236.<sup>f</sup>
- , —, —, —, near Bedford Springs, *H. H. Hayden*, xix, 97.
- , —, —, —, near Westchester, *J. Finch*, xiv, 15.
- , —, —, —, mineral resources, *J. Pierce*, xii, 54.
- , —, —, —, scenery, xxi, 197.
- , —, —, —, survey proposed, xii, 173.

GEOLOGY, *North American.*

- , —, United States, Pennsylvania, *H. D. Rogers's* report noticed, xxxii, 192; xxxiv, 188; xxxvii, 380.
- , —, —, **Maryland**, Appalachian chain in, *W. E. A. Aikin*, xxvi, 219.<sup>f</sup>
- , —, —, —, report on, *J. T. Ducatel* and *J. H. Alexander*, xxvii, 1; xxxii, 191.
- , —, —, —, survey of, xxx, 393.
- , —, —, —, report on the new map of, noticed, xxxii, 191.
- , —, —, —, Bare Hills, near Baltimore, *H. H. Hayden*, xxiv, 349.<sup>f</sup>
- , —, —, **Virginia**, account of part of, and Tennessee, *J. H. Kain*, i, 60.
- , —, —, —, *ibid*, with parts of Alabama and Mississippi, *E. Cornelius*, i, 214, 317.<sup>f</sup>
- , —, —, —, coal mines and strata of, see *Coal*.
- , —, —, —, gold mines of, see *Gold*.
- , —, —, —, Kenawha and other western valleys, *S. P. Hildreth*, xxix, 83.
- , —, —, —, shell marl regions, *J. Pierce*, xi, 54.
- , —, —, —, tertiary formation, *W. B.* and *H. D. Rogers*, xxxviii, 183.
- , —, —, —, report on, of *W. B. Rogers*, noticed, xxxii, 192; xxxvii, 380.
- , —, —, —, **N. and S. Carolina**, account of parts of, *J. Dickson*, iii, 1.
- , —, —, —, *ibid*, *T. D. Porter*, iii, 227.
- , —, —, —, gold region, see *Gold*.
- , —, —, **N. Carolina**, basalt, basaltic dikes, ("natural walls,") and petrifications, *J. Beckwith*, v, 1.

GEOLOGY, *North American.*

- , —, United States, N. Carolina, natural walls of Rowan, xiv, 242.
- , —, —, —, mining districts of western part, *J. Peck*, xxiii, 1.<sup>f</sup>
- , —, —, —, origin and character of the low country, *E. Mitchill*, xiii, 336.
- , —, —, —, notice of *D. Olmsted's* report, xiv, 230.
- , —, —, —, red sandstone formation in, *D. Olmsted*, ii, 175.
- , —, —, —, survey proposed, v, 202.
- , —, —, —, **Georgia**, Alabama and Florida, with account of fossils in, silicified from thermal springs, *C. U. Shepard*, xxv, 162.
- , —, —, —, **Alabama**, sketches of, *W. S. Porter*, xiii, 77.
- , —, —, —, Greene Co., *R. W. Withers*, xxiv, 187.
- , —, —, —, near Centerville, xlvi, 399.
- , —, —, —, the gale in, *S. G. Morton*, xxviii, 277.
- , —, —, —, tertiary, with a list of fossils, xxv, 417, 419.
- , —, —, —, **Floridas**, *J. Pierce*, ix, 119.
- , —, —, —, East, remarks on, xxxv, 60.
- , —, —, —, **Mississippi** valley, lower part, *R. Nutt*, xxiii, 49.
- , —, —, —, *L. Brinquier*, iii, 15.
- , —, —, —, **Texas**, Trinity country, *J. L. Riddell*, xxxvii, 211.
- , —, —, —, hog-wallow prairies, xxxix, 211.
- , —, —, —, **Ohio**, account of, *S. P. Hildreth*, x, 1; xxv, 217.

GEOLOGY, *North American.*

- , —, U. States, Ohio, valley, including part of Pennsylvania and Virginia, *S. P. Hildreth*, xxix, 1.<sup>f</sup>
- , —, —, —, climate, diseases, &c., *C. Atwater*, xi, 224.
- , —, —, —, tertiary deposits, xxxiv, 360.
- , —, —, —, saliferous formation, *S. P. Hildreth*, xxiv, 46; xxix, 26.
- , —, —, —, buhrstone, xxix, 142; xxxiv, 352.
- , —, —, —, grotto of plants, xxix, 18.<sup>f</sup>
- , —, —, —, Falls of the Cuyahoga, *S. P. Hildreth*, xxxi, 47.<sup>f</sup>
- , —, —, —, rocks of, xl, 126.
- , —, —, —, Belmont Co., *C. Atwater*, i, 226.
- , —, —, —, reports on, noticed, of *S. P. Hildreth*, xxxii, 190; xxxiv, 196, 347.
- , —, —, —, *ibid*, of *W. W. Mather*, xxxiv, 196, 347; xl, 126.
- , —, —, —, *ibid*, of *Mr. Briggs*, xxxiv, 197.
- , —, —, —, *ibid*, of *Mr. Whittlesey*, xxxiv, 197.
- , —, —, —, coal, see *Coal*.
- , —, —, —, **Western States**, *D. D. Owen*, xlv, 365; xlv, 151, 163.
- , —, —, —, *J. Locke*, xli, 160; xliii, 147.
- , —, —, —, *J. Hall*, xlii, 51.
- , —, —, —, *G. W. Featherstonhaugh's* report noticed, xxviii, 379; xxxii, 185.
- , —, —, —, **Michigan**, observations on, *J. Pierce*, x, 304.
- , —, —, —, rocks of, xl, 136.
- , —, —, —, mining region of, *D. Houghton*, xli, 183.



GEOLOGY, *North American.*

- , —, United States, Michigan, *D. Houghton's* reports on, noticed, xxxiv, 190; xl, 136.
- , —, —, —, N. W. portion of Lake Huron, *J. J. Bigsby*, iii, 254.<sup>f</sup>
- , —, —, —, Fort Winnebago, *D. Ruggles*, xxx, 1.<sup>f</sup>
- , —, —, —, Kewenaw Point, *C. T. Jackson*, xlix, 81.
- , —, —, —, **Indiana**, *W. B. Stilson*, i, 131.
- , —, —, —, *D. D. Owen's* report noticed, xxxiv, 193; xl, 133.
- , —, —, —, Wayne Co., *J. T. Plummer*, xlv, 281.<sup>f</sup>
- , —, —, —, **Illinois**, upper, *C. U. Shepard*, xxxiv, 134.<sup>f</sup>
- , —, —, —, **Missouri**, cretaceous formation, *J. N. Nicollet*, xli, 180; xlv, 153.
- , —, —, —, lead, see *Lead*.
- , —, —, —, limestone of the lead region, iii, 248.
- , —, —, —, Mississippi valley and the lakes, *J. B. Gibson*, xxix, 201.
- , —, —, —, *H. King*, xlvii, 128.
- , —, —, —, **Tennessee**, East, *J. Peck*, xxiii, 1.<sup>f</sup>
- , —, —, —, *G. Troost's* report noticed, xxx, 391; xxxiv, 187.
- , —, —, —, **Kentucky**, near Louisville and Shippingsport canal, *I. A. Lapham*, xiv, 65.<sup>f</sup>
- , —, —, —, **Oregon**, or West of the Rocky Mountains, *A. Eaton*, xxv, 351.
- , —, —, —, *J. Ball*, xxviii, 1.
- , —, —, —, American, West Indies, *Nugent*, i, 140.
- , —, —, —, St. Croix and Antigua, *S. Hovey*, xxxv, 64, 75.

## GEOLOGY.

- , —, —, —, American, West Indies, shell limestone, *S. Hovey*, xxxv, 71.
- , —, —, —, chert, siliceous petrifications, xxxv, 79.
- , —, —, —, coral limestone raised in Dominica, St. Christopher's, St. Eustatia, &c., iv, 218.
- , —, —, —, Cuba, oolitic strata, *I. Lea*, xl, 41.
- , —, —, —, South America, New Grenada, oolitic strata, *I. Lea*, xl, 41.
- , —, —, —, mining regions of Peru, xvii, 43.
- , —, —, —, Montevideo, xxix, 240.
- , —, —, —, Tarapaca Province, *J. H. Blake*, xlv, 1.<sup>f</sup>
- , —, —, —, Sandwich Islands, rocks and minerals of, xvi, 345.
- , —, —, —, notices of, *C. S. Stewart*, xx, 229.
- , —, —, —, Hawaii, xi, 1.
- , —, —, —, *E. G. Kelley*, xl, 117.<sup>f</sup>
- , —, —, —, Mauna Loa, xvi, 346.
- , —, —, —, Oahu, *J. D. Dana*, xlv, 407.
- , —, —, —, *A. Ball*, xxviii, 15.
- , —, —, —, see further, under *Volcano*.
- Geometry, by *N. I. Larkin*, ii, 359.
- , analytical, *C. Wilder*, xx, 285.<sup>f</sup>
- Georama at Paris, ix, 204; xii, 190.
- Germany, city of Berlin, notice of, xx, 389.
- German silver, made by *M. Frick*, xiii, 172.
- Correspondent, a paper in New York, ii, 178.
- Germination, influence of light on, *R. Hunt*, xlvi, 397.
- of cellules, *C. Vogt*, xlv, 213.
- Geum, species of, iv, 64; xlii, 35.

- Geysers, remarks on, *G. Bischof*, xxxvi, 255.
- of Iceland, siliceous concretions from, xxxi, 167; xxxii, 196.
- Gibbes, L. R.*, on the resistance of fluids, xxvii, 135.
- Gibbon, J. H.*, visit to the salt works of Zipaquera, xxxii, 89.
- Gibbs, G.*, on the dry rot, ii, 114.
- , method of augmenting the force of gunpowder, i, 87.
- , connexion between magnetism and light, i, 89.
- , on the tourmalines and other minerals of Chesterfield, Mass., i, 346.
- , mineral cabinet of, at Yale College, ii, 169.
- Gibbs, J. W.*, characteristics of some African dialects, xxxviii, 41; xxxix, 255.
- , contributions to English lexicography, xxxiii, 324; xli, 28.
- , *ibid*, origin of the names of beasts, birds and insects, xli, 32.
- , on the adverbial genitive case in English, xlv, 96.
- , on Greek conjugations, xxxvii, 112.
- , table of Greek correlatives, xxxiv, 337.
- , on Greek verbal roots in English, xlv, 284.
- , on the orthography of Hebrew words in the Roman character, xxiv, 87.
- Gibbs, O. W.*, new form of magneto-electric machine, and account of a carbon battery, xxxix, 132.
- , on a natural system of chemical classification, xlix, 384.
- Gibbsite in Massachusetts, iii, 239, (called Wavellite); v, 269; vi, 247, 364; viii, 52.
- in New York, xl, 75.
- Gibson, J. B.*, on the geology of the lakes and the valley of the Mississippi, xxix, 201.
- Gigantolite, analysis of, xlii, 387.
- Gilding by electrography, xli, 402.
- Gin, loss of memory from the use of, xxvi, 211.
- Girard, P. S.*, on navigable canals, iv, 102; vii, 286.
- Girardin*, analysis of guano, xlviii, 181.
- Glaciers and boulders in Switzerland, *L. Agassiz*, xli, 59, 190.
- in Switzerland, extent of, xlii, 357.
- of the Alps, account of, *J. D. Forbes*, xlv, 173.
- in Scotland, former existence of, xli, 191.
- , a week among, *H. A. Grant*, xlv, 281.
- Glacier theory of *L. Agassiz*, xlii, 346.<sup>f</sup>
- —, remarks on, *E. Hitchcock*, xliii, 396.
- — of drift, *E. Hitchcock*, xlv, 324.
- — —, remarks on, *H. D. Rogers*, xlvii, 268.
- Glasgow, supply of water to, iii, 372.
- Glass, manufacture of, iii, 370.
- , —, *H. N. Fenn*, xvi, 112.<sup>f</sup>
- from burning hay, xix, 395; xxiv, 174.
- , blowing of, xxiv, 380.
- , cloth of, xxxix, 386.
- , ductility of, viii, 392.
- , on the decomposition of, *D. Brewster*, xl, 324.
- , decay of an object-, xxviii, 69.
- decomposed, rings of polarized light produced in specimens of, *D. Brewster*, xl, 325.
- , dividing of, by friction, *R. Hare*, xliii, 7.<sup>f</sup>
- , *Guinand's* flint, ix, 380.
- , opaline, cause of color of, xxvi, 66.
- for optical purposes, manufacture of, *A. Bourne*, xl, 207.
- , porosity of, vii, 192.
- , spectacle, xxvii, 80.

- Glass, silvering of, according to *Drayton's* method, xlix, 198.
- beads, manufactory of, at Venice, xxvii, 78.
- houses, improved mode of drying wood for, xvii, 163.
- vessels, method of cutting, xxiv, 206.
- or porcelain vessels, a crust formed on, removed by muriatic acid, xxvi, 188.
- Glasses, lamp, to prevent the cracking of, xxi, 165.
- Glauberite, xvii, 338.
- Glaucolite, xv, 387.
- Glucinium, atomic weight of, xlvii, 189.
- Glyptodon, xxxvii, 232.
- Gmelinite or hydrolite, *A. Connell*, xxxv, 195.
- Gnaphalium decurrens, i, 310, 380.<sup>f</sup>
- Gnathodon, *T. A. Conrad*, xxxviii, 92.<sup>f</sup>
- Gneiss of the Connecticut valley, vi, 18.<sup>f</sup>
- quarries of Connecticut, *C. U. Shepard*, xxxiii, 170.
- in western Massachusetts, viii, 5.<sup>f</sup>
- , glandulous, vi, 20.
- Goat, Cashmere Angora, remarks on, xxv, 208.
- Göbel's* observations on formic acid, xxviii, 127.
- Godfrey, T.*, grave of, xxxv, 389.
- Göthe, F. W.*, honors to, from the king of Bavaria, ix, 184; xv, 171.
- Goitre, causes of, iv, 339; xxii, 355.
- Gold coinage in the United States, xx, 403.
- , amount deposited at the mint of the U. States, xx, 404.
- , an alloy imitating, x, 384; xiv, 371.
- , alembic for distilling amalgam of, *M. F. Maury*, xxxiii, 66.<sup>f</sup>
- , new cyanide of, xlvi, 191.
- , fulminating, ii, 350; xlvi, 192.
- Gold, medical uses of, xvi, 385.
- , method of refining, xvii, 177.
- , mosaic, xiii, 174.
- oxides, purple of Cassius, ii, 350; xx, 192; xxviii, 145; xlvi, 192.
- , native, in Canada, *F. H. Baddely*, xxviii, 112.
- , —, at New Fane, Vt., xii, 177; xxii, 63.
- , —, in Maryland, xvii, 202.
- , —, in Virginia, in talcose slate, *H. H. Hayden*, xx, 164.
- , —, —, account of mines and region, *B. Silliman*, xxxii, 98.
- , —, —, Moss and Busby's mines, *B. Silliman*, xxxii, 99.
- , —, —, Culpeper mine, *B. Silliman*, xxxii, 117, 185.
- , —, —, Louisa county mines, *B. Silliman*, xxxii, 126.
- , —, —, Fauquier and Culpeper Co. mines, *B. Silliman*, xxxii, 127.
- , —, —, large masses of, *B. Silliman*, xxxii, 101.
- , —, —, experiments on different varieties of rock containing, *B. Silliman*, xxxii, 105.
- , —, —, U. States mine near Fredericksburg, *M. F. Maury*, xxxii, 325.
- , —, —, *ibid*, mode of working and yield, xxxii, 183.
- , —, in Carolina, miscellaneous notices of, iii, 3; xvi, 360; xvii, 400; xlvi, 398.
- , —, —, large masses of, ix, 9.
- , —, —, *D. Olmsted*, on the mines of, ix, 5; xiv, 237.
- , —, —, remarks on mines of, *C. E. Rothe*, xiii, 201.<sup>f</sup>
- , —, —, miscellaneous notices of the geology of the region of, *E. Mitchell*, xvi, 1.<sup>f</sup>
- , —, —, on the nature of deposits, *F. L. Smith*, xxxii, 130.

- Gold, native, of the Carolinas, in talcose slate, *A. Eaton*, xviii, 50.
- , —, in Georgia, mines of, *W. Phillips*, xxiv, 1.<sup>f</sup>
- , —, —, —, washing for, xxiv, 14.<sup>f</sup>
- , —, —, —, remarks on, xxxiv, 397.
- , —, —, —, analysis of, *W. Mather*, xxvii, 255.
- , —, —, —, western North Carolina and eastern Tennessee, geological account of districts, *J. Peck*, with a map, xxiii, 1.<sup>f</sup>
- , —, —, —, region of the U. States, xxvii, 348.
- , —, —, —, yield of branch mines of U. States, xxvii, 350.
- , —, —, —, of Mexico, in a rock equivalent to that containing the gold of the Carolinas, *A. Eaton*, xx, 124.
- , —, —, —, mines of Brazil, yield of, xx, 403.
- , —, —, —, in France, xl, 216.
- , —, —, —, in Russia, annual yield, xvii, 406; xx, 402; xxi, 372.
- , —, —, —, in the Ural, deposit, ix, 183; xxviii, 395; xlv, 211.
- , —, —, —, mines of Tobolsk, xvii, 25.
- , —, —, —, a mass of twenty-five lbs., from the Russian mines, xii, 384.
- , —, —, —, large mass of, found in N. Carolina, ix, 9.
- , —, —, —, large masses of, in Virginia, *B. Silliman*, xxxii, 101.
- , —, —, —, table showing the amount yielded by mines, xx, 401.
- , —, —, —, containing rhodium, from Mexico, xi, 298.
- , —, —, —, coins, wear and tear of, throughout the world, xx, 402.
- , —, —, —, coinage, in the United States, amount of, xx, 403.
- , —, —, —, leaf, the blue color of transmitted light, *Dupasquier*, xlix, 391.
- Gold leaf, adhering through electrical attraction, v, 198.
- Goniometer, reflecting, improvement suggested by *A. Eaton*, xx, 158.
- , —, —, —, simplification of Wollaston's, *R. Graves*, xxiii, 75.<sup>f</sup>
- , —, —, —, new mode of adjusting, xlv, 372.<sup>f</sup>
- Gonord, a mode of enlarging an engraving on a copper plate, ii, 342.
- Good Hope, Cape of, geology, scenery, &c., *G. Champion*, xxix, 230.
- Goode, *W. H.*, the daguerrotype and its applications, xl, 137.
- Goodrich, *C. E.*, notice of a peculiarity in vision, xiv, 264.<sup>f</sup>
- Göppert, *H. R.*, views on the lapidification of vegetables, xxxiii, 109.
- Gorham, *J.*, a new work on chemistry announced, i, 434; iii, 331.
- Gorton, *T.*, some properties of a rampant arch, xxvii, 303.<sup>f</sup>
- , —, —, —, on railroad curves, xxvii, 131.<sup>f</sup>
- , —, —, —, turnouts in railroads, xxvii, 248.
- Goshen minerals, ix, 21.
- Goshenite, xlvii, 350.
- , —, —, —, *C. U. Shepard*, xlviii, 174, 176.
- Gossamer spider, xvi, 399.
- Gould, *A. A.*, Report on the invertebrate animals of Massachusetts, xli, 378.
- , —, —, —, on zoological nomenclature, xlv, 1.
- Gould, *D.*, direct demonstration of the binomial theorem, xix, 50.
- , —, —, —, rational expression for sines, tangents and secants, xxii, 392.
- Graduating instrument, new, iv, 398.
- Graham, *T.*, on the constitution of salts, xxxv, 300.
- , —, —, —, on Dumas's law of substitutions in chemistry, xxxviii, 114.
- Graham, *Maria*, on the rise of the coast of Chili, xxviii, 237.

- Grains, cereal, analyses of, *C. T. Jackson* and *A. A. Hayes*, xlv, 339.
- Grammer, J.*, coal mines near Richmond, Va., i, 125.
- Granger, E.*, vegetable impressions on the rocks of the coal formation at Zanesville, Ohio, iii, 5.<sup>f</sup>
- Granite, artificial, xxiv, 205.
- , durability of, as compared with marble, xv, 168.
- of Northern America, xvii, 1, *et seq.*
- , in Canada, origin of, *R. H. Bonnycastle*, xxx, 246.
- intermixed with a fossiliferous limestone at Cataragui, xviii, 104.
- in Nova Scotia, xv, 206.
- in New Hampshire, veins of, *O. P. Hubbard*, xxxiv, 123.<sup>f</sup>
- , —, porphyritic, vi, 10.
- , in Massachusetts, viii, 4; xxii, 14.
- , —, graphic, i, 138; vi, 16; vii, 22.<sup>f</sup>
- , —, porphyritic, viii, 4.
- , —, pseudomorphous, vi, 17; vii, 22.<sup>f</sup>
- , —, veins of, *E. Hitchcock*, vi, 13.
- , —, —, *C. Dewey*, viii, 4.
- , —, —, *E. Emmons*, viii, 250.<sup>f</sup>
- , —, —, in mica slate, viii, 5<sup>f</sup>; xxvii, 344.
- , —, —, in granite, *A. Nash*, xii, 261.<sup>f</sup>
- , —, —, in syenite, vi, 14.<sup>f</sup>
- in the Connecticut valley, vi, 1, *et seq.*
- in Connecticut, graphic, ii, 204, 240.
- in Pennsylvania, viii, 237.
- in Vermont, at Bellows Falls, Vt., vi, 11.
- quarry at Port Deposit and elsewhere, Maryland, xxvii, 19, 20.
- in Italy, secondary, vii, 186.
- at Christiana, Norway, xxxiv, 204.
- Granite, views of *C. Lyell* on, xxxiii, 116.
- sometimes metamorphic, *J. D. Dana*, xlv, 108.
- , means of polishing, viii, 185.
- , polishing of, in India, iv, 246.
- Granitogeny, a poem, v, 283.
- Grant, H. A.*, a week among the glaciers, xvi, 281.
- Graphic granite in Massachusetts, i, 138; vi, 16; vii, 22.<sup>f</sup>
- in Connecticut, ii, 204, 240.
- Graphite, conversion of cannon balls into, iv, 178.
- in coal-gas retorts, vii, 380.
- , formed by pressure, xlix, 227.
- , fusion of, by galvanism, vi, 341.
- of Sturbridge, Mass., xviii, 377.
- of Worcester, Mass., probable age of, *C. Lyell*, xlvii, 214.
- of Wake, N. Carolina, notice of, *D. Olmsted*, xiv, 243.
- , mode of working mine of, at Borrowdale, xxxi, 177.
- of Ticonderoga, vi, 178.
- at Mount Dunderberg, N. Y., v, 29.
- for chronometers instead of oil, xviii, 179.
- in Maine, x, 17.
- in New Hampshire, ii, 241; vi, 245.
- in Massachusetts, vi, 248; viii, 54; x, 18; xviii, 377; xxii, 47.
- in Connecticut, i, 239, 354; ii, 238; viii, 259; xxxiii, 164.
- in New York, i, 237; iv, 48; v, 29; vi, 178; ix, 41; xix, 224; xl, 75.
- in New Jersey, v, 246.
- in Pennsylvania, x, 220; xiv, 10, 14.
- in Maryland, xviii, 80.
- in the Carolinas, iv, 53; v, 263, 264, 407; xiv, 243.
- in Canada, viii, 74.

- Graphite battery, *B. Silliman, Jr.*, xliii, 393; xliv, 180.<sup>f</sup>
- Graptolites, remarks on, xlvii, 370.<sup>f</sup>
- Grasshopper's leg a substitute for frogs in galvanic experiments, *J. W. Bailey*, xxxi, 292.<sup>f</sup>
- Grasses, the importance of, to man, *W. Darlington*, xli, 365.
- Gratiola micrantha, v, 287.
- missouriana, x, 258.
- Gravel, singular deposit near Troy, *A. Eaton*, v, 22.
- Graves, R., a gelatinous meteor, ii, 335.
- , on a simplification of Wollaston's goniometer, xxiii, 75.<sup>f</sup>
- Gravity, specific, on the means of taking, *R. Hare*, xi, 121.<sup>f</sup>
- , —, of various minerals, *Breithaupt*, xxxi, 268.
- , varying in its action, leading to errors in determinations of the earth's figure, xv, 172.
- Gray, A., botanical excursions to the mountains of N. Carolina, xlii, 1.
- , notices of European herbaria, especially those interesting to American botanists, xl, 1.
- , selections from the correspondence of Cadwallader Colden, xlv, 85.
- , synonymy of several North American plants of the Orchis tribe, xxxviii, 306.
- , remarks on vegetable fecundation, xxxi, 308.
- Grease of wines, xxii, 192.
- Greece, modern and ancient, notices of, *S. G. Howe*, xviii, 250.
- , remarks on the antiquities of, and the efforts to preserve, xxxvi, 192.
- , Grecian Archipelago, iron, rutile, serpentine and heavy spar in, xxxi, 175.
- , model farm in, xix, 193.
- Grecian University at Corfu, ii, 348.
- Green, H., vegetable organography and physiology, xxxviii, 49.
- Green, Jacob, air lamp, inflammable, ii, 330.<sup>f</sup>
- Green, Jacob, blowpipe, new, iv, 164.<sup>f</sup>
- , crystallization instantaneous, instance of, iii, 93.
- , — of snow, ii, 337.<sup>f</sup>
- , petrified tree near Chittenango, New York, v, 251.
- , rattlesnake bones, curious fact concerning, iii, 85.
- , trilobites, notice of a monograph on, xxiii, 395.
- , —, new, xxv, 334.
- , —, structure of, &c., xxxvii, 25.<sup>f</sup>
- , —, genus Paradoxides of *Brongniart*, and on the genus *Triarthrus*, xxxiii, 341.
- , —, Calymene Rowii, xxxiii, 406.
- , —, Calymene bufo, note on, xxxviii, 410.
- , —, Asaphus diurus, xxxvii, 40.
- Green, James, barometer and other instruments, construction of, xxvii, 292.
- Green, Schweinfurt's, preparation of, vii, 386.
- Green malachite, see *Malachite*.
- earth in Massachusetts, i, 113.
- paint, a new, for artists, xxviii, 148.
- sand in France, viii, 217.
- — in New Jersey, see *Cretaceous*.
- Greenland, east coast, formerly inhabited by Europeans, xv, 166.
- , subsidence of the coast of, xxx, 379.
- , rocks and country of, xvii, 14.
- , population of, iii, 384.
- , ice, i, 101.
- Greenstone in Western Massachusetts, viii, 9.
- of Nova Scotia, xiv, 305.
- of the Connecticut valley, account of, *E. Hitchcock*, vi, 31, 44.
- , junction of with the sandstone, vi, 47.
- , columnar, Connecticut valley, vi, 53.

- Greenstone, degradation of, vi, 55.  
 —, dikes of, Connecticut valley, vi, 47, 56.  
 —, see further under *Trap*.  
 Greek conjugations, *J. W. Gibbs*, xxxvii, 112.  
 — correlatives, *J. W. Gibbs*, xxxiv, 337.  
 — fire, *J. Cutbush* on, vi, 302.  
 — verbal roots in English, *J. W. Gibbs*, xlv, 284.  
 Grevilleanum serratum, xi, 183.<sup>f</sup>  
 Greystone, characters of, xv, 32.  
*Griffith, Mary*, on the halo which surrounds all bodies, xxxviii, 22.  
 Grindstones of Nova Scotia, xv, 148; xxx, 338.  
*Griscom, J.*, on botanical fêtes in France, ix, 154.  
*Griswold, C.*, submarine explosion, ii, 94.  
*Gronovius, J. F.*, letters from, to C. Colden, xlv, 85.  
 Grooves in rocks, see *Scratches*.  
 Grotto del Cane, xxiv, 244.  
 Grove's voltaic battery, xxxviii, 116.  
 — — —, experiments with, *S. F. B. Morse*, xlv, 390.<sup>f</sup>  
 — — —, on the use of carbon in, *B. Silliman, Jr.*, xliii, 393; xlv, 180.<sup>f</sup>  
 Groves of evergreens, their value near gardens, &c., xxii, 158.  
 Growth of wheat, on the acceleration of, *G. W. Hall*, xxxi, 345.  
 — of timber, xxiv, 391.  
 Guaco, notice of, xxii, 182.  
 —, medical virtues of, confirmed, *W. R. Johnson*, xxvii, 171.  
 —, remedy for hydrophobia, *W. R. Johnson*, xxiv, 279.  
 —, note on, xxiv, 388.  
 Guadeloupe fossil human skeleton, description of the skull of, *J. Moultrie*, xxxii, 361.  
 Guano, remarks on, *J. E. Teschemacher*, xlvi, 203.  
 —, account and analysis of, xviii, 181.  
 —, change in bones in, *R. War- rington*, xlix, 391.  
 Guano, xanthic oxide in, xlix, 200.  
 —, xanthine in, *Unger*, xlix, 391.  
*Guillemin, J. B. A.*, on the bitterness of vegetables, xxiv, 273.  
 Gulf of Mexico, accumulation of water in, supposed from the action of the Gulf Stream, v, 353.  
 Gulf Stream, cause of, v, 353.  
 — — —, existence of, determined by *B. Franklin*, xlvii, 162.  
 — — —, supposed connection of, with opposite currents on the coast of the United States, *W. C. Redfield*, xxxii, 349.  
 — — —, extent of, xxxii, 350.  
 — — —, ice of the north brought within the dissolving influence of, on the Newfoundland bank, *W. C. Redfield*, xxxii, 351.  
 — — —, loss of vessels in, xx, 158.  
 — — —, remarks on, *M. F. Maury*, xlvii, 161.  
 Gum, composition of, xxii, 350.  
 — ammoniacum, xx, 399.  
 Gun barrels, browning of, xxxiv, 45.  
 Gunpowder, *A. Ure* on the composition of, xx, 190.  
 —, experiments on, *A. Mordecai*, xlix, 180.  
 —, inflamed underwater, xxii, 354.  
 —, method of augmenting the force of, *Geo. Gibbs*, i, 87.  
 —, safe process for manufacturing, *S. Guthrie*, xxi, 292.  
*Guthrie, S.*, mode of obtaining chloric ether, xxi, 64; xxii, 105.  
 —, chemical products by, xxi, 92.  
 —, fulminating preparations, xxi, 288, 293.  
 —, gunpowder, safe process, xxi, 292.  
 —, molasses from the potato, xxi, 93.  
 —, sugar from potato starch, xxi, 284.  
 —, purification of turpentine, xxi, 291.  
 —, pure oil of turpentine, xxi, 93.  
 —, vaporization of mercury in the fumes of nitric ether, xxi, 90.

- Gymnasium at New Haven, xiii, 385; xiv, 400.
- Gymnastic science in France, x, 176.
- Gymnastics in Switzerland, v, 191.
- Gypsies, essay on, xxiv, 342.
- in America, xxvi, 189.
- Gypsum, action of, as a manure, xxvi, 181.
- , experiments on the solidification of, *J. P. Emmet*, xxiii, 209.
- , fertilizing properties of, xxii, 350.
- , origin of, *L. Vanuxem*, xii, 92.
- , curved, mammoth cave, Ky., xlii, 206.<sup>f</sup>
- of the basin of mines, Nova Scotia, xv, 146.
- , localities of, in New York, i, 243; iv, 36; v, 39, 40; xvi, 377; xxxvi, 38.
- , —, in Maryland, xxvii, 8.
- , —, in Ohio, iv, 51, 52; v, 39; vii, 48; xvi, 158.
- , —, in Canada, viii, 71.
- , —, in Michigan, vii, 47.
- , —, in Virginia, i, 62; iv, 52.
- , —, Prince Regent's Inlet, xvii, 10.
- , —, in Nova Scotia, xiv, 229; xv, 146.
- , —, in the Hartz, xix, 111.
- , —, in Sicily, viii, 204.
- , —, in Africa, iv, 33.
- and accompanying marine limestones, in Nova Scotia, age and position of, *C. Lyell*, xlv, 356.
- Gyropodium coccineum, ix, 56.<sup>f</sup>
- II.
- Hæmatoxylin, *O. L. Erdman*, xlv, 357.
- Hail, formation of, xix, 396.
- Hail storms, cause of, in warm weather, *B. Hallowell*, xv, 361.
- , —, phenomena and causes of, *D. Olmsted*, xviii, 1.<sup>f</sup>
- , —, reply to *A. T. Christie* on, by *D. Olmsted*, xx, 373.
- , —, *A. T. Christie's* views on, xx, 373.
- Hail storms, *A. Jones*, xxiii, 35.<sup>f</sup>
- , —, remarks on, *W. C. Redfield*, xxxiii, 55.
- , —, in Louisiana, *W. M. Carpenter*, xxvii, 171.
- , —, rods a protection against, x, 196.
- Hail-rods, in France, x, 196; xii, 398.
- , —, —, efficacy of, xiv, 37.
- Haile, A. B.*, observations on the magnetic disturbance during an Aurora, Nov., 1837, xxxiv, 270.
- Hailstones, structure of, xxiii, 36.<sup>f</sup>
- at Clermont, France, large, xxxi, 191.
- Haldeman, S. S.*, on the Melanians of Lamarck, xli, 21; xlii, 216.
- , notice of the zoological writings of the late *C. S. Rafinesque*, xlii, 280.
- , species of mollusca common to Europe and America, xlvii, 412.
- Hale, M.*, geological notice of Troy, iii, 72.
- Hall, F.*, notice of, xlvii, 139.
- , notes on a tour in France, Italy and Elba, xxxii, 74.
- , on some minerals from Palestine, ix, 337.
- , notice of oriental minerals, xxxiii, 249.
- , ores of iron and manganese in Vermont, iii, 57.
- , waterfall, in the Green Mts., and an excavation in the rocks, vi, 252.
- Hall, James*, on the crinoidea, xlv, 349.
- , fossils of U. States, general remarks on the distribution of, xlv, 157; xlvii, 117.
- , Paradoxides, species of, xxxiii, 139.<sup>f</sup>
- , ripple marks and casts of furrows, xlv, 148.
- , sections at Portage, N. Y., xlv, 329.
- , shells, microscopic, from a marl slate, Cincinnati, xlvi, 292.



- Hall, J.*, Western States, general account of geology of, xlii, 51.
- Hall, John*, on the staining of wood, and on medical electricity, iii, 166.
- Hallowell, B.*, on the cause of hail in warm weather, xv, 361.
- , blue color of sky, twinkling of stars, and on the deception as to the number in view on a clear evening, xv, 360.
- Halos*, theory of, *E. S. Snell*, xlix, 73.<sup>f</sup>
- , lunar, West Point, March 20, 1831, xx, 299.
- , solar, seen in N. York, at Cazenovia, *J. W. Tyler*, xxi, 189.
- , —, *ibid*, in Otsego Co., Feb. 1823, xx, 297.
- , —, *ibid*, at Kingston, *R. H. Bonnycastle*, xxx, 136.
- , —, *ibid*, at West Point, *A. C. Twining*, xxxii, 229.
- , —, *ibid*, New Lebanon, *T. Kendall*, vii, 337.<sup>f</sup>
- , —, seen in Kentucky, August, 1825, xi, 325.<sup>f</sup>
- , —, seen in Rhode Island, September, 1816, xi, 328.<sup>f</sup>
- , —, seen in Tennessee, at Jackson, x, 368.<sup>f</sup>
- Hambato*, S. America, account of, xxiv, 382.
- Hamilton, J.*, on terrestrial magnetism, xxxvii, 100.
- Hamilton, M.*, earthquakes of S. America, xli, 57.
- Hammer*, new mineralogical, *E. Hitchcock*, vii, 175.<sup>f</sup>
- Hansteen's* journey in Siberia, notice of, xvii, 392.
- Harden, J. M. B.*, formula for ascertaining the weight and volume in a mixture of two bodies, xxxvii, 289.
- Hare, C.*, perchloric ether, xl, 50; xlii, 63.
- , on the destructive distillation of the sulphate of etherine, xxxvi, 77.
- Hare, C.*, reaction of sulphuric acid with the essential oil of hemlock, xxxvii, 246.
- Hare, R.*, acids and salts, remarks on the nature of, xxvii, 63, 67.
- , —, classes of, xxvii, 69.
- , air pump of a new construction, xxxiii, 237.<sup>f</sup>
- , alkanet, as a substitute for litmus, v, 348.
- , ammonia, nitrate, on the preparing of pure, v, 348.
- , atoms, on the views of *Faraday*, respecting, xlviii, 247.
- , amphide salts, on the existence of radicals in, xlv, 52, 247.
- , barium, strontium and calcium, extrication of, xxxvii, 267; xxxviii, 115; xxxix, 362; xl, 293.<sup>f</sup>
- , blasting rocks, by galvanic ignition, xxi, 139; xxvi, 352<sup>f</sup>; xxxviii, 188.
- , blowpipe, improved alcohol, vii, 110.<sup>f</sup>
- , —, hydrostatic, xi, 135.<sup>f</sup>
- , —, strictures on a publication entitled Clark's gas blowpipe, ii, 281.<sup>f</sup>
- , —, oxy-hydrogen, fusion of a large amount of platina with, xxxiii, 195; xxxv, 328.
- , boron, process for evolving, xxii, 189; xxiv, 249.<sup>f</sup>
- , calorimotor, i, 413<sup>f</sup>; v, 94.
- , —, for igniting platina in the galvano-ignition apparatus, xxxii, 284.<sup>f</sup>
- , carbon, on the fusion of, in reply to *L. Vanuxem*, viii, 288; x, 111.
- , —, experiments on the fusion of, x, 118.
- , —, —, remarks on, xxxviii, 190.
- , carbonic acid, apparatus for exhibiting some of the properties of, xiv, 358.<sup>f</sup>
- , carbonic oxide, apparatus for separating from carbonic acid, xxiv, 252.<sup>f</sup>

- Hare, R.*, chemical nomenclature, xxvii, 63; xxxii, 259.
- , *ibid*, in a letter to *Berzelius*, xlix, 249.
- , Chemistry, compendium of, noticed, xx, 95.
- , chlorine, explosive reaction of hydrogen with, under the sun's rays, xxix, 243.<sup>f</sup>
- , —, apparatus for combustion of metals in, xiv, 354.<sup>f</sup>
- , chlorohydric acid, preparation of, from the muriatic acid of commerce, xxxix, 371.
- , cold, apparatus for producing ebullition by, xxxiii, 248.<sup>f</sup>
- , collapse of a reservoir, xxxiii, 242.<sup>f</sup>
- , cryophorus, improved, xxxiii, 244.<sup>f</sup>
- , cyanogen, analysis of, xv, 271.<sup>f</sup>
- , deflagrator, galvanic, iv, 201; v, 94.<sup>f</sup>
- , —, —, improved forms of, and powers, vii, 347<sup>f</sup>; xl, 48.
- , deflagrating carburets, phosphurets, &c., in vacuo, mode of, xl, 303.<sup>f</sup>
- , De Luc's column, on the construction of, xxv, 136.<sup>f</sup>
- , on electricity, vii, 103.<sup>f</sup>
- , —, on some inferences from the phenomena of the spark, in *Thomson's* work on heat and electricity, xxxii, 278.
- , —, on the causes of the diversity in the length of sparks erroneously distinguished by the terms positive and negative, xxxii, 275.<sup>f</sup>
- , electrical brush, xxxii, 277.<sup>f</sup>
- , electric induction, and letters to *Faraday* on, xxxviii, 1; xli, 1.
- , —, *M. Faraday* in reply to, xxxix, 108; xlii, 291.
- , electrical machine, plate, vii, 108<sup>f</sup>; (large) xxxii, 272.<sup>f</sup>
- , —, —, on the error that they must communicate with the earth, xxiv, 253.
- Hare, R.*, electrometer, single leaf, vii, 351<sup>f</sup>; viii, 99; xxv, 136.<sup>f</sup>
- , —, modification of the single leaf, xxv, 136.<sup>f</sup>
- , electrometer, use of, as an electric discriminator, xxv, 136.
- , electro-magnetic and galvanic experiments, viii, 145.
- , ether, hypo-nitro-acetic, xxxv, 329.
- , —, nitrous, new process for, ii, 326.<sup>f</sup>
- , —, nitric, process for, xxxiii, 241.<sup>f</sup>
- , —, sulphurous, xxxi, 275.
- , etherine, sulphate of, xxxi, 275.
- , eudiometer, a new, ii, 312<sup>f</sup>; x, 67<sup>f</sup>; xii, 36<sup>f</sup>; xxxvii, 383.
- , —, barometer gage, xxxii, 280.<sup>f</sup>
- , —, subsidiary, xv, 271.<sup>f</sup>
- , eudiometry by means of nitric oxide, xv, 260.<sup>f</sup>
- , freezing water by aid of sulphuric acid, apparatus for, xxvii, 132.<sup>f</sup>
- , fulminating powder, consisting of cyanogen and calcium, process for, xxxvii, 268.
- , — silver, injury to, from the explosion of, xxii, 185.
- , galvanic apparatus, new modifications of, iii, 105.<sup>f</sup>
- , — ignition of gunpowder, xxxvii, 269.
- , galvano-ignition apparatus, xxxii, 282.
- , —, *ibid*, see above, under *blasting*.
- , galvanism, new theory of, i, 413.<sup>f</sup>
- , —, series, new, combining the advantages of the trough and deflagrator, xxxii, 285.<sup>f</sup>
- , —, new rotatory multiplier, xxxviii, 339.<sup>f</sup>
- , apparatus for regulating the supply of gas by its absorption, xiii, 2.<sup>f</sup>
- , gases, a mode of obtaining the specific gravity of, xvi, 293, 295.<sup>f</sup>

- Hare, R.*, gaseous mixtures, analysis of, xv, 279, 283.
- , gasometers, mode of suspending, iv, 312.<sup>f</sup>
- , glass, method of dividing by friction, xiii, 7.<sup>f</sup>
- , heat, on the cause of, iv, 142.
- , —, capacities for, apparatus for illustrating, xiii, 6.<sup>f</sup>
- , —, —, apparatus for showing an increase of, in air with relaxed pressure, xiii, 5.<sup>f</sup>
- , —, reply to *D. Olmsted*, on the materiality of, xii, 50, 366; xiii, 8.
- , liquids, apparatus for transferring or decanting, xxvi, 358.<sup>f</sup>
- , hydrometers, xi, 115.
- , hydrostatic blowpipe, xi, 135.<sup>f</sup>
- , laboratory of, xix, 26.<sup>f</sup>
- , laudanum, xii, 291.
- , light, means of producing, ii, 172.
- , lightning rods, xiii, 322.
- , litrameter, xi, 133.<sup>f</sup>
- , meconic acid, mode of obtaining, xii, 293.
- , matter is heavy as demonstrated by *W. Whewell*, reply to, xlii, 260.
- , nitrogen, apparatus for obtaining, from the atmosphere, xiv, 356.<sup>f</sup>; xxviii, 263.<sup>f</sup>
- , nitrous oxide, properties of, xvi, 298.
- , —, —, method of obtaining, xvi, 295, 297.<sup>f</sup>
- , palm-glass, cold produced by, xiii, 4.<sup>f</sup>
- , olefiant gas, on the analysis of, xv, 270.
- , opium, mode of detecting minute quantities of, xii, 290.
- , platina, on the fusion of, xxxiii, 195; xxxv, 328.
- , pneumatic cistern, xiv, 200.<sup>f</sup>; xxxiii, 246.<sup>f</sup>
- , potassium, improved process for, xxxviii, 338.
- , phosphorus, combustion of, in nitrous oxide, xxxii, 290.<sup>f</sup>
- Hare, R.*, prussic acid, apparatus for the evolution of, xxix, 244.<sup>f</sup>
- , sassarubrin, a resin, xxxi, 285.
- , silicon, mode of obtaining, xxii, 189; xl, 28.
- , —, apparatus for evolving from fluo-silicic acid, xxiv, 247.<sup>f</sup>
- , silver, nitrate of, preparation of pure, v, 348.
- , on specific gravities, xi, 121.<sup>f</sup>
- , storms of the Atlantic coast, v, 352.
- , —, on Redfield's theory of, xlii, 140; xliii, 122.
- , —, on Dové's essay on, xliv, 137; xlviii, 220.
- , —, replies of *W. C. Redfield* to, xlii, 299; xliii, 250.<sup>f</sup>; xliv, 384.
- , — or tornado in R. Island, Aug. 1838, and others, xxxviii, 73.
- , — tornado and water spout, causes of, xxxii, 153.<sup>f</sup>
- , sulphurous acid, reaction of the essential oils with, xxxi, 281.
- , syphons, improved, xxiv, 317.<sup>f</sup>
- , valve cock, xxiv, 251.<sup>f</sup>
- , volumescopé, description of, xv, 275.<sup>f</sup>; xxviii, 264.<sup>f</sup>
- , —, application of, xv, 278.<sup>f</sup>
- , volumenter, xii, 38.<sup>f</sup>
- , water, apparatus for decomposition and recomposition of, xxxviii, 336.<sup>f</sup>
- , Woulfe's apparatus, a substitute for, i, 410.<sup>f</sup>; xiii, 1.<sup>f</sup>
- Harlan, R.*; *Arvicola ferrugineus*, x, 285.
- , Batracian reptiles, new, with observations on the larvæ of frogs, x, 53.
- , bones from near the mouth of the Mississippi, xiv, 186.
- , lizards, orbicular, notice of, xxxi, 383.
- , mammalia, fossil, from the Brunswick canal, Georgia, xliii, 141.<sup>f</sup>

- Harlan, R.*, mouse, new species of, xxxi, 385.  
 —, *Orycterotherium*, xlii, 392; xliv, 69.<sup>f</sup>  
 —, *Salamandra pennsylvanica*, x, 286.  
 —, tortoise, freshwater, xxxi, 382.<sup>f</sup>  
 —, Medical and Physical Researches of, noticed, xxx, 188.  
 —, new fossil mammalia of, *R. Owen* on, xliv, 341.  
 —, *ibid.* in reply to *R. Owen*, xlv, 208.  
*Harris, W. S.*, utility of lightning conductors on ships, xxi, 347.  
 —, meteorological observations at Plymouth, xliii, 369.  
*Harris, T. W.*, North American Sphingides, xxxvi, 282.  
 —, Report on Insects injurious to vegetation, noticed, xliii, 386.  
*Hartz, Europe*, notices of, *T. G. Clemson*, xix, 105.<sup>f</sup>  
*Haskins, R. W.*, examination of the theory of a resisting medium in space, xxxiii, 1.  
 —, Astronomy of, noticed, xli, 389.  
*Hassler, F. R.*, methods and plans of, in the survey of the coast of the United States, xvi, 225.  
 —, repeating theodolite, description of, *C. Wilkes*, U.S.N., xvi, 252.<sup>f</sup>  
 Hats, manufacture of, x, 193.  
 Hawaii, see *Sandwich Islands*.  
*Hawkins'* Saurian remains purchased, xxix, 367.  
 Hay, siliceous glass from burning, xix, 395; xxiv, 174.  
*Hayden, C. B.*, analysis of the Scott spring, Va., xlv, 409.  
 —, on the ice mountain of Hampshire Co., Va., xlv, 78.<sup>f</sup>  
 —, on the rock-salt and salines of the Holston, Va., xlv, 173.  
*Hayden, H. H.*, Geological Essays of, noticed, iii, 47.  
 —, on the Bare Hills, near Baltimore, xxiv, 349.<sup>f</sup>  
 —, notices of the geology of the country near Bedford springs, Pennsylvania, xix, 97.
- Haydenite*, description of, xlv, 379.<sup>f</sup>  
 —, analysis, by *B. Silliman, Jr.*, xlv, 380.  
*Hayes, A. A.*, chlorine, carbon and hydrogen, two new compounds of, xxii, 141.  
 —, chromium, combinations of, xiv, 136.  
 —, columbic acid, investigations on, xlv, 166.  
 —, dewpoint, remarks on, xviii, 63.  
 —, hygrometer, portable, xvii, 351.<sup>f</sup>  
 —, meteoric iron, Alabama, xlviii, 147.  
 —, microlite and pyrochlore, identity of, xliii, 33; xlv, 158.  
 —, tin, action of metallic, on the muriate of, xxxviii, 408.  
 —, Tarapaca saline minerals, nitrates, iodates, borates, xxxviii, 410.  
*Hayes, G. E.*, geology of western New York, with remarks on the causes of its topographical features, xxxi, 241; xxxv, 86.<sup>f</sup>  
*Hayes, J. L.*, on the geographical distribution and phenomena of volcanoes, xlvii, 127.  
 —, influence of icebergs upon drift, xlv, 316, 326.  
*Haymond, R.*, on remains of *Megatherium* and *Mastodon*, xlv, 294.  
*Hazard, R. G.*, method of describing a hyperbola, xxi, 314.<sup>f</sup>  
 Heat, absorption of, *Nobili* and *Melloni* on, xxiii, 188.  
 —, —, apparatus for illustrating, *A. D. Bache*, xxviii, 320.<sup>f</sup>  
 —, animal, vii, 200.  
 —, —, influence of the nerves on, x, 390.  
 —, —, *Nobili* and *Melloni's* experiments on insects, &c., xxiii, 185.  
 — of different animals, x, 382.  
 —, capacity of gas for, iv, 372.  
 —, — of air, apparatus for illustrating, *R. Hare*, xiii, 5<sup>f</sup>, 6.<sup>f</sup>

- Heat, cause of, *R. Hare*, iv, 142.
- of combination, law of, *Andrews*, xlv, 397.
- , conduction of, notice of *Despretz's* investigations, v, 378.
- , —, laws of, *Kelland*, xlii, 161.
- , —, by water, *C. Dewey*, xxviii, 151.
- , connection of, with electricity and magnetism, *J. F. Dana*, vi, 163.
- , diathermancy of rock salt, *Melloni*, xl, 313.
- of the earth, iv, 372.
- —, at different depths, xxiii, 14; xxxvii, 357.
- —, rate of increase downward, *A. De la Rive* and *F. Marcet*, xxvii, 397.
- —, *ibid.*, *L. Cordier*, xv, 116.
- —, detailed analysis of, *L. Cordier's* essay upon, xv, 109.
- —, criticism of *Poisson's* view, *J. D. Forbes*, xl, 319.
- —, *G. Bischof*, xxxvii, 52.
- —, *W. Whewell*, xxix, 349.
- — and of space, *Baron Fourier*, xxxii, 1.
- —, effects of internal and solar, on the temperature of the globe, xxxii, 1.
- —, in mines, *R. W. Fox*, xxxiv, 46.
- , effect of, on magnetism, *C. Matteucci*, xxii, 361.
- , — of long continued, on minerals, experiment to determine, *W. V. Harcourt*, xxix, 357.
- , — of, on some minerals or rocks in New York, *L. C. Beck*, xlv, 143; xlv, 333.
- , moon's, xl, 315.
- , *Nobili* and *Melloni's* experiments on, xxiii, 185; xl, 313.
- , polarization of, xxviii, 366, 397.
- Heat, polarized, and on his claims to the discovery of, *J. D. Forbes*, xl, 317.
- , production of, and of light, *J. L. Sullivan*, i, 91.
- , —, from combustion, x, 382.
- , —, by compression of glass, xx, 180.
- , —, by friction, cause of, *J. T. Watson*, viii, 276.
- , —, by combination with oxygen, different for different substances, and amount of, xv, 392.
- , radiated, influence of color on, *A. D. Bache*, xxx, 16; xxxiv, 39.
- , —, transmission and refraction of, *Melloni*, xxvii, 228; xl, 313.
- , — —, *J. D. Forbes*, xl, 315; refraction of, xxviii, 366.
- , radiation of, apparatus for illustrating, *A. D. Bache*, xxviii, 320.<sup>f</sup>
- , —, *Powell's* report on, noticed, xl, 313.
- of space, *W. Whewell*, xxix, 349.
- —, *Baron Fourier*, xxxii, 1.
- , specific, of gases, some of the laws of, xiii, 394.
- , —, of certain solids, method of determining and calculating, *W. R. Johnson*, xxvii, 267.
- , sun's, *W. Whewell*, xxix, 349.
- , general views on, x, 78.
- at the bottom of the ocean not necessarily diffused by upward currents, *W. C. Redfield*, xlv, 138.
- and light, *S. Morey*, ii, 118, 122.
- and vapor, inquiries respecting, *W. R. Johnson*, xxi, 304.
- , see further under *Meteorology* and *Temperature*.
- Heated waters, an agent in producing metamorphic changes, *J. D. Dana*, xlv, 104.

- Heating houses by furnaces below, some important precautions, xxxiv, 84.
- Heavy spar, of Berlin, Ct., analysis of, *G. T. Bowen*, iv, 325.
- , localities of, in Canada, viii, 72.
- , —, in Carolina, iii, 4; v, 257.
- , —, in Connecticut, i, 240; ii, 373; iv, 325; v, 40, 42<sup>f</sup>, 254; vi, 211.
- , —, in Massachusetts, i, 115; vi, 211.
- , —, in New Jersey, xxxvi, 103.
- , —, in New York, i, 237; ii, 173; 368; v, 28; vii, 56; viii, 249; xxv, 346; xxvii, 364; xxviii, 175.
- , —, in Tennessee, i, 63.
- , —, in Virginia, i, 63.
- , —, in Sicily, viii, 205.
- Hebrew words, orthography of, *J. W. Gibbs*, xxiv, 87.
- Heckwelder, John*, labors of, xxxi, 64, 66.
- Height, on the measurement of, by boiling water, xxxvii, 19.
- , mean, of the continents above the sea, xlix, 397.
- of Lake Erie and various places in western New York, *C. Dewey*, xxxiii, 122.
- of places in Ohio, Michigan, Pennsylvania and New York, *C. Whittlesey*, xlv, 12.
- — in Wisconsin, *I. A. Lapham*, xlvi, 258.
- Hematite, see *Iron Ore*.
- Hemlock, reaction of sulphuric with the essential oil of, xxxvii, 246.
- Hemming's safety tube, *J. W. Webster*, xxxvii, 104.
- Hemorrhage, remedy for, v, 409.
- Hemp, Manilla, account of, xli, 200.<sup>f</sup>
- Hemprich and Ehrenberg*, notice of journey by, in Northern Africa, vii, 195.
- Henry, J.*, electro-dynamic induction, xxxviii, 209<sup>f</sup>; xli, 117.<sup>f</sup>
- Henry, J.*, electro-magnet, large, xix, 408.<sup>f</sup>
- , electro-magnetic experiments, by, xxii, 403.
- , — apparatus, application of galvanic multiplier to, xix, 400.<sup>f</sup>
- , — —, remarks in confirmation of, *J. W. Webster* and *R. Hare*, xx, 143.
- , magnetism, production of currents of electricity and sparks from, xxii, 403.
- , magnetic attraction and repulsion, reciprocating motion of, xx, 340.<sup>f</sup>
- , — needle, disturbance during an Aurora, xxii, 143.
- , soap-bubble, experiments with, on molecular attraction, xlvi, 215.
- , spark from a long conductor in a galvanic battery, xxviii, 327.
- , spiral conductor, action of, xxviii, 329.
- Henry, W.*, on the disinfecting powers of increased temperatures, xxi, 392; xxii, 111.<sup>f</sup>
- , philosophical character of Priestley, xxiv, 28.
- Hentz, N. M.*, on North American spiders, xxi, 99.<sup>f</sup>
- , a new subgenus of spiders, xli, 116.<sup>f</sup>
- Hepatic blende, xlii, 387.
- Herbaria, European, notices of, xl, 1.
- Herculaneum manuscripts, ii, 340.
- Herrick, E. C.*, *Argulus catostomi*, description of, xxxi, 297.<sup>f</sup>
- , Aurora Borealis, in summer, with abstract of Huxham's aural register, xxxiii, 297.
- , — —, February, 1837, xxxii, 396.
- , — —, July, 1837, xxxiii, 144.
- , — —, *ibid*, needle agitated during, xxxiii, 146.
- , — —, Nov. 14, 1837, influence of, on the magnetic needle, xxxiv, 270.

- Herrick, E. C.*, Aurora Borealis, of Sept. 1839, xxxviii, 260.
- , —, —, April, 1842, xliii, 213.
- , —, —, August, 1844, New Haven, xlviii, 319.
- , —, —, belt of May, 1840, xxxix, 194, 383.
- , great comet of 1843, xlv, 412; xlv, 191, 229.
- , elm tree moth, -parasite of the eggs of, xxxviii, 385; xl, 211.
- , Hessian fly and its parasites, xli, 153.
- , meteorite of Missouri, xxxvii, 385.
- , meteor of Dec. 14, 1837, xxxvii, 130.
- , Weston meteorite, Dec. 1807, xxxvii, 132.
- , shooting stars, facts showing the probable annual occurrence in August, xxxiii, 177, 354, 401.
- , —, —, probable periods of showers, in October, June, January, February, July, September, xxxv, 366.
- , —, —, April and November showers, cycle of, xl, 365.
- , —, —, August showers, characteristics of, xxxiii, 359.
- , —, —, nature, motions, numbers of, xxxiii, 360.
- , —, —, theory of, xxxiii, 363; xxxv, 367.
- , —, —, contributions towards a history of the showers, of former times, xl, 349; (errata) xlviii, 319.
- , —, —, of April, 1095, 1122 and 1803, xxxvi, 358, 361.
- , —, —, of June, various instances of showers in former times, xlii, 201.
- , —, —, of January, 1825, 1838 and 1839, xxxix, 334.
- , —, —, of August, 1837, xxxiii, 176; xxxiv, 180.
- , —, —, of April, 1838, xxxiv, 398.
- Herrick, E. C.*, shooting stars, of August, 1838, xxxv, 167.
- , —, —, of December, 1838, xxxv, 361; xxxvi, 355; xlii, 398.
- , —, —, of April, 1839, xxxvi, 361.
- , —, —, of August, 1839, xxxvii, 325.
- , —, —, of August, 1840, xxxix, 328; xl, 201.
- , —, —, of October and December, 1840, xl, 203.
- , —, —, of April, 1841, xlii, 397.
- , —, —, of August, 1841, xli, 399; xlii, 202.
- , —, —, of April, 1842, xliii, 212.
- , —, —, of August, 1842, xliii, 377; xlv, 208.
- , —, —, of November, 1842, xlv, 209.
- , —, —, of December, 1842, xlv, 210.
- , —, —, of April, 1843, xlv, 230.
- , —, —, of August, 1844, xlviii, 316.
- Herring*, the mode of curing of, when discovered, xx, 183.
- Herschel, J. F. W.*, astronomical observations at the Cape of Good Hope, xxxv, 283.
- , remarkable phenomena of Halley's comet, xxxv, 285.
- , photographic process by which dormant pictures are made that may be developed by the breath, xlvi, 393.
- , on meteoric iron from South Africa, xxxvi, 213.
- Hessian fly*, some account of, *J. E. Muse*, xxii, 71.
- , observations on, *M. H. Morris*, xl, 381.
- , account of, *E. C. Herrick*, xli, 153.
- Heterosite*, analysis of, xix, 371.
- Heulandite* of Paterson and Bound Brook, N. J., *L. C. Beck*, xlv, 59.f

- Heulandite, locality in New Jersey, xliv, 59.
- , — in Nova Scotia, xxx, 345, 349.
- , Beaumontite and Lincolnite identical with, *F. Alger*, xlv, 233.<sup>f</sup>
- Hewel, J. C. vanden*, on the honey bees of America, iii, 79.
- Hewitson, W.*, notice of a work on Oology, by, xxxvii, 166.
- Hibbert, S.*, on the fresh water limestone of Burdie House, near Edinburgh, xxviii, 365.
- Hieroglyphical investigations, *T. Young*, xxii, 245.
- Highlands of New York and New Jersey, geology and mineralogy of, v, 26.
- Hildreth, S. P.*, on the Cicada semptemdecem, or seventeen year locust, xviii, 47.<sup>f</sup>
- , meteorological register and calendar, with various memoranda, for 1828, at Marietta, Ohio, xvi, 44.
- , *ibid*, for 1829, xviii, 368.
- , *ibid*, for 1830, xx, 126.
- , *ibid*, for 1831, xxii, 109.
- , *ibid*, for 1832, xxiv, 132.
- , *ibid*, for 1833, xxvi, 84.
- , *ibid*, for 1834, xxviii, 160.
- , *ibid*, for 1835, xxx, 56.
- , *ibid*, for 1836, xxxii, 95.
- , *ibid*, for 1837, xxxiv, 132.
- , *ibid*, for 1838, xxxvi, 78.
- , *ibid*, for 1839, xxxviii, 273.
- , *ibid*, for 1840, xl, 345.
- , *ibid*, for 1841, xlii, 344.
- , *ibid*, for 1842, xlv, 347.
- , *ibid*, for 1843, xlv, 277.
- , *ibid*, for 1844, xlviii, 287.
- , Ohio, notes on, x, 152, 319; xi, 231.
- , —, ten days in, xxv, 217.
- , —, miscellaneous observations, on a tour to the falls of the Cuyahoga, in 1835, xxxi, 1.<sup>f</sup>
- , —, miscellaneous notices of rocks and minerals, xvi, 154.
- , —, flight of pigeons, xxiv, 134.
- Hildreth, S. P.*, Ohio, climate and productions of Washington Co., xii, 206.
- , —, disease among shell-fish, xxxii, 97.
- , —, geology of parts of, x, 1.
- , —, coal of, xiii, 38.
- , —, fossil trees near Gallopolis, xii, 205.
- , —, valley, on the coal deposits and accompanying organic remains of, xxix, 1.<sup>f</sup>
- , —, saliferous rock formation, xxiv, 46.
- , —, shells of some rivers, xiv, 276.<sup>f</sup>
- , —, report on, noticed, xxxii, 190; xxxiv, 196, 350.
- , Pennsylvania, bituminous coal of, xxix, 77.
- , Tennessee, coal measures of, xxix, 141.
- , the West, lias of, xxx, 395.
- Himalaya Mountains, height of, v, 384; ix, 384.
- quadruped fossil remains, xxxiii, 103, 211.
- Hitchcock, E.*, *Botrychium simplex*, a new species of fern, vi, 103.<sup>f</sup>
- , coal in Massachusetts, xxii, 41; xxxvi, 377.
- , drift, in the U. States, xli, 248; xlv, 331.
- , —, influence of ice in, xlv, 324.
- , —, on the glacier theory, xliii, 396.
- , —, singular case of, in Berkshire Co., Mass., xlvii, 132; xlix, 258.<sup>f</sup>
- , —, copper in, Massachusetts, xlv, 331.
- , Fasciculite, vi, 226.<sup>f</sup>
- , Flinders' large birds' nests in New Holland, xlvii, 217; xlviii, 61.
- , frost, disruption of the ground by, i, 286.<sup>f</sup>
- , fossil fish, in the Connecticut valley, iii, 222, 365; vi, 76.<sup>f</sup>



- Hitchcock, E.*, fossil vertebral remains in the Connecticut valley sandstone, xxix, 330.
- , —, footprints, description of, (ornithichnology) xxix, 307.<sup>f</sup>
- , —, — in Connecticut, xxxi, 174.
- , —, — of Connecticut valley, Report of Committee on, xli, 165.
- , —, —, general review of, xxxii, 174; xlvii, 113, 292.<sup>f</sup>
- , —, —, miscellaneous notices of, xlviii, 61.
- , —, —, reply to *J. Deane* on the discovery of, xlvii, 390.
- , —, —, geology and mineralogy of Massachusetts, New Hampshire and Vermont, i, 105.<sup>f</sup>
- , —, — of the regions about the Connecticut, with a map, vi, 1<sup>f</sup>, 201<sup>f</sup>; vii, 1.<sup>f</sup>
- , —, — of Massachusetts, report on, with a map, xxii, 1.
- , —, —, Report noticed, xxiii, 389; xxvi, 213; xxxvi, 363; xli, 384.
- , —, —, economical review of, xxxvi, 363.
- , —, — of Connecticut valley sandstone, xxix, 329.
- , —, —, trap tufa or volcanic grit, xlvii, 103.
- , —, — U. States, general review of, xli, 239.
- , —, —, historical notice of State surveys, xli, 235.
- , —, —, Geological Association, address before, xli, 232.
- , —, —, *Gyropodium coccineum*, physiology of, ix, 56.<sup>f</sup>
- , —, —, *Lincolnite*, xlvii, 416; xlviii, 64.
- , —, —, longitude, on *F. Baily's* method of determining, ix, 107.
- , —, —, hammer, new mineralogical, vii, 175.<sup>f</sup>
- , —, —, meteors of Nov. 13, 1833, xxv, 354—their connection with the *Aurora Borealis*, 357.
- , —, —, on a supposed gelatinous, of Amherst, xxv, 362.
- Hitchcock, E.*, tin ore, at Goshen, Mass., xvi, 188.
- , —, topaz at Goshen, ix, 180.
- , —, —, wines from Palestine, analysis of, xlvi, 249.
- , —, —, yttrocerite in Massachusetts, xlv, 331.
- Hodge, J. T.*, on the secondary and tertiary formations of the Southern Atlantic, xli, 332.
- , —, on the Wisconsin and Missouri lead region, xlviii, 35.<sup>f</sup>
- Hodgkinson, E.*, on the strength of stones and other materials, xlv, 168.
- Hoffman, F.*, obituary notice of, xxxiii, 76.
- Hog, curious instinct of, iv, 309.
- Holcomb's manufacture of telescopes, xxiii, 403.
- Holmesite, *T. Thomson*, xxxi, 172.
- Holyoke, Mt., scenery of, vii, 5.
- , —, geological structure of, vi, 53.
- Homer's Iliad, notice of a copy of, of the fourth century, ii, 343.
- Hones, stone for, at Lake Memphremagog, v, 406.
- , —, —, in Massachusetts, xxii, 34.
- Hone-slate of N. Carolina, xiv, 238.
- Hooker, W. J.*, on the Botany of America, ix, 263.
- Hop, chemical examination of, *A. W. Ives*, ii, 302.
- Hops, analysis of, vi, 393.
- , —, lupuline from, xii, 388.
- Hopkins, M.*, on mystery, xiii, 217.
- Hopkins*, on the geological phenomena of elevation, xxxi, 365.
- , —, —, views on dislocations and fractures of the earth's surface, xxxiii, 83.
- Horns, manufactured articles from, xx, 394.
- Hornblende, localities of, in Connecticut, x, 14.
- , —, —, in Massachusetts, vi, 226.
- , —, —, in New Hampshire, vi, 245; xviii, 129.

- Hornblende, localities of, in New Jersey, v, 246; ix, 245.
- , —, in New York, ix, 40, 41, 251; xix, 226; xxi, 324.<sup>f</sup>
- , —, in Pennsylvania, xiv, 4, 17.
- , —, in R. Island, iv, 285.
- rocks, of western Massachusetts, viii, 9.
- slate, of the Connecticut valley, vi, 20.
- Horse, anecdote of, xlvi, 243.
- , a Filaria in the eye of, xxxix, 278.<sup>f</sup>
- fed with bread in Silesia, xi, 397.
- , fossil bones of, in Louisiana, *W. M. Carpenter*, xxxiv, 201.<sup>f</sup>
- , power of, xxi, 167.
- Horse latitudes, xxxiii, 64.
- Horticultural experiments, *J. T. Plummer*, xl, 197.
- Horticulture, propagation of fruit trees and vines, xxvii, 288.
- Hospital of Mt. St. Bernard, v, 393.
- Hospitals in France, v, 191.
- , founding, in Europe, xvii, 393.
- Hot blast, in the manufacture of iron, *T. Clark*, xxxi, 180.
- —, saving by, xxviii, 71.
- springs or baths, see *Springs*.
- Hough, H. G.*, inquiries into the principles of liquid attraction, xvii, 86.<sup>f</sup>
- Houghton, D.*, geology of Michigan, xxxiv, 190.
- , mining region of Michigan, xli, 183.
- Houses, improvements in laying out grounds, arranging and building, &c., *E. Lord*, xxv, 304.
- , double doors and double windows for, xxv, 294.
- , mode of heating, xxv, 295.
- , on securing from fire, *Lord Mahon's* experiments, xxv, 290, 298; xxvi, 286.
- , *ibid.*, *D. Hartley's* experiments, xxv, 300.
- , mode of supplying cisterns with water for extinguishing fires, xxv, 301; xxvi, 293.
- Houstonia, notice of species of, x, 262, 263.
- Howard, W.*, description of a differential thermometer, ii, 327.<sup>f</sup>
- , on the stopping of astronomical clocks, viii, 277.
- Howe, S. G.*, notices of ancient and modern Greece, xviii, 250.
- Howell, S.*, on the shad fisheries of the Delaware, xxxii, 134.
- Huaco, an Indian remedy for the hydrophobia, *W. R. Johnson*, xxiv, 279, 388.
- , *L. Feuchtwanger*, xxii, 182.
- Hubbard, O. P.*, chemical examination of the bituminous coal of Chesterfield Co., Va., xlii, 369.
- , geological and mineralogical notices, xxxii, 230.<sup>f</sup>
- , calcareous rocks at Boonville, N. Y., xxxii, 230.
- , — —, *ibid.*, rhomboidal structure in, xxxii, 232.<sup>f</sup>
- , boulders at Boonville, xxxii, 233.
- , locality of crystallized calc spar, Boonville, N. Y., xxxii, 234.
- , — of green coccolite and tabular spar, at Boonville, N. Y., xiii, 198; xxxii, 234.
- , on the removal of carbonic acid from wells, xxxviii, 206; xlii, 165.
- , spontaneous combustion in wood ashes, xlii, 165.
- , geological observations on an excursion to the White Mts., numerous trap dykes, minerals, granite veins, &c., xxxiv, 105.<sup>f</sup>
- , Third Geological Report of New York, notice of, xxxix, 95.
- , Geological Reports of Ohio, Indiana and Michigan, noticed by, xl, 126.
- Huber, F.*, life and writings of, xxiii, 117.
- Hudson river, northern sources of, *W. C. Redfield*, xxxiii, 301.<sup>f</sup>
- —, fish of, xx, 151.
- bay, rocks and country in the vicinity of, xvii, 11.

- Hudson's* series of investigations with the barometer, xxiv, 393.
- Hudsonite, *L. C. Beck*, xlvi, 32.
- Human bones, fossil, v, 171.
- — of the præ-historic world, in *S. America*, xlv, 277.
- skeleton, fossil, of Guadeloupe, skull of, *J. Moultrie*, xxxii, 361.
- footprints of the Mississippi valley, in limestone, v, 223<sup>f</sup>; xxxiii, 398.
- —, *ibid*, in limestone, *D. D. Owen*, xliii, 14.<sup>f</sup>
- —, *ibid*, *W. A. Adams*, xlv, 200.
- race, stature of, *J. G. St. Hilaire*, xxii, 357.
- —, law of increase in stature, *Quetelet*, xxii, 376.
- —, varieties of, xiv, 372.
- —, singular variety of, in Peru and Bolivia, xxviii, 78.
- Humboldt, A.*, expedition to Siberia, xvii, 405.
- , on the invention of the mariner's compass, xl, 242.
- , mean height of the continents above the sea, xlix, 397.
- Humboldtite, xi, 251.<sup>f</sup>
- Humboldtine, v, 193.
- Hume, Sir Abraham*, notice of, xxxvii, 118.
- Hungary, observations on *Beudant's* geological travels in, vii, 256.
- , tribe of Scotacks in, v, 384.
- Hunt, R.*, on the chromatype, xlvi, 396.
- , influence of light on the germination of seeds, xlv, 352.
- , influence of light on the growth of plants, xlv, 352; xlvi, 397.
- , influence of ferro-cyanate of potash on iodide of silver, xlii, 317.
- Huraulite, analysis of, xix, 371.
- Huronite, xxx, 241.
- Huron race of Indians, *S. G. Morton*, xxxviii, 368.<sup>f</sup>
- Hurricane, see *Wind*.
- Hutton's* table of products, errors in, xliii, 116.
- Huxham's* Auroral Register, xxxiii, 297.
- Hyalite, in Florida, xxv, 165.
- , at West Point, N. Y., xxxii, 87.
- Hibernation, *I. Lea*, ix, 75.
- , *S. Woodruff*, xxiv, 363.
- Hydrargillite, *C. Dewey*, iii, 239.
- Hydrate of magnesia, from Shetland, vii, 365.
- Hydraulic cement in N. York State, xxxvi, 45.
- limestones of N. York, xxxix, 96; xlvi, 29.
- — in the Appalachian chain, xxxvii, 381.
- —, magnesian character of, xxxvii, 381.
- machine, new, ii, 345.
- ram, new, iii, 381.
- volcano, xxii, 358.
- Hydriodic acid, preparation of, xvi, 383; xlvii, 192.
- Hydroboracite, analysis of, xxviii, 394.
- Hydrobromic acid, xlvii, 192.
- Hydro-carbo-sulphuric acid, how prepared, vii, 187.
- Hydrochloric acid, notice of experiments with reference to, *Macaire* and *De la Rive*, xi, 393.
- —, mode of preparing pure, from muriatic acid of commerce, *R. Hare*, xxxix, 371.
- —, fumigation with, at Plattsburgh, in 1819, viii, 200.
- —, condensation of, *M. Faraday*, vii, 357.
- Hydrocyanic acid, *F. Magendie* on, ii, 81.
- —, memoir on, *B. L. Olivier*, iii, 182.
- —, —, *Orfila*, xviii, 157.
- —, effect of muriatic and sulphuric acids on, xviii, 146.
- —, apparatus for the evolution of, *R. Hare*, xxix, 244.<sup>f</sup>
- —, extraordinary production of, *A. A. Hayes*, xviii, 201.

- Hydrocyanic acid, preservation of, xvi, 260.
- —, cases in which administered, ii, 83 ; iii, 187.
- —, efficacy in asthma, vi, 366.
- —, effects on a horse, xii, 385.
- —, effects of, on vegetation, x, 190.
- —, chlorine, an antidote for, xvii, 174 ; xxi, 157.
- Hydrogen, combustion of, under pressure, xxii, 352.
- —, in water, being a new application of Hare's blowpipe, v, 347.
- mixed with oxygen, effect of breathing, viii, 375.
- , a new carburetted, xxx, 180.
- gas apparatus, vii, 392.
- , self regulating reservoir for, *R. Hare*, xi, 140.<sup>f</sup>
- , peroxyd of, action of, xvii, 34.
- and chlorine, iii, 341.
- Hydromagnesite of Hoboken, *Wachtmeister*, analysis of, xviii, 167.
- Hydrometers, opinion on, *R. Hare*, xi, 115.
- Hydrophobia, remarks on, ii, 359 ; iv, 385 ; v, 177 ; xvii, 204.
- , singular case of, xvii, 205.
- , account of cases of deaths by, xxiii, 143.
- cured, x, 385.
- — by means of mercurial ointment, xix, 204.
- — by Huaco, an Indian remedy, *W. R. Johnson*, xxiv, 279.
- Hydrosilicite, xv, 388.
- Hydrostatic balance, xix, 185.
- press, xix, 185.
- Hydrous anthophyllite of N. York, *T. Thomson*, xix, 359.
- Hydroxanthic acid, vii, 376.
- Hygrometer, Daniell's, remarks on, *E. Loomis*, xlvi, 19 ; xlix, 277.
- , portable, *A. A. Hayes*, xvii, 351.<sup>f</sup>
- Hygrometric Register at Western Reserve College, *E. Loomis*, Sept.—Nov. 1838, xxxvi, 166 ;—1838—1840, xli, 315 ;—1841—44, xlix, 271.
- — at Hudson, Ohio, compared with those at Greenwich, *E. Loomis*, xlix, 276.
- observations, mean of, at Malvern, in Worcestershire, xxxviii, 102.
- —, at Matanzas, *A. Mallory*, xxxi, 287.
- —, at New Orleans, *Barton*, xxxi, 400.
- , see farther under *Meteorology*.
- Hygrometry, a method of experimenting in, x, 387.
- Hyperbola, method of describing, *R. G. Hazard*, xxi, 314.<sup>f</sup>
- Hypersthene of N. York, analysis of, *L. C. Beck*, xlvi, 35.
- in Massachusetts, iv, 55.
- Hyssopus anisatus, iv, 65.

## I

- Ice, artificial preparation of, xviii, 145.
- , evaporation of, xvi, 390.
- , formation of, in still water, iii, 179.
- , —, at the bottom of rivers, *H. W. Sheffey*, xxxvi, 186.
- , —, *ibid*, *T. Stratton*, xl, 407.
- , —, sparks given out during, xxvi, 178.
- in a well, xxxvi, 184.
- of the sea, characters of, and remarks on, v, 131.
- , Greenland, i, 101.
- of the Alps, *J. D. Forbes*, xlvi, 173 ;—veined structure and motion consequence of its viscous condition, xlvi, 174, 175.
- Icebergs, remarks on, v, 131.
- , formation of, *C. Wilkes*, xlvi, 114.
- , *J. P. Couthouy*, xliii, 154.

- Icebergs, character of, and facts concerning, *J. L. Hayes*, xlv, 316.  
 — and currents of the North Atlantic, *W. C. Redfield*, xlviii, 373.<sup>f</sup>  
 — in low latitudes, xxii, 200.  
 —, theory of drift, see *Drift*.  
 Ice houses, natural, iv, 174.  
 — — —, —, in Salisbury, Ct., viii, 254.  
 — — —, —, near Williamstown, Mass., iv, 331; v, 398.  
 — — —, —, of St. Ouen, xii, 184.  
 Ice mountain of Hampshire Co., Va., *C. B. Hayden*, xlv, 78.<sup>f</sup>  
 — — — in Vermont, *S. P. Lathrop*, xlvi, 331.  
 — water, drinking of, xv, 194.  
 Iceland, notice of, xvii, 15.  
 —, geysers, springs, &c. of, *E. Robert*, xxxi, 167; xxxii, 196.  
 —, —, remarks on, *G. Bischof*, xxxvi, 255.  
 Ichnolithology, see *Footprints*.  
 Ichthyolites, see *Fish*.  
 Ichthyosaurus, largest, found by *Mary Anning*, xxviii, 369.  
 —, in U. States, xxvii, 353.  
 — at Strensham, England, xxxviii, 126.  
 Ichthyosauri, *T. Hawkins*, xxvii, 413.  
 Iconography, xxxiii, 184.  
*Ideler*, *J. L.*, views of, on meteorites, shooting stars and Auroras, xxviii, 288.  
 Idocrase, analysis of, *T. Richardson*, xxxviii, 120.  
 —, of Skye, xxviii, 395.  
 —, American, first detected, *W. Meade*, vii, 50.  
 —, crystal, from Amherst, N. H., xlvi, 381.<sup>f</sup>  
 —, in Connecticut, ix, 44.  
 —, in Massachusetts, viii, 44; x, 11.  
 —, in N. York, xvii, 145; xxi, 327; xlvi, 35.  
 —, in Rhode Island, viii, 230.  
 Idria quicksilver mines, xxix, 219.  
 Igneous action, as indicated by certain minerals in New York, *L. C. Beck*, xlvi, 333.  
 Igneous origin of some trap rocks, *B. Silliman*, xvii, 119.  
 — — — *ibid*, *T. Cooper*, iv, 205.  
 — theory of the earth, remarks on, *W. Maclure*, xvi, 351.  
 — — —, as connected with the secular variation of the magnetic needle, *J. H. Lathrop*, xxxviii, 68.  
 — — —, applications of, *ibid*, xxxix, 90.  
 Ignis fatuus, observations on, *J. Mitchell*, xvi, 246.  
 Iguanodon, bones of, in Mantell's Museum, xxiii, 165.  
 —, discovery of, xxvii, 355.<sup>f</sup>  
 —, Maidstone, xxvii, 420.  
 Illicine, in fevers, xxii, 349.  
 Ilex laurifolia, v, 289.  
 Illinois, geology of Upper, *C. U. Shepard*, xxxiv, 134.<sup>f</sup>  
 —, —, *ibid*, coal formation, xxxiv, 142.<sup>f</sup>  
 —, Lake shore near Chicago, xxxiv, 134.  
 —, route, expense, &c., of the Michigan and Illinois canal, xxxiv, 138.  
 —, mineral and brine springs, xxxiv, 157.  
 Ilmenite, (Crichtonite,) localities of, in Connecticut, xii, 161, 170; xxxv, 179; xliii, 364.<sup>f</sup>  
 —, in Pennsylvania, xiv, 6, 7.  
 —, in Rhode Island, xxxv, 180.  
 Impression in marble near Philadelphia, notice of, *J. B. Browne*, xix, 361.<sup>f</sup>  
 Incas, dominion of, xxxviii, 365.  
 Inclined planes, on, *J. Thomson*, xxiii, 107.  
 Indelible coloring, xxiv, 373.  
 — ink, see *Ink*.  
 India, culture of cotton in, attempted, xl, 40.  
 India rubber carpets, xxvi, 191.  
 Indian attacks on Wheeling, xxxi, 3.  
 — axe of hornblende rock, xliii, 31.<sup>f</sup>  
 — cemetery, Ohio, *S. P. Hildreth*, xxxi, 69.

- Indian corn, origin of, xix, 186.  
 — —, oil of, xliii, 403.  
 — — mounds of the West, xxii, 124.  
 — —, crania, &c., *Dr. Warren*, xxxiv, 47.  
 — — and earthworks in the form of animal effigies, *R. C. Taylor*, xxxiv, 88.<sup>f</sup>  
 — — and other remains in Iowa and Wisconsin, *S. Taylor*, xlv, 21.<sup>f</sup>  
 — —, *Col. Whittlesey*, xxxiv, 361.  
 — — and relics, near Natchez, *C. G. Forshey*, xl, 376.  
 — —, in Louisiana, *C. G. Forshey*, xlix, 38.<sup>f</sup>  
 — —, in Indiana, *J. T. Plummer*, xlv, 313.  
 — — mummies and remains in the caves of Tennessee, xxii, 124.  
 — — remains, skeleton, &c., xxxiv, 47.  
 — — races of America, characteristics of, *S. G. Morton*, xxxviii, 347; xlvii, 408.  
 — —, ancient Peruvian, xxxviii, 360.<sup>f</sup>  
 — —, Araucanian, xxxviii, 368.<sup>f</sup>  
 — —, Huron, xxxviii, 368.<sup>f</sup>  
 — —, remarks on, *R. C. Taylor*, xxxiv, 88.  
 — — sepulchre and remains, xxxi, 8.<sup>f</sup>  
 — — summer, remarks on, xviii, 66.  
 — —, remarks on, *L. Foot*, xxx, 8.  
 — —, essay on, xxvii, 140.  
 — — utensil, ancient; *W. R. Johnson*, xxiii, 65.<sup>f</sup>  
 — — words in the English language, *J. W. Gibbs*, xli, 28.  
 — —, names of beasts, birds and insects, origin of, *J. W. Gibbs*, xli, 39.  
 Indians, Esquimaux, remarks on, xvi, 145.  
 — —, Seminole, ix, 132.  
 — —, adventure of Lewis Wetzel among, xxxi, 14.  
 Indians, murder of Logan's family by, xxxi, 11.  
 Indiana, sketch of the geology and mineralogy of, *W. B. Stilson*, i, 131.  
 — —, *ibid*, cave near Corydon, containing Epsom salts, i, 133.  
 — —, geological report on, by *D. D. Owen*, noticed, xxxiv, 193; xl, 133.  
 — —, suburban geology of Richmond, *J. T. Plummer*, xlv, 281.<sup>f</sup>  
 — —, pisolitic rocks, *J. T. Plummer*, xlv, 283.<sup>f</sup>  
 — —, phosphate of iron, *J. T. Plummer*, xlv, 287.  
 — —, fossil including fossil fuci, *J. T. Plummer*, xlv, 290.<sup>f</sup>  
 — —, ancient wood and stumps of trees, *J. T. Plummer*, xlv, 302.  
 — —, boulders in, *J. T. Plummer*, xlv, 303.  
 — —, magnesia in the water of, *J. T. Plummer*, xlv, 307.  
 — —, soil of, *J. T. Plummer*, xl, 198; xlv, 310.  
 — —, mounds of, *J. T. Plummer*, xlv, 313.  
 Indigo, *J. Dalton's* mode of testing the value of, ix, 385.  
 — —, analysis of, xviii, 241.  
 — —, mode of assaying, *S. L. Dana*, xlii, 320.  
 — —, on the manufacture of, in the U. States, *W. Partridge*, xviii, 237.  
 Induction, electrical, see *Electrical*.  
 Inertia, remarks on, *Z.*, xiv, 50.  
 Infinites, on, *I. Orr*, v, 326.  
 Infusoria, *Turpin*, on siliceous, xxxii, 400.  
 — —, *C. G. Ehrenberg's* discoveries in relation to fossil and recent, xxxiii, 111; xxxv, 371<sup>f</sup>; xxxvii, 116.  
 — —, — —, in volcanic rocks, xlix, 397.  
 — —, — —, in argillaceous formation, at Berlin, xlii, 388.  
 — —, — — conclusions on, xxxviii, 405; xlvii, 208.

- Infusoria, *C. G. Ehrenberg*, on American, xliii, 393; xlv, 297.
- , —, near Richmond, Virginia, xlv, 300.
- , —, Maryland and Virginia, xlviii, 201.
- , —, near West Point, New York, xlv, 302; xxxix, 191.
- , *J. W. Bailey*, in peat earth, West Point, xxxv, 118.<sup>f</sup>
- , —, from Oregon, Bermudas, Virginia and Maryland, catalogue of, xlviii, 321.<sup>f</sup>
- , —, Connecticut, New Haven harbor, xlviii, 337.<sup>f</sup>
- , —, S. Carolina, Charleston harbor, xlviii, 338.<sup>f</sup>
- , —, Virginia, xli, 214; xlv, 313; xlv, 137<sup>f</sup>; xlviii, 330.<sup>f</sup>
- , —, Nova Scotia, xlviii, 339.
- , —, with bones of Mastodon, xlviii, 339.
- , —, of the family Baccillaria, xli, 284<sup>f</sup>; xlii, 88<sup>f</sup>; xliii, 321<sup>f</sup>; —localities, xliii, 328, 329.
- , *E. Hitchcock*, remarks on the discoveries of, xli, 258.
- , *W. B. Rogers*, stratum of, near Richmond, Virginia, xlv, 313; xlv, 141.
- Infusorial vegetable remains in England, *J. E. Bowman*, xl, 174.
- Injection, venous, improved instrument for, xxiii, 114.<sup>f</sup>
- Ink, antediluvian, *J. T. Plummer*, xlv, 287.
- , black writing, improvement in, *J. Bostoch*, xx, 195.
- , receipt for, xxx, 169.
- , made with chesnut bark, ix, 202.
- , India, substitute for, xxvi, 189.
- , indelible, xxiii, 201.
- , —, composition of, *Truill*, xxxvi, 209.
- , —, *H. Braconnot's*, xvii, 172, 371.
- Ink, indelible, stain from, discharged by corrosive sublimate, xxvi, 392.
- , sympathetic, xviii, 148.
- Inking machine, Wood's, xxiii, 103.<sup>f</sup>
- Insanity, *B. W. Dwight's* cases of, i, 431.
- , connection of civilization with, xxii, 379.
- Insects, circulation in, xxx, 186.
- , miscellaneous observations on, *J. T. Plummer*, xl, 146.
- , a means of protecting trees from, x, 204.
- , method of destroying, xxxiii, 273.
- , on the preservation of, *T. Roger*, xix, 213.
- , produced, as supposed, by galvanism, *A. Crosse*, xxxii, 374<sup>f</sup>; xxxv, 125.<sup>f</sup>
- , *ibid*, *W. H. Weekes*, xliii, 395.
- , not produced by galvanism, xxxiii, 272; xlix, 227.
- Inspiration of inflammable gas, xiv, 370.
- Institute, Albany, transactions of, noticed, xvii, 208, 415; xix, 173, 360.
- , Mechanic's, New York, notice of proceedings, xxxi, 415.
- , National, a society established at Washington, xli, 203.
- Interest, new mode of computing, *G. R. Perkins*, xvii, 51.
- Interference of light, new case of, *Powell*, xxxviii, 107.
- —, apparatus for experiments on, *E. S. Snell*, xlix, 26.<sup>f</sup>
- Iodate of soda, iodate of magnesia, and a borate, &c., Tarapaca, *A. A. Hayes*, xxxviii, 410; xxxix, 378; xlv, 6.
- Iodic acid, crystallization of, xx, 185.
- , action of, with morphine, xx, 184.
- —, combinations of, with vegetable alkalies, xix, 371.
- —, preparation of, xxviii, 136.

- Iodide of azote, preparation of, *Serullas*, xviii, 154.
- of calcium and potassium, xvii, 177.
- of lead, decomposition of, xv, 188.
- Iodine, iii, 386.
- , acidification of, by nitric acid, xxi, 376.
- , atomic weight of, *J. J. Berzelius*, xix, 383.
- , crystallization of, xvii, 168.
- , —, *W. W. Mather*, xviii, 84.<sup>f</sup>
- , action of, on the protochloride of mercury, xvi, 395.
- , a reagent for hydro-sulphuric acid, *A. du Pasquier*, xl, 123.
- , used as a dye, xv, 394.
- , medical uses of, iii, 386 ; vi, 383.
- , — — of tincture of, xx, 196.
- , — —, *ibid*, in a report by *Dumeril* and *Magendie*, xx, 386.
- , — —, in Anguina pectoris, xx, 411.
- , — —, in causing disappearance of the breasts, xi, 395.
- , — —, in gout and Anguina pectoris, xvi, 176.
- , — —, as a cure for the goitre and scrofula, v, 387.
- , occurrence of, in coal, *Busby*, xl, 217.
- and bromine in mineral waters, remarks on, *C. Daubeny*, xxi, 366.
- in a mineral spring in Italy, vii, 387.
- in the Saratoga mineral water, xvi, 217 ; *J. H. Steel*, xvi, 242.
- in the Kenawha waters, xviii, 260.
- and bromine in the salt springs of Athens, Ohio, *W. W. Mather*, xlix, 211.
- in plants and mosses, xlv, 227.
- in sponges, ii, 363.
- Iodine in an ore of zinc, xvi, 389.
- , cyanide of, a mode of obtaining, xiii, 181.
- , fluoride of, *H. B. Leeson*, xlix, 205.
- and phosphorus, heat from, xxvii, 200.
- and oxygen, new compound of, (hyperiodic acid) xxviii, 141.
- Iolite, analyses of, xlvi, 383.
- , in Connecticut, xxii, 389.
- , in Massachusetts, xxxiii, 399.
- , decomposed varieties of, *C. U. Shepard*, xli, 354.
- Iowa, mounds of various imitative shapes in, *S. Taylor*, xlv, 21.<sup>f</sup>
- Ipecacuana, analysis of, xvii, 385.
- Ireland, geographical distribution of plants in, xxxi, 367.
- Iridium, method of obtaining, from the platinum residue, *F. Wöhler*, xxvi, 371.
- , means of obtaining pure, *Fremy*, xviii, 185.
- Iris, affords a good test liquor, v, 408.
- Iris Duerinckii, xlv, 176.
- lacustris, iv, 57.
- Iriscopes, *Reade's* experiments with, xl, 334.
- Iron, action of, on ammonia, xviii, 146.
- , action of air and water on, *Mallet*, xlv, 355.
- , steel and cast iron, remarks on, xxxviii, 121.
- , method of bronzing, xxx, 173.
- , — of browning, ix, 168.
- , cementation of, by carburetted hydrogen, xxviii, 362.
- , cold short, method of purifying, xxx, 173.
- , chlorine in, *C. U. Shepard*, xliii, 359.
- , corrosion of, by salt water, xxxiii, 286.
- when cutting, action of, in motion, on tempered steel, ix, 324 ; x, 127 ; xi, 384.
- , deoxidation of the salts of the peroxide of, *C. F. Schönbein*, xlix, 203.



- Iron, experiments on two varieties made from the magnetic ores of Essex Co., N. Y., *W. R. Johnson*, xxxvi, 94.<sup>f</sup>
- , manufacture of, by use of anthracite, xxxiii, 266.
- , —, with the hot blast, xxix, 356.
- , —, with the hot blast, *T. Clark*, xxxi, 180.
- , —, by the hot and cold blast, comparative strength of, *Fairburn*, xxxiii, 292.
- , —, *ibid*, comparative composition of, *T. Thomson*, xxxiv, 21.
- , —, gas obtained by water applied in, *J. S. Dawes*, xxxv, 303.
- , oxides of, separation of, *J. Liebig*, xxiii, 379.
- , —, effect of, on soil, xli, 159.
- for railways, *D. Mushet*, xxxiv, 15.
- , separation of, from manganese, xiii, 173.
- , method of silvering, xxx, 169.
- , on the different states of, xiii, 159.
- , state of, in soils, *R. Phillips, Jr.*, xlix, 394.
- , use of, for stereotyping, xxvi, 192.
- , sulphur in bar, xxviii, 71.
- , sulphuret of, formation of, xxxi, 74.
- boat, iii, 371.
- bridge in Prussia, xii, 197.
- cement, xxx, 171.
- conduit pipes, vi, 173.
- furnaces, number in England and Scotland, xvi, 395.
- mountain of Missouri, iii, 63.
- — *ibid*, *J. T. Hodge*, xliii, 58.
- spikes, experiments on the adhesion of, *W. R. Johnson*, xxxii, 34.<sup>f</sup>
- trade of Great Britain, amount of, xx, 176.
- Iron trade of Wales, xx, 182.
- works of Sweden, amount of exports from, in 1828, xviii, 173.
- — of Glasgow, xli, 48.
- — of Russia, improvements in, xxx, 181.
- — of McIntyre, Essex Co., N. Y., *W. C. Redfield*, xxxiii, 303.
- —, statistics of, in the U. States, xxii, 179.
- —, —, in Connecticut, *C. U. Shepard*, xxxiii, 157.
- —, —, in Maryland, (1834,) xxvii, 15.
- , meteoric, see *Meteoric*.
- , native, see *Meteoric*.
- from Bedford Co., Pa., supposed native, chemical examination of, xiv, 183.
- ores, reduction of, *W. W. Mather*, xxi, 212.
- —, —, in Connecticut, ii, 207.
- Localities.*
- Iron ores, in Greece, xxxii, 175.
- — in Canada, viii, 75, 76.
- — in Nova Scotia, xv, 157, 159, 201, 210, 213.
- — in United States.
- —, in New England, western, viii, 30.
- —, —, in Maine, *C. T. Jackson*, xxxvi, 147, 150.
- —, —, in New Hampshire, at Franconia, viii, 180.
- —, —, *ibid*, *C. U. Shepard*, xviii, 134, 289.
- —, —, in Massachusetts, southern, and northern Connecticut, (bog) x, 14.
- —, —, *ibid*, notice of some, xxxvi, 378.
- —, —, general account of, *E. Hitchcock*, xxii, 50.
- —, —, *ibid*, of Hawley, vi, 208.
- —, —, *ibid*, of Kent, Richmond, &c., v, 20.
- —, —, of New Britain, vi, 209.

Iron ores, in United States.  
 ———, ———, in New England,  
 in Vermont, *F. Hall*, iii, 57; iv,  
 23.  
 ———, ———, *ibid*, at Benning-  
 ton, *C. Dewey*, v, 249.  
 ———, ———, *ibid*, at Plym-  
 outh, (spathic) ix, 22.  
 ———, ———, *ibid*, *ibid*, *T. G.*  
*Clemson*, xxiv, 170.  
 ———, ———, in Rhode Island,  
 xl, 185.  
 ———, ———, in Connecticut,  
*C. U. Shepard*, xxxiii, 152.  
 ———, ———, *ibid*, at New Mil-  
 ford, (spathic) vi, 209; xix,  
 311.<sup>f</sup>  
 ———, ———, in Kent, hema-  
 tite, ii, 216; vi, 209.  
 ———, ———, in Salisbury, ii,  
 212; vi, 208; xix, 322.  
 ———, ———, in New York,  
 xlvi, 25.  
 ———, ———, *ibid*, of Clinton  
 group of rocks, (argillaceous)  
 xlvi, 301.  
 ———, ———, *ibid*, of Colum-  
 bia and Dutchess Cos., xxxvi, 21.  
 ———, ———, *ibid*, of Crown  
 Point, iv, 48.  
 ———, ———, *ibid*, of Essex  
 Co., xxxvi, 26; xl, 81.  
 ———, ———, *ibid*, at Hillsdale  
 and Amenia, viii, 243.  
 ———, ———, *ibid*, in Orange  
 Co., xvii, 203.  
 ———, ———, *ibid*, in Jefferson  
 and St. Lawrence Cos., xl, 81.  
 ———, ———, *ibid*, in Schoharie  
 Co., xxviii, 176.  
 ———, ———, *ibid*, in St. Law-  
 rence Co., *J. Finch*, xix, 220.  
 ———, ———, in New Jersey,  
 at Franklin, v, 243.  
 ———, ———, *ibid*, at Pompton  
 Plains, v, 28.  
 ———, ———, *ibid*, in Morris  
 Co., v, 28.  
 ———, ———, in Pennsylvania,  
 analyses of, *W. R. Johnson*,  
 xxxviii, 383; xxxix, 142.

Iron ores, in United States.  
 ———, ———, in Maryland, *Du-*  
*catel* and *Alexander*, xxvii, 7, 13,  
 32.  
 ———, ———, near Baltimore,  
 titanic, *T. G. Clemson*, xvii,  
 42.  
 ———, ———, in Ohio valley  
 and Ohio, *S. P. Hildreth*, xxix,  
 129<sup>f</sup>, 137; xxxi, 61, 68.  
 ———, ———, in Michigan,  
 xxxiv, 192.  
 ———, ———, in Illinois, *C. U.*  
*Shepard*, xxxiv, 159.  
 ———, ———, in Missouri and  
 the West, iii, 26, 63; xliii, 67.  
 ———, ———, in North Caro-  
 lina, v, 417; xiv, 235; xli, 183,  
 348.  
 ———, ———, in Alabama,  
 xlvi, 399.  
 ———, arsenical, in New Hampshire,  
 xxiv, 386; xlvi, 384.  
 ———, ———, in Connecticut, vi, 232.  
 ———, ———, in New York, xxi,  
 326.  
 ———, bog, in Maine, x, 18.  
 ———, ———, in Massachusetts, i,  
 343; ix, 43; x, 14; xxii, 55.  
 ———, ———, in Connecticut, x, 14;  
 xxxiii, 156, 160.  
 ———, ———, in New York, v, 270;  
 xxviii, 176.  
 ———, ———, in New Jersey, *H.*  
*Seybert*, with an analysis, viii,  
 298.  
 ———, ———, in Pennsylvania, iv, 4;  
 xiv, 5.  
 ———, ———, in Maryland, xxvii, 7.  
 ———, ———, in North Carolina, xiv,  
 235.  
 ———, ———, in Michigan, xxxiv,  
 192.  
 ———, ———, in Canada, viii, 76.  
 ———, argillaceous, in Massachu-  
 setts, iv, 285; xxii, 55.  
 ———, ———, in New York, xlvi,  
 301.  
 ———, ———, in Ohio, xvi, 156.  
 ———, ———, in Maryland, xxvii,  
 32.

- Iron, argillaceous, in Delaware, xiv, 11.
- , —, in Canada, viii, 76.
- , carbonate of, or spathic, in New Hampshire, vi, 245.
- , —, in Vermont, Plymouth, ix, 22; xxiv, 170, (with analysis.)
- , —, in Massachusetts, v, 269; ix, 54; xxii, 50.
- , —, in Connecticut, ii, 226; vi, 209; xix, 311<sup>f</sup>, (New Milford); xxxiii, 160.
- , chromic, in Vermont, xxviii, 383.
- , —, in Massachusetts, vi, 248; viii, 56; xxiv, 397.
- , —, in Connecticut, vi, 233.
- , —, in New York, ix, 243.
- , —, in Pennsylvania, viii, 239; ix, 45; xiv, 7, 10.
- , —, in Maryland, xxvii, 18.
- , hematite or brown, in Vermont, iii, 57; iv, 23; v, 249.
- , —, in Massachusetts, iv, 285; v, 269; viii, 55; xxii, 54.
- , —, in R. Island, iv, 285.
- , —, in Connecticut, ii, 209, 212, 216; vi, 208; viii, 260; xix, 322; xxxiii, 156.
- , —, in New York, i, 144; iv, 47.
- , —, in Pennsylvania, i, 236; xiv, 14.
- , magnetic, igneous origin indicated by jointed structure, xli, 173.
- , —, connection with trap dikes, *E. Emmons*, xl, 81.
- , —, at Mount Etna, xxx, 186.
- , —, in New Hampshire, xviii, 130.
- , —, in Vermont, iii, 76; vi, 232.
- , —, in Massachusetts, i, 115, 344; v, 269; vi, 208; vii, 255; viii, 55; ix, 43; x, 13, 18; xxii, 52.
- , —, in Rhode Island, (native magnet) iv, 285; v, 402.
- Iron, magnetic, in Connecticut, v, 41; viii, 259; xxxiii, 155; xlvi, 365,<sup>f</sup> (distorted crystal.)
- , —, in New York, iv, 48; v, 28; ix, 41, 252; xxv, 350; xl, 81.
- , —, in Pennsylvania, viii, 238; x, 219; xiv, 10, 18.
- , —, in Maryland, xviii, 81.
- , —, in Canada, viii, 75.
- , micaceous, in Vermont, iii, 76; vi, 208, 233.
- , —, in Massachusetts, i, 115; iv, 53; vi, 27, 207, 233, 248; xxii, 53.
- , —, in Rhode Island, viii, 231, 232.
- , —, in New York, xxv, 350.
- , —, in Pennsylvania, iv, 4; viii, 238.
- , —, in Virginia, iii, 232.
- , phosphate of, Cornwall, analysis of, vii, 369.
- pyrites, cause of decomposition of, xix, 387.
- —, specific gravity of, xix, 388.
- —, occurrence of, in fossiliferous rocks, xxxi, 74.
- —, in New Hampshire, xviii, 129, 131.
- —, in Vermont, i, 115; vi, 245.
- —, in Massachusetts, viii, 54; x, 18; xxii, 51.
- —, in Rhode Island, viii, 199.
- —, in Connecticut, i, 49; v, 44; vii, 56; x, 13; xxxiii, 160.
- —, in New York, v, 12, xix, 224; xxv, 350; xxviii, 172<sup>f</sup>; xlvi, 36.<sup>f</sup>
- —, in Pennsylvania, iv, 4; viii, 239; x, 222; xiv, 5, 6, 8, 13.
- —, in Ohio, xvi, 156.
- —, in New Jersey, v, 28.
- —, in Maryland, xviii, 80.

- Iron pyrites, in North and South Carolina, iii, 3; v, 262; xli, 183.  
 — — —, in Alabama, xxiv, 9.  
 — — —, in Canada, viii, 75.  
 — — —, in Nova Scotia, xv, 213.  
 — — sand, in Massachusetts, i, 115.  
 — — —, in Connecticut, vi, 232.  
 — — —, in Canada, viii, 75.  
 — —, silicate of, Bodenmais, xviii, 164.  
 — —, specular, association of, in Jefferson and St. Lawrence Cos., *E. Emmons*, xl, 81.  
 — —, — —, of volcanic origin, theory of formation of, *G. Bischof*, xxxvi, 237.  
 — —, — —, *ibid*, *Mitscherlich*, xxxvi, 237.  
 — —, — —, in Canada, viii, 76.  
 — —, — —, in Maine, x, 17.  
 — —, — —, in Massachusetts, i, 115, 438.  
 — —, — —, in New Hampshire, xviii, 131.  
 — —, — —, in New York, iv, 250; xxi, 329; xl, 81.  
 — —, — —, in Pennsylvania, iv, 4; xiv, 9.  
 — —, — —, in Rhode Island, ix, 46.  
 — —, sulphate of, in Massachusetts, i, 115; viii, 56.  
 — —, — —, in Connecticut, v, 36; viii, 260; x, 13.  
 — —, — —, in New York, iv, 250; xv, 243.  
 — —, — —, in New Jersey, v, 265.  
 — —, titanic, near Baltimore, Maryland, *T. G. Clemson*, xvii, 42.  
 Irradiation, notice of *B. F. Joslin's* memoir on, xxvii, 389.  
 Ischil, salt mines of, xxix, 225.  
 Islands, floating, *A. Pettengill*, xii, 122.  
 — —, sudden formation of, from volcanic action, *G. Bischof*, xxxvi, 267.  
 — —, volcanic, near Sicily, thrown up, xxi, 399.<sup>f</sup>  
 Isomeric compounds, xix, 383.  
 Isomeric bodies, *J. J. Berzelius* on, xxvi, 178.  
 Isomerism, remarks on, xxviii, 356.  
 Isomorphism, *H. Kopp's* views on, xlvi, 369.  
 — —, exceptions to the law of, xxxv, 302.  
 Isopyre, analysis of, xv, 388.  
 Italy, see *Vesuvius* and *Volcano*.  
 Ives, *A. W.*, chemical examination of hop, ii, 302.  
 Ives, *Eli*, on a species of *Limosella*, i, 74.  
 — —, on the amount of nutritious matter afforded by an acre of land cultivated with potatoes or wheat, i, 297.  
 — —, new species of *Asclepias*, i, 252.<sup>f</sup>  
 — —, on spring pasture, iii, 355.  
 Ivory paper, iii, 370.  
 — —, vegetable, xlix, 400.

## J.

- Jackson, C. T.*, analysis of mineral waters from the Azores, xxxi, 94, 96.  
 — —, — — of the serpentine marble of Vermont, xxxviii, 198.  
 — —, — — of meteoric iron from Claiborne, Alabama, xxxiv, 332; xlviii, 145.  
 — —, — — of Catlinite, xxxv, 388; xxxvii, 393.  
 — —, composition of some kinds of grains, xlv, 339.  
 — —, on the copper and silver of Kewenaw Point, Lake Superior, xlix, 81.  
 — —, remarks on drift, xlv, 320.  
 — —, geology and mineralogy of a part of Nova Scotia, xiv, 305<sup>f</sup>; xv, 132<sup>f</sup>, 201.  
 — —, on certain portions of the geology of Maine, xxxiv, 69.  
 — —, geological reports on Maine, noticed, xxxii, 193; xxxv, 387; xxxvi, 143; xxxvii, 376.  
 — —, — — — on N. Hampshire, xli, 383; xlviii, 393; xlix, 27.

- Jackson, C. T.*, on the geology of Maine and the public lands, review of, xxxvi, 143.
- , on geological specimens and surveys, xxx, 203.
- , notice of some metamorphic rocks in New Hampshire, xlv, 145.
- , organic matters in soils, xlv, 337.
- Jacobi*, on electro-magnetism as a moving power, xl, 339.
- Jameson's Mineralogy*, announced, ii, 167.
- Jarman, T.*, on gas lights, iii, 170.
- Jasper in Canada, viii, 64.
- in Connecticut, v, 36.
- in Massachusetts, i, 113, 343.
- in Mississippi valley, iii, 71.
- in New Jersey, ii, 197.
- in North Carolina, v, 261.
- Jaundice, use of phosphoric acid in, iv, 162.
- Java, native sulphur of, i, 58.
- , sulphuric acid of, i, 58.
- Jeffersonite, analysis of, v, 402.
- , identity of, with pyroxene, *H. Seybert*, vii, 145.
- Jenyns, L.*, notice of the works of, xxxvii, 165.
- Jewelry, composition of the powder used in giving the fine color to gold, xii, 188.
- Johnson, E. F.*, canal surveys in the state of New York, xxiv, 19.<sup>f</sup>
- , on the height of the mountains of New York, xxxvii, 84.
- , on the present mode of conducting land surveys in the U. States, xix, 131.
- , on the epicycloid, xxi, 280.<sup>f</sup>
- Johnson, S. L.*, ascent of Mt. Etna, xxvi, 1.
- Johnson, W. R.*, economy of fuel, in its domestic applications, xxiii, 318.<sup>f</sup>
- , electricity, experiments in, xxv, 57.
- , heating power of various coals, xlix, 166, 310.
- Johnson, W. R.*, heat and vapor, inquiries respecting, xxi, 304.
- , method of determining and calculating the specific heats of certain solids, xxvii, 267.
- , huaco a remedy for hydrophobia, xxiv, 279, 388.
- , confirmatory notice of the medical virtues of guaco, xxvii, 171.
- , iron from the Adirondack iron works, experiments on two varieties, xxxvi, 94.<sup>f</sup>
- , iron ore and coal of Pennsylvania, analyses of, xxxviii, 382.
- , on the coal field of Carbon creek, xxxix, 137.
- , iron spikes, experiments on the adhesion of, in different kinds of timber, xxxii, 34.<sup>f</sup>
- , rotascope, description of, xxi, 265.<sup>f</sup>
- , rotation of liquids of different specific gravities, placed upon each other, xxvii, 84.<sup>f</sup>
- , on the rapid production of steam in contact with metals highly heated, xix, 292; xx, 308, 418.
- , action between water and hot iron, xxi, 71.<sup>f</sup>
- , description of a steam pyrometer, xxii, 96.<sup>f</sup>
- , the strength of cylindrical steam boilers, xxiii, 68.
- , notice of an ancient American utensil, xxiii, 65.<sup>f</sup>
- Johnston, J.*, improved air pump, xxxiv, 86.<sup>f</sup>
- , apparatus for solidifying carbonic acid, xxxviii, 297<sup>f</sup>; xlii, 203.
- , new crystals of beryl, from Middletown, xl, 401.<sup>f</sup>
- , on a large crystal of columbite from Middletown, Ct., xxx, 387.<sup>f</sup>
- , sketch of the early history of Count Rumford, xxxiii, 21.
- , on shrinkage marks in sandstone, xlv, 315.

- Johnston, J. F. W.*, blank form for statistical information on chemical education, xxxi, 414.
- , work by, on agriculture, noticed, xlii, 187.
- Joints in rocks, *W. W. Mather*, xli, 172.
- Jones, A.*, steamboats protected from lightning, xxii, 106.
- , on hailstorms, xxiii, 35.<sup>f</sup>
- Jones, G.*, on the use of anthracite in blacksmith shops, xviii, 303.
- , remarks on prairies, xxxiii, 226.
- , Naval Sketches; citation from, xvi, 168, 320.<sup>f</sup>
- , excursion to Cairo, &c, xxxi, 412.
- Jones, W. G.*, description of a new compensating pendulum, xxxviii, 274.<sup>f</sup>
- Joslin, B. F.*, on the atmospheric origin of the Aurora, xxx, 390; xxxv, 145.
- , polarity of crystals indicated by rotation, while forming, as seen under solar microscope, xxxv, 150.
- , on the tails of Halley's comet, xxxi, 142, 324.
- , electro-magnetic apparatus, xxi, 86.<sup>f</sup>
- , on the causes of the earth's magnetism, xix, 398.
- , memoir\* on irradiation noticed, xxvii, 389.
- Journals of Science, remark on British and American, xxvi, 174.
- Journey, scientific, by *Seiber*, in Abyssinia, announced, iv, 383.
- Juncus cylindricus*, xlii, 83.
- *Greenii*, xlv, 37.
- Juniperus repens*, iv, 69.
- Jussieua tenuifolia*, v, 294.
- Justicia lætivirens*, xlv, 176.
- K.**
- Kaatskill mountains, see *Catskill*.
- Kain, J. H.*, on the mineralogy and geology of part of Virginia and Tennessee, i, 60.
- Kain, J. H.*, mounds and caves in Tennessee, i, 428.
- , hurricane at Shelbyville, Tenn., June, 1830, xxxi, 252.
- Kakodyl, Bunsen*, xli, 51; xlii, 324.
- Kalmia cuneata*, xxvi, 314.
- Kamschatka, notice of, xvii, 30.
- Kaolin, bed of, in Chester Co., Penn., xiv, 7.
- , in Maryland, xxvii, 19.
- , in New Jersey, ii, 368.
- , in North Carolina, v, 6.
- Karsten*, experiments by, on the formation of "images of Möser," xlv, 228.
- Katahdin mountain, excursion to, *J. W. Bailey*, xxxii, 20.<sup>f</sup>
- , height of, xxxii, 31.
- Keely, G. W.*, on the resistance of fluids, xxviii, 318.<sup>f</sup>
- Kelley, E. G.*, geological features of Hawaii, xl, 117.<sup>f</sup>
- Kellogg, E.*, on the passage of lightning, ix, 84.
- Kenawha gas, *J. A. Lewis*, xlix, 209.
- river and valley, *S. P. Hildreth*, xxix, 83, 87.
- , climate of, xxix, 89.
- brines, xviii, 260; xxiv, 51, 66; xxix, 84, 113.
- Kendall, E. O.*, on the comet of 1843, xlv, 188.<sup>f</sup>
- Kendall, T.*, Halo at New Lebanon, a notice of, vii, 337.<sup>f</sup>
- , improvements in the surveyor's compass, xix, 337.<sup>f</sup>
- Kent, E. N.*, new process for preparing gallic acid, xlvi, 78.
- Kentucky, fossil bones at Big-bone Lick, xviii, 139.
- , — *ibid*, report on, by Messrs. Cooper, Smith and De Kay, xx, 370.
- , geology of the region near Louisville and Shippingsport canal, *I. A. Lapham*, xiv, 65.<sup>f</sup>
- , caves in, containing nitre, viii, 323.
- , marbles of, iii, 234.
- Kerolite, xviii, 391.

- Kerolite of Westchester, N. Y., analysis of, xlvi, 34.
- Kilauea, Hawaii, notice of volcano of, xi, 1, 362; xvi, 345.
- , —, ibid, *C. S. Stewart*, xx, 228.
- , —, ibid, *J. Goodrich*, xxv, 199.
- , —, ibid, *E. G. Kelley*, xl, 117.<sup>f</sup>
- King, A. T.*, footprints in Westmoreland Co., Pa., xlvi, 217, 343<sup>f</sup>; xlix, 216.<sup>f</sup>
- , on a halo, xl, 25.<sup>f</sup>
- King, H.*, on the geology of the valley of the Mississippi, xlvii, 128.
- Kinic acid, detection of, *J. Stenhouse*, xlix, 391.
- Kirkdale caverns, bones of, &c., examined by *W. Buckland*, viii, 158, 317.
- Kirtland, J. P.*, on the sexual characters of the Naiades, xxvi, 117.<sup>f</sup>
- , habits of the Naiades, xxxix, 164.<sup>f</sup>
- , miscellaneous notices in Ornithology, xl, 19.
- , notice of, xxxi, 22.
- Kite, for electro-meteorological observations, xxxii, 304.<sup>f</sup>
- , for communicating with stranded vessels, x, 184.
- Kobell, F. von*, on galvanography, xlvi, 221.<sup>f</sup>
- Kobresia filiformis, xxix, 253.<sup>f</sup>
- globularis, xxix, 253.<sup>f</sup>
- König's* transparent paintings, ii, 348.
- Kopp, H.*, on isomorphism, xlvi, 369.
- Kuhlmann*, on the use of sulphate of copper, alum, &c. in the making of bread, xx, 269.
- Kunker, a tuffaceous deposit in India, *Newbold*, xlix, 398.
- Kurile Islands, xvii, 32.
- Kyanite, analysis by *C. H. Rockwell*, xlvi, 383.
- , compared crystallographically with Sillimanite, *C. U. Shepard*, xii, 159.<sup>f</sup>
- Kyanite, in Connecticut, i, 352; ii, 238; vi, 219; vii, 253; xviii, 361.
- , in Massachusetts, i, 114; vi, 219; vii, 255; ix, 252; xiv, 216.
- , in New Hampshire, v, 40.
- , in New York, vi, 364.
- , in Pennsylvania, v, 41; ix, 246; x, 220, 222; xiv, 8, 12, 14, 18.
- , in Rhode Island, v, 403.
- , in Vermont, vi, 219, 245, 249.

## L.

- Laboratory of Dr. Hare, description of, xix, 26.<sup>f</sup>
- Labradorite of Essex Co., N. Y., *W. C. Redfield*, xxxiii, 303.
- , in Canada, viii, 66.
- Lachrymatories from Milo, xvi, 333.<sup>f</sup>
- Lacker for brass, receipt for, ix, 169.
- Lagrange, J. L.*, works and life of, notice of, xxx, 64; xxxi, 97.
- formulæ for determining the motions of any systems of bodies about a state of equilibrium, correction of an error in, *H. J. A.*, xi, 398.
- Lakes, North American, origin of, *J. B. Gibson*, xxix, 208.
- , —, —, action of, *H. Schoolcraft*, xlv, 368;—drift sand deposits, 369.
- , —, —, raised beaches of, *C. Lyell*, xlvi, 314.
- , —, —, on the changes of level, *H. A. S. Dearborn*, xvi, 78.<sup>f</sup>
- , —, —, dimensions of, xlvii, 21.
- , —, —, influence of, on climate, xlvii, 21.
- , —, —, remarks on the supposed tides of, *H. Whiting*, xx, 205.
- , —, —, tides in, *D. Ruggles*, xlv, 18.

- Lakes, bursting of, through mountains, iii, 252.
- , ancient, along the Connecticut valley, vii, 16.
- Lake, Chautauque, height of, above the sea, xlv, 17.
- Erie, coast of, xxix, 204.
- —, degradation on, xxxiv, 349.
- , on the eruption of Long and Mud Lake, Vt., *S. E. Dwight*, xi, 39.<sup>f</sup>
- of the Highlands, N. Y., v, 32.
- Huron, account of, and of fossils about, iii, 254<sup>f</sup>, 270<sup>f</sup>, 271.<sup>f</sup>
- Ontario, beaches of, and height, xxxvi, 43.
- —, height of, above tide level, depth and temperature, xxxiii, 403.
- —, *C. Dewey*, xxxvii, 242.
- of the Woods, position of, determined astronomically, by *J. L. Tiarks*, xv, 41.
- Lalande*, medals founded by, xxv, 190.
- Lamp, aphlogistic, iv, 328.<sup>f</sup>
- , —, platina, xx, 385.
- , new astral, v, 386.
- , hydrostatic, xvii, 161.
- , a new, with inflammable air, *J. Green*, ii, 330.<sup>f</sup>
- , new, without flame, i, 207.
- , monochromatic, of *D. Brewster*, vii, 363.
- , oil gas, xxii, 387.
- , portable gas, iii, 371.
- , Rumford, xix, 40.
- , voltaic, *J. Cutbush*, ii, 332.
- black, analysis of, xi, 387.
- glasses, to prevent the cracking of, xxi, 165.
- Land and water, distribution of, xiv, 375.
- Land surveys in the U. States, present mode of conducting, xix, 131.
- Languages, *F. Adelung's* work on, iii, 376.
- , number of, on the earth, x, 383.
- of signs, observations on, *S. Akerly*, viii, 348.
- Lanthanium, a new metal, xxxvii, 192.
- , atomic weight of, xvii, 190.
- Lapham, D.*, problems relating to canals, xxvii, 127.<sup>f</sup>
- , plan of the canal locks at Cincinnati, Ohio, xxiv, 70.<sup>f</sup>
- Lapham, D.* and *I. A.*, observations on boulders in Ohio, xxii, 300.
- Lapham, I. A.*, statement of elevations in Wisconsin, xlvi, 258.
- , notice of the Louisville and Shippingsport canal, and of the geology of its vicinity, xiv, 65.<sup>f</sup>
- Laplace, P. S.*, eulogy on, xxv, 1.
- Larkin's* Geometry, ii, 359.
- Latent heat of vapors, ii, 361.
- Laterrade, J. F.*, on the unicorn, xxi, 123.
- Lathrop, J. H.*, applications of the igneous theory of the earth, xxxviii, 68; xxxix, 90.
- Lathrop, S. P.*, ice mountain in Vermont, xlvi, 331.
- Latitudes, on determining, xlix, 232.
- Latitude, reduction of, *T. J. Cram*, xxxi, 222.
- of the Hudson (Ohio) observatory, xxxix, 362.
- of Mt. Washington, xli, 384.
- and longitude of Yale College observatory, xxxiv, 309.
- Latrobite, analysis of, *Gmelin*, ix, 330.
- Laudanum, denarcotized, mode of preparing, *R. Hare*, xii, 291.
- Laumonite, in Delaware, ix, 246.
- , in New York, vi, 365; ix, 41.
- , in Nova Scotia, xxx, 345.
- , moving rocks in a lake in Salisbury, ix, 239.
- Lea, H. C.*, description of eight new species of shells, xlii, 106.<sup>f</sup>
- , new tertiary shells from Alabama, xl, 92.<sup>f</sup>
- , examination of the peroxide of manganese, xlii, 81.
- Lea, I.*, contributions to geology, noticed, xxv, 414.



- Lea, I.*, causes and effects of earthquakes, ix, 209.
- , on hybernation, ix, 75.
- , impression in sandstone, v, 155.<sup>f</sup>
- , on the Naiades, notice of, xvi, 378; xxii, 169; xxvii, 371; xxxv, 184; xlvi, 104.
- , on the northwest passage, x, 138.
- , New Grenada and Cuba, oolitic strata in, xl, 41.
- , Alabama tertiary and list of fossils, xxv, 417, 419.
- , on the Unionidæ, xxii, 170; xxvii, 371.
- , on the genus *Unio*, &c., notice of, xxxv, 184.
- , on the study of natural history, xi, 218.
- , a halo and parhelia, x, 368.<sup>f</sup>
- Lea, M. C.*, on the first or southern coal field of Pennsylvania, xl, 370.
- Lead, sheet, Chinese process of making, vii, 391.
- , on the use of the hot blast in smelting, xlii, 169.<sup>f</sup>
- , action of water on, xxxiv, 25; xlvi, 398.
- in sulphuric acid, test for, xvii, 195.
- , sulphate of, action of some alkaline salts on, *J. L. Smith*, xvii, 81.
- , tartrate of, a pyrophorus, ix, 207.
- , native, in Europe, x, 191.
- mines of the Hartz, xix, 113.
- — of the United States, proceeds from, x, 398.
- — of the West, *J. Locke*, xliii, 147.
- — of the West, remarks on the position and origin of, xlvi, 106.
- —, rock of, of the West, identical with the Niagara limestone, *J. Hall*, xlii, 59.
- — of Lubec, in Maine, xxx, 332.
- Lead mines of Massachusetts, ix, 166; xxii, 56.
- — of Hampshire Co., Mass., notices of, *A. Nash*, xii, 238.<sup>f</sup>
- — of Southampton, Mass., i, 136; vi, 201.
- — of Whately and Leverett, Mass., vi, 204.
- — of Middletown and Bethlehem, Ct., vi, 205.
- — and ores in New York, xlvi, 28.
- — at Ancram, New York, notice of, *C. A. Lee*, viii, 247.
- — of northern New York, xxxvi, 24.
- — and ores of Davidson Co., N. C., xli, 183, 348.
- region of Missouri, *H. R. Schoolcraft*, iii, 248.
- — and ores of Missouri, *Troost and Lesueur*, xii, 379.
- — of Missouri, *J. N. Niccollet*, xlv, 340.
- — of La Motte, the ore of, not argentiferous, xliii, 64.
- — of the upper Mississippi, notice of Chandler's map of, xvii, 416.
- — of Wisconsin and Missouri, *J. T. Hodge*, xliii, 35.<sup>f</sup>
- — of Wisconsin, and mode of working, *J. T. Hodge*, xliii, 41.<sup>f</sup>
- ores, observations on, iii, 176.
- —, price of, and of lead in Wisconsin, xliii, 72.
- — of the La Motte mine, Mo., not argentiferous, xliii, 64.
- , native carbonate of, Davidson Co., N. C., analysis of, xli, 183, 348.
- , — —, in Massachusetts, vi, 201; ix, 249.
- , — —, in Missouri, xii, 379.
- , — —, in Wythe Co., Va., xliii, 169.
- , — chloride of, in Massachusetts, vi, 201.

- Lead, native cupreous sulphato-carbonate of, iv, 29.
- , — diarsenate of, *T. Thomson*, xxxv, 297.
- , — molybdate of, in Massachusetts, vi, 201.
- , — —, in New York, viii, 249.
- , — red and yellow oxide of, in Wythe Co., Va., xliii, 169.
- , — phosphate of, in Massachusetts, vi, 201.
- , — —, in North Carolina, xli, 183, 348.
- , — sulphato-carbonate of, iv, 29.
- , — sulphato-tri-carbonate of, iv, 29.
- , — sulphuret of, (Galena) crystals, distorted, from Rossie, xlvii, 417.
- , — —, argentiferous ore of Lane's mine, analysis of silver from, *W. W. Mather*, xxvii, 256.
- , — —, in Canada, viii, 76.
- , — —, in Connecticut, i, 316; iii, 173; v, 44<sup>f</sup>; xxvii, 256; xxxiii, 162.
- , — —, in Maine, xxx, 332.
- , — —, in Massachusetts, i, 115, 137, 343, 437; vi, 201, 204; viii, 57; xii, 251; xxii, 56.
- , — —, in Missouri and the West, see above, under *Lead Mines*.
- , — —, in New Hampshire, vi, 245; viii, 235; xxxiv, 114.
- , — —, in New York, v, 21, 30; vii, 254; viii, 260; xxv, 350; xl, 76; xlvii, 417.
- , — —, in Rhode Island, viii, 231.
- , — —, in Tennessee, i, 63.
- , — —, in Virginia, i, 63; xliii, 169.
- pipes, strength of, xii, 189; xiv, 369.
- Lead pipes used as an aqueduct, hydrogen in, *N. Walkly*, xxxiv, 393.
- — —, Ewbank's tinned, notice of, xxvi, 210.
- — —, protected by tin, safety of, xxvi, 400.
- and tin, combustion of the alloy of, xxi, 375.
- pots, manufacture of, by Messrs. Dixon, xxi, 196.
- Leafing of plants, xlv, 419.
- Leather, fabrication of Russian, iv, 193.
- Leavenworth, M. C.*, four new plants from Alabama, vii, 61.
- , list of the rarer plants of Alabama, ix, 74.
- , description of the *Tullia pycnanthemoides*, xx, 343.<sup>f</sup>
- , on some new species of plants, xlix, 127.
- Lebanon, Mt., coal mine of, xxviii, 32.
- Lederer's cabinet of minerals for sale, xxix, 392.
- Ledererite, supposed new mineral, *C. T. Jackson* and *A. A. Hayes*, xxv, 78<sup>f</sup>, 80.
- , description of, xlvii, 339, 350.
- Lederite, a supposed new mineral species, *C. U. Shepard*, xxxix, 357<sup>f</sup>; xlviii, 176.
- of Shepard identical with Sphene, xlv, 36.<sup>f</sup>
- identical with Sphene, *B. Siliman, Jr.*, xlviii, 180.
- , measurements of, by *J. D. Dana*, xlviii, 180.
- Lee, C. A.*, sketch of the geology and mineralogy of Salisbury, Ct., viii, 252.
- , notice of the Ancram lead mine, viii, 247.
- Leech, account of, x, 389; xxiv, 160.
- Leeches, mortality of, during storms, xvii, 186.
- Leedom, E. C.*, an astronomical machine, xlii, 338.<sup>f</sup>

- Leghorn hats, on the cultivation of the material for, xxii, 363.  
 Leguminous fruits, flour or meal from, vii, 189.  
*Leibnitz, G. W. von*, notice of life of, xlix, 187.  
 —, Protogæa of, or his views on the formation of the earth, xx, 56; xxxix, 15.  
 Leipsic fair, notice of, iv, 392; vii, 381; xxiii, 182.  
*Leitner, E. T.*, on double flowers, xxiii, 45.  
 Lens, crystalline, of animals, how preserved for future examination, xxvi, 216.  
*Lenz* on the saltness of the ocean at different depths, xxiii, 10.  
 Lepidanche, new genus, *G. Engelmann*, xliii, 343.  
 — appressa, xlv, 77.  
 — compositarum, xliii, 344f; xlv, 77.  
 Lepidolite, analysis of, *Gmelin*, ix, 329.  
 —, in Maine, x, 16; xviii, 293.  
 —, in Massachusetts, i, 350.  
*Lester, W.*, geological map of New London and Windham Cos., Ct., xxiii, 404.  
 Level of the Dead Sea, barometrical observations made to determine, xlii, 214.  
 —, difference of, between the Black and Caspian Seas, xl, 320.  
 —, change of, during earthquakes in Calabria, Chile, Scandinavia, Finland, &c., *G. Bischof*, xxxvi, 273.  
 —, —, various examples of, *W. W. Mather*, xlix, 294.  
 —, —, in Chile, xxviii, 236.  
 —, —, — and elsewhere in S. America, *C. Darwin*, xxxiii, 100.  
 —, —, at Ceylon, vi, 194.  
 —, —, in Great Britain, xxxiii, 97; xxxiv, 27.  
 —, —, about the North American Lakes, *C. Lyell*, xli, 314.  
 —, —, about Lake Huron, indicated by ancient beaches, iii, 257.  
 Level, change of, about Lake Ontario, *ibid*, *G. E. Hayes*, xxxv, 104.  
 —, —, in Maine, *C. T. Jackson*, xxxvi, 154.  
 —, —, in New York, about Canaan mountain, v, 15.  
 —, —, —, in the Mohawk valley, xxxvi, 31.  
 —, —, in Palestine, *J. D. Sherwood*, xlviii, 15.  
 —, —, on the Scandinavian coast, *L. Beamish*, xlvii, 184.  
 —, —, in Sweden, *C. Lyell*, xxviii, 72, 387.  
 —, —, in United States and California, during the tertiary epoch, *T. A. Conrad*, xxxv, 245.  
 —, causes of changes of, *G. Bischof*, xxxvi, 278.  
 —, — *ibid*, *W. W. Mather*, xlix, 284.  
 —, — *ibid*, *H. D. and W. B. Rogers*, xlv, 360.  
*Lewis, J. A.*, Kenawha gas, xlix, 209.  
*Lewis, W. J.*, involution of polynomials, xlii, 239.  
 Lexicography, contributions to English, *J. W. Gibbs*, xxxiii, 324; xli, 28, 32; xlv, 96.  
 Leyden jar, effect of freezing water in, viii, 374.  
 —, —, on the discharge of, xxxviii, 6.  
*Lezch, J. U.*, volatile acids of butter, xlix, 202.  
 Lias of the West, *S. P. Hildreth*, xxx, 395.  
*Liatris flexuosa*, xxxvii, 388.<sup>f</sup>  
 — fruticosa, v, 299.  
 — oppositifolia, v, 299.  
 — scariosa, iv, 67.  
 — squarrosa, iv, 66.  
 Library, Royal, at Paris, size of, viii, 376.  
 — of Yale College, donation to, from England, xxvii, 184.  
 Libraries of the world, comparative table of, xxxi, 178.  
 —, circulating, in England, v, 175.  
 — of St. Petersburg, v, 177.

- Lichen rocella, coloring matter of, xviii, 151.
- Liebig, J.*, on creosote, xxviii, 131.
- and *Wöhler*, on the radical of benzoic acid, xxvi, 261.<sup>f</sup>
- , on bitter almond oil, xxvi, 263.
- Life, on the functions of vegetable, *G. T. Burnett*, xxi, 153.
- , mean term of, among the Romans, xvii, 188.
- , mean term of, in France and England, xvii, 188.
- , probability of, from registers kept at Geneva, xv, 187.
- of a molluscous animal, singular preservation of, xxviii, 355.
- apparatus, notice of *Murray's*, xxviii, 70.
- preservers, xiv, 189.
- Light and heat, *S. Morey*, ii, 118, 122.
- and magnetism, connexion between, *G. Gibbs*, i, 89.
- , observations and experiments on, *S. Adams*, xlii, 123.
- , absorption of, by the atmosphere, xlvi, 201.
- , action of, chemical, xvii, 376.
- , —, in producing chemical changes, *J. W. Döbereiner*, xxii, 352.
- , —, in decomposing carbonic acid and alkaline carbonates, *J. W. Draper*, xlvi, 398.
- , —, on the color and movement of plants, *D. P. Gardner*, xlvi, 1.<sup>f</sup>
- , —, on an elementary substance, producing, as supposed, a change, *J. W. Draper*, xlvi, 390.
- , —, on an iodized silver plate, producing electricity, xvii, 190.
- , — of solar spectrum, chemical, xxxi, 260.
- , — — —, on sensitive paper, *J. F. W. Herschel*, xxxviii, 110.
- , — of gaseous and other media on the solar spectrum, xlii, 157.
- , blanching effects of, obviated, xxxv, 338.
- Light, halo of, which surrounds all bodies, *Mary Griffith*, xxxviii, 22.
- , influence of, on germination, *R. Hunt*, xlv, 352.
- , —, on the growth of plants, xlv, 352; xlvi, 397.
- , intensity of, how measured, xv, 184.
- , new case of interference of, *Powell*, xxxviii, 107.
- , apparatus for experiments on inflection and interference of, *E. S. Snell*, xlix, 26.<sup>f</sup>
- , latent, *J. W. Draper*, xlv, 202.
- lines seen at regular intervals, a new property, *D. Brewster*, xxxiv, 20.
- , magnetic influence of the violet ray of, xviii, 171.
- , — — of the solar rays, xiii, 188.
- , on the deflection of, xviii, 176.
- , monochromatic, for microscopic observations, xiii, 190.
- , oxy-hydrogen, for light-houses, improvement in, by use of sulphate of lime, xxviii, 355.
- , a new kind of polarity in homogeneous, *D. Brewster*, xxxv, 292.
- , polarization of, by reflection, *D. Brewster*, xxii, 277.<sup>f</sup>
- , —, by refraction, laws of, *D. Brewster*, xxiii, 225.<sup>f</sup>
- , —, elliptic, of reflected, *Powell*, xlv, 171; xlvi, 390.
- , —, rings produced in specimens of decomposed glass, *D. Brewster*, xl, 325.
- , on the passage of, through small apertures, and on the cause of prismatic analysis, *C. C. Conwell*, xx, 350.
- , on the production of, *R. Hare*, ii, 172.
- , —, *J. L. Sullivan*, i, 91.<sup>f</sup>
- , —, from quicklime, xiv, 385.
- , —, *ibid.*, for geodetical operations, xiii, 188.

- Light, on the production of, from quicklime, for light-houses, *T. Drummond*, xxi, 366.
- , reflection of, from different surfaces, *Potter*, xxviii, 59.
- , action of second surfaces of transparent plates on, *D. Brewster*, xxiii, 28.<sup>f</sup>
- , solar, curious effect of, xii, 164.
- , —, as compared with that of the moon and fixed stars, xvii, 362.
- , —, chemical action of, see above.
- , zodiacal, see *Zodiacal*.
- Lights, northern, see *Aurora Borealis*.
- Light-houses, ix, 199.
- , lighted by means of lime, *T. Drummond*, xxi, 366.
- Lighting by gas, see *Gas*.
- of apartments, new method in Venice, x, 385.
- Lightning, cure of asthma by, vi, 329.
- , a case of paralytic affection cured by, iii, 100.
- , effect of a stroke of, xvii, 193; xlv, 215.
- , effects of a stroke of, in Wethersfield, Ct., xi, 359.
- , —, *J. H. Linsley*, xlii, 393.
- , —, upon the packet ship New York, *C. Rich*, xxxvii, 321.
- , —, on three ships, xxxviii, 112.
- , several strokes of, from the same explosion, v, 125.
- , passage of, *E. Kellogg*, ix, 84.
- , protection of steamboats from, *A. Jones*, xxii, 106.
- , wet or damp clothes, good conductors of, v, 121.<sup>f</sup>
- , heat, xix, 187.
- , conductors in ships, utility of, *W. S. Harris*, xxi, 347.
- rods, *R. Hare* on, xiii, 322.
- , *J. Murray*, xix, 186.
- Lightning rods, observations on, *J. Van Rensselaer*, ix, 331.
- , —, on the action of, xxxiv, 8, 18.
- , —, mode of adjusting, xviii, 361.
- tubes in sand, see *Fulgurite*.
- Lignite, at Auteuil, in France, ii, 351.
- , on the carbonization of, xviii, 371.
- of the ferruginous sand formation, U. States, xviii, 246.
- , in North Carolina, v, 407; xiv, 250.
- of the McKenzie river and northern America, xvii, 4.
- , in Texas, xxxvii, 216.
- Ligustrum vulgare, x, 258.
- Lilium canadense, xi, 177.
- Catesbæi, xi, 177.
- Lime, intense light produced by means of, xiii, 188; xiv, 385; xxi, 366.
- , quantity used in Baltimore in 1832, xxvii, 17.
- , chloride of, x, 386; xv, 391; xvi, 387; xix, 166.
- , —, used in psora, xvi, 395.
- , —, use of, in the navy, xix, 164.
- , —, action of, in alcohol, *E. Soubeiran*, xxiii, 134.
- , —, manufacture of, at Glasgow, *T. Thomson*, xli, 48.
- , —, —, *G. W. Carpenter*, xvi, 177.
- , —, estimation of the bleaching power of, xvii, 170; xxii, 354.
- , —, disinfecting power of, xix, 177.
- , —, disinfection at the Morgue, in Paris, xxi, 149.
- , common and hydraulic, iv, 373.
- , nitrate of, i, 133.
- , phosphate of, see *Apatite*.
- , sulphate of, from steam boilers, *J. F. W. Johnston*, xxxv, 300.

- Lime, sulphate of, and not carbonate in the waters of Pymont, xv, 185.
- , —, used with the oxygen-hydrogen flame for light-houses, xxviii, 355.
- , —, see *Gypsum*.
- Limestone, basaltiform, of Kingston, U. C., *R. H. Bonnycastle*, xxiv, 97; xxx, 233.<sup>f</sup>
- , ibid, containing shells, penetrated with syenite, *R. H. Bonnycastle*, xxx, 243.<sup>f</sup>
- , in Massachusetts, xxii, 24.
- , fertilizing properties of, xxx, 383.
- , compact, in eastern N. York, viii, 21.
- , —, dove-colored, N. Y., iv, 44.
- , —, rhomboidal structure of, at Boonville, N. Y., *O. P. Hubbard*, xxxii, 231.<sup>f</sup>
- , —, from St. Louis, Mo., analysis of, xliii, 21.
- , —, of N. Carolina, analysis of, *J. T. Hodge*, xli, 334.
- , fetid, iii, 234.
- , granular, in the U. States, xli, 240.
- , —, —, in Maine, *C. T. Jackson*, xxxvi, 145, 147.
- , —, singular conformation near Williamstown, Mass., *C. Dewey*, ix, 19.<sup>f</sup>
- , —, in Bolton, Mass., vii, 52.
- , —, ranges of, through western Massachusetts, viii, 13, 28.
- , —, ibid, alternation with mica slate, viii, 15.
- , —, of the Connecticut valley, vi, 37; viii, 240.
- , —, ibid, alternation with mica slate, viii, 240.
- , —, of Connecticut, at Salisbury, viii, 240.
- , —, of New York, v, 266.
- , —, of Pennsylvania, v, 41.
- , —, &c., near Hudson's Bay, xvii, 13.
- , —, of Maryland, fossils in, xxvi, 222.
- Limestone, granular, of New Jersey, minerals of, v, 239.
- , —, ibid, alternating with granite rocks, v, 247.
- , —, passing above into a secondary fossiliferous limestone, v, 247.
- , effect of trap dikes on, xxix, 351.
- , hydraulic, of New York, xxxix, 96; xlvi, 29.
- , —, in the Appalachian chain, xxxvii, 381.
- , —, magnesian character of, xxxvii, 381.
- , polished, of Rochester, *C. Dewey*, xxxvii, 240.
- , siliceous, (argentine) in Massachusetts, v, 268.
- Limonia acidissima, v, 295.
- Lincoln, B., notice of a water spout, xiv, 171.<sup>f</sup>
- Lincolnite, *E. Hitchcock*, xlvii, 416; xlviii, 64.
- , *C. U. Shepard*, xlviii, 175.
- , *B. Silliman, Jr.*, xlviii, 180.
- identical with Heulandite, *F. Alger*, xlvii, 233.<sup>f</sup>
- Lindernia saxicola, xlv, 83.
- Lindley, J., review of the natural system of Botany of, xxxii, 292.
- , effect of the frost of the winter 1837-38, on plants in England, xxxix, 18.
- Linen, a substitute for, found at Salem, Mass., xxvii, 179.
- Lingula, fossil, indicating marine currents, near Lockport, N. Y., xxxvi, 37.
- Linnaeus, C., notice of an autobiography of, iii, 379.
- , life and works of, *C. Fox*, xxxvii, 142.
- , *Systema Vegetabilium*, a new edition of, *Romer*, i, 435.
- , letters from, to C. Colden, xlv, 111.
- , memoir of, xxv, 151.
- , notice of the herbarium of, xl, 2.

- Linsley, J. H.*, catalogue of the birds of Connecticut, xlv, 249.
- , catalogue of the fishes of Connecticut, xlvii, 55.
- , catalogue of the mammalia of Connecticut, xliii, 345.
- , catalogue of the reptiles of Connecticut, xlvi, 37.
- , on a stroke of lightning, xlii, 393.
- , obituary notice of, xlvi, 216.
- Liquefaction of gases, *M. Faraday*, vii, 352; xlix, 373.
- , —, *J. Torrey*, xxxv, 374.
- , —, *J. K. Mitchell*, xxxv, 346.<sup>f</sup>
- Liquids, principles of the resistance of, *L. R. Gibbes*, xxvii, 135.
- , —, —, *A. Bourne*, xxviii, 231.
- , —, —, *G. W. Keely*, xxviii, 318<sup>f</sup>; xxx, 164; xxxi, 111.
- , —, —, *E. W. Blake*, xxix, 274; xxx, 359.
- , —, —, *Russel*, xxix, 351.
- , revolving motion in, xix, 391.
- of different specific gravities together, rotation of, *W. R. Johnson*, xxvii, 84.<sup>f</sup>
- , on the upward forces of, *E. C. Genet*, xi, 110, 339<sup>f</sup>; xii, 94, 310; xiii, 377.
- , *ibid*, reply by *T. P. Jones*, xliii, 79.
- Lister, Martin*, notice of, *C. Fox*, xxxvii, 137.
- Lithia, a new alkali, i, 309.
- , blowpipe test, when mixed with soda, xlvi, 193.
- , new process for obtaining, *Quesneville*, xx, 194.
- Lithographic establishment in Portugal, ix, 366.
- impressions of leaves of plants, v, 170.
- paper, iii, 370.
- printing of MSS., iv, 197.
- stone, new locality of, in Spain, v, 386.
- Lithographic stone, locality in the French Pyrenees, xlix, 401.
- Lithography, notice of, iv, 169.
- Litmus paper, as prepared by *Gay Lussac*, xvii, 165.
- Litrameter, on the, xi, 133.<sup>f</sup>
- Litton, A.*, a double sulphite of the protoxide of platinum and soda, xlv, 274.
- Liver pies of Strasburgh, xxii, 194.
- Liverpool, objects of interest in, xxxiv, 52.
- Living molecules, *R. Brown's*, xvii, 390.
- particles in all kinds of matter, motion of, xix, 393.
- Lizards in chalk, xxxvii, 402.
- , see under *Zoology, Reptiles*.
- Lobelia aphylla, v, 297.
- Locke, J.*, alabaster of the mammoth cave of Kentucky, xlii, 206.<sup>f</sup>
- , a new botanical press, xxx, 54.<sup>f</sup>
- , microscopic compass, xxiii, 237.<sup>f</sup>
- , on the manipulations of the dipping compass, xlii, 235.
- , electro-magnetic multiplier, xxvi, 380.
- , notice of a galvanometer, xxvi, 103.<sup>f</sup>
- , improvements on his galvanometer, xxvi, 378<sup>f</sup>; experiments with, 379, 381.
- , on a large thermoscopic galvanometer, xxxiii, 365.
- , geology of the U. States, west of the Allegany Mountains, xli, 160.
- , lead region of the West, xliii, 147.
- , magnetic dip in the United States, xli, 15.
- , —, — at Baltimore, xlii, 258.
- , on magneto-electricity, and electro-magnetic machines, xxxiv, 125.<sup>f</sup>
- , connection between geology and magnetism, xlvii, 101.
- , on manufacture of maple sugar, ii, 259.

- Locke, J.*, notice of a new trilobite, *Ceraurus crosotus*, xlv, 346<sup>f</sup> ; xlv, 222.<sup>f</sup>
- , *Isotelus megistus*, a new trilobite, xlii, 366.<sup>f</sup>
- Lockwood, M. B.*, variation of the magnetic needle at Providence, R. I., xlv, 314.
- Locust, seventeen year, habits of, xliii, 224.
- , —, —, notice of, *S. P. Hildreth*, xviii, 47.<sup>f</sup>
- , —, —, remarks on, *D. Thomas*, xxi, 188.
- Locusts in China, xxxi, 193.
- Lodoicea sechellarum*, notice of, *J. E. Teschemacher*, xxxvii, 396.
- Logan, murder of the family of, xxxi, 11.
- Logarithmic tables, corrections in *Hassler's*, xxii, 181.
- and exponential theorems, new mode of obtaining, *T. Strong*, xlviii, 36.
- Logwood, on hæmatoxylin the coloring principle of, xlv, 357.
- Long's* expedition to the Rocky Mountains, vi, 374.
- Long, G. W.*, description of a frame bridge, xviii, 123.<sup>f</sup>
- , on the origin of springs and fountains, xvii, 336.
- , a parasite tree, xxvi, 106.<sup>f</sup>
- Long lake and Mud lake, Vt., on the eruption of, *S. E. Dwight*, xi, 39.<sup>f</sup>
- Longevity of trees, xxii, 379.
- of the yew tree, xxix, 353.
- — —, *Bowman*, xxxi, 358.
- Longitude, notice of *F. Baily's* method of determining, by the culmination of the moon and stars, ix, 107.
- , determination of, by means of shooting stars, xxxix, 372 ; xlii, 399.
- , arc of, between Dublin and Armagh, xxxviii, 113.
- deduced from the eclipse of Sept. 18, 1838, xxxix, 367.
- of New York, v, 143.
- Longitude of New York City Hall, xxxviii, 113 ; xl, 43.
- of Alexandria, D. C., xxxix, 368.
- of Boston, xl, 43.
- of Brooklyn, N.Y., xxxix, 369 ; xl, 43.
- of Burlington, N.J., xxxix, 368.
- of Dorchester Observatory, Mass., xxxix, 369 ; xl, 43.
- of Dover, Ohio, xxxix, 368 ; xl, 43.
- of Germantown, Penn., xxxix, 368.
- of Haverford School, Penn., xxxix, 368.
- of New Haven, xxxiv, 309 ; xxxix, 369 ; xl, 43.
- of Hudson Observatory, Ohio, xl, 43.
- of Philadelphia State House, xxxix, 368 ; xl, 43.
- of Philadelphia High School Observatory, xl, 43.
- of Princeton, N.J., xxxix, 368 ; xl, 43.
- of Southwick, Mass., xxxix, 369 ; xl, 43.
- and latitude of Turtle Island, Lake Erie and South Bend lake, Michigan, xxxviii, 154.
- of Washington capitol, xxxix, 368 ; xl, 43 ; — marine observatory, xl, 43.
- of Weasel mountain, N. J., xxxix, 368.
- of Wesleyan University, Middletown, Ct., xxxix, 369.
- of Williamstown College, Mass., xxxix, 369.
- of Western Reserve College, Ohio, xxxix, 368.
- Loomis, E.*, clouds, register of, Hudson, Ohio, xli, 323 ; xlix, 280.
- , on Halley's comet, xxx, 209.
- , hygrometric observations at Hudson, Ohio, 1838-1840, xli, 315.
- , — — —, 1841-1844, Hudson, Ohio, xlix, 271.
- , latitude and longitude of Yale College observatory, xxxiv, 309.



- Loomis, E.*, on the variation and dip of the magnetic needle in different parts of the U. States, xxxiv, 290<sup>f</sup>; xxxix, 41<sup>f</sup>; xl, 85; xliii, 93.
- , magnetic dip of various places in Ohio and Michigan, xxxviii, 397.
- , observations on the variation of the magnetic needle at Yale College, xxx, 221.
- , examination of *Gauss's* theory of terrestrial magnetism, xlvii, 278.
- , meteorological register at Western Reserve College, Sept.-Nov., 1838, xxxvi, 165.
- , — ibid, for 1838-1840, xli, 310.
- , — ibid, for 1841-1844, with a summary for seven years, xlix, 266.
- , on shooting stars, xxviii, 95.<sup>f</sup>
- , on the meteor of May 18, 1838, and on shooting stars in general, xxxv, 223.
- , on a hurricane which passed over Stowe, Ohio, Oct. 1837, xxxiii, 368.<sup>f</sup>
- , on the storm of Dec. 1836, in the U. States, xl, 34.
- , —, Feb. 1842, Mayfield, Ohio, xliii, 278.<sup>f</sup>
- , list of tornadoes in the United States, since 1823, xliii, 298.
- , direction of rotation of small whirlwinds, xliii, 296.
- , on vibrating dams, xlv, 363.<sup>f</sup>
- Lord, E.*, on architectural, rural, domestic, and other improvements, xxv, 304.
- Louisiana, trees with axe marks, *W. M. Carpenter*, xxxvi, 118.<sup>f</sup>
- , fossil tooth, *W. M. Carpenter*, xlii, 390.<sup>f</sup>
- , fossil teeth of the mastodon and horse, *W. M. Carpenter*, xxxiv, 201.<sup>f</sup>
- , meteorological register at Jackson, *W. M. Carpenter*, 1839-1841, xlv, 49.
- Louisiana, hailstorm in, *W. M. Carpenter*, xxvii, 171.
- , Opelousas and Attakapas, geological character of the prairies, with remarks on the vegetation of, *W. M. Carpenter*, xxxv, 344.
- , ibid, bituminized wood, East Feliciana, xxxv, 345.
- Lowell, facts relating to, xxvii, 340.
- Löwitz, H. Fitz*, fusible cement of, xvii, 81.<sup>f</sup>
- Ludlow rocks, fossil shells of, xxx, 48.
- Luminous appearances in the atmosphere, *J. A. Allen*, iv, 341.
- Lunar distance, instrument for finding, *M. F. Maury*, xxvi, 63.<sup>f</sup>
- Lungs, disease from dust in, xxxiv, 29.
- Lupulin, remarks on, xii, 388.
- Lute or cement, Willis's, vii, 392.
- for bottling wine, &c., xxiv, 205.
- , see farther, *Cement*.
- Luther, statue of, v, 181.
- Lyceum of Natural History, New York, abstract of the proceedings of, ii, 366; vi, 361; vii, 171; viii, 192; ix, 387; x, 198; xiii, 378; xiv, 190; xv, 191, 357; xvi, 205, 354; xviii, 193; xix, 159, 353; xxvii, 148; xxviii, 189; xxxvi, 195.
- ibid, officers of, viii, 192; xv, 193; xvi, 355; xxxii, 204; xxxvi, 195; xlvi, 404.
- , ibid, memorial of, on a geological survey of N. York, xvi, 358.
- , ibid, annals of, commenced, vii, 359;—noticed, xxxiv, 214.
- , Naval, of Brooklyn, xxvii, 390.
- , at Troy, ii, 173.
- Lychenopora, a new genus from S. America, notice of, ix, 375.
- Lycoperdon tuber, or Indian bread, ii, 369.
- giganteum, xxxviii, 391.
- Lycopodites, generic characters of, vii, 180.
- Lycopodium, remark on the yellow powder of, xxxix, 399.

- Lycopodium annotinum*, xlv, 46.  
 — *inundatum*, xlv, 47.  
 — *selago*, xlv, 48.
- Lyell, C.*, medal of the Royal Society conferred on, xxx, 174.  
 —, address before the Geological Society of London, 1837, xxxiii, 76.  
 —, on the changes of climate on the earth in past times, xx, 377.  
 —, coal formation of Nova Scotia, and on the age and position of the gypsum, xlv, 356.  
 —, upright trees in the coal strata of Nova Scotia, xlv, 353.  
 —, on the cretaceous strata of New Jersey, xlvii, 213.  
 —, on the elevated beaches, and boulder formations of the Canadian lakes and valley of St. Lawrence, xlv, 314.  
 —, on the elevation of Sweden, xxviii, 72, 387.  
 —, footprints of birds in the Connecticut valley, xlv, 394.  
 —, views on granite, xxxiii, 116.  
 —, probable age of graphite and anthracite in the mica slate at Worcester, Mass., xlvii, 214.  
 —, geological position of the mastodon at Big Bone Lick, Ky., and elsewhere, xlv, 320.  
 —, geology of, 4th edition, notice of, xxix, 358.  
 —, proposed visit to the United States, xli, 403; xlii, 213.
- Lyon, L.*, on surveying instruments, xiv, 268.<sup>f</sup>
- IV.**
- Macaire*, vegetable physiology in relation to rotation of crops, xxiii, 138.  
 —, injurious action of gases on vegetation, xxiii, 193.  
 —, on nitrogen in animal substances, xxiii, 384.  
 —, experiments on hydrochloric acid, xi, 393.
- McConnell, B. R.*, notice of a revolving electro-magnetic instrument, xxxiii, 188.
- McCord, J. S.*, meteorological observations at Montreal, 1836-40, xli, 330.
- MacCulloch, J.*, essay on remittent and intermittent fevers, xviii, 338.
- McGuire, W. W.*, on the prairies of Alabama, xxvi, 93;—causes of, xxvi, 96.
- Machine for cleaning grain invented, iv, 387.  
 — and its model, relation between, *E. Sang*, xxiv, 264.
- Machines, examination of, maximum and minimum effect of, *A. B. Quinby*, xii, 346.  
 —, electrical, see *Electrical*.
- Machinery, use of soapstone in diminishing friction of, xiii, 192.  
 — and manufactures, economy of, xxiv, 105.
- Macle*, see *Chiastolite*.
- Maclure, W.*, on different systems of education, ix, 160, 163.  
 —, on the Pestalozzian system of, ix, 163; x, 145.  
 —, geological arrangement, outlines of, i, 209.  
 —, systematic arrangement of rocks and their probable origin, vii, 261.  
 —, geological systems, geological maps, and chatoyant feldspar, ix, 253.  
 —, — changes in N. America, conjectures on, east of the Stoney mountains, vi, 98.  
 —, — remarks on Mexico, xx, 406.  
 —, igneous theory of the earth, remarks on, xv, 384; xvi, 351.  
 —, on Mosaic geology, ix, 157.  
 —, passage to Mexico of, xv, 400.  
 —, memoir of, *S. G. Morton*, xlvii, 1.<sup>f</sup>  
 —, list of works of, xlvii, 16.
- Maclurite*, description of, v, 246.

- Maclurite, analysis of, *H. Seybert*, v, 336.
- , identical with chondrodite, v, 366.
- , in New Jersey, v, 343.
- Madeira, notice of, xxiv, 238.
- , wines of, xxiv, 240.
- Mæcenas, bust of, xxxiv, 51.
- Maerenhaut, J. A.*, on Otaheite, xxix, 283.
- Magendie, F.*, on the mechanism of absorption in animals, iii, 288.
- , on prussic acid, ii, 81.
- Magic, natural, remarks on, xxxiii, 258.
- Magnesia, effect of, on soil, xli, 159.
- , solubility of, v, 378.
- , in compact limestones, large proportion of, *R. E. Rogers*, xli, 171.
- , carbonate of, of Staten Island, N. Y., i, 142; v, 266.
- , —, in Pennsylvania, i, 236; xiv, 18.
- , hydrate of, description and analysis of, iv, 245.
- , —, in New Jersey, i, 55; iv, 17; v, 267.
- , —, in Hoboken, i, 54; iv, 17; vii, 370.
- , —, from Shetland, vii, 365.
- , nitrate of, i, 133.
- , sulphate of, i, 133; ii, 375; xv, 241.
- , —, native in New York State, xv, 241.
- and soda, sulphate of, xlvi, 189.
- Magnesian carbonate of lime, in N. York, analyses of, *L. C. Beck*, xlvi, 34.
- hydrate of silica, Harford Co., Md., *P. T. Tyson*, xviii, 79.
- — —, identity of, with Deweylite, *C. U. Shepard*, xviii, 81.
- pseudomorphs, and metamorphic changes, xlvi, 89.
- Magnesite, hard, from Baumgarten, Silesia, vii, 368.
- , in N. York, v, 267; xlvi, 34.
- , in Maryland, xiv, 12.
- , in Pennsylvania, xiv, 9, 10.
- Magnesium, notice of, xix, 197, 379; xxvii, 196.
- , obtained by *W. W. Mather*, xx, 408.
- Magnets, cast iron, xxxiii, 265.
- , chemical action in needles suspended from, xviii, 402.
- , best position of, for mutual action, *H. Lloyd*, xxxviii, 96.
- , current produced by the rotation of, *Pixii*, xxiv, 144, 146.<sup>f</sup>
- , electric spark from, *J. Henry*, xxii, 403.
- , a mode of producing sparks and galvanic currents from the horse shoe, *J. P. Emmet*, xxiv, 78.<sup>f</sup>
- , new method of making permanent, xxxvi, 335.<sup>f</sup>
- , galvanic, construction of, *J. B. Zabriskie*, xxxvi, 124.<sup>f</sup>
- , —, Henry's large, xix, 408.<sup>f</sup>
- , —, made for Laboratory of Yale College, xx, 201.
- , —, Humbert's, xxxviii, 204.
- , —, Ganby's, xxix, 354.
- , —, Page's, xxxv, 253.<sup>f</sup>
- , —, E. M. Clarke's, xxxiii, 213.<sup>f</sup>
- , —, see farther under *Electro-Magnetic* and *Magneto-Electric*.
- , musical tones from, *C. G. Page*, xxxii, 396; xxxiii, 118; xlvi, 401.
- , cause of voltaic currents with, *J. P. Emmet*, xxvi, 23.<sup>f</sup>
- , native, in Rhode Island, iv, 285; v, 402.
- Magnetic attraction and repulsion, law of, *R. W. Fox*, xxviii, 370.
- — —, reciprocating motion of, *J. Henry*, xx, 340.<sup>f</sup>

- Magnetic chart, of the U. States, *E. Loomis*, xxxiv, 290; xxxix, 41.
- compass, mariner's, on the invention of, *A. Humboldt*, xl, 242.
- dip, in different parts of the world, *T. H. Perry*, xlvii, 84.
- —, at different places in Europe, xl, 30.
- —, in Ireland, *H. Lloyd*, xxxv, 296.
- —, at Perth, Scotland, xl, 342.
- —, at St. Petersburg, xxi, 382.
- —, at different places in the U. States, xl, 380.
- —, *ibid*, *J. Locke*, xxxix, 319; xl, 149; xli, 15.
- —, —, *ibid*, remarks on, xxxix, 325.
- —, *ibid*, *E. Loomis*, xxxiv, 290<sup>f</sup>; xxxix, 41<sup>f</sup>; xl, 85.
- —, at various places in Ohio and Michigan, *E. Loomis*, xxxviii, 397.
- —, — *ibid*, at Cincinnati, *J. Locke*, xl, 56.
- —, at Philadelphia and Baltimore, *A. D. Bache*, xl, 375.
- —, at Baltimore, *J. Locke* and *J. N. Nicollet*, xlii, 239.
- —, at Nantucket, *W. Mitchell*, xlvi, 157.
- —, daily variation in, *Kupffer*, xxv, 194.
- — and intensity determined by one instrument, *H. Lloyd*, xxxviii, 179.
- — discoveries by *H. H. Sherwood*, xxxiv, 210.
- — effects from Hare's calorimeter, *G. T. Bowen*, v, 357.
- — experiments, showing the effect of cold and heat on steel bars, *Kupffer*, xxv, 194.
- — influence of the sun's rays, xiii, 188; xviii, 181.
- — of the violet ray, xviii, 171.
- Magnetic instrument, new, called a Solar Index, *M. Conant*, xlix, 301.<sup>f</sup>
- iron, see *Iron*.
- intensity, at great elevations, *J. D. Forbes*, xxxi, 369.
- —, at different places in Europe, xl, 30.
- —, in Ireland, *H. Lloyd*, xxxv, 296.
- —, daily variation and changes in, *H. Lloyd*, xlvi, 391.
- —, in different places in the United States, xl, 378.
- — investigations, by *W. Scoresby*, xlviii, 33.
- — needle, dipping, theory of adjusting, *T. H. Perry*, xxxvii, 277.
- —, —, manipulations of, *J. Locke*, xlii, 235.
- —, dip of, see *Magnetic dip*.
- —, on the influence of the Aurora on, xxxiv, 285.
- —, *ibid*, *Franklin*, xvi, 148.
- —, *ibid*, *J. Henry*, xxii, 143.
- —, *ibid*, of Jan., 1837, New Haven, xxxii, 179.
- —, *ibid*, in July, 1837, xxxiii, 146.
- —, *ibid*, at Schenectady, Jan., 1837, &c., *B. F. Joslin*, xxxv, 152.
- —, *ibid*, Nov. 14, 1837, *E. C. Herrick*, xxxiv, 269.
- —, *ibid*, xl, 48.
- —, *ibid*, May, 1840, at Toronto, xl, 337.
- —, *ibid*, as seen at Greenwich, xl, 338.
- —, influence of coasts on the deflection of, xxviii, 62.
- —, — of heating to the temperature of boiling water, xxxviii, 180.
- —, influence of iron cooled to a low red heat, xxix, 348.
- —, improvement in the manufacture of, *A. Eaton*, xii, 14.

- Magnetic needle, improvement in, reply to the same, xii, 232.
- —, made of thin plates not in contact, *W. Scoresby*, xxxiv, 398.
- —, oscillations of, differing near different metals, xv, 182.
- —, polarity and dip of, a remark on, xxix, 353.
- —, made to indicate the true north, xxvi, 90.
- —, on the connexion of the theory of the earth with the secular variations of, *J. H. Lathrop*, xxxviii, 68.
- needles, best position of three, for mutual action, *H. Lloyd*, xxxviii, 96.
- observations, a union of effort urged for carrying on, xviii, 380.
- —, great scheme for, by the Royal Society of London, xxxvii, 198.
- —, *ibid*, by British Association, xl, 335; xlii, 151; xliii, 374.
- —, in Russia and other countries, in progress, xlii, 153.
- —, coöperation of the Amer. Acad. of Arts and Sciences in a general system of, xxxix, 193.
- —, corresponding, by *A. D. Bache* and *H. Lloyd*, xli, 260.
- observatory at Dublin, xxxiv, 3.
- poles, revolution of the two, xxix, 352.
- polarity, notice of, *D. H. Barnes*, xiii, 70.
- —, reply to *D. H. Barnes*, xiv, 121.
- — of rocks, xx, 198.
- power of a galvanic battery, v, 388.
- separating machine for magnetic ores of iron, used at Franconia, xviii, 289.
- Magnetic variation, daily, different in different places, xix, 189.
- —, at Perth, Scotland, xl, 342.
- —, at Paris, France, xxxi, 190.
- —, remarks on, *N. Bowditch*, xvi, 64.
- —, for the United States, *E. Loomis*, xxxiv, 290<sup>f</sup>; xxxix, 41<sup>f</sup>; xliii, 106.
- —, table made from observations at Boston, Falmouth and Penobscot, xvi, 60.
- —, at Providence, R. I., *M. B. Lockwood*, xlv, 314.
- —, at Troy, N. Y., xvii, 198.
- —, in some parts of New York State, xxxvi, 28.
- —, in Connecticut, *G. Gillet*, xxiii, 205.
- —, at Yale College, xxx, 221.
- —, at Westchester, Pa., observations by *A. D. Bache*, xxvii, 385.
- Magnetism, animal, v, 192; xiii, 175.
- , *Davis's* Manual of, xliii, 381.
- of the earth, especially of the arctic regions, *E. Sabine*, xvii, 145.<sup>f</sup>
- —, causes of, *B. F. Joslin*, xix, 398.
- —, views of *J. Hamilton*, xxxvii, 100.
- —, views of *S. L. Metcalf*, xxvii, 153.
- —, views of *Rowall*, xli, 41.
- —, effect of, on the precipitation of silver, xvi, 262.
- — chemical effects of, viii, 374.
- —, supposed influence of, in combinations and crystallizations, by *O. L. Erdmann*, xviii, 395.
- —, influence of, xvi, 262.
- —, connexion of, with electricity, iii, 386.<sup>f</sup>

- Magnetism, connexion of, with heat and electricity, *J. F. Dana*, vi, 163.
- , —, with light, *G. Gibbs*, i, 89.
- , —, with geology, *J. Locke*, xlvii, 101.
- , conversion of, into electricity, xxii, 386.
- , currents and sparks of electricity from, *J. Henry*, xxii, 403.
- , destroyed by lightning, xii, 382.
- , Gauss's theory of, tested by observations, *E. Loomis*, xlvii, 278.
- , *Hansteen's* discovery in, v, 190.
- , influence of heat on, xxii, 361.
- of soft iron, acquired by induction, retained for some time if the armature is not removed, xxviii, 63.
- , molecular forces, on the disturbance of, by, *C. G. Page*, xxxiii, 118.
- produced by friction, xix, 394.
- by a stroke of lightning, vi, 394.
- by voltaic electricity, iii, 383.
- by the solar rays, xiii, 171.
- , double helix for inducing, *C. G. Page*, xxxv, 261.<sup>f</sup>
- Magnetization, some phenomena of, *De Nairac*, xxvii, 401.<sup>f</sup>
- Magneto-electric apparatus, and experiments, *J. P. Emmet*, xxiv, 78<sup>f</sup>; xxvi, 311; xxviii, 331.
- — — —, *J. Henry*, xxviii, 331.
- — — —, *E. M. Clarke*, xxxiii, 213.<sup>f</sup>
- — — —, *C. G. Page*, xxxiv, 163<sup>f</sup>, 364<sup>f</sup>; xxxv, 112<sup>f</sup>, 252<sup>f</sup>; xxxvii, 275<sup>f</sup>; xlvi, 392.
- — — —, *O. W. Gibbs*, xxxix, 132.
- Magneto-electric apparatus and experiments, *J. H. Abbot*, xl, 104.<sup>f</sup>
- — — — electropeter, *E. M. Clarke*, xxxiii, 224.<sup>f</sup>
- — — —, *C. G. Page*, xxxv, 112.<sup>f</sup>
- — — — electrotome, *C. G. Page*, xxxv, 112<sup>f</sup>, 253.<sup>f</sup>
- — — — formula, xxxv, 356.<sup>f</sup>
- — — — multiplier, *C. G. Page*, xxxvii, 275.<sup>f</sup>
- — — — shock increased by a long coil, *J. Henry*, xxviii, 331.
- — — — increased by passing it through a portion of the generating magnet, *J. P. Emmet*, xxviii, 331.
- Magneto-electricity, *J. Locke*, xxxiv, 125.<sup>f</sup>
- Magnetometer, new, *A. D. Bache*, xl, 380.
- Magnolia grandiflora, xxvi, 314.
- Mahogany, artificial, ix, 206.
- Mahomet Ali, notice of, xxviii, 30.
- Maine, geological reports of *C. T. Jackson* on, noticed, xxxii, 193; xxxv, 387; xxxvi, 143; xxxvii, 376.
- , miscellaneous remarks on the geology of, *C. T. Jackson*, xxxiv, 69;—actual bituminization of peat, xxxiv, 73.
- , anthracite coal formation of, *C. T. Jackson*, xxxvi, 149.
- , dikes of trap, and metamorphic limestone, *C. T. Jackson*, xxxvi, 145, 147.
- iron ore veins, *C. T. Jackson*, xxxvi, 147, 150.
- , changes of level in, *C. T. Jackson*, xxxvi, 154.
- , fossiliferous rocks near Moose river, xxxvii, 378.
- Maine, list of some plants in, *J. W. Bailey*, xxxii, 22.
- , minerals of Freyburg and Paris, xviii, 291.
- Mairan*, on the Aurora Borealis, allusion to, xxix, 388; xxxii, 177; xxxiv, 288, 289.

- Maize, from the graves of ancient Peruvians, germination of, ix, 208.
- , sugar from, xlv, 215.
- Majorca, notice of a part of, xxvii, 83.
- Malachite, in Connecticut, vi, 206, 232.
- , in Massachusetts, i, 115.
- , in New York, viii, 249.
- , in Pennsylvania, i, 236.
- , of Lake Superior copper mines, vii, 45.
- Malacrone, a new mineral, xlix, 394.
- Malaria, remarks on, xvii, 300; xviii, 339.
- , *T. Hopkins* on, xxxvii, 196.
- of the Campagna di Roma, xxii, 336.
- Malate of lime, in sumach, *W. B. Rogers*, xxvii, 294.
- Malic acid, *J. Liebig*, xxi, 156.
- Malva Leontii, xlv, 176.
- Nutalloides, xxvi, 313.
- triangulata, vii, 62.
- Mammalia, fossil, in Great Britain, xvii, 186.
- , see farther under *Zoology*.
- Mammoth, first use of the name, xix, 388.
- , see farther under *Zoology*.
- Cave, Ky., alabaster (gypsum in curved forms) in, *J. Locke*, xlii, 206.<sup>f</sup>
- Mandingo, native, from near the river Gambia, account of, xxxv, 305.
- Manganese, separation of, from zinc, xlvii, 194; xlviii, 187.
- , commercial value of its ores, how ascertained, *E. Turner*, xxi, 364.
- , electricity of peroxide of, xxx, 179.
- , examination of the peroxide of, *H. C. Lea*, xlii, 81.
- , two sulphates of, xvi, 383.
- ores, analyses of, *P. Berthier*, vii, 366.
- ores, method of assaying, xxviii, 146.
- —, in Connecticut, phosphate, xiii, 196.
- Manganese ores, in Maryland, iv, 283; xxvii, 20, 33.
- —, in Massachusetts, ii, 374; iv, 54, 189; vii, 253; viii, 30, 233; ix, 42; xxii, 61;—siliceous, vii, 251; ix, 22; xxii, 62.
- —, in New York, xlvi, 28.
- —, in N. Carolina, v, 258.
- —, in Nova Scotia, xv, 157.
- —, in Pennsylvania, iv, 38; xiv, 4, 12.
- —, in Rhode Island, viii, 231; ix, 248; xl, 185;—ferrosilicate, with a figure, *C. U. Shepard*, xvii, 142.<sup>f</sup>
- —, in Virginia, iii, 245.
- Manilla hemp, account of, xxi, 29; xli, 200.<sup>f</sup>
- Mantell, G. A.*, museum of, xxiii, 162<sup>f</sup>; xxviii, 194.
- , —, specimens from, noticed, xxviii, 197.
- , *C. Lyell's* remarks at the presentation of the Wollaston medal to, xxviii, 391.
- , presentation of a microscope to, xliii, 206.
- , description of some fossil fruits, xlv, 401.
- , discovery of the Iguanodon, xxvii, 355.<sup>f</sup>
- , notice of molluskite, xlv, 243.
- , on the geological age of reptiles, xxi, 359.
- , on the Unionidæ of the country of the Iguanodon, xlvii, 402.<sup>f</sup>
- , on Zoophytes, xxxiii, 329.
- , Wonders of Geology, review of, xxxiv, 387; xxxix, 1.
- , letter to *J. Deane*, xlv, 189.
- , Medals of Creation, review of, xlvi, 105.
- Manufactories of Lowell, xxvii, 346.
- , limitation of the labor of children in, xii, 194.
- Manures, action of, *De la Giraudieu*, xxvi, 179.
- , action of gypsum in, xxvi, 181.
- , marl for, from Chesapeake Bay, xx, 411.

- Manures, marl for, from New Jersey, *J. Pierce*, vi, 237.
- , remarks on calcareous, xxx, 138, 383.
- , use of muriate of lime for, ix, 194.
- Map of Maryland, 1835, xxx, 393; xxxii, 191.
- of mountains, iii, 364.
- Maps, on contoured, *Larcom*, xli, 394.
- , a mode of illustrating criminal statistics by, xxxi, 379.
- Mapping instrument, xx, 159.
- Maranta arundinacea, v, 302.
- Marble, Carrara, an altered oolite, xxx, 176.
- , and flagstones, strength of, *E. Hodgkinson*, xli, 168.
- , durability of, as compared with granite, xv, 168.
- , in Massachusetts, white, iv, 40; viii, 14; xxii, 28.
- , —, clouded, viii, 14.
- , —, dove colored, viii, 14.
- , —, elastic, of Lanesboro' and West Stockbridge, viii, 15.
- , —, — and flexible, of Berkshire, Co., ix, 241.
- , —, tortuous layers of, viii, 28.
- in Vermont, xxxv, 390.
- in Connecticut, ii, 141, 165, 219, 222.
- —, verd antique in Connecticut, ii, 165.
- in New York, at Hudson, transition, vi, 371.
- —, in the Stonybrook Mts., v, 29.
- —, serpentine, v, 29.
- , Potomac breccia, xxvi, 221; xxvii, 22.
- , of Maryland, xxvii, 24, 27.
- —, white, of Hagerstown, v, 264; xxvi, 222.
- in Kentucky, iii, 234.
- in Missouri, iii, 23.
- , yellow, of Tabriz, xxxvii, 355.
- Marcet, F.*, influence of the moon on the weather, xxvii, 192.
- Marcet, F.*, boiling point, in vessels of different materials, xlvi, 190.
- Mariner's compass, the invention of, *A. Humboldt*, xl, 242.
- Marl, apparatus for analyzing, *W. B. Rogers*, xxvii, 299.<sup>f</sup>
- from Farmington, Ct., analysis of, *E. Hitchcock*, xxxvi, 176.
- in New York, iii, 237.
- for manure, from near the Chesapeake Bay, xx, 411.
- of New Jersey, identical with the chalk of England, *S. G. Morton*, xxii, 90.
- — —, analysis of, xvii, 277.
- — —, on the application of, to agriculture, *J. Pierce*, vi, 237.
- , shell, in Maryland, xxvii, 3.
- beds of Virginia, xi, 54.
- pits, in N. Carolina, organic remains of, *H. B. Croom*, xxvii, 168.
- from Ashley river, S. C., composition of, *J. L. Smith*, xlvi, 101.
- — —, infusorial character of, *J. W. Bailey*, xlvi, 102.
- in Wayne Co., Ohio, xxxi, 55.
- , red calcareous, in Texas, *J. L. Riddell*, xxxvii, 211.
- Marmalite, description and analysis of, *T. Nuttall*, iv, 17, 19.
- Marsh, R.*, meteorological register, xlix, 212.
- Marsupial fossils of the Stonesfield slate, xxvii, 412; xxxvii, 228.
- —, see under *Zoology*.
- Martha's Vineyard, notices of geology of, vii, 240.<sup>f</sup>
- — —, *ibid*, *C. Lyell*, xli, 318.
- Martin, A. St.*, account of the opening into his stomach, and experiments on the gastric juice of, *W. Beaumont*, xxvi, 194.
- Martin, J.*, on the central forces of bodies revolving about fixed axes, xxxix, 262.<sup>f</sup>
- Martius, C. F. P. von*, on the spiritual life of plants, xl, 170.
- , works of, noticed, xlv, 217; xlvi, 207.



- Maryland, Bare Hills, near Baltimore, *H. H. Hayden*, xxiv, 349.<sup>f</sup>
- , minerals of, *G. W. Carpenter*, xiv, 1.
- , — of Baltimore and Harford Cos., *P. T. Tyson*, xviii, 78.
- , chromic iron of, iv, 321; xxiv, 349, 355; xxvii, 18, 20.
- , Appalachian chain in, *W. E. A. Aikin*, xxvi, 219.<sup>f</sup>
- , notice of the Geological Report and Map of, *J. T. Ducatel* and *J. H. Alexander*, xxvii, 1; xxx, 393; xxxii, 191.
- , *Mastodon longirostris* in, xliii, 143.
- , caves in, containing saltpetre, xxvii, 33.
- , coal in, *J. T. Ducatel* and *J. H. Alexander*, xxvii, 29.
- , —, chemical analysis of, *ibid*, xxvii, 31.
- , tertiary fossils of, *I. Lea*, xxv, 422.
- , infusoria in, xlv, 137<sup>f</sup>; xlviii, 201, 330.<sup>f</sup>
- Mason, E. P.*, micrometric measures of eclipse of the sun, Sept. 1838, xxxv, 174.
- , on some nebulæ, xl, 37.
- , obituary notice of, xl, 407; xliii, 381.
- Mason, O.*, chemical examination of the bark of the white birch, xx, 282.
- Masonite, description and analysis of, *C. T. Jackson*, xl, 186.
- , composition of, xlviii, 218.
- Massachusetts, geology and mineralogy of a section of, with a part of New Hampshire and Vermont, including notices of rocks, soil, changes in the river, Indian relics at Deerfield, minerals, &c., *E. Hitchcock*, i, 105.<sup>f</sup>
- , *ibid* of Connecticut valley, *E. Hitchcock*, vi, 1<sup>f</sup>, 201<sup>f</sup>;—granite, 2; granitic veins, 12; graphic granite, 16.
- Massachusetts, geology and mineralogy of Connecticut valley, *E. Hitchcock*, pseudomorphous granite, vi, 17; gneiss, 18; vii, 29; hornblende slate, vi, 20; mica slate, 22; talcose slate, 26; chlorite slate, 27; syenite, vi, 28; trap, 31, 44; argillite, 35; granular limestone, 37; sandstone, 39; fossil bones, 43; coal formations, 61; vii, 28; fossil fish, vi, 76; localities of various minerals, ores, &c. 201; vii, 30.
- , scenery of, and miscellaneous notices, *E. Hitchcock*, vii, 1;—Mount Holyoke, &c. 5, 9, 10; Bellows Falls, 12; Turner's Falls, 13; ancient lakes, 16; Sunderland cave, 19; Goshen graphic granite, 22<sup>f</sup>; pseudomorphous granite, 22.<sup>f</sup>
- , tabular arrangement of the rocks of, *E. Hitchcock*, vii, 24.
- , Report on the Geology of, *E. Hitchcock*, xxii, 1<sup>f</sup>;—Economical Geology, giving an account of the soils from different rocks, &c., 1; useful rocks and minerals, 13; granite quarries, prices, &c., 14; gneiss quarries, &c., 18; quartz rock, 22; mica and talcose slate, 23; limestone, 24; marble, 28; serpentine, 29; steatite or soapstone, 31; slates, clays, peat, &c., 23, 38; buhrstone, 40; coal, 41; graphite, 46; mineral waters, 47; metals and their ores, 50.
- , — (second) on the Economical Geology of, including remarks on soils and modes of analysis adopted by *S. L. Dana*, xxxvi, 363.
- , — on the Geology of, noticed, xxiii, 389; xxvi, 213; xxxvi, 363; xli, 384.
- , Report on the water courses, terraces, ancient lakes, and the alluvial and rock formations of, *A. Smith*, xxii, 205.<sup>f</sup>

- Massachusetts, geology and mineralogy of the vicinity of Williams College, Williamstown, including notices of the Taconic range, of granite, gneiss, quartz, granular limestone, and other rocks and minerals, *C. Dewey*, i, 337.<sup>f</sup>
- , — and mineralogy of western, including a small part of the adjoining states, *C. Dewey*, viii, 1<sup>f</sup>, 240;—granite, 4; gneiss, 5; mica slate, 6; trap and hornblende rocks, 9; syenite, 10; serpentine, 11; granular limestone, 13; quartz rock, 16; argillaceous slate, &c., 18; dip and course, 27; ores and minerals, 30, 243; alternations of mica slate and granular limestone, 15, 240.
- , geology of the vicinity of Lowell, xxvii, 340.
- , — Hampshire Co., with an account of the lead mines, *A. Nash*, xii, 238.<sup>f</sup>
- , — Martha's Vineyard and the Elizabeth Islands, vii, 240<sup>f</sup>; xlv, 318.
- , granite veins and beds of Chester, *E. Emmons*, viii, 250.<sup>f</sup>
- , coal in, *E. Hitchcock*, vi, 61; vii, 28; xxii, 41; xxxvi, 377.
- , —, at Wrentham, xxiii, 405.
- , —, at Mansfield, *C. T. Jackson*, xxxiv, 395.
- , —, probable age of, *C. Lyell*, xlvii, 214.
- , footprints in sandstone of, see *Footprints*.
- , fossil fish of, *E. Hitchcock*, iii, 222, 365; vi, 76.<sup>f</sup>
- , cave in Mount Toby, i, 111.
- , caves in Western, viii, 15.
- , mineral localities, *C. Dewey*, i, 337; viii, 1.
- , —, —, *E. Hitchcock*, i, 112; vi, 201; vii, 30; xiv, 215.
- , — of Chesterfield and Goshen, *G. Gibbs*, i, 346.
- Massachusetts, mineral localities of Charlestown quarries, *J. E. Teschemacher*, xxxviii, 194.
- , — —, see farther under the names of the different minerals.
- , steatite or soapstone in, xxii, 31; xxvii, 341, (see *Steatite*.)
- lead mines, vi, 204; ix, 166, 249; xii, 238<sup>f</sup>; xxii, 56.
- iron ores, v, 20; vi, 208, 209; x, 14; xxii, 50; xxxvi, 378.
- , tin in, xvi, 188; xxii, 62.
- , indications of gold in, xxii, 63.
- , graphite or plumbago in, vi, 248; viii, 54; x, 18; xviii, 377; xxii, 46.
- , — of Worcester, probable age of, *C. Lyell*, xlvii, 214.
- , statistical tables of, xxxiv, 213.
- , — — of Boston, xxxix, 395.
- , Indian relics, at Deerfield, i, 108.
- , Mount Holyoke, height of, i, 112.
- , latitude and longitude of Deerfield, i, 112.
- , Lebanon mineral spring, viii, 21.
- Mastodon, tooth of, *J. Wyman*, xxxix, 53.
- , dental system, xl, 377.
- remains, in Connecticut, at Berlin, xxvii, 165.
- —, —, at Cheshire, xiv, 187.
- —, in New York, near Rochester, xix, 358<sup>f</sup>; xxxiii, 201.
- —, —, in Chatauque Co., xxvii, 166.
- —, —, in Orange Co., xxxi, 171.
- —, in New Jersey, *J. Van Rensselaer*, xi, 246.
- —, in Virginia, Wythe Co., xxvii, 352.
- —, —, geological age of, xxvii, 352.
- —, in North Carolina marl pits, Craven Co., *H. B. Croom*, xxvii, 168.

- Mastodon remains, in Ohio, near Massillon, xxx, 394; xxxi, 56.
- — —, — — —, in Crawford Co., *J. W. Foster*, xxxvi, 189.<sup>f</sup>
- — —, — — —, in Pickaway Co., *C. Atwater*, ii, 245<sup>f</sup>; xxv, 256.
- — —, in Tennessee, near Nashville, xxvii, 354.
- — —, Big Bone Lick, Ky., and elsewhere, geological position of, *C. Lyell*, xlvi, 320.
- — —, in Missouri, iii, 22; xxxvii, 191.
- — —, — — —, Gasconade Co., xxxvi, 199.
- — —, — — —, bones from near St. Louis, obtained by *A. Koch*, xl, 56.
- — — skeleton, found on the Morris canal, xiv, 188.
- — —, found on the Delaware and Hudson canal, xiv, 31.
- — — longirostris in Maryland, xliii, 143.
- — — tooth, in Louisiana, *W. M. Carpenter*, xxxiv, 201.
- Matches, kindling without fire, i, 308.
- — —, lucifer, by whom first made, xviii, 148.
- Mathematics, review of the Cambridge course of, v, 304.
- Mathematical instrument, short notice of a new, iv, 377.
- — — problems, *T. Strong*, ii, 54<sup>f</sup>, 266.<sup>f</sup>
- Mather, W. W.*, mode of obtaining aluminium and magnesium, xx, 408.
- — —, chloride of aluminium and its analysis, xxvii, 241.
- — —, hydrated chloride of aluminium, xxvii, 253.
- — —, solubility of bitungstate of ammonia, xxvii, 264.
- — —, disulphuret of bismuth, xxiv, 189; xxvii, 264.
- — —, bromine and iodine in the salt springs of Ohio, xlix, 211.
- — —, new method of cupellation, xxxv, 321.
- Mather, W. W.*, Georgia gold, xxvii, 255.
- — —, crystalline form of iodine, xviii, 84.<sup>f</sup>
- — —, *ibid*, of xanthite, xviii, 359.<sup>f</sup>
- — —, amalgam of platinum, xxvii, 263.
- — —, iodide of mercury, xxvii, 263.
- — —, chloriodide of platinum, xxvii, 258.
- — —, perchloride of platinum, xxvii, 262.
- — —, iodide of potassium and platinum, xxvii, 257.
- — —, reduction of iron and silver ores, and on some Mexican and S. American silver mines, xxiv, 213.
- — —, silver of Lane's mine, Connecticut, xxvii, 256.
- — —, crystallized tin from solution, xxvii, 254.
- — —, non-conducting power of water, in relation to heat, xiii, 368.<sup>f</sup>
- — —, instrument for measuring the expansion of solids, xxx, 324.<sup>f</sup>
- — —, on the possible variation of the length of the day, xlvi, 344.
- — —, a geological section through a part of Connecticut from Killingly to Haddam, xxi, 94.<sup>f</sup>
- — —, geology of the Highlands of New York, xxi, 97.
- — —, geological survey of Ohio, xxxiv, 196, 347; xl, 126.
- — —, physical geology of the U. States, east of the Rocky Mountains, xlix, 1, 284.
- — —, elevation of sedimentary rocks of United States, causes of, xlix, 284.
- — —, protest with reference to G. W. Featherstonhaugh, xxxiii, 205.
- Matter, infinite divisibility of, *E. Adams*, xxviii, 163.
- — —, — — —, *S. Clark*, ix, 356.
- — —, — — —, *W. Whewell*, xxxviii, 113.

- Matter, infinite divisibility of, xxxix, 55.<sup>f</sup>
- , heavy, demonstration of, *W. Whewell*, xlii, 264.
- , —, reply to *W. Whewell* on, *R. Hare*, xlii, 260.
- , motion the natural state of, xvi, 151.
- , on the vitality of, xv, 54.
- Matteucci, C.*, on electric currents in the nerves, xlix, 387.
- , on animal electricity, xxi, 157; xxxii, 198; xlix, 388.
- , on the decomposition of metallic salts, xx, 187.
- , influence of heat on magnetism, xxii, 361.
- , on atmospheric electricity, xxx, 376.
- Mauch Chunk, river, canal and coal region, *B. Silliman*, xix, 7.<sup>f</sup>
- , notice of, xx, 163.
- Mauna Loa, Hawaii, character of, xvi, 346.
- — and Mauna Kea, Sandwich Islands, xi, 4.
- —, see farther under *Volcano*.
- Mauran, J.*, improved instrument for venous injection, xxiii, 114.<sup>f</sup>
- Maury, M. F.*, description of an alembic for distilling amalgam of gold, xxxiii, 66.<sup>f</sup>
- , on the gold veins of the U. States mine near Fredericksburg, Va., xxxii, 325.
- , on the navigation of Cape Horn, xxvi, 54.
- , on the Gulf Stream and currents of the sea, xlvii, 161.
- , instrument for finding the true lunar distance, xxvi, 63.<sup>f</sup>
- Meade, W.*, mineral cabinet of, xxvi, 209.
- , on the coal near Tioga river, Penn., xiii, 32.
- , on the anthracites of Europe and America, xii, 75.
- , on the use of anthracite in the making of brick, xviii, 118.
- Meade, W.*, mica for spectacle glasses, xviii, 374.
- , analogy of the minerals of northern Europe and N. America, xii, 303.
- , on the artificial preparation of medicinal waters, xxii, 126, 330.
- , on a new mineral spring near Albany, xiii, 145.
- , *ibid*, at Pittsburgh, xiv, 124.
- , analysis of Lebanon spring, xxxvi, 7.
- , idocrase in New England, vii, 50.
- Meal from leguminous fruits, vii, 189.
- Mease, J.*, on spontaneous combustion, xxxiii, 147, 199.
- , on bills of mortality, xli, 306.
- , on some of the vegetable materials from which cordage, twine and thread, are made, xxi, 27.
- and *H. Perrine*, on the plants used for cordage, xxv, 330.
- , on descents in diving bells, xxii, 327.
- Measure of a French metre compared with an English yard, xxi, 382.
- Mécanique Céleste*, translated by *N. Bowditch*, xix, 202; xxxv, 17.
- Mechanics, analytic, a new general principle of, *Jacobi*, xlv, 170.
- , experiment in, xxii, 362.
- , review of *Allen's*, xvii, 338.
- Meconic acid, *R. Hare*, xii, 293.
- Meconine, remarks on, xxiii, 380.
- Medals, remarks on, xxvii, 74.
- and coins, *J. Allan*, xxxvii, 285.
- —, *J. W. Draper* on, xxix, 157.
- of New Haven, *J. Allan*, xxxvii, 285.
- , antique, found near Geneva, xx, 391.
- founded by *De Lalande*, xxv, 190.
- offered by the Royal Society of London, xxv, 412.

- Medal of the Royal Society of London, conferred on C. Lyell, xxx, 174.
- , Wollaston, conferred on L. Agassiz, xxx, 382.
- , Geographical Society, awarded to E. Robinson, xliii, 404.
- , Thomson's scientific, xviii, 198.
- Medical electricity, *J. Hall*, iii, 168.
- School of South Carolina organized, ix, 392.
- Medina sandstone, freshwater fossils not occurring in, xlii, 230.
- Medusa, fossil, *C. S. Rafinesque*, iii, 285.<sup>f</sup>
- Megalonyx, *R. Owen*, xlv, 342.
- , localities of, in the U. States, xxvii, 353; xlv, 209.
- Megatherium, no bony armor to, xxxvii, 371.
- , remains of, in Indiana, *R. Haymond*, xlv, 294.
- , of Georgia, xxvii, 353.
- , of New Jersey, *R. Harlan*, xiv, 187.
- , of Patagonia, xxxiii, 105.
- Melam, *J. Liebig*, xxix, 372.
- Melamine, xxix, 372.
- Melanite of Franklin furnace, N. J., analysis of, *H. Seybert*, viii, 300.
- Mellon, *J. Liebig*, xxix, 371.
- Melloni, M.*, investigations on heat, xxiii, 185; xl, 313.
- , on radiant heat and diathermancy, xxvii, 228.
- Melville Island, rocks of, xvii, 10.
- Memoir, see *Obituary*.
- Memory, the process of, *I. Orr*, xxiii, 278.
- , loss of, from the use of gin, xxvi, 211.
- Menardite, supposed new mineral, from Spain, xii, 385.
- Mengite, xxvi, 388; xxxix, 249.
- Mental aberration as connected with civilization, xxii, 379.
- Mercaptan, *Zeise*, xxix, 368.
- Mercurial atmosphere, iii, 385.
- Mercury, atomic weight of, xvi, 183; xviii, 402.
- Mercury, amalgam of, *W. W. Mather*, xxvii, 263.
- , congelation of, vii, 192.
- , method of detecting small quantities of, vii, 392.
- , combination of, with metallic wires, xvii, 375.
- , elastic force of the vapor of, *M. Avogadro*, xxiv, 286.
- , on the vaporization of, in nitric ether, *S. Guthrie*, xxi, 90.
- , germination on, xix, 202.
- , passage of, from a vessel through a bar of lead bent like a syphon, xxxviii, 180.
- , iodide of, *W. W. Mather*, xxvii, 263.
- , compounds of, *Donovan*, ii, 350.
- , sesqui-sulphate of, xviii, 364.
- mines of Spain, xxviii, 21.
- — of Idria, xxix, 219.
- Mercury, observations on the transit of, May, 1845, *D. Olmsted*, xlix, 142.
- Meridian, measurement of, v, 190.
- , length of a degree of, *T. J. Cram*, xxxi, 222.<sup>f</sup>
- , formula for the establishment of a true, xxv, 261.<sup>f</sup>
- Merino sheep, v, 189.
- Mermaid, ii, 178; vi, 195.
- Mesotype in N. Hampshire, xviii, 133.
- in New Jersey, v, 239; xl, 69.
- Metagallic acid, *Pelouze*, xxviii, 126.
- Metals, action of, on inflammable gases, xvii, 168.
- , apparatus for combustion of metals in chlorine, xiv, 354.<sup>f</sup>
- , crystallization of, by galvanic influence, *G. Bird*, xxxiii, 267.
- , distribution of, according to their electric qualities, *J. P. Emmet*, xxv, 272.
- , electro-chemical reduction of, *Becquerel*, xxxi, 164.
- , electro-precipitated, structure of, xlix, 390.

- Metals, letters on, permanent after fusion, xxv, 197.
- , reduction of, by azote, xix, 371.
- , singular modifications of the ordinary action of nitric acid on, xxxiii, 286.
- , solubility of, in persulphate and perchloride of iron, *J. Napier*, xlviii, 190.
- , new, aurum millium, ii, 363.
- , —, didymium, xliii, 404.
- , —, donium, xxxi, 163.
- , —, erythronium, supposed new, xx, 386.
- , —, lanthanum, xxxvii, 192.
- , —, pelopium and niobium, xlviii, 400.
- , —, ruthenium, xlviii, 401.
- , —, selenium, i, 310.
- , —, thorium, xvii, 381.
- , —, vanadium, xx, 386.
- , sulphurets, new method of precipitating, xlvii, 193.
- Metallic casting, vii, 190.
- decompositions by phosphuretted hydrogen, xviii, 403.
- salts, *C. Matteucci* on the decomposition of, xx, 187.
- vegetation, ii, 349.
- wires and springs, on tempering, xx, 393.
- Metalliferous veins, course of, and origin, *R. W. Fox*, xxxi, 373.
- —, electro-magnetic properties of, xx, 136.
- Metamorphic changes at the Lipari Islands, xxxiii, 77.
- agency, as indicated by certain crystals in some rocks in N. York, &c., *L. C. Beck*, xlv, 143; xlvii, 333.
- changes in iron ore by trap dikes, in Nova Scotia, xv, 212.
- — by artificial heat in a sandstone, *E. Emmons*, xlv, 146.
- — by heat, through the medium of heated water, *J. D. Dana*, xlv, 104.
- —, by dikes, *J. D. Dana*, xlv, 113.
- Metamorphic origin of granite, *R. H. Bonnycastle*, xxx, 245.
- granite, *J. D. Dana*, xlv, 108.
- limestone, Carrara marble an instance of, xxx, 176.
- limestones, Maine, *C. T. Jackson*, xxxvi, 146.
- rocks of N. Hampshire, notice of, *C. T. Jackson*, xlv, 145.
- Metamorphism, related to pseudomorphism, xlviii, 92.
- , heated water an agency in, *B. Silliman*, xliii, 247.
- Meteors, instances of some remarkable, *D. Olmsted*, xxvi, 133.
- seen in Canada, April, 1840, xxxix, 383.
- seen in Connecticut, Dec. 14, 1837, *E. C. Herrick*, xxxvii, 130.
- — —, at New Haven, March, 1813, *S. E. Dwight*, xiii, 35.
- — —, at New Haven, March 31 and April 1, 1826, *A. C. Twining*, xi, 184.
- — —, at New Haven, May, 1840, xxxix, 382.
- — — at Boston and N. Haven, in Nov., 1841, xliii, 399.
- — — in England, Nov. 26, 1758, xxxv, 231.
- — —, August 18, 1783, xxxv, 231.
- — — in Greece, xxxix, 381.
- — — in Illinois, in day time, Aug. 20, 1836, xxxiii, 402.
- — — in Maine, Aug. 7, 1823, vii, 170.
- — — in Massachusetts, near Boston, October, 1689, xliii, 399.
- — — in New Hampshire, at Rochester, 1837, xxxiii, 200.
- — — in New York, of a green color, Feb. 11, 1828, *B. D. Silliman*, xiv, 199.
- — — in North Carolina, at Fayetteville, xlix, 408.
- — — in Vermont, at Burlington, April 14, 1826, *G. W. Benedict*, xi, 120.

- Meteors seen in West Indies, at Antigua, xxxix, 381.
- , combustible, in Moscow, March, 1832, xxvi, 134.
- , gelatinous, account of, ii, 335.
- , —, *E. Hitchcock*, xxv, 362.
- , —, in 1718, in India, xxvi, 133.
- , —, in 1796, in Lusatia, xxvi, 133.
- , called inflammable snow, *Hermann*, xxviii, 361.
- , mucilaginous, xvii, 197.
- , theory of, *W. G. Reynolds*, i, 266.
- , see farther, *Shooting star*.
- Meteoric iron, on chlorine in, *C. T. Jackson*, xxxiv, 332; xlvi, 145.
- , —, *ibid.*, *A. A. Hayes*, xlvi, 147.
- , —, *ibid.*, *C. U. Shepard*, xxxvi, 81; xl, 369; xliii, 359.
- , —, in Africa, xxxvi, 213.
- , —, in Europe, Bohemia, found in 1829, xix, 384.
- , —, in France, xxxiii, 257.
- , —, at Magdebourg, xxviii, 288.
- , —, North American, in Alabama, Claiborne Co., analysis of, *C. T. Jackson*, xxxiv, 332.
- , —, *ibid.*, *C. T. Jackson* and *A. A. Hayes*, xlvi, 145.
- , —, in Alabama, xliii, 169.
- , —, in Alabama and Tennessee, *G. Troost*, xlix, 336.<sup>f</sup>
- , —, in Connecticut, Canaan, (? called native iron,) xii, 154.
- , —, *ibid.*, analysis of, *C. U. Shepard*, xii, 155.
- , —, in Mexico, *Burkart*, xxviii, 288.
- , —, in N. York, near Oswego, *C. U. Shepard*, xl, 366.<sup>f</sup>
- , —, —, near Lockport, *B. Silliman, Jr.*, xlvi, 388.<sup>f</sup>
- , —, —, at Burlington, *B. Silliman, Jr.*, xlvi, 401.
- Meteoric iron, North American, in North Carolina, (called native iron,) v, 262.
- , —, —, *C. U. Shepard*, xvii, 140.
- , —, —, Buncombe Co., *C. U. Shepard*, xxxvi, 81; xliii, 359.
- , —, —, Guilford Co., *C. U. Shepard*, xl, 369.
- , —, —, in Tennessee, description and analysis of, *G. Troost*, xxxviii, 250.
- , —, —, *ibid.*, analysis of, *C. U. Shepard*, xliii, 354.
- , —, —, in Tennessee, *G. Troost*, xlix, 336.<sup>f</sup>
- , —, —, of Texas, account of, viii, 218; xxxiii, 257.
- , —, —, analysis of, *C. U. Shepard*, xvi, 217.
- , —, —, a mass, presented to Yale College, xxvii, 382.
- , —, —, in Virginia, xliii, 169.
- , —, South American, near Bogota, ix, 194.
- , —, see farther under *Meteorite*.
- , —, phenomena, *Adie's* mode of registering, xxviii, 70.
- , —, rain in Hungary, terrestrial origin of, xliii, 401.
- , —, shower of grain, xli, 40.
- , —, of fish, xli, 40.
- Meteorites, on the nature and origin of, *J. Berzelius*, xxxvii, 93.
- , —, *ibid.*, *J. L. Ideler*, xxviii, 288.
- , —, *ibid.*, *Fleurian de Bellevue*, v, 170.
- , —, African, Cold Bokkeveld, notice of, xxxvi, 393; xl, 199.
- , —, *ibid.*, analysis of, xxxvii, 190.
- , —, in Asia, Hindoostan, 1834, xxx, 175.
- , —, in Europe, France, in the Commune of Juvenas, 1821, v, 175.
- , —, —, *ibid.*, analysis of, vi, 397.

- Meteorites, in Europe, France, in the Dept. of Loiret, 1841, xlii, 203.
- , —, —, of Chateau-Renard, characters and analysis of, xlii, 403.
- , —, —, near Bethune, xlii, 203.
- , —, —, in Moravia, 1833, xxx, 175.
- , —, —, in Sillesia, at Grünberg, xlii, 203.
- , —, —, in *North America*.
- , —, —, Connecticut, at Weston, analysis of, i, 273.
- , —, —, —, *ibid*, some considerations on its velocity, course, &c., *E. C. Herrick*, xxxvii, 132.
- , —, —, Georgia, May, 1829, notice of the fall of, xviii, 388.
- , —, —, —, May, 1829, description of, xviii, 389.
- , —, —, Maine, August, 1823, analysis of, ix, 400.
- , —, —, Maryland, February, 1825, notice of, *S. D. Carver*, ix, 351.
- , —, —, —, *ibid*, analysis of, *G. Chilton*, x, 131.
- , —, —, —, *ibid*, description of, x, 135.
- , —, —, Massachusetts, East Bridgewater, May 5, 1837, xxxii, 395.
- , —, —, Missouri, February, 1839, *E. C. Herrick*, xxxvii, 385.
- , —, —, Tennessee, fall of, at Nashville, xv, 358; xviii, 378.
- , —, —, —, 1827, analysis of, xvii, 326.
- , —, —, —, *ibid*, general characters of, xviii, 200.
- , —, —, Virginia, Richmond, June 4, 1828, xv, 195.
- , —, —, —, *ibid*, description and analysis of, *C. U. Shepard*, xvi, 191.
- , —, —, —, apatite in, *C. U. Shepard*, xlv, 102.
- , —, —, —, Grayson Co., xliii, 169.
- Meteorites, in South America, Brazil, xxxiv, 209.
- , —, —, Sandwich Islands, xlix, 407.<sup>1</sup>
- Meteorological correspondence of *Morin*, xxvii, 172.
- facts and phenomena, review of various, *W. C. Redfield*, xxv, 122; xxxiii, 50.
- memoranda, ancient, xlii, 399.
- observations, rules for making, *C. Dewey*, xi, 59.
- —, —, mode of making at the Albany Institute, &c., xxx, 194.
- —, —, balloons a means of making, *D. Brewster*, xlii, 150.
- —, —, made at the equinoxes and solstices, report on the reduction of, before the British Association, 1840, xl, 311.
- —, —, *ibid*, report of progress, xlii, 149.
- —, —, on the progress of the great cooperative system of, *J. F. W. Herschel*, xliii, 372.
- —, —, in Asia, at Canton, *W. C. Redfield*, xxxviii, 267, 272.
- —, —, —, at Singapore, 1839–1841, *J. S. Travelli*, xlv, 151.
- —, —, —, at Trevandrum, hourly, notice of, xl, 322.
- —, —, —, in the Ghâts of Western India, xxxviii, 103.
- —, —, —, in England, at Plymouth, hourly, notice of a report on, xlii, 149; xliii, 369.
- —, —, —, hourly, at Inverness and Kingussie, some deductions from, *D. Brewster*, xxxviii, 95; xl, 321.
- —, —, —, hourly, at Inverness and Unst, in progress, xlii, 150.
- —, —, —, North American, in Canada, at Montreal, *J. S. McCord*, for 1836, xxxiv, 208.
- —, —, —, *ibid*, for 1837, xxxv, 382.
- —, —, —, *ibid*, for 1838, xxxvi, 180.



- Meteorological observations, North American, in Canada, at Montreal, *J. S. McCord*, for 1836-1840, xli, 330.
- , —, —, at Newfoundland, *W. C. Redfield*, xxxviii, 265, 269.
- , —, —, New England, ancient, xliii, 398.
- , —, —, in Connecticut, at New Haven, 1766, 1767, xxviii, 183.
- , —, —, *ibid*, for 1827, *D. Olmsted*, xiv, 176.
- , —, —, *ibid*, for 1828, *D. Olmsted*, xvi, 70.
- , —, —, in Cuba, at San Fernando, *J. H. Blake*, xlii, 292.
- , —, —, in Cuba, at Matanzas, 1832-33, *A. Mallory*, xxvi, 89; 1835, xxxi, 287.
- , —, —, in U. States, at different military posts, by surgeons of the army, xii, 149.
- , —, —, in New England, in the years 1741 to 1757, *J. Winthrop*, xl, 204.
- , —, —, in Florida, 1833, *H. B. Croom*, xxv, 69.
- , —, —, in Georgia, 1832-33, *W. H. Williams*, xxv, 211.
- , —, —, —, 1833-34, xxvii, 173.
- , —, —, in Indiana, *D. D. Owen*, xxix, 294.
- , —, —, in Louisiana, at New Orleans, 1833-1836, *Barton*, xxxi, 400.
- , —, —, at Jackson, 1839-1841, *W. M. Carpenter*, xlv, 49.
- , —, —, in Michigan, at Sault de St. Marie, *L. Foot*, ix, 171.
- , —, —, in Missouri, at St. Louis, xxxii, 386.
- , —, —, in Massachusetts, at Deerfield, *E. Hitchcock*, iv, 333.
- , —, —, at Westfield, 1825, xii, 119.
- Meteorological observations, North American, in Massachusetts, at Boston, 1820-29, xx, 264.
- , —, —, at New Bedford, 1830, xx, 162; 1831, xxii, 188.
- , —, —, in New Hampshire, at Dartmouth College, xxviii, 179.
- , —, —, in New York, 1833-34, *W. C. Redfield*, xxviii, 154.
- , —, —, in N. Y. city, 1838 and 1839, with the mean results for the last seven years, *W. C. Redfield*, xxxviii, 323.
- , —, —, for May, 1834, at Cazenovia, *J. Johnston*, (therm., winds, weather,) xxvi, 398.
- , —, —, at Brooklyn, for 1829, xvii, 409.
- , —, —, at Penn Yan, 1834, *H. P. Sartwell*, xxviii, 187.
- , —, —, New Jersey, at Middletown, *J. F. Jenkins*, 1831, 1832, xxii, 394; 1832-34, xxvi, 395.
- , —, —, in North Carolina, at Chapel Hill, *D. Olmsted*, x, 294.
- , —, —, in Ohio, kept at Marietta, *S. P. Hildreth*, 1826, xii, 213.
- , —, —, *ibid*, 1827, xiv, 63.
- , —, —, *ibid*, 1828, xvi, 44.
- , —, —, *ibid*, 1829, xviii, 368.
- , —, —, *ibid*, 1830, xx, 126.
- , —, —, *ibid*, 1831, xxii, 109.
- , —, —, *ibid*, 1832, xxiv, 132.
- , —, —, *ibid*, 1833, xxvi, 84.
- , —, —, *ibid*, 1834, xxviii, 160.

- Meteorological observations, North American, in Ohio, kept at Marietta, *S. P. Hildreth*, 1835, xxx, 56.
- , —, —, —, *ibid*, 1836, xxxii, 95.
- , —, —, —, *ibid*, 1837, xxxiv, 132.
- , —, —, —, *ibid*, 1838, xxxvi, 78.
- , —, —, —, *ibid*, 1839, xxxviii, 273.
- , —, —, —, *ibid*, 1840, xl, 345.
- , —, —, —, *ibid*, 1841, xlii, 344.
- , —, —, —, *ibid*, 1842, xliv, 347.
- , —, —, —, *ibid*, 1843, xlvi, 277.
- , —, —, —, *ibid*, 1844, xlviii, 287.
- , —, —, —, at Western Reserve College, Sept.—Nov., 1838, *E. Loomis*, xxxvi, 166.
- , —, —, —, at Hudson, for the years 1838, 1839, 1840, *E. Loomis*, xli, 310.
- , —, —, —, *ibid*, 1841—1844, xlix, 266.
- , —, —, —, at Steubenville, 1844, *R. Marsh*, xlix, 212.
- , —, —, —, in Oregon, or west of the Rocky Mountains, *A. Eaton*, from *J. Ball*, xxv, 351.
- , —, —, —, at Fort Vancouver, *J. Ball*, 1832, '33, xxviii, 9.
- , —, —, —, in Vermont, Fayetteville, *M. Field*, xii, 364; xvi, 288; xviii, 366; xx, 261<sup>f</sup>; xxii, 298; xxiv, 361.
- , —, —, —, in Wisconsin, at Fort Winnebago, xxx, 13.
- , —, —, —, South American, in Colombia, 1820, 1830, *R. Wright*, xxxvii, 1.
- , —, —, —, at Rio Janeiro, *J. Gardner*, xlvii, 290.
- Meteorological observations, at sea, on a voyage from Liverpool to New York, v, 137.
- , —, —, —, on board the United States ship Peacock, *W. S. W. Ruschenberger*, xxxiii, 345.
- , —, —, —, on board the United States ship Erie, 1834, between New York and Rio Janeiro, xxix, 237.
- , —, —, —, (electro-) *J. Swaim*, xxxii, 304.<sup>f</sup>
- , —, —, —, see farther, *Floral calendar*.
- , —, —, —, tables, *J. de Wallestein*, ix, 394.
- Meteorology, *J. D. Forbes* on the progress of, xl, 318.
- Metre, French, compared with an English yard, xxi, 382.
- Mexican Andes, ascent of Popocatepetl, xxviii, 220.
- Mexico, geological character, climate, uses of obsidian, &c. in, xvi, 160.
- , geological remarks relating to, *W. Machure*, xx, 406.
- , discovery of mummies near Durango, xxxvi, 200.
- , silver mines of, xxiv, 226.
- , meteoric iron at Charcas, xxviii, 288.
- Mica, containing potash and lithia, xxxvii, 356.
- , analyses of lepidolite and a yellow, xxxvii, 361.
- , of Chester, Mass., crystallization of, viii, 250.<sup>f</sup>
- , use of, in chemical analyses, xxiv, 373.
- , black, a substitute for glass in spectacles, xviii, 374.
- , models of crystals made of, xxxviii, 187.
- , in Canada, viii, 67.
- , in Connecticut, i, 353;—plumose, vi, 251.
- , in Massachusetts, i, 113; ii, 237; iv, 55 (green); vii, 255; viii, 41, 235;—prismatic, v, 399; vii, 30, 255; viii, 41; xiv, 219;—rose, i, 350; v, 265.

- Mica, in New Hampshire, v, 40 ; xvii, 357.
- , in New Jersey, v, 246 ; vi, 250.
- , in New York, iv, 37 ; v, 29 ; ix, 40, 251 ; xxi, 326.
- , in Pennsylvania, ix, 45 ; xiv, 5, 13.
- , in Virginia, v, 257.
- slate, association with granite, in Massachusetts, and relative age, vi, 4.
- —, varieties in the Connecticut valley, vi, 22.
- —, minerals of, vi, 24.
- —, in western Massachusetts, viii, 6, 240.
- —, relation to gneiss, viii, 6.
- —, conglomerated, in Windsor, Mass., viii, 7.
- —, contorted, viii, 253.
- —, minerals of, viii, 7.
- —, alternations with granular limestone, ii, 211 ; viii, 15, 240, 252.
- —, containing rounded pebbles of quartz, in Massachusetts, viii, 244.
- Mice, habits of, xlvi, 242.
- Michaux, André*, notice of, *A. Gray*, xlii, 2.
- , notice of his botanical labors, ix, 266.
- , the younger, notice of, xlii, 10.
- Michigan, notice of the peninsula of, in relation to its topography, scenery, agriculture, population, resources and productions, *J. Pierce*, x, 304.
- , Indians of, *J. Pierce*, x, 313.
- , rocks of, xl, 136.
- , mining region of, *D. Houghton*, xli, 183.
- , Geological Reports on, of *D. Houghton*, noticed, xxxiv, 190 ; xl, 136.
- , geological and mineralogical observations on the northwest portion of Lake Huron ; *J. I. Bigsby*, iii, 254.<sup>f</sup>
- Michigan, geological and mineralogical observations of the region about Fort Winnebago, *D. Ruggles*, xxx, 1.<sup>f</sup>
- , native copper and ores of, *D. Houghton*, xli, 185 ; xlv, 331, 332.
- , — — — — *ibid*, *D. Ruggles*, xlix, 64.<sup>f</sup>
- , — — — —, of Lake Superior, *H. R. Schoolcraft*, iii, 201.<sup>f</sup>
- , — — — — and silver, of Kewenaw Point, *C. T. Jackson*, xlix, 81.
- , Lake, height of, xlv, 16 ; xlv, 259, 260.
- Microlite, *C. U. Shepard*, xxvii, 361 ; xxxii, 338 ; xliii, 116 ; xlviii, 176.
- , identical with pyrochlore, *J. E. Teschemacher* and *A. A. Hayes*, xliii, 33.
- , reply to, *ibid*, by *C. U. Shepard*, xliii, 116 ; xlviii, 176.
- , analysis of, *A. A. Hayes*, xlvi, 158.
- Micrometers, artificial spider's web for, xv, 183.
- Microscope, on improvements in, *E. Thomas*, xix, 57.<sup>f</sup>
- , on the achromatic, *E. Thomas*, xx, 265.<sup>f</sup>
- , monochromatic lamp of *D. Brewster* for, vii, 363.
- and microscopical observations, notice of, xli, 205.
- Microscopic life, see *Infusoria*, and *Zoology*.
- Migration of birds, note on, x, 192.
- — — — of North America, *J. Bachman*, xxx, 81.
- Mildew, prevention of, iii, 385.
- Milk, mode of preserving indefinitely, xviii, 152.
- , use of, in dropsy, xxiv, 209.
- , facts from *Barruel* respecting the milk sold in Paris, xvii, 378.

- Milk tree of Venezuela, xix, 373.
- Milking, principle of the balance applied to, *H. Strait*, xxvii, 92.<sup>f</sup>
- Milkweed, *Asclepias Syriaca*, a substitute for flax, xxvii, 384.
- , on the fibre of, xxviii, 380.
- Miller, E.*, canals of Pennsylvania, xxv, 84; xxvi, 108.
- , on tracing oval arches, xxii, 303.<sup>f</sup>
- Millet's smoke disperser, xvii, 164.
- Milo, catacombs of, xvi, 331.<sup>f</sup>
- , caves of, containing alum, xvi, 334.
- Mines, depth of different, xxix, 374.
- , wire ropes for deep, xxxv, 319.
- , general remarks on the positions of, *Taylor*, xxxiv, 9.
- of Pasco, S. A., xvii, 43.<sup>f</sup>
- of the Hartz, and mode of working, xix, 113.
- of Idria, xxix, 219.
- of Michigan, position of, *D. Houghton*, xli, 183.
- of Russia, see under *Russia*.
- of Spain, xxviii, 17, 21, 144.
- of Tokat, xxxvii, 352.
- , see farther, under names of *Countries, Metals and Minerals*.
- Minerals, new fluids in cavities of, detected by *D. Brewster*, xii, 214.
- , optical structure of, ix, 384.
- , specific gravities of various, *Breithaupt*, xxxi, 268.
- , Hosack's donation of, iv, 396.
- , pseudomorphous, account of, xlviii, 66, 81.
- of trap, origin of, *J. D. Dana*, xlix, 49.
- of volcanic rocks, iv, 212, 215.
- , zeolitic, not formed at the formation of the containing rock, *J. D. Dana*, xlv, 116, 145.
- , —, rendered hydrous by steam of eruption, *H. D. Rogers*, xlv, 147.
- , in London, prices of, v, 169.
- Minerals of Europe, value of, xxix, 368.
- of North America, their analogy with those of northern Europe, *W. Meade*, xii, 303.
- , *Foreign*.
- of a cavern, upon Bosjesman river, southern Africa, xxviii, 290.
- of Ceylon, vi, 192.
- of Greece, xxxiii, 207.
- , oriental, from Sardis, *F. Hall*, xxxiii, 249; Pergamos, 250; Smyrna, 250; Ephesus, 251; Thyatira, 251; Samos, 252; Syra, 253.
- , —, *Robertson*, xxxiii, 255.
- found in the Hartz, xix, 112.
- of New Holland, *F. Alger*, xxxix, 157.<sup>f</sup>
- from Palestine, ix, 337; x, 21.
- of Peru, San Lorenzo, selenite, calc spar, &c., xxxviii, 201.
- of Sicily, viii, 203.
- , saline, of the plains of Tarapaca, *J. H. Blake*, xlv, 2.
- of Vesuvius, account of, from *Monticelli's* treatise, xii, 185.
- , *North American*.
- , —, proposed as new, shown to be identical with other species previously known, xlv, 384.
- , —, in Alabama, *E. Cornelius*, i, 214, 317.
- , —, in Canada, *J. I. Bigsby*, v, 205; viii, 60.
- , —, of northern America, and the vicinity of Hudson's Bay, xvii, 12.
- , —, of Nova Scotia, *F. Alger*, xii, 227.
- , —, —, *Jackson* and *Alger*, xiv, 305; xv, 132, 201.
- , —, —, examined by a party from Williams College, xxx, 330.
- , —, of Connecticut, Litchfield Co., gneiss range, *J. P. Brace*, i, 351.

- Minerals, North American, of Connecticut, New Haven and vicinity, *B. Silliman*, ii, 201.
- , —, —, *T. D. Porter's* localities of, with a map, ix, 177.
- , —, —, various localities, *C. U. Shepard*, xxxiii, 155.
- , —, —, at Stonington, *W. W. Rodman*, xxxv, 179.
- , —, of Delaware, x, 223.
- , —, —, *G. W. Carpenter*, xiv, 1.
- , —, of Illinois, Shawneetown, i, 52; ii, 176; iii, 244, 367.
- , —, of Indiana, *W. B. Stilson*, i, 131.
- , —, of Kewenaw Point, Lake Superior, *C. T. Jackson*, xlix, 86.
- , —, of Maine, Freyburg and Paris, xviii, 291.
- , —, of Maryland, *G. W. Carpenter*, xiv, 1.
- , —, —, Baltimore and Harford Cos., *P. T. Tyson*, xviii, 78.
- , —, —, Bare Hills, *H. H. Hayden*, xxiv, 349.<sup>f</sup>
- , —, of Massachusetts, localities of, in part, *C. Dewey*, i, 337; viii, 1.
- , —, —, *ibid.*, *E. Hitchcock*, i, 112, 201; vi, 201; vii, 30; xiv, 215.
- , —, —, Chesterfield and Goshen, *G. Gibbs*, i, 346.
- , —, —, Hampshire Co., *A. Nash*, xii, 238.
- , —, —, Charlestown quarries, *J. E. Teschemacher*, xxxviii, 194.
- , —, of Mississippi, *E. Cornelius*, i, 214, 317.
- , —, of Missouri, iii, 24, 59, 67, 71; xii, 376, 379; xliii, 35; xlv, 340.
- , —, of New Hampshire, *J. F. Dana*, vi, 245.
- , —, —, *C. U. Shepard*, xvii, 353; xviii, 126.
- Minerals, North American, of New Hampshire, *O. P. Hubbard*, xxxiv, 105.
- , —, —, *C. T. Jackson*, xlix, 33.
- , —, of New Jersey, at Patterson and Sparta, with geological remarks by *T. Nuttall*, v, 239.
- , —, —, at Hoboken, i, 49, 54.
- , —, —, at Hoboken, *T. Nuttall*, iv, 16.
- , —, —, various, ix, 244; xxi, 321; xxxvi, 107; xl, 69; xliv, 54.
- , —, —, Bergen Hill, account of, *W. O. Bourne*, xl, 69.
- , —, —, near New Brunswick, copper ores, &c., *L. C. Beck*, with analyses of native copper, red oxide, bisilicate, and gray sulphuret of copper, xxxvi, 107.
- , —, —, in Sussex Co., *S. Fowler*, xxi, 319.
- , —, —, —, *C. U. Shepard*, with a map, xxi, 321.
- , —, —, of New York, some account of, in review of the Report of *L. C. Beck*, xvi, 25.<sup>f</sup>
- , —, —, secondary region of, *J. Pierce*, ii, 181.
- , —, —, of the Highlands of, *J. Pierce*, v, 27.
- , —, —, at Boonville, *O. P. Hubbard*, xxxii, 234.
- , —, —, in St. Lawrence Co., *J. Finch*, xix, 220.
- , —, —, in St. Lawrence and Jefferson Cos., *J. B. Craue* and *A. Gray*, xxv, 346.
- , —, —, in Orange Co., *C. U. Shepard*, with a map, xxi, 321.<sup>f</sup>
- , —, —, in Schoharie Co., *J. Gebhard*, xxviii, 172.<sup>f</sup>
- , —, —, of Warwick, *S. Fowler*, ix, 242.
- , —, —, in North Carolina, *D. Olmsted*, v, 257.
- , —, —, and South Carolina, *J. Dickson*, iii, 1.

- Minerals, North American, in Carolina, *T. D. Porter*, iii, 227.
- , —, —, North, Davidson Co., *J. C. Booth*, xli, 348.
- , —, in Ohio, *S. P. Hildreth*, xvi, 154.
- , —, —, Belmont Co., i, 227.
- , —, in Pennsylvania, Chester Co., *G. W. Carpenter*, xiv, 1 ; —Bucks Co., 12 ; Philadelphia Co., 14.
- , —, —, vicinity of West Chester, *J. Finch*, xiv, 15.
- , —, in Rhode Island, *S. Taylor*, vi, 245.
- , —, —, near Providence, *J. H. Webb*, iv, 284.
- , —, in Vermont, *E. Hitchcock*, i, 105.
- , —, —, *F. Hall*, vii, 58.
- , —, —, *A. A. Hayes*, xiii, 195.
- , —, —, Brattleboro', *J. A. Allen*, iii, 76.
- , —, —, Marlboro' and New Fane, *C. U. Shepard*, xvii, 353.
- , —, of part of Virginia and Tennessee, *J. H. Kain*, i, 60.
- , —, of parts of Virginia, Tennessee, Alabama and Mississippi, with geology of the same, *E. Cornelius*, i, 214, 317.
- , —, see farther, under the names of the several *Minerals*, *Ores*, or *Metals*.
- , artificial, sulphate of lime with half an atom of water, *J. F. W. Johnston*, xxxv, 300.
- , —, produced by heat, x, 190.
- , —, oxide of iron about furnaces, xxxvi, 237.
- , —, feldspar, xxviii, 396.
- , cabinet of, given by Baron de Schutz to the school at Landshut, v, 193.
- , —, a large, for sale ii, 169.
- Mineral resins from peat mosses—  
Tekoretin, Phylloretin, Xyloretin, Balloretin, *G. Forchhammer*, xli, 402.
- springs, see *Springs*.
- veins, remarks on, with the views of *R. W. Fox*, xxxiii, 93 ; *I. Fournet's* views, 94.
- —, questions on, *R. W. Fox*, xxxiii, 135.
- waters, artificial, *S. Morey*, iii, 94.
- —, native, see *Springs*.
- wax, a new species, *M. Prinssep*, xviii, 165.
- Mineralogical hammer, new, *E. Hitchcock*, vii, 175.<sup>f</sup>
- systems, *W. Whewell* on, xlv, 214.
- Mineralogy, *P. Cleaveland's* Treatise on, noticed, i, 35.
- , — ibid, 2d edition announced, v, 404.
- , review of *C. U. Shepard's*, xxii, 395 ; xxviii, 374 ; xlvii, 333.
- , ibid *F. Alger's*, xlvii, 333.
- , ibid *J. D. Dana's*, xxxii, 387 ; xlv, 362.<sup>f</sup>
- Mining company, the Muskingum, xxv, 224.
- industry of Spain, *F. le Play*, xxviii, 17.
- Mint, projected branch, of North Carolina, xx, 401.
- , gold coinage, amount of, in the United States, xx, 403.
- , amount of gold deposited at, xx, 404.
- Mirror, metallic, found by the precipitation of silver from the oxide, xlix, 398.
- Mississippi, mounds of, *R. C. Taylor*, xxxiv, 97.
- valley, *L. Bringier*, iii, 15 ; —banks of the Mississippi, 16 ; driftwood of the Achafalaya, Red river, 17 ; earthquakes and eruptions, 20 ; fossil remains of mastodon, 22 ; marble and other mineral productions, 23.

- Mississippi valley, *L. Bringier*, lead mines, iii, 24; iron ores, 26; cove of Wachitta, 26, 28; alum slate, 28; salt, sandhills, 27; hot springs of Wachitta, 29; Indians, 30; mounds, 36.
- — and the lakes, *J. B. Gibson*, xxix, 201.
- —, *H. King*, xlvii, 128.
- —, lower part of, *R. Nutt*, xxiii, 49.
- —, mineralogy and geology of, *E. Cornelius*, i, 317.
- —, Upper, polythalamia of, *J. W. Bailey*, xli, 400.
- — river, elevation of banks of, 1811, *F. C. Usher*, xxxi, 294.<sup>f</sup>
- —, velocity of, vii, 174.
- —, headwaters, botany of, *D. B. Douglass* and *J. Torrey*, iv, 56.
- — waters, medical effects of, viii, 396.
- Missouri, lead region of, *H. R. Schoolcraft*, iii, 248.
- —, — —, ores, *Troost* and *Lesueur*, xii, 379.
- —, — —, *J. N. Nicollet*, xlv, 340.
- —, — —, *J. T. Hodge*, xliii, 35.<sup>f</sup>
- —, — — mine of la Motte, ore not argentiferous, xliii, 64.
- —, native carbonate of lead in, xii, 379.
- —, cobalt ores, xii, 378.
- —, cretaceous formation of, *J. N. Nicollet*, xli, 180; xlv, 153.
- —, Indian mounds or fortifications in, iii, 36.
- —, — —, *R. C. Taylor*, xxxiv, 89.
- —, contributions to the botany of, *L. C. Beck*, x, 257; xi, 167; xiv, 112.
- Mitchell, E.*, on the effect of quantity of matter in modifying the force of attraction, xvi, 234.
- —, on the geology of the gold region of North Carolina, xvi, 1.<sup>f</sup>
- Mitchell, E.*, North Carolina, character and origin of the low country of, xiii, 336.
- —, on the proximate causes of winds and storms, xix, 248.<sup>f</sup>
- —, Protogæa of *Leibnitz*, xx, 56.
- —, on storms and meteorological observations, xx, 361.
- —, on Welther's tube of safety, xvii, 345.<sup>f</sup>
- Mitchell, J.*, on the ignis fatuus, xvi, 246.
- Mitchell, J. K.*, on the liquefaction and solidification of carbonic acid, xxxv, 346.<sup>f</sup>
- Mitchell, T. D.*, carbonic oxide obtained free from carbonic acid, xxv, 344.
- Mitchell, Wm.*, on the tails of comets, xxxviii, 35; xl, 59.
- —, magnetic dip at Nantucket, xlvi, 157.
- Mitchill, S. L.*, conditions of the growth of plants on living animals, xii, 21.
- —, on the *Mus bursarius* or pouch-ed rat, of Canada, iv, 183.
- —, on the *Proteus* of the N. A. Lakes, iv, 181.
- —, on a group of polyps, v, 46.
- —, a new *Raja*, ix, 290.
- —, *Zeus crinitus*, xi, 144.<sup>f</sup>
- —, spoonbill sturgeon, xii, 201.<sup>f</sup>
- —, new reptiles of North America, vii, 63.
- —, on the eatable clam of New York, x, 287.
- —, facts showing that two-headed snakes are monsters, x, 48.
- —, history of sea-serpentism, xv, 351.
- —, notice of his edition of *Cuvier's* essay on the theory of the earth, i, 68.
- —, obituary notice of, xxvii, 149.
- Mitscherlich*, formation of specular iron about volcanoes, xxxvi, 237.
- —, on fuming nitric acid, xx, 185.
- Mohs, F.*, obituary notice of, xl, 220.
- Molasses from the potato, xxi, 93.

- Mole, natural history of, xvii, 386.  
 —, carnivorous, *S. Woodruff*,  
 xxviii, 168.
- Molecules, Brown's active, xvii, 390.  
 —, forms and nature of crystal-  
 line, *J. D. Dana*, xxx, 275.<sup>f</sup>
- Molecular attraction, *J. Henry's* ex-  
 periments on, with soap bubbles,  
 xviii, 215.
- Moll, G.*, experiments in electro-  
 magnetism, xix, 329; xxvi, 177.
- Mollusca, see under ZOOLOGY.
- Molluskite, *G. A. Mantell*, xlv, 243.
- Molybdenite, analysis of, *H. Sey-  
 bert*, iv, 320.  
 —, in Connecticut, i, 242; vi,  
 235; viii, 194.  
 —, in Maine, x, 17.  
 —, in Maryland, xxvii, 20.  
 —, in Massachusetts, i, 238; v,  
 268; vi, 235; vii, 58; viii, 58;  
 ix, 55; xiv, 217; xxxiii, 400.  
 —, in New Jersey, v, 401.  
 —, in New York, vii, 57.  
 —, in Pennsylvania, v, 41.  
 —, in Rhode Island, viii, 231.
- Monarda allophylla, iv, 56.  
 — *Bradburiana*, x, 260.  
 — *scabra*, x, 260.
- Money cowry, xxxii, 250.
- Monophane, xxvi, 388.
- Montague, G.*, notice of, xxxvii,  
 162.
- Monsoons, remarks on, *W. C. Red-  
 field*, xxv, 124.  
 —, character and causes of, *W.  
 C. Redfield*, xxxiii, 63.
- Monte Video, Connecticut, scenery  
 of, vii, 5.  
 —, in South America, xxix, 240.
- Monticellite, xxvi, 388.
- Montlosier, Count*, notice of, xxxvii,  
 121.
- Monuments, public, in the United  
 States, xviii, 229.
- Monument to Copernicus, in War-  
 saw, iv, 387.  
 — of Pultowa, iii, 379.  
 — to Cuvier, xxiii, 309.
- Monumental inscriptions, on the  
 writing of, xvii, 271.
- Moodus noises at East Haddam,  
 Ct., xxix, 364; xxxix, 336.
- Moon, volcanoes of, v, 176; xxxv,  
 305.  
 —, action of, on the atmosphere,  
 deductions respecting, xv, 174.  
 —, influence of, on the weather,  
*F. Marcet*, xxvii, 192.  
 —, heat in rays of, ii, 329; xl,  
 315.  
 —, singular appearance of, xxii,  
 375.  
 —, halo, West Point, xx, 299.
- Moon's mean motion, secular accel-  
 eration of, *J. H. Coffin*, xlvii, 324.<sup>f</sup>
- Moore, N. F.*, ancient mineralogy,  
 notice of, xxviii, 188.
- Morbid animal products, chemical  
 examination of, *J. F. Dana*, iv, 149.
- Mordecai, A.*, experiments on gun-  
 powder, xlix, 180.
- Morey, S.*, on artificial mineral wa-  
 ters, iii, 94.  
 —, on heat and light, ii, 118, 122.  
 —, bubbles blown in melted ros-  
 in, ii, 179.  
 —, on the patent water-burner,  
 vii, 141.  
 —, revolving steam engine, i,  
 157.<sup>f</sup>  
 —, observations on combustion,  
 xxv, 146.  
 —, explosive engine, xi, 104.
- Morey's steam engine, *J. Doolittle*,  
 ii, 101.<sup>f</sup>  
 — — —, *Sullivan*, ii, 106.<sup>f</sup>
- Morgan, H. K. G.*, galvanic means  
 of blasting, xxxviii, 33.
- Morin, P. E.*, laws of meteorolog-  
 ical phenomena, xl, 402.  
 — solicits meteoric information  
 from America, xlii, 202.  
 —, theory of the universe, xxxi,  
 160.
- Morphine, preparation of, xvii, 384;  
 xxiii, 190.  
 —, and its salts, new method  
 for, xli, 51.  
 —, test for, viii, 381.  
 —, action of, with iodic acid, xx,  
 184.



- Morphine, sulphate of, results of experiments on, *W. Tully*, xxi, 39.
- Morris, Miss M. H.*, on the Hessian fly, xl, 381.
- Morse, S. F. B.*, account of the twilight bow, xxxviii, 389.
- electro-magnetic telegraph, xxxiii, 185.<sup>f</sup>
- , two electrical currents over the same conductor without interference, xlv, 418.<sup>f</sup>
- , experiments with Grove's battery, xlv, 390.<sup>f</sup>
- Mortality, observations on bills of, *J. Mease*, xli, 306.
- of infants in France, xix, 192.
- , effect of ventilation on, xxvii, 79.
- Mortar, iv, 373.
- , *W. H. Wright*, on, xlix, 379.
- Morton, J.*, ancient mound near Wheeling, Va., vi, 166.
- Morton, S. G.*, new work on American crania, proposed, xxxii, 207.
- , *ibid*, review of, xxxviii, 341.<sup>f</sup>
- , characteristics of the Aboriginal race of America, xlvii, 408.
- , *Crania Ægyptiaca*, notice of, xlvii, 205.
- , on a second series of ancient Egyptian crania, xlviii, 268.
- , on the internal capacity of the cranium in different races of men, xxxviii, 373.
- , on the fossils and geological characters of the ferruginous sand formation of the United States, xvii, 274, 290; xviii, 243, 249<sup>f</sup>; xxiii, 288<sup>f</sup>; xxiv, 128.<sup>f</sup>
- , analogy between the marl of New Jersey and the chalk of Europe, xxii, 90.
- , synopsis of the organic remains of the cretaceous group of the United States, xxvii, 377.
- , proposed division of the U. States cretaceous group, xxviii, 277.
- Morton, S. G.*, discovery of the gale in Alabama, xxviii, 277.
- , head of a fossil crocodile, xlviii, 265.<sup>f</sup>
- , list of fossils associated with the fossil crocodile, xlviii, 267.
- , on the fossil teeth of fishes in the United States, xxviii, 276.
- , notice of an embalmed Ibis, from Egypt, xli, 187.
- , supposed new species of hippopotamus, xlvii, 406.<sup>f</sup>
- , memoir of Wm. Maclure, xlvii, 1.<sup>f</sup>
- Mosaic cosmogony, xxv, 26.
- , critical interpretation of *bara* and *asah*, *N. Webster*, xxxv, 375.
- gold, xiii, 174.
- Mosasaurus, xvii, 289; xviii, 246.
- , in United States, xxvii, 353.
- Möser, images of, *Karsten* on, xlv, 228.
- Moss, Irish, or carrageen, *L. Feuchtwanger*, xxvi, 389.
- Mosses and ferns of the United States, *L. C. Beck*, xv, 287.
- Motion, the natural state of matter, xvi, 151.
- , on the principles of, and their use in the higher mathematics, xiv, 297.
- , revolving, in fluids, xix, 391.
- of living particles in all kinds of matter, xix, 393.
- of a system of bodies, *T. Strong*, xxiv, 40; xxv, 281; xxvi, 44.
- *ibid*, *Lagrange's* formulæ, xi, 398.
- Moulting of birds, xxiv, 366.
- Moultrie, J.*, skull of fossil human skeleton of Guadaloupe, xxxii, 361.
- Mounds, Indian, of the West, remarks on, *J. Finch*, vii, 158.
- , —, —, xxii, 124.
- , —, and other antiquities, xxxiv, 47.
- , —, vessels of earthenware in, xxvi, 237; xxvii, 175.

- Mounds, Indian, in Indiana, *J. T. Plummer*, xliv, 313.
- , —, and works, in Ohio, xxv, 234, 238.
- , —, in Ohio, *C. Whittlesey*, xxxiv, 361.
- , —, near Wheeling, Virginia, *J. Morton*, vi, 166.
- , —, of various imitative shapes, in Iowa and Wisconsin, *S. Taylor*, xliv, 21.<sup>f</sup>
- , —, earthworks of the form of animal effigies in Wisconsin, &c., *R. C. Taylor*, xxxiv, 88.<sup>f</sup>
- , —, in Missouri, iii, 36.
- , —, in Tennessee, i, 322, 428.
- , —, and relics, near Natchez, Miss., *C. G. Forshey*, xl, 376.
- , —, in Louisiana, *C. G. Forshey*, xlix, 38.<sup>f</sup>
- , —, in Salisbury Plain, England, &c., *B. Silliman*, xliii, 152.
- Mountains, on the measurement of height of, by boiling water, xxix, 355; xxxvii, 19.
- , ibid, by barometer, *O. Byrne*, xliv, 12.<sup>f</sup>
- , bursting of, iii, 252.
- , slides on White and Green, xv, 217.
- , map showing height of, ii, 168.
- , map of, iii, 364.
- , ranges of, elevation of, xxxi, 290.
- , chains of, *C. Darwin* on the elevation of, xxxvii, 234.
- , —, elevation of, *H. D. Rogers*, xlvii, 263.
- , —, theory of origin of, *J. D. Dana*, xlv, 125, 128.
- , granitic, relation to modern volcanic, *J. D. Dana*, xlv, 125.
- of iron, iii, 63.
- of Himmalayah, height of, ix, 384.
- of Europe, remarks on, *G. F. Shcouw*, xxi, 127, 128.
- Mountains of Europe, Bolca, xiii, 255.<sup>f</sup>
- , —, see *Volcano*.
- , systems of, in the United States, xli, 266.
- Katahdin, Me., excursion to, and height of, *J. W. Bailey*, xxxii, 20.<sup>f</sup>
- Lafayette, ascent of, xii, 172.
- Washington, notices of, xxxiv, 73, 76, 120.
- of New York, of Essex Co., description, height of, &c., xxxiii, 301<sup>f</sup>; xxxvi, 27; xxxvii, 83.
- , —, of Lake George, iv, 48.
- in North Carolina, description and height of, *E. Mitchell*, xxxv, 377.
- , height of, Abraham, Me., xxxvii, 378.
- , —, Adams, New Hampshire, xxxiii, 322.
- , —, Bald Peak, New York, xxxiii, 320.
- , —, Black, Vermont, vi, 6.
- , —, Black, North Carolina, xxxv, 379; xxxvi, 28.
- , —, Camel's Hump, Green Mountains, xxxvii, 85.
- , —, Catskill, Round Top, New York, ii, 19; xxxv, 378; xlv, 17.
- , —, Dial, Essex Co., N. Y., xxxvi, 28.
- , —, Dix, Essex Co., N. Y., xxxvi, 28.
- , —, Fall, New Hampshire, vii, 12.
- , —, Franklin, New Hampshire, xxxiii, 322.
- , —, Grandfather, North Carolina, xxxv, 378, 379.
- , —, High Peak of Essex, or Mount Marcy, N. Y., xxxiii, 320; xxxvi, 28; xxxvii, 84, 89.
- , —, Holyoke, Massachusetts, vii, 5.
- , —, Jefferson, New Hampshire, xxxiii, 322.

- Mountains, height of, Kedidica Hook, New Jersey, ii, 187.
- , —, La Fayette, xli, 384.
- , —, Lyon, New York, xxxvii, 84.
- , —, Madison, N. H., xxxiii, 322.
- , —, Mansfield, Green Mountains, Vt., xxxv, 378; xxxvii, 85.
- , —, McIntyre, Essex Co., N. Y., xxxiii, 320; xxxvi, 28.
- , —, Monroe, New Hampshire, xxxiii, 322.
- , —, Otter, Va., xxxv, 379.
- , —, Palisade range, different points of, ii, 184.
- , —, Pilot, North Carolina, xxxv, 379.
- , —, Roan, North Carolina, xxxv, 378, 379.
- , —, Saddle, Massachusetts, ii, 19; xxxv, 378.
- , —, Skeene's, at Whitehall, New York, xxxiii, 311.
- , —, Sugar Loaf, Massachusetts, vii, 9.
- , —, Table, North Carolina, xxxv, 377, 379.
- , —, Tom, Massachusetts, vi, 45; vii, 9.
- , —, Video, Connecticut, vii, 5.
- , —, Washington, N. Hampshire, xxxiii, 322; xxxiv, 120; xxxv, 378; xxxvii, 87; xli, 384.
- , —, West River, N. Hampshire, vii, 11.
- , —, Whiteface, N. York, xxxiii, 323; xxxvii, 84.
- , —, White Top, Virginia, xxxv, 379.
- slides, phenomena of, Essex Co., N. Y., *W. C. Redfield*, xxxiii, 313.
- leather, xxxvi, 114.
- Moving stones, in lakes and ponds, *N. Chipman*, xiv, 303.
- Mowing, best time of, v, 380.
- Moles, vision of, xvii, 185.
- Mucedinea on vines, xxix, 367.
- Mud of New Haven harbor, analysis of, *B. Silliman, Jr.*, xlvi, 337.
- eruptions, iv, 216.
- furrows in rocks, *J. Hall*, xlv, 148.
- Muhlenbergia filipes, xlv, 83.
- Mulberry tree, on the culture of, in the United States, xviii, 278.
- Mule from a stag and mare, xiv, 392.
- silver, xiii, 200.
- Multiplier, galvanic, see *Galvanic*.
- Munich, public instruction in, iv, 196.
- Murchison, R. I.*, departure of, for the Urals, xli, 207.
- , return from a tour to Russia, xlii, 213.
- , salt steppe south of Orenburg, Russia, xlv, 205.
- , freezing cavern, xlv, 205.
- , relation of American geology to Russian, xli, 208.
- , geological map of part of England and Wales, xxxv, 306.
- , Silurian system, xxxvi, 399; xxxvii, 219.
- Murchisonite, analysis of, xv, 386, [feldspar.]
- Murexide, process for, xli, 46.
- Muriate of lime, a native salt, xv, 242.
- of soda, see *Salt*.
- Muriatic acid, fumigations with, at Plattsburgh, 1819, viii, 200.
- , condensation of, *M. Faraday*, vii, 357.
- , experiments with reference to, *Macaire* and *De la Rive*, xi, 393.
- , mode of purifying, *R. Hare*, xxxix, 371.
- Murray, John*, obituary notice of, ii, 355.
- Musa texilis, xxi, 29.
- Muscles, hydatids in human, xxix, 353.
- Muse, J. E.*, on resuscitation from drowning, by oxygen, xvi, 250.
- , notice of the appearance of fish and lizards in extraordinary circumstances, xvi, 41.

- Muse, J. E.*, stony concretions in the ovary of a turtle, xxvii, 163.  
 —, on animalcules in snow, xviii, 56.  
 —, on the Hessian fly, xxii, 71, 155.  
 Museum at Geneva, in Switzerland, iv, 199.  
 — of the Vatican, iv, 380.  
 — of Paris, iv, 381.  
 Museums of Natural History, when established in England, xxxvii, 143.  
 Mushroom, gas from, xvii, 174.  
 Musical intervals, *J. Farey*, ii, 65.  
 — temperament, essay on, *A. M. Fisher*, i, 9<sup>f</sup>, 176.<sup>f</sup>  
 — tones produced by magnets, *C. G. Page*, xxxii, 396; xxxiii, 118; xlvi, 401.  
 Muskets, manufacture of, by *E. Whitney*, xxi, 237.  
 Mylocarium ligustrinum, xxvi, 319.  
 Mylodon, *R. Owen*, xliv, 341.  
 —, *R. Harlan*, xliii, 141; xlv, 209.  
 —, in Georgia, xlvii, 258.  
 —, in Oregon, (?) xlii, 136.  
 Myology of the human body, works on, noticed, iv, 198; xviii, 203.  
 Myosotis inflexa, xlvi, 98.  
 — macrosperma, xlvi, 98.  
 — stricta, xlvi, 98.  
 — verna, xlvi, 97.  
 Myosurus Shortii, i, 379.  
 Myrica carifera, analysis of, i, 294.  
 Myrrhis canadensis, xi, 175.  
 — longistylis, xi, 175.  
 Mystery, on, *M. Hopkins*, xiii, 217.
- N.**
- Naiades, see under ZOOLOGY, *Mollusca*.  
 Nantucket, Philosophical Institute of, xii, 173.  
 Naphtha springs in old Assyria, xxxvii, 353.  
 — — of Persia, xxxvii, 354.  
 Naphtha in quartz crystal, *C. Dewey*, i, 345.  
*Napier, J.*, on the solubility of the metals in the salts of iron, xlvi, 190.  
 Naples, surgery in, v, 179.  
 Napoleon, literary taste of, xii, 390.  
 Napoleon's library, xii, 390.  
 Narceine, a new substance, *Pelletier*, xxiii, 379.  
 Narcotine, results of experiments on, *W. Tully*, xxi, 39.  
 —, products of the decomposition of, *F. Wöhler*, xlix, 205, 206.  
*Nash, A.*, lead mines and geology of Hampshire Co., Mass., xii, 238.<sup>f</sup>  
 —, fascination of snakes, xii, 368.  
 Nasmyth's pneumatic speculum, xxxviii, 107.  
 Native metals, see under the names of the metals.  
 Natrolite in New Jersey, xl, 71.  
 Natural bridge, i, 66.  
 Natural History Society, see *Society*.  
 — magic, remarks on, xxxiii, 258.  
 Naturalist, Journal of a, noticed, xxi, 390.  
 Naturalists, some notice of British, *C. Fox*, xxxvi, 217.  
 Nautilus, fossil, xliii, 187.  
 Naval Sketches, by *G. Jones*, noticed, xvi, 168, 320<sup>f</sup>; xvii, 201.  
 — Lyceum, xxvii, 390.  
 Navigation, submarine, ii, 94.  
 — on canals, mode of, vii, 190.  
 — of rapids, vii, 175.  
 — of Cape Horn, *M. F. Maury*, xxvi, 54.  
 — of the Atlantic, by ship Savannah by steam in 1819, xxxviii, 155.  
 — — — — —, log book of, deposited with the American Philosophical Society, xl, 34.

- Navigation, letters of *J. Smith* on, xxxv, 160, 332; xxxvi, 133.  
 — to the Pacific by steam, xli, 358.  
 —, in the Pacific, on the coast of Chili, xliii, 207.  
 —, steam, see *Steam*.  
 —, on the application of the hydrostatic and aerostatic powers to aquatic, *E. C. Genet*, xi, 344.<sup>f</sup>  
 —, solution of a problem in, *W. Chauvenet*, xli, 79.  
 —, Treatise on, *M. F. Maury's*, noticed, xxxii, 208.  
 Navigator, *N. Bowditch's*, noticed, xxxv, 11.  
 Navigators, directions to, if overtaken by storms in different seas, *W. C. Redfield*, xxv, 119, 120.  
 —, *ibid*, *H. W. Dove*, xli, 338.  
 Navy of steam ships, xxxv, 333.  
 Nebulæ, account of some, *H. L. Smith* and *E. P. Mason*, xl, 37.  
 —, approximate places of some, xxxv, 284.  
 — delineated by photography, xli, 375.  
 Necrology, see *Obituary*.  
 Necronite, *H. H. Hayden*, i, 306.  
 Needle, see *Magnetic*.  
 — ore, analysis of, xxviii, 395.  
 Needlestone in Nova Scotia, xxx, 349.  
 Nelumbium luteum, iv, 64.  
 Nematite, iv, 19.  
 Nemopanthus, i, 377.  
 Nephrite from Rhode Island, analysis of, *G. T. Bowen*, v, 346.  
 — in Rhode Island, v, 39, 346.  
 — in New York, vi, 365.  
 — in Pennsylvania, viii, 239.  
 Neptune's goblet, *A. A. Gould*, xxxvi, 386.  
 Nerves, influence of, on animal heat, x, 390.  
 —, electric currents in, denied, xlix, 387.  
 Nets and cordage, strengthened by means of a solution of glue and oak bark, xxvi, 186.  
 Neufchatel, xiii, 182.  
*Newbold*, on the kunker, a tuffaceous deposit in India, xlix, 398.  
 New Brunswick tornado, *R. Hare*, from a written statement by *J. P. Espy*, xxxii, 158.  
 — —, *W. C. Redfield*, xxxv, 206; xli, 69.<sup>f</sup>  
 — —, *L. C. Beck*, xxxvi, 115.<sup>f</sup>  
 New England, geology of, see under *Geology*.  
 — — Asylum for the Blind, xxiv, 175.  
 — — Magazine, noticed, xxvii, 389.  
 New Grenada and Cuba, fossils of, supposed to be oolitic, *I. Lea*, xl, 41.  
 New Hampshire, geological account of a part of, *E. Hitchcock*, i, 105; vi, 1; vii, 1.  
 —, excursion to the White Mountains and to the summit of Mount Washington, *J. Pierce*, viii, 172; observations on the White Mountains, 172; source of the Saco, 174; vegetation on the ascent, 174, 175; view around, 176–178; wild animals, 178, 179; mineral spring near the Amonoosuc, 179; Franconia iron works, 180.  
 —, miscellaneous notices of mountain scenery and of slides and avalanches in the White and Green Mountains, xv, 217;—region about Lake Winnepiscogee, the Notch, the deluge of August, 1826, which destroyed the Willey family, and the consequent denudation, *B. Silliman*, 218–222; effects of the storm of August 28, 1826 on the stream, and its action, *C. Wilcox*, 222–228.  
 —, geological observations on, *O. P. Hubbard*, xxxiv, 105;—trap dikes in Dorchester and Canaan, 105<sup>f</sup>; *ibid*, Wentworth, 107; *ibid*, at the falls of the Campton, 108<sup>f</sup>; tourmalines and diluvial scratches in Rumney, 107; trap dikes on Red Hill, 111; *ibid*, Moultonboro', Tamworth and Eaton, 112, 113.<sup>f</sup>

- New Hampshire, geological observations on, *O. P. Hubbard*, xxxiv, 105; trap and granite boulders, and granite veins, 112; blende and galena near Eaton, 114; White Mountains, 115; effects of the deluge of August, 1826, 115; decomposing granite, 116; octahedral fluor spar, 117; trap dikes near the Willey house, 118; Mount Washington, 120; Franconia Notch and pot hole, 122; granite veins in granite, 123<sup>f</sup>; detached masses of granite, 124.
- , geological reports on, by *C. T. Jackson*, noticed, xli, 383; xlviii, 393;—*ibid*, review of, xlix, 27; anticlinal axis of primary rocks in the state, 28; on the glacier theory of drift, 29; Camel's Hump mountain ascended, 31; useful minerals, 33; tin ore of Jackson, 34.
- , mountains, height of, Adams, xxxiii, 322.
- , —, —, Fall, vii, 12.
- , —, —, Franklin, xxxiii, 322.
- , —, —, Washington, xxxiii, 322; xxxiv, 120; xxxv, 378; xxxvii, 87; xli, 384.
- , —, —, Lafayette, xli, 384.
- , —, —, Jefferson, xxxiii, 322.
- , —, —, Madison, xxxiii, 322.
- , —, —, Monroe, xxxiii, 322.
- , latitude of Mounts Lafayette and Washington, xli, 384.
- , tin ore in, xliii, 168; xlix, 34.
- , iron ore in, xviii, 130.
- , Bellows falls, scenery of, vii, 12.
- New Harmony, Indiana, Owen's establishment at, xi, 189.
- New Haven medal, *J. Allan*, xxxvii, 285.
- Gymnasium, xliii, 385; xiv, 400.
- , latitude and longitude of Yale College, xxxiv, 309.
- New Haven, geology of the region around, vii, 20.
- , tornado, xxxvii, 340.<sup>f</sup>
- New Holland, bone caves in, xx, 380.
- , Boomerang, xxxvi, 164.<sup>f</sup>
- , minerals of, *F. Alger*, xxxix, 157.<sup>f</sup>
- New Jersey, geology, mineralogy, scenery, &c. of, *J. Pierce*, ii, 181;—Kedidica Hook mountains, 187; rocks and minerals of the vicinity of Patterson, 189, 192; Datholite of Patterson, 192; trap from Patterson to Springfield, Bergen and minerals, 193–195; peat on the Passaic, 196; pea-ore, *ibid*, 196; copper, 198; pipe clay, 198; Snake-hill, 199.
- , alluvial district, with remarks on the marl, and its application to agriculture, *J. Pierce*, vi, 237.
- , geology, Hoboken serpentine rocks of, and their minerals, (Nemalite, Marmolite, &c.) *T. Nuttall*, iv, 16.
- , on the cretaceous formation of, *S. G. Morton*, xvii, 274, 290; xviii, 243, 249<sup>f</sup>; xxii, 90; xxiii, 288<sup>f</sup>; xxiv, 128<sup>f</sup>; xlviii, 265<sup>f</sup>, 267.
- , *ibid*, *C. Lyell*, xvii, 213.
- , fossil fish, *W. C. Redfield*, xxxvi, 186; xli, 24, 164; xliii, 172; xlv, 134<sup>f</sup>; xlv, 314.
- , —, —, *L. D. Gale*, xxxv, 192.
- , fossil footprints, *W. C. Redfield*, xlv, 134; xlv, 315.
- , fossil rain marks, *W. C. Redfield*, xliii, 172; xlv, 136; xlv, 315.
- , New Brunswick tornado, June, 1835, *J. P. Espy*, cited by *R. Hare*, xxxii, 158.
- , —, —, *W. C. Redfield*, xxxv, 206; xli, 69.<sup>f</sup>
- , —, —, *L. C. Beck*, xxxvi, 115.<sup>f</sup>
- , iron ores of Franklin, v, 243.
- , —, —, at Pompton Mountain, v, 287.
- , —, —, in Morris Co., v, 28.

- New Jersey, copper, native, xxxvi, 107; xlv, 331.
- , copper ores, ii, 198; v, 239, 268, 401; viii, 118; xxxvi, 107.
- , mineralogy and geology of, *C. U. Shepard*, with a map by *Young* and *Heron*, xxi, 321.
- , minerals of Bergen Hill, *W. O. Bourne*, xl, 69.
- , minerals in trap, *L. C. Beck*, xlv, 54.<sup>f</sup>
- New York, statistics of, in 1831, (population, manufactures, agriculture, education, &c.) xx, 147.
- , Report, noticed, of the Regents of the University of, xxii, 415; xxv, 258<sup>f</sup>; xxvii, 177; xxx, 389; xlix, 176.
- , Reports, annual, noticed, of the geological survey of, xxxii, 186; xxxvi, 1; xxxix, 95; xl, 73; xlii, 227.
- , —, final geological, reviewed, *D. D. Owen*, xlvi, 143; xlvii, 354<sup>f</sup>; xlviii, 296.<sup>f</sup>
- , —, mineralogical, by *L. C. Beck*, reviewed, xl, 75; xlv, 25.<sup>f</sup>
- , —, zoological, of *J. E. DeKay*, xlv, 397.
- , Albany Co., geological survey of, executed by *T. R. Beck*, iii, 239.
- , mineral waters of Albany city, xxxvi, 9.
- , Canaan Mountains, geological section of, with observations on the soil and productions of the neighboring region, *D. H. Barnes*, v, 8, 204<sup>f</sup>; peat abundant, 8; quarries of limestone, 10; fine sand, 10; Lebanon roofing slate, 11; gray-wacke at summit, 14; prospect, 14; disruption and sinking of the strata, 15; iron ores, 20; lead ore, 21.
- , carburetted hydrogen springs, xv, 236; xvii, 398; xxxvi, 6.
- , Catskill Mountains, account of, *H. E. Dwight*, ii, 11; rocks and petrefactions of, 12, 13; sulphur spring, 15; falls of the Kaaterskill, 17, 21.
- New York, Catskill Mountains, account of, *H. E. Dwight*, ii, 11; elevation, according to Capt. Partridge, 19; prospect, 19; lakes, 20; mink pot, 24; wild animals, 28.
- , — —, geology of, *D. W. Barton*, with a plan, iv, 249.
- , — —, memoir on, with notices of the topography, scenery, mineralogy, zoology and economical resources, *J. Pierce*, vi, 86.
- , Chatauque Co., Fredonia gas spring, xvii, 398; xxxvi, 6.
- , Chitteningo, fossil calcareous tree of, v, 251; xviii, 354; xxxvi, 12.
- , Clinton group of rocks, iron ores in, xlviii, 301.
- , Columbia and Dutchess Counties, iron ores in, xxxvi, 21; xlv, 27.
- , — —, at Hillsdale and Amenia, viii, 243.
- , — —, manganese ores, xlv, 28.
- , —, Ancram lead mine, viii, 247.
- , Lebanon nitrogen springs, xxxvi, 7;—analysis by *W. Meade*, 7.
- , Corlear's Hook, fossils at, ii, 371.
- , Crown Point, iron ores, iv, 48.
- , Dutchess Co., iron beds and works, xlv, 27.
- , —, manganese ores, xlv, 28.
- , Erie canal route, *A. Eaton's* survey of, noticed, vi, 373; viii, 358; ix, 355; xiii, 383; xiv, 145<sup>f</sup>, 359; xv, 233.
- , *ibid*, gases, acids and salts in the vicinity of, *A. Eaton*, xv, 233;—nitrogen gas, 234; sulphuretted hydrogen, 235; carburetted hydrogen, 236; carbonic acid, 237; sulphuric acid, 238; sulphate of magnesia, 241; sulphate of iron, 243.

- New York, Erie canal route, gases and acids in the vicinity of, *A. Eaton*, xv, 233; sulphate of alumina, 243; carbonate of iron, 244; common salt, pseudomorphous crystals, 244; calc tufa, 247.
- , Essex Co., and northern sources of the Hudson, remarks on, *W. C. Redfield*, xxxiii, 301<sup>f</sup>;—settlement at MacIntyre and iron works, 303; Labradoritic rocks, 303; Lake Colden, 305; Avalanche lake, 307; Whiteface Mt., the notch, 308; barometrical observations, and heights above Lake Champlain and the ocean, 310, 311; mountain slides, 313; main source of the Hudson; fall of the Au Sable, 313; high peak of Essex, 314; boulders, 315; trap dike, 316; ascent of Mount MacIntyre, 317; elevation of the mountains, 319; head of the Hudson, 320<sup>f</sup>; beds of iron, 323.
- , —, *E. Emmons's* Geological Report of, noticed, xxxvi, 26;—iron ore, dikes, ripple marks, 26; height of mountains, 27; variation of the needle, 28, 29.
- , —, *ibid*, xl, 81;—iron ores, 81.
- , —, height of mountains, *E. F. Johnson*, xxxvii, 84.
- , Kedidica Hook range, ii, 187.
- , Franklin Co., Duane, steel ore beds, xlvi, 26.
- , Fredonia gas, xvii, 398; xxxvi, 6.
- , Genesee Co., sulphuric acid spring, xxxvi, 10.
- , gypsum in, i, 243; iv, 36; v, 39, 40; xvi, 377; xxxvi, 38, 43.
- , Herkimer Co., calcareous tufa, with impressions of numerous plants, xxxvi, 11.
- , heights in, above the level of the sea, of points in the Palisade range, ii, 184.
- New York, heights in, above the level of the sea, of Lakes Erie, Ontario, Niagara, Rochester, &c., *C. Dewey*, xxxiii, 122.
- , —, —, —, of Lake Colden, source of Hudson, Essex peak, Mount MacIntyre, Bald peak, Lake Champlain, &c. &c., *W. C. Redfield*, xxxiii, 320.
- , —, —, —, of the country near Chatauque lake, Cayuga lake, Seneca lake, Niagara, Buffalo, Mohawk at Little Falls, Round top, Catskill Mountains, &c. &c., xlv, 16, 17.
- , —, —, —, of Lake Champlain, Skeene's Mountain, Moriah, pass of Schroon Mountain, iron works at MacIntyre, Lake Henderson Outlet, &c. &c., *W. C. Redfield*, xxxiii, 311.
- , —, —, —, of Essex peak, (Mount Marcy,) Mount MacIntyre, Mount Dix, Dial Mountain, *E. Emmons*, xxxvi, 28.
- , —, —, —, of Lyon Mountain, Whiteface Mountain, Mount Marcy, xxxvii, 84.
- , Highlands, outline of the geology of, *A. Eaton*, v, 231.
- , —, geology, mineralogy, scenery, &c., of, *J. Pierce*, v, 26;—minerals, 27; animals, 31; lakes and rivers, 32.
- , —, geology and mineralogy of, *W. W. Mather*, xxi, 97.
- , hydraulic limestones in, xxxvi, 37, 44; xxxix, 96; xlvi, 29.
- , Hudson river, tertiary formations on the borders of, *J. Finch*, x, 227.
- , —, —, —, sources of, *W. C. Redfield*, xxxiii, 301<sup>f</sup>.
- , Jefferson Co., mineralogy of a portion of, *J. B. Crave* and *A. Gray*, xxv, 346; Sackett's Harbor, and Watertown minerals, cave, Pillar point heavy spar, 346; Antwerp and Oxbow minerals, 347.



- New York, Long Island, peat near Newtown, xxxvi, 16.
- , —, encroach of sea on, xxxvi, 16.
- , —, boulders of, xxxvi, 20.
- , —, bricks of, xxxvi, 21.
- , —, soils and marls of, xxxvi, 21.
- , Lebanon nitrogen springs, viii, 31; xxxvi, 7.
- , Mohawk alluvial deposits, xxiii, 207.
- , New York city, population of, in 1826, x, 398.
- , —, longitude of, v, 143.
- , —, longitude of the City Hall, xxxvii, 400.
- , Niagara and its vicinity, geological features of, *L. Foot*, iv, 55.
- , —, *J. Geddes*, xi, 213.<sup>f</sup>
- , —, pressure of the atmosphere, within the cataract of, *B. Hall*, xiii, 364.
- , —, on the falls, and the reasonings of some authors respecting them, *H. D. Rogers*, xxvii, 326.<sup>f</sup>
- , —, retrocession of the falls, *J. B. Gibson*, xxix, 204.
- , —, *ibid*, *G. E. Hayes*, xxxv, 86, 100.
- , —, remarks on, *J. Hall*, xxxvi, 49.
- , —, volume of water, *Z. Allen*, xlvi, 67.<sup>f</sup>
- , Onondaga Co., salines, *A. Eaton*, xv, 244.
- , —, —, *G. W. Carpenter*, xv, 5.
- , —, —, and manufacture of salt at Salina, Syracuse, &c., *S. Smith*, xv, 6.
- , —, —, of Salina, *J. Foreman*, xix, 141.
- , —, —, from the N. Y. state survey, xxxvi, 2;—analysis of Salina water, 3; composition of different kinds of salt, 5.
- New York, Onondaga Co., from the New York state survey, geological position of, &c., xxxix, 103.
- , —, *ibid*, xlii, 228.
- , —, tufa near Syracuse and elsewhere, xxxvi, 12.
- , Orange Co., mineralogy of, *J. Pierce*, v, 30.
- , —, natural history of, *J. Van Rensselaer*, xiii, 224;—habits of the seventeen-year locust, 224; date of the annual song of the kitty didet, 227; register of the flowering of chesnut trees for eleven years, 228.
- , —, oolite in, xix, 398.
- , —, iron beds of, xvii, 203; xlv, 25, 26.
- , —, Palisades in, ii, 181;—elevations of points in, 184; 'Tappan creek, 185; excavation for silver, 185.
- , —, mineralogy and geology of, *C. U. Shepard*, with a map by Young and Heron, xxi, 321.
- , Portage, evidence of out-breaking of lakes, &c., *J. Hall*, xlv, 329.
- , Rensselaer Co., geological survey of, in progress, iv, 189;—*ibid*, noticed, v, 203.
- , Rochester, polished limestone of, *C. Dewey*, xxxvii, 240.
- , Rockland Co., inhabitants of, ii, 189.
- , Rockland lake, ii, 186.
- , Saratoga Co., Lake and its environs with Snakehill, *J. H. Steele*, ix, 1.<sup>f</sup>
- , —, mineral water, analysis of, *J. Steel*, xxi, 182; xxxvi, 8.
- , —, —, —, analysis of, *J. F. Dana*, xxxvi, 8.
- , —, —, —, iodine in, xvi, 217, 242.
- , —, —, —, bromine in, xviii, 142.

- New York, Saratoga County, high rock spring, description of, xvi, 343.<sup>f</sup>
- , Schoharie Co., geology and mineralogy of Schoharie in, *J. Gebhard*, xxviii, 172.<sup>f</sup>
- , —, on the strontianite limestone cavern, (Ball's cave) of Schoharie, *C. U. Shepard*, xxvii, 363<sup>f</sup>, 368.
- , St. Lawrence Co., mineralogy and geology of, boulders of Labrador feldspar, &c., near Laurentia, *J. Finch*, xix, 220; — minerals of Hammond, Rossie and Gouverneur, 222, 225; Norfolk iron furnace, 226; Potsdam rocks, 226, 227; steatite at Little York, 228.
- , —, mineralogy of a portion of, (Gouverneur, Rossie, Fowler iron ores, Wilson ore bed, &c.,) *J. B. Crave* and *A. Gray*, xxv, 346.
- , —, from the Geological Report of *E. Emmons*, xxxvi, 23; — size of the county, and rocks of, veins of granular limestone, 23, 24; lead of Rossie, 24; temperature of wells, 25.
- , —, Rossie lead mine, xl, 76; xlvi, 28.
- , —, iron ores of, *L. C. Beck*, xlvi, 25.
- , Suffolk Co., extent of salt marshes of, xxxvi, 16.
- , sulphur springs of, ii, 15; xv, 235; xxxvi, 9; xli, 162.
- , — of Avon, xxxvi, 10.
- , — — —, analysis of, xxxv, 188.
- , — — — near Massena, St. Lawrence Co., xix, 226.
- , — — — near Buffalo, chemical examination of, xx, 156.
- , — — — along the Hudson, allusion to, viii, 31.
- , — — — near Canandagua, xxxvi, 10.
- New York, Sullivan Co., facts relating to diluvial action in, *W. A. Thompson*, xxiii, 243.
- , —, lead mines, xlvi, 28.
- , Taconic range, section of, to Troy, *C. Dewey*, ii, 246.
- , Troy, geological notice of, iii, 72.
- , —, gravel near, *A. Eaton*, v, 22.
- , Ticonderoga, graphite of, vi, 178.
- , West Point, geology in the vicinity of, v, 232.
- , —, fossil infusoria in peat earth, *J. W. Bailey*, xxxv, 118.<sup>f</sup>
- , winds of, see *Winds*.
- New York, packet ship, struck by lightning, xxxvii, 321.
- New Zealand, extent of, and on the changes of population in, xxxv, 315.
- — —, volcano in, xx, 381.
- Newcastle coal field, xxxv, 305.
- Newellian sphere, xii, 103.
- Newfoundland, meteorological observations at, xxxviii, 265.
- Newton's Principia, stereotype edition of, vi, 379.
- — —, review of, xi, 238; xii, 28, 330; xiii, 311.
- Niagara and its vicinity, geological features of, iv, 35; xi, 213.<sup>f</sup>
- , on the falls of, *H. D. Rogers*, xxvii, 326.<sup>f</sup>
- falls, retrocession of, *J. B. Gibson*, xxix, 204.
- — —, —, *G. E. Hayes*, xxxv, 86, 100.
- — —, remarks on, *J. Hall*, xxxvi, 49.
- , on the pressure of the atmosphere, &c., within the cataract of, *B. Hall*, xliii, 364.
- river, volume of, *Z. Allen*, xlvi, 67.<sup>f</sup>
- Nichols, G. W.*, popular notices of Mount Washington, xxxiv, 73.
- Nickel, a test for potash, xvi, 387.
- in meteoric stones, see *Meteoric*.
- , new antimoniuret of, xxx, 177.

- Nickel, white, or deutarseniuret of, from Reichelsdorf, *J. C. Booth*, xxix, 241.
- ore, in Connecticut, at Chatham, xxi, 195.
- Nicollet, J. N.*, on the cretaceous formation of the Upper Missouri, xli, 180; xlv, 153.
- , drift not accounted for by the glacial theory, xlv, 323.
- , on the mineral region of Missouri, xlv, 340.
- , obituary of, xlv, 404; xlvii, 139.
- Niepce*, photographic processes of, xxxvii, 173, 374.
- Niger, mouth of, iv, 373.
- Nile, the mouth of, xxviii, 24<sup>f</sup>, 28.
- Nineveh, ruins of, *A. Smith*, xlix, 113.
- Niobium, new metal, xlvi, 400.
- Nitrate of lime and of potash, i, 65.
- of silver, preparation of, v, 348.
- —, preparation of pure, xxiv, 370.
- —, pure not blackened by sun's rays, xxxv, 298.
- —, reduction of, xviii, 400.
- of soda of Atacama, Peru, xii, 385.
- —, of Tarapaca, *A. A. Hayes*, xxxviii, 410; xxxix, 375.
- —, of Tarapaca, mode of refining, xlv, 7.
- Nitre, origin of, xxviii, 292.
- , native, i, 146.
- , —, in caves of Kentucky and elsewhere, viii, 323.
- , —, in Africa, i, 147.
- Nitric acid, on fuming, *Mitscherlich*, xx, 185.
- —, remarks on its solvent power on metals, *Millon*, xlvii, 191.
- —, *J. Liebig's* new test for, xvii, 176.
- —, *ibid.*, *J. W. Bailey*, xxxii, 85.
- —, effect on sulphuretted hydrogen, viii, 375.
- Nitric acid, action of, on certain metals, xxxiii, 286.
- —, action of, on iodine, xxi, 376.
- — fumes, use of, in pulmonary diseases, xxxvi, 191.
- —, eyes of insects reddened by, xxx, 196.
- — and phosphorus, explosion from, xvi, 366.
- ether, process for, *R. Hare*, xxxiii, 241.<sup>f</sup>
- Nitrification, theory of, xiv, 385.
- Nitrogen, abstracted from the atmosphere by organization, geological proofs of, *L. Vanuxem*, xii, 84.
- , different modes of obtaining, xxviii, 360.
- , apparatus for procuring, *R. Hare*, xiv, 356<sup>f</sup>; xxviii, 263.<sup>f</sup>
- , mode of preparing, xlix, 195.
- , specific gravity of, xxxv, 298.
- , on the office of, in respiration, *L. C. Beck*, xviii, 52.
- , reduction of metals by, xix, 371.
- in animal substances, researches relative to, *Macaire* and *Marcet*, xxiii, 384.
- — *ibid.* on the determination of, xxviii, 134.
- — *ibid.*, *Bunsen's* method of estimating, xli, 53.
- — *ibid.*, new method of determining, *Varrentrapp* and *Will*, xlii, 253<sup>f</sup>; xlv, 267.
- , combines with iron and copper, xxiv, 374.
- , phosphuret of, xxviii, 140.
- combined with boron and silicon, forming combinations analogous to cyanogen, xlvii, 192.
- , chloride of, properties of, *G. S. Serullas*, xviii, 155.
- , new compounds of, (Mellon, Melam, &c.) *J. Liebig*, xxix, 371.
- gas at Hoosic, N. Y., xv, 234.
- , formation of, in warm springs, *C. Daubeny*, xx, 383.

- Nitrogen springs in New York, analysis of, xxxvi, 7.  
 ———, see *Springs*.  
 Nitroline, analysis of, xlix, 204.  
 Nitrous atmosphere of Tirhoot, xx, 199.  
 ——— ether, new process for, *R. Hare*, ii, 326.<sup>f</sup>  
 ——— gas, theory of the action of, in eudiometry, *J. F. Dana*, vii, 338.  
 ——— oxide, effects of, v, 194.  
 ——— ———, condensation of, vii, 355.  
 ——— ———, method of obtaining, *R. Hare*, xvi, 295, 297.<sup>f</sup>  
 ——— ———, properties and composition of, xvi, 298.  
*Nobili, L.*, new thermo-electric piles of, xxviii, 397.  
 ——— and *Melloni*, new experiments on heat, xxiii, 185.  
*Noggerath*, on compression of air, xvii, 38.  
 Nomenclature of minerals, i, 45.  
 ———, chemical, *J. J. Berzelius* on, xxii, 248; —(letter) xxxii, 262.  
 ———, ———, *R. Hare* on, xxvii, 63; xxxii, 259; xlix, 249.  
 ———, ———, *W. Whewell* on, xxi, 369.  
 ——— of numbers from ten to twenty, xlvi, 215.  
 ——— of the stars, revision of, under the direction of the British Association, xxxviii, 94; xl, 310; xlii, 147; xlv, 158.  
 ———, zoological, *A. A. Gould*, xlv, 1.  
 ———, ———, remarks on, *S. S. Haldeman*, xlvi, 18.  
 ——— of the Palæozoic strata of the Appalachian basin, xlvi, 154.  
*Nooney, J.*, on the astronomical operations at Pulkova Observatory, xlvi, 88.  
 Nooth's apparatus, a substitute for, *R. Hare*, i, 410.<sup>f</sup>  
*North, E.*, on fuel, xi, 66.  
 North America, Report on the Zoology of, xxxi, 343, 356, 376.  
 North American Medical and Surgical Journal, xviii, 203.  
 North Carolina, basalt, basaltic dikes ("natural walls") and petrifications of, *J. Beckwith*, v, 1.  
 ———, natural walls of Rowan, xiv, 242.  
 ———, mining district of western part, *J. Peck*, xxiii, 1.<sup>f</sup>  
 ———, origin and character of the low country, *E. Mitchell*, xiii, 336.  
 ———, red sandstone of, *D. Olmsted*, ii, 175.  
 ———, rocks and minerals of, *D. Olmsted*, v, 257.  
 ———, geological survey of, in contemplation, v, 202; —*D. Olmsted's* Report on the Geology of, noticed, xiv, 230.  
 ———, *J. Dickson* on the mineralogy and geology of, iii, 1.  
 ———, *T. D. Porter*, *ibid*, iii, 227.  
 ———, gold, miscellaneous notices of, iii, 3; xvi, 360; xvii, 400; xlviii, 398.  
 ———, ———, large mass of, ix, 9.  
 ———, ——— mines of, *D. Olmsted*, ix, 5; xiv, 237.  
 ———, ———, on the mines of, *C. E. Rothe*, xiii, 201.<sup>f</sup>  
 ———, ———, on the region of, *E. Mitchell*, xvi, 1.<sup>f</sup>  
 ———, ———, remarks on, *J. Peck*, xxiii, 1.<sup>f</sup>  
 ———, ———, on the nature of the deposits of, *F. L. Smith*, xxxii, 130.  
 ———, ———, talcose slate, the rock of, *A. Eaton*, xviii, 50.  
 ———, heights of several mountains in, with remarks on their features, (Table Mountain, Roan, Black, Grandfather, Yeates's Knob, Pilot,) *E. Mitchell*, xxxv, 377.  
 ———, temperature of wells and springs, xxxv, 379.  
 North magnetic pole, revolution of, around the north pole of the earth, xxix, 352.  
 North pole and northwest passage, i, 101.  
 Northern Antiquaries, Society of, xlii, 214.

- Northern lights, see *Aurora Borealis*.
- Northwest passage, and Greenland ice, i, 101.
- , —, *I. Lea*, x, 138.
- Northrop, B. F.*, fluid in hornstone, vii, 283.
- Norton, W. A.*, Treatise on Astronomy by, noticed, xxxvi, 197.
- , on the tails of comets, xlvi, 104.<sup>f</sup>
- Norton, J. P.*, analysis of Sillimanite, xlvi, 382.
- Notices of books, see *Works*.
- Nova Scotia, short notice of the minerals of, xii, 176.
- , mineralogy of, *F. Alger*, xii, 227.
- , geology and mineralogy of, *C. T. Jackson* and *F. Alger*, xiv, 305, with a map; xv, 132<sup>f</sup>, 201; xxii, 167.
- , fossils in the iron ore of, xv, 201.
- , scientific excursions to, from Williams College, with an account of the minerals and geology of, xxx, 330.<sup>f</sup>
- , fossils and fossil wood of, xxx, 339.<sup>f</sup>
- , grindstones, xv, 148; xxx, 338.
- , coal, bituminous, xv, 149.
- , fossil trees, upright in the coal strata of, xlv, 353.
- , gas, from the coal mine of, xxx, 184.
- , coal and gypsiferous formation of, xlv, 356.
- Novaculite, or whetstone of North Carolina, v, 262; xiv, 238.
- in Georgia, xvi, 185.
- in Ohio, xvi, 374.
- of Lake Memphremagog, Canada, v, 41, 406.
- Nucula, see under ZOOLOGY, *Mol-lusca*.
- Nugent*, geology of some West India Islands, i, 140.
- Nulty, E.*, on formulæ for comets, xxxviii, 160.
- Number *five*, the most favorite of nature, xvi, 172.
- Numbers, interesting properties of, *G. R. Perkins*, xl, 112.
- , analysis of square, *A. D. Wheeler*, xxv, 87.
- Numerical faculties, theory of, vii, 285.
- Nutation, new determination of, *Peters*, xlvii, 90.
- Nutmeg, in Singapore, xlv, 153.
- Nutriments of gelatine, xxii, 197.
- Nutritious matter from an acre of land cultivated with potatoes or wheat, *Eli Ives*, i, 297.
- Nutt, R.*, on the origin and extension of prairies, xxiii, 40.
- , observations on the lower part of the Mississippi valley, xxiii, 49.
- Nuttall, T.*, plants collected in East Florida, v, 286.
- , serpentine rocks of Hoboken, iv, 16.
- , observations and geological remarks on the minerals of Paterson and the valley of Sparta, N. J., v, 239.
- , reply to *H. Seybert*, vi, 171.
- , Botany of, noticed, xiii, 99.
- , proposed work on birds, xx, 154.
- , —, —, noticed, xxii, 178.
- , North American Sylva, noticed, xlv, 194.
- O.
- Obesity, xxii, 194.
- Obituary of Adam Afzelius, xxxiii, 211.
- *J. Aldini*, xxvii, 405.
- Duke of Atholl, xx, 307.
- *R. Bakewell*, xlv, 403.
- *D. H. Barnes*, xv, 401.
- *Mark Beaufoy*, xxviii, 340.
- *John, Duke of Bedford*, xl, 219.
- *Andrew Bell*, xxiii, 370.
- *E. T. Bennet*, xxxii, 215.
- *J. Bentham*, xxiii, 370.
- *Sir Charles Blagden*, ii, 344.
- *J. F. Blumenbach*, xl, 219.
- *Bode*, xv, 177.
- *E. Boethor*, of Paris, v, 180.

- Obituary of C. Bonnycastle, xl, 375.  
 — C. V. de Bonstetten, xxiii, 370, 371.  
 — Camille Borghèse, xxiii, 370.  
 — N. Bowditch, xxxiv, 220; xxxv, 1.<sup>f</sup>  
 — G. T. Bowen, xv, 403.  
 — S. Breislak, xii, 192.  
 — Henry Browne, xx, 307.  
 — Archibald Bruce, i, 299.<sup>f</sup>  
 — Carreno, xliii, 215.  
 — G. L. J. Carre, xxiii, 371.  
 — Angelo Cesaris, xxiii, 370.  
 — J. F. Champollion, xxiii, 371.  
 — J. A. Chaptal, xxvi, 127.  
 — Chenevix, xx, 305.  
 — G. Chilton, xxxi, 421.  
 — Chladni, xv, 177.  
 — Sheldon Clark, xli, 217.<sup>f</sup>  
 — J. F. Coindet, xxvii, 404.  
 — Condorcet, widow of, vii, 200.  
 — Corvisart, of Paris, v, 179.  
 — G. Crabbe, xxiii, 370.  
 — Wm. Cristy, xl, 219.  
 — Allan Cunningham, xl, 219.  
 — R. Cunningham, xxxii, 215.  
 — G. Cuvier, memoir of, xxiii, 303, 371.  
 — Sir Humphrey Davy, xvii, 157.<sup>f</sup>; review of the labors of, 217.  
 — B. Dearborn, xxxviii, 154.  
 — A. P. De Candolle, xlii, 217; xlv, 217.  
 — R. L. Desfontaines, life and writings of, xxvii, 201.  
 — Alberic Deville, xxiii, 371.  
 — Simeon Dewitt, xxvii, 395.  
 — David Don, xliii, 214.  
 — A. Doolittle, xxii, 183.  
 — David Douglas, xxx, 196.  
 — Auguste Duvau, xxiii, 371.  
 — Amos Eaton, xliii, 215.  
 — J. P. Emmet, xliii, 404.  
 — J. Esmark, xl, 220.  
 — Martin Field, xxvi, 204.  
 — A. M. Fisher, v, 367.<sup>f</sup>  
 — Fourier, xx, 174.  
 — J. Fraunhofer, xv, 177; xvi, 304.  
 — Fresnel, xv, 177.  
 Obituary of Fuss, xv, 177.  
 — Evariste Gallois, xxiii, 371.  
 — George Gibbs, xxv, 214.  
 — Davies Gilbert, xl, 219.  
 — C. Vidua le Gonzano, xxiii, 198.  
 — John Gorham, xvi, 400.  
 — Prof. Gouan, of France, v, 179.  
 — Guillemin, xliii, 214.  
 — Frederick Hall, xlv, 404.  
 — R. Harlan, xlvi, 216.  
 — R. J. Haüy, viii, 362.  
 — Sigismund Hernstadt, xxvi, 402.  
 — Frederick Hoffman, xxxiii, 76.  
 — Hosack, xxix, 395.  
 — François Huber, xxiii, 117.  
 — Baron Jacquin, xl, 219.  
 — Patrick Keith, xl, 219.  
 — George Knox, xv, 189.  
 — Don Mariano Lagasca, xl, 219.  
 — J. L. Lagrange, xxx, 64; xxxi, 97.  
 — Marquis de la Place, xiii, 166; xxv, 1.  
 — Lambert, xliii, 214.  
 — P. A. Latreille, xxv, 431.  
 — Thomas Lawrence, xx, 308.  
 — L. Lederer, xlv, 216.  
 — Leroux, xxiii, 371.  
 — C. Linnæus, xxv, 151.  
 — James H. Linsley, xlvi, 216.  
 — Martin Lister, xxxvii, 136.  
 — Littrow, xl, 220.  
 — Wm. Maclure, xxxix, 212; xlvii, 1.<sup>f</sup>  
 — Sir J. Mackintosh, xxiii, 370.  
 — Jared Mansfield, xviii, 208.  
 — E. P. Mason, xl, 407; xliii, 381.  
 — Wm. Meade, xxv, 215.  
 — Prof. Meyen, xl, 219.  
 — J. S. Miller, notice of, xx, 300.  
 — S. L. Mitchell, xxvii, 149.  
 — F. Mohs, xl, 220.  
 — Boissel de Monville, xxiii, 371.  
 — John Murray, ii, 355.  
 — Næff, xxiii, 370.

- Obituary of J. N. Nicollet, xlv, 404; xlvii, 139.
- H. W. M. Olbers, xxxix, 387.
  - B. Oriani, xxv, 186.
  - T. Ornie, xxiii, 370.
  - T. Pennant, xxxvii, 146.
  - Persoon, xxxii, 215.
  - H. Pestalozzi, xiii, 183.
  - William Phillips, xv, 160.
  - M. A. Pictet, x, 179.
  - S. D. Poisson, xl, 220.
  - J. Priestley, xxiv, 28.
  - J. Prince, xxxi, 201.<sup>f</sup>
  - C. S. Rafinesque, xl, 221.
  - Ramond, xv, 177.
  - Reichenback, xv, 177.
  - Abel Remusat, xxiii, 371.
  - James Rennell, xx, 304.
  - Stephen Van Rensselaer, xxxvi, 156.
  - La Rochefoucauld-Liancourt, xiii, 167.
  - Rodrigues, v, 193.
  - Count Rumford, xix, 28; xxxiii, 21.
  - Thomas Say, xxvii, 393.
  - Scarpa, xxv, 184.
  - L. D. de Schweinitz, xxvi, 218.
  - Schubert, xv, 177.
  - G. S. Serullas, xxiii, 271.
  - Charles Silvertop, xl, 220.
  - Nathan Smith, xvi, 211.
  - Wm. Smith, xl, 219.
  - Smithson, xx, 306.
  - L. Simond, xxxiii, 371.
  - G. Spurzheim, xxiii, 356.
  - Sir John St. Aubyn, xl, 220.
  - M. F. de St. Fond, ii, 352.
  - Edward Thomas, xxii, 380.
  - Sir Benjamin Thomson (Count Rumford), xix, 28; xxxiii, 21.
  - John Trumbull, xlvi, 216.
  - Edward Turner, xxxii, 213.
  - Vaucher, xliii, 215.
  - Benjamin Vaughan, xxix, 395.
  - Vigers, xl, 219.
  - Vogel, xliii, 215.
  - Alexander Volta, xv, 67.
  - Eli Whitney, xxi, 201.<sup>f</sup>
  - F. P. Wilmsen, xxii, 380.
- Obituary of Wollaston, xvi, 216; xvii, 159.
- Thomas Young, xxii, 232.
  - F. X. Baron de Zach, xxiv, 194.
- Observatory, a new Astronomical, at Berne, in Switzerland, vii, 374.
- , letter on, from *Encke* to *A. D. Bache*, xxxviii, 184.
  - , at Cape of Good Hope, xxxviii, 95.
  - , near Glasgow, xl, 344.
  - , at Geneva, xxiii, 390.
  - , at Rome, xlv, 373.
  - , at Pulkova, astronomical operations at, xlvii, 88.
  - , at St. Petersburg, a new, xxviii, 200.
  - , at Havana, xlii, 153.
  - , remarks on certain, (Cambridge, Brussels, Calton Hill at Edinburgh,) xxviii, 67, 69.
  - , United States, Cambridge, xlv, 224.
  - , —, at Girard College, authorized, xxxviii, 398.
  - , —, in Philadelphia, in Rittenhouse Square, xl, 375.
  - , —, of Hudson, Ohio, Western Reserve College, *E. Loomis*, xxxix, 361.
  - , —, of Yale College, latitude and longitude of, xxxiv, 309.
  - , instruments proper for a small, xxxviii, 185.
  - , magnetical, at Dublin, xxxiv, 3.
  - , —, establishment of, recommended by the British Association, xxxviii, 108.
- O'Brien, L.*, on a case of transpiration, xxxix, 400.
- Obsidian, West Indies, i, 237.
- , used for cutting instruments by the Mexicans, xvi, 161.<sup>f</sup>
- Occultation of Aldebaran, July, 1830, xix, 170.
- Ocean, natural history of, v, 128.
- , color of, vi, 198; xxix, 237.
  - , —, cause of, xvii, 170; xxvi, 65.<sup>f</sup>
  - , depth of, v, 130; xl, 407.

- Ocean, depth of, not determined from the echo, xxxviii, 160.
- , temperature in different parts, v, 129; xxv, 130.
- , — and saltness of, at different depths, xxiii, 10.
- , — at great depths, xvii, 295.
- , — ibid, *Foster's* observations, xvii, 299.
- , — ibid, *Irving's* observations, xvii, 299.
- , — ibid, *Scoresby and Buchan*, xlv, 139, 140.
- , —, between New York and Rio, 1834, xxix, 237.
- , saltness of, *H. Humphreys*, xlix, 208.
- , —, remarks on, v, 131.
- , —, at different depths, xxiii, 10.
- , pressure of, at great depths, xiv, 194.
- , deep soundings in, by the French ship *Venus*, xl, 407.
- , phosphorescence of, v, 133; xvii, 209; xviii, 166, 187; xxxvi, 208.
- , supposed effects of, on the features of western New York, during its elevation, xxxv, 86.
- , see *Sea water*.
- Oceanic currents, v, 132.
- —, of the Atlantic, iv, 390.
- —, of the Gulf Stream, v, 133, 353.
- —, general remarks on, *W. C. Redfield*, xxv, 130;—circuit currents of the Atlantic and Pacific, 130, 131; cold polar currents flowing beneath the tropical, and carrying icebergs into the Gulf Stream, 131; their influence on climate, 133.
- —, tidal, course of, in the Atlantic, *W. C. Redfield*, xxviii, 313.
- —, Gulf Stream, relation of, to an opposite current on the North American coast, *W. C. Redfield*, xxxii, 349.
- Oceanic currents, Gulf Stream, icebergs carried into, by the deeper polar current, *W. C. Redfield*, xxxii, 351, 352;—lower temperature on shoals and shores due to the submarine current, 353.
- —, prevailing, and observations on tides, *W. C. Redfield*, xlv, 293.
- —, on ancient polar, *W. C. Redfield*, xliiii, 152.
- —, effects of polar, *W. C. Redfield*, xlv, 326.
- —, of the north Atlantic and the drift ice, with a map, *W. C. Redfield*, xlviiii, 373.
- —, Gulf Stream, existence of, determined by *B. Franklin*, xlvi, 162.
- —, — —, remarks on, *M. F. Maury*, xlvi, 161;—warmth of, 162; course, color, 164; relation of amount of waters to waters of Mississippi, 165; causes of, 165; evidence from bottles thrown overboard, 167; temperature of, 175; cold northern currents, 177; Japan currents, 181.
- —, tidal, see farther under *Tides*.
- Ochres, in Connecticut, v, 36.
- , in Vermont, iii, 58; iv, 43.
- Odessa, notice of, vi, 386.
- Odontograph, xxxv, 319.
- Odors affected by electricity, xv, 394.
- Odor, like Benzoin, from a man's arm, xxii, 368.
- of wines due to œnanthic ether, xxxii, 381.
- œnanthic ether, xxxii, 381.
- acid, xxxii, 382.
- Ersted*, *H. C.*, on water-spouts, xxxvii, 250.<sup>f</sup>
- , on tornadoes, xxxviii, 82.
- , allusion to discoveries in electro-magnetism, v, 388.
- Ørstedite, xxx, 179.



- Ogden, H. W.*, on water-spouts, xxix, 254.
- Ohio, notes on, i, 207, 311.
- , Medical College of, i, 311.
- , Belmont Co., scenery, geology, mineralogy, botany, &c., of, *C. Atwater*, i, 226.
- , winds of, *C. Atwater*, i, 276.
- , vegetable impressions in the coal strata of Zanesville, *E. Granger*, iii, 5.<sup>f</sup>
- , facts relating to certain parts of, *S. P. Hildreth*, x, 1;—Washington Co., soil, &c., 2; caverns on the Little Hockhocking, 3; limestone and coal, salt borings, 4; gas from springs, 5; petroleum, 5; iron ore, 7; ochres, pyrites, 8.
- , notes on, in reply to inquiries by *C. Atwater*, *S. P. Hildreth*, x, 152;—Marietta, size, manufactures, &c., 152; county of Washington, statistics, 153; settlement of different places of Ohio, 153, 154, 155; attacks of Indians, 154; escape of R. J. Meigs, 157; Indian Mounds, &c., 160.
- , *ibid*, *S. P. Hildreth*, xi, 231;
- on the plants of, climate, &c., 231; epidemic disorders, influenza, &c., 233; diseases of cattle, 234; crimes, suicide, 235; education, 235; population of Marietta, 236; sect of Halcyons, 236; antiquities, 237; meteors, 237; storm of May 28, 1809, 238.
- , on the geology, climate, diseases, &c., of, *C. Atwater*, xi, 224.
- , Washington Co., climate and productions of, *S. P. Hildreth*, xii, 206.
- , coal and diluvial strata of, *S. P. Hildreth*, xiii, 38.
- , people of, *C. Atwater*, xiii, 200.
- , miscellaneous notices of rocks and minerals of, *S. P. Hildreth*, xvi, 154.
- Ohio canals, xx, 416.
- , boulders of, *D. and I. A. Lapham*, xxii, 300.
- , saliferous rock formation of, *S. P. Hildreth*, xxiv, 46.
- , ten days in, xxv, 217;—Marietta, notice of, 217; Waterford, 221; Morgan Co., 227; Zanesville, 228; Putnam, 230; Muskingum Co., 230; Perry Co., 232; Flint ridge, 233; buhrstone, 233; Tumuli, 234; Somerset, 236; Rushville and Rush Creek, 236; Lancaster, 237; Pickaway Co., 238; Circleville ancient works, 238; Scioto aqueduct, 240; Williamsport, 247; the Barrens, 248; Westport, 249; Chilicothe, 251; Pickaway plains, 255.
- , channels of streams far below the general level, deeply seated, xxv, 223.
- , on the bituminous coal deposits of the Ohio valley, *S. P. Hildreth*, xxix, 1<sup>f</sup>;—general topography, 7; Muskingum valley, 9<sup>f</sup>; Putnam Hill strata, 30<sup>f</sup>; cannel coal, 39; calcareous breccia, 43; Hockhocking valley, 46; buhrstone, 142.
- , miscellaneous notices of, *S. P. Hildreth*, xxxi, 1;—steamboats, 1; Sun-fish creek, 2; grave creek, bituminous coal, Wheeling and Indian attacks, 3; Wellsburg, Steubenville, 6; Judge Tappan's cabinet, 7; ancient Indian sculpture, 8<sup>f</sup>; Mingoës, Logan, Henry Jolly, 10; Mr. Slack's spring garden, 14; Lewis Wetzel, 14; Brady and Brady's Hill, 20, 21; Connecticut Reserve, 21, 34; Poland, Dr. Kirtland's collection of shells, 22; Mahoning valley, tertiary deposits, 24<sup>f</sup>; coal deposits, 27; natural mounds, fossil plants, 28<sup>f</sup>; massasauga, rattle snakes, 32; gypsum of Canfield, 34; ponds of Portage Co., 35; *Lymnæa stagnalis* and *Helices*, &c., 35.<sup>f</sup>

- Ohio, miscellaneous notices of, *S. P. Hildreth*, xxxi, 1;—Portage Co., 37; Ohio and Pennsylvania canal, 40; Brady's Pond, 42; Falls of the Cuyahoga, 45<sup>f</sup>; travertine, 50; marl beds, 55; mastodon bones at Massillon, 56; Fort Lawrence, 57; village of Zoar, 59; and great ferruginous deposits, 61; Newcastle, coal, 63; Gnadenhutzen, 64; Rev. J. Heckewelder, 66; Coshocton Co., 69; narrows of Licking, 70; rock strata, 71; trilobites, 72<sup>f</sup>; Delaware sulphur springs, 73; sulphuret of iron, 74; Zanesville, 75<sup>f</sup>; cannel coal, 79; cabinet of the Atheneum at Zanesville, 79; fossil bones of ovis, &c., 80.<sup>f</sup>
- , Geological Reports of, noticed, xxxii, 190; xxxiv, 196, 347<sup>f</sup>; xl, 126.
- , *ibid*, with extracts, xxxiv, 347;—extent of coal in, 348, 357; degradation on Lake Erie, 349; buhrstone of, 352, 353; iron ore deposits, 357; fossil elephant of Salt Creek, 358, 362.<sup>f</sup>
- , Indian mounds and relics, *C. Whittlesey*, xxxiv, 361.
- , hurricane in, Oct. 20, 1837, *E. Loomis*, xxxiii, 368.<sup>f</sup>
- , prairies of, xxxiii, 230.
- , cannel coal in, xviii, 376; xxix, 39; xxxi, 79.
- , buhrstone in, xxv, 233; xxix, 142; xxxiv, 353.
- , mastodon remains in, ii, 245<sup>f</sup>; xxv, 256; xxx, 394; xxxi, 56; xxxvi, 189.<sup>f</sup>
- , heights of various points in, *C. Whittlesey*, xlv, 12.
- , meteorological observations in, see under *Meteorology*.
- Oils, depuration of, xxiv, 200.
- , action of, on oxygen gas, xxiii, 190.
- , bleaching, xlvii, 196.
- , proportion of, in different oleaginous plants, xviii, 150.
- of balsam copaiva, xxviii, 384.
- Oil of cajeput, xxviii, 384.
- of the Chené, ii, 264.
- of cinnamon, xxviii, 385.
- of the Croton tiglium, xiv, 369.
- from grape seed, ii, 348.
- of Indian corn, xliii, 403.
- , inflammable, xii, 388.
- of juniper, xxviii, 385.
- , olive, impurities in, xix, 76.
- , —, purification of, for chronometers, xx, 166.
- from the spirit of wine of potatoes, *J. Dumas*, xxviii, 386.
- , essential, of potatoes, xxxii, 382.
- of Ricinus communis, impurities in, xix, 77.
- of roses, on the preparation and analysis of, *R. Blanchet*, xxviii, 383.
- of turpentine, see *Turpentine*.
- of sweet almonds, impurities in, xix, 76.
- of the tutui or candlenut tree of the Sandwich Islands, xxxiv, 209.
- of wine, destructive distillation of, xxxvi, 76.
- from white fish, xxxv, 391.
- , essential, adulteration of, with alcohol, xix, 77; xlvii, 197.
- , —, action of, with sulphurous acid, *R. Hare*, xxxi, 281.
- , watchmaker's, best, ix, 202.
- Oil-casks, rendered impermeable by glauber salt, xxx, 173.
- Oilstone, of Ohio, xvi, 374.
- , of Georgia, xvi, 185.
- , of Lake Memphremagog, v, 41, 406.
- , of North Carolina, v, 262; xiv, 238.
- Olbers, H. W. M.*, obituary of, xxxix, 387.
- Old man of the Mountain, xiv, 64.<sup>f</sup>
- Olea Americana, northern limit of, *H. B. Croom*, xxvi, 315.
- Oligostachyum, iv, 58.
- Oliver, B. L.*, on prussic acid, iii, 182.
- , letter to, on Otahete, *J. A. Maerenhaut*, xxix, 283.

*Oliver, B. L.*, on the use of iodine in gout, xvi, 176.

*Olivine* from near Naples, *L. P. Walmstedt* on, ix, 378.

— and chrysolite, comparative analyses of, xiii, 184.

*Olmsted, D.*, red sandstone of North Carolina, ii, 175.

—, geological survey of North Carolina, in contemplation, v, 202.

—, rocks and minerals of North Carolina, v, 257.

—, on the gold mines of North Carolina, ix, 5.

—, Report on the Geology of North Carolina, noticed, xiv, 230.

—, report on the state of chemical science in 1826, xi, 349; xii, 1.<sup>f</sup>

—, on the materiality of heat, xi, 356; xii, 359.

—, notice of illuminating gas, from cotton seed, viii, 294; x, 363.

—, on the excessive use of sulphur, viii, 394.

—, meteorological report, for 1827, xiv, 176.

—, — — —, for 1828, xvi, 70.

—, on the phenomena and causes of hail storms, xviii, 1.<sup>f</sup>

—, on adjusting lightning rods, xviii, 362.

—, reply to A. T. Christie on hail-storms, xx, 373.

—, on the New Haven tornado, July, 1839, xxxvii, 340.<sup>f</sup>

—, on the nature and cause of the meteors of Nov. 13, 1833, xxv, 363; xxvi, 132.<sup>f</sup>

—, cause of the meteors of November, xxix, 376; xxx, 370.<sup>f</sup>

—, meteors of November, 1836, xxxi, 286.

—, — — —, 1837, xxxiii, 379.<sup>f</sup>

—, — — —, 1838, xxxv, 368.

—, — — —, 1839, xl, 202.

—, — — — of different periods, xxvi, 132.

*Olmsted, D.*, on the Aurora Borealis, xxix, 388; xxxii, 176.

—, on the Zodiacal light, xxvii, 416; xxix, 379.

—, on the eclipse of the sun, of Sept. 1838, xxxv, 174.

—, report of observations on the transit of Mercury, May, 1845, xlix, 142.

—, new experiments on the solar spectrum, xlvi, 137.

—, a paralytic affection cured by a stroke of lightning, iii, 100.

—, memoir of Eli Whitney, xxi, 201.<sup>f</sup>

—, Natural Philosophy of, noticed, xxiii, 351; xxv, 214; xxxiv, 219.

—, Introduction to Astronomy by, noticed, xxxvi, 203.

—, Life and Writings of E. P. Mason, by, noticed, xl, 407; xliii, 381.

Ontario valley, geological features of, xi, 213.<sup>f</sup>

— lake, level of, xxxiii, 122; xlv, 16.

— — —, temperature of, xxxiii, 403; xxxvii, 242.

— — —, ridge of, xxxvi, 40.

— — —, evidences of changes of level about, xxxv, 104; xxxvi, 41; xlv, 315.

— — —, small lakes running into, xxxvi, 42.

— — —, shore of, and height of water in, xxxvi, 43.

Onyx, in Missouri, iii, 71.

Oolitic formation in America, xl, 41.

— — — in New York, Orange Co., xix, 398.

— — —, in Saratoga Co., *J. H. Steele*, ix, 16.<sup>f</sup>

— — — in Ohio, xlii, 233.

— fossils, remarks on, xxxiii, 107.

Oology, notice of *W. Hewitson's* work on, xxxvii, 166.

Opal at Vienna, a large, xii, 384.

— from the graphite mine of Pfaffenreith, one-third water, xv, 390.

- Opelousas, geological notice of, xxxv, 344.
- Ophisaurus ventralis, i, 262.
- Opiamon, xlix, 205.
- Opianic acid, xlvii, 196; xlix, 205.
- Opiano-sulphurous acid, xlix, 205.
- Opium, constitution of, xxviii, 359.
- , mode of detecting minute quantities of, *R. Hare*, xii, 290.
- , observations and experiments on, *G. W. Carpenter*, xiii, 17.
- , English, viii, 389; x, 194.
- , paramorphine in, xxiv, 374.
- , thebaine in, xxx, 379.
- Opossum, remains in the Stonesfield slate, xxvii, 412; xxxvii, 228.
- Optics, notice of *D. Brewster's* Treatise on, xxiv, 389.
- Optical amusements, xvi, 398.
- experiment, exhibiting the blood vessels of the eye, xxi, 166.
- deception, instrument for exhibiting a certain, *E. S. Snell*, xxvii, 310.
- instruments, xix, 390.
- properties of saccharine juice, *Biot*, xxiv, 379.
- structure of minerals, notice of, ix, 384.
- surgery, xviii, 179.
- trap, v, 200.
- Orang Outang, account of, xv, 161.
- Orange County of New York, natural history of, *J. Van Rensselaer*, xiii, 224.
- , mineral notices of, *C. U. Shepard*, xxi, 321.<sup>f</sup>
- , —, —, *J. Fowler*, ix, 242.
- Orangeries, v, 190.
- Orchis tribe, synonymy of some species of, *A. Gray*, xxxviii, 306.
- spectabilis, monstrous flower of, *J. W. Bailey*, xxxv, 117.<sup>f</sup>
- Ordinaire, *J. J.*, method of teaching Latin used by, v, 182; vii, 383.
- , on public instruction, vii, 199, 383.
- Oregon, fossil bones from, *H. C. Perkins*, xlii, 136.<sup>f</sup>
- Oregon, fossil bones from, orycterotherium, &c., *R. Harlan*, xlv, 79.
- , geological and miscellaneous remarks on, *J. Ball*, xxviii, 1.
- , climate of, and a meteorological register kept at Fort Vancouver, 1832, 1833, *J. Ball*, xxviii, 8.
- Orenburg, salt steppe of, xlv, 205.
- Orford brown tourmaline, xxxiv, 204.
- Organic remains, see *Fossil*.
- Oriani, B.*, death of, xxv, 186.
- Oriental, style of, v, 181.
- Oriental minerals, *F. Hall*, xxxiii, 249.
- Ornithichnites, see *Footprints*.
- Ornithological terms, improved, xxi, 162.
- Ornithology, work on, by *T. Nuttall*, noticed, xx, 154; xxii, 178; xxv, 424.
- , see farther under *Zoology*.
- Orr, I.*, on the process of memory, xxiii, 278.
- , on the formation of the universe, vi, 128.<sup>f</sup>
- , on infinites, v, 326.
- , mathematical propositions by, xxiv, 395.
- Orthite, ix, 376.
- Orthocerata, see *ZOOLOGY, Mollusca*.
- Orthography, English, proposals for improving, xxxix, 197.
- Orycterotherium, xlii, 136<sup>f</sup>, 392; xlv, 69<sup>f</sup>; xlv, 210.
- Missouriense, xlv, 69<sup>f</sup>; xlv, 210.
- Origonense, xlii, 136<sup>f</sup>; xlv, 79.
- Osborn, M. W.* and *N. S.*, on a vibrating dam, xlv, 366.
- Osler, F.*, on indications of his anemometer, xxxviii, 103.
- Osmelites, xv, 388.
- Osmium, atomic weight and compounds of, *E. Fremy*, xlix, 199.
- , method of obtaining, from the platinum residue, *F. Wöhler*, xxvi, 371.
- , means of obtaining pure, *E. Fremy*, xlviii, 185.

- Ossification of the vitreous humor, xvii, 186.
- Ostræa edulis, remarks on, xxxii, 241.
- , see farther under ZOOLOGY, *Mollusca*.
- Ostrich toes, xxxv, 312.
- Otaheite, letter on, by *J. A. Maerenhaut*, xxix, 283.
- , contents of *J. A. Maerenhaut's* work on, xxix, 290.
- Otto, on the separation of zinc from manganese, xlvi, 194.
- Oval arches, tracing of, *E. Miller*, xxii, 303.<sup>f</sup>
- Owen, *D. D.*, on fossil palm trees in Indiana, xlv, 336.
- , on geological coloring and symbols, xlv, 351.
- , on geological paintings and illustrations, xlv, 136.
- , geology of the Western States, xliv, 365; xlv, 151, 163.
- , report on Indiana, notice of, xxxiv, 193; xl, 133.
- , on human footprints in limestone, xliii, 14.<sup>f</sup>
- , review of New York Geological Reports, xlvi, 143; xlvii, 354<sup>f</sup>; xlviii, 296.<sup>f</sup>
- , meteorological notices in Indiana, xxix, 294.
- Owen, *Richard*, Wollaston medal, presented to, xxxv, 197.
- , on the fossil bones collected by *C. Darwin*, xxxv, 196.
- , structure of fossil teeth, xxxv, 307.
- , on the *Megatherium*, xxxvii, 371.
- , on *R. Harlan's* notice of new fossil mammalia, xliv, 341.
- , reply of *R. Harlan* to, xlv, 208.
- , on the *Dinornis*, and the Connecticut valley fossil footprints, xlv, 185; xlviii, 194.
- , on the bird's nests of New Holland, xlviii, 61.
- , Report on the Fossil Mammalia of Great Britain, xlvi, 186.
- Owen, *Robert*, establishment at New Harmony, x, 165; xi, 188.
- , Plans of Education, &c., ix, 161, 383.
- Owhyhee, see *Sandwich Islands*—also under *Geology* and *Volcanoes*.
- Oxahverite, xv, 387, [Apophyllite.]
- Oxalates, experiments on certain, xiii, 188.
- Oxalate of lime, crystallized in plants, xxi, 372.
- Oxalic acid, *Gay Lussac*, xxvii, 400.
- ether, new product from, *Malaguti*, xl, 215.
- — and chlorine, compound of, xl, 215.
- Oxygen, absorption of, by water, ii, 349.
- , abstraction of, from the atmosphere, xii, 91.
- , specific gravity of, xxxv, 298.
- , delicate test of, in a gaseous mixture, xvi, 397.
- , a means of resuscitating from drowning, xvi, 250.
- , respiration of, i, 95.
- , action of oils upon, xxiii, 190.
- Oxygenized water, iii, 369.
- Oxy-hydrogen blowpipe, see under *Blowpipe*.
- — illumination in light-houses, xxviii, 355.
- Oxyria reniformis, xlv, 29.
- Oysters, ancient and modern history of, xxxii, 241.
- , fishery of, xxxii, 245.
- , habits of, xxxii, 244.
- , uses, xxxii, 246.
- Ozocerite, new mineral species, xxvi, 388.
- Ozone, the cause of the electrochemical odor, *C. F. Schönbein*, xli, 44.
- , nature and properties of, *F. de Moleyns*, xlii, 318.
- , notice of, xlix, 195.

## P.

- Pachuca silver mines, xxiv, 231.  
 Pacific, Caroline Islands, some account of, xxviii, 115.  
 —, currents of, xxv, 131; xlv, 299.  
 Packfong, composition of, xv, 396.  
 Paddle fish, Ohio, xii, 201.<sup>f</sup>  
 Paddle wheel and screw, propulsion of vessels by, xlii, 336.  
 Padua, v, 177.  
 Pæstum, on the stone of which the temple of, is built, xxxvii, 366.  
*Page, C. G.*, movements on the surface of water produced by the vibration of glass, xxx, 192.  
 —, echo in Virginia, xxxvi, 174.  
 —, new electrical instruments, xxvi, 110.<sup>f</sup>  
 —, method of increasing shocks with J. Henry's apparatus for obtaining sparks and shocks from the calorimotor, xxxi, 137.<sup>f</sup>  
 —, iron, lead and other metals, a substitute for copper in galvanic apparatus, xxxii, 197.  
 —, on the use of the dynamic multiplier, xxxii, 354.<sup>f</sup>  
 —, musical tones from magnets, xxxii, 396; xxxiii, 118; xlvi, 401.  
 —, electro-magnetic apparatus and experiments, xxxiii, 190.<sup>f</sup>  
 —, — experiments on the application of electro-magnetism as a moving power, xxxiii, 118, 190<sup>f</sup>; xxxv, 106.  
 —, rotary multiplier, or astatic galvanometer, xxxiii, 376.<sup>f</sup>  
 —, new form of electrometer, xxxiii, 377.<sup>f</sup>  
 —, new magnetic electrical machine of great power, with two parallel horse-shoe magnets and two straight rotating armatures, with experimental researches, xxxiv, 163.<sup>f</sup>  
 —, *ibid*, fusion of iron filings by, xxxiv, 169.  
 —, compound electro-magnets for the magnetic electrical spark, shock and decomposition, xxxiv, 364.

- Page, C. G.*, magneto-electric multiplier convertible into an electro-magnetic engine, xxxiv, 368.<sup>f</sup>  
 —, magneto-electric and electro-magnetic apparatus, xxxv, 252.<sup>f</sup>  
 —, magnetic electrometer and electrotonne to be used with flat spirals, xxxv, 112.<sup>f</sup>  
 —, compound electro-magnet and electrotome, xxxv, 253.<sup>f</sup>  
 —, circular galvanometers, xxxv, 259.<sup>f</sup>  
 —, revolving armature machine, xxxv, 262<sup>f</sup>; xxxvi, 350.<sup>f</sup>  
 —, reciprocating armature engine, xxxv, 263.<sup>f</sup>  
 —, vibrating armature engine, xxxv, 267.<sup>f</sup>  
 —, double helix for inducing magnetism, xxxv, 261.<sup>f</sup>  
 —, on the benefit of fresh immersion in galvanic batteries, xxxvi, 137.<sup>f</sup>  
 —, the galvanoscope, a means of detecting the failure of water in steam boilers, xxxvi, 141.<sup>f</sup>  
 —, observations on electricity, xxxvi, 353.  
 —, magneto-electric multiplier, xxxvii, 275.<sup>f</sup>  
 —, an improved form of Saxton's magneto-electric machine, xlvi, 392.  
 —, new electro-magnetic machine, xlix, 131.<sup>f</sup>  
 —, new axial galvanometer, xlix, 136.<sup>f</sup>  
 —, double axial reciprocating engine, xlix, 139.<sup>f</sup>  
 —, entomological cabinet of, for sale, xxxix, 211.  
 —, mode of preserving Lepidoptera, xlvi, 131.  
*Paine, M.*, Medical Commentaries, notice of, xxxix, 209.  
*Paine, R. T.*, on barometric minima of Feb. 16–19, 1842, xlii, 403.  
 —, on the solar eclipse of July 8, 1842, xlii, 175.  
 Paint, fine scarlet, for the pallet, xvi, 174.

- Paint, a new green, for artists, xxviii, 148.
- , use of alumina with, for the pallet, xvi, 173.
- Rock, Virginia, i, 67.
- Painting in fresco, means of detaching, iv, 384.
- on ivory, color of carmine, how produced by red lead, xxvi, 74.
- of a Parthian archer, by D. Scott, xlii, 215.
- of porcelain, iii, 217.
- of the Declaration of Independence, by Col. Trumbull, i, 200.
- Paintings, historical, by J. Trumbull, xvi, 163.
- , Trumbull Gallery of, at Yale College, xxxix, 213.<sup>f</sup>
- , transparent, by Kœnig, ii, 348.
- , remarks on colors for, xxvi, 74, 75.
- Palæonisci found in New Jersey, xlv, 135.
- Palæontology, *W. Whewell's* remarks on, xxxvii, 227.
- Palæozoic rocks, classification and nomenclature of, *H. D.* and *W. B. Rogers*, xlvii, 111, 154.
- Palermo, iii, 396.
- Palestine, on minerals from, *F. Hall*, ix, 337.
- , —, *I. Bird*, x, 21.
- , various facts relating to, *I. Bird*, xii, 145.
- , notices of, in a letter by *I. Bird*, xv, 374.
- , climate of, xxxi, 183.
- , account of, *J. D. Sherwood*, xlviii, 2.
- Palisades, ii, 182.
- Palms, *C. F. P. von Martius* on, noticed, viii, 383.
- Palm trees, fossil, Indiana, *D. D. Owen*, xlv, 336.
- , seed of, Mariner's Mill, Ohio, xxxi, 28.<sup>f</sup>
- , leaf of, Ohio, xxxi, 35.<sup>f</sup>
- Palmacites, fossil plants, generic characters of, vii, 182.
- Palmetto, used as food in Florida, xxxv, 59.
- Paludina, see ZOOLOGY, *Mollusca*.
- Pantology, of *R. Park*, noticed, xli, 389; xlii, 192.
- Pantoppidan's* account of the sea serpent, ii, 163.
- Paper from the bark of willow, &c., x, 387.
- from the beach grass, xxxvi, 386.
- from husks of corn, xxvi, 193.
- made from marine plants, xv, 169.
- , ivory, iii, 370.
- , lithographic, iii, 370.
- , rice, xxiv, 207.
- for drawing, a new mode of preparing, xiv, 373.
- covered with pumice, for removing rust, xv, 169.
- making, a discovery in, made, x, 193.<sup>f</sup>
- hangings, how protected from injury by dampness of walls, vi, 396.
- Papyrus, made from plants, at Syracuse, xxvii, 80.
- Paradoxides, *J. Hall* on, xxxiii, 139.<sup>f</sup>
- Paragrèles in France, x, 196; xii, 398.
- , efficacy of, xiv, 37.
- Parallax of the star 61 Cygni, xxxvi, 200.
- Paralysis, cured by lightning, iii, 100.
- Paramorphine and Pseudomorphine, xxx, 179.
- Parasite tree, *G. W. Long*, xxvi, 106.<sup>f</sup>
- of the honey bee, xxv, 213.
- of the eggs of the canker worm, xxxviii, 385; xl, 211.
- Parasitical plants, xii, 21.
- Parhelion, singular, with theory of halos, *E. S. Snell*, xlix, 73.<sup>f</sup>
- Pargasite, in Massachusetts, x, 11.
- , in New York, xxv, 347.
- Parhelia, seen at Otisco, *W. Gaylord*, xxxix, 61.<sup>f</sup>
- , seen at Green Bay, *R. E. Clary*, xxviii, 304.<sup>f</sup>

- Parietin, *R. D. Thomson*, xlix, 195.
- Paris, J. A.*, on sandstone, i, 234.
- Paris, France, statistics of, iv, 376; ix, 202.
- , suicides in, x, 386.
- , table of punishments in, iv, 386.
- , table of epidemics in, during the past and present centuries, xxv, 197.
- , disinfection of the dead bodies at the Morgue, xxi, 149.
- fresh water formations, notice of, vi, 381.
- , Linnæan Society of, v, 382.
- , Tract Society of, v, 383.
- Conservatory of Arts and Trades, v, 383.
- Paris, Maine, minerals of, x, 14; xviii, 293.
- Parker, P.*, meteorological observations at Canton, August, 1839, xxxviii, 301.
- , on volcanic ashes, xl, 198.
- Parker*, on volcano of Hawaii, xl, 117.<sup>f</sup>
- Parkes's Chemical Catechism*, v, 398.
- Essays, noticed, viii, 190.
- Parkinson and Frodsham*, on the sea and land rates of chronometers, xxvi, 121.
- —, on chronometers, xxix, 297.
- Parnell*, on rare British fishes, xxxv, 310.
- Parnell, E. A.*, Elements of Chemical Analysis, xlv, 190.
- Parrot*, on the temperature of the globe, xxvi, 10.
- Parry, Capt. W. E.*, observations on the Aurora, notice of, xvi, 148.
- Parthian archer, picture of, xlii, 215.
- Partridge, W.*, on the manufacture of indigo in the United States, xviii, 237.
- Pascalis, F.*, remarks on hail-rods, x, 196.
- , on the small pox, x, 208.
- Pascalis, F.*, upward forces of fluids, xi, 110, 339.<sup>f</sup>
- , on the culture of silk in the United States, xvii, 202; xviii, 278.
- , obituary of, xxv, 216.
- Pasco silver mines, xvii, 43<sup>f</sup>; xxiv, 232.
- Pasquier, A. du*, iodine a reagent for hydrosulphuric acid, xl, 123.
- Passeres, new species of, xxxi, 192.
- Passiflora Warei, v, 297.
- Paste, mode of preserving, vii, 379.
- Pasteboard roofs, xxiv, 381.
- Pastils, use and preparation of alkaline, for calculus, xi, 388.
- Pasture, spring, *E. Ives*, iii, 355.
- Patagonia fossil bones, *R. Owen*, xxxiii, 208; xxxv, 196.
- fossil remains, *C. Darwin*, xxxiii, 105.
- Patents, number of new, in different countries in 1822, ix, 198.
- , agency for, at Washington, xxxi, 411.
- Patent claims in Piedmont and Sardinia, remark on, xvii, 193.
- Patten, J. H.*, air pump of, viii, 143.<sup>f</sup>
- , — —, gazometer and balance beam of, ix, 92<sup>f</sup>, 327.
- , — —, *J. F. Dana*, remarks on, viii, 275; ix, 327.
- Patterson*, on electricity from steam, xl, 382.
- Pattinson, H.*, new mode of extracting silver from lead, xxxv, 299.
- Patton, J. H.*, hurricane in India, xxxvi, 71.
- Paulding, N.*, on shells, ii, 371.
- Pavia, v, 177.
- Paving with wood, xxxviii, 136.
- Payen*, means of employing dead animals, xxiv, 326.
- , on the woody tissue of plants, xl, 176.
- , on the bleaching of oils, xlvii, 196.
- Peach trees, cause of decay in, xi, 194.
- Peaches on an almond tree, ii, 363.



- Pearl ashes, method of manufacturing, *G. A. Rogers*, viii, 304.
- Pearls and pearl fishery, xxxii, 56, 68.
- in fluviatile shells, xxv, 257.
- Pearson's Domestic Telegraph*, iv, 314.<sup>f</sup>
- Peat, on the use and mode of formation of, *E. North*, xi, 67.
- , on the origin, preparation and uses of, from a memoir by *Ribaucourt*, xv, 250.
- , gas light from, xxx, 189.
- , instance of bituminization of, in Maine, *C. T. Jackson*, xxxiv, 73.
- , in Massachusetts, xxii, 38.
- , in New York, i, 139; v, 8; xxxvi, 16.
- moss, mode of determination of age of, xxix, 349.
- Peat-bogs, observations on, *G. H. Adams*, xxxviii, 127.
- Peck, J.*, geology of the mining districts in Georgia, western North Carolina and East Tennessee, with a map, xxiii, 1.
- Pecten, uses and economical notice of, xxxii, 248, 249.
- Pectic acid, converted to oxalic, xvii, 179.
- Peirce, B.*, elements of the third comet of 1845, xlix, 220.
- Pelilot, E.*, on tea, xlviii, 187.
- Pelletier*, on guaiac resin, xlix, 194.
- Pelocnite, new mineral species, xxii, 387; xxvi, 386.
- Pelopium, new metal, xlviii, 400.
- Pelouze, J.*, on tannin, xxviii, 124.
- , on the atomic weights of simple bodies, xlvii, 188.
- , on the solubility of chlorine in water, xlvii, 191.
- Peltier*, on tornadoes, xxxviii, 401.
- Pendulum, new compensating, *W. G. Jones*, xxxviii, 274.<sup>f</sup>
- , experiments on the vibrations of, with different suspending springs, *W. J. Frodsham*, xxxvii, 278.
- Pendulum, *W. J. Frodsham's* improved compound, xxxviii, 107.
- , portable mercurial, *E. J. Dent*, xxxv, 289.
- , vibrations of a mercurial, *G. Baker*, xlviii, 156.
- , barometric compensation of, xlv, 393.
- , oscillations in the plane of the meridian and at right angles with the same, different, xxviii, 62.
- , simultaneous motions of the surrounding air and, *S. D. Poisson*, xxiii, 391.
- , *E. Sabine's* experiments with, and conclusions, xvii, 364.
- , on the reduction to a vacuum of the vibrations of an invariable, xvii, 365.
- Penetrativeness of fluids, xix, 360.
- Penguins, habits of, xlix, 151.
- Pennant, Thos.*, life and writings of, xxxvii, 146.
- Pennatule fêche, iv, 87.<sup>f</sup>
- Pennine, form and analysis of, xlvii, 216.
- Pennsylvania, coal beds of Wyoming, *Z. Cist*, iv, 1.<sup>f</sup>
- , —, —, —, rocks accompanying, vii, 260.
- , —, —, —, remarks on the properties and economical uses of anthracite, *B. Silliman*, x, 331; —characters, 332; experiments on, 333; uses of, in the arts, 337; mode of burning, 338, 341; comparative value of Lehigh and Schuylkill, 339; price in New York, 340; general qualities of, 343; documents relating to the value of, 346.
- , —, —, —, characters of anthracite, *B. Silliman*, xi, 91; —analysis of the Lehigh by *L. Vanuxem*, 93; directions as to burning, 94; remarks on *M. Bull's* memoir on the heating power of fuels, 98.
- , coal; value, position, extent, &c., of anthracite, *J. Pierce*, xii, 54.

- Pennsylvania, coal, Mauch Chunk, *J. Pierce*, xii, 56; yield of Mauch Chunk beds in 1825, and statistics relating to, 57; navigation of the Lehigh, 58; rations to laborers, 61; Mount Carbon or Pottsville, 63; price of coal, 64; Peter's Mountain, 65; Wyoming beds, 66; Lackawanna, 67.
- , —, on the bituminous, *J. Pierce*, xii, 69;—use of, in making iron, 73.
- , — mines of Belmont on the Lackawanna, *T. Ritter*, xii, 301.
- , — on Tioga river, chemical analysis and description of, *W. Meade*, xiii, 32;—the two great coal districts of the state, 35.
- , — region of the valley of the Lackawanna and Wyoming, *B. Silliman*, xviii, 308.<sup>f</sup>
- , — of Mauch Chunk, &c., *B. Silliman*, xix, 1<sup>f</sup>, 11;—mine, 12; new mines, 17; Beaver Meadow mine, 19; xx, 163.
- , — region between Cumberland and Pittsburg, *S. W. Pomeroy*, xxi, 342.
- , — vegetable fibres apparent in the anthracite, *B. Silliman*, xxiv, 173.
- , — region of the Monongahela valley, xxix, 60<sup>f</sup>, 61, 64.<sup>f</sup>
- , — of the Conemaugh and Kiskiminitas, xxix, 73, 74.<sup>f</sup>
- , —, remarks on the extent and characters of the bituminous, *S. P. Hildreth*, xxix, 77.
- , — field of Carbon Creek, (Bradford coal field) with analyses, *W. R. Johnson*, xxxix, 137.
- , —, southern, *M. C. Lea*, xl, 370;—various analyses, 373.
- , —, —, model of, with notices of geological features, &c., *R. C. Taylor*, xli, 80.<sup>f</sup>
- Pennsylvania, coal, on the general character, limits, and relations of the beds, *J. Hall*, xlii, 52.
- , — formation, *H. D. Rogers*, xli, 177.
- , Beaver Meadow mine, xix, 19.
- , Bethlehem, catalogue of plants near, *J. Wolle* and *A. L. Hübener*, xxxvii, 310.
- , Blue ridge gap, xix, 6.
- , Carbon Creek, region, *W. R. Johnson*, xxxix, 137.
- , Chester Co., mineralogy of, *G. W. Carpenter*, xiv, 1.
- , Conemaugh and Kiskiminitas regions, xxix, 71.<sup>f</sup>
- , diluvial scratches in, *H. D. Rogers*, xliii, 180.
- , Easton, notice of, *B. Silliman*, xix, 5.
- , —, rare plants of, *L. de Schweinitz*, viii, 267.
- , —, geology of the country near, and list of minerals, *J. Finch*, viii, 236.<sup>f</sup>
- , geological survey of, proposed, xii, 173.
- , — report of *H. D. Rogers*, noticed, xxxii, 192; xxxiv, 188; xxxvii, 380; xli, 385.
- , internal improvements in, xxv, 84; xxvi, 108.
- , iron furnace at Mauch Chunk, xii, 61.
- , iron ores of Center and Huntingdon Cos., xii, 73;—mode of manufacturing, 74.
- , — of Belmont coal mines, xii, 302.
- , — —, analysis of, *W. R. Johnson*, xxxviii, 383; xxxix, 142.
- , Lackawanna region and coal, *J. Pierce*, xii, 67.
- , — ibid, Belmont, *T. Ritter*, xii, 301.
- , Laurel Mountains, xxi, 346.
- , Lehigh coal and navigation company, xxiv, 173.

- Pennsylvania, Lehigh coal, analysis of, xl, 373.
- , Lehigh river, character of, *J. Pierce*, xii, 59.
- , Mauch Chunk and vicinity, xii, 56, 60.
- , — — — —, *B. Silliman*, xix, 7;—canal, 7, 8; scenery, 8; railroad, 9, 16; cost of main railway, 11; mines, &c., 11; public house, 16.
- , mineral resources of, *J. Pierce*, xii, 54.
- , Monongahela valley, rocks and coal, xxix, 58, 60<sup>f</sup>, 63.<sup>f</sup>
- , Fort Pitt remains, *W. B. Weed*, xxi, 197.
- , Pittsburgh coal strata, xxix, 68.<sup>f</sup>
- , — — — —, amount of coal consumed at, xxix, 79.
- , — — — —, manufactures of, xxix, 79.
- , Potsville or Mount Carbon, *J. Pierce*, xii, 63, 65.
- , — — — —, descent from, to Philadelphia, xii, 64.
- , — — — —, Carbondale, xviii, 313, 319, 324.
- , salt wells of Conemaugh and Kiskiminitas, xxix, 72, 74.
- , — — — —, coal consumed in the manufacture, xxix, 79.
- , — — — — springs of Conemaugh and Kiskiminitas, and manufacture, xii, 70.
- , — — — — near Pittsburgh, xii, 72.
- , — — — — in Mercer Co., xii, 72.
- , scenery from Harrisburg, westward, *W. B. Weed*, xxi, 197.
- , Schuylkill, passage of, and of canal, through the Blue Ridge, *J. Pierce*, xii, 61; navigation of, 65.
- , soil of the counties near Ohio, xii, 73.
- , trap dikes in, *H. D. Rogers*, xli, 173.
- Pennsylvania, Westmoreland Co., footprints in, *A. T. King*, xlviii, 217, 343<sup>f</sup>; xlix, 216.<sup>f</sup>
- , Wyoming region and coal beds, iv, 1<sup>f</sup>; vii, 260.
- , — — — —, *J. Pierce*, xii, 66.
- , — — — —, *B. Silliman*, xviii, 309<sup>f</sup>;—disputed title, 315; scenery and surface, 316; people, forts, battle ground, 317.
- Pentremites, see ZOOLOGY, *Radiata*.
- Pepper, analysis of, iv, 390.
- Pepys, W. H.*, electro-magnetic apparatus, vii, 195.
- Perca nobilis*, dissection of the eye of, xxvii, 216.<sup>f</sup>
- Perchloric ether, xlii, 63.
- Percival, J. G.*, minerals of Berlin, v, 42.<sup>f</sup>
- , analysis of *Ad. Brongniart* on fossil vegetation, vii, 178.
- , on the geology and mineralogy of Sicily, viii, 201.
- , on the zoological characters of formations, viii, 213.
- , curious effect of solar light, xii, 169, 180.
- , Report on the Geology of Connecticut, notice of, xlv, 187.
- , crescent form of dikes first observed by, xvi, 205.
- Percussion powder, xviii, 156.
- Perdicaris, G. A.*, on the revival of letters in Greece, xxxvi, 192.
- Perkins, G. R.*, interesting properties of numbers, xl, 112.
- , solution of a functional equation, xlii, 69.
- , new method of computing interest, xlvii, 51.
- Perkins, H. C.*, notices of fossil bones from Oregon, xlii, 136.<sup>f</sup>
- Perkins, J.*, compressibility of water, iii, 347.<sup>f</sup>
- , engraving on steel, iii, 353.
- , new steam engine, vii, 111.<sup>f</sup>

- Perkins, J.*, mode of applying his method of generating steam to the boilers of ordinary steam engines, vii, 116, 332.<sup>f</sup>
- , on steam engines, xiii, 40.
- , on the cutting of steel by soft iron, vii, 390.
- Perkins, T.*, salting of ship timber, ii, 117.
- Perkins's Algebra*, noticed, xliii, 380.
- Peron*, on the temperature of the ocean, xvii, 295.
- Perrine, H.*, on the Agave and other plants used for cordage, xxv, 330.
- Perry, T. H.*, magnetic dip in different regions, xlvi, 84.
- , method of adjusting the dipping needle, xxxvii, 277.
- , on some of the probable effects of a resisting medium, xxxviii, 246.
- Persoon*, obituary notice of, xxxii, 215.
- Peru, Andes of, xviii, 182.
- , —, highest elevations of, xviii, 184.
- , —, highest habitations of men in, xviii, 183.
- , —, trachytes of, xviii, 183.
- , —, the mining regions of, xvii, 43.
- , mines of, xvii, 43<sup>f</sup>; xxiv, 232.
- , physical features, xvii, 47.
- , antiquities of, xvii, 116.<sup>f</sup>
- , ancient and modern races of, *S. G. Morton*, xxxviii, 360<sup>f</sup>, 365.<sup>f</sup>
- , ancient race of men in the Andes, xxix, 358.
- , Atacama, nitrate of soda of, xii, 385.
- , province of Tarapaca, *J. H. Blake*, xxxix, 375; xlv, 1.<sup>f</sup>
- Peruvian bark, on, *G. W. Carpenter*, ix, 363; xvi, 28.
- , on a new variety of, *G. W. Carpenter*, xx, 52.
- , adulterations in, xix, 81.
- Pestalozzi, H.*, death of, xiii, 183.
- Pestalozzian system, ix, 163; x, 145.
- Pestum, stone of the temples at, xxxvii, 366.
- Petalite in Canada, viii, 69.
- Petersburg, St., Russia, libraries of, v, 177.
- , Botanic Garden, xx, 175.
- Petrified, see *Fossil*.
- Petrifying springs in New York, xxxvi, 11.
- Petroleum in the salt springs of the Ohio valley, xxiv, 63.
- in the valley of the little Kenawha, xxix, 86.
- in the Kenawha valley, xxix, 121.
- in the valley of the Sandy river, Virginia, xxix, 129.
- or oil spring of Allegany Co., N. Y., xxiii, 97.
- , well of, near Burksville, Ky., xxxix, 195.
- Pettengill, A.*, on floating islands, xii, 122.
- , stellarota of, xvi, 363.
- Pettenkoffer, M.*, test for bile, xlix, 206.
- Peucedanum ternatum, xxviii, 165.
- Pfaff*, theory of voltaic electricity, xix, 178.
- Phacelia, species of, xlv, 171, 172.
- Phalæna devastator, i, 154.
- Phalangium esculentum, iv, 60.
- Pharmaceutical preparations, ii, 373.
- Phascolatherium, xxxvii, 230.
- Phenacite, xxx, 177.
- , supposed locality at Goshen, Mass., *C. U. Shepard*, xxxiv, 329.
- , not at Goshen, Mass., xliii, 366.
- Phi Beta Kappa Society of New York, xxvii, 388.
- Philadelphia water works, vi, 375; viii, 193.
- , population of, xxi, 194.
- College of Pharmacy, Journal of, xxi, 173.
- Academy of Science, see *Academy*.

- Phillips, J.*, on the principles of geology, from the geology of Yorkshire, xxi, 2.
- Phillips, R.*, on certain chemical equivalents, xxxvii, 368.
- , on the state of iron in soils, xlix, 394.
- Phillips, W. and W. D. Conybeare's* Outlines of Geology, &c., noticed, vii, 203.
- — Geological arrangement, viii, 261.
- , mineralogical collection of, xvi, 379; xlviii, 219.
- , mineralogy of, *F. Alger's* edition, noticed, xli, 203; xlvii, 333 (reviewed).
- , obituary of, xv, 160.
- Phillips, W.*, essay on the Georgia gold mines, xxiv, 1.<sup>f</sup>
- Philology, origin of the languages of Europe, iv, 379.
- , *F. Adelung's* conclusion as to the number of languages on the earth, iii, 376; x, 383.
- Philosophers, morality of the Greek and Roman, ix, 365.
- Philosophical instruments, *Gambey's*, vii, 374.
- apparatus, xxiv, 175.
- —, American, xxvii, 292.
- Philosophy of the human voice, *J. Rush* on, xxv, 425.
- Phloridzin, discovery of, announced, xxviii, 383.
- , notice of, xxx, 377.
- Phlox, species of, xi, 169, 170; xlv, 177.
- Phormium tenax, used for cordage, xxi, 37.
- Phosphates of alkalis, action of, on carbonate of lime, &c., *J. L. Smith*, xlviii, 97.
- Phosphate of lime in the teeth of infusoria, xxviii, 386.
- —, eupyrcroite identical with, xli, 32.
- —, see *Apatite*.
- of soda, impurities in, xix, 82.
- Phosphorescence of the ocean, v, 133; xvii, 209; xviii, 166, 187.
- Phosphorescence of the ocean, observations on, in the Bonite, xxxvi, 208.
- —, *Ehrenberg*, xxxv, 372.
- of the Gulf of St. Lawrence, xviii, 187.
- of fluor spar, ii, 142.
- of several sub-resins, x, 189.
- communicated by means of electricity, xxi, 378.
- Phosphorescent plants, xv, 170.
- Phosphori, solar, xvii, 170.
- Phosphoric acid in plants, and all vegetable extracts, ii, 358.
- —, use of, in jaundice, iv, 162.
- —, precipitation of albumen by, xvi, 396.
- —, *J. Pelouze*, xxviii, 129.
- Phosphorus, facts connected with the history of, xlix, 197.
- , preparation of, xix, 382.
- , impurities of, xlix, 197.
- , density of vapor of, xxiii, 383; xxxv, 298.
- in kelp, xiii, 187.
- , combustion of, in nitrous oxide, *R. Hare*, xxxii, 290.<sup>f</sup>
- , in vacuo, xviii, 147.
- , inflammation of, in a rarefied medium, xxiv, 390.
- , explosion of, with nitric acid, xvi, 366.
- , mode of powdering, xx, 194.
- , hydrate of, *H. Rose*, xxviii, 140.
- , oxide of, *Berzelius*, xlix, 193.
- , isomeric acids of, xli, 64.
- Phosphurets, apparatus for deflagrating, in vacuo, xxxix, 366.
- Phosphuret of lime, on the preparation of, xvii, 349.
- —, xlix, 193.
- of nitrogen, xxviii, 140.
- Phosphuretted hydrogen, on the formation of, *L. C. Beck*, xii, 294.
- —, a new, *P. Thenard*, xlviii, 184.
- —, effect of, on metallic decompositions, xviii, 403.

- Photogenic power of light from burning coke, xxxvii, 368.
- Photography, Daguerre's process in, xxxvii, 374; xxxviii, 97.
- and photogenic drawings, by Daguerre and Talbot, xxxvii, 169.
- , processes in, *A. Fyfe*, xxxvii, 175.
- , perfection of the art of, *J. Robison*, xxxvii, 183.
- , daguerrotype and its applications, *W. H. Goode*, xl, 137.
- , improvement in the daguerrotype process of, *F. A. P. Barnard*, xli, 352.
- , daguerrotype experiment by galvanic light, *B. Silliman, Jr.* and *W. H. Goode*, xliii, 185.
- , daguerrotype pictures, mode of fixing, engraving and painting from, *Berres*, xxxix, 385.
- , copies of engravings by, xlii, 164.
- Photographic delineation of nebulæ, at Rome, *P. F. de Vico*, xlv, 375.
- impression of the solar spectrum, *J. W. Draper*, xlv, 204.
- impressions obtained on silver, &c., without previous preparation, xlv, 159.
- preparation made with ferrocyanate of potash, *R. Hunt*, xlii, 317.
- paper, mode of preparing, xxxvii, 171, 175, 361.
- , action of the different rays of the spectrum on, producing colors, *J. F. W. Herschel*, xxxviii, 111.
- —, intensity of light in diffuse daylight measured by, *A. Ure*, xxxviii, 107.
- process, observations on, *W. F. Channing*, xliii, 73.
- — called Chromatype, *R. Hunt*, xlvi, 396.
- —, by which dormant pictures are made, which the breath or moisture will develop, xlvi, 393.
- Photometer, *X. de Maistre*, xxiv, 378.<sup>f</sup>
- , new, *C. Daubeny*, xxxviii, 96.
- Phrenology, notice of *Gall's* and *Spurzheim's* views, xxiii, 357.
- , *G. Combe's* lectures on, in New Haven, xxxviii, 391.
- , remarks on, xxxix, 65.
- Pbthisis in Paris in 1828, xix, 193.
- Phyllites, fossil plants, generic characters of, vii, 182.
- Phyllite in Massachusetts, xvi, 207.
- Physa, see ZOOLOGY, *Mollusca*.
- Physalis pubescens, xi, 170.
- Physick, P. S.*, notice of, xxxviii, 155.
- Physics, *N. Arnott's* Elements of, noticed, xx, 155.
- Physical Geography, effects of, on the boundaries of empires, *J. Finch*, xiv, 18.
- Physiology, some of the principles of, *A. Fourcault*, xix, 391.
- , animal, xxiv, 382.
- , vegetable, xix, 393; xxiii, 138; xxxiii, 290.
- Pickering, C.*, description of the *Caligus americanus*, xxxiv, 225.<sup>f</sup>
- Pickering, J.*, notice of life of *N. Bowditch*, xxxv, 386.
- Pickeringite, analysis of, *A. A. Hayes*, xlvi, 360.
- Picropharmacolite of Rügelsdorf, vii, 368.
- Pictet, M. A.*, death of, x, 179.
- Pictured rocks of Lake Superior, composition of, v, 220.
- Pictures, transparent, ii, 348.
- Pierce, E.*, on meteoric iron from Otsego Co., N. Y., xlvi, 402.
- Pierce, J.*, native carbonate of magnesia on Staten Island, i, 142.
- , geology, mineralogy, scenery, &c. of the secondary region of a part of New York, New Jersey, and the adjacent regions, ii, 181.
- , on mineral waters, &c., iii, 235, 236.

- Pierce, J.*, on the geology, mineralogy, &c. of the Highlands of New York and New Jersey, v, 26.
- , geology, scenery, &c. of the Catskill Mountains, vi, 86.
- , notice of the alluvial district of New Jersey, with remarks on the marl, vi, 237.
- , an excursion among the White Mountains and up Mount Washington, viii, 172.
- , agriculture, geology, &c. of the Floridas, ix, 119.
- , topography, resources, &c. of Michigan, x, 304.
- , Virginia, shell marl and coal regions of, xi, 54.
- , mineral resources of Pennsylvania, xii, 54.
- Pierce, L.*, notice of a halo, x, 369.<sup>f</sup>
- Pierpont, J.*, meteorological notes in 1692, xlii, 399.
- Pig, anecdote of, xlv, 243.
- Pigeons, flight of, in Ohio, *S. P. Hildreth*, xxiv, 134, 136; xl, 348.
- , roosts of, in Ohio, xl, 348.
- , mode of decoying, xvi, 373.
- Pigment for the pallet, xvi, 174.
- Pilatus, Mount, slide of, iii, 368.
- Pimelite in Vermont, viii, 234.
- Pine timber, strength of, xix, 228.<sup>f</sup>
- Pinguite, new mineral species, xx, 197.
- Pinite in Massachusetts, ix, 48.
- (chlorophyllite) in Connecticut, vi, 219; xli, 354.
- not at Bellows Falls, Vt., xi, 384.
- Pink dye, from the flower of the sweet balm, xxv, 413.
- Pipa, xi, 271.
- Piperine, use of, *G. W. Carpenter*, xiii, 326.
- , notice of, *T. G. Clemson*, xviii, 352.
- Piper leptostachyum, v, 287.
- Pipes, iron conduit, vi, 173.
- Pipestone, red, of the Côteau des Prairies, xxxvii, 393; xxxviii, 138.
- Pirira*, on salicine, xlix, 392.
- Pisa, notice of, iv, 383.
- Pisolite in Massachusetts, ii, 238.
- Pisolitic balls, xlv, 283.<sup>f</sup>
- Piston, Cooper's rotative, xvi, 313.<sup>f</sup>
- Pittsburg, Pennsylvania, account of, *S. P. Hildreth*, xxix, 68, 79.
- Pixii*, rotating magnetic machine, xxiv, 144, 146<sup>f</sup>, 196.
- Plague in Constantinople, remarks on, xxxiv, 32.
- Planes, inclined, in the construction of rail roads, *J. Thomson*, xxiii, 107.
- Planera, or Siberian elm, notice of, xx, 377.
- Planet, supposed new, beyond Herschel, *Cacciatore*, xxxi, 158.
- Jupiter and his satellites, *Struve*, xiii, 173.
- Saturn, xiii, 172; xvii, 162; xxv, 191; xxxvii, 373; xlv, 383.
- —, sixth satellite of, xxxiv, 207.
- Venus, *P. F. de Vico*, xlv, 377, 383.
- —, rotation of, xxiv, 204.
- Planets moving in a resisting medium, examination of the theory of, *R. W. Haskins*, xxxiii, 1.
- , *ibid*, remarks on, xvii, 389.
- , sizes of, xxxiii, 17.
- , motion of, represented, xii, 103.
- , comparative oblateness of, xxxi, 222.
- Planetarium, Russell's, xlii, 400.
- Planetary spaces, temperature of, xxxii, 1; xxxiv, 57.
- Planorbis, see ZOOLOGY, *Mollusca*.
- Plants, number of known species, xlix, 172.
- of New York, number of indigenous, *J. Torrey*, xl, 77.
- , classification of, according to a natural system, *Robert Brown*, i, 435.
- , grand division, into exogens, endogens and acrogens, xxxii, 295.
- , other subdivisions, xxxii, 296, 299.
- , soul or spiritual life of, *C. F. P. von Martius*, xl, 170.
- , ammonia disengaged by growing, x, 190.

- Plants, carbonic acid disengaged by the roots of, xlv, 227.
- , non-decomposition of carbonic acid by, xxxiv, 44.
- , circulation in, *E. Emmons*, xxvi, 99.
- , — of sap in, xix, 393.
- , chemistry of, *J. Liebig*, xl, 177.
- , chemical constitution of cellular and woody tissue in, xl, 176.
- , cultivation of, in moss, xiii, 189.
- , crystalline substances from the juice of, xi, 391.
- , crystals in, *Turpin*, xix, 177; xx, 382.
- , crystals of oxalate of lime in, xx, 383; xxi, 372.
- , crystals in the tissues of, *J. W. Bailey*, xlv, 149; xlviii, 17.<sup>f</sup>
- , effect of light on the color and movements of, *D. P. Gardner*, xlvi, 1.<sup>f</sup>
- , effect of light on the germination of the seeds of, xlv, 352.
- , — — on the growth of, xlv, 352; xlvi, 397; xlvii, 194.
- , experiments on inorganic elements of, xlvii, 194.
- , effect of climate on geography of, xlvii, 221.
- , effect of frost of the winter of 1837-8 in England, upon, *J. Lindley*, xxxix, 18.
- , — of chemical solutions on, xvii, 388.
- , excrementitious matter from, *J. Buel*, xxviii, 267.
- , experiments on garden, *J. T. Plummer*, xl, 197.
- , growth of, in closely glazed cases, xliii, 383.
- , growing under glass, *C. Daubeny*, xxxiv, 11.
- , — *ibid.*, *N. B. Ward*, xxxiv, 11.
- , — *ibid.*, *J. Yates*, xxxiv, 13.
- Plants, growing on animals, *S. L. Mitchell*, xii, 21.
- , on the development of the external organs of, xxxvii, 187.
- , on the leafing of, xlv, 419.
- , indicators of seasons, ii, 255.
- , phosphorescent, xv, 170.
- , phosphoric acid in, ii, 358.
- , poisoning of, xv, 169.
- , respiration in, xxii, 363.
- , sleep of, xxii, 375.
- , used for cordage, xxi, 27; xxv, 330; xxviii, 371; xli, 200.<sup>f</sup>
- and mosses, iodine in, xlv, 227.
- , fossil, accompanying anthracite coal, ix, 165.
- , —, at Mariner's Mill, Ohio, xxxi, 28.<sup>f</sup>
- , —, in coal strata of England, iii, 389; xxxiii, 87, 270.
- , —, of the coal formations, *A. Brongniart*, iv, 266.<sup>f</sup>
- , —, analysis of *Ad. Brongniart's* work on, vii, 178.
- , see farther under *Botany and Vegetable*.
- Plaster, on the setting of, xvii, 371.
- of Paris, see *Gypsum*.
- Plastic clay of the southeast of England, xxxiii, 92.
- — and sand formation of New Jersey, Massachusetts coast, and elsewhere, vii, 34, 214, 244.
- Plate electrical machine, *R. Hare*, vii, 108<sup>f</sup>; xxxii, 272.<sup>f</sup>
- — —, viii, 378.
- Platinum, size of grains of, xvi, 389.
- , price of, (1833,) xxvi, 210.
- , imitation of, xxii, 383.
- , on the fusion of, *R. Hare*, ii, 295; xxxiii, 195; xxxv, 328; xxxviii, 155, 163.
- , test for, vi, 376.
- , amalgam of, xxvii, 363.
- , action of, on combustible gases mixed with oxygen, xii, 181.
- mines, found in the Ural, Russia, xii, 384; xiv, 204; xviii, 190; xxviii, 395.
- of Russia, large masses, xvi, 389; xlv, 212.



- Platinum, large mass of, from Peru, iv, 28; xvi, 389.
- , analysis of the Russian, *J. J. Berzelius*, xviii, 162.
- , in France, xxvi, 389.
- boilers, at Paris, xvii, 179.
- lamp, xx, 385.
- wire, ignited, i, 309.
- —, action of heated, on combustible gases, *W. Henry*, xii, 181.
- , spongy, combustion with, discovered by *J. W. Döbereiner*, vii, 387.
- , —, *J. W. Döbereiner's* researches on, xviii, 151.
- , —, *J. Liebig*, xviii, 398.
- , —, action of, prevented by certain gases, xxxi, 348.
- , —, —, *Kuhlmann*, xxxvii, 198.
- , on the dark precipitate of, *J. Liebig*, xviii, 398.
- , new compounds of, *J. W. Döbereiner*, xxviii, 130.
- , a bichloride of, combined with deutoxide of nitrogen, *H. D. Rogers*, xxxviii, 186; xxxix, 369.
- , a property of asbestos imbued with chloride of, xx, 160.
- , chloriodide of, *W. W. Mather*, xxvii, 258.
- and hydrogen, no combination of, *J. W. Döbereiner*, xxxiv, 207.
- and soda, a double sulphite of the protoxide of, *A. Litton* and *Schnederman*, xlv, 274.
- , iodide of potassium and, *W. Mather*, xxvii, 257.
- Plesiosaurus, from north of Whitby, England, xxix, 364.
- , notice of, xvii, 289.
- Plessy, on the hydrosulphite of soda, xlix, 200.
- Pleurodon, *R. Owen*, xlv, 342.
- Pliny, on the influence of the ash on reptiles, xxx, 268.
- Plough, American, compared with French, vii, 190.
- Plumbago, a new vegetable substance, xvii, 385.
- Plumbago formed by pressure, xlix, 227.
- , see *Graphite*.
- Plumbago floridana, v, 290.
- Plumbocalcite, new mineral species, xxvi, 386.
- Plummer, *J. T.*, miscellaneous observations on insects, xl, 146.
- , motion of particles of melted spermaceti of a burning candle, xl, 148.
- , suburban geology, (Indiana) xlv, 281.<sup>f</sup>
- , fucoids in Indiana, xlv, 290.<sup>f</sup>
- , scraps in natural history, xlv, 236; xlviii, 93.
- , horticultural experiments, xl, 197.
- , on the dry-rot, xlii, 197.
- , combustibility of wood ashes, xlii, 167.<sup>f</sup>
- , on a dangerous property of wood ashes, xliii, 80.
- Plumose mica, ii, 141.
- Pluranium, announced as a new metal, from the Ural, xvi, 384.
- Pluviometrical observations, see under *Rain* and *Meteorological*.
- Pneumatic cistern of *R. Hare*, xiv, 200<sup>f</sup>; xxxiii, 246.<sup>f</sup>
- paradox, on the true theory of, *J. H. Abbot*, xxxix, 296<sup>f</sup>; xl, 144.<sup>f</sup>
- Poa modesta, xlv, 45.
- Poacites, fossil plants, generic characters of, vii, 182.
- Poem, geological, v, 272.
- Poison of the Argas persicus, xxxiii, 271.
- , *Senecio obovatus* poison to sheep, xv, 358.
- of the common toad, xiv, 373.
- Poisons, animal, ii, 168.
- , —, antidotes for, ii, 358.
- , —, salt a remedy for, xxi, 158.
- —, ammonia an antidote against, xvi, 182.
- , —, the *Uvularia perfoliata* a remedy for, *B. H. Coates*, xxxv, 270.

- Poisons, action of, on vegetables, xii, 196; xv, 169.
- Poisonous confectionary, xviii, 157.
- Poisson, S. D.*, on the temperature of the earth, atmosphere and of space, xxxiv, 57.
- , death of, xl, 220.
- Poland, a history of, published by N. Rosenfield, vi, 390.
- Polania, i, 378.
- Polar, north, fogs of, xiv, 378.
- , —, account of explorations, i, 101; xvi, 124.
- Polariscope, for polarized light, xv, 369.<sup>f</sup>
- , natural, of tourmaline in mica, *B. Silliman, Jr.*, xlvii, 418.
- Polarity, new kind of, in light, *D. Brewster*, xxxv, 292.
- of molecules in crystallization, *J. D. Dana*, xxx, 275.<sup>f</sup>
- , electric, see under *Electricity*.
- Polarization of heat, xxviii, 366, 397.
- —, remarks on, *J. D. Forbes*, xl, 317.
- of light by reflection, *D. Brewster*, xxii, 277.<sup>f</sup>
- by refraction, laws of, *D. Brewster*, xxiii, 28<sup>f</sup>, 227.<sup>f</sup>
- , use of mica in, *J. D. Forbes*, xxxviii, 101.
- , elliptical, of reflected light, *B. Powell*, xliv, 171; xlvi, 390.
- , auroral light without, *J. Henry*, xxxix, 366.
- Polarized rings produced in specimens of decomposed glass, *D. Brewster*, xl, 325.
- light, exhibited by means of oxy-hydrogen microscope, xxxviii, 102.
- Polarizing rocks, xx, 198.
- Pole, north, attempts to discover, i, 101.
- Polishing of granite, iv, 246; viii, 185.
- Pollen, analysis of, *M. Prinsep*, xviii, 402.
- Pollen, yellow showers of, xxxix, 399; xlii, 195.
- , — —, examined by *J. W. Bailey*, xlii, 196.<sup>f</sup>
- Polycrase, a new mineral species, xlix, 394.
- Polygons, on the measure of, *G. C. Whitlock*, xlvii, 380.<sup>f</sup>
- Polyhydrite, xlii, 386.
- Polynesian Islands, new work on, xxix, 290.
- Polynomials, involution of, *W. J. Lewis*, xlii, 239.
- Polyyps, a group of, v, 46.
- Polytechnic Institute of Vienna, x, 379.
- Society of Paris, xxiv, 191.
- Polythalamia, American, xli, 400.<sup>f</sup>
- , fossil, in the United States, *J. W. Bailey*, xlviii, 102, 340.<sup>f</sup>
- , —, from Petersburg, Va., *J. W. Bailey*, xlv, 313.
- , —, from the Upper Mississippi, *J. W. Bailey*, xli, 400.<sup>f</sup>
- Pomerooy, S. W.*, remarks on the coal formation of Pennsylvania, xxi, 343.
- Pompeii, how covered, iii, 374.
- , excavation of, iv, 384.
- Pompton Mountains, N. J., rocks of, v, 241.
- Pond, a fermenting, v, 199.
- Ponton, M.*, on paper for photography, xxxvii, 361.
- Poor, education of, iii, 379.
- Popocatepetl, ascent of, xxviii, 220.
- Population of France, xv, 397.
- of Glasgow, proportion of males to females, xxviii, 80.
- of Great Britain, xxiv, 211.
- of Manchester, England, xxviii, 80.
- of Prussia, ix, 184.
- of Russia, iv, 389.
- and religion of Russia, xv, 397.
- of Sweden, in 1816, 17, 18, ii, 347.
- of the United States at the earliest census, xxxiii, 278.

- Population of United States, rate of increase since first census, xxxiii, 278, 279.
- of New York city, in 1826, x, 398.
- Populine, xix, 380.
- Porcelain and porcelain clays, i, 57.
- and earthenware, on the art, xxvi, 233<sup>f</sup>;—history of, 233; Egyptian, 234; Roman, 234; Phœnicia, 235; Indian mounds, 237; Chinese, 237; European, 238; Wedgewood ware, 242; kinds of, 259; materials used for, 245; processes, 249; mode of glazing, 254.
- , mode of coloring, iii, 217; xxvi, 256.
- , enamel for, v, 189.
- , manufactory at Philadelphia, xiv, 198; xviii, 384.
- , difference between the English, and that of the continent, xxxiii, 407.
- clay, from Granby, Ct., xviii, 199.
- —, of Pennsylvania and Delaware, xviii, 384.
- —, in Maryland, xxvii, 19.
- Porosity of glass and siliceous bodies, vii, 192.
- Porphyry of the Chinese frontier, xvii, 32.
- in Nova Scotia, xv, 203, 213.
- of Peru, xvii, 57.
- Portable gas, xv, 189.
- — lamp, iii, 371.
- Porter, A. L.*, edition of Gray's Operative Chemist, by, noticed, xix, 362.
- Porter, J.*, floral calendar of Plainfield, Mass., 1818, i, 254.
- , — —, *ibid*, for 1819, iii, 273.
- , on snow crystals, ii, 339.
- , minerals of Plainfield, v, 270.
- , catalogue of minerals, vi, 246; vii, 58, 252; viii, 233; x, 18.
- Porter, J.*, notice of a rocking stone, ix, 27.<sup>f</sup>
- , on the American Antiquarian Society, xviii, 136.
- , on the garden of Fromont, xx, 83.
- Porter, J.*, Roxbury rocking stone, vii, 59.<sup>f</sup>
- Porter, R. K.*, travels in Persia, xxxvii, 347.
- Porter, T. D.*, contributions to the Geological Society, ii, 143.
- , geological notice of some parts of North and South Carolina, iii, 227.
- , reply to *T. Cooper* on tests of arsenic, iv, 160.
- , mineral localities on the Connecticut, ix, 177.<sup>f</sup>
- , specimens of Zircon, iii, 229; v, 271.
- Porter, W. S.*, sketches of Alabama, xiii, 77.
- Portugal, public instruction in, vii, 198.
- Post office department, progress of the American, xv, 373.
- Post offices in France, income of, for 1824, x, 174.
- Postage of printed sheets in England, xlix, 228.
- Pot and pearl ashes, method of manufacturing, by *G. A. Rogers*, viii, 304.
- Potamogeton Claytoni, xlv, 38.
- pulcher, xlv, 38.
- Potassa in sea-water, iii, 371.
- , caustic, of commerce, xxxv, 299.
- , commercial, of New York, researches on, *L. C. Beck*, xxix, 260.
- , —, adulteration of, xxix, 261.
- , —, manufacture of, xxix, 261.
- , mode of obtaining from feldspar, *Fuchs*, xxi, 157.
- , detection of, by the oxide of nickel, xvi, 387.
- , mode of separating from soda, xxix, 273.

- Potassa, Davy's original mode of decomposing, xxi, 367.<sup>f</sup>
- , action of, on organic matters, xvii, 382; xxiv, 372.
- , action of, on cholesterine, xlv, 60.
- and soda, mixture of pure carbonates of, xlix, 195.
- , carbonate of, mode of preparing, free from silica, xlix, 195.
- , chlorate of, mode of obtaining, ix, 201.
- , pure chromate of, xx, 409.
- , to test the chromate of, *S. Zuber*, xxiv, 372.
- , chromate of, means of determining the purity of, xvi, 392.
- , —, a test for distinguishing strontia and baryta, xxxvi, 183.
- , bichromate of, ulcers produced by the use of, xvi, 384.
- , manganesiates of, *F. Wöhler*, xxviii, 137.
- and copper, sulphate of, xx, 195.
- and silica, new compound of, xvi, 397.
- Potassium, atomic weight of, xlvii, 189.
- , preparation of, viii, 372.
- , best method of preparing and preserving, xix, 205.<sup>f</sup>
- , new apparatus for obtaining, *L. D. Gale*, xxi, 60.<sup>f</sup>
- , improvement in Brunner's process for, *R. Hare*, xxiv, 312.
- , an improved mode of obtaining, *R. Hare*, xxxviii, 338; xl, 27.
- , properties of, xvii, 182.
- , price of, in 1825, ix, 387.
- , experiments on, by *J. T. Ducatel*, xxv, 90.
- , ammoniacal nituret of, xxv, 205.
- , iodide of platinum and, *W. W. Mather*, xxvii, 257.
- , preparation of iodide of, ix, 188.
- , ferridcyanide, deoxidation of, *C. F. Schönbein*, xlix, 203.
- Potassium and naphtha, explosive compound produced from, xxiv, 315.
- , mode of filling tubes with, xxiv, 316.
- Potatoe, found wild in South America, iv, 195.
- , fruitfulness of, iii, 381.
- , culture of, in France, xxvii, 176.
- , on the growth of, xii, 170.
- , precaution in planting, xxi, 159.
- , nutrition from, *E. Ives* on, i, 297.
- , mode of preserving, vi, 200; xvii, 188.
- , how to boil, xxiii, 201.
- , used in steam engine boilers, vii, 193.
- , oil from spirits of wine of, xxviii, 386.
- , essential oil of, *A. Cahours*, xxxii, 382.
- cheese, xviii, 395; xxiii, 202.
- flour for bread, xvi, 391.
- —, detection of, in wheat, xvii, 173.
- , molasses from, *S. Guthrie*, xxi, 93.
- starch, sugar from, *S. Guthrie*, xxi, 284.
- , Sweet, sugar in, xv, 285.
- fly, cantharidin in, ii, 137.
- Potentilla supina, xiv, 114.
- Pot-holes, made by means of running water, in the Green Mountains, vi, 252.
- , near the Franconia Notch, xxxiv, 122.
- Potosi silver mines, xxiv, 233.
- Potstone, Middlefield, Mass., viii, 51.
- of Greenland, xvii, 14.
- Potter, C. E.*, notice of a rocking stone, xxiv, 185.<sup>f</sup>
- Pottery, analysis of, xv, 183.
- , notice of *A. Brongniart* on, xxxi, 134.
- , ancient American, xxvii, 175.
- Powder of Cassius, purple, see *Cassius*.

- Powder of Balda, viii, 204.  
 — mills, inflamed by the stroke of copper, xiii, 161.  
 Powders, fulminating, see *Fulminating*.  
 Powell, B., on the interference of light, xxxviii, 107.  
 —, on refractive indices, xxxviii, 107.  
 —, on the wave theory, xxxviii, 108.  
 —, on radiant heat, xl, 313.  
 —, on certain cases of elliptically polarized light, xlv, 171.  
 —, on the elliptic polarization of light, reflected from various substances, xvi, 390.  
 Power of horses, xxi, 167.  
 Pozzuolana, iv, 373.  
 Practical Tourist, review of, xxiii, 213.  
 Prague, statistics of, ix, 184.  
 Prairies, origin of, R. W. Wells, i, 331.  
 —, — and extension of, R. Nutt, xxiii, 40.  
 — of the West, C. Atwater, i, 116.  
 — and barrens of the West, A. Bourne, ii, 30.  
 — of Alabama, W. W. McGuire, xxiv, 187; xxvi, 33.  
 — formation of Opelousas and Attakapas, W. M. Carpenter, xxxv, 344.  
 —, observations on, G. Jones, xxxiii, 226;—dry prairies, 226; comparison with Holland, 228.  
 — of Ohio, xxxiii, 230.  
 — of Texas, J. L. Riddell, xxxvii, 212.  
 —, Hog-wallow, of Texas, notice of, xxxix, 211.  
 Prase in Massachusetts, i, 344.  
 — in Rhode Island, viii, 226, 230.  
 — in Pennsylvania, viii, 238.  
 Precision of the equinoxes, remarks on, vii, 323<sup>f</sup>; viii, 132, 139.<sup>f</sup>  
 — —, constant of, O. Struve, xlvii, 91.  
 Precipitate, purple, of silver and gold, xxii, 198.  
 Prehnite, L. P. Walmstedt on, ix, 378.  
 —, datholite, &c. at Kewenaw Point, Lake Superior, C. T. Jackson, xlix, 87.  
 —, in Connecticut, i, 50, 135; ii, 232; vi, 223.  
 —, in Massachusetts, i, 114; iii, 364.  
 —, in New Jersey, ii, 183, 191, 195, 197; v, 239; xl, 69; xlv, 58.  
 —, in Pennsylvania, x, 220.  
 Premiums by the French Academy of Sciences, for 1827, xiv, 380, 389.  
 — — —, for 1831, xxii, 194.  
 — offered by the Society for the Encouragement of National Industry, France, 1821, 1822, iv, 192.  
 — — —, for 1832–34, xxii, 359.  
 —, for Mechanical Arts, iv, 192.  
 —, for Chemical Arts, iv, 192.  
 —, for fabrication of Russian leather, iv, 193.  
 —, for Economical Arts, iv, 193.  
 —, for useful inventions in agriculture, xviii, 382.  
 —, for chemical and medical discoveries, xxii, 194.  
 —, scientific, xxiv, 210.  
 —, see farther under *Medals* and *Prizes*.  
 Prenanthes aphylla, v, 299.  
 Preservation of objects in Natural History, iv, 198.  
 — of specimens of animals, directions for, xii, 271; xix, 52.  
 — — — ibid, with arsenical soap, xix, 53.  
 — of zoological collections from insects, T. S. Trail, xv, 167.  
 — of animal and vegetable substances from insects, J. Macartney, xxxi, 367.

- Preservation of specimens, new mode of, *J. L. Riddell*, xxxv, 338.  
 — of eggs, Scotch method, xxvi, 188.  
 — — for cabinets, xxi, 161.  
 — of insects, *T. Roger*, xix, 213.  
 — —, xix, 56; xxi, 162.  
 — of freshwater shells, xlii, 391.  
 — of Echini with the spines, xxix, 353.  
 — of skins, xxvi, 188.  
 — of fish skins for museums, xxxvi, 196.  
 — of anatomical preparations, vi, 384.  
 — of skeletons, xix, 57.  
 — of animal bodies, new mode of, by petrification, *G. Segato*, xxix, 359.  
 — of animal preparations, by Gannal's new process, xl, 194.  
 — of animal substances, salt for, xxx, 183.  
 — of crystalline lenses, xxvi, 216.  
 — of dead bodies, i, 307.  
 — of meats, &c. by Appert's process, xiii, 163.  
 — of fruits without sugar, method of, xv, 381.  
 — of substances by alkalies, xxiii, 383.  
 — of cordage, &c. from moisture, xxiii, 199.  
 — of firemen against fire and flame, xviii, 177; xx, 96.<sup>f</sup>  
 — of grain from mice, vii, 378.  
 — of timber by pyrolignite of iron, *Boucherie*, xl, 213.  
 — of the Royal George, xl, 213.  
 — from rust, a mode of, by means of caoutchouc, vi, 398.  
 — of iron from rust, xix, 203; xxi, 150; xxii, 382; xxiii, 199, 383.  
*Presl*, notice of the Genera Fileacearum of, xxxix, 174.  
 Press, botanical, *J. Locke*, xxx, 54.<sup>f</sup>  
 —, printing, see *Printing*.
- Pressure in the ocean at great depths, see *Ocean*.  
 —, atmospheric, see *Barometrical*.  
 — on the human body, variations of, and apparatus for withdrawing, xxxiv, 30.  
 —, effect of instantaneous, as compared with accumulative, *C. Bonnycastle*, xl, 32.  
 Price of labor and subsistence in some parts of Europe, xxxvi, 176.  
*Priestley*, *J.* philosophical character of, *W. Henry*, xxiv, 28.  
 —, discoveries by, xxiv, 30.  
*Primula farinosa*, iv, 59.  
*Prince, James*, on the sea-serpent, ii, 154.  
*Prince, John*, memoir of, xxxi, 201.<sup>f</sup>  
*Prince, W.*, a fruit, between the Spanish chesnut and the Maryland chinquapin, iii, 77.  
 Prince Regent's Inlet, geology of, xvii, 10.  
 Princeton, battle of, painted by J. Trumbull, xxxix, 231.  
 Principia of Newton, new edition of, vi, 379.  
 — —, review of, xi, 238; xii, 28, 330; xiii, 311.  
*Prinos coriaceus*, v, 293.  
 Printing on zinc, x, 388.  
 —, a mode of stereotyping by Senefelder, xi, 386.  
 —, invention of stereotyping, xvii, 161.  
 —, stereotype, original papers by *C. Colden* and *B. Franklin* on, xxiv, 319.  
 — designs, new mode of, vii, 191.  
 —, anastatic, xlix, 401.  
 — press, improvements in, by *J. I. Wells*, iii, 311.<sup>f</sup>  
 — —, inking machine, *Wood's*, xxiii, 103.<sup>f</sup>  
 — — for the blind, v, 385.  
 Prisons, Society for the Amelioration of, ii, 374.  
 Prizes offered by the Royal Society of London, xxv, 412.

- Prize given by the Royal Society to *J. F. W. Herschel*, for a paper on double stars, xxv, 412.
- respecting the ammoniacal azoturet of potassium, offered by the St. Petersburg Academy, xxv, 205.
- , the Montyon, presented, xxv, 189.
- , the De Lalande, given to *E. Sabine*, xii, 194.
- , —, xxv, 190.
- of the Academy of Sciences, xiv, 380, 389; xxii, 194.
- Problems, diophantine, xxxi, 156.
- , dynamical, new solutions of, xxxviii, 106.
- Producta, see ZOOLOGY, *Mollusca*.
- Profile mountain, New Hampshire, *M. Field*, xiv, 64<sup>f</sup>; xxxiv, 122.
- Pronouns, nature of, explained, xxxiv, 337.
- Proportions, definite, in Chemistry, *D. Olmsted*, xii, 1.
- Prospect Hill, East Haven, Ct., scenery of, vii, 3.
- Proteus of the North American Lakes, *S. L. Mitchill*, iv, 181; vii, 68.<sup>f</sup>
- , *D. H. Barnes*, xi, 285.
- Protococcus kermesinus, analogous to red particles in blood, xxxvi, 206.
- Prout, W.*, analysis of starch sugar, xxxv, 299.
- Providence Franklin Society, xviii, 195.
- tornado, *R. Hare*, xliiii, 137.
- —, *W. C. Redfield*, xliiii, 263.<sup>f</sup>
- Prunnerite, new mineral species, xx, 197.
- Prussia, population of, ix, 184.
- , universities of, xx, 388.
- Prussian travellers, vii, 195.
- Prussiate of potash, red, deoxidation of, *C. F. Schönbein*, xlix, 203.
- —, manufacture of, at Glasgow, *T. Thomson*, xli, 49.
- Prussian blue, new mode of preparing, viii, 380.
- Prussian blue, researches into the manufacture of, xv, 178.
- —, formation and nature of, xviii, 332.
- —, manufacture of, at Glasgow, xli, 50.
- Prussic acid, *F. Magendie* on, ii, 81.
- —, memoir on, *B. L. Oliver*, iii, 182.
- —, —, *Orfila*, xviii, 157.
- —, effect of muriatic and sulphuric acids on, xviii, 146.
- —, extraordinary production of, *A. A. Hayes*, xviii, 201.
- —, preservation of, xvi, 260.
- —, apparatus for the evolution of, *R. Hare*, xxix, 244.<sup>f</sup>
- —, impurities of, xix, 70.
- —, cases in which administered, iii, 187.
- —, efficacy in asthma, vi, 366.
- —, action of, on a horse, xii, 385.
- —, effects on vegetation, x, 190.
- —, chlorine an antidote for, xvii, 174; xxi, 157.
- Pseudomorphine, a new vegetable extract, xxx, 179.
- Pseudomorphism, observations on, *J. D. Dana*, xlviiii, 81, 397.
- Pseudomorphous minerals, account of, in a review of *J. R. Blum's* treatise, xlviiii, 66.
- (crystallized) steatite, in Massachusetts, *C. Dewey*, iv, 274; v, 249; vi, 333; viii, 51.
- steatite, having the form of quartz, scapolite and spinel, xxi, 320.
- steatitic hornblende, analysis of, *L. C. Beck*, xlvi, 35.
- quartz, at Southampton lead mine, vi, 214; ix, 249.
- —, in Pennsylvania, x, 223.

- Pseudomorphous granite, vii, 22.<sup>f</sup>  
 Pseudomorphs, siliceous, in Hampshire Co., Mass., xii, 256.  
 Pseudo-volcanoes of the Upper Missouri, xlv, 154.  
 Psora, use of chloride of lime in, xvi, 395.  
 Pudding stone of Mount Toby, Mass., vi, 8, 69.  
 Pulkova Observatory, xlvii, 88.  
 Pulmonary consumption, work on, *S. G. Morton*, noticed, xxv, 424.  
 Pultowa, monument of, iii, 379.  
 Pumice, floating, xx, 161.  
 — at the Azores, iv, 259.  
 — of the Mississippi, iii, 247.  
 — of the Missouri and Mississippi rivers, due to pseudo-volcanoes, *J. N. Nicollet*, xlv, 154.  
 Pump, by steam, xvi, 181.  
 —, air, see *Air pump*.  
 Purple of Cassius, ii, 350; xx, 192; xxviii, 145; xlvi, 192.  
*Pursh, F.*, notice of the herbarium of, xl, 11.  
 —, botanical excursions of, xlii, 10.  
 —, notice of, ix, 269.  
 Putnam's rock, v, 37.  
 Putnam Hill, section of, xxix, 30.<sup>f</sup>  
 Putrefaction, animal, xviii, 397.  
 — of stagnant water, prevented by animal charcoal, x, 189.  
*Puvis*, essay on lime as a manure, xxx, 138.  
 Pyrrargillite, analysis and description of, *Nordenskiöld*, xxvi, 387.  
 Pyrenees, geological notice of, ix, 23.  
 —, botany of, remarks on, xiv, 377.  
 Pyrites, arsenical, in New Jersey, v, 244.  
 —, copper, see under *Copper*.  
 —, iron, origin of, in fossils, xxviii, 293.  
 —, —, occurrence of, in fossiliferous rocks, xxxi, 74.  
 —, —, investing quartz, vegetable stalks, &c., *L. Lyon*, xii, 162.  
 Pyrites, iron, in a peat field, *J. T. Plummer*, xlv, 312.<sup>f</sup>  
 —, —, specific gravity of, xix, 388.  
 —, —, cause of decomposition of, xix, 387.  
 —, —, of Rossie, complex crystal of, xlv, 36.<sup>f</sup>  
 —, —, in Connecticut, i, 316; v, 44; vii, 56; x, 13; xxxiii, 160.  
 —, —, in Georgia, xxiv, 9.  
 —, —, in Kentucky, iii, 233.  
 —, —, in Massachusetts, viii, 54; x, 13, 18; xxii, 51.  
 —, —, in Missouri, iii, 67.  
 —, —, in New Hampshire, xviii, 129, 131.  
 —, —, in New Jersey, v, 28.  
 —, —, in New York, v, 12; xix, 224; xxv, 350; xxviii, 172.  
 —, —, in North and South Carolina, iii, 3; v, 262; xli, 183.  
 —, —, in Ohio, xvi, 156, 157.  
 —, —, in Pennsylvania, iv, 4; viii, 239; x, 222; xiv, 5, 6, 8, 13.  
 —, —, in Vermont, i, 115; iii, 76, 326; vi, 245.  
 Pyrochlore, analysis of, *F. Wöhler*, xviii, 392; xliii, 35.  
 — of Chesterfield, Mass., *J. E. Teschemacher*, xlviii, 395.  
 —, identical with microlite, *J. E. Teschemacher* and *A. A. Hayes*, xliii, 33.  
 — and microlite, not identical, *C. U. Shepard*, xliii, 116; xlviii, 177.  
 —, analysis of, xlv, 163.  
 Pyro-citric acid, new, vii, 187.  
 Pyro-gallic acid, *J. Pelouze*, xxviii, 126.  
 Pyrogenic acid, new, xxxiv, 206.  
 Pyroligneous acid, ii, 340; v, 188; ix, 201.  
 — —, purified by animal charcoal, xiii, 175.  
 — —, medical use of, ix, 201.  
 Pyrometer, steam, *W. R. Johnson*, xxii, 96.<sup>f</sup>



Pyromorphite, or phosphate of lead, *C. Kersten*, xxii, 307.

Pyrope at Brimfield, Mass., vi, 222.

Pyrophorus, explosion of, x, 366.

—, new, from tartrate of lead, ix, 207.

—, remarks on, *Gay Lussac*, xvii, 176.

—, new, *R. Hare*, xix, 173.

Pyrophyllite, xviii, 392.

Pyrophyllite, ix, 21.

Pyrotechny, history of, vii, 137.

—, *J. Cutbush* on, ix, 173.

Pyroxene, see *Augite*.

Pyrrhite, xlvii, 340, 418.

## Q.

Quackery, medical, iv, 390.

Quadrant, *T. Godfrey*, the inventor of, xxxv, 389.

Quadrupeds about Richmond, Indiana, xlvi, 244.

—, habits and anecdotes of, xlvi, 237, 243.

—, see farther under *Zoology*.

Quantity of matter, effect of, on affinity, xvi, 234.

Quarantine, high temperatures disinfecting and affording a substitute for, *W. Henry*, xxi, 392.

Quartz, on certain cavities in, *W. L. Ailee*, xxxv, 139.<sup>f</sup>

—, from Elba, containing water, iv, 27.

—, American, containing liquids, ii, 14; ix, 246; (and coal) xl, 83.

—, naphtha in, *C. Dewey*, i, 345.

—, soft crystal of, v, 394.

—, gelatinous, *Guillemin*, xiv, 391.

— crystals, distorted, xlvi, 365<sup>f</sup>, 366.<sup>f</sup>

— —, in Canada, viii, 63.

— —, in Connecticut, i, 135; v, 41, 45;—(rose) i, 238; iv, 54; vi, 213, 251.

— —, in Maine, (smoky) xiii, 374; (rose) xviii, 297.

Quartz crystals, in Massachusetts, i, 112, 113, 136; (rose) i, 116; vi, 247.

— —, in Missouri, iii, 67.

— —, in New Hampshire, (rose) xvii, 355; (smoky) xxxiv, 114.

— —, in New Jersey, ii, 197.

— —, in New York, i, 241; ii, 13; iii, 233; iv, 44; vi, 247; ix, 44.

— —, in North or South Carolina, iii, 5.

— —, in Pennsylvania, i, 237; ix, 45; x, 222; xiv, 5.

— —, in Rhode Island, viii, 230; ix, 46; xl, 185.

— —, in Vermont, vi, 249.

— —, near Lake Superior, smoky and amethyst, vii, 48.

—, pseudomorphous, in Massachusetts, at Southampton, vi, 214; ix, 249; xii, 256.

— —, in Pennsylvania, x, 223.

—, imitated by steatite, in Massachusetts, v, 249; vi, 333; viii, 51.

—, — —, in New Jersey, xxi, 320.

— rock of western Massachusetts, viii, 16.

— veins, origin of, *G. Bischof*, xlix, 396.

Quebec, cement of the Castle Rock, *F. H. Baddely*, xxviii, 367.

—, Literary and Historical Society, transactions of, xvii, 412; xxv, 211.

Queries, geological, proposed by the geologists of the New York State survey, xxxiii, 124.

— relative to mineral veins, xxxiii, 135.

Quicksilver mines of Spain, xxviii, 17.

— — of Idria, xxix, 219.

*Quinby, A. B.*, investigations relative to the blowing machinery of blast furnace, xii, 128.

—, examination of the maximum and minimum effects of machines, xii, 346.

- Quinby, A. B.*, on crank motion, vii, 316<sup>f</sup>; ix, 317; xi, 338<sup>f</sup>; xii, 344<sup>f</sup>; xiii, 73, 356.
- , on pitchback and breast wheels, xi, 333.
- , on high and low pressure boilers, ix, 313.<sup>f</sup>
- , on the spiral of Archimedes, ix, 316.<sup>f</sup>
- , new demonstrations on the theory of the overshot water-wheel, ix, 304<sup>f</sup>; x, 203; xi, 335.
- Quinine, preparation of, xlvii, 196.
- , remarks upon, xx, 52.
- , sulphate of, frauds in, x, 386.
- , —, mode of detecting its adulteration with sugar, xiii, 400.
- , manufactures of, in France, xiv, 390.
- Quinoline, xlvii, 196.
- R.**
- Races of men, enumeration and characters of, *S. G. Morton*, xxxviii, 342<sup>f</sup>; xlvii, 206.
- , —, stature of, xxii, 357.
- , Indian, of America, characteristics of, *S. G. Morton*, xxxviii, 345, 347, 360<sup>f</sup>; xlvii, 408.
- of the Andes, ancient, xxix, 358.
- , Peruvian, characteristics of ancient and modern, *S. G. Morton*, xxxviii, 361<sup>f</sup>, 365.<sup>f</sup>
- Radiant heat, transmission of, *M. Melloni*, xxvii, 228.
- , —, *B. Powell*, xl, 313.
- Radiation of heat, *A. D. Bache*, xxx, 16; xxxiv, 39.
- , —, apparatus for illustrating, xxviii, 320.<sup>f</sup>
- Radius of the earth, xxxi, 234.
- Rae, J.*, balloon raised by solar heat, xxxiii, 196.
- Rafinesque, C. S.*, progress of vegetation near Philadelphia, i, 77.
- , on atmospherical dust, i, 397.
- , on the genus *Flœrkea*, i, 373.
- , new species of grass, *Diplocea barbata*, i, 252.
- Rafinesque, C. S.*, *Cylactis*, *Nemopanthus* and *Polanisia*, three genera of New York plants, i, 377.
- , description of the *Xanthium maculatum*, i, 151.
- , new genus (*Exoglossum*) of freshwater fish, i, 155.
- , *Mustela vulpina*, new species, i, 82.
- , *Scytalus cupreus*, or copper headed snake, i, 81.
- , sponges on Long Island shores, i, 149.
- , notice of the works of, xxix, 393, 394.
- , — of zoological writings of, *S. S. Haldeman*, xlii, 280.
- , — of the Botanical writings of, xl, 221.
- Railroads in Austria, xx, 174.
- in the United States, extent of, *J. Henry*, xxxiii, 296.
- , Hudson and Mohawk, account of, *S. D. Bloodgood*, xxi, 141.
- , graduation of Mohawk and Hudson, xxi, 385.<sup>f</sup>
- , Baltimore, method of clearing the snow from, xx, 166.<sup>f</sup>
- curves, *T. Gorton*, xxvii, 131.<sup>f</sup>
- , elevation of, required for rails, over roads of a certain curvature, *J. Thomson*, xxii, 346.<sup>f</sup>
- , inclined planes in the construction of, *J. Thomson*, xxiii, 107.
- , turn-outs in, with flexible moveable rails, *T. Gorton*, xxviii, 248.
- cars, rapidity consistent with safety, xxxv, 197.
- , improved method of constructing, xxxv, 318.
- , cast iron sleepers for, xxxv, 318.
- , resistance of air to trains of, xxxviii, 136.
- , atmospheric, xlix, 228.
- tunnel, in Pennsylvania, xxix, 73.
- Railways, vibration of, *Denham*, xxx, 382.

- Railway iron, remarks on, *D. Mueshet*, xxxiv, 15.
- Rain, amount of, at different heights in the atmosphere, xxix, 354.
- , —, in S. W. of Ireland, *T. Knox*, xlvi, 394.
- , —, in the Ghâts of Western India, xxxviii, 103.
- , mean annual amount of, at Perth, Scotland, xl, 342.
- , excessive at Genoa and elsewhere, *J. D. Forbes*, xl, 326.
- at Paris, in 1823, ix, 194.
- , register of, at Hudson, Ohio, *E. Loomis*, xli, 328; xlix, 282.
- , —, at Montreal, 1836-1840, *J. S. McCord*, xli, 331.
- at Westchester, Penn., amount for several years, *W. Darlington*, vi, 326.
- —, register for ten years, xiv, 29.
- , at New Fane, Vt., 1823, '24, *M. Field*, viii, 306.
- , tropical, iv, 375.
- , season of, in Columbia, South America, *R. Wright*, xxxvii, 2.
- from a clear sky, instances of, xxxvi, 178.
- , *Rowall's* theory of, xli, 40.
- , remarks on, *W. C. Redfield*, xxxiii, 54.
- , red, i, 309.
- , —, in Tennessee, *G. Troost*, xli, 403.
- , —, —, a hoax, xlv, 216.
- of mollusca, xxx, 187.
- of fish, xli, 40.
- of grain, xli, 40.
- water, contents of, xv, 181, 185.
- , see farther under *Meteorology*.
- Rain-gauge, improved, *G. Chilton*, vii, 326.<sup>f</sup>
- , conical, *S. De Witt*, xxii, 321.<sup>f</sup>
- , used in New York state, xxv, 267.<sup>f</sup>
- , globular, of *Robinson*, xlii, 159.
- Rain-gauge, *A. D. Bache*, on the effect of deflected currents of air on the results with, xxxv, 287.
- Rain-marks in sandstone, *W. Buckland*, xxxv, 308.
- , at Storeton Hill, *Cunningham*, xxxvii, 371.
- in the new red sandstone of New Jersey, *W. C. Redfield*, xliii, 172; xlv, 136; xlv, 315.
- in the rocks of the Connecticut valley, *C. Lyell*, xlv, 394.
- in the Connecticut valley sandstone, *J. Deane*, xlix, 213.
- in the Potsdam sandstone, *E. Emmons*, xlv, 316.
- Rainbow, different brilliancy of the primary and secondary, xxi, 379.
- , supernumerary, *A. C. Twinning*, xxxii, 227.
- , accompanied with five supplementary bows, *D. Brewster*, xl, 344.
- , an acoustic, xxi, 381.
- Rainey, P.*, on the dry-rot, xxxiv, 169.
- Raining trees, notice of, xv, 170.
- Rains, G. W.*, on the generation of statical electricity by the electrical machine, xlix, 93.<sup>f</sup>
- Raleigh's typhoon of 1835, xxxv, 210; xxxvi, 59.
- Ram, hydraulic, iii, 381.
- Rambles of a naturalist, xxv, 425.
- Ramond*, on the vegetation of the Pyrenees, xiv, 377.
- Rana, species of, x, 52; xi, 273.
- Raphael tapestries, effect of light and air in restoring the colors of, xxxvii, 244.
- Rapids, navigation of, vii, 175.
- Rask*, notice of, iv, 383.
- Rat, pouched, of Canada, iv, 183.
- , mode of destroying, xxiv, 205.
- Rational expression for sines, tangents and secants, *D. Gould*, xxii, 392.
- Rats, habits of, xlvi, 242.

- Rattlesnakes, ii, 229.
- , curious facts respecting the bones of, *J. Green*, iii, 85.
- , disarmed by the leaves of the white ash, *S. Woodruff*, xxiii, 337.
- , — *ibid*, remarks on, xxx, 208.
- , cure for bite, iv, 61, 189.
- , Turman's snake root in North Carolina considered an antidote for the bite of, xlii, 43.
- , oil cure for the bite of, xlv, 95.
- , *Crotalus durissus*, xxiv, 176.
- , habits of, xlvi, 44.
- Rawson*, on fires in London, xxxv, 316.
- Ray, solar, see *Light*.
- Ray, John*, some notice of, *C. Fox*, xxxvi, 223.
- Razors, paste for, iv, 199.
- , method of sharpening, xxi, 165.
- , effect of cold on, xxvi, 189.
- Record of General Science, *R. D. Thomson's*, noticed, xxviii, 365; xxxii, 212.
- Rectification of the ellipse, xviii, 38.<sup>f</sup>
- Red color in agates, xxxvi, 207.
- — of marshes in the Mediterranean, xli, 193.
- globules of blood related to *Protococcus*, xxxvi, 206.
- rain, i, 309.
- — in Tennessee, xli, 403.
- — —, a hoax, xlv, 216.
- snow, x, 192.
- —, an animal production, *L. Agassiz*, xli, 64.
- sulphur spring, Va., xxix, 96.
- Redfield, W. C.*, on the storms of the Atlantic coast of the United States, xx, 17;—storm of September 3, 1821, 20; exhibited in the form of a great whirlwind, 21; tornadoes, generally, revolve on an axis of rotation and move with the main currents, 22; a consequent retrograde motion on one side of the axis and progressive on the other side, 23.
- Redfield, W. C.*, storm of August, 1830, xx, 34; second storm of August, 1830, 39; storm of October 1, 1830, 41; fall in the barometer due to the gyration of storms, 45.
- , on the hurricane of August, 1831, illustrating the position that storms and hurricanes are gyratory in action, and move with the general current of the region in which they occur, xxi, 191.
- , on the hurricanes and storms of the West Indies and the coast of the United States, xxv, 114;—uniformity of general character of; originate in tropical latitudes; greatest energy towards their interior; drifted by the prevailing atmospheric current; velocity of progression, 114; length of route; local duration; direction of the winds not the direction of progress, 115; local directions and change of wind, 115, 116; rotative motion from right to left in the northern hemisphere; effect on the barometer, 117; oscillation of the axis of rotation, 118; Barbadoes hurricane of August, 1831, 119; practical deductions for navigators, 119, 120; storms of the China Sea similar to those of the West Indies, 121; gyration in the southern hemisphere opposite to that in the northern, 121.
- , facts in meteorology, xxv, 122;—general view of the atmosphere and its currents, 123; classification of storm-winds, 126; whirlwinds and water-spouts identical, 127; transport of volcanic ashes by upper currents, 128, 129; barometer, 129, 130; circuit currents of the Atlantic and Pacific, 130, 131; cold polar currents flowing beneath the tropical, and carrying icebergs into the Gulf Stream, 131.

*Redfield, W. C.*, irregularities in the tides at Tahiti and elsewhere suggest a movement of the tide-wave from west to east in the higher latitudes and the reverse in the lower, xxv, 132; climate, as connected with atmospheric and oceanic currents, 133; deserts due to the fact that aerial currents of the region are passing from colder to warmer latitudes, 134.

—, synopsis of Meteorological Journal in New York city, for 1833, '34, xxviii, 154;—observed winds and cloud currents, 155; cold of southwest winds in winter, 157; barometric results, 157.

—, reply to *J.P. Espy's* "Notes," xxviii, 310;—tides at Tahiti, 311; course of tide-wave in N. Atlantic, 313; southwest wind of the Andes, 314; correction of a barometrical inaccuracy, 315; general atmospheric currents due to the earth's rotation and orbital progression, as affecting the gravitation, 316; greatest influence of heat shown in land and sea breezes, 317.

—, gales and hurricanes of the Western Atlantic, with a chart, xxxi, 115;—character of, and causes, 115–119<sup>f</sup>; hurricane of October, 1780, at Jamaica, showing the northwardly progression of, 120; hurricane of Barbadoes, October 10, 1780, 121; Barbadoes, Sept. 3, 1835, 122; rotatory scudding in hurricanes, 122; routes of various hurricanes, 125–127; Pacific systems of storms same as in the Atlantic, 128, 129.

—, relation of Gulf Stream to an opposite current on the N. American coast, xxxii, 349;—icebergs carried into the Gulf Stream by the deeper polar current, 351, 352; (boulders of Labradorite at Cocksackie, 351;) lower temperature on shoals and shores, due to the submarine current, 353.

*Redfield, W. C.*, meteorological sketches; on the atmosphere, currents, winds, clouds, fogs, rain, hail, storms, water-spouts, whirlwinds, trade winds, circuit winds, and land and sea breezes, xxxiii, 50;—deserts, variations of the barometer, 261.

—, meteorological journal at New York, for 1837, with average results for the preceding five years, including surface winds and cloud currents, and barometrical observations, xxxiv, 373.

—, on the courses of hurricanes, xxxv, 201;—tornado of 1835, 206; tyfoons of the China Sea, 209; Raleigh's typhoon, 210<sup>f</sup>; Canton typhoon of August, 1832, 217; *ibid* of September, 1831, 218; hurricanes of Asiatic Seas, 220; law of atmospheric circulation, 222.

—, on columnar whirlwinds excited by fires, xxxvi, 50.

—, Raleigh's Typhoon, xxxvi, 59.

—, meteorological register at New York city, for 1838 and 1839, with the mean results for the last seven years, xxxviii, 323.

—, meteorological observations at St. John's, Newfoundland, and at Canton, China, xxxviii, 265.

—, on the tornado of New Brunswick, and its whirling action, xli, 69.<sup>f</sup>

—, on the storm of Dec. 15, 1839, and general deductions on the nature of storms, xlii, 112.<sup>f</sup>

—, on the Providence tornado, with the evidence of its whirling action, xliii, 263.<sup>f</sup>

—, reply to *R. Hare's* objections to the whirlwind theory of storms, xlii, 299; xliii, 250.

—, reply to *R. Hare's* strictures on H. W. Dove's essay on storms, xliv, 384.

—, on tides, and the prevailing currents of the ocean and atmosphere, xlv, 293.

- Redfield, W. C.*, on ancient polar currents, xliii, 152.
- , on drift deposits about New York, xliii, 152.
- , *Scoresby* and *Buchan's* observations on the temperature of the ocean at different depths, showing warmer waters below, xlv, 139.
- , heated waters at the bottom of an ocean not immediately diffused by upward currents, xlv, 138.
- , on the effects of polar currents, xlv, 326.
- , on the drift period, the condition of the earth at the time, and attendant phenomena, xlvii, 120.
- , on the drift ice, and currents of the North Atlantic, with an illustrative map, xlviii, 373.
- , visit to Essex Co. mountains, N. Y., and barometric measurements, with a sketch of the northern sources of the Hudson, xxxiii, 301<sup>f</sup>;—see farther under *New York*.
- , on some American fossil fishes of the Connecticut valley and New Jersey, xli, 24, 164; xliii, 172.
- , fossil fishes of New Jersey and Connecticut identical, xxxvi, 186.
- , fossil fish and footprints in the red sandstone of New Jersey, xlv, 134.<sup>f</sup>
- , on fossil fishes in New Jersey, xlv, 314.
- , fossil fish in Virginia, xxxiv, 201.
- , fossil footprints of Middletown, Ct., xxxiii, 201.
- , — of Portland, Ct., xliii, 172.
- , — in New Jersey, xlv, 134; xlv, 315.
- , — rain-marks in New Jersey, xliii, 172; xlv, 136; xlv, 315.
- Redfield, W. C.*, fossil shells of the Miocene, xli, 161.
- , notices of American steamboats, xxiii, 311.
- , on steamboat explosions, xxi, 190.
- Refining, instructions on, xvii, 177.
- Reflecting goniometer, xx, 158.
- Refraction in the higher regions of the atmosphere, suggestions on, xii, 299.
- , curious lunar, x, 187.
- , extraordinary, in the diamond, xxxiv, 38.<sup>f</sup>
- , double, its relation to the crystalline forms of minerals, *D. Brewster*, vii, 363.
- , —, produced by pressure, *D. Brewster*, xxi, 296.
- , —, cause of, in crystals, *D. Brewster*, xxi, 296.
- of heat, xxviii, 366.
- Refractive indices, theoretical computation of, *B. Powell*, xlii, 160.
- —, *B. Powell* on, xxxviii, 107.
- power of minute bodies, and its application to mineralogy, *A. Bryson*, xli, 54.
- Refrigerating compound, see *Cold*.
- Regents of the University of New York, Report of, xxii, 415; xxv, 258<sup>f</sup>; xxvii, 177; xxx, 389; xlix, 176.
- Regnault, V.*, analysis of lithia mica, xxxvii, 356.
- , researches on the dilatation of gases, notice of, xlv, 63.
- Règne Animal of Cuvier, American translation of, xxi, 388.
- Reid, W.*, on the laws of storms, xxxv, 276.
- , work by, on storms, noticed, xxxv, 182.
- Reizet*, on determining the nitrogen in organic compounds, xlv, 267.
- Reliquiæ Diluvianæ, of *W. Buckland*, viii, 150, 317; xi, 196; xviii, 393.
- Baldwinianæ, xli, 192.
- Rennel, J.*, notice of, xx, 304.

- Rensselaer, J. van*, ascent of Mount Blanc, ii, 1.
- , on the natural history of the ocean, v, 128.
- , notice of freshwater formations, vi, 381.
- , notice of an error in *J. Finch's* paper on the Celtic antiquities of America, viii, 200.
- , on lightning rods, ix, 331.
- , geological lectures of, ix, 397; xii, 399.
- , on the fossil mastodon, xi, 246; xii, 380.
- , new Vesuvian minerals, xi, 250.<sup>f</sup>
- , natural history of Orange Co., N. Y., xiii, 224.
- , fossil tooth of an elephant, xiv, 31.
- , on a larva, supposed to have passed from the bladder, xiii, 229.
- , temperature of the cities of Rome (Italy) and New York, xlii, 120.
- Rensselaer, S. van*, obituary notice of, xxxvi, 156.
- , notice of his survey in the district adjoining the Erie canal, viii, 195, 358.
- Rensselaer school, travelling of, xviii, 200; xix, 151.
- — — flotilla, xviii, 200.
- — —, incidents of, in 1830, xix, 153.
- Rensselaerite, is steatitic pyroxene, *L. C. Beck*, xl, 77.
- Renwick, J.*, longitude of New York, v, 143.
- , on a new mineral, viii, 192.
- , translation from the *Astronomical Journal of Hamburgh*, xvi, 225.
- , letter to, by *E. Sabine*, on the magnetism of the earth, xvii, 145.
- , treatise on the steam engine, review of, xx, 323.
- , *Outlines of Geology*, noticed, xxxiv, 183.
- Repeating Theodolite, *F. R. Hassler's*, xvi, 252.<sup>f</sup>
- Report on Iron, by *J. H. Alexander*, xli, 376.
- on herbaceous plants of Massachusetts, by *C. Dewey*, xli, 378.
- on the quadrupeds of Massachusetts, by *E. Emmons*, xli, 378.
- on insects injurious to vegetation, by *T. W. Harris*; noticed, xliii, 386.
- on the invertebrata of Massachusetts, *A. A. Gould*, xli, 378.
- , fishes, reptiles and birds of Massachusetts, xxxviii, 379, 393.
- on the fishes of New York, by *J. E. Dekay*, reviewed, xlv, 275.
- , *Geological*, of Connecticut, by *C. U. Shepard*, noticed, xxxiii, 151.
- , —, —, by *J. G. Percival*, noticed, xlv, 187.
- , —, of Indiana, by *D. D. Owen*, noticed, xxxiv, 193; xl, 133.
- , —, of Maine, by *C. T. Jackson*, noticed, xxxii, 193; xxxv, 387; xxxvi, 143; xxxvii, 376.
- , —, of Maryland, by *J. T. Ducatel*, noticed, xxvii, 1; xxx, 393; xxxii, 191.
- , —, of Massachusetts, by *E. Hitchcock*, xxii, 1<sup>f</sup>; xxiii, 389; xxvi, 213; xxxvi, 363; xli, 384.
- , —, of Michigan, by *D. Houghton*, xxxiv, 190; xl, 136.
- , —, of New Hampshire, by *C. T. Jackson*, noticed, xli, 383; xlviii, 393; xlix, 27.
- , —, of New York, annual, noticed, xxxii, 186; xxxvi, 1; xxxix, 95; xl, 73; xlii, 227.
- , —, —, final, reviewed, xlv, 143; xlvii, 354<sup>f</sup>; xlviii, 296.<sup>f</sup>
- , —, of Ohio, noticed, xxxii, 190; xxxiv, 196, 347<sup>f</sup>; xl, 126.
- , —, of Pennsylvania, by *H. D. Rogers*, noticed, xxxii, 192; xxxiv, 188; xxxvii, 380.
- , —, of Rhode Island, by *C. T. Jackson*, noticed, xl, 182.

- Report, Geological, of Tennessee, by *G. Troost*, noticed, xxx, 391; xxxiv, 187.
- , —, of Virginia, by *W. B. Rogers*, noticed, xxxii, 192; xxxvii, 380.
- , —, of Western States, *G. W. Featherstonhaugh*, xxviii, 379; xxxii, 185.
- Reptiles, fossil, notice of *T. Hawkins's* work on, xxvii, 413.
- , —, notice of *R. Owen's* report on, xlii, 328.
- , on the geological age of, *G. A. Mantell*, xxi, 359.
- , monograph on, *D. H. Barnes*, xi, 268.
- of Connecticut, catalogue of, *J. H. Linsley*, xvi, 37.
- , see farther under *Zoology*.
- Resin, Maynas, xlix, 194.
- , guaiac, xlix, 194.
- , *J. F. W. Johnston*, xli, 53.
- Resistance of the air to railway trains, xxxviii, 136.
- of fluids, general principles of, *L. R. Gibbes*, xxvii, 135.
- —, *A. Bourne*, xxviii, 230.
- —, *G. W. Keely*, xxviii, 318<sup>f</sup>; xxx, 164; xxxi, 111.
- —, *E. W. Blake*, xxix, 274; xxx, 359.
- —, *J. S. Russell*, xxix, 351; xxxv, 317.
- Resisting medium, some of the probable effects of, *T. H. Perry*, xxxviii, 246.
- —, remarks on, xvii, 389.
- —, see farther, *Ether*.
- Respiration, chemical process of, xii, 396.
- , *G. Magnus*, xxxv, 198.
- , on the office of nitrogen in, *L. C. Beck*, xviii, 52.
- , effect of deep, *G. C. Holland*, xxxiv, 28.
- of oxygen, i, 95.
- , products of, at different periods of the day, *C. T. Coathupe*, xxxvii, 367.
- Resuscitation from drowning, by oxygen, remarks on, *J. E. Muse*, xvi, 250.
- Retina, remarks on, *W. C. Wallace*, xxviii, 278.
- Revere, J.*, on the crude sodas of commerce, xiv, 41.
- , on sheathing for ships, xvi, 180.
- Review, see *Works*.
- Revue Encyclopédique, notice of, ii, 164; iii, 392; viii, 385; xviii, 184.
- —, notice of one of the monthly suppers commemorating the establishment of, xviii, 184.
- Reynolds, W. G.*, theory of meteors, i, 266.
- Rhine, amount of water of, which passes Bâle, v, 392.
- Rhinoceros, fossil bones of, ii, 145.
- Rhode Island, geological survey of, *C. T. Jackson*, xl, 182.
- , coal of, x, 342; xi, 78; xii, 76; xl, 187.
- Rhodium in gold from Mexico, xi, 298.
- Rhomb spar in Massachusetts, vii, 255; x, 18.
- Rhubarb, *G. W. Carpenter*, ix, 91.
- , observations on, *G. W. Carpenter*, xiv, 33.
- , preparation of, vii, 385.
- Ribancourt*, on peat, xv, 250.
- Rice, how to boil, xxiii, 202.
- paper, xxiv, 207.
- Rich, C.*, effects of lightning on the packetship New York, xxxvii, 321.
- Rich, E.*, project for reforming the English alphabet, xlvi, 420.
- Richardson, J.*, on the Zoology of North America, xxxi, 343, 356, 376.
- Riddell, J. L.*, new construction of the barometer, xxvii, 223.<sup>f</sup>
- , a new mode of preserving plants, xxxv, 338.
- , on the geological features of Ohio, xxx, 394.
- , electro-magnetic engine, xxxv, 343.<sup>f</sup>



- Riddell, J. L.*, Texas, Trinity country, xxxvii, 211.
- , on Hog Wallow Prairies, Texas, xxxix, 211.
- Riench's* test for arsenic, medico-legal application of, xlv, 240.
- Rigg, R.*, carbon a compound body, xlvii, 211.
- , Chemical and Agricultural Researches of, noticed, xlvii, 211.
- Right angled triangles, expressions for sides of, xxiv, 68.
- Rio Janeiro, meteorological register kept at, from 1832-1843, xlvii, 290.
- Ripple-marks in transition rocks, *T. A. Conrad*, xxxv, 248.
- — in the rocks of the Connecticut valley, *C. Lyell*, xlv, 394.
- — in the new red sandstone of New Jersey, xlv, 136.
- — and mud furrows in rocks, *J. Hall*, xlv, 148.
- — in New York, xxxvi, 46.
- Rise of land, see *Elevation*.
- Ritter, T.*, on Belmont anthracite, xii, 301.
- Rive, A. de la*, galvanic instrument by, v, 395.
- , present state (1833) of the principles of electricity, xxvi, 175.
- , on electro-magnetic currents, xxxiv, 6.
- River McKenzie, xvii, 4.
- Rhine, amount of water in, which passes Bâle, v, 392.
- Mississippi, velocity of, vii, 174.
- Copper Mine, xvii, 7.
- Rivers, action of, xxi, 23.
- Rivero, de*, sketch of the mines of Pasco, xvii, 43.<sup>f</sup>
- Robert, E.*, visit to Iceland, xxxi, 167; xxxii, 196.
- Robertson, E.*, on aerostation, xiv, 166, 325.
- Robinson, E.*, gold medal of the Geographical Society awarded to, xliii, 404.
- Robinson, S.*, catalogue of minerals of, noticed, viii, 200; ix, 396.
- , localities of minerals, viii, 230.
- , notice of minerals, x, 225.
- , cabinet of minerals of, xiii, 199.
- Robison, I.*, on the rising of the coast of Chili, in 1822, xxx, 110.
- Robison, J.*, perfection of the art of photography, xxxvii, 183.
- , substitute for barometer, xxxv, 294.
- Robiquet*, on a new metallic dye, xxii, 197.
- Rochefoucauld, Duc de la*, notice of, xiii, 167; xiv, 392.
- Rochester, town of, ii, 252.
- Rock crystal, see *Quartz*.
- Rock, Paint, i, 67.
- Rock, Putnam's, v, 37.
- Rocks, *Brongniart's* seven classes of, xxxix, 149.
- , *K. C. von Leonhard's* arrangement of, xx, 182.
- , European, classification of, *H. T. De la Beche*, xviii, 26.
- , American, classification and characters of, *L. Vanuxem*, xvi, 254.
- , nomenclature and classes of, *A. Eaton*, xiv, 145<sup>f</sup>, 359.
- of America, equivalency with European, *A. Eaton*, xxxix, 149.
- , volcanic, characters and arrangement of the different kinds of, *G. P. Scrope*, xv, 28.
- of the Connecticut valley, vii, 25.
- , joints in, a result of elevation, xxxi, 366.
- , supposed motion, without apparent cause, v, 34.<sup>f</sup>
- , moving, of Salisbury, remarks on, v, 34<sup>f</sup>; ix, 239.
- moved by ice, *J. Adams*, ix, 136.
- —, *J. Wood*, ix, 144.

- Rocks, removal of, by the Saxicava, xlii, 326.
- , excavated basins in, about a fall in the Green Mountains, Vt., vi, 252.
- , blasting of, see *Blasting*.
- Rocket, newly invented, v, 189.
- Rocking stone, of Durham, N. H., *J. B. Moore*, vi, 243.<sup>f</sup>
- — of Hanover, N. H., xxiv, 185.<sup>f</sup>
- — of Roxbury, Mass., vii, 59.<sup>f</sup>
- — in Savoy, Massachusetts, ix, 27.<sup>f</sup>
- — in Rhode Island, x, 9.<sup>f</sup>
- — in Warwick, R. Island, vii, 201.<sup>f</sup>
- — in Putnam Co., N. Y., v, 252.<sup>f</sup>
- —, raised by the Indians of America, vii, 157.
- Rocksalt, see *Salt*.
- Rockwell, C. H.*, analysis of kyanite, xlvi, 383.
- , analysis of meteoric iron of Otsego Co., N. Y., xlvi, 402.
- Rockwell, S.*, on spontaneous combustion, v, 201.
- Rocky Mountains, geological observations on the northern termination of, xvii, 2.
- —, geology and meteorology west of, *A. Eaton*, xxv, 351.
- —, *ibid*, remarks on, *J. Ball*, xxviii, 1.
- Rod, divining, iii, 102; xi, 201.<sup>f</sup>
- Rodentia, new species of, xxxi, 385.
- , see farther *Zoology*.
- Rodman, W. W.*, new localities of minerals, xxxv, 179, 180.
- Rodriguez, P. J.*, on comets, xvi, 94.<sup>f</sup>
- Roger, T.*, on the preservation of insects, xix, 213.
- Rogers, G. A.*, method of manufacturing pot and pearl ashes, viii, 304.
- Rogers, H. D.*, on the falls of Niagara, xxvii, 326.<sup>f</sup>
- Rogers, H. D.*, Geology of the United States, notice of a memoir read before the British Association, xxviii, 74.
- , opinion on age of graywacke, opposed, xxxv, 243.
- , *ibid*, explanation concerning, *B. Silliman*, xxxv, 250.
- , on trap dikes in Pennsylvania, xli, 173.
- , — —, crescent form of, xlv, 334.
- , on diluvial action, xli, 175.
- , on Pennsylvania coal formation, xli, 177.
- , dip of new red sandstone, due to oblique deposition, xliii, 170.
- , dispersion of drift due to waves of translation from the north seas, xliii, 153.
- , on hydrated minerals, xlv, 147.
- , on the ancient temperature of the globe, xlv, 147.
- , Address before the American Association of Geologists and Naturalists, including a review of American geology and some branches of general geological dynamics, xlvii, 137, 247.
- , characters of some recent earthquakes, as bearing upon the dynamics of geology, xlv, 341; xlvii, 274.
- , paroxysmal undulations of the earth's crust, a cause of flexures of strata, xlv, 345, 346; xlvii, 276.
- , constitution of the atmosphere during the coal era, xlvii, 105.
- , first Report on the Geology of Pennsylvania, noticed, xxxii, 192.
- , second Report on Geology of Pennsylvania, noticed, xxxiv, 188.
- , third Report, *ibid*, xxxvii, 380.
- , fifth Report, *ibid*, xli, 385.

- Rogers, H. D.*, origin of the Appalachian coal strata, xliii, 178.
- , structure of the Appalachian chain, xliii, 177 ; xliv, 359.
- , scratches, diluvial, in Pennsylvania, xliii, 180.
- , a new compound containing platinum, xxxix, 369.
- Rogers, J. B.*, and *J. Green*, experiments with the elementary voltaic battery, xxviii, 33.
- Rogers, J. B.*, dolomite, a double salt, xli, 172.
- , analysis of meteoric iron, xliii, 169.
- Rogers, Moses*, Savannah steamer the first which crossed the Atlantic, commanded by, xxxviii, 155.
- , —, log-book of, preserved at Philadelphia, by the American Philosophical Society, xl, 34.
- Rogers, R. E.*, on limestones, xli, 171.
- , new instruments and processes for the analysis of the carbonates, xlvi, 346.<sup>f</sup>
- Rogers, S.*, letters on the manufacture of iron, xlii, 380.
- Rogers, W. B.* and *H. D.*, experimental enquiry into some of the laws of the elementary voltaic battery, xxvii, 39.<sup>f</sup>
- Rogers, W. B.*, analyses of shells, xxvi, 36.
- , apparatus for analyzing marl and carbonates, xxvii, 299<sup>f</sup> ; xlv, 346.<sup>f</sup>
- , on bimalate of lime in sumach, xxvii, 294.
- , self-filling syphon, xxvii, 302.<sup>f</sup>
- , chlorine in meteoric iron, xliii, 169.
- , fossil foot-marks, xliii, 173.
- , ores of zinc and lead in Virginia, xliii, 169.
- , oxide of tin in Virginia, xliii, 168.
- , on subterranean temperature, xliii, 176.
- Rogers, W. B.*, on the dip of strata, xliii, 171.
- , elevation and flexure of strata, theory of, xliv, 360.
- , proofs of diluvial agency, xliii, 181.
- , infusorial stratum, near Richmond, Va., xlv, 313.
- , — — —, in Maryland, xlvi, 141.
- , Virginia tertiary formations, xxxviii, 183.
- , coal of eastern Virginia, of the age of the lower oolite, xliii, 175.
- , natural coke, or porous anthracite of eastern Virginia, xliii, 175.
- , connection of thermal springs with anticlinal axes and faults, xliii, 176.
- , structure of the Appalachian chain, xliii, 177 ; xliv, 359.
- , on chemical equivalents, xlvi, 105.
- , geological Report on Virginia, notice of, xxxii, 192 ; xxxvii, 380.
- Roma, Campagna di, malaria of, xxii, 336.
- , manuscripts at, v, 385.
- , clergy and population of, ix, 186.
- Roman aqueducts, xix, 389.
- Romanzow's expedition across Behring's Straits, ii, 345.
- Roofs of pasteboard, xxiv, 381.
- Roofing with zinc, *A. Caswell*, xxxi, 248.
- ibid, *L. D. Gale*, xxxii, 315.
- slate, of Lebanon, N. Y., v, 11.
- — — in Vermont, v, 272.
- Ropes, on the various vegetable materials for, xxi, 27 ; xxv, 330.
- , material for, from the Rose of Sharon, xxviii, 371.
- , from Manilla hemp, xli, 200.<sup>f</sup>
- , strengthened by a solution of glue with oak bark, xxvi, 186.
- Rosaic acid in urine, xvii, 385.

- Rose of Sharon, fibres of, xxviii, 371.  
 Roses, preparation of oil of, xxviii, 383.  
 —, stearoptine of oil of, xxviii, 383.  
*Rosé, G.*, on the identity of Edwardsite and Monazite, xxxv, 249.  
*Rosé, H.*, on the new metals niobium and pelopium, xlviii, 400.  
 —, examination of columbite, xlix, 228.  
 Rosin, gas lights from, xxviii, 147.  
 —, bubbles blown in, ii, 179.  
 Rosse's great telescope, xli, 208; xlix, 221.  
 Rossie lead mines, xxxvi, 24; xlii, 174.  
 Rot, dry, *G. Gibbs*, ii, 114.  
 —, —, *P. Rainey*, xxxiv, 169.  
 —, —, *J. T. Plummer*, xlii, 197.  
 Rotary motion, instrument for illustrating, (rotascope) *W. R. Johnson*, xxi, 265.<sup>f</sup>  
 — multiplier, see under *Electricity*.  
 Rotascope, description of, *W. R. Johnson*, xxi, 265.<sup>f</sup>  
 Rotation of the planet Venus, xxiv, 204.<sup>f</sup>  
 — of fluids, xxvii, 84.<sup>f</sup>  
 Rotative piston, Cooper's, xvi, 313.<sup>f</sup>  
*Rothe, C. E.*, remarks on the gold mines of North Carolina, xiii, 201.<sup>f</sup>  
 Rotting of timber in certain situations, xxxii, 380.  
*Rowles*, evaporation of water under electrical insulation, xlvii, 190.  
 Royal George, state of preservation of, xl, 213.  
 — Society, see *Society*.  
 Rubellite of Kingsbridge, ii, 366.  
 Ruby, fusion of, ii, 292.  
 Rudder, temporary, xiii, 371.<sup>f</sup>  
*Rue, W. de la*, structure of electro-precipitated metals, xlix, 390.  
*Ruffin, E.*, on calcareous manures, review of, xxx, 138.  
*Ruggles, D.*, notice of the region about Fort Winnebago, xxx, 1.<sup>f</sup>  
*Ruggles, D.*, on the copper mines of Lake Superior, xlix, 64.<sup>f</sup>  
 —, tides in the North American lakes, xlv, 18.  
 —, on a large trilobite, and Iowa coralline marble, xlix, 216.  
 Rumford, Count, biographical memoir of, xix, 28.  
 —, —, sketch of the early history of, *J. Johnston*, xxxiii, 21.  
 Ruminants, follicular dentition in, xxxviii, 129.  
*Rumker, C.*, on currents in the ocean, xx, 180.  
 Rupert's drop, breaking of, xxv, 194.  
 Rural economy, v, 380; xiv, 391.  
*Ruschenberger, W. S. W.*, remarks on the barometer, and meteorological observations on board U. S. ship Peacock, xxxiii, 345.  
 —, translation of *C. Bertero's* list of the plants of Chili, xix, 63, 299; xx, 248; xxiii, 78, 250.  
*Rush, B.*, on the sugar of the maple, ii, 261.  
*Russell, A.*, on Statistical Enquiries, noticed, xxxix, 395.  
*Russell, J. L.*, on the cryptogamia of Chelmsford, xxxix, 183.  
*Russell, J. S.*, on waves, xxxiii, 283; xxxiv, 1; xxxv, 290.  
 —, substitute for mountain barometer, xxxv, 294.  
*Russell's Planetarium*, xlii, 400.  
 Russia, population of, iv, 389.  
 —, population and religion of, xv, 397.  
 —, religious toleration in, xvii, 192.  
 —, establishments in, v, 176.  
 —, extensive draining in, v, 393.  
 —, destruction of live-stock by wolves, xx, 177.  
 —, wood in, vi, 398.  
 —, steppes of, xvii, 23.  
 —, —, salt, of Orenburg, xlv, 205.  
 —, Irkutsk, notice of, xvii, 27.  
 —, Okotsk, notice of, xvii, 30.  
 —, St. Petersburg Botanic Garden, xx, 175.  
 —, libraries of, v, 177.

- Russia, Yakutsk, notice of, xvii, 28.  
 —, gypsum in, xvii, 19, 21, 24.  
 —, salt of, xvii, 19.  
 —, mines, proceeds of, from 1818 to 1823, xii, 197.  
 —, mines of Nertchinsk, xvii, 34.  
 — diamond mines, xix, 199.  
 —, copper mines at Ekatherin-  
 enburg, xvii, 25.  
 —, notice of gold mines of, ix,  
 183; xii, 384; xiv, 204; xvii, 25;  
 xviii, 190; xxviii, 395; xlvi,  
 211.  
 —, mines of gold and silver, yield  
 of, xvii, 406; xx, 402; xxi, 372.  
 —, mass of twenty-five pounds,  
 xii, 384.  
 —, platina in the Ural, xii, 384;  
 xiv, 204; xviii, 190; xxviii, 395.  
 —, —, large masses of, xlvi,  
 212.  
 —, iron founderies, improvements  
 in, xxx, 181.  
 —, stone butter, a mineral pro-  
 duct eaten in, xvii, 28.  
 Russian drinks, xi, 392.  
 — leather, fabrication of, iv, 193.  
 — universities, xx, 176.  
 Rust, preservation of iron from, xix,  
 203; xxi, 150; xxii, 382; xxiii,  
 199, 383.  
 —, means of preserving from, by  
 caoutchouc, vi, 398.  
 Ruthenium, a new metal from the  
 Ural, xvi, 384; xlvi, 401.  
 Rutile, in Connecticut, iv, 55.  
 —, in Massachusetts, i, 116, 134;  
 v, 405; vii, 58; xii, 259; xx,  
 170.  
 —, in New Jersey, ix, 245.  
 —, in New York, xxi, 325.  
 —, in Pennsylvania, v, 41; xiv,  
 5, 14.  
 —, in Vermont, ix, 55.  
 Rye, ergot of, *Wm. Tully*, ii, 45.
- S.**
- Sabal Adansoni, xxvi, 315.  
 — hystrix, v, 293.  
 — minima, v, 293.
- Sabine, E.*, on the magnetism of the  
 earth, and especially of the Arc-  
 tic regions, xvii, 145.<sup>f</sup>  
 Saccharic acid, *Heintz*, xlvi, 193.  
 Saccharine juices, optical properties  
 of, *Biot*, xxiv, 379.  
 Saco river, temperature of, xxxiv,  
 381; xxxvii, 389.  
 Saddle Mountain, Mass., viii, 3.  
 Safe, for provisions, xxx, 169.  
 Safety lamp, *H. Davy's*, xvii, 240.  
 — —, of *E. du Mesnil*, xxxviii,  
 115.  
 — tubes, substitute for, xvii,  
 345.<sup>f</sup>  
 Sagenaria, generic characters, vii,  
 180.  
*Sager, A.*, on American amphibia,  
 xxxvi, 320.<sup>f</sup>  
 Saguerus, a Sago palm, affording  
 material for cordage, xxi, 36.  
 Sahlite, in Connecticut, vi, 225.  
 —, in New York, viii, 88.  
 Sailing, solution of a case in, xlvi,  
 79.  
 Sal-ammoniac, produced from the  
 combustion of a coal bed, vi,  
 395.  
 Salamander, see under *Zoology*.  
 Salicine, xix, 204, 370; xx, 384.  
 —, mode of obtaining, xxi, 155.  
 —, properties of, xlix, 392.  
 Saliferous formation of the Ohio  
 valley, *S. P. Hildreth*, xxiv, 46;  
 xxix, 26.  
 — — in New York, xxxix,  
 103.  
 — — in Virginia, xli, 214.  
 Salina, salt works and springs of,  
 xv, 6; xvi, 187; xix, 141; xxxvi,  
 2; xxxix, 103.  
 —, bromine in the brine of, xviii,  
 143.  
 Salines, see under *Salt*.  
*Salisbury, E. E.*, Dr. Lund on the  
 occurrence of fossil human bones  
 of the præhistoric world, xliv,  
 277.  
 —, abstract of *J. Klaproth* on the  
 invention of the compass, xl,  
 242.

- Salisbury, S.*, analysis of the Avon waters, xxxv, 188.
- Salisbury*, Connecticut, iron ores, ii, 212.
- iron works, xix, 322.
- , geology and mineralogy of, viii, 252.
- Salix ambigua*, xlv, 35.
- *Cutleri*, xlv, 36.
- *myrtilloides*, xlv, 34.
- *phylicifolia*, xlv, 35.
- Salmon, W.*, biographical notice of, xxxvii, 121.
- Salt, J. Van Rensselaer* on, vii, 360.
- , a mode of obtaining large crystals of, xvi, 397.
- , a remedy for animal poisons, xxi, 158.
- , gas in the cavities of, producing decrepitation, xix, 198.
- storms, influence of, on vegetation, *J. B. Beck*, i, 388.
- , *ibid*, on animals, i, 394.
- , quantity of, in sea-water, *C. Daubeny*, xxxvi, 188.
- , marine, arsenic detected in, xx, 193.
- *infusoria*, xli, 193.
- beds, origin of, *L. Vanuxem*, xii, 88.
- manufactured by evaporation on faggots, x, 180.
- in Asia, Tabriz, Lake Oromiah, and of the great desert of Arabia, xxxvii, 350.
- in Europe, annual yield of mines, iii, 371.
- , in Russia, xvii, 19, 20.
- , —, steppe south of Orenburg, *R. I. Murchison*, xlv, 205.
- , mines of Ischil, xxix, 225.
- , in France, impurities of, xix, 178.
- , mines in Cheshire, England, xxiii, 219.
- in South America, on the plains of Tarapaca, *J. H. Blake*, xlv, 2.
- , New Grenada, works of Zipaquera, *J. H. Gibbon*, xxxii, 89.
- Salt in North America, U. States, springs and deposits, *G. W. Carpenter*, xv, 1.
- , New York, rocks and springs of, xv, 5, 6, 244; xxxvi, 2; xxxix, 103.
- , —, works of Onondaga lake, xlii, 228.
- , —, works of Salina and Syracuse, xv, 6; xix, 141.
- , —, manufacture of, xxxvi, 2.
- , Pennsylvania, valley of the Kiskiminitas and Conemaugh, *S. P. Hildreth*, xxix, 71.
- , Ohio, region of, *S. P. Hildreth*, xxiv, 46.
- , —, of the Muskingum valley, *S. P. Hildreth*, xxiv, 50; xxix, 26.
- , —, of Sundry Creek, xxix, 48.
- , —, mode of making the salt in the Ohio valley, xxiv, 54.
- , —, history of manufacture of, *S. P. Hildreth*, xxix, 117.
- , in Virginia, and salt formation, xli, 214.
- , —, Kenawha valleys, *S. P. Hildreth*, xxiv, 51; xxix, 84, 113.
- , —, of the Holston, *C. B. Hayden*, xlv, 173.
- , in Michigan, xxxiv, 192.
- , in Kentucky, xxix, 140.
- , in Texas, springs of, —, see farther *Springs, salt*. xxxvii, 213.
- , theory of, xxix, 115.
- marshes of the Mediterranean, red color of, due to a crustaceous animal, xli, 193.
- radical theory, criticism on, *R. Hare*, xlv, 52, 247.
- , —, criticism on, *W. Gibbs*, xlvi, 52.
- , —, *R. Kane*, xlvi, 57.
- Salts, *T. Graham* on the constitution of, xxxv, 300.

- Salts, number of, xvii, 184.  
 —, fusibility of, xix, 379.  
 — of ammonia, solvent and oxidating powers of, xviii, 255.  
 —, efflorescence of, prevented by the vapor of turpentine, xvi, 391.  
 —, haloid, certain existence of, in solution, demonstrated, *G. Wilson*, xxxviii, 118.  
 —, Harrodsburg, analysis of, *E. D. Smith*, i, 403.  
 —, metallic, on the decomposition of, *C. Matteucci*, xx, 187.  
 —, new series of double, formed by the action of sulphurous and nitrous acids upon the alkaline bases, *E. Fremy*, xviii, 194.  
 Saltness of the ocean, v, 131.  
 — — —, remarks on, *H. Humphreys*, xlix, 208.  
 — — —, at different depths, xxiii, 10.  
 Saltpetre, method of making by sun's heat, discovered by *Baffé*, vi, 400.  
 —, formed from beat leaves, xv, 180.  
*Sampson, W.*, notice of a cetaceous animal, xxiii, 301.<sup>f</sup>  
 San Lorenzo, Peru, fossils from, xxxviii, 201.  
 Sand, blown from shore, viii, 392.  
 —, rate of flowing, and angle of a heap of, xix, 190.  
 —, pressure of, xix, 190.  
 — of Lake George, iv, 46.  
 —, white siliceous, of Staten Island, xxxvi, 21.  
 —, lightning tubes in, xx, 396.  
 Sand hills, iii, 27.  
 Sand pipes in chalk, cause of, *C. Lyell*, xxxviii, 122.  
 Sandstone, recent, on northern coast of Cornwall, *J. A. Paris*, i, 234.  
 —, new red, some account of, in United States, xli, 244.  
 —, — — —, of United States, dip due to oblique deposition, *H. D. Rogers*, xliii, 170.<sup>f</sup>  
 Sandstone, new red, of Connecticut, cause of inclined position, *B. Silliman*, xlvi, 107.  
 —, — — —, of the Connecticut river, vi, 39.<sup>f</sup>  
 —, — — —, fossil remains, including bones, in, ii, 146; vi, 43.  
 —, — — —, junction with greenstone, vi, 47.  
 —, or freestone of the Sugar Loaf Mountain, Maryland, xxvii, 21.  
 — and breccia of the Capitol at Washington, i, 215, 216.  
 — of Potsdam, N. Y., xxxvi, 25.  
 — of Cornwall, England, i, 234.  
 —, footprints in, see *Footprints*.  
 Sandwich Islands, rocks and minerals of, xi, 11, 362; xvi, 345.  
 — — —, notices of, *C. S. Stewart*, xi, 363; xx, 229.  
 — — —, Hawaii, volcanic character of, xi, 1; xx, 228.  
 — — —, — — —, geological features of, *E. G. Kelley*, xl, 117.<sup>f</sup>  
 — — —, — — —, Mauna Loa, character of, xvi, 346.  
 — — —, Oahu, features of, *J. Ball*, xxviii, 15.  
 — — —, — — —, remark on the structure of, *J. D. Dana*, xlv, 407.  
 — — —, great agitation of the sea at, xxxvii, 358.  
 — — —, see farther under *Volcano*.  
*Sanford, E.*, notice of the calcareous tufa and tree of Chitteningo, N. Y., xviii, 354.  
*Sang, E.*, relation between a machine and its model, xxiv, 264.  
 —, rapidity of motion of railway cars, xxxv, 197.  
 Sanguinaria canadensis, xlix, 130.  
 Sanicula marilandica, xi, 174.  
 Santee, high hills of, iii, 2.  
 Saponaceous vegetables, *Bussy*, xxiv, 381.  
 Sappar, fusion of, ii, 291.

- Sappar, see farther, *Kyanite*.
- Sapphire in the emery of Naxos, xiv, 205.
- in Connecticut, vi, 219.
- of New Jersey, xiii, 380; xxi, 319.
- in North Carolina, iii, 4, 229.
- Saratoga high rock spring, description of, *J. N. Steel*, xvi, 343.<sup>f</sup>
- water, analysis of, *J. Steel*, xxi, 182; xxxvi, 8.
- —, —, *J. F. Dana*, xxxvi, 8.
- —, iodine in, xvi, 217, 242.
- —, bromine in, xviii, 142.
- Lake, and its environs, with Snake Hill, *J. H. Steele*, ix, 1.<sup>f</sup>
- , oolitic formation of, *J. H. Steele*, ix, 16.<sup>f</sup>
- powders, xvi, 369.
- Sarcophagus, ancient, iii, 390.
- Sargasso weeds, xx, 181.
- Sarracenia, remarks on the genus and species of, *H. B. Croom*, xxvi, 316.
- pulchella, xxv, 75.
- Sartwell, H. P.*, meteorological observations at Penn Yan, 1834, xxviii, 187.
- Sassarubrin, a resin from oil of sassafras, *R. Hare*, xxxi, 282, 285.
- Satin spar in New Jersey, ii, 197.
- — in New York, iv, 44.
- Saturn, five or more rings about, xxxvii, 373.
- , *ibid*, approximate dimensions of, xxxvii, 374.
- ring, eccentricity of, xvii, 162.
- , observations on the rings of, *L. F. Wartmann*, xxv, 191.
- , micrometrical observations on, xiii, 172.
- and his rings, observations on, at Rome, *P. F. de Vico*, xlv, 383.
- , sixth satellite of, xxxiv, 207.
- Sault St. Marie, canal around, xlvi, 213.
- Saurian remains, Hawkins's collection of, xxix, 367.
- —, in the alum shale of England, xxix, 364.
- Saurian remains of Tilgate Forest, *G. A. Mantell's* work and memoirs on, xli, 205; xliii, 189.
- —, *R. Owen's* Report on British, xlii, 328.
- Saurians in magnesian conglomerate, xxviii, 389.
- , new, *S. Stutchbury*, xxxi, 364.
- , see farther under *Zoology*.
- Saurocephalus, of *R. Harlan*, xxvii, 353.
- Saurodon, xviii, 246.
- Savage, T. S.*, on African insects, xl, 387.
- Savings Bank of Geneva, xxiv, 209.
- Saw, moved by mechanism, vii, 198.
- , acceleration of, at night, viii, 393.
- machine, rotary, *R. Eastman*, v, 146.<sup>f</sup>
- Saxifraga Careyana, xlii, 32.
- Saxton, J.*, electrographic gilding by, xli, 402.
- Say, Thos.*, observations on some zoophytes, shells, &c., principally fossil, i, 381; ii, 34.
- , American Conchology of, noticed, xxi, 179.
- , notes on Herpetology, i, 256.
- , obituary notice of, xxvii, 393.
- Scandinavians, early discovery of America by, xvii, 410.
- Scandinavian coast, elevation of, xlvii, 184.
- Scanlan, R.*, on commercial carbonate of ammonia, xxxv, 297.
- , nitrate of silver not blackened by light, xxxv, 298.
- Scapolite, pink, of Bolton, formula of, xlvii, 418.
- in Connecticut, viii, 258; xiv, 226.
- in Massachusetts, vii, 53, 252; viii, 233; ix, 47; xiv, 226.
- in New Jersey, vi, 250.
- in New York, ix, 41, 402; xix, 225; xxi, 325; xxv, 348.
- in Pennsylvania, viii, 239; x, 220, 221, 223; xiv, 13.
- Scarpa*, death of, xxv, 184.



- Schaeffer, G. C.*, on the meteors of August, 1837, and November, 1832, xxxiii, 133.
- , meteor of August, 1840, xxxix, 332.
- Schaeffer, F. C.*, peat of Dutchess Co., N. Y., i, 139.
- , localities of minerals, i, 236.
- Schænus effusus*, northern limit of, *H. B. Croom*, xxvi, 315.
- Scheerer*, on aventurine feldspar, xlix, 394.
- , on polycrase and malacrone, xlix, 394.
- Schenck*, transit of Mercury, May, 1832, xlix, 148.
- Schimpfer*, theory of boulders quoted and questioned, xxxvi, 331, 332.
- Schistose structure a result of crystallization, *J. D. Dana*, xlv, 105.
- in some volcanic rocks, *J. D. Dana*, xlv, 105.
- Schlechtendal, D. F. L. von*, Linnæa of, noticed, xxxix, 178; xl, 392.
- Schley, G.*, on steam as a conductor of electricity, xxvi, 206.
- Schlossberger, F.*, on the composition of fungi, xlix, 393.
- Schlotheim, E. F. von*, notice of, xxxvii, 128.
- Schmidt, G.*, notice of, iii, 79.
- Schnederman*, on a salt of platinum, xlv, 274.
- Schoharie, mineralogy of, xxviii, 172<sup>f</sup>; 381.
- Schönbein, C. F.*, on ozone, xlix, 195.
- , on the deoxidation of the ferridcyanide of potassium, and the salts of the peroxide of iron, xlix, 203.
- , on ozone, a supposed cause of odor attending electrical discharges, xli, 44.
- Schools for the poor in Italy, iii, 375.
- , Lancasterian, in France, iv, 199, 389.
- , see farther under *Education*.
- Schoolcraft, H. R.*, native copper of Lake Superior, with a figure, iii, 201.
- , copper mine on Lake Superior, vii, 43.
- , lead mines of Missouri, with geological and miscellaneous notices, iii, 59.
- , on a petrified tree, near Lake Michigan, iv, 285.
- , memoir on a fossil tree, notices of, by John Adams, James Madison and Thomas Jefferson, v, 23, 25.
- , on the prints of human feet in limestone, v, 223<sup>f</sup>; xliii, 22.
- , localities of minerals, vii, 46.
- , notice of a discourse by, xx, 166.
- , letter on the tide of Lake Superior, xx, 213.
- , address on the North American Indians, xxiv, 190.
- , action of the North American Lakes, xlv, 368.
- Schorl, see *Tourmaline*.
- Schröder, J. F.*, address by, noticed, xxi, 181.
- Schweigger-Seidel*, general electric formula, xxxv, 356.<sup>f</sup>
- Schweinfurt green, vii, 386.
- Schweinitz, L. D. de*, monograph of the genus *Viola*, v, 48.
- , list of the rarer plants near Easton, Penn., viii, 267.
- , obituary notice of, xxvi, 218.
- Schweitzer, G.*, analysis of seawater near Brighton, xxxviii, 12.
- Science, list of men of, who have held offices under government, xx, 172.
- in the South, xxi, 188.
- in the West, xxi, 187.
- Scientific publications, recent, in the United States, xxvi, 208, 397; xxvii, 395.
- Journals in Great Britain, xxviii, 365.
- Sciuri, see under *Zoology*.
- Sclerotic bones of the eyes of birds and reptiles, xxxiii, 289.

- Scoresby, W.*, magnetical investigations, xlvi, 33.  
 —, improvements by, in magnetic apparatus, xxxiv, 398.  
 Scotacks, tribe of, in Hungary, v, 384.  
 Scotland, population of, xxiv, 211.  
 Scott spring, Virginia, analysis of, xlv, 409.  
 Scratches, diluvial, caused by ice, according to *L. Agassiz's* theory, xlii, 350.  
 —, —, theory of, *E. Hitchcock*, xli, 255.  
 —, —, in the United States, xli, 174.  
 —, —, —, belong to two systems, *W. C. Redfield*, xlv, 333.  
 —, —, —, on rocks, a few localities of, xvii, 408.  
 —, —, in Maine, *C. T. Jackson*, xxxvi, 153.  
 —, —, in New Hampshire, *O. P. Hubbard*, xxxiv, 107.  
 —, —, —, *C. T. Jackson*, xlv, 146.  
 —, —, —, on the rocks at Hebron, xxii, 166.  
 —, —, in western New York, *G. E. Hayes*, xxxv, 191.  
 —, —, —, xxxvi, 39.  
 —, —, *ibid*, *C. Dewey*, xlv, 146.  
 —, —, on the rocks near New York city, *J. E. DeKay*, xvi, 357.  
 —, —, on the rocks in Sullivan Co., N. Y., *W. A. Thompson*, xxiii, 243.  
 —, —, in Pennsylvania, *H. D. Rogers*, xliii, 180.  
 —, —, in Ohio, (?) at Sandusky Bay, vi, 179.  
 —, —, in Indiana, *J. T. Plummer*, xlv, 296.  
 —, —, in the rocks of the Allegany range, xx, 124.  
 Screws, manufacture of, in Connecticut, ii, 208.  
*Scrope, G. P.*, on Volcanoes, review of, xiii, 106.  
 —, letter to the editor on volcanoes in North America, xiii, 190.
- Scrope, G. P.*, descriptive arrangement of volcanic rocks, xv, 28.  
 Sculpture, by Canova, iv, 371, 389.  
 Sea and land, relative level of, as regards the tides, xxxi, 335.  
 —, waves, currents and tides, v, 131.  
 —, —, —, see farther under *Ocean*.  
 —, depth of, v, 130.  
 —, —, not determinable by the echo, *C. Bonnycastle*, xxxviii, 161.  
 —, deep soundings in, by the French ship *Venus*, xl, 407.  
 —, encroachments of, near New York, xxxvi, 16.  
 —, action of, xxi, 21.  
 — and land breezes, causes of, *W. C. Redfield*, xxxiii, 65.  
 —, remarkable agitations of, at the Sandwich Islands, *T. C. B. Rooke*, xxxvii, 358.  
 —, Dead, level of, xl, 213; xlii, 214.  
 —, —, analysis of the waters of, xiii, 395; xlvi, 10.  
 —, —, account of, *J. D. Sherwood*, xlvi, 1.  
 Sea-serpent, remarks concerning, *J. Bigelow*, ii, 147.  
 —, xi, 196.  
 —, on the existence of, xii, 375.  
 —, xxviii, 372.  
 Sea-serpentism, history of, *S. L. Mitchill*, xv, 351.  
*Seal, T.*, on beryl, iv, 39.  
 Sealing wax, method of making, xxi, 150.  
 —, —, improvement in, xxviii, 148.  
 —, —, mode of separating from old letters, xxiii, 200.  
 Seawater near Brighton, analysis of, *G. Schweitzer*, xxxviii, 12.  
 —, Black Sea, analysis of, xx, 188.  
 —, quantity of salt in, *C. Daubeny*, xxxvi, 188.  
 —, potash in, iii, 371.

- Seawater, absorption of light by, v, 134.  
 —, marine animals in, v, 134.  
 —, color of, vi, 198; xxix, 237.  
 —, cause of color of, xxvi, 65.<sup>f</sup>  
 —, color of, due in part to iodine and bromine, xvii, 170.  
 —, density at different depths in the Mediterranean, xvii, 364.  
 —, distillation of, iii, 381.  
 —, distilled, use of, i, 172.  
 —, luminousness or phosphorescence of, v, 133; xvii, 209; xviii, 166, 187; xxxv, 372; xxxvi, 208.  
 —, saltness of ocean, v, 131.  
 —, —, *H. Humphreys*, xlix, 208.  
 —, —, at different depths, xxiii, 10.  
 —, specific gravity, v, 129.  
 —, temperature in different parts, v, 129; xxv, 130.  
 —, —, at great depths, xvii, 295.  
 —, —, at different depths, xxiii, 10.  
 Seaweeds of the Atlantic, xx, 181.  
*Sedgwick, A.*, Cambrian system of, xxxvii, 220.  
 —, address before the Geological Society of London, xxi, 186.  
 —, letter to R. Elton, xlvi, 403.  
 Sediment from the Mersey, xxxiii, 269.  
*Seely, L.*, garnet locality, iii, 241.  
 Segregation theory of veins, objections to, from facts in Maine, *C. T. Jackson*, xxxvi, 148.  
*Seiber's* Journey into Abyssinia, announced, iv, 383.  
*Selby, P. J.*, notice of, xxxvii, 164.  
 Selenite, see *Gypsum*.  
 Selenium, a new metal, i, 310.  
 Seleniuret of lead, xviii, 391; xix, 369.  
 — — and mercury, xviii, 391.  
 — of palladium, xix, 369.  
*Selloa nudata*, v, 300.  
 Seminole Indians, notice of, ix, 132.  
 Septaria, large; xxvi, 217.  
 Serbian, or miloschin, xlii, 386.  
 Serapis, temple of, account of the changes of level in, *C. Babbage*, xxvii, 408.  
 Series, new algebraic, vii, 278; viii, 131; ix, 98, 293.  
 Serpent rock of Lake Huron, iii, 258.<sup>f</sup>  
 Serpentine, metamorphic, through the agency of heated waters, xlv, 120.  
 —, crystallized, at Warwick, N. Y., ix, 242.  
 —, in Tenos, Grecian Archipelago, xxxi, 176.  
 — of the vicinity of Hudson's Bay, xvii, 12.  
 —, in Canada, viii, 68.  
 —, in Connecticut, vi, 227.  
 —, in Delaware, v, 240.  
 —, in Maryland, xviii, 80; xxiv, 349; xxvii, 25.  
 —, in Massachusetts, i, 114, 137; ii, 236; iii, 238; v, 268; vi, 227; viii, 49; ix, 43; x, 213; xii, 260; xxii, 29.  
 —, in New Jersey, ii, 195; iv, 16; v, 29.  
 —, in New York, vii, 57; ix, 39, 42; xix, 225, 228; xxv, 349.  
 —, in Pennsylvania, viii, 237; xiv, 3, 10, 12.  
 —, in Rhode Island, viii, 225, 228; ix, 51.  
 —, in Vermont, iii, 76; v, 40; 272; vi, 227, 249; xiii, 200; xxxv, 390; (marble) xxxviii, 198.  
*Serres, Marcel de*, on some new bone caves, xxi, 56.  
*Serullas, G. S.*, elected a member of the French Academy, xviii, 185.  
 —, on iodic acid, and morphine, xx, 184.  
 —, obituary notice of, xxiii, 371.  
 Sewell Mountains, xxix, 93.  
 Sewers, furnace for ventilating, vii, 177.  
 —, cleansing of, xviii, 161.  
 Sexes, proportion of, viii, 376.  
*Seybert, A.*, notice of, i, 37.

- Seybert, H.*, analysis of the chrysoberyl, of Haddam, Ct., viii, 105.
- , — of bog iron ore from New Jersey, viii, 298.
- , — of the Maclureite, v, 336.
- , — of the melanite of Franklin furnace, N. Jersey, viii, 300.
- , — of pyroxene from the Franklin iron-works, vii, 145.
- , — of sulphuret of molybdenum, iv, 320.
- , — of chromic iron, iv, 321.
- , — of a manganesian garnet, vi, 155.
- , — of the glassy actinolite of Concord, Penn., vi, 331.
- , — of tabular spar, pyroxene and colophonite, from Willsboro', N. Y., v, 113.
- , reclamation of the discovery of fluoric acid in chondrodite, vi, 168, 356.
- , analysis of a meteorite, xvii, 326.
- Seybertite, a new mineral, *T. G. Clemson*, xxiv, 171.
- Seyssel cement, xxxiv, 383.
- Shad-fisheries of the Delaware, notice of, *S. Howell*, xxxii, 134.
- Shaquaw, Cherokee, prophecy of, iii, 39.
- Shark, fossil, xvii, 289.
- , see farther under *Zoology*.
- Sharpening of razors and other cutting instruments, method of, xxi, 165.
- Sharpless, J. T.*, description of the American wild swan, xxii, 83.<sup>f</sup>
- Sheathing of ships, *H. Davy's* experiments on, xvii, 244.
- for ships, of leather, xv, 365.
- Sheep, relative value of different kinds of food for, xxiii, 393.
- , merino, price of, in France, v, 189.
- Sheffey, H. W.*, ice at the bottom of a river, xxxvi, 186.
- Shelburne Falls, Mass., vii, 16.
- Sheldon, W.*, on tanning, &c., i, 312.
- Shells, analyses of, *W. B. Rogers*, xxvi, 361.
- , fancy work from, xxxii, 257.
- , as a circulating medium, xxxii, 258.
- , recent and fossil, see under *Zoology*.
- Shell fish in Ohio, disease among, *S. P. Hildreth*, xxxii, 97.
- rock, of the Florida coast, ix, 123.
- — of St. Augustine, remarks on, xxxv, 61.
- — of St. Croix, xxxv, 71.
- Shepard, C. U.*, localities of minerals, viii, 235.
- , notice of minerals, xii, 156, 161.
- , measurement of topaz, xii, 158.<sup>f</sup>
- , Kyanite and Sillimanite, on the identity of, xii, 159.<sup>f</sup>
- , on native iron, xii, 155; xiv, 183; xvii, 140.
- , on phosphate of manganese, tabular spar, &c., xiii, 196.
- , measurement of crystals of zircon, xiii, 392.<sup>f</sup>
- , Columbite, stanniferous, in Massachusetts, xvi, 220.<sup>f</sup>
- , soda alum, of Milo, analysis of, xvi, 203; xxii, 387.
- , on ferro-silicate of manganese, xvii, 142.<sup>f</sup>
- , on new localities of minerals, xvii, 144.
- , mineralogical journey in the northern parts of New England, xvii, 353<sup>f</sup>; xviii, 126<sup>f</sup>, 289.<sup>f</sup>
- , on the Deweylite, xviii, 81.
- , spathic iron mine of New Milford, xix, 311.<sup>f</sup>
- , letter to, on the copper ore of Strafford, Vermont, xxi, 383.
- , mineralogy and geology of Orange Co., N. Y., and Sussex Co., N. J., xxi, 321.<sup>f</sup>
- , on brown lead ores, xxii, 307.

- Shepard, C. U.*, on datholite and iolite in Connecticut, xxii, 389.
- , geological observations upon Alabama, Georgia and Florida, xxv, 162.
- , thermal waters of Suannee, Georgia, producing a silicification of fossils, xxv, 165.
- , on Ball's cave, xxvii, 368.
- , analysis of the waters of the Gray Sulphur spring, Virginia, xxx, 100.
- , microlite, a new mineral, xxvii, 361.
- , —, chemical examination of, xxxii, 338.
- , — not identical with pyrochlore, xliii, 116.
- , on the strontianite of Schoharie, N. Y., xxvii, 363.<sup>f</sup>
- , description of Edwardsite, xxxii, 162.
- , Eremite, a new mineral, xxxii, 341.<sup>f</sup>
- , copper mines of Connecticut, xxxiii, 160.
- , iron mines and furnaces of Connecticut, xxxiii, 155.
- , second locality of topaz in Connecticut, xxxiv, 329.
- , calstronbaryte, a new mineral species, xxxiv, 161.
- , calstronbaryte, not entitled to be considered a mineralogical species, xliii, 366.
- , phenacite in New England, xxxiv, 329.
- , phenacite from Goshen, not phenacite, xliii, 366.
- , Warwickite, a new mineral, xxxiv, 313; xxxvi, 85.
- , geology of upper Illinois, xxxiv, 134.<sup>f</sup>
- , Danburite, a new mineral, xxxv, 137.
- , note to *F. Wöhler's* analysis of cobalt ores, xxxvi, 332, 333.
- , identity of Edwardsite with Monazite, xxxix, 249.
- , Lederite, a supposed new mineral, xxxix, 357<sup>f</sup>; xlviii, 176.
- Shepard, C. U.*, on two decomposed varieties of iolite, xli, 354.
- , euclase in Connecticut, xliii, 366.
- , Washingtonite, a new mineral, xliii, 364.<sup>f</sup>
- , description and analysis of the meteorite of Virginia, xvi, 191.<sup>f</sup>
- , analysis of the Texas meteoric iron, xvi, 217.
- , — of meteoric iron of Buncombe Co., North Carolina, xxxvi, 81.
- , — of a Wisconsin meteorite, xxxix, 254.
- , account of the meteoric iron of Oswego, with an analysis, xl, 366.<sup>f</sup>
- , *ibid.*, of Guilford Co., N. C., with an analysis, xl, 368.
- , analysis of meteoric iron from Tennessee, xliii, 354.
- , on phosphate of lime in the Virginia meteoric stone, xlv, 102.
- , meteoric (native) iron of Canaan, Ct.; analysis of, xii, 155.
- , chlorine in meteoric iron, xliii, 359.
- , experiments with Henry's magnet, xx, 201.
- , extracts from foreign Journals, xx, 197.
- , notice by, of the transactions of the Geological Society of France, for 1833, xxviii, 283.
- , notice of the report by, on the geology and mineralogy of Connecticut, xxxii, 399; xxxiii, 151.
- , notice of Travels in the Alps, xxviii, 296.
- , Mineralogy, notice of, xxi, 389; xxii, 395; xxviii, 374; xxxv, 187.
- , reply to *A. Del Rio's* observations on *C. U. Shepard's* Treatise of Mineralogy, xxvii, 312; xxxi, 131.
- , *Del Rio's* reply to, xxx, 384.
- , Mineralogy, second edition, review of, xlvii, 333, 346.

- Shepard, C. U.*, reply to a notice of his mineralogy, *xlvi*, 168.
- , private school of mineralogy, *xxv*, 431; *xxvi*, 215.
- Shepherd, F.*, on the fall of a meteorite, in Missouri, *xxxvii*, 385.
- , experiments on the solar spectrum, *xlvi*, 137.
- Sherwin, T.*, Algebra of, noticed, *xlvi*, 190.
- Sherwood, H. H.*, discoveries by, in magnetism, *xxxiv*, 210.
- Sherwood, J. D.*, on the valley of the Jordan and the Dead Sea, *xlvi*, 1.
- Shetland Islands, minerals of, *iv*, 25.
- , New South, minerals from, *xii*, 161.
- Shillaber, J.*, description of a mermaid, *vi*, 195.
- Ships, best form for, *J. S. Russel*, *xxxv*, 290.
- , sheathing for, of leather, *xv*, 365.
- , fastenings and sheathings for, *xvi*, 180.
- , —, *H. Davy's* experiments on, *xvii*, 244.
- , improvements in the keels of, *O. Lang*, *xxxiv*, 35.
- , lightning conductors for, *xxi*, 347.
- , steam, without masts, *xxxv*, 332.
- Shooting stars, in the years 1768, and 686 B. C.; A. D. 7, 532, 558, 585, 611, 744 or 747, 750, 764, 765, 829, 855, 899, 901, 902, 912 or 913, 931 or 934, 935, 1029, 1060, 1090, 1094, 1095, 1096, 1106, 1122, 1199, 1202, 1243, 1366, 1398, 1399, 1635, 1636, 1743, 1799, 1803, 1832, 1833, notices of, *E. C. Herrick*, *xl*, 349 to 363.
- , —, of August in the years 1800, 1815, 1819, 1822, 1836, notices of, *E. C. Herrick*, *xxxvii*, 335, 336.
- Shooting stars, of December, 1692, *E. C. Herrick*, *xlii*, 400.
- , —, of December, 1798, *H. W. Brandes*, *xxxv*, 361.
- , —, of November, 1799, noticed by Humboldt, *S. P. Hildreth*, *xxvi*, 87.
- , —, —, *ibid.*, *E. C. Herrick*, *xl*, 363.
- , —, of June, 1799, 1812, 1817, *E. C. Herrick*, *xlii*, 201.
- , —, —, 1777, *Messier*, *xxxiii*, 364.
- , —, of April 20, 1803, *D. Olmsted*, *xxvi*, 135.
- , —, —, *E. C. Herrick*, *xxxvi*, 358; *xl*, 363.
- , —, of November, 1803, a large meteor in England, *xxvi*, 137.
- , —, of December, 1809, *E. C. Herrick*, *xxxvi*, 357.
- , —, of December, 1824, *E. C. Herrick*, *xxxvi*, 357.
- , —, of November, 1831, *Berard*, *xxx*, 374.
- , —, of November, 1832, notices by *D. Olmsted*, *xxvi*, 134, 136.
- , —, —, in Russia, *xxxi*, 189.
- , —, —, off Pernambuco, *G. C. Schaeffer*, *xxxiii*, 133.
- , —, —, *Gautier*, *xxxiii*, 364.
- , —, —, in England, *xxvi*, 136.
- , —, —, in the Tyrol, *xxvi*, 134.
- , —, —, at Mocha on the Red Sea, *xxvi*, 136.
- , —, of November, 1833, *E. Hitchcock*, *xxv*, 354.
- , —, —, *D. Olmsted*, *xxv*, 363; *xxvi*, 132; *xxix*, 376.
- , —, —, *A. C. Twining*, *xxvi*, 320.<sup>f</sup>
- , —, —, *A. D. Bache*, *xxix*, 383.
- , —, of November, 1834, *A. D. Bache*, *xxvii*, 335; *xxviii*, 305; *xxix*, 383.

- Shooting stars, of November, 1834, *A. C. Twining*, xxvii, 339.
- — —, — — —, *D. Olmsted*, xxvii, 417; xxix, 168.
- — —, — — —, seen in California, xxxii, 195.
- — —, of November, 1835, *D. Olmsted*, xxx, 375.
- — —, — — —, Cape of Good Hope, *J. F. W. Herschel*, xxx, 374.
- — —, of November, 1836, *D. Olmsted*, xxxi, 386.
- — —, — — —, at Hingham, Mass., *J. L. Russel*, xxxii, 392.
- — —, — — —, foreign accounts of, xxxii, 181.
- — —, of August, 1837, *E. C. Herrick*, xxxiii, 176, 354, 401; xxxiv, 160.
- — —, — — —, *G. C. Schaeffer*, xxxiii, 133.
- — —, of November, 1837, *D. Olmsted*, xxxiii, 379.
- — —, of April, 1838, *E. C. Herrick*, xxxiv, 398.
- — —, of August, 1838, *E. C. Herrick*, xxxv, 167.
- — —, of November, 1838, *D. Olmsted*, xxxv, 368.
- — —, — — —, *E. C. Herrick*, xxxv, 362.
- — —, — — —, at Cambridge, Mass., *J. Lovering*, xxxv, 323.
- — —, — — —, in Europe, xxxvi, 179.
- — —, of December, 1838, *E. C. Herrick*, xxxv, 361; xxxvi, 355; xlii, 398.
- — —, — — —, in Europe, xli, 403; xlii, 398.
- — —, of April, 1839, *E. C. Herrick*, xxxvi, 361.
- — —, of August, 1839, *E. C. Herrick*, xxxvii, 325; xxxviii, 203.
- — —, — — —, at Canton, China, *P. Parker*, xxxviii, 301.
- — —, of October, 1839, *E. C. Herrick*, xxxviii, 377.
- — —, of November and December, 1839, *E. C. Herrick*, xxxviii, 377.
- Shooting stars, of November, 1839, *D. Olmsted*, xl, 202.
- — —, of August, 1840, *E. C. Herrick*, xxxix, 328, 332; xl, 201.
- — —, of November, 1840, nothing unusual, *D. Olmsted*, xl, 202.
- — —, of October and December, 1840, *E. C. Herrick*, xl, 203.
- — —, of April, 1841, *E. C. Herrick*, xlii, 397.
- — —, of August, 1841, *E. C. Herrick*, xli, 399; xlii, 202.
- — —, of August and November, abstract of *S. C. Walker's* paper on, xlii, 401.
- — —, of November, 1841, xliii, 399.
- — —, of April, 1842, *E. C. Herrick*, xliii, 212.
- — —, of August, 1842, *E. C. Herrick*, xliii, 377; xliv, 208.
- — —, of August 22, 1842, seen in the day time, at Winchester, Va., *C. Chase*, xliv, 418.
- — —, of November, 1842, *E. C. Herrick*, xliv, 209.
- — —, of December, 1842, *E. C. Herrick*, xliv, 210.
- — —, of April, 1843, *E. C. Herrick*, xlv, 230.
- — —, of August, 1844, *E. C. Herrick*, xlvi, 316.
- — —, — — —, *S. R. Williams*, xlviii, 320.
- — —, see farther under *Meteor*.
- — —, attributed to Auroral vapor, xx, 153.
- — —, *Arago*, hypothesis of a zone of asteroids revolving about the sun, xxxiii, 363.
- — —, — — —, origin of, beyond the atmosphere, xxx, 373.
- — —, *Bache, A. D.*, on the non-occurrence of a shower of meteors, Nov. 13, 1834, xxvii, 335; xxviii, 305; xxix, 383.

- Shooting stars, *Benzenberg, J. F.*, and *Brandes, H. W.*, made the first observations relative to the distances, velocities, &c., xxxv, 366.
- —, *Brandes, H. W.*, investigation of, xv, 168; xxviii, 97; xxxv, 231, 232, 366.
- —, —, number, duration, course of, &c., xv, 168; xxviii, 97; xxxiii, 361.
- —, —, mode of calculation respecting, xxviii, 98.<sup>f</sup>
- —, —, table of, calculated, xxviii, 101.
- —, *Clarke, W. A.*, on the origin of, xxx, 369.
- —, *Erman*, origin of, cosmical, xl, 53.
- —, —, motion and mode of revolution, xl, 53.
- —, —, velocity, perihelion distances, position, xl, 53, 54.
- —, *Fisher, F. G.*, origin of, atmospheric, and connected with electricity, xxviii, 289.
- —, *Gruithuisen*, origin of, beyond the earth's atmosphere, from metallic vapors, xxviii, 290.
- —, *Halley, E.*, suggested the determination of longitude by means of, xlii, 399.
- —, *Herrick, E. C.*, on the number of showers of, in a year, xxxiii, 360; xxxv, 366; xxxix, 334.
- —, —, facts establishing the August period, xxxiii, 177, 354.
- —, —, observations on the August period, in early times, xxxvii, 337;—in 1800, 1815, 1819, 1822, 1836, xxxvii, 335, 336;—in 1837, xxxiii, 176, 354, 401; xxxiv, 180;—1838, xxxv, 167;—1839, xxxvii, 325; xxxviii, 203;—1840, xxxix, 328, 332; xl, 201;—1841, xli, 399; xlii, 202;—1842, xliii, 377; xliv, 208;—1844, xlvi, 316.
- Shooting stars, *Herrick, E. C.*, characteristics of the August shower, xxxiii, 359; xxxix, 330.
- —, —, cycle of the November shower, xxxv, 367; xl, 365.
- —, —, return of the November shower probable in 1867, xl, 365.
- —, —, observations on the November showers, of former periods, xl, 363;—in 1838, xxxv, 362;—in 1839, xxxviii, 377;—1842, xliv, 209.
- —, —, notices of observations in December, 1692, xlii, 400;—1809, xxxvi, 357;—1824, xxxvi, 357;—in 1838, xxxv, 361, 365; xxxvi, 355; xlii, 398;—in 1839, xxxviii, 377;—in 1840, xl, 203;—1842, xliv, 210.
- —, —, cycle of the April shower, xxxv, 367; xl, 365.
- —, —, observations on April showers, of former periods, xxxvi, 361;—in 1803, xxxvi, 358;—1838, xxxiv, 398;—1839, xxxvi, 361;—1841, xlii, 397;—1842, xliii, 212;—1843, xlv, 230.
- —, —, notices of observations in June, xxxix, 334; xlii, 201.
- —, —, notices of observations in October, 1839, xxxviii, 377;—1840, xl, 203.
- —, —, notices of observations in January, xxxix, 334.
- —, —, remarks on the zone-theory of, xxxiii, 363; xxxv, 367.
- —, —, on the supposed connexion of, with the Zodiacal light, xxxiii, 364; xxxv, 368; xxxix, 331.
- —, —, nature, motions and distance of, xxxiii, 360; xxxv, 366.
- —, —, average daily number, xxxiii, 362.
- —, —, average hourly number, xxxiii, 362; xxxv, 365.



- Shooting stars, *Herrick, E. C.*, apparent sizes, colors, &c., xxxiii, 360; xxxix, 330.
- — —, — — —, hour of maximum in August, xxxix, 330.
- — —, — — —, radiant point, xxxvii, 328; xxxix, 330.
- — —, *Hitchcock, E.*, magnetic or Auroral origin of, suggested, xxv, 355.
- — —, — — —, observations in November, 1833, xxv, 354.
- — —, *Ideler, J. L.*, conclusions as to the atmospheric origin (vegetable and animal) of, xxviii, 289.
- — —, *Laplace, P. S.*, remark as to the prevailing ignorance on, xxviii, 59.
- — —, *Loomis, E.*, on the sizes, heights, paths, course and velocities of, xxviii, 95; xxxv, 231.
- — —, — — —, apparent direction of, dependent on the motion of the earth, xxviii, 104.
- — —, — — —, on the course, velocity, height and size of the meteor of May 18, 1838, mathematically calculated, xxxv, 223.
- — —, *Lynn, G.*, first laid down a method for determining longitude by, xlii, 399.
- — —, *Maskelyne, N.*, on determining longitude by, xlii, 399; xliv, 374.
- — —, *Messier*, on some meteors seen crossing the sun's disk, June, 1777, xxxiii, 364.
- — —, *Olmsted, D.*, on the November shower of 1833, xxv, 363; xxvi, 132<sup>f</sup>; xxix, 376.
- — —, — — —, notices of observations on, in November, 1832, xxvi, 136;—1834, xxvii, 417, xxix, 168;—1835, xxx, 374;—1836, xxxi, 386;—1837, xxxiii, 379;—1838, xxxv, 368;—1840, xl, 202.
- Shooting stars, *Olmsted, D.*, November period continued in 1837, xxxiii, 379.
- — —, — — —, November period passed, in 1838, xl, 202.
- — —, — — —, *ibid*, length of, and cycle, xl, 203.
- — —, — — —, *ibid*, time of maximum number and duration of shower in, xxv, 386, 402; xxvi, 141; xxxiii, 381.
- — —, — — —, *ibid*, whole number, xxv, 389.
- — —, — — —, *ibid*, height, course of, and direction, xxv, 392, 393; xxvi, 144; xxxiii, 381.
- — —, — — —, *ibid*, sound from, xxv, 392, 404.
- — —, — — —, *ibid*, apparent origin and radiation, xxv, 394, 405; xxxiii, 386, 390.
- — —, — — —, *ibid*, velocity, xxvi, 147<sup>f</sup>, 149; xxxiii, 383.
- — —, — — —, *ibid*, size, xxv, 408; xxvi, 155; xxxiii, 382.
- — —, — — —, *ibid*, matter supposed to have come from, xxv, 396, 408.
- — —, — — —, *ibid*, Auroral appearances attending, xxv, 397, 410.
- — —, — — —, *ibid*, concurrent phenomena, xxv, 398, 401; xxvi, 160.
- — —, — — —, *ibid*, electrical and magnetic phenomena accompanying, xxv, 396, 409.
- — —, — — —, origin of, beyond the atmosphere, xxvi, 140; xxix, 377.
- — —, — — —, combustible nature of, and other characters, xxvi, 151, 161; xxix, 377.
- — —, — — —, relation to the solar system, and orbital motion of supposed shooting star nebula, xxvi, 163<sup>f</sup>; xxix, 377.
- — —, — — —, connection with Zodiacal light, xxvi, 172; xxix, 378; xxxiii, 390.<sup>f</sup>

- Shooting stars, *Olmsted, D.*, remarks in reply to objections to his theory of, xxix, 380; xxx, 370.<sup>f</sup>
- —, *Quetelet*, report of desultory remarks at the British Association of 1833, xxviii, 59.
- —, —, general average per hour, xxxv, 365.
- —, *Twining, A. C.*, on the meteors of November, 1833, xxvi, 320<sup>f</sup>;—1834, xxvii, 339.
- —, —, examination of *D. Olmsted's* views on, xxvi, 321.
- —, —, time and maximum of shower, November, 1833, xxvi, 323.
- —, —, the radiant point fixed independent of the earth's rotation, xxvi, 325, 347; xxvii, 339.
- —, —, nature and cause of, xxvi, 335.
- —, —, height of several calculated, xxvi, 337.<sup>f</sup>
- —, —, velocity of, xxvi, 346.
- —, —, character of orbital motion and period of, xxvi, 348, 349.
- —, —, *Walker, S. C.*, on the showers of, in August, xl, 51; xlii, 401.
- —, —, *ibid*, radiant point and other observations, xl, 51.
- Shortrede, R.*, logarithmic tables of, noticed, xlvi, 208.
- Shower of red matter like blood in Tennessee, a hoax, xlv, 216, (see xli, 403.)
- Siamese twins, an account of, *J. C. Warren*, xvii, 212.<sup>f</sup>
- Sibbald, R.*, notice of, with an enumeration of his works, xxxvii, 138.
- Siberia, steppes, xvii, 23.
- , depth of the frozen ground in, xxxvi, 210.
- , temperature of the ground in, xxxvi, 205.
- , notice of *Humboldt's* expedition to, xvii, 405.
- Siberian elm, notice of, xx, 377.
- Sibley, J.*, fact from a letter by, relating to the Texas meteoric iron, viii, 221.
- Sicily, earthquakes of 1823, ix, 216.
- , geological structure of, *F. Ferrara*, viii, 201.
- , marbles of, viii, 203.
- , minerals of, viii, 203.
- , geology of, *C. Daubeny*, x, 230.<sup>f</sup>
- , volcanic character of, xiii, 272.
- , fountain of Cyana in, xxvii, 82.
- Sida abutilon*, affording a material for cordage, xxi, 37.
- Sidero-graphite, *J. Torrey*, ii, 176, 370.
- Sideroscope, xv, 177.
- Siebold's* Flora Japonica, noticed, xxxix, 175.
- Sienite, see *Syenite*.
- Sigillaria, generic characters, vii, 180.
- marineria, xxxi, 30.<sup>f</sup>
- in the coal fields near Liverpool, xlv, 403.
- , remarks on the relation of, to *Stigmariæ*, xlix, 227.
- Signals, iii, 382.
- , telegraphic, by rockets, v, 189.
- Signs, observations on the language of, viii, 348.
- Silene axillaris*, vii, 62.
- regia, xi, 182.
- Silix, fusion of, ii, 292.
- , solubility of, xiv, 385; xli, 60.
- , gelatinous, *Guillemin*, xiv, 391.
- , in solution, in geodes, viii, 282.
- , —, *ibid*, *G. Bischof*, xlix, 396.
- , hydrate of, xv, 390.
- in plants, xxxiv, 27.
- Siliceous buhr millstone deposits of Ohio, xxix, 142.

- Siliceous buhr millstone deposits of Ohio, hot water origin, xxix, 45.
- minerals, on the treatment of, by carbonated alkalies, xviii, 404.
- —, solution of, by steam, xlvi, 397.
- glass from burning hay, xix, 395; xxiv, 174.
- corals, i, 141.
- shells, corals and wood of Antigua, *S. Hovey*, xxxv, 79;—due to siliceous solutions, 82.
- Sinter of the Azores, *J. W. Webster*, iii, 391.
- springs and deposits in India, *Newbold*, xlix, 398.
- substances, porosity of, vii, 192.
- —, containing siliceous infusoria and minute organic remains, *Turpin*, xxxii, 400.
- Silicic acid, see *Silex*.
- ether, *Ebelman*, xlix, 192.
- Silicification of fossils, proceeding from thermal springs in Florida, *C. U. Shepard*, xxv, 165.
- of wood, xxxiii, 108.
- , remarks on, *J. D. Dana*, xlvi, 88, 397; xlix, 227.
- Silicified wood, see *Fossil*.
- Silicon, how obtained, ix, 377.
- , a process for obtaining, *R. Hare*, xxii, 189; xxiv, 247<sup>f</sup>; xl, 28.
- , production of, from paracyanogen, *S. M. Brown*, xli, 208.
- , on the alleged conversion of carbon into, xlii, 193.
- Silk, on the manufacture of, in America, xviii, 382; xix, 175.
- , review of F. Pascalis on the culture of, xvii, 202; xviii, 278.
- , practical instruction concerning, xviii, 207, 278.
- , on the culture of, in India, xl, 39.
- , grown at Nottingham, England, xxxviii, 130.
- Silk-worm, amount of silk from one, viii, 391.
- , new, xxxiii, 206.
- Silliman, B.*, geological notices of New Haven and Litchfield Cos., Conn., ii, 201.
- , on prussic acid, ii, 81.
- , experiments with the gas blow-pipe, ii, 282; iii, 89; vi, 349.
- , on an argentiferous galena from Huntington, Ct., and miscellaneous observations on lead ores, iii, 173.
- , circumstances connected with the formation of ice on still waters, iii, 179.
- , progress of American science, v, 197; xliii, 224.
- , tempest of Sept. 3, 1821, iv, 171.
- , natural ice-houses, iv, 174.
- , conversion of cannon balls into plumbago, iv, 179.
- , yellow oxide of tungsten, iv, 187.
- , fusion of charcoal, graphite, anthracite, &c. with the deflagrator, v, 108, 361; vi, 341, 378; x, 109, 119.
- , — — — ibid, with the compound blowpipe, vi, 349.
- , relations between the calorimeter and deflagrator, and other galvanic batteries, vi, 337.
- , application of fluor to etching glass, vi, 354.
- , on the cutting of steel by soft iron, vii, 342.
- , on the economical use of the anthracite of Pennsylvania, x, 331.
- , — — — of R. Island, xi, 78.
- , on the igneous origin of some trap rocks, xvii, 119.
- , on the anthracite region in the Lackawanna and Wyoming valleys, xviii, 308.<sup>f</sup>
- , notes on Mauch Chunk and other anthracite regions of Pennsylvania, xix, 1.
- , on the safety of steamboats, xix, 143.
- , notice of a fountain of petroleum, or oil spring, of Allegany Co., N. Y., xxiii, 97.

- Silliman, B.*, on the gold mines and region of Virginia, xxxii, 98.
- , experiments on different varieties of gold rock, xxxii, 105.
- , chemical examination of the coal of Chesterfield Co., Va., xlii, 369.
- , remarks on Phrenology, xxxix, 67.
- , remarks on ancient mounds, xliii, 152.
- , Address before the Assoc. Amer. Geol., 1841, xli, 187;— 1842, xliii, 217.
- , review of Mantell's Medals of Creation, xlvi, 105.
- , work on Chemistry by, noticed, xix, 343; xx, 96.
- , comparison of British and American Journals of Science in 1834, xxvi, 174.
- Silliman, B., Jr.*, on the electrotype, xl, 157.<sup>f</sup>
- , analysis of the alluvium of the Nile, xl, 190.
- , rhombic structure of Connecticut sandstone, xli, 173.
- , soil of the Nile, xli, 160.
- , a daguerrotype experiment by galvanic light, xliii, 185.
- , use of carbon in Grove's battery, xliii, 393.
- , account of a carbon battery, xliv, 180.<sup>f</sup>
- , scratches on rocks of Connecticut, xlv, 333.
- , review of Dana's Mineralogy, xlvi, 362.<sup>f</sup>
- , analysis of Haydenite, xlvi, 379.
- , on meteoric iron from Otsego Co., N. Y., xlvi, 401.
- , on the trap and sandstone of Connecticut, xlvi, 107.
- , natural polariscope, xlvi, 418.
- , analysis of waters of the Dead Sea, xlvi, 10.
- , analysis of the mud of New Haven harbor, xlvi, 337.
- , reply to C. U. Shepard on a notice of his Mineralogy, xlvi, 179.
- Silliman, B., Jr.*, notice of meteoric iron from Cambria, near Lockport, N. Y., xlvi, 388.<sup>f</sup>
- Silliman, B. D.*, experiments on topaz, x, 352.
- , notice of an Aurora, xiv, 91.
- Sillimanite, named, described and analyzed by *G. T. Bowen*, viii, 113.
- , notice of, viii, 195.
- , compared crystallographically with Kyanite, *C. U. Shepard*, xii, 59.<sup>f</sup>
- , crystal of, with analyses, xlvi, 381.<sup>f</sup>
- , analysis of, xlvi, 219.
- , analysis by *T. Thomson*, xlix, 396.
- , locality of, and of monazite, in Westchester Co., N. Y., xlvi, 207.
- Silphium, v, 301.
- Silurian or transition system, xxxv, 243.
- — —, *R. I. Murchison* on, noticed, xxxvi, 399; xxxvii, 219; xlv, 193.
- system of England and Europe, xxxvii, 219.
- rocks of Denbighshire, *J. E. Bowman*, xlii, 325.
- — — of New York, xl, 77.
- system, and its characteristic fossils, *T. A. Conrad*, xxxviii, 86.
- — —, *ibid.*, *H. D. Rogers*, xlvii, 145.
- fossils, in Indiana, xlvi, 296.
- Silver, atomic weight of, xlvi, 189.
- , effect of terrestrial magnetism on the precipitation of, xvi, 262.
- , Gregory's method of obtaining, from the chloride, xlvi, 201.
- , reduction of the chloride of, xxviii, 145.
- , production of the discolored chloride of, *Cavalier*, xx, 193; xxi, 369.
- , chloride of, on the change of color, xx, 193; xxi, 369.
- , fulminating, accidents from, i, 169; xxii, 185.
- , — —, xviii, 335.

- Silver, fulminating, of Berthollet, xviii, 155.
- , —, *Mitscherlich's* mode of preparation, xix, 379.
- , on some of the substances which may be used in forming a metallic mirror by the precipitation of the oxide of, xlix, 398.
- , hyperoxide of, xlix, 194, 391.
- , purple precipitate of, xxii, 198.
- , German, made by *Frick*, xiii, 172.
- , imitation, xxiii, 195.
- , preparation of pure nitrate of, v, 348; xxiv, 370.
- , nitrate of, reduced by remaining in a pasteboard box, xviii, 400.
- , —, pure, not blackened by sun's rays, xxxv, 298.
- , native, at Huntington, Conn., vi, 230.
- , —, in New Jersey, v, 401.
- , —, of Davidson Co., N.C., xli, 183, 349.
- , —, in Michigan, Lake Superior, xli, 185; xlix, 81.
- of Lane's mine, analysis of, *W. W. Mather*, xxvii, 256.
- , in the Southampton lead mines, Mass., xxii, 63.
- , fruitless search for, in Ohio, xxv, 224.
- ores, reduction of, *W. W. Mather*, xxiv, 218.
- , yield of Russian mines of, xxi, 372.
- mines of Nertchinsk, xvii, 34.
- — of the Hartz, xix, 113.
- — of Peru and Chili, xvii, 43.
- — —, Pasco, S. America, sketch of, *De Rivero*, xvii, 43.<sup>f</sup>
- — —, Tarapaca, xliv, 8.
- — of Mexico and South America, xxiv, 213, 226.
- — of Davidson Co., North Carolina, xli, 183, 348.
- Silver, sulphuret of, in New York, i, 237.
- ore, red, analysis of, v, 377.
- paper, mode of imitating, xix, 189.
- Silvering copper, xxiii, 386.
- glass, Drayton's method, xlix, 198.
- iron, xxx, 169.
- Simond, L.*, notice of, xxiii, 371.
- Sines and cosines of the sum and difference of two arcs, formulæ for, *T. Strong*, i, 424.<sup>f</sup>
- , rational expression for, *D. Gould*, xxii, 392.
- Singapore, climate and productions of, *J. S. Travelli*, xliv, 151.
- Siren, notice of genus and species, *D. H. Barnes*, xi, 281.
- Sismondine, analysis and description of, *A. Delesse*, xlvii, 217.
- Sium tricuspidatum, xi, 175.
- Sivatherium, xxxi, 170; xxxiii, 104.
- Size for artists, receipt for, xxi, 168.
- , new, for the chain of woven cloth, xxii, 366.
- for cotton or linen, preparation of, xxii, 367.
- Skeleton, human, of Guadaloupe, *J. Moultrie*, xxxii, 361.
- , —, ancient in Ohio, ii, 242.
- , preservation of, xix, 57.
- Skene, J.*, on the emigration of a colony of caterpillars, ix, 284.<sup>f</sup>
- , graduation of thermometers, xii, 397.
- Skidmore, T.*, formation of flexible elastic tubes, v, 153.
- Skins, preservation of, xi, 397.
- , —, see farther under *Preservation*.
- Skugisan, xxvi, 388.
- Skull found in a tree, iv, 377.
- , of Guadaloupe human skeleton, *J. Moultrie*, xxxii, 361.
- Skulls, singular variety of, from Peru and Bolivia, xxviii, 78.
- , American, observations on, *J. C. Warren*, xxxiv, 47.
- , —, *S. G. Morton* on, xxxviii, 341.<sup>f</sup>

- Skulls, *S. G. Morton's* collection of, xxi, 197.
- , proposed new work on, by *S. G. Morton*, xxxii, 207.
- , —, reviewed, xxxviii, 341.<sup>f</sup>
- Skunk, American, iv, 391.
- Sky, on the cause of the blue appearance of, *B. Hallowell*, xv, 360.
- , *ibid*, xxvi, 65.
- Slates, artificial, in Russia, vii, 191.
- Slate, roof, in western Massachusetts, viii, 19, 20.
- , —, in Worcester Co., Mass., xxii, 34.
- , fused to hornstone, xxxiv, 73.
- Sleep of plants, xxii, 375.
- Slide of Alpnach, xxiv, 124.
- in Essex Mountains, *W. C. Redfield*, xxxiii, 313.
- from Mount Pilatus to the Lake of Lucerne, iii, 368.
- and avalanches in the White and Green Mountains, xv, 217.
- Small pox, nature of the virus of, xix, 389.
- —, *F. Pascalis's* theory of its origin, x, 208.
- —, on the increase, xxxviii, 134.
- —, power of new virus, xxxviii, 134.
- Smilax grandifolia*, xlv, 171.
- Smith, Al.*, Connecticut valley, water courses and geology of, xxii, 205.<sup>f</sup>
- , —, terraces of, xxii, 214.
- , —, ancient lakes, xxii, 216.
- , —, greenstone, xxii, 224.
- Smith, Az.*, electricity in machines, xxxix, 134.
- , ruins of Nineveh, xlix, 113.
- Smith, D. B.*, Principle of Chemistry, by, noticed, xlvii, 414.
- Smith, E. D.*, effects of earthquakes of 1811-12, i, 93.
- , Warm springs in Buncombe Co., North Carolina, iii, 117.
- Smith, E. D.*, analysis of the Harrodsburg salt, i, 403.
- , application of medico-chemistry to calculous affections, iii, 300.
- Smith, F. L.*, on the gold deposits of a portion of North Carolina, xxxii, 130.
- Smith, H.*, letter to B. Silliman, xxxv, 336.
- Smith, H. L.*, on some nebulae, xl, 37.
- , discovery of a comet, xlvii, 419.
- Smith, J.*, on Atlantic steam navigation, xxxv, 160, 332; xxxvi, 133.
- Smith, J. D.*, analyses of guano, xlviii, 183.
- Smith, J. L.*, on the means of detecting arsenic, xl, 278; xlii, 75.<sup>f</sup>
- , action of some alkaline salts on the sulphate of lead, xlvii, 81.
- , instrument for estimating the carbonate of lime in calcareous substances, xlv, 262.<sup>f</sup>
- , action of phosphates of alkalis on carbonate of lime, &c., xlviii, 97.
- , chromate of potash, a reagent for distinguishing the salts of baryta and strontia, xxxvi, 183.
- , action of potash in cholesterine, xlv, 60.
- , notice of *V. Regnault* on the dilatation of gases, xlv, 63.
- , on *Varrentrap* and *Will's* mode of determining the nitrogen in organic compounds, xlii, 253<sup>f</sup>; xlv, 267.
- , composition and products of distillation of spermaceti, and its oxidation by nitric acid, xliii, 301.
- , composition of marl from Ashley river, S. Carolina, xlviii, 101.
- , on fluorine in bones, xlvii, 131; xlviii, 99.
- , oxide of cobalt at Silver Bluff, S. Carolina, xlvii, 131; xlviii, 103.

- Smith, J. L.*, a new method of making permanent magnets, by galvanism, xxxvi, 335.<sup>f</sup>
- Smith, J. P.*, lectures on geology, xli, 387.
- Smith, J. V. C.*, remarks on his "Fishes of Massachusetts," xxxvi, 337.
- Smith, L. W.*, suspended animation from drowning, v, 125.
- Smith, N.*, obituary notice of, xvi, 211.
- Smith, S.*, on the salt springs and manufacture of salt at Salina and Syracuse, xv, 6.
- Smith, W.*, labors of, in English geology, xl, 219; xliii, 226.
- Smithson*, notice of, xx, 306.
- Smoke, production and prevention of, *H. Dircks*, xlvi, 400.
- disperser, *Millet's*, xvii, 164.
- Snail, edible, economical notice of, xxxii, 254.
- Snails, habits of, *J. T. Plummer*, xlvi, 93.
- , see farther under ZOOLOGY, *Mollusca*.
- Snake, copper-head, *C. S. Rafinesque*, i, 84.
- Snakes, fascination of, xii, 368.
- , *ibid*, objected to, xiii, 388.
- , preserving of, xii, 288.
- , two headed, *S. L. Mitchell*, x, 48.<sup>f</sup>
- , remarks on, *S. Woodruff*, xxix, 304.
- , suspended by spiders, xxvii, 307.<sup>f</sup>
- Snake Hill, Saratoga lake, ix, 1.<sup>f</sup>
- Snake-root, Turman's, a supposed antidote for the bite of rattlesnake, N. Carolina, xlii, 43.
- Snell, E. S.*, instrument for exhibiting a certain optical deception, xxvii, 310.
- , facts relative to the temperature of the year 1839, from observations at Amherst College, xxxix, 36.<sup>f</sup>
- , a singular case of parhelion, and the theory of halos, xlix, 73.<sup>f</sup>
- Snell, E. S.*, on some new articles of philosophical apparatus, xlix, 20.<sup>f</sup>
- Snow, animalcules in, xviii, 56.
- , balls of, at Brunswick, Me., vi, 162.
- , clearing of, from the Baltimore railway, xx, 166.<sup>f</sup>
- , crystallization of, *J. Green*, ii, 337.<sup>f</sup>
- , —, *C. Dewey*, iii, 367.
- , cylinders of, ii, 375.
- , at New Fane, Vt., 1823-4, depth of, *M. Field*, viii, 306.
- , at Marietta, Ohio, see *S. P. Hildreth's* meteorological registers from 1829 to 1844.
- , inflammable, on a substance so called, *Hermann*, xxviii, 361.
- , red, x, 192.
- , —, an animal production, xli, 64.
- , —, near Boston, in 1688, xliii, 399.
- , —, of Baffin's Bay, ii, 356.
- and hail, singular appearances of, *D. A. Clark*, ii, 132.
- Soap, notice of *Chevreul's* observations on, ix, 189.
- , economical mode of making, xxxvii, 194.
- , from the Caribes insects in Africa, iv, 195.
- bubbles, illustration of cohesive force with, *J. Henry*, xlvi, 215.
- , making, preservation of animal fat for, xxxvii, 194.
- Soapstone, and its uses, xiv, 376.
- , used for diminishing friction in machines, xliii, 192.
- and mica slate, connection of, near Lowell, Mass., xxvii, 341.
- , of Maryland, xxvii, 17, 20.
- , in Virginia, i, 62.
- , see farther under *Steatite*.
- Societies, admission fees to various foreign, xx, 165.
- , number of members of a few prominent, xx, 173.

- Society, (in England,) of Arts, Manufactures and Commerce, of London, xviii, 390; xxxix, 397.
- , —, Astronomical, of London, ii, 364.
- , —, Egyptian, of London, ii, 345.
- , —, Electrical, xxxiv, 401.
- , —, Geological, number of fellows of, in 1837, xxxiii, 76.
- , —, —, xli, 190.
- , —, Geographical, of London, xxxii, 383.
- , —, Meteorological, of London, xxxiv, 400.
- , —, Microscopic, of London, xxxix, 203; xliii, 391.
- , —, Royal, iii, 373.
- , —, Traveller's, v, 175.
- , —, Yorkshire Philosophical, xxi, 168.
- , (in Scotland,) Royal, xli, 382.
- , (in Ireland,) Belfast Natural History, ix, 381; xxviii, 369.
- , —, Geological, of Dublin, xxviii, 368.
- , (in Europe,) for the encouragement of Agriculture, Industry and the Arts, in Switzerland, vii, 381.
- , —, for the amelioration of Prisons in Russia, iii, 374.
- , —, for the advancement of the Arts at Geneva, v, 379; vi, 392.
- , —, Bible, of Athens, iii, 381.
- , —, for the encouragement of National Industry in France, expenditure of, for 1821, vii, 198, 371.
- , —, of Christian Morals in France, v, 194.
- , —, Geographical, at Paris, viii, 384.
- , —, Geological, of France, xxiv, 192; xxviii, 283.
- , —, Helvetic, of Natural Sciences, x, 377; xviii, 168.
- , —, Horticultural, of Paris, xv, 378.
- Society, (in Europe,) Linnæan, of Paris, v, 382; x, 195; xi, 380.
- , —, —, of Bordeaux, x, 173.
- , —, Literary, of Antwerp, iv, 380.
- , —, Medical, (Royal) in France, iv, 378.
- , —, of Northern Antiquaries, xl, 212, 403; xlii, 214.
- , —, Polytechnic, of Paris, xxiv, 191.
- , (in Canada,) Literary and Scientific, xx, 168.
- , —, Historical and Literary, of Quebec, transactions of, xvii, 412; xx, 168; xxv, 211; xxviii, 368.
- , (in United States,) enunciation of scientific, x, 369.
- , —, American Antiquarian, iii, 357; xviii, 136.
- , —, American Geological, notice of, i, 442; ii, 139; v, 403; vi, 377.
- , —, *ibid*, proceedings of, iii, 360; iv, 191; ix, 178; x, 201.
- , —, American Philosophical, notice of transactions of, xxxvii, 188.
- , —, *ibid*, proceedings of, xxxviii, 153; xxxix, 361; xl, 27, 374.
- , —, *ibid*, proceedings at the centennial anniversary of, in 1843, xlv, 231.
- , —, Albany Institute, transactions of, xvii, 208, 415; xix, 173, 360.
- , —, Boston Natural History, annual report of, giving some account of the cabinet of, xxxii, 364; proceedings of, xxxiii, 180.
- , —, *ibid*, notice of Journal of, xxvi, 397;—proceedings of, xxviii, 373; xxxi, 185; xxxiii, 180; xxxvi, 379; xxxvii, 391; xxxviii, 193; xxxix, 182; xl, 196, 386; xli, 379; xliv, 193; xlvii, 411.



- Society, (in United States,) Cincinnati Natural History, address from, on collecting specimens and information, i, 203.
- , —, Delaware Chemical and Geological, notice of, v, 198.
- , —, Essex County Natural History, notice of Journal of, xxxvii, 187.
- , —, Entomological, of Pennsylvania, xlv, 199.
- , —, Franklin Institute, Philadelphia, established, ix, 391.
- , —, Franklin, of Providence, xviii, 195.
- , —, Hartford Natural History, xxxii, 392.
- , —, Yale Natural History, xxx, 187; xxxiv, 397.
- , —, Indiana Historical, notice of, xx, 163; xxiv, 181.
- , —, New York State Horticultural, formed, viii, 398.
- , —, Statistical, of New York, notice of, xxxii, 202.
- , see farther under *Academy, Association, Lyceum and Institute.*
- Soda, crude, of commerce, remarks on, *J. Revere*, xiv, 41.
- , prepared from the sulphate of soda, xiii, 176.
- , impurities in, xix, 83.
- , carbonate of, on the manufacture, xxviii, 143.
- , supercarbonate of, new mode of preparing, xxx, 189.
- , —, xix, 198.
- , nitrate of, in Atacama, Peru, xii, 385.
- , —, in Tarapaca, xxxviii, 410; xxxix, 375; xlv, 5.
- , anhydrous sulphate of, xiii, 185.
- , hyposulphite of, *Plessy*, xlix, 200.
- and magnesia sulphate, xlvi, 189.
- alum, at Milo, analysis of, xvi, 203; xxii, 387.
- Sodium, preparation of, viii, 372.
- , a property of, xvii, 182.
- Sodium, price of, in 1825, ix, 387.
- , experiments on, *J. T. Duca-  
tel*, xxv, 90.
- , chloride of, see *Salt.*
- Soils, analysis of, remarks on, *A.  
Eaton*, xii, 370.
- , —, new mode of, *S. L.  
Dana*, xxxvi, 366.
- , —, in *C. T. Jackson's* ge-  
ological report, xl, 189.
- , on the chemical examination  
of, xli, 262.
- , organic matter of, *C. T. Jack-  
son*, xlv, 337.
- , on the importance of deter-  
mining the organic constituents  
of, and the mode, *C. Daubeny*,  
xlv, 352.
- , state of iron in, xlix, 394.
- , action of manures on, *Bou-  
tigny d'Evreux*, xxvi, 179.
- , action of gypsum on, xxvi, 181.
- , effect of magnesia on, xli, 159.
- , effect of hydrated-peroxide of  
iron on, xli, 159.
- , effect of sulphuret of iron on,  
xli, 159.
- , potash in, xli, 160.
- , in Indiana, *J. T. Plummer*,  
xl, 198; xlv, 310.
- , of Illinois prairie, xxxiv, 160.
- , of Maryland, *J. T. Ducatel*,  
xxvii, 316.
- , of Massachusetts, analyses,  
*E. Hitchcock*, xxxvi, 363, 366.
- , of New York, Kings, Queens  
and Richmond Cos., xxxvi, 21.
- , of Rhode Island, *C. T. Jack-  
son*, xl, 188.
- of the West, analyses of,  
xxxvi, 373.
- Solar eclipse, see *Eclipse.*
- spectrum, chemical action of,  
*Hessler*, xxxi, 160.
- —, dark lines of, rendered  
distinct, *D. Brewster*, xxxi, 379.
- —, new observations on,  
*J. F. W. Herschel*, xxxviii, 110.
- —, with light from nitre,  
&c., peculiarities of, *D. Brews-  
ter*, xlv, 163.

- Solar spectrum, action of gaseous and other media on, xlii, 157.
- —, photographic impression of, and phenomena of, *J. W. Draper*, xliv, 204.
- —, new experiments on, *D. Olmsted*, xlviii, 137.
- rays, magnetic influence of, xliii, 188.
- —, electricity of, xvii, 391.
- —, see farther under *Light*.
- spots, first observations on, xxiv, 204.
- —, in 1825, connection of, with temperature, xii, 199.
- —, in Nov., 1837, *D. Olmsted*, xxxiii, 393.<sup>f</sup>
- —, heat of, *J. Henry*, xlix, 405.
- halos, at New Lebanon, *T. Kendall*, vii, 337.<sup>f</sup>
- —, in Tennessee, at Jackson, x, 368.<sup>f</sup>
- —, in Massachusetts, at Millbury, x, 369.<sup>f</sup>
- —, in Kentucky, xi, 325.<sup>f</sup>
- —, in Rhode Island, September, 1816, xi, 328.<sup>f</sup>
- —, in Otsego Co., N. Y., Feb., 1823, xx, 297.
- —, at Cazenovia, N. Y., *J. W. Tyler*, xxi, 189.
- —, at Kingston, U. C., *R. H. Bonnycastle*, xxx, 136.
- —, at West Point, *A. C. Twining*, xxxii, 229.
- —, theory of, *E. S. Snell*, xlix, 73.<sup>f</sup>
- heat, effect of, in raising a balloon, xxxiii, 196.
- and terrestrial radiation, observed at Montreal, xxxvi, 182.
- index, xlix, 301.<sup>f</sup>
- phosphori, xvii, 170.
- system, on the elements of, *E. H. Burrill*, xxvi, 129.
- Soldering sheet iron, vii, 379.
- Solfaterra, connection of, with Vesuvius, xix, 387.
- Solid bodies, instrument for measuring the expansion of, xxx, 324.<sup>f</sup>
- Solidification of carbonic acid, xxxi, 163, 404; xxxv, 301, 346; xxxviii, 297<sup>f</sup>; xlii, 203; xlix, 206.<sup>f</sup>
- of gases, *M. Faraday*, xlix, 373.
- Solorina saccata, xlv, 49.
- Solubility of magnesia, v, 378.
- Songs of birds, xxi, 164.
- Soot, analysis of, xi, 386.
- Sophora affinis, xlix, 130.
- Sopwith's mode of constructing secretaries, xxxv, 317.
- Sordawallite, x, 186.
- Sorex, see under *Zoology*.
- Soubeiran, E.*, action of chloride of lime on alcohol, xxiii, 134.
- , on the pulverization of calomel, xlvii, 193.
- Sound, concentration of, xix, 190.
- , limits to the audibility of, xxii, 374.
- , effect of, on the barometer, xxx, 377.
- , reverberation of, and best buildings for hearing, xxix, 350.
- , velocity of, vi, 394; xvi, 390.
- , waves of, apparatus for illustrating, xlix, 20.<sup>f</sup>
- , subterranean, x, 377.
- , —, at East Haddam, Ct., xxxix, 336.
- , influence of, on the elephant and lion, x, 186.
- Soundings, deep, in the ocean, by the French ship *Venus*, xl, 407.
- Soups from bones, in France, x, 388.
- South America, extracts from travels in, xxiv, 382.
- South Carolina, Medical Institution and Journal, xii, 382.
- , geological notices of, iii, 1, 227.
- South Seas, icebergs in, xxii, 200.
- Southampton lead mine, Massachusetts, i, 136; vi, 201; ix, 166; xii, 238<sup>f</sup>; xxii, 57.
- Southern Review, notice of, xliii, 383; xiv, 199.
- Agriculturalist, xviii, 203; xxi, 182.

- Space, planetary, *Fourier* on the temperature of, xxxii, 1.
- , —, *S. D. Poisson* *ibid.*, xxxiv, 57.
- , —, idea of ether in, when introduced, xxxiii, 1.
- , —, *ibid.*, *R. W. Haskins* on, xxxiii, 1.
- , resistance in, to the motion of the heavenly bodies, xvii, 389.
- Spadiate, a new mineral, xlix, 394.
- Spafford, H. G.*, on groves of evergreens, as screens for the garden, orchard, &c., xxii, 158.
- , on spontaneous combustion, xxii, 161.
- Spain, difficulty of mineralogical excursions in, viii, 187.
- , yield of Rio Tinto mine of copper, xxviii, 144.
- , mines of Almaden, xxviii, 21.
- , extracts from a journal, on the mining industry of, *F. Le Play*, xxviii, 17.
- , Madrid, science in, xix, 194.
- Spark extinguisher, xlii, 209.<sup>f</sup>
- , electric, see *Electric*.
- Sparks in the freezing of water by ether, *Pontus*, xxvi, 178.
- Sparrows, number of caterpillars taken by, ix, 200.
- Spatangus, see *ZOOLOGY, Radiata*.
- Spathic iron, see *Iron, carbonate of*.
- Specific gravity, considered as a mineralogical character, xvi, 260.
- , —, on the means of taking, *R. Hare*, xi, 121.<sup>f</sup>
- , —, a new instrument for, *F. H. Baddely*, xviii, 263.<sup>f</sup>
- , — of gases, a modification of the method for ascertaining, *R. Hare*, xvi, 293.
- , —, —, *T. Thomson's* method of taking, ii, 362.
- , — of nitrogen, oxygen, chlorine, and of the vapors of carbon, sulphur, arsenic and phosphorus, xxxv, 298.
- , — of various minerals, *A. Breithaupt*, xxxi, 268.
- , — of seawater, v, 129.
- Specific heat of the gases, notice of *de la Rive's* and *Marcet's* memoir on, xiii, 394.
- , — of certain solids, method of determining, xxvii, 267.
- Spectacle glasses, manufactory of, xxvii, 80.
- Spectrum, solar, see *Solar*.
- Specula for telescopes, improvement in, xliv, 166.
- Speculum, *Nasmyth's* pneumatic, xxxviii, 107.
- Spencer, A.*, vindication of claims, relating to the graphic art, xliv, Appendix.
- Spencer, T.*, on the electrotype and its use, xl, 157.<sup>f</sup>
- Spermaceti, composition of, products of distillation of, and oxidation of, by nitric acid, *J. Lawrence Smith*, xliii, 301.
- , moving particles in, when burning, xl, 148.
- Sphene in Canada, viii, 76.
- in Massachusetts, vii, 53, 254; xxiv, 397.
- in New Jersey, v, 243, 244.
- in New York, ix, 40, 41, 251, 402; xxi, 326.
- in Pennsylvania, x, 220; xiv, 7, 18.
- in Vermont, iv, 276.
- Sphenophyllites, generic characters of, vii, 182.
- Spherical trigonometry, elements of, xvii, 415.
- Sphinges, North American, xxxvi, 282.
- Spiders, mode of forming the web of, xviii, 165.
- and spider-webs, *J. Edwards*, xxi, 109.<sup>f</sup>
- , gossamer, xvi, 399.
- , snake suspended by, xxvii, 307.<sup>f</sup>
- , see farther, *ZOOLOGY, Articulata*.
- Spinel in New York, viii, 92; ix, 242, 251; xxi, 326.
- in New Jersey, v, 244; ix, 245.
- Spinning frame, *Brewster's*, x, 130.

- Spinning machine, worked by mice, in Scotland, viii, 371.
- Spiral of Archimedes; *A. B. Quincy*, ix, 316.<sup>f</sup>
- conductor, on the action of, *J. Henry*, xxviii, 329.
- Spirits, evaporation of, iii, 376.
- Spitzbergen, some account of, xvi, 144.
- Spix and Martius, reception of, at Munich, iv, 383.
- Spodumene in Massachusetts, vi, 225 and vii, 30 (called white Augite); viii, 120, 243; ix, 20; xiv, 220; xx, 170.
- from Sweden, vii, 371.
- Sponges on the shores of Long Island, *C. S. Rafinesque*, i, 149.
- Spongia patera*, or Neptune's goblet, *A. A. Gould*, xxxvi, 386.
- Spongy platina, *Döbereiner's* discovery and researches, vii, 387; xviii, 151.
- —, *J. Liebig* on, xviii, 398.
- —, action of, prevented by certain gases, xxxi, 348.
- —, —, *Kuhlmann*, xxxvii, 198.
- Spontaneous combustion, instance of, iii, 383; v, 201; xxii, 161; xxvii, 178; xxxiii, 147.
- — in wood ashes, *O. P. Hubbard*, xlii, 165.
- —, remarks on, *J. Mease*, xxxiii, 147, 199.
- — of coal, xxxiii, 147.
- — of linen, cotton, &c. with linseed oil, xxxiii, 148.
- — of oatmeal, xxxiii, 150.
- — of lampblack, xxxiii, 150.
- — of horse-manure, xxxiii, 151.
- — of coal, xxxiii, 200.
- — of wood, xxxv, 144.
- generation, remarks on the theory of, *C. A. Lee*, xxxix, 289.
- Spots on the sun, first observations on, xxiv, 204.
- Spots on the sun in 1825, connection of, with the temperature, xii, 199.
- —, in 1837, observations on, *D. Olmsted*, xxxiii, 393.<sup>f</sup>
- —, heat of, *J. Henry*, xlix, 405.
- Spring*, monograph by, on the *Lycopodiaceæ*, xlv, 196.
- Springs and fountains, on the origin of, *G. W. Long*, xvii, 336.
- , remarks on Mr. G. W. Long's paper on, xviii, 379.
- , geographical, geological and physical considerations on, *H. de Thury*, xviii, 267.<sup>f</sup>
- , freshwater, *J. du Commun*, xiv, 174.<sup>f</sup>
- , spouting fountain near Uncino, Naples, xxv, 194.
- , *ibid*, analysis of water of, xxv, 195.
- , acidulous or carbonated, New York, xxxvi, 8.
- , burning, Ohio, xlix, 406.
- , carburetted hydrogen, New York, xxxvi, 6.
- , — —, in the Ohio valley, xxiv, 61.
- , chalybeate, at Litchfield, Ct., iii, 235.
- , —, at Catskill, N. Y., iii, 236.
- , —, remarkable, in Scotland, xx, 384.
- , hot, see *Springs, thermal*.
- , intermittent, near Pittsburgh, Pa., cause of, xlvi, 400.
- , mineral, *J. Anglada's* deductions respecting, v, 187.
- , — water from Azores, analysis of, *C. T. Jackson*, xxxi, 94, 96.
- , —, near Albany, *W. Meade*, xiii, 145.
- , —, of Carlsbad, vii, 185.
- , —, of Florida, xxxv, 51.
- , —, in Illinois, xxxiv, 157.
- , —, in Massachusetts, viii, 31; xxii, 47.

- Springs, mineral, of Cliff street, New York city, analysis of, *G. Chilton*, xviii, 346.
- , —, of Saratoga and Ballstown, analysis of, *J. Steel*, xxi, 182; xxxvi, 8.
- , —, —, iodine in, xvi, 216, 242.
- , —, —, high rock, description of, *J. N. Steel*, xvi, 341.<sup>f</sup>
- , —, —, springs, bromine in, xviii, 142.
- , —, —, remarks on, with analyses, *J. F. Dana* and *J. Steel*, xxxvi, 8.
- , —, in Pennsylvania, Bedford, xix, 97, 204.
- , —, —, Pittsburgh, analysis of, *W. Meade*, xiv, 124.
- , —, in Tennessee, i, 66.
- , —, in Texas, *J. L. Riddell*, xxxvii, 214.
- , —, in Scott, Scott Co., Va., analysis of, *C. B. Hayden*, xlv, 409.
- , naphtha, in Old Assyria, xxxvii, 353.
- , in Persia, xxxvii, 354.
- , nitrogen, locality of, at Hoo-sick, viii, 31; xv, 234.
- , —, Lebanon, viii, 21; xxxvi, 7.
- , on the formation of nitrogen in warm, *C. Daubeny*, xx, 383.
- , petrifying, in New York, xxxvi, 11.
- , pretroleum, in Kentucky, xxxix, 195.
- , — in the salt springs of the Ohio valley, xxiv, 63.
- , salt, origin of, *A. Eaton*, vi, 242.
- , —, in Europe, Bavaria, emitting carbonic acid gas, *J. D. Forbes*, xxxv, 293.
- , —, —, of Montiers, in the Alps, and a peculiar mode of evaporation, *R. Bakewell*, xx, 219.<sup>f</sup>
- , —, —, changes in, in Prussia, x, 193.
- Springs; salt, in America, of Bear Lake and Northern America, xvii, 3, 5.
- , —, —, in Canada, viii, 73.
- , —, —, of the United States, account of, *G. W. Carpenter*, xv, 1.
- , —, —, of New York, xxxvi, 2; xxxix, 103.
- , —, —, —, analyses of, *G. Chilton*, vii, 344.
- , —, —, —, of Salina and Syracuse, *S. Smith*, xv, 6.
- , —, —, —, of Salina, contain iron, xvi, 187.
- , —, —, —, of Salina, bromine contained in, xviii, 143.
- , —, —, —, of Onondaga lake, xlii, 228.
- , —, —, —, of Pennsylvania, Kiskiminitas and Cone-maugh, xxix, 71.
- , —, —, —, of Ohio, x, 5.
- , —, —, —, of Ohio valley, *S. P. Hildreth*, xxiv, 46; xxix, 26, 48.
- , —, —, —, of Indiana, xl, 135.
- , —, —, —, of upper Illinois, xxxiv, 157.
- , —, —, —, of Kentucky, xxix, 140.
- , —, —, —, of Michigan, xxxiv, 192.
- , —, —, —, of Virginia, i, 66.
- , —, —, —, Holston, *C. B. Hayden*, xlv, 173.
- , —, —, —, Kena-wha, bromine and iodine in, xviii, 260.
- , —, —, —, Kena-wha, analysis of, xxiv, 66.
- , —, —, —, west of the Mississippi, iii, 27, 33.
- , —, —, —, of Texas, *J. L. Riddell*, xxxvii, 213.
- , sulphur, in New York, ii, 15; xv, 235; xxxvi, 9.

- Springs, sulphur, of New York state, *L. C. Beck*, xli, 162.
- , —, of Avon, analysis of, *S. Salisbury*, xxxv, 188.
- , —, near Massena, St. Lawrence Co., N. Y., xix, 226.
- , —, Buffalo, chemical examination of, xx, 156.
- , —, along the Hudson, allusion to, viii, 31.
- , —, Delaware Co., Ohio, xxxi, 73;—analysis of, 74.
- , —, in Maryland, xxvii, 28.
- , —, in Virginia, gray sulphur, analysis of the water of, *C. U. Shepard*, xxx, 100.
- , —, —, white sulphur, xxix, 94.
- , —, —, red sulphur, xxix, 96.
- , —, in Indiana, i, 133.
- , —, on the St. John, Florida, xxv, 170.
- , —, of Florida, xxxv, 51.
- , —, of Texas, xxxvii, 215.
- , sulphuric acid or sour, in New York state, xv, 238; xxxvi, 10.
- , thermal, *K. von Nidda's* classification of, xxxvi, 255.
- , —, of volcanic regions, *G. Bischof*, xxxvi, 254.
- , —, deposits from, *G. Bischof*, xxxvi, 259.
- , —, causes of, *G. Bischof*, xxxvi, 253.
- , —, connection of, with volcanoes, xxxvii, 53.
- , —, of the Azores, iv, 261.
- , —, boiling, near the Akhoo river, xxxvii, 349.
- , —, —, of Iceland, iv, 370; xxxvi, 255.
- , —, in Asia Minor, xxxvii, 372.
- , —, baths of Tiflis, Georgia, xxxvii, 349.
- , —, of the Pyrenees and Alps, xxxvi, 253; xxxvii, 58, 61.
- , —, in the bed of the Rhone, xxiv, 201.
- Springs, thermal, of North America, notice of, *C. Daubeny*, xxxvi, 88.
- , —, of United States, Arkansas, xxxiii, 202.
- , —, —, in Maryland, xxvii, 28.
- , —, —, in Virginia, i, 66.
- , —, —, in North Carolina, iii, 117.
- , —, —, in Missouri, iii, 29.
- , —, —, of Suwannee and elsewhere, Florida, *C. U. Shepard*, xxv, 165.
- , —, —, of Georgia and Florida, remarkable, *C. U. Shepard*, xxv, 168.
- Sproat, A. D.*, proposed reform of orthography, xxxix, 197.
- Spruce timber, strength of, xix, 228.
- Spurzheim, G.*, memoir of, xxiii, 356.
- , works of, xxiii, 406.
- Squamaria rubina, notice of, xxxix, 183.
- Square numbers, analysis of, *A. D. Wheeler*, xxv, 87.
- Squirrels of North America, description of, xxxvii, 290.
- , larvæ of Estrus in, xlvi, 244.
- St. Lawrence, geology of the valley of, xlvi, 314.
- St. Croix, geological character of, xxxv, 64.
- St. Fond, F. de*, obituary notice of, ii, 352.
- St. Gall, society for encouragement of industry, vii, 381.
- St. Michael, geological structure of, iv, 251.
- St. Lawrence Co., N. Y., minerals of, xix, 220; xxv, 346.
- , geology of the valley of, *C. Lyell*, xlvi, 314.
- St. Petersburg Academy, xxii, 203.
- St. John's river, xxxv, 48.
- Stachys aspera*, iv, 65.
- Staining of wood, iii, 166.

- Stalactites, artificial, in a brewery, Indiana, *J. T. Plummer*, xliv, 307.
- , in New York, xxv, 347.
- , in Ohio, i, 133.
- , lava, of Hawaii, xvi, 350.
- Stanleya amplexifolia*, v, 297.
- Stars in Lacaille's *Cælum Australe Stelliferum*, remark on the reduction of, xxxviii, 94; xl, 310; xliii, 368.
- in Lalande's *Histoire Céleste*, remark on the reduction of, xxxviii, 94; xl, 312; xliii, 367.
- , catalogue by the Royal Astronomical Society of London, in progress, xl, 312.
- , on the revision of the nomenclature of, *F. Baily*, xl, 310.
- , nomenclature of, to be revised by a committee of the British Association, xxxviii, 94.
- , extension of the Astronomical Society's catalogue, xxxviii, 95; xl, 312.
- , report of a committee from the British Association for revising the nomenclature of the stars, xl, 310; xlii, 147; xlv, 158; xlvi, 389.
- , — *ibid*, on catalogue, &c., xl, 310; xliii, 368.
- , British Association, catalogue of, completed, xlvi, 389.
- , number and order of, xv, 76.
- , missing, xxxvii, 373; xl, 406.
- , double, remarks on, xv, 76.
- , —, motion of, xxxvii, 373.
- , twinkling of, remarks on, v, 156; xv, 360.
- , sixty-one Cygni, parallax of, xxxvi, 200.
- , aberration of, *F. G. W. Struve*, xlvii, 91.
- , —, *B. Hallowell*, xv, 360.
- , observations on the lunar occultations of certain, xxxviii, 177.
- , shooting, see *Shooting Stars*.
- Starch, chemical researches on, *J. B. Caventon*, xiii, 393.
- , notice of a memoir on, by *Guibourt*, xxiv, 371.
- , preparation of sugar from, xx, 195.
- Starved rock, Illinois, xxxiv, 145.
- State's Prison of Connecticut, in an old copper mine, iii, 222.
- Statical electricity, generation of, *G. W. Raines*, xlix, 93.<sup>f</sup>
- Statistics, in Asia, of the Deccan, xxxiii, 274.
- , in Europe, price of labor and subsistence in, xxxvi, 176.
- , —, value of mineral productions of, xxxi, 369.
- , —, France, books published in, xviii, 185.
- , —, —, of crimes, xxviii, 80.
- , —, —, —, of infants, xix, 192.
- , —, —, —, for Paris, 1819, iv, 376.
- , —, —, population, number of clergy, &c., xv, 397.
- , —, Wirtemberg, xx, 176.
- , —, Netherlands, University of, xviii, 182.
- , —, Great Britain and Ireland, xxxv, 315.
- , —, —, of population, xxiv, 211; xxviii, 80.
- , —, —, of crimes, xxxviii, 135.
- , —, —, of crime in Liverpool, xxxiv, 33.
- , —, —, of fires in London, xxxv, 316.
- , in Russia, population, iv, 389; xv, 397.
- , in Africa, Egypt, vi, 389.
- , in America, West Indies, of deaths in the white troops, xxxvii, 197.
- , —, of trade between U. States and Great Britain, xxxiii, 277.
- , —, United States, of iron, xxii, 179.

- Statistics, in America, United States, New York, of population, manufactures, &c., xx, 147.
- , in New Zealand, of changes of population, xxxv, 315.
- , books of memoirs of 1833, xxviii, 295.
- , list of communications presented to British Association, at the tenth meeting, xli, 65.
- , of agriculture, importance of collecting information on, xxxviii, 135.
- , points of enquiry suggested by *Malthus*, xxviii, 66.
- Statistical tables of Massachusetts, xxxiv, 213.
- Society of London, number of members, xxviii, 80.
- — — —, notice of Journal of, xxxvii, 189.
- — — —, of New York, xxxii, 202.
- — — —, of Boston, xxxix, 395.
- societies in the United States, on the establishment of, xxxi, 186.
- Statue of Luther, v, 181.
- of Cuvier, xxx, 184.
- Stature, human, law of increase in, *M. Quetelet*, xxii, 376.
- Staurolite macle, *C. T. Jackson*, xlvi, 368.<sup>f</sup>
- , in Canada, viii, 62.
- , in Connecticut, i, 353; ii, 205; v, 36.
- , in Maine, x, 17.
- , in Massachusetts, i, 436; v, 268; vi, 24, 219; viii, 40.
- , in New Hampshire, v, 40, 271; vi, 219, 245; (Mink pond) xviii, 127, 128.
- , in New York, i, 435.
- , in Pennsylvania, ix, 45.
- , in Rhode Island, ix, 49.
- , in Vermont, vi, 219.
- Steam, a conductor of electricity, remarks on, xxvi, 206.
- , table of the elastic forces of, *Dulong*, xix, 181.
- Steam, ratio between the elastic force and temperature of, xxviii, 363.
- , maximum elasticity of, xxxvi, 242.
- , power of, xiii, 180.
- , production of, from heated iron, *W. R. Johnson*, xxi, 71.<sup>f</sup>
- , properties of, xx, 326, 329.
- , specific gravity of, at different temperatures, xxxviii, 137.
- , electricity from, xl, 383.
- , rapid production of, in contact with highly heated metals, *W. R. Johnson*, xix, 292; xx, 308, 418.
- , agent in volcanic action, *G. Bischof*, xxxvi, 241.
- , destruction of vermin in ships by, xvii, 390.
- pyrometer, *W. R. Johnson* on, xxii, 96.<sup>f</sup>
- navigation, ii, 342, 347.
- — — —, letters on, *J. Smith*, xxxv, 332; xxxvi, 133.
- — — —, Atlantic, *J. Smith*, xxxv, 160.
- — — —, to the Pacific, by the isthmus of Panama and the western coast of South America, xli, 358.
- — — —, in the Pacific, on the coast of Chili, xliii, 207.
- — — —, mechanism of waves, in reference to, *J. S. Russel*, xxxiii, 283.
- — — —, Journal, xxxviii, 205.
- Steamboats, American, notices of, *W. C. Redfield*, xxiii, 311.
- , the first, on the western waters, xxxi, 1.
- , Burden's, in France, xxx, 174.
- Babcock, *J. H. Patten*, xii, 115.<sup>f</sup>
- in 1819, between Stockholm and St. Petersburg, ii, 347.
- , at Stockholm, v, 379.
- , at Bordeaux, v, 381.
- , first on the Swiss lakes, vi, 385.



- Steamboat, between Trieste and Venice, iv, 377.
- , on fuel for, xx, 133.
- , of iron, v, 396.
- , advantages of iron compared with wood, xxxix, 206.
- , protection of, from lightning, *A. Jones*, xxii, 106.
- , on extinguishing fire in, xli, 66.
- , propulsion of, by the trapezium paddlewheel and screw, xlii, 336.
- , an economical, xx, 14.
- , explosions, list of, *W. C. Redfield*, xx, 336.
- , cause of explosion, and a safety apparatus, *A. D. Bache*, xx, 317.<sup>f</sup>
- , safety of, *B. Silliman*, xix, 143.
- , means of safety in, *J. L. Sullivan*, xx, 1.
- , safety of, xxxiv, 35.
- , causes of explosion, in a review of *J. Renwick* on the steam engine, xx, 329.
- , precautions to be used against explosion, *J. Renwick*, xx, 329.
- Steamboilers, on the explosion of, *J. Perkins*, xiii, 52.
- , *ibid*, *E. Hazard*, xiii, 56.
- , on the supposed collapse of, and mode of preventing explosions, *W. C. Redfield*, xxi, 190.
- , loss of life by explosions of, xx, 415.
- , explosions due to defective material, xxxv, 317.
- , premium for protection against explosions, xx, 178.
- , rules regarding, in France, ix, 203.
- , safety of, in France, xix, 202.
- , feeding of, vii, 378.
- , on fuel for, *B. Silliman*, xx, 133.
- , use of American coal for, xlix, 310.
- Steamboilers, the galvanoscope, a means of detecting a deficiency of water in, *C. G. Page*, xxxvi, 141.<sup>f</sup>
- , on high and low pressure, *A. B. Quinby*, ix, 313.
- , hydrostat for supplying water to, *I. Doolittle*, xiii, 64.<sup>f</sup>
- , incrustations within, prevented by potatoes, vii, 193.
- , protection of, by timber, xix, 176.
- , strength of cylindrical, *W. R. Johnson*, xxiii, 68.
- Steam-engines, large, x, 170.
- , spark extinguisher for, xlii, 209.<sup>f</sup>
- , in Great Britain, xv, 185.
- , the first at Glasgow, xii, 385.
- , economy of using highly elastic steam expansively, *J. Perkins*, xiii, 59.<sup>f</sup>
- , *J. Perkins's* method of applying his mode of generating steam to ordinary, vii, 332.<sup>f</sup>
- , *Perkins's* new, vii, 111.<sup>f</sup>
- , remarks on *J. Perkins's* high pressure, xiii, 40.
- , power of *Perkins's*, ix, 206.
- , revolving, invented by Samuel Morey, i, 157.<sup>f</sup>
- , on the revolving, of Morey, *I. Doolittle*, ii, 101.<sup>f</sup>
- , *J. L. Sullivan*, ii, 106<sup>f</sup>; v, 144.
- , Ward's alternating, iv, 90.<sup>f</sup>
- , review of a treatise on, by *J. Renwick*, xx, 322.
- Steamship, the Savannah, under Captain Moses Rogers, the first Atlantic, 1819, xxxviii, 155.
- , log-book deposited with the American Philosophical Society, xl, 34.
- Steam generators of the steamboat Babcock, xii, 115.<sup>f</sup>
- Steam pump, Long's, xiv, 169.<sup>f</sup>
- , some experiments with, xvi, 181.
- Stearine, a compound body, *Lecanu*, xxviii, 361.

- Stearine and elaine, vi, 377.  
 Stearoptine, of oil of roses, xxviii, 383.  
 Steatite, best in New England, xxxiii, 165.  
 —, uses of, xiii, 192; xiv, 376.  
 —, in Connecticut, i, 354; vi, 228; x, 12; xxxiii, 165.  
 —, in Maryland, v, 255; xxiv, 355; xxvii, 20.  
 —, in Massachusetts, i, 113, 138; vi, 228; ix, 54; xxii, 31;—Middlefield, ii, 236; iv, 274; v, 249; viii, 50, 51; x, 19; xxvii, 382; xxxiii, 165;—Groton, xxvii, 341.  
 —, in New Hampshire, at Orford, xxxiii, 165.  
 —, in New Jersey, at Sterling, ix, 245.  
 —, in New York, xix, 225; xxv, 347.  
 —, in Pennsylvania, viii, 236; xiv, 18.  
 — quarries in Rhode Island, viii, 227, 231.  
 —, in Vermont, v, 272; vi, 228; vii, 58; xxviii, 370; xxxiii, 165.  
 —, crystallized, (pseudomorphous) at Middlefield, *C. Dewey*, iv, 274; v, 249; vi, 334 (analysis); viii, 51.  
 —, hornblende pseudomorphs, analysis of, *L. C. Beck*, xlvi, 35.  
*Steel, J. H.*, notice of a report by, on the geology of Saratoga Co., N. Y., v, 203.  
 —, notice of Snake Hill and Saratoga lake, and its environs, ix, 1.<sup>f</sup>  
 —, description of the high rock spring, at Saratoga, xvi, 341.<sup>f</sup>  
 —, iodine in the Saratoga waters, xvi, 242.  
 —, on swallows, xix, 356.  
 —, analysis of the Saratoga and Ballstown waters, xxi, 182; xxxvi, 8.  
 —, oolite of Saratoga, and state of New York, ix, 16.<sup>f</sup>  
 —, on chrysoberyl, iv, 37.  
 Steel, on the cutting of, by soft iron, *H. Daggett*, vi, 336.  
 —, *ibid*, *B. Silliman*, vii, 342.  
 Steel, on the cutting of, by soft iron, note on, vii, 390.  
 —, *ibid*, x, 127, 397.  
 —, Clarke's, xvii, 113.  
 —, Damascus, v, 182.  
 —, American, xix, 175.  
 —, engraving on, iii, 353.  
 —, on the fabrication of, at Sheffield, Yorkshire, xix, 182.<sup>f</sup>  
 —, manufacture of, xvii, 111.  
 —, —, by cementation, xix, 182.  
 —, prevention of, from rusting, vi, 398; xxi, 150; xxii, 382; xxiii, 199, 383.  
 —, silicium in, iv, 376.  
 —, tempered, action on, of soft iron in motion, ix, 324; x, 127, 397.  
 —, blistered, xv, 374.  
 — blades, *P. Bradier's*, vi, 395.  
 — plate, menstruum for biting-in on, x, 194.  
 — plates, colored, xvii, 376.  
*Stein, W.*, on lithia in a blowpipe test, xlviii, 193.  
*Steinhauer, H.*, remarks on trap, ii, 232.  
 Steinheilite, iv, 377.  
 Stellarota, *Pettengill's*, xvi, 363.  
 Stellite, Bergen Hill, N. J., xl, 69.  
 —, —, analysis of, xlv, 54; xlvi, 35.  
 —, —, remarks on, xlvi, 379.  
*Stenhouse, J.*, detection of kinic acid, xlix, 391.  
 —, on the silvering of glass, xlix, 398.  
 Steppes, Russian, xvii, 23.  
 Stereoscope, xxxv, 295.  
 Stereotyping, invention of, xvii, 161.  
 Stereotype, soft iron used for, xxvi, 192.  
 — printing, original document on, *C. Colden*, and a letter by *B. Franklin*, xxiv, 319.  
*Sternberg, Count K.*, notice of, xxxvii, 125.  
 Sternbergite, xv, 386.  
*Studel, E. T.*, Nomenclator Botanicus, notice of, xl, 174; xli, 373; xlii, 377.

- Stevelly, J.*, on clouds, wind and rain, xxxviii, 105.  
 —, on filling barometers, xxxviii, 109.  
*Stewart, C. S.*, notices of the volcano Kilauea on Hawaii, xi, 363; xx, 229.  
*Stickney, B. F.*, on native lead and cinnabar, ii, 170.  
 —, on the supposed discovery of cinnabar in Michigan, xxxvii, 185.  
*Stigmariæ*, generic characters of, vii, 180.  
*Stigmariæ* and *Sigillariæ*, xlix, 227.  
*Stilbite*, in Canada, viii, 65.  
 —, in Connecticut, i, 135; vi, 224; xxxv, 179.  
 —, in Massachusetts, i, 114, 115, 134; vi, 224; vii, 254.  
 —, in New Jersey, ii, 191, 192, 195; v, 239; xlv, 59.<sup>f</sup>  
 —, in New York, v, 399; vi, 365; ix, 41, 402; xlv, 59.  
 —, in Nova Scotia, xxx, 346.  
 —, from New Holland, xxxix, 161.<sup>f</sup>  
 Still for gin, of large size, xix, 394.  
*Stilpnomelane*, xviii, 392.  
*Stilson, W. B.*, geology and mineralogy of a part of Indiana, i, 131.  
 Stockholm, steamboats at, v, 379.  
 Stones, moving, in lakes and ponds, *N. Chipman*, xiv, 303.  
 —, building, contraction and expansion of, by variations of temperature, *W. H. C. Bartlett*, xxii, 136.<sup>f</sup>  
 —, experiments on the strength of various, *E. Hodgkinson*, xlv, 169.  
 — of memorial and sacrifice, vii, 153.  
 —, lithographic, see *Lithographic*.  
 —, boulder, see *Boulders*.  
 —, meteoric, see *Meteorites*.  
 Stonesfield slate, marsupial fossils of, xxvii, 412; xxxvii, 228.  
 Stoneware of Baltimore, xxvii, 11.  
 Storax, oil of, xlix, 392.  
*Storer, D. H.*, report of the curators of the Boston Society of Natural History, xxxii, 364.
- Storer, D. H.*, review of the "Natural History of the Fishes of Massachusetts," xxxvi, 337.  
 —, on the *Carcharias obscurus*, xxxviii, 195.  
 —, on the *Emys Blandingii* and a *Syngnanthus*, xxxviii, 195.  
 —, on the *Squalus elephas*, xxxviii, 197.  
 —, fifteen species of Ohio fishes, xxxviii, 392.  
 —, two species of Ray, xxxviii, 396.  
 —, fishes and reptiles of Massachusetts, xxxviii, 379.  
 —, on Bell's British Reptiles, xxxix, 185.  
 —, account of several fishes, xxxix, 378.  
 —, on Indian Cyprinidæ, xli, 92.  
 —, a new species of torpedo, xlv, 213; xlv, 165.<sup>f</sup>  
 —, notice of Dekay's report on the fishes of New York, xlv, 275.  
 Storm, see under *Wind*.  
 Strafford, Vermont, copperas manufactory of, iii, 326.  
*Strait, H.*, on aerial navigation, xxv, 15.<sup>f</sup>  
 —, theory of the bellows, xxvii, 88.<sup>f</sup>  
 —, application of the principle of the balance in milking, pumping, churning, washing, fulling, &c., xxvii, 92.<sup>f</sup>  
*Stratton, T.*, on ground ice, xl, 407.  
 Straw, Leghorn, viii, 378.  
 —, —, on the cultivation of, xxii, 363.  
 Strength of stones and other materials, *E. Hodgkinson*, xlv, 168.  
 Striæ on rocks, see *Scratches*.  
*Strickland, A.*, on *Ardea alba*, xxxv, 311.  
*Strickland, H. E.*, silurian strata of Asia Minor, xxxiii, 95.  
*Strobilus caryophyllus*, xxxi, 32.<sup>f</sup>  
*Strode, T.*, on a siliceous petrification from North Carolina, vii, 249.  
 Strokr, account of, xxxvi, 256.

- Stromeyer*, analyses of several minerals, vii, 368.
- Stromnite*, new mineral species, ii, 177.
- Strong, T.*, a new method of obtaining the formulæ of the sines and cosines of the sum and difference of two arcs, i, 424.<sup>f</sup>
- , solutions of diophantine problems, i, 426; xxxi, 156.
- , mathematical problems, ii, 54<sup>f</sup>, 266.<sup>f</sup>
- , demonstration of the binomial theorem, xii, 132.
- , solution of problems in fluxions, xvi, 283; xvii, 69, 329; xviii, 67.
- , on capillary attraction, xviii, 70.
- , on central forces, xix, 46; xx, 65, 291; xxi, 66, 334; xxii, 132, 342.
- , motion of a system of bodies, xxiv, 40; xxv, 281; xxvi, 44.
- , on the parallelogram of forces, xxvi, 304; xxix, 345.
- , composition and resolution of forces and statical equilibrium, xxviii, 85.
- , theory of the variations of the arbitrary constants in elliptic motion, xxx, 248.
- , integration of one kind of differential equations of the second order, xlii, 273.
- , on the principles of virtual velocities, xlii, 66; xliii, 77.<sup>f</sup>
- , on the first principles of the differential calculus, together with a new investigation of Taylor's theorem, xlv, 269.
- , new way of obtaining exponential and logarithmic theorems, xlviii, 36.
- Strontia* distinguished from baryta by means of chromate of potash, *J. L. Smith*, xxxvi, 183.
- , on the red color of the flame from, *F. H. Baddely*, xviii, 261.
- , test for, iv, 372.
- , action of, on animals, xiii, 178.
- Strontia*, sulphate of, (celestine) Lake Eric, ii, 241; iii, 363; iv, 279, 324.
- , —, analysis of, *G. T. Bowen*, iv, 324.
- , —, —, *Stromeyer*, vii, 369.
- , —, of Presq'ile, Ohio, vii, 46.
- , —, Detroit river, v, 40.
- , —, in Canada, viii, 72.
- , —, —, *F. H. Baddely*, xviii, 104.
- , —, in Sicily, viii, 205.
- Strontianite* in the United States, *E. Emmons*, xxvii, 182.
- , —, notices of, xxvii, 363; xxviii, 174.
- , examination of, *C. U. Shepard*, xxvii, 183, 363.<sup>f</sup>
- , from Freyberg, and Scotland, vii, 369.
- , analysis by *Stromeyer*, vii, 369.
- , in Sicily, viii, 205.
- Strontium*, mode of obtaining from a chlorid of, *R. Hare*, xxxvii, 267; xxxviii, 115; xxxix, 362; xl, 296.<sup>f</sup>
- Structure of rocks*, a result of elevation, *W. Hopkins*, xxxi, 365.
- , —, schistose often a result of crystallization, *J. D. Dana*, xlv, 105.
- Struder, B.*, on erratic blocks, xxxvi, 325.
- Stuart, J.*, localities of minerals, vi, 249.
- Stuart, M.*, exposition of the first chapter of Genesis, review of, xxx, 114.
- Stucco* for walls, xxiv, 206.
- Sturgeon*, spoonbill, of the Ohio, notice of, xii, 201.<sup>f</sup>
- Sturgeon, W.*, miscellaneous notices of remarkable results, in heating and decomposing by galvanism, xxxix, 28.<sup>f</sup>
- , annals of electricity by, noticed, xxxii, 213.
- , remarks on galvanic batteries, xxxix, 35.

- Sturm's auxiliary functions, on the relation of, to the roots of an algebraic equation, *J. J. Sylvester*, xlii, 163.
- Stuttering, cured, v, 382.
- Styrole, xlix, 392.
- Submarine explosion, ii, 94.
- Subsidence of southern part of Sweden, *Nilsson*, xxxiii, 102.
- of the coast of Greenland, xxx, 379.
- about Canaan Mountain, N. Y., v, 15.
- and elevation, modern, xxxiii, 97.
- , areas of, in the Pacific, *J. D. Dana*, xlv, 131.<sup>f</sup>
- , evidences of, in Great Britain, xxxiii, 97.
- Subsistence in continental Europe, price of, xxxvi, 176.
- Substitutions, theory of, as connected with the allotropism of chlorine, xlix, 346.<sup>f</sup>
- Subterranean forests, xxi, 23.
- galleries, locust wood used in, xxx, 182.
- Succinic acid, xlvii, 196.
- Sugar, a means of preserving fish, viii, 391.
- , new acid from, xlvii, 196.
- , barley, crystallization of, xix, 177.
- , from beets, vi, 388.
- , — — —, manufacture of, promoted in France, xi, 396.
- , — — —, amount manufactured in France, xv, 394.
- , — — —, *Girardin*, xxiii, 392.
- , diabetic, analysis of, *T. Thomson*, xxxv, 298.
- , — — —, xlix, 200.
- , from maize, xxx, 174; xxxi, 163; xlv, 215.
- , from mangle wurtzel, xxxi, 345.
- , maple, manufacture of, *J. Locke*, ii, 258.
- , in sweet potato, xv, 285.
- , from rags, saw-dust, ii, 347.
- Sugar, preparation of, from potato starch, xx, 195; xxi, 284; xl, 216.
- , — — —, — — —, *S. Guthrie*, xxi, 284.
- , from wood sawings, &c., xl, 216.
- cane in Colombia, at great heights on the Andes, xxxvii, 16.
- Sugar Loaf Mountain, Mass., scenery of, vii, 9.
- Sullivan, J. L.*, notice of the revolving steam engine, i, 157<sup>f</sup>; ii, 106<sup>f</sup>; v, 144.
- , new means of producing heat and light, i, 91.<sup>f</sup>
- , means of producing safety in steamboats, xx, 1.
- , description of a steamboat, xx, 14.
- , improvement in steam boilers, xx, 10.
- Sullivan, W. S.*, description of three undescribed plants from Ohio, xlii, 49.
- Sulphacetic acid, *Melsens*, xlvi, 193.
- Sulphates, new series of double, xlvi, 189, 190.
- , decomposed by organic matters, xviii, 147.
- Sulphur, atomic weight of, xlvi, 402; xlix, 203.
- , properties of, xv, 189.
- , experiments on the cooling of, xvi, 216.
- , density of the vapor, xxiii, 383; xxxv, 298.
- in assafetida, xv, 185.
- in granite, vii, 56.
- in volcanoes, origin of, *C. Gemellaro*, xxviii, 293.
- in Connecticut, vii, 56; viii, 259; x, 12.
- in Massachusetts, i, 114; viii, 53.
- in New York, iv, 250.
- in Pennsylvania, i, 237.
- in Sicily, viii, 210.
- , use of, in rheumatism, ix, 169.
- , effects of excessive use of, viii, 394.

- Sulphur, piercing of hot iron with, viii, 182.
- , carburet of, decomposed by weak electric action, xviii, 153.
- , two chlorides of, xxiii, 382.
- , bichloride of, *F. Chevet*, xlii, 71.
- , hydruret of, *L. J. Thenard*, xxii, 351.
- acid, new, xlvii, 191.
- spring, see *Spring*.
- Sulphurets of the metal, new method of precipitating, xlvii, 193.
- Sulphuretted hydrogen gas in the state of New York, xv, 235.
- —, condensation of, to a liquid, *M. Faraday*, vii, 354.
- —, solidified, *M. Faraday*, xlix, 377.
- —, injurious effects of, xviii, 160.
- Sulphuric acid, anhydrous, new mode of forming, xii, 200.
- —, —, Mosander's mode of preparing, xxviii, 360.
- —, on a new process for, practiced in Germany, *T. G. Clemson*, xx, 347.<sup>f</sup>
- —, new process for, *Provostaye*, xl, 214.
- —, action of, on alcohol, xvi, 267.
- —, —, on oil of sassafras, *R. Hare*, xxxi, 285.
- —, crystallization of, vi, 186.
- —; crystallized hydrates of, xx, 384.
- —, decomposed and not evaporated, on an incandescent metal, xxii, 365.
- —, manufacture of, at Glasgow, x, 360; xli, 48.
- —, tension of, xlvii, 191.
- — and sulphate of iron, remarks on, xii, 387.
- —, action of, on hydrocyanic acid, xviii, 146.
- —, —, with oil of hemlock, xxxvii, 246.
- — and arsenious acids, a new compound of, xli, 47.
- Sulphuric acid produced by the Aix waters, xix, 176.
- —, native, xv, 238.
- — in the Rio Vinagro, x, 191.
- Sulphurous acid gas, a mode of obtaining, xxviii, 360.
- — decomposed by iodine in alcohol, xi, 392.
- —, reaction of the essential oils with, xxxi, 281.
- —, a mode of liquefying, ix, 195.
- —, liquid, vii, 353; xvii, 166; xxxv, 374.
- —, solid, xlix, 376.
- ether, xxxi, 275.
- Sumach, bimalate of lime in, *W. B. Rogers*, xxvii, 294.
- Summer, Indian, xii, 120; xxvii, 140.
- —, —, on the cause of the peculiar aspect of the air in, xviii, 66.
- —, —, *L. Foot* on, xxx, 8.
- Sun, a blue, seen at Bermuda, xl, 323.
- , singular appearance of, xxi, 198.
- , a supposed change by the rays of, in an elementary substance, *J. W. Draper*, xlvi, 390.
- , first observation of the spots on, xxiv, 204.
- , connection of spots on, with the temperature, xii, 199.
- , —, November, 1837, *D. Olmsted*, xxxiii, 393.<sup>f</sup>
- , heat of spots on, *J. Henry*, xlix, 405.
- Sunderland cave, vii, 19.
- Sunsets, autumnal, influence of the great lakes on, *W. Gaylord*, xxxiii, 335.<sup>f</sup>
- —, —, in the West, *C. Dewey*, xxxviii, 151; xlii, 200.
- Surgical operation, extraordinary, iii, 372.
- Survey of the coast of the United States, by *F. R. Hassler*, plans and methods in, xvi, 225.
- — *ibid*, under *A. D. Bache*, xlix, 229.

- Survey, land, in the United States, mode of conducting, *E. F. Johnson*, xix, 131.
- , geological, see *Geological*.
- , canal, in New York, xxiv, 19.<sup>f</sup>
- Surveying, an improvement suggested by *E. Wright*, xxii, 74.<sup>f</sup>
- , field, improvement in, xxiii, 37.<sup>f</sup>
- instruments, on their improvement, *L. Lyon*, xiv, 268.<sup>f</sup>
- Surveyor's compass, improvements in, *T. Kendall*, xix, 337.<sup>f</sup>
- Sus, species of, see *Zoology*.
- Sussex, *Duke of*, notice of N. Bowditch by, xxxvi, 214.
- Sussex County, England, number of fossils of, xxiii, 171.
- Sussex County, N. J., minerals of, *S. Fowler*, xxi, 319.
- —, mineralogy and geology of, *C. U. Shepard*, xxi, 321.<sup>f</sup>
- Swain, J.*, electro-meteorological observations, xxxii, 304.<sup>f</sup>
- Swainson, W.*, Zoological Miscellany of, noticed, iii, 392.
- , Naturalist's Guide of, noticed, viii, 183.
- , new Zoological illustrations, xvi, 386.
- , Exchanges in Entomology, xxvii, 386.
- , on the monocardian animals, notice of, xxxix, 389.
- Swallow, barn, *S. Woodruff*, xix, 172.
- , —, *J. N. Steel*, xix, 356.
- Swan, American, description of, xxii, 83.<sup>f</sup>
- Sweden, population of, in 1816, 1817, 1818, ii, 347.
- , botany of, v, 180.
- , elevation of, xxix, 363.
- , gradual elevation of, *C. Lyell*, xxviii, 72, 387.
- , subsidence of southern part of, xxxiii, 102.
- Swedish Journals, xxix, 375.
- Swift, P.*, on the temperature of the sea, xviii, 191.
- Switzerland, jurisprudence in, iii, 379.
- , schools of, vi, 391; xii, 191; xiii, 397.
- , anniversary of the Society for the Encouragement of Agriculture, vii, 381.
- , thunder-storms in, xx, 178.
- Syenite and amygdaloid of Salem, Mass., iii, 232.
- of Massachusetts, along the Connecticut valley, vi, 28.
- in western Massachusetts, viii, 10.
- of Pennsylvania, viii, 236.
- Sympathetic ink, xviii, 148.
- Syphon, Buntem's improvement in, ix, 198.
- Syphons, easy method of filling, *W. Foster*, xxviii, 268.
- of glass, xxiii, 387.<sup>f</sup>
- , improved, *R. Hare*, xxiv, 317.<sup>f</sup>
- , self-filling, *W. B. Rogers*, xxvii, 302.<sup>f</sup>
- Syringodendron, generic characters of, vii, 180.
- *Kirtlandius*, xxxi, 29.<sup>f</sup>
- Syrups, bleaching of, *Dumont*, xxiii, 346.<sup>f</sup>

## T.

- Tabasheer, analysis of, xxx, 381.
- Taber, T.*, practical remarks on gems, xxxviii, 61.
- Taberd's Anamitic and Latin Dictionary, xl, 43.
- Table Mountain, iii, 228.
- Tabriz, earthquakes at, xxxvii, 351.
- , salt near, xxxvii, 350.
- , marble of, xxxvii, 355.
- Tabular spar from the Bannat, analysis of, vii, 370.
- — of Pargas, vii, 371.
- — of Willsboro', N. Y., analysis of, *H. Seybert*, v, 113.
- — in New York, v, 113; xiii, 198; xvii, 145.
- — in Pennsylvania, xiv, 13.

- Taconic mountains, character of, ii, 246; viii, 2, 8.
- — —, geological section from, to Troy, *C. Dewey*, ii, 246.
- system, remarks on, *D. D. Owen*, xlvi, 145.
- — —, remarks on, *H. D. Rogers*, xlvii, 150.
- — —, work on, by *E. Emmons*, noticed, xlvi, 394.
- Tagua-nut, or vegetable ivory, xlix, 400.
- Tails of comets, x, 395; xxxi, 142, 325; xxxiii, 5, 11; xxxviii, 35; xl, 59; xlvi, 108.<sup>f</sup>
- Talbot, H. F.*, photogenic drawings, xxxvii, 169; xxxviii, 97.<sup>a</sup>
- — —, improvement in the telescope, xlv, 166.
- Talc from Chamouni, analysis of, xlvii, 216.
- in Connecticut, x, 14.
- in Maryland, xiv, 12; xviii, 79; xxiv, 355.
- in Massachusetts, i, 113; ii, 236; iv, 54; vii, 55.
- in New Jersey, v, 29.
- in New York, i, 144; v, 29; xix, 227, 228.
- in North Carolina, v, 259, 264.
- in Pennsylvania, i, 237; viii, 239; x, 219, 221; xiv, 5, 6, 17.
- in Rhode Island, vii, 254; viii, 227, 231.
- in Vermont, iii, 76; iv, 54; v, 40.
- Talcose slate of the Connecticut valley, vi, 26.
- — —, the gold rock of the Carolinas, *A. Eaton*, xviii, 50.
- Tannin, memoir on, *J. Pelouze*, xxviii, 124.
- Tanning, application of chestnut wood in, *W. Sheldon*, i, 312.
- — —, new process of, i, 439; xxxv, 303.
- Tantalite, see *Columbite*.
- Tapestries of Raphael, revival of their colors, xxxvii, 244.
- Tapir, fossil, at Darmstadt, xxvi, 218.
- Tappan, B.*, on the boulders of primitive rocks found in Ohio, xiv, 291.
- — —, on the cannel coal of Ohio, xviii, 376.
- — —, description of some new shells, xxxv, 268.<sup>f</sup>
- Tar, used to afford light, i, 92.
- — —, used to work steam engines, i, 165.
- Tarapaca, South America, account of the minerals of the province of, *J. H. Blake*, xlv, 1.<sup>f</sup>
- Tarlors*, observations on mining, xxxiv, 9.
- Tartaric acid, manufacture of, at Glasgow, xli, 50.
- Taste, the seat of, xx, 180.
- Taurus Mountains, xxxvii, 351.
- Taxidermy, see *Preservation*.
- Taxodon, *R. Owen*, xxxiii, 208; xxxv, 196.
- Taylor, J.*, on Astronomy and Photography at Rome, xlv, 373.
- Taylor, R. C.*, Indian mounds and earthworks in the form of animal effigies, principally in Wisconsin, xxxiv, 88.<sup>f</sup>
- — —, model of the southern coal-field of Pennsylvania, xli, 80.<sup>f</sup>
- Taylor, Steuben*, localities of minerals, vi, 245.
- — —, account of a rocking stone, vii, 201.
- — —, localities of minerals, vii, 253; viii, 225.
- Taylor, Stephen*, on salt in Virginia, xli, 214.
- Taylor, S.*, ancient mounds and other remains in Iowa and Wisconsin, xlv, 21.<sup>f</sup>
- Taylor, W. C.*, on change of population in New Zealand, xxxv, 315.
- Taylor's theorem, *C. Bonnycastle* on, xl, 42.
- — —, new investigation of, *T. Strong*, xlv, 272.
- Tchihatcheff, P. de*, memoir on the geological constitution of the Altai, noticed, xlix, 378.



- Tea, composition of, *E. Peligot*,  
xlviii, 187.
- plant of Upper Assam, *W. Griffith*, xl, 165.
- in Brazil, iv, 377.
- , cultivation of, in Brazil, and on its introduction into France, *Guillemin*, xl, 167.
- , green, of commerce, observations on, *R. Warrenton*, xlviii, 188.
- Teahills of China, excursion to, xxxi, 194.
- Teale, T. P.*, on the vermiform filaments of Actiniæ, xxxv, 311.
- Technological Institutes, xii, 197.
- Technology, Elements of, xvii, 198.
- Teeth, phosphate of lime in, xxviii, 386.
- , *R. Owen* on fossil, xxxv, 307; xxxviii, 127.
- , on the microscopic structure of, xxxviii, 134.
- of the Lepidostei, on the microscopic structure of, *J. Wyman*, xlv, 359.<sup>f</sup>
- of shark, New Jersey, fossil, xxviii, 378.<sup>f</sup>
- , see farther under *Fossil*.
- Telegraph, Pearson's, iv, 314.<sup>f</sup>
- , system for the United States, proposed, xxxii, 201.
- , Morse's electro-magnetic, xxxiii, 185.<sup>f</sup>
- , — — —, experiments with, xlv, 390.<sup>f</sup>
- Telescope, notice of Barlow's refracting, xvii, 367.
- , Leon Lewenberg's, xxxviii, 379.
- , Rosse's, xlvi, 208; xlix, 221.
- , achromatic, Cauchoix's, xxii, 358.
- , improvements in, by *J. Fraunhofer*, xvi, 307.
- , notice of Holcomb's, xxiii, 403; xxvii, 185.
- , superior, of Lerebours, xvi, 302.
- Telescope, fourteen feet reflector, xxxv, 174.
- , improvement in, *H. F. Talbot*, xlv, 166.
- , on determining distances by means of, xlii, 164.
- Tellurium, *J. J. Berzelius* on, xxviii, 137.
- , in Connecticut, i, 312, 316; vi, 235.
- , an astronomical machine, *E. C. Leedom*, xlii, 338.<sup>f</sup>
- Temperament, musical, *A. M. Fisher*, i, 9<sup>f</sup>, 176.<sup>f</sup>
- , — — —, *Jno. Farcy*, ii, 65.
- Temperance, *Oliver's* address on, xxiv, 190.
- Temperature, disinfecting powers of increased, *W. Henry*, xxi, 392; xxii, 111.<sup>f</sup>
- , effect of clearing land on, xlvii, 237.
- , — — — of mountains on, in the winter, xlii, 159.
- , — — — of, on the distribution of fossils, *T. A. Conrad*, xxxv, 239.
- , — — — of, on geography of plants, *S. Forry*, xlvii, 221.
- limiting the distribution of corals, *J. D. Dana*, xlv, 310.
- , *ibid*, remarks on, *W. C. Redfield*, xlv, 311.
- , in different geological epochs, xxxv, 240.
- of different heights, *W. C. Redfield*, xxxiii, 52.
- , on the methods of ascertaining the mean, *W. M. Carpenter*, xlv, 50.
- of October, not the mean temperature of the year, xxv, 260.
- , month giving mean annual, xlvii, 223.
- of the planetary space, xix, 377; xxxii, 1.
- of the earth, and of space, *Fourier*, xxxii, 1.
- , *ibid*, *S. D. Poisson*, xxxiv, 157.

- Temperature of the terrestrial globe, xxvi, 10; xxxii, 1.
- of the earth at different depths, remarks on, xxiii, 14; xxxiv, 36; xxxv, 293; xliii, 176.
- —, in deep mines, xxxv, 297; xl, 333.
- — increasing with the depth, early experiments upon, by *Joel Lean*, xl, 332.
- — at different depths, near Madgeburg, xxxvi, 203.
- —, interior of, *R. Patterson*, xxxvii, 357.
- —, variations of internal, producing elevations and depressions in the earth's crust, *C. Babage*, xxvii, 408.
- —, oscillations of annual, extinguished at different depths in different rocks, xxxviii, 109.
- —, supposed difference of, between the air and the earth, *W. M. Carpenter*, xlv, 50.
- of elevation, xxv, 123; xxxiii, 52.
- of wells and springs, xxxv, 379.
- — in New York, xxxvi, 25.
- —, xv, 190; xli, 316; xlix, 272.
- of the ocean, v, 129; xxv, 130.
- of the sea at great depths, from Péron's voyage, xvii, 295.
- —, *ibid*, remarks on, xviii, 191.
- —, table of Forster's observations, xvii, 299.
- —, table of Irving's observations, xvii, 299.
- —, —, xxiii, 10.
- — at depths, by *Scoresby* and *Buchan*, xlv, 139, 140.
- —, extreme cold, extraordinary seasons of, *N. Webster*, xxviii, 183.
- of the ground in Siberia, *M. Erman, Jr.*, xxxvi, 205.
- Temperature in Europe, of wells at St. André, xxxvi, 204.
- —, of the cities of Rome, (Italy) and New York, *J. Van Rensselaer*, xlii, 120.
- —, of a cavern near Montpelier, xxxvii, 73.
- —, at Perth, Scotland, mean annual, xl, 342.
- —, mean, of Inverness, xlv, 158.
- —, —, of Plymouth, England, xxxiv, 20.
- —, cold, of winter of 1837, 8, in England, *J. Lindley*, xxxix, 18.
- —, of Malvern, in Worcestershire, *Addison*, xxxviii, 102.
- —, of the air in York Minster, xlii, 161.
- —, excessively hot, of July, 1825, in England and France, xi, 195.
- of the eastern and western continents compared and explained, *S. Forry*, xlvii, 38.
- of the United States, connection of, with the lakes and ocean, *S. Forry*, xlvii, 21, 23.
- —, isothermal, isothermal and isocheimal lines of, in America and Europe, *S. Forry*, xlvii, 18.<sup>f</sup>
- —, on the forwardness of the spring in different parts, *J. Bigelow*, i, 76.
- —, cold extreme of the winter of 1825, 6, x, 399.
- —, — — of January, 1835, at different places in, xxviii, 177.
- —, heat extreme in 1824, in the Southern States, ix, 395.
- —, — — of the summer of 1825, various observations upon, x, 296, 297.
- —, mean, of the state of New York, in 1832, xxv, 259.
- —, —, *ibid*, xlix, 179.
- —, mean, of Albany, N.Y., xxv, 260.

- Temperature of the United States, extreme cold at Plattsburg, N. Y., (1821) iii, 366; (1826) xi, 195.
- , subterranean, in the mines of eastern Virginia, *W. B. Rogers*, xliii, 176.
- , of the year 1839, as deduced from observations at Amherst College, *E. S. Snell*, xxxix, 36.<sup>f</sup>
- , mean, at Salem, Massachusetts, and Rome, in Italy, for thirty-three years ending in 1818, vi, 386.
- , —, at Marietta, Ohio, see *S. P. Hildreth's* meteorological registers.
- , extreme heat, at Cumberland, Md., July, 1838, xxxv, 190.
- , observations at Hudson, Ohio, 1838–1840, *E. Loomis*, xli, 315.
- , —, —, 1841–1844, *E. Loomis*, xlix, 271.
- , —, cold on Lake Superior, ix, 395.
- , —, of Lake Ontario, *C. Dewey*, xxxiii, 403; xxxvii, 242.
- , —, of the Saco river, *J. M. Batchelder*, xxxiv, 381.
- , —, relative, of the water of the Saco river, and the atmosphere for the years 1837 and 1838, *J. M. Batchelder*, xxxvii, 389.
- , —, of wells at Hudson, Ohio, *E. Loomis*, xli, 316; xlix, 272.
- , —, New York state, xxxvi, 25.
- , —, —, *M. Field*, xv, 190.
- register at Montreal, 1836–40, *J. S. McCord*, xli, 330.
- of Colombia, and of the Pacific coast of S. America, *R. Wright*, xxxvii, 1.
- , mean, at Rio Janeiro, for 1832 to 1843, *J. Gardner*, xlvii, 291.
- of air, see farther *Meteorological*.
- Tempering of metallic wires and springs, xx, 393.
- Temple of Jupiter Ammon, iii, 378.
- of Serapis, changes of level in, *C. Babbage*, xxvii, 408.
- Ten Eyck*, account of a large electro-magnet, xx, 201.
- Tennantite, *Hemming*, xxvi, 386.
- Tennessee, geology of eastern, &c., i, 60, 214.
- meteorite, fall of, at Nashville, xv, 358; xviii, 378.
- , —, account of, xvii, 326; xviii, 200.
- , meteoric iron, *G. Troost*, xxxviii, 250; xlix, 336.<sup>f</sup>
- , —, —, analysis, *C. U. Shepard*, xliii, 354.
- gold region, xxiii, 1.<sup>f</sup>
- , Geological Report of, xxx, 391; xxxiv, 187.
- , mounds and caves in eastern, *J. H. Kain*, i, 428.
- Tenorite, xlviii, 219.
- Tephroite, xviii, 391.
- Teratology, a French treatise on the elements of, noticed, xli, 374.
- Terraces of the Connecticut valley, xxii, 214; xlvii, 98.
- of the river Malbay, Lower Canada, v, 221.
- of the Canadian Lakes, xlvi, 314.
- of Lake Ontario, xxxv, 89; xxxvi, 40.
- of Lake Huron, iii, 257.
- of the Bay of Funda, xli, 55.
- Terrestrial meridian, length of a degree of, xxxi, 222.<sup>f</sup>
- Tertiary of the Middle Rhine, *R. I. Murchison* on, xlvii, 183.
- of Cephalonia, *Hamilton* and *Strickland*, xxxiii, 211.
- formations in North America, essay on, by *J. Finch*, vii, 31.
- of the Atlantic coast, United States, *T. A. Conrad*, xxviii, 104, 280.<sup>f</sup>
- epoch, elevation during, in the United States and California, xxxv, 245.

- Tertiary of Massachusetts, xxii, 36.
- —, of Martha's Vineyard, vii, 240<sup>f</sup>; xxii, 36; xlvi, 318.
- —, Hudson river formations, *J. Finch*, x, 227.
- — of Lake Champlain, xxxvi, 27.
- — of Ohio, xxxiv, 360.
- — formations of Virginia, *W. B. and H. D. Rogers*, xxxviii, 182.
- — of North Carolina, *D. Olmsted*, xiv, 231.
- — of the southern Atlantic states, *J. T. Hodge*, xli, 332.
- — shells of the United States, description of, *T. A. Conrad*, xxiii, 204, 339; xxviii, 109; xli, 344.<sup>f</sup>
- — — —, *I. Lea*, xxv, 413.
- — — —, notice of, *E. Hitchcock*, xli, 246.
- — — —, *H. D. Rogers*, xlvii, 254.
- — — —, remarks on a list of, *J. T. Hodge*, xli, 332, 343.
- — — — of Maryland, list of, *I. Lea*, xxv, 422.
- — — — from North Carolina, xxxix, 387.
- — — — of Alabama, list of, *I. Lea*, xxv, 419.
- — — — of the United States, mostly from Alabama, *H. C. Lea*, xl, 92.<sup>f</sup>
- — — — infusoria, Virginia, xli, 214.
- — — — fossils, *Cuvier* and *Brongniart* on Deshayes' work on, xxiii, 196.
- Teschemacher, E. F.*, analyses of guano, xlvi, 181.
- Teschemacher, J. E.*, on the identity of pyrochlore with microlite, xliii, 33.
- —, reply of C. U. Shepard to, xliii, 116.
- —, remarks on uranium and pyrochlore, in reply to C. U. Shepard, xlvi, 395.
- —, on the *Elvella esculenta*, xxxviii, 194.
- —, on the minerals found at Charlestown, Mass., xxxviii, 194.
- Teschemacher, J. E.*, on plants from Blackstone river, xxxviii, 195.
- —, on the *Andromeda mariana*, xxxviii, 196.
- —, on fossil coals and madrepores, xxxviii, 197.
- —, address by, before the Boston Society of Natural History, xli, 370.
- —, on singular crystals of galena from Rossie, N. Y., xlvii, 417.
- —, on the blowpipe characters of pyrrhite, xlvii, 418.
- —, on the palatal tooth of the *Ptychodus polygyrus*, xxxvi, 380.
- —, remarks on the origin of guano, xlvi, 203.
- —, on the identity of Lincolnite and Heulandite, xlviii, 65.
- Test for alkalies, flowers of the common mallows, a good, vii, 194.
- — liquor, the blue iris affords a good, v, 408.
- — paper of purple cabbage, xxvi, 210.
- Tests for arsenic, see *Arsenic*.
- Testacea, economical notice of some species of, xxxii, 53, 235.
- —, see farther under ZOOLOGY, *Mollusca*.
- Tetracaulodon, *R. Harlan*, xliii, 141.
- —, xlv, 210.
- —, *R. Owen*, xlv, 342.
- Texas, lignite of, xxxvii, 216.
- —, silicified wood of, xxxvii, 215.
- —, hog-wallow prairies, notice of, xxxix, 211.
- Thebaine, from opium, xxx, 379.
- Thenard, L. J.*, system of Chemistry of, notice of, xx, 94.
- Thenard, P.*, on the combinations of phosphorus and hydrogen, xlvi, 184.
- —, on phosphuret of lime, xlix, 193.
- Theodolite, Hassler's repeating, xvi, 252.<sup>f</sup>
- Theory of the universe, *P. E. Morin*, xxxi, 160.

- Theory of a resisting medium, examination of, xxxiii, 1.
- Thermal spring, see *Spring*.
- Thermo-electricity, xxv, 271; xxx, 181.
- Thermo-electrical battery, *J. Locke*, xxvi, 214.
- experiments on metals, *J. Locke*, xxvi, 381.
- piles of Nobili, new, xxviii, 397.
- Thermo-magnetism, a law of, regarding metals unequally heated, &c., *J. P. Emmet*, xxvi, 311.
- Thermo-multiplier, *Nobili* and *Melloni*, xxii, 370; xxiii, 185.
- , effects of, *M. Melloni*, xxiii, 381.
- Thermometer, when invented, ii, 359.
- , theory of the construction of, *J. Adams*, viii, 121.
- , a new mode of graduating, *Skene*, xii, 397.
- , American manufactures of, vi, 371.
- , employed in finding the heights of mountains, xlv, 12.
- , or apparatus for measuring the expansion of solid bodies, *W. W. Mather*, xxx, 324.<sup>f</sup>
- , differential, *W. Howard*, ii, 327.<sup>f</sup>
- Thermometric observations on solar and terrestrial radiation, at Montreal, 1838, *J. S. McCord*, xxxvi, 180, 182.
- —, see farther under *Temperature* and *Meteorological*.
- Thermopsis caroliniana, xlv, 80.
- fraxinifolia, xlv, 81.
- Thermoscope, new, xxii, 370.
- Thermoscopic galvanometer, xxii, 370; xxxiii, 365.
- Thetford, Vermont, copperas factory near, iii, 326.
- Thilorier, liquid carbonic acid, xxxi, 402.
- , solidification of carbonic acid, xxxi, 163, 404.
- Thimbles, manufactory of, in France, iii, 375.
- Thomaite, a new mineral, xlix, 393.
- Thomas, D.*, dip of the rocks in western New York, xviii, 375.
- , on coal formations in New York, xix, 326.
- , on physical climate, xix, 361.
- , *Chrysomela vitivora*, xxvi, 113.<sup>f</sup>
- , on the American locust, xxi, 188.
- , specific characters of two species of *Corydalis*, xxvi, 114.<sup>f</sup>
- , description of a new *Ulmus*, xix, 170.<sup>f</sup>
- , on a new species of *Liatris*, xxxvii, 338.<sup>f</sup>
- , on frogs and toads in rocks, xix, 167.
- Thomas, E.*, improvements in the microscope, xix, 57.<sup>f</sup>
- , improvements in the achromatic microscope, xx, 265.<sup>f</sup>
- , obituary notice of, xxii, 380.
- Thomas, J.*, transmission of galvanic light through metals of different conducting powers, xxxiv, 205.<sup>f</sup>
- Thompson, W. A.*, facts relating to diluvial action, xxiii, 243.
- , account of marks on graywacke, xx, 124.
- , on the vitality of toads confined, xxv, 41.
- Thomson, Sir Benjamin*, obituary notice of, xix, 28; xxxiii, 21.
- Thomson, C.*, grave of, xxxv, 389.
- Thomson, J.*, elevation of rails for roads of certain curvature, xxii, 346.<sup>f</sup>
- , on inclined planes in the construction of railroads, xxiii, 107.
- , method of describing curves for arches, xxiv, 73.<sup>f</sup>
- Thomson, J. B.*, Elements of Geometry, by, noticed, xlvi, 210.
- Thomson, R. D.*, on action of emulsin on amygdalin, xxxv, 302.
- , British annual of, noticed, xxxvii, 400.
- , on Parietin, xlix, 195.

- Thomson, R. D.*, Records of Science, noticed, xxviii, 365; xxxii, 212.
- Thomson, T.*, native diarsenate of lead, xxxv, 297.
- , on diabetic sugar, xxxv, 298.
- , on galactin, xxxv, 303.
- , on cast iron, xxxiv, 21.
- , foreign substances in iron, xxxv, 302.
- , First Principles of Chemistry of, noticed, x, 162.
- , on light and heat, xx, 93.
- , Chemistry of Organic Bodies, noticed, xxxvi, 202.
- , on the non-existence of zirconia in Sillimanite, xlviii, 219.
- , analysis of Sillimanite, xlix, 396.
- , analysis of anthophyllite, xix, 359.
- , scientific medals of, xviii, 198.
- Thomsonite, in New Jersey, xl, 69; xliv, 54.
- , in Nova Scotia, xxx, 345.
- Thorium, a new metal, xvii, 381.
- Thorn fence, x, 167.
- Thracia, see ZOOLOGY, *Mollusca*.
- Thrombolite, xlii, 386.
- Thunder storms, see under *Wind*.
- Thury, H. de*, on springs and fountains, xviii, 267.<sup>f</sup>
- Thylacotherium, xxxvii, 228.
- Tiarks, J.L.*, on the northern boundary of the Lake of the Woods, xv, 41.
- Ticknor, G.*, letter to, from Baron von Waltershausen, xlvii, 100.
- Ticonderoga, walls of, iv, 49.
- Tides, atmospheric, Bombay, xxxiii, 274.
- of the ocean, remarks on, v, 133.
- , remarks on, *W. C. Redfield*, xxv, 132; xxviii, 311; xlv, 294.
- , theory of, with observations at London and Liverpool, *J. W. Lubbock*, xxxi, 333.
- , *W. Whewell* on, xxxi, 335, 362; xxxv, 290.
- Tides, connection with the weather, *G. W. Hall*, xxxi, 371.
- , results mapped out by means of curves, *W. Whewell*, xxxv, 290.
- wave, circuit character of, *W. C. Redfield*, xxviii, 313.
- and tidal wave of the Atlantic and Pacific, *W. C. Redfield*, xlv, 294.
- of the Society Islands anomalous, *W. C. Redfield*, xxviii, 311.
- — — — —, xxxiv, 83.
- , observations on the coast survey, xlix, 240.
- , remarks on, *D. Tomlinson*, xxxiv, 81.
- , rise and fall of, vanishes at a central space in the German Ocean, xlii, 158.
- at Arbroath, remarkable, xlv, 395.
- , of Mount's Bay, Cornwall, xlv, 396.
- observations made at Bristol and Leith, xlii, 150.
- of London and Liverpool, xxxi, 333.
- of Cape Cod, xxxiv, 393.
- , supposed, in the North American Lakes, remarks on, *H. Whiting*, xx, 205.
- — — — —, *H. A. S. Dearborn*, xvi, 78.<sup>f</sup>
- — — — —, *D. Rug-gles*, xlv, 18.
- — — — —, in Lake Superior, *H. R. Schoolcraft*, xx, 213.
- Tilgate forest, birds in the strata of, xxix, 362.
- Timber, growth of, *A. C. Twining*, xxiv, 391.
- , seasoning of, xii, 163.
- , proper season for cutting, xxxiv, 169.
- , rotting of, in certain situations, xxxii, 380.
- , preserved by pyrolignite of iron, xl, 213.
- Tin, purity of, xv, 178.
- , crystallization of, xvii, 206.

- Tin**, crystallized from solution, *W. W. Mather*, xxvii, 254.  
 —, action of metallic, on solutions of muriate of, *A. A. Hayes*, xxxviii, 408.  
 —, method of separating from antimony, xxvii, 197.  
 —, alloy of, with bismuth and lead, xxi, 371, 375.  
 —, —, with antimony, the action of muriatic and nitric acids on, xlix, 206.  
 — ore at Goshen, Mass., xvi, 188; xxii, 62.  
 — —, in New Hampshire, *C. T. Jackson*, xliii, 168; xlix, 34.  
 — —, in Virginia, xliii, 168.  
**Tinned lead pipes**, xxvi, 210, 400.  
**Tioga coal**, xiii, 32, 381.  
**Titaniferous iron ore**, near Baltimore, *T. G. Clemson*, xvii, 42.  
 — — —, *P. Berthier*, xxiv, 375.  
**Titanium**, metallic, vii, 192.  
 —, volatility of, *Zinken*, xxviii, 136.  
 —, crystals of, in the furnaces of Baden, xii, 189.  
 — in scoria, *Wollaston's* mode of detecting, xix, 188.  
 — in rocks, xxviii, 136.  
 — ores, in Connecticut, iv, 55.  
 — —, in Greece, xxxi, 175.  
 — —, of Massachusetts, i, 116, 134; vi, 24.  
 — —, in Vermont, iv, 276; vi, 24.  
 — —, in Virginia, ii, 143.  
 — —, in S. Carolina, iii, 228.  
**Tithonometer**, *J. W. Draper*, xlvi, 217.<sup>f</sup>  
**Toad**, poison of the common, xiv, 373.  
 —, living in rocks, *A. Eaton*, xv, 247.  
 —, in stone or wood, *W. Buckland*, xxiii, 272.  
 —, vitality of, in rocks, *W. A. Thompson*, xxv, 41.  
 —, in sandstone at Park Gardens, Coventry, xxix, 353.
- Tobacco**, chemical experiments on, *C. C. Conwell*, xvii, 369.  
 —, a remedy for arsenic, xxxi, 188.  
 —, *E. Wright's* lecture on the use of, alluded to, xxiv, 190.  
**Toby**, Mount, geology of, vi, 8.  
 —, —, Mass., scenery of, vii, 10.  
*Tolefree, R.*, the voice and its modifications, xxvi, 76.  
**Tom**, Mount, Massachusetts, rests on sandstone, i, 109.  
 —, —, height of, and geological structure, vi, 45.  
 —, —, scenery of, vii, 9.  
**Tomatos**, acid in, xvii, 115.  
**Tombacite**, xlii, 387.  
*Tomlinson, D.*, on the tides, xxxiv, 81.  
 —, on preserving animal fat for soap making, xxxvii, 194.  
**Tongueless dog**, retaining the power to bark, xxxvi, 194.  
**Tonsil**, concretion from, vi, 165.  
**Topaz**, powder of, used as emery, xxxiv, 381.  
 —, distribution of coloring matter in crystals, and optical properties of, *D. Brewster*, vii, 364.  
 — in Ireland, xxix, 374.  
 — of Huntington, Ct., x, 352; xi, 192; xii, 158<sup>f</sup>; xiv, 229.  
 — in Connecticut, at Middletown, *C. U. Shepard*, xxxiv, 324.  
 — in the White Mountains, xx, 410.  
 — —, analysis of, x, 352.  
**Tornado**, see under *Wind*.  
**Toronto**, picture gallery, xxvii, 178.  
**Torpedo**, experiments on, *Dr. Davy*, xxv, 187.  
 —, electricity of, xxxii, 198.  
 —, new species of, *D. H. Storer*, xliv, 213; xlv, 165.<sup>f</sup>  
**Torpedoes** of fulminating silver, i, 169.  
**Torrelite**, *J. Renwick*, viii, 192.  
 — of Thomson identical with Columbite, *J. D. Dana*, xxxii, 149.<sup>f</sup>

- Torrey, John*, on the condensation of carbonic, sulphurous and chloro-chromic acid gases, xxxv, 374; xxxvi, 394.<sup>f</sup>
- , on staurotide, i, 435.
- , on siderographite, ii, 176.
- , on an ore of zinc at Ancram, N. Y., v, 235.
- , notice of plants collected by D. B. Douglass, around the Great Lakes and the head waters of the Mississippi, iv, 56.
- , number of indigenous plants of New York state, xl, 77.
- , description of the *Usnea acharius*, vi, 104.<sup>f</sup>
- , Flora of the Northern and Middle States, notice of, vii, 178; viii, 192; xii, 179.
- , on West Point minerals, ix, 402.
- , and *A. Gray*, Flora of North America of, noticed, xxxv, 180; xxxix, 198; xli, 275; xliv, 420.
- Torrey, Joseph*, proposed reform of orthography, xxxix, 197.
- Tortoise, fossil, xvii, 290.
- , a new freshwater, *R. Harlan*, xxxi, 382.<sup>f</sup>
- Totten, J. G.*, descriptions of some shells of the coast of New England, xxvi, 366<sup>f</sup>; xxviii, 347.<sup>f</sup>
- Touchwood, xxi, 163.
- Tourmaline, electricity of, xvi, 390; xviii, 301.
- , to detect boracic acid in, vi, 157.
- , analysis of, xiv, 384.
- , analyses of varieties of, xv, 389.
- in Canada, viii, 61.
- in Connecticut, i, 353; ii, 142, 205, 239, 240; vi, 220, 246; x, 206; xiv, 229; xviii, 361.
- in Delaware, xiv, 11.
- in Maine, x, 15; xviii, 293, 299.<sup>f</sup>
- in Maryland, v, 256; xiv, 12; xviii, 78.
- Tourmaline in Massachusetts, i, 114, 343, 346; iv, 55; vii, 55; viii, 42, 233; ix, 42; x, 18, 214; xii, 259; xiv, 215, 219.
- in New Hampshire, xxxiv, 107, 204.
- in New Jersey, ix, 245.
- in New York, i, 237; ii, 366; iv, 37; xix, 223, 225, 227; xxv, 349.
- in North Carolina, v, 263.
- in Pennsylvania, ix, 45; x, 221, 222; xiv, 5, 8, 12, 14.
- in Rhode Island, ix, 46.
- in Vermont, i, 114; iii, 76; v, 271.
- in Virginia, v, 263.
- of Chesterfield, for sale, xiv, 400.
- Tower of Babel, ruins of, xxxvii, 352.
- Town, Ithiel*, new mode of bridge-building, iii, 158.<sup>f</sup>
- Town's bridges, xxxviii, 276.<sup>f</sup>
- Townsend, J. K.*, on the ornithology of the United States, xxxvi, 201.
- Townsend, P. S.*, titles of memoirs read before the New York Lyceum, ii, 339, 371.
- Toxodon of Patagonia, *R. Owen*, xxxiii, 208; xxxv, 196.
- Trachyte, varieties of, xiii, 249; xv, 32.
- at the Azores, iv, 259.
- Tracks, see *Footprints*.
- Tract Society of Paris, v, 383.
- Tracy, C.*, on the rotary action of storms, xlv, 65.<sup>f</sup>
- , on the oil of Indian corn, xliii, 403.
- Trade, statistics of, between Great Britain and the United States, xxxiii, 277.
- winds, remarks on, *W. C. Redfield*, xxv, 124; xxxiii, 61.
- Traill, T. S.*, Russian vapor bath, xxiii, 295.
- , on the preservation of animals, xv, 167.
- Transactions, notice of, see *Society*.
- Transit of Mercury, May, 1845, *D. Olmsted*, xlix, 142.



- Transition epoch, nature of organic life during, xxxvi, 12.
- , fossils characteristic of, *T. A. Conrad*, xxxv, 246.
- rocks of the Cataract, xviii, 85; xx, 74<sup>f</sup>; xxiv, 97<sup>f</sup>; xxx, 233.<sup>f</sup>
- Transpiration of half the body, xxxix, 400.
- Transplanting of trees, xxii, 383.
- Transylvania, volcanic character of, xiii, 251.
- Trap formation of Antigua, *S. Hovey*, xxxv, 76.
- of New England and New Jersey, volcanic origin of, *T. Cooper*, iv, 239.
- —, igneous origin of, *B. Silliman*, xvii, 119.
- of New Jersey, connection with the sandstone, v, 240.
- , peculiar porous character of, v, 240.
- , and minerals of, in Nova Scotia, by *Jackson* and *Alger*, xiv, 305; xv, 132<sup>f</sup>, 204.
- of the Copper Mountains, northern America, xvii, 8.
- dikes, crescent form of, first observed by *J. G. Percival*, xlvi, 205.
- —, — —, remarks on, xlv, 334.
- — of Maine, of four different ages, *C. T. Jackson*, xxxvi, 145.
- — in Vermont, at Montgometry, xxii, 189.
- — in gneiss and granite, in New Hampshire, *O. P. Hubbard*, xxxiv, 105.<sup>f</sup>
- — in the Connecticut valley, vi, 46, 47.
- — in Connecticut, xxvii, 104.<sup>f</sup>
- — —, *B. Silliman, Jr.*, xlvii, 107.
- — —, junction of, with sandstone, *A. B. Chapin*, xxvii, 104.
- — —, *ibid*, *B. Silliman*, xvii, 123.<sup>f</sup>
- Trap dikes in Massachusetts, at Lowell, Nahant, &c., xxvii, 342.
- — in New York, Essex Co., connection of, with iron ores, *E. Emmons*, xl, 81.
- —, — —, *W. C. Redfield*, xxxiii, 316.
- — in Michigan, *D. Houghton*, xli, 184.
- — (natural walls) in North Carolina, *J. Beckwith*, v, 1.
- —, — — *ibid*, xiv, 242.
- — in Pennsylvania, *H. D. Rogers*, xli, 173.
- —, a hundred and twenty miles long, in England, xxxviii, 127.
- — render limestone magnesian, xxix, 351.
- , and rocks altered by, xx, 170.
- minerals, origin of, *J. D. Dana*, xlix, 49.
- — of New Jersey and New York, xlv, 54.<sup>f</sup>
- — of Nova Scotia, xiv, 305; xv, 132, 204.
- tufa of the Connecticut river valley, *E. Hitchcock*, viii, 245; xlvii, 103.
- Trap, optical, for catching animals, v, 200.
- Trapezium paddle-wheels, xlii, 336.
- Traveller's Society, v, 175.
- Travels, *Stevens's*, in Egypt, Arabia, &c., noticed, xxxii, 398.
- Travelli, J. S.*, meteorological register kept at Singapore, Nov. 1839 to Feb. 1841, xlv, 151.
- Travelling with dog-sleds in the northwest, xliii, 391.<sup>f</sup>
- Travertine, deposit of, xxxiv, 152.
- Tree from which water drops in great quantities, xv, 170.
- , fossil, see *Fossil*.
- Trees, beach, interlocking of, xxxii, 379.
- , fruit, propagation of, xxvii, 288.
- , a new method of grafting, ii, 358.
- , method of transplanting, xxii, 383.

- Trees, items on the growth of, xiii, 193.
- , longevity of, xxii, 379.
- , — of yew, xxix, 353; xxxi, 358.
- , dug up from a depth of forty feet, in Ohio, xvii, 398.
- , protected from hares, by means of fat, xxi, 159.
- , how protected from insects, x, 204.
- Trego, C. B.*, on the coal of Savage Mountain, xli, 186.
- Tremolite in Canada, viii, 69.
- in Connecticut, i, 354; ii, 206, 238; v, 36; vi, 225; viii, 258.
- in Delaware, x, 224.
- in Massachusetts, i, 114; ii, 236, 237; vi, 248; vii, 53; viii, 46.
- in New Hampshire, ii, 241.
- in New Jersey, v, 30.
- in New York, vii, 57; ix, 40; xix, 227; xxv, 347.
- in Pennsylvania, viii, 239; x, 222; xiv, 7, 8, 13.
- in Rhode Island, iv, 284, 285; viii, 226; x, 10.
- in Vermont, iii, 76.
- Trevclyan, W. C.*, on the temple of Pæstum, xxxvii, 366.
- Treviranus, L. C.*, Physiology of Plants, noticed, xxxix, 181.
- Triangles, expression of the sides of right-angled, by integral numbers, *D. Wilkie*, xxiv, 68.
- Triarthrus, see *Trilobites*.
- Trigonometer, Bolles's, ix, 401.<sup>f</sup>
- Trilobites, remarks on, *A. Eaton*, xxii, 165.
- , notice of *J. Green's* monograph on, xxiii, 395.
- , some new, *J. Green*, xxv, 334.
- , structure of, &c., *J. Green*, xxiii, 396; xxxvii, 25; xxxviii, 410.
- , genus *Paradoxides* of Brongniart, and on the genus *Triarthrus*, *J. Green*, xxxiii, 341.
- , *Calymene Rowii*, *J. Green*, xxxiii, 406.
- Trilobites, *Calymene Bufo*, *J. Green*, xxxvii, 32; xxxviii, 410.
- , *Asaphus polypleurus*, *J. Green*, xxxiv, 360.
- , — *diurus*, *J. Green*, xxxvii, 40.
- , *Calymenè Bucklandii*, *J. G. Anthony*, xxxvi, 106.<sup>f</sup>
- , *Ceratocephala ceralepta*, *J. G. Anthony*, xxxiv, 379.<sup>f</sup>
- , *Ceratocephala goniata*, *J. A. Warder*, xxxiv, 377.<sup>f</sup>
- , *Paradoxides*, *J. Hall*, xxxiii, 139.<sup>f</sup>
- , *Calymene senaria*, *T. A. Conrad*, xlii, 230.
- , *Ceraurus crosotus*, *J. Locke*, xlv, 346<sup>f</sup>; xlv, 222.<sup>f</sup>
- , *Isotelus megistos*, *J. Locke*, xlii, 366.<sup>f</sup>
- , in Canada, *J. J. Bigsby*, viii, 83.
- , in Kentucky, *J. Walter*, xxxiv, 380.
- , in Ohio, xxxi, 72.<sup>f</sup>
- , in New York, xlvii, 363<sup>f</sup>, 368<sup>f</sup>, 370<sup>f</sup>; xlviii, 307<sup>f</sup>, 309<sup>f</sup>, 311.<sup>f</sup>
- , from Staffordshire, xxiii, 203.<sup>f</sup>
- , supposed recent, from the New South Shetlands, xxvii, 395.
- Trimmer, J.*, on marine shells in the Cefn cave, xxxv, 306.
- , Practical Geology and Mineralogy of, noticed, xliii, 191.
- Triphyline, a new mineral, xxviii, 394.
- Trisection, curves of, iv, 343.<sup>f</sup>
- Troglodytes niger, xlvii, 411.
- Troost, G.*, amber at Cape Sable, Maryland, iii, 8.
- , minerals of Missouri, xii, 376, 378, 379.
- , some remarks on the coal regions of Tennessee, xxx, 391.
- , Third Report on Tennessee, noticed, xxx, 391.
- , Fourth Report on Tennessee, notice of, xxxiv, 187.
- , Fifth Report, xli, 385.
- , analysis of a meteorite from Tennessee, xxxviii, 250.

- Troost, G.*, meteoric iron from Tennessee and Alabama, xlix, 336.<sup>f</sup>  
 —, shower of red matter in Tennessee, xli, 403.  
 Tropical rains, iv, 375.  
 Troy Lyceum, ii, 173.  
 Trumbull, J., Sen., Governor of Connecticut, sketch of, xxxix, 246.  
 Trumbull, Col. John, notice of, xxxix, 213.  
 —, historical paintings of, xvi, 163.  
 —, painting of the Declaration of Independence, i, 200.  
 —, — ibid, notice of, viii, 168.  
 —, decease of, xlvi, 216.  
 Trumbull Gallery of Paintings, Yale College, account of, xxxix, 213.<sup>f</sup>  
 Tubes, in sand, lightning, xx, 396.  
 —, see farther, *Fulgurites*.  
 —, flexible, elastic, *T. Skidmore*, v, 153.  
 Tubular sandpipes in chalk, *C. Lyell*, xxxviii, 122.  
 Tuckahoe or Indian bread, ii, 369.  
*Tuckerman, E.*, on the *Géaster quadrifidus*, xxxvi, 380.  
 —, on the Lichens of New England, xxxvii, 394.  
 —, observations on some plants of New England, xlv, 27.  
 —, *Enumeratio Methodica Caricum, &c.*, noticed, xlv, 216.  
 Tufa, calcareous, in New York state, iii, 236; xv, 247; xviii, 354 (*Chitteningo*); xxviii, 176; xxxiii, 405.  
 —, —, in Indiana, *J. T. Plummer*, xlv, 307.  
 —, trap, in Massachusetts, *E. Hitchcock*, vi, 61; viii, 245; xlvii, 103.  
 Tufaceous deposit in India, called Kunker, *Newbold*, xlix, 398.  
 — deposits, New York, xxxvi, 11.  
 Tullia pycnanthemoides, xx, 343.<sup>f</sup>  
*Tully, Wm.*, on the Ergot of rye, ii, 45.  
 —, on two sorts of *Datura* in the United States, vi, 254.
- Tully, Wm.*, on narcotine and sulphate of morphine, xxi, 39.  
 Tumuli, Indian, see *Mounds*.  
 Tungstate of lime, or calcareous oxide of tungsten, of Connecticut, analysis of, *G. T. Bowen*, v, 118.  
 Tungsten ores of Connecticut, i, 312, 316, 405; v, 118; vi, 210.  
 —, yellow oxide of, iv, 52, 187.  
*Tuomey, M.*, Nautilus in the Eocene, Virginia, xliii, 187.  
 —, infusorial stratum at Petersburg, Va., xlv, 339.  
 Turbo, see *ZOOLOGY, Mollusca*.  
*Turner, E.*, chemical examination of the fire-damp of the coal mines near Newcastle, xxxvii, 201.  
 —, on ores of manganese, xxi, 364.  
 —, obituary notice of, xxxii, 213.  
 —, *Elements of Chemistry* of, noticed, xx, 88.  
 —, ibid, seventh edition, xlv, 189.  
 Turner's Falls, Mass., vii, 13.  
 —, fossil footprints at, xlvi, 73.<sup>f</sup>  
 Turnerite, xviii, 392.  
 Turpentine, purified spirits of, *S. Guthrie*, xxi, 93, 291.  
 —, Hare's method of purifying, xxxvii, 399.  
 —, used for destroying worms and insects, xxvii, 197.  
*Turpin*, on the analogy of the red globules of the blood to *Protococcus*, xxxvi, 206.  
 —, on the red color of agates, xxxvi, 207.  
 Turquoise, vi, 382.  
 Turtle, stony concretions in the ovary of, xxvii, 163.  
 —, fossil, in the chalk of Kent, xli, 205.  
*Turton, W.*, notice of the works of, xxxvii, 161.  
 Tuscany, boracic acid of, xxviii, 143.  
 —, — — lagoons of, *J. Bowring*, xxxvii, 270.  
*Tweddie, A.*, *Practical Medicine* of, noticed, xxxix, 398.

- Twilight bow, account of, *S. F. B. Morse*, xxxviii, 389.
- Twin crystals, formation of, *J. D. Dana*, xxx, 275.<sup>f</sup>
- of Columbite, *C. U. Shepard*, xvii, 358.<sup>f</sup>
- Twine, see *Cordage*.
- Twining, *A. C.*, method of resolving equations of the third and fourth degrees, ix, 86.
- , observations on meteors, xi, 184.
- , on the growth of timber, xxiv, 391.
- , on the position and height of some Auroral arches and streamers, xxxii, 217.
- , on the Aurora of September, 1839, xxxviii, 376.
- , supernumerary rainbows, xxxii, 227.
- , halos in January, 1835, xxxii, 229.
- , on the appearance, nature and cause of the meteors of November 13, 1833, in reply to *D. Olmsted*, xxvi, 320.<sup>f</sup>
- , *ibid*, Nov. 1834, xxvii, 339.
- , suggestions on the solar eclipse of July, 1842, xlii, 395.
- , on the parallelogram of forces, xlvi, 324.<sup>f</sup>
- Twinkling of fixed stars, v, 156.
- — —, remarks on, *B. Hallowell*, xv, 360.
- Tyfoons of the China Sea, xxxv, 209; xxxvi, 59.
- at Balasore, xxxv, 220.
- at Canton, xxxv, 217, 218.
- at Manilla, xxxv, 220.
- , *Raleigh's*, xxxv, 210<sup>f</sup>; xxxvi, 59.
- , method of escaping, xxxv, 216.
- , see farther under *Winds*.
- Tyler, J. W.*, solar halo, seen at Cazenovia, N. Y., xxi, 189.
- Tyrannula, see under *Zoology*.
- Tyrian dye, xxxviii, 126.
- Tyson, P. T.*, on the minerals of Baltimore and Harford Cos., Maryland, xviii, 78.
- U.**
- Ulcers cured by chloride of lime, xiii, 179.
- Ultramarine, artificial, xv, 392; xxii, 368; xxiv, 373; xxvii, 195; xxviii, 144.
- Unger*, on xanthic oxide in guano, xlix, 200, 391.
- Unicorn, on the existence of, *J. F. Laterrade*, xxi, 123.
- Unio, see under *ZOOLOGY, Mollusca*.
- Unionidæ of the country of the Iguanodon, *G. A. Mantell*, xlvii, 402.<sup>f</sup>
- Unit, linear, proposed by *Davy*, xvii, 164.
- United States, earliest census of, xxxiii, 278.
- , magnetic chart of, *E. Loomis*, xxxiv, 290; xxxix, 41.
- , plan for the survey of the coast, xvi, 225.
- , architecture in, xvii, 99, 249<sup>f</sup>; xviii, 11, 212.
- , culture of silk in, xviii, 278.
- , statistics of iron in, xxii, 179.
- , Medical and Surgical Journal, noticed, xxvii, 180.
- , Naval Lyceum, xxvii, 390.
- , distribution of plants in, *S. Forry*, xlvii, 221.
- , amelioration of climate in, *D. Thomas*, xix, 361.
- , climate of, *S. Forry*, xlvii, 18<sup>f</sup>, 221.
- Universal terms, *Emma Willard*, xxiii, 18.
- Universe, on the formation of, *I. Orr*, vi, 128.<sup>f</sup>
- University of the State of New York, Report of the Regents of, xxii, 415; xxv, 258<sup>f</sup>; xxvii, 177; xxx, 389; xlix, 176.
- , see *Education*.
- Upas, analysis of the juice of, xxxix, 206.
- Upham, C. W.*, memoirs of *J. Prince*, xxxi, 201.<sup>f</sup>
- Ural, mines of, see under *Russia*.

- Uranite, *R. Phillips*, vii, 380.  
 — in Massachusetts, xxviii, 382.  
 — at Chesterfield, Mass., *C. U. Shepard*, xlviii, 179.  
 — of Chesterfield, *J. E. Teschemacher*, xlviii, 395.  
 Uranium, atomic weight of, xlvii, 189.  
 —, ore of, vii, 194.  
 Ure, *A.*, Dictionary of Chemistry of, noticed, xx, 93.  
 —, on the composition of gunpowder, xx, 190.  
 —, analysis of guano, xlviii, 60.  
 Urea, on the preëxistence of, in uric acid, xli, 46.  
 — and uric acid, *J. Liebig*, xxxiv, 40.  
 Urinary calculi, iv, 149; xvii, 190.  
 Urine, rosacic acid in, xvii, 385.  
 —, diabetic, detection of sugar in, xlix, 200.  
 Usher, *F. C.*, on the elevation of the banks of the Mississippi in 1811, xxxi, 294.<sup>f</sup>  
 Uvularia, used for poisoned wounds, xxxv, 270.
- V.**
- Vaccination, a remedy for the plague, iv, 196.  
 Vacuum, heat of, ii, 343.  
 Val di Noto, *C. Gemellaro* on, xxx, 382.  
 Vallot, on living animals in solid bodies, xii, 395.  
 VanDieman's Land, notice of, iii, 377.  
 Vanadate of lead, xxvi, 386.  
 Vanadium, a new metal, xx, 386.  
 Vancouver, Fort, meteorological observations at, in 1832 and 1833, xxviii, 9.  
 Vanden Heuvel, *J. C.*, on honey bees, iii, 79.  
 Vanilla in Europe, xxxv, 310.  
 Vanuxem, *L.*, experiments on anthracite and plumbago, with reference to the fusion of carbon, viii, 292; x, 102.  
 —, proofs from Geology of the abstraction of nitrogen from the atmosphere by organization, xii, 84.
- Vanuxem, L.*, on the pressure of water at great depths, xiv, 194.  
 —, on the classification and characters of American rock formations, xvi, 254.  
 —, Atlantic coast, ancient oyster shell deposits of, xli, 168.  
 —, Report on Ornithichnites, xli, 165.  
 Vapor, effects of, on flame, i, 401.  
 —, force of, at different temperatures, xix, 182, 201.  
 —, law with reference to the relation between the elastic force of, and temperature, xxviii, 363.  
 —, new phenomena of, on placing a disk upon an orifice, xliii, 161.  
 — and heat, inquiries respecting, *W. R. Johnson*, xxi, 304.  
 —, of mercury, elastic force of, *Avogadro*, xxiv, 286.  
 — of carbon, sulphur, arsenic and phosphorus, specific gravity of, xxxv, 298.  
 —, of sulphur and phosphorus, density of, xxiii, 383.  
 — bath, Russian, *T. S. Traill*, xxiii, 295.  
 —, the basis of the Aurora Borealis, xix, 240.  
 Vapors, latent heat of, ii, 361.  
 Vaporization of spirits, iii, 376.  
 — of mercury, in fumes of nitric ether, *S. Guthrie*, xxi, 90.  
 —, limits of, *M. Faraday*, xx, 189; xxi, 151.  
 —, mechanical, of earths, *W. Gaylord*, xxxvii, 398.  
 —, of liquid carbonic acid, xxxi, 402.  
 Variation, magnetic, see *Magnetic*.  
 Varnish, for articles of cast iron, xxvii, 199.  
 —, copal, *J. J. Berzelius*, xvii, 175.  
 —, seedlac, receipt for, ix, 169.  
 Varrentrapp and Will, new mode of determining the quantity of nitrogen in organic compounds, xliii, 253<sup>f</sup>; xlv, 267.

- Vase, Warwick, notice of, xxvi, 244.<sup>f</sup>
- , Portland, xxvi, 243.<sup>f</sup>
- , terra cotta, from Pompeii, xxvi, 238.<sup>f</sup>
- , Murrhine, xxvi, 336.
- Vatican, museum of, iv, 380.
- Vaucher, death of, xliii, 215.
- Vaughan, B., obituary of, xxix, 395.
- Vauquelin, process by, for obtaining metallic chromium, xxi, 375.
- , analysis of guano, xlvi, 60.
- Vauquelin, a new alkali, i, 310.
- Vaux, G., on iron conduit pipes, vi, 173.
- Vegetables, saponaceous, remarks on, Bussy, xxiv, 381.
- , action of poisons on, xii, 196.
- , influence of chemical solutions on, xvii, 388.
- , effect of arsenic on, C. Daubeny, xxxi, 346.
- , injurious action of gases on, Macaire, xxiii, 193.
- Vegetable fecundation, remarks on, A. Gray, xxxi, 303;—A. J. C. Corda's views on, 317.<sup>f</sup>
- impregnation, Aldridge, xli, 62.
- life, tenacity of, as shown by a root taken from a mummy, xxi, 158.
- —, functions of, G. T. Burnett, xxi, 153.
- kingdom, rapid growth in, xxviii, 399.
- membrane and fibre, chemical composition of, xxxiii, 289.
- organography and physiology, H. Green, xxxviii, 49.
- physiology, xix, 393.
- —, experiments in, Niven, xxxiii, 290.
- —, in relation to rotation of crops, Macaire, xxiii, 138.
- productions of the earth at different periods in its early history, Ad. Brongniart, xxxiv, 315.
- tissue, elementary composition of, Payen, xlii, 212.
- Vegetable tissue, development of, xxxix, 205.
- crystallizations, xix, 177.
- monstrosities, xxxv, 310.
- Vegetation of the first period of an ancient world, H. Witham, xviii, 110.<sup>f</sup>
- of the Andes of Columbia, distribution of, xxxvii, 15.
- , progress of, near Philadelphia, C. S. Rafinesque, i, 77.
- , —, see farther, *Floral Calendar*.
- , supported by air and water, iii, 372.
- , manures as stimulants to, C. Daubeny, xlii, 319.
- , see farther under *Botany*, and *Plants*.
- , metallic, ii, 349.
- Veins of granite and syenite in Massachusetts, E. Hitchcock, vi, 10, 29.
- —, in Massachusetts, C. Dewey, viii, 4.
- —, —, E. Emmons, viii, 5<sup>f</sup>, 250.<sup>f</sup>
- —, —, A. Nash, xii, 261.<sup>f</sup>
- —, in New Hampshire, O. P. Hubbard, xxxiv, 123.<sup>f</sup>
- of feldspar or granite, in Hampshire Co., Mass., xii, 244<sup>f</sup>, 261.<sup>f</sup>
- , metalliferous, electro-magnetic properties of, R. W. Fox, xx, 136; xxxi, 374.
- , —, electrical currents in, Reich, xxxviii, 120.
- , mineral, formed artificially by voltaic action, R. W. Fox, xxxv, 308; xxxvii, 199.
- , —, questions relative to, R. W. Fox, xxxiii, 135.
- , —, remarks on, C. Lyell, with the views of R. W. Fox, xxxiii, 93.
- , —, J. Fournet's views on, xxxiii, 93.
- , segregation theory of, objections by C. T. Jackson, from facts in Maine, xxxvi, 148.

- Velocity of the Mississippi, vii, 174.  
 — of sound, vi, 394.
- Velocities, virtual, principle of, xlii, 66; xliii, 77.<sup>f</sup>
- Venez, on boulders, xxxvi, 327.
- Venice bead manufactory, xxvii, 78.
- Ventilating sewers, furnace for, vii, 177.
- Ventilation, effect of, on the mortality of infants, xxviii, 79.
- Ventilator, marine, description of, *S. Whiting*, xviii, 75.<sup>f</sup>
- Ventriloquism, remarks on, *R. Tolefree*, xxvi, 76.
- Venus, appearances of, as seen at Rome, *P. F. de Vico*, xlv, 377.  
 —, results of observations on, *P. F. de Vico*, xlv, 383.  
 —, rotation of the planet, xxiv, 204.
- Veratria, xxx, 190.
- Verd antique marble in Connecticut, ii, 165; vi, 38, 227.
- Vermiculite, *T. H. Webb*, vii, 55.  
 —, the species objected to, *C. Dewey*, viii, 50.  
 —, *T. H. Webb's* vindication, viii, 230.  
 —, in Maryland, xxiv, 356.
- Vermin, destruction of, by steam, xvii, 390.
- Vermont, geological survey of, xlviii, 404.
- Vernier, application of, to the subdividing of time, *F. Osler*, xlv, 161.
- Vespertilio, see under ZOOLOGY, *Articulata*.
- Vessels, best form for sailing, *J. S. Russell*, xxxv, 290.  
 —, propulsion of, by paddle-wheel and screw, xlii, 336.  
 —, steam, see *Steam*.
- Vestiges of the Natural History of Creation, xlviii, 395; xlix, 191.
- Vesuvian, see *Idocrase*.
- Vesuvius, notice of, v, 193; vi, 385; xiii, 262; xxiv, 343; xxvii, 281.  
 —, mineralogy of, xii, 185.
- Vesuvius, connection of the Solfatara with, xix, 387.  
 —, eruption of, August, 1834, xxviii, 199.  
 —, —, April, 1835, xxviii, 340.  
 — and the Solfatara, xlvii, 182.
- Vibrating dams, *E. Loomis*, xlv, 363.<sup>f</sup>  
 — —, time of vibration calculated from the dimensions of, *E. Loomis*, xlv, 373.
- Vibration, effect of, on the colors of the light from different stars, x, 188.  
 — of glass, movements in water produced by, xxx, 192.  
 — of railways, xxx, 382.  
 — of a mercurial pendulum, *G. Baker*, xlvi, 156.
- Vico, P. F. de*, comet of, xlviii, 402.
- Vienna, temple at, iv, 197.
- Vinci, L. da*, on the motion of water, xix, 397.
- Vines, diseases of, xxix, 367.  
 —, on the propagation of, xxvii, 288.  
 —, to prevent the bleeding of, when cut, xxiv, 205.
- Vinegar, new process for obtaining from alcohol, xxviii, 359.  
 —, expeditious mode of manufacturing, *L. Feuchtwanger*, xxxi, 272.<sup>f</sup>  
 —, impurities in, xix, 86.
- Vinification, treatise on, noticed, xi, 396.
- Violan, xlii, 387.
- Virginia meteorite, see *Meteorites* and *Meteoric iron*.  
 — gold mines, see *Gold*.  
 — salt formation, xxiv, 51; xxix, 84, 113; xli, 214; xlv, 173.  
 —, geological remarks on, i, 60, 214, 317.  
 — tertiary formation, xi, 54; xxxviii, 183.  
 —, coal of, see under *Coal*.  
 —, geological report of *W. B. Rogers*, noticed, xxxii, 192; xxxvii, 380.

- Virtual velocities, principles of, *T. Strong*, xlii, 66; xliii, 77.<sup>f</sup>
- Virus, vaccine, liable to lose its virtue, xxxviii, 175.
- Vision, notice of a peculiarity in, *C. E. Goodrich*, xiv, 264.<sup>f</sup>
- with the head inverted, *D. Brewster*, xl, 343.
- Vitality of matter, xv, 54.
- Væikel*, analysis of guano, xlvi, 60.
- Vogel*, obituary of, xliii, 215.
- Vogt, C.*, Embryologie des Salamones, noticed, xlv, 211.<sup>f</sup>
- Voice and its modification, *R. Tolefree*, xxvi, 76.
- Volatile oils, adulteration of, xix, 77.
- —, see farther under *Oils*.
- Volborthite, xlii, 387.
- Volcanoes, remarks on, ii, 351.
- , and volcanic substances, *T. Cooper*, iv, 205.
- , some account of, in a review of Scrope's work, xiii, 106.
- , remarks on, in a notice of Daubeny's work, xiii, 235;—theories of, xiv, 70, 87.
- , remarks on, from *J. Phillips's* Geology of Yorkshire, xxi, 24.
- , hypothesis on, *J. du Commun*, xv, 12.<sup>f</sup>
- , ibid, objections to, xv, 25.
- , ibid, strictures on, *B. Bell*, xvi, 51.
- , phenomena of, explained by *L. Cordier*, by the theory of central fluidity, xv, 123.
- , *H. Davy's* theory of, xvii, 239; xxxvi, 231.
- , *Gay Lussac's* views on, xxxvi, 233, 236.
- , *G. Bischof* on, xxxvi, 230, 239<sup>f</sup>; xxxvii, 41.<sup>f</sup>
- , —, theory of central heat satisfactory, xxxvi, 239; xxxvii, 52.
- , —, freshwater rivers contribute to the action of, xxxvi, 262.
- Volcanoes, *C. Daubeny*, in reply to *G. Bischof*, on the chemical theory of, xxxvii, 78.
- , *L. von Buch*, on certain volcanoes and volcanic phenomena, xxxvi, 260–273.
- , geographical distribution and phenomena of, *J. L. Hayes*, xlvii, 127.
- , mud, iv, 216.
- , African, at the Canaries, &c., xiii, 283; xxxvi, 260, 273.
- , —, Azores, iv, 259; xiii, 289.
- , —, supposed, at sea, in lat. 7° N., and long. 99° W., xxxii, 195.
- , American, of Cosiguina, eruption of, xxviii, 332.
- , —, of Peru and Chili, xiii, 308, 309.
- , —, of Mexico, Jorullo, Popocatapetl, &c., xiii, 304.
- , —, of the West Indies, xiii, 302.
- , —, of Greenland, xiii, 279.
- , —, of Upper Missouri, only pseudo-volcanoes, *J. N. Nicollet*, xlv, 154.
- , —, supposed, of West River Mountain, Vermont, *J. A. Allen*, iii, 73.
- , —, —, in Canada, xxx, 238.
- , Asiatic, and Asiatic Islands, general review of, xiii, 290.
- , —, near Mount Ararat, extinct, xxxvii, 349.
- , —, in the Kourdish country, xxxvii, 350.
- , —, region of, or Catacaumene, of Asia Minor, xxxiii, 95; xxxviii, 206.
- , —, of Gunong-API, iv, 375; xiii, 299.
- , —, Palambang, eruption of, 1833, xxix, 364.
- , European, of France, xiii, 237.
- , —, of Germany, xiii, 242.
- , —, Grecian Archipelago, xiii, 279.



- Volcanoes, European, of Greece, Santorino, xxxvi, 267.
- , —, of Hungary, xiii, 245.
- , —, of Iceland, xiii, 276.
- , —, of Italy, xii, 252.
- , —, —, Vesuvius, v, 193; vi, 385; xii, 185; xiii, 262; xix, 387; xxiv, 243.
- , —, —, ibid, notice of, *J. D. Dana*, xxvii, 281.
- , —, —, ibid, eruption in 1834, xxviii, 199.
- , —, —, ibid, eruption of April, 1835, xxviii, 340.
- , —, phenomena at the Lipari islands—fumeroles—forming minerals, &c., xiii, 270; xxxiii, 77.
- , —, of Sicily, xiii, 272.
- , —, —, Mount Etna, observations on, *E. de Beaumont*, xxxi, 168.
- , —, —, —, luminous flames, *E. de Beaumont*, xxxi, 169.
- , —, —, —, formation of, *E. de Beaumont*, xxxi, 170.
- , —, —, —, some account of, *S. L. Johnson*, xxvi, 1.
- , —, —, —, island thrown up off Sicily, account of, *W. Ainsworth*, xxi, 399.<sup>f</sup>
- , —, of Transylvania, xiii, 251.
- , of Pacific ocean, New Zealand, xx, 381.
- , —, Hawaii, Kilauea, xi, 1, 362; xvi, 345; xx, 228, 229.
- , —, —, —, ibid, *C. S. Stewart*, xx, 229.
- , —, —, —, ibid, *J. Goodrich*, xxv, 199.
- , —, —, —, ibid, *E. G. Kelley*, xl, 117.<sup>f</sup>
- , —, —, —, ibid, *J. P. Couthouy*, xli, 200.
- , lunar, v, 176; xxxv, 305.
- Volcanic ashes of Etna, analysis of, xii, 194.
- , —, on some showers of, xxv, 129.
- Volcanic ashes, at sea, west of the Philippines, *P. Parker*, xl, 198.
- , —, carried by upper atmospheric currents, *W. C. Redfield*, xxv, 128.
- , character of Transylvania, xiii, 251.
- , eruptions and earthquakes, *J. Galindo*, xxviii, 332.
- , formation of islands, xxxvi, 267.
- , —, of iron glance, *Mischerlich's* theory of, xxxvi, 237.
- , rocks, descriptive arrangement of, *G. P. Scrope*, xv, 28.
- , —, or lavas, South America, why not crystalline, xxxi, 176.
- , —, nature of, *G. Bischof*, xxxvi, 252.
- , —, scoria of Hawaii, xvi, 348.
- , —, fusibility of, *G. Bischof*, xxxvi, 240.
- , —, still soft after crystals have formed, *G. Bischof*, xxxvi, 266.
- , —, force required to raise, xv, 125.
- , —, raised by steam, and force required, *G. Bischof*, xxxvi, 241.
- , —, eruptions of, xxxvi, 261.
- , —, spun glass of Hawaii, xvi, 349.
- Volney*, theories of temperature, xlvii, 232.
- , death of, ii, 345.
- Volta, A.*, discoveries of, noticed, xv, 67.
- , biography of, xv, 67.
- Voltaic pile, calorific effects of, xviii, 173.
- , see farther under *Galvanism*.
- Volume, changes in, on mixing alcohol and water, xxiv, 373.
- Volumeter, *R. Hare*, xii, 36<sup>f</sup>, 38.<sup>f</sup>
- Volumescopie, *R. Hare*, xii, 39<sup>f</sup>; xv, 275<sup>f</sup>; xxviii, 264.<sup>f</sup>

- Von Buch, L.*, on the nature of volcanic phenomena, xxxvi, 268.
- , on volcanic eruptions in Lancerote, xxxvi, 260, 264.
- , on Palma and Grand Canary, xxxvi, 273.
- , on the formation of volcanic cones, xxxvi, 273.
- , on the formation of certain conglomerates, xxxvi, 266.
- Voorhies, J.*, fall of meteoric iron in Tennessee, xlix, 338.
- Voyage of discovery, French, by Capt. Freycinet, in the *Uranie*, notice of, iv, 391.
- around the world, projected by the French, under the command of D. d'Urville, xxxiii, 206.
- of Bonite around the world, xxxiv, 219.
- of the French to the Antarctic regions, xxxix, 201.
- of the *Chanticleer*, xviii, 188.
- of J. C. Ross to the Antarctic, xxxvii, 397; xxxviii, 204; xlii, 152.
- of exploration under Lieut. C. Wilkes, U. S. N., around the world, xxxv, 192.
- — *ibid*, progress of, xxxvi, 195; xxxvii, 19, 398; xxxviii, 387; xxxix, 193; xliii, 208.
- — *ibid*, results of, xl, 394; xliv, 393; xlix, 149.
- Vulcano, boracic acid in the waters of, ii, 349.
- Vulpinite, *Vauquelin*, vii, 368.
- W.**
- Wachitta, cove of, iii, 26, 28.
- , —, hot springs, iii, 29.
- Wacke, aqueous origin of, *J. W. Webster*, i, 230.
- , analysis of, i, 296.
- Wadsworth, D.*, remarks on the upper falls of the Genesee river, with a view, xviii, 209.
- Wages for labor in England, France and the United States, xxiii, 216.
- Wagner, S.*, on the acceleration of the saw at night, viii, 393.
- Wailles*, on rare insects, xxxv, 310.
- Walferdin*, on subterranean temperatures, xxxvi, 204.
- Walker, C. V.*, galvanic experiments by, xxxix, 32.<sup>f</sup>
- , reclamation against W. Sturgeon, xlii, 383.
- Walker, S. C.*, on the great comet of 1843, xlv, 188.<sup>f</sup>
- , on the meteors of August, 1840, xl, 51;—on the meteors of August and November, xlii, 401.
- Walkly, N.*, on hydrogen gas in a lead water-pipe, xxxiv, 393.
- Walks and alleys, valuable material for, xxiv, 206.
- Walls or dikes in North Carolina, *J. Beckwith*, v, 1.
- , how preserved from dampness, xii, 193.
- Wallace, J.*, on certain Algebraic series, vii, 278.
- , reply to remarks on, ix, 98.
- , numerical faculties, vii, 285.
- Wallace, W. C.*, dissection of the eye of a halibut, xxvi, 393.<sup>f</sup>
- , discovery of a muscle in the eye of fishes, xxvi, 394.
- , dissection of the eye of the streaked bass, with observations on the accommodation of the eye to different distances, xxvii, 216.<sup>f</sup>
- , on the retina, xxviii, 278.
- , on a Bramah press attached to the eyes of fishes, xxxiv, 376.
- , denial of a charge of plagiarism made by J. Dalrymple, xxxiv, 396.
- , discovery of a muscle attached to the crystalline lens, xxxv, 291.
- Wallestein, J. de*, meteorological tables of, ix, 394.
- Walper, G. G.*, Repertorium, noticed, xlvii, 200.

- Waltershausen, W. S. von*, letter on Etna, xlvii, 100.
- Ward, M.*, alternating steam engine of, iv, 90.<sup>f</sup>
- Ward, N.*, on fresh and salt water fountains, xviii, 379.
- Ward, N. B.*, on the growth of plants in closely glazed cases, xxxiv, 11 ; xliii, 383.
- Warder, M. A.*, reclamation of, relative to a species of trilobite, xxxvi, 187.
- Ware, H.*, notice of an Aurora in 1789, xxxiv, 204.
- Ware, N. A.*, note on drift wood, iii, 19.
- Warm air, mode of heating apartments by, xxv, 290 ; xxxiv, 84.
- springs, see *Springs*.
- Warren, J. C.*, on the Siamese twins, xvii, 212.<sup>f</sup>
- , on North American crania, xxxiv, 47.
- Warrington, R.*, on the adulteration of the green teas of commerce, xlvi, 188.
- , bones from guano, xlix, 391.
- , action of animal charcoal, xlix, 393.
- Wartmann, L. F.*, on Saturn's ring and the comet of Biela, xxv, 191.
- Warwick rocking stone, vii, 201.<sup>f</sup>
- Warwickite, C. U. Shepard*, xxxiv, 313 ; xxxvi, 85.
- Washington, G., Trumbull's portrait of, xxxix, 245.
- , — painting of his resignation of office, xxxix, 239.
- Washington, Capt.*, account of a Mandingo, xxxv, 305.
- , of recent expeditions to Antarctic seas, xxxv, 306.
- , account of trigonometrical surveys, xxxv, 308.
- Washington, Mount, excursion up, viii, 176.
- , —, popular notice of, *G. W. Nichols*, xxxiv, 73.
- , —, remarks on, *B. Silliman*, xxxiv, 76.
- , —, —, *O. P. Hubbard*, xxxiv, 120.
- Washington, Mount, height of, xxxiii, 322 ; xxxiv, 120 ; xxxv, 378 ; xxxvii, 87 ; xli, 384.
- Washingtonite, a supposed new mineral, xliii, 364.<sup>f</sup>
- Watch, remarkable, made by *Rebiller*, xviii, 180.
- Watchmakers' oil, ix, 202.
- Water, action of, on lead, xxxiv, 25 ; xlv, 398.
- , analysis of, from Black Sea, xx, 188.
- , —, from Dead Sea, *B. Silliman, Jr.*, xlvi, 10.
- , —, from sea, near Brighton, *G. Schweitzer*, xxxviii, 12.
- , —, from the spouting fountain near Naples, xxv, 195.
- , —, from the Rio Vinagre, *Boussingault*, xxiv, 149.
- , boiling point of, different in vessels of different materials, xlvii, 190.
- , —, used in measuring heights, xxxvii, 19.
- , boring for, xix, 203 ; xxvii, 399.
- , —, in the United States, xii, 136.
- , —, in New York, xxiii, 206.
- , —, see *Wells, artesian*.
- of cities, contaminated, xxvi, 294.
- , for the city of Boston, notice of *L. Baldwin's* report on the introduction of, xxxi, 179.
- , — — Glasgow, iii, 372.
- , color of deep, *X. de Mais-tre*, xxvi, 65.
- , compressibility of, *J. Perkins*, iii, 347.<sup>f</sup>
- , —, *H. C. Ørsted*, ix, 189 ; xv, 186.
- , —, xiii, 189.
- , —, instrument for measuring, vii, 195.
- , non-conducting power in relation to heat, *W. W. Mather*, xiii, 368.<sup>f</sup>
- , conduction of heat by, *C. Dewey*, xxviii, 151 ; xxxi, 266.

- Water, currents in, *A. W. Carson* on, xxix, 340.<sup>f</sup>
- , decomposition of, *C. Despretz*, xx, 186.
- , —, see *Oceanic*.
- , —, by galvanism, xix, 383.
- , —, by magnetic electrical machines, xxxiii, 217.<sup>f</sup>
- , —, by atmospheric electricity, xx, 179.
- , —, — and common electricity, xxi, 368.
- , —, by chlorine in the sun's rays, xlix, 348.<sup>f</sup>
- , apparatus for illustrating decomposition and recomposition of, *R. Hare*, xxxviii, 336.<sup>f</sup>
- , density of, maximum, xvi, 265; xxiii, 391; xxviii, 357.
- , discharge of a jet of, in water, xxi, 379.
- , evaporation of, xv, 180.
- , —, under electric insulation, xlvii, 190.
- , filtering for domestic purposes, xxx, 172.<sup>f</sup>
- , freezing, sparks emitted by, xxvi, 178.
- , —, apparatus for, with sulphuric acid, *R. Hare*, xxvii, 132.<sup>f</sup>
- , formation of, by compound blowpipe, iii, 91.
- , hard, solvent power of, xxi, 150.
- , heating of, *E. Emmons*, xviii, 371.
- , impurities of, how precipitated, xxviii, 150.
- , — in rain, xv, 185.
- , medicinal, on the preparation of, *W. Meade*, xxii, 126, 330.
- , mineral, see *Springs*.
- , oxygenized, iii, 369.
- , —, preparation by *L. J. Thenard*, xxiii, 382.
- , pressure of, at great depths, *L. Vanuxem*, xiv, 194.
- , purification of, xxviii, 150.
- , rain, nitric acid in, xv, 181.
- , solvent power of hard, xxi, 150.
- Water, temperature of, low in red hot vessels or surfaces highly heated, xix, 381.
- , —, low and non-ebullition of, *ibid*, xv, 180.
- , —, — *ibid*, remarks on, *Le Chevalier*, xxii, 384.
- , transporting power of, *H. D. Rogers*, xlvii, 275.
- and air support vegetation, iii, 372.
- , vibration of glass producing a movement in, xxx, 192.
- , mode of access to volcanic fires, *G. Bischof*, xxxvi, 243, 262.
- in Indiana, character of, *J. T. Plummer*, xlv, 306.
- of Mediterranean, density at different depths, xvii, 364.
- of the British Channel, analysis of, xxxviii, 12.
- of the spouting fountain of Uncino, kingdom of Naples, with analysis, xxv, 194.
- of the Black Sea, analysis of, xx, 188.
- of the Dead Sea, analysis of, *B. Silliman, Jr.*, xlviii, 10.
- , sea, near Brighton, analysis of, *G. Schweitzer*, xxxviii, 12.
- of the Rio Vinagre, analysis of, *Boussingault*, xxiv, 149.
- in wells, temperature of, see under *Temperature*.
- , ocean, see *Ocean* and *Seawater*.
- Water-burner, patent, vii, 141.
- Water-cement in N. York, iii, 230; xxxvi, 45; xxxix, 96; xlvi, 29.
- of Southington, Ct., xiii, 382.
- in the Appalachian chain, xxxvii, 381.
- , rock for, near Quebec, *F. H. Baddely*, xxviii, 113, 367.
- Water-cresses, dangerous plant among, xix, 191.
- Water-fall, see *Falls*.
- Water-spouts, remarks on, v, 135.
- , causes of, *X. de Maistre*, xxv, 47.<sup>f</sup>

- Water-spouts, causes of, *W. C. Redfield*, xxv, 126, 127; xxxiii, 58; xliii, 265.
- , —, *H. E. Ersted*, xxxvii, 250.<sup>f</sup>
- , —, *R. Hare*, xxxii, 153.<sup>f</sup>
- , account and theory of, *H. W. Ogden*, xxix, 254.
- , illustration of a theory of, *W. Gaylord*, xl, 399.
- , rotation of, xl, 324, 332.
- , in France in 1823, x, 183.
- , on the Lake of Geneva, xxiv, 377.
- , off Florida in 1826, notice of, *B. Lincoln*, xiv, 171.<sup>f</sup>
- , at New Brunswick in 1835, xxxvi, 115.<sup>f</sup>
- Water-wheels, on the asserted acceleration during night and in winter, ix, 104; x, 129; xii, 163.
- , on the overshot, *A. B. Quinby*, ix, 304.<sup>f</sup>
- , pitchback and breast, *A. B. Quinby*, xi, 333.
- Water-works, in Philadelphia, vi, 375; viii, 193.
- Waterhouse, B.*, notice of, i, 37.
- Watkins's galvanic battery, xvii, 162.
- Watson, J. T.*, on the heat produced by friction, viii, 276.
- Wave lines and mud furrows in rocks, *J. Hall*, xlv, 148.
- Waves, v, 131.
- , *J. S. Russell* on the laws of, xxxviii, 100; xl, 323; xlv, 159.
- , mechanism of, in reference to steam navigation, *J. S. Russell*, xxxiii, 283.
- of translation, *J. S. Russell*, xxxiv, 1.
- , report of the committee of the British Association on, xxxv, 290.
- , remarkable, at the Sandwich Islands, 1837, *T. C. B. Rooke*, xxxvii, 358.
- , transporting effect, remarks on, *H. D. Rogers*, xlvii, 274.
- of sea, and sound, instruments for illustrating, xlix, 20.<sup>f</sup>
- Wavellite from Richmond, Mass., *C. Dewey*, ii, 249.
- Wax, fossil, *Meyer*, xxx, 185.
- of the *Myrica cerifera*, i, 294.
- , sealing, xxi, 150; xxiii, 200; xxviii, 148.
- tablet, used for instructing the blind, xxxviii, 186.
- Weasel, habits of, xlvi, 241.
- Weather, influence of the moon on, *F. Marcet*, xxvii, 192.
- , see *Meteorology*.
- Weather-glass, zoological, xvii, 187.
- Webb*, on lunar volcanoes, xxxv, 305.
- Webb, T. H.*, on fluor spar, iv, 50; vii, 54.
- , minerals near Providence, iv, 284.
- , mineral localities, v, 402; viii, 225, 228.
- , localities of talc and tourmaline, vii, 55.
- Webber, S.*, on the alluvial banks of the Connecticut, xlvii, 98.
- Webster, J. W.*, notice of the lectures of, i, 304.
- , — of the cabinet of, i, 305.
- , structure of Calton Hill, near Edinburgh, Scotland, and on the aqueous origin of wacke, i, 230.<sup>f</sup>
- , analysis of wacke, i, 296.
- , localities of minerals, principally at Haddam, Ct., ii, 239.
- , sinter at St. Michael's, iii, 391.
- , on prussic acid, iii, 189.
- , epidote at Nahant, iii, 364.
- , on the island of St. Michael, iv, 251.
- , foreign notices in Mineralogy, iv, 25.
- , communication of Boué's notices of European Geology, vi, 188.
- , discovery of green feldspar, xxxv, 192.
- , claim to blowpipe mouth, xxxv, 187.
- , explosion of hydrogen and oxygen, with remarks on Hemming's safety tube, xxxvii, 104.

- Webster, J. W.*, notice of work on the Azores by, iv, 251.
- , work of, on Chemistry, noticed, xi, 377; xx, 89; xxxvi, 195; xxxviii, 329.
- , proposed biography of scientific men, xxxvii, 193.
- Webster, N.*, notice of the seasoning of timber, and of the acceleration of water-wheels during the night, xii, 163.
- , critical interpretation of *bara* and *asah*, xxxv, 375.
- , winters of uncommon severity, xxviii, 183.
- , opinions on temperature, xlvi, 228.
- , on luminous appearance in the atmosphere, xii, 380.
- , dictionary of, noticed, xv, 399.
- Wedgewood ware, notice of, xxvi, 242.
- Weed, W. B.*, on scenery in Pennsylvania, xxi, 197.
- Weeds, destruction of, xxii, 381.
- Weekes, W. H.*, experiments with reference to the *Acarus Crossii*, xliii, 395.
- Weight, apparent diminution of, in some instances of lifting, *W. E. A. Aikin*, xxvii, 224;—*J. Nickalls*, xxviii, 198.
- , atomic, of elementary bodies, xxxviii, 119; xlvi, 187.
- Weights and measures, notice of *F. R. Hassler's* report on, xxiii, 405.
- Welland canal, xiv, 159.<sup>f</sup>
- Wells, R. W.*, origin of prairies, i, 331.
- Wells, artesian, xx, 392.
- , —, notice of, xxvii, 399.
- , —, at St. André, xxxvi, 204.
- , —, at Grenelle, Paris, xli, 209.
- , —, uses arising from the uniform temperature of the water, xxii, 373.
- , —, Ohio, xlix, 406.
- , frozen, xxxvi, 184.
- , of Columbia, S. C., affected by earthquakes, i, 93.
- Wells, temperature of, see *Temperature*.
- Wellsted, J. R.*, on the province of Omán, on the eastern coast of Arabia, xxxii, 383.
- Welther's tube of safety, substitute for, xvii, 345.<sup>f</sup>
- West, C. E.*, siliceous tubes in the earth, Rome, N. Y., xlv, 220.
- West*, on the corrosion of lead tubes by spring water, xlvi, 398.
- West Indies, geology of, i, 140.
- —, coral limestone, raised, in Dominica, iv, 218;—St. Christopher's, iv, 218; St. Eustatia, iv, 219; Saba, iv, 219.
- —, Antigua, i, 56, 140; xii, 378; xxxv, 75.
- —, Barbadoes, v, 406.
- —, St. Croix, *S. Hovey*, xxxv, 64.
- West of England Journal, notice of, xxviii, 365.
- Westchester, Pa., geology and mineralogy of, xiv, 15.
- County Cabinet of Natural Science, xxii, 402.
- Western country, natural resources of, xxii, 122.
- Western Museum Society, i, 203.
- Wetzel, L.*, adventure of, xxxi, 14.
- Whale, suspension of respiration in, xxix, 348.
- , fossil, xvii, 289.
- , remains of, at Durham, England, xxxviii, 130.
- Wheat, manures for, xii, 165.
- , soil for, xii, 372.
- , growth of, on accelerating, *G. W. Hall*, xxxi, 345; xxxviii, 129.
- , —, effects of an earthquake on, ix, 208.
- Wheatstone, C.*, on binocular vision, xxxv, 295.
- Wheels, water, on pitchback or breast, *A. B. Quinby*, xi, 333.
- , —, on the asserted acceleration of, during night and in winter, ix, 104; x, 129; xii, 163.
- Wheeler, A. D.*, solution of a diophantine problem, xx, 295.

- Wheeler, H.*, on sea-serpent, ii, 161.
- Wheeling, Virginia, notice of, xxiv, 186.
- , —, Indian attacks, xxxi, 3.
- Wheelright, W.*, efforts of, for steam navigation, xli, 358.
- , on steam navigation in the Pacific, xliiii, 107.
- Whelk, economical notice of, xxxii, 248.
- Whelpley, J. D.*, two species of hydrachna, xxx, 354.<sup>f</sup>
- , idea of an atom, xlvi, 352.
- Whetstone, in R. Island, viii, 232.
- , see farther, *Novaculite*.
- Whewell, W.*, anniversary address by, before the Geological Society of London, xxxvii, 218.
- , address before the eleventh meeting of the British Association, xli, 391.
- , chemical symbols, xxi, 369.
- , relative level of land and sea, as connected with the tides, xxxi, 335; xxxv, 287.
- , on mineralogical systems, xli, 214.
- , heat from the sun, central heat, of space, &c., xxix, 349.
- , tides mapped out by curves, with a discussion on, xxxv, 290.
- , demonstration that all matter is heavy, xlii, 264.
- , —, reply to, by *R. Hare*, xlii, 260.
- Whirlpools, course of, *A. W. Carson*, xxix, 341.<sup>f</sup>
- Whirlwind, see *Winds*.
- White, C.*, obtained a patent for hydraulic lime, iii, 230.
- White, G.*, notice of the works of, xxxvii, 155.
- White, D. A.*, eulogium on Dr. Bowditch, xxxv, 386.
- White Mountains, old man of the mountain, xiv, 64<sup>f</sup>; xxxiv, 122.
- , —, slides in, and miscellaneous notices of, xv, 217.
- , —, excursion among, *J. Pierce*, viii, 172.
- White Mountains, excursion to, *O. P. Hubbard*, xxxiv, 105.<sup>f</sup>
- White race of Atlas, xxxii, 400.
- Whiting, H.*, on the supposed tides of the North American lakes, xx, 205.
- , remarks on East Florida, 1838, xxxv, 47.
- Whiting, S.*, description of a marine ventilator, xviii, 75.<sup>f</sup>
- Whitlock, G. C.*, on the measure of polygons, xlvii, 380.<sup>f</sup>
- Whitney, E.*, on a fluid contained in stones, viii, 285.
- , invention of the cotton gin, xxi, 209.
- , manufacture of fire-arms, xxi, 237.
- , memoir of, *D. Olmsted*, xxi, 201.<sup>f</sup>
- , reminiscences of, *B. Silliman*, xxi, 255.<sup>f</sup>
- , monumental stone of, xxi, 264.<sup>f</sup>
- Whitney, J. D.*, translation by, of Berzelius on the blowpipe, noticed, xlix, 379.
- Whittlesey, C.*, heights of places in Ohio, and elsewhere, xlv, 12.
- Wiegman*, on the inorganic elements of plants, xlvii, 194.
- Wier's cave, Virginia, i, 59, 64.
- Wikström's Report on Botany*, xl, 393.
- Wilcox, C.*, letters on the White Mountains, xv, 217.
- Wilcox, P. B.*, on adjusting lightning rods, xviii, 361.
- Wilcox, W. W.*, on oil from white fish, xxxv, 391.
- Wilder, C.*, algebraic solution by, xvi, 271.
- , on the rectification of the ellipse, xviii, 38.<sup>f</sup>
- , on the resolution of equations of the fourth degree, xviii, 276.
- , on analytical geometry, xx, 285.<sup>f</sup>
- Wilkes, C.*, notice of Hassler's repeating theodolite, xvi, 252.<sup>f</sup>

- Wilkes, C.*, on the formation of Antarctic ice, *xlvi*, 114.
- , Narrative of the U. S. Exploring Expedition, noticed, *xlvi*, 211; *xlix*, 149.
- Wilkesbarre, on the rocks and coal, &c., of, *iv*, 1<sup>f</sup>; *vii*, 260; *xii*, 66; *xviii*, 309.<sup>f</sup>
- fossil plants, *ix*, 165.
- Wilkie, Daniel*, sides of right angled triangles expressed by integral numbers, *xxiv*, 68.
- , on definitions, *xxx*, 28, 266; *xxxi*, 88, 236.
- Wilkie, David*, death of, *xlii*, 215.
- Willard, Emma*, on the universal terms, *xxiii*, 18.
- Williams, S. C.*, notice of mineral localities, *x*, 206.
- Williams, S. R.*, on the shooting stars, of August, 1844, *xlvi*, 320.
- Williams, S. W.*, floral calendar kept at Deerfield, Massachusetts, *i*, 359.
- Williams, W. H.*, meteorological journal kept at Savannah, *xxv*, 211; *xxvii*, 173.
- Williamstown, Mass., geology of, &c., *i*, 337.<sup>f</sup>
- Willis's lute, *vii*, 392.
- Willoughby*, some notice of, *C. Fox*, *xxxvi*, 229.
- Wilmington Island, fossils of, *xxxv*, 380.
- Wilmsen, F. P.*, death of, *xxii*, 380.
- Winch, N. J.*, notice of, *xxvii*, 120.
- Winds and storms, proximate causes of, *E. Mitchell*, *xix*, 248.<sup>f</sup>
- , general, and on atmospheric phenomena, *W. C. Redfield*, *xxv*, 125; *xl*, 302.
- , —, and on the stratification and elevation of currents in the atmosphere, *W. C. Redfield*, *xxv*, 128; *xxxiii*, 52.
- , names and characters of different, *W. C. Redfield*, *xxv*, 126.
- Winds, average velocity near the surface of the ocean, *W. C. Redfield*, *xxxiii*, 52.
- , great circuits of, *W. C. Redfield*, *xxxiii*, 61; *xl*, 302.
- , causes of the great system of, *W. C. Redfield*, *xxviii*, 316; *xl*, 307.
- , system of, in the Atlantic, *W. C. Redfield*, *xx*, 50.
- , direction indicated by the ashes of volcanoes, *xxv*, 128; *xxxiii*, 53.
- , curve representing the comparative force of, almost identical with the curve of temperature, *xl*, 322.
- , curve of calms reverse of the curve of temperature, *xl*, 322.
- , monsoons, characters of, *W. C. Redfield*, *xxv*, 124.
- , —, character and causes of, *W. C. Redfield*, *xxxiii*, 63.
- , —, time of changes in the N. E. and S. W., at Canton, *xxxv*, 220.
- , sea and land, causes of, *W. C. Redfield*, *xxxiii*, 65.
- , trade, attributed to accumulation of air in the Gulf of Mexico, *v*, 355.
- , —, course and causes of, *W. C. Redfield*, *xx*, 30; *xxv*, 124; *xxxiii*, 61.
- , —, *ibid*, *J. P. Espy*, *xxxix*, 120, 129.
- , —, relation of, to the westerly, of higher latitudes, *xx*, 30.
- , —, semi-annual change in, *W. C. Redfield*, *xl*, 304.
- , —, objections to common theories of, *W. C. Redfield*, *xl*, 303.
- , of the summit of the Andes and other high peaks, *W. C. Redfield*, *xxviii*, 314.
- , at Canton, *xxxviii*, 272.
- , at Montreal, *J. S. McCord*, *xli*, 331.
- in U. States, of several years, at different forts, *xxx*, 10.



Winds, in the U. States; causes of the coldness and dryness of the west and northwest winds of New England, *T. Dwight*, viii, 307.

—, —, prevailing, in New York state, 1833, xxv, 259.

—, —, of New York state, xlix, 179.

—, —, at New York city, westerly more prevalent than easterly, *W. C. Redfield*, xxxiii, 62.

—, —, observations on, at N. York for five years, to 1837, inclusive, *W. C. Redfield*, xxxiv, 373.

—, —, as indicated by the higher clouds, at Otisco, N. Y., *W. Gaylord*, xxxix, 63.

—, —, prevailing, of Ohio and the West, *C. Atwater*, i, 276.

—, —, register of, at Hudson, Ohio, *E. Loomis*, xli, 319; xlix, 279, 280.

—, —, at New Orleans, 1833-36, *Prof. Barton*, xxxi, 401.

#### STORMS OR TORNADES.

— of the Atlantic, v, 352.

— —, *W. C. Redfield*, xx, 17<sup>f</sup>; xxv, 114; xxxi, 115<sup>f</sup>; xlii, 112.<sup>f</sup>

— —, —, September, 1804, xxxi, 124.<sup>f</sup>

— —, —, September, 1821, xx, 20, 24; xxxi, 126.<sup>f</sup>

— —, —, August, 1827, xxxi, 123.<sup>f</sup>

— —, —, August, 1830, xx, 34<sup>f</sup>, 39; xxxi, 125<sup>f</sup>, 136.<sup>f</sup>

— —, —, September, 1830, xx, 41; xxxi, 125.<sup>f</sup>

— —, —, December, 1830, xxxi, 126.<sup>f</sup>

— —, —, June, 1831, xxxi, 123.<sup>f</sup>

— —, —, August, 1831, xxi, 191; xxv, 119; xxxi, 123.<sup>f</sup>

— —, —, August, 1835, xxxi, 124.<sup>f</sup>

#### STORMS OR TORNADES.

— of the Atlantic, *W. C. Redfield*, Dec. 15, 1839, xlii, 112.<sup>f</sup>

— in United States, December, 1836, *E. Loomis*, xl, 34.

— —, list of, from 1823 to 1842, *E. Loomis*, xliii, 298.

— in New England, September, 1815, *N. Darling*, xlii, 243.

— —, in N. Hampshire, Sept. 1821, *J. Woods*, xxxv, 233.

— —, in Connecticut, at New Haven, July, 1839, *D. Olmsted*, xxxvii, 340.<sup>f</sup>

— —, —, at Northford, June, 1794, xxxix, 384.

— —, in Rhode Island, August, 1838, *R. Hare*, xxxviii, 73.

— —, —, —, *ibid*, *W. C. Redfield*, xliii, 263.<sup>f</sup>

— —, in New York, at Catskill, July, 1819, *B. W. Dwight*, iv, 124.

— —, —, in Onondaga Co., July, 1838, *W. Gaylord*, xxxvii, 90.

— —, —, central N. York, September, 1840, xlii, 210.

— —, —, over lakes Erie and Ontario, November, 1835, *W. C. Redfield*, xxxi, 126.<sup>f</sup>

— —, in New Jersey, New Brunswick, June, 1835, *J. P. Es- py* cited by *R. Hare*, xxxii, 158.

— —, —, *ibid*, *W. C. Redfield*, xxxv, 206; xli, 69.<sup>f</sup>

— —, —, *ibid*, *L. C. Beck*, xxxvi, 115.<sup>f</sup>

— —, in Ohio, at Stowe, October, 1837, *E. Loomis*, xxxiii, 368.<sup>f</sup>

— —, —, at Marietta, April 23, 1840, *S. P. Hildreth*, xl, 346.

— —, —, at Mayfield, February, 1842, *E. Loomis*, xliii, 278.<sup>f</sup>

— —, in Tennessee, at Shelbyville, June, 1830, *J. H. Kain*, xxxi, 252.

— of Europe, remarks on, *W. C. Redfield*, xxxv, 222.

## STORMS OR TORNADOES.

- of Europe, England, January, 1838, *F. Osler*, xxxviii, 103.
- —, France, xix, 191; xx, 395; xxxviii, 77.
- —, Switzerland, xx, 178.
- of Asia, near Calcutta, April 8, 1838, *J. Floyd*, xxxvi, 71.
- —, China seas, (tyfoons) *W. C. Redfield*, xxv, 121; xxxv, 209<sup>f</sup>; xxxvi, 59.
- —, —, September, 1831, *W. C. Redfield*, xxxv, 218.
- —, —, October, 1831, Manilla, *W. C. Redfield*, xxxv, 220.
- —, —, August, 1832, *W. C. Redfield*, xxxv, 217.
- —, —, Raleigh's, of 1835, xxxv, 210<sup>f</sup>; xxxvi, 59.
- —, barometric effects attending, *W. C. Redfield*, xx, 45; xxv, 117; xxxi, 127; xxxiii, 262.
- —, —, *ibid*, during storm of December, 1836, in the U. States, *E. Loomis*, xl, 34.
- —, — *ibid*, *J. P. Espy*, xxxix, 123.
- —, — *ibid*, *H. W. Dové*, xliv, 315.
- —, —
- —, *E. Mitchell*, on causes and nature of storms, xix, 248<sup>f</sup>; xx, 361.
- —, *W. C. Redfield*, characters of Atlantic and others, gyratory, xx, 21; xxi, 191; xxv, 117; xxxi, 115; xxxiii, 57; xxxv, 214<sup>f</sup>; xli, 70; xlii, 301; xlv, 307.
- —, —, direction of gyration, xx, 32; xxv, 117, 121; xxxi, 115; xxxv, 215, 222; xli, 70; xlii, 115.
- —, —, principles respecting the gyratory action of, xli, 70.
- —, —, gyratory storm moves with the main currents, xx, 22; xxi, 191; xxv, 114.
- —, —, velocity of the wind, not the velocity of the movement of a gale, xx, 23; xxxiii, 57; xxxv, 215.

## STORMS OR TORNADOES.

- —, *W. C. Redfield*, rate of progress, course, extent, xxv, 114, 117; xxxv, 215, 221.
- —, —, duration of, xxv, 115.
- —, —, on the changes of wind during, xxv, 116; xliii, 268.
- —, —, direction of wind and course of storm different, xxv, 115.
- —, —, oscillations of the axis of rotation, xxv, 118.
- —, —, centre of, a region of calms, xxxiii, 61.
- —, —, opposite sides of a whirlwind often unequal in breadth, xliii, 275.
- —, —, fluctuations of barometer accompanying the passage of, xx, 45; xxv, 117.
- —, —, fall of barometer a result of the gyration, xx, 45; xxxi, 127.
- —, —, barometric indications extend beyond the limits of the action, xlii, 114.
- —, —, causes of some irregularities, xxxv, 203.
- —, —, two sometimes mingled, xlii, 114.
- —, —, a transference sometimes from the lower to the higher currents, xxxi, 128.
- —, —, transfer of volcanic ashes by upper currents, xxv, 129.
- —, —, directions to navigators with regard to escaping the violence of, xxv, 119; xxxv, 216.
- —, —, in relation to system of ocean currents in the Atlantic, xx, 50; xxv, 130.
- —, —, elliptical circuit of storms in the Atlantic, xxv, 114; xxxi, 128.
- —, —, Atlantic storms originate in the tropics, xxv, 114.
- —, —, the northeasters and southeasters of the United States coast, part of the same storm, xx, 29.

## STORMS OR TORNADOES.

- , *W. C. Redfield*, Pacific system of storms, same as Atlantic, xxxi, 128, 129.
- , —, causes of thunderstorms, gusts, squalls and water-spouts, xxxiii, 56, 58, 60.
- , —, winds not a result of the condensation producing rain, xxxiii, 58.
- , —, effects of gales on trees and fences, xliii, 263.<sup>f</sup>
- , —, gyrotary action from circular fires, xxxvi, 50.
- , —, Herschel on the views of, xxxv, 281.
- , —, *R. Hare* on the views of, xlii, 140; xliii, 122; xliv, 384.
- , —, in reply to *R. Hare*, xlii, 299; xliii, 250.
- , *R. Hare*, causes of, xxxii, 153<sup>f</sup>; xxxviii, 81, 82; xlii, 143; xliii, 136.
- , —, effect of an electrified current of air, xxxii, 154; xlii, 143.
- , —, objections to *Redfield's* views, xlii, 140; xliii, 122.
- , —, — to *Dové's* essay, xliv, 137.
- , *E. Loomis*, on the gyrotary motion, xliii, 287, 291.
- , —, different character of the two sides, in the tornado of *Mayfield*, Feb. 1842, xliii, 285.
- , —, force of wind, *ibid*, xliii, 284.
- , —, effect of, in picking feathers of geese, xliii, 293.
- , —, character of gyration in small whirlwinds, xliii, 296.
- , —, causes of the storm of Dec. 1836, xl, 36.
- , —, limits, *ibid*, xl, 35.
- , —, effect on barometer, *ibid*, xl, 34.
- , *J. P. Espy*, on the nature of, xxxix, 120.
- , —, effect of heat in producing, xxxix, 120.
- , —, effect of tornado on trees, xxxix, 127.

## STORMS OR TORNADOES.

- , *J. P. Espy*, views of, presented to the British Association, xl, 327.
- , —, —, notice of, *A. D. Bache*, xxxv, 280.
- , —, —, remarks on, *J. Stevelly*, xl, 329.
- , —, —, remarks on, *F. Osler*, xl, 330.
- , *W. Gaylord*, illustrations of a theory of water-spouts, tornadoes, &c., xl, 399.
- , *C. Tracy*, on the rotary character and action of, xlv, 65.<sup>f</sup>
- , *W. Reid*, on the laws of, xxxv, 276.<sup>f</sup>
- , —, gyrotary character of, xxxv, 183, 277.<sup>f</sup>
- , —, force of, in accordance with the law of magnetic intensity, xxxv, 280.
- , *H. W. Dové*, on the law of, xliv, 315.<sup>f</sup>
- , —, gyrotary character of, xliv, 321.
- , —, barometric indications, xliv, 315.
- , —, causes of West Indian, xliv, 329.
- , —, general causes of, xliv, 337.
- , —, direction to navigators, xliv, 338.
- , —, —
- Windows of wire gauze, a protection against malaria, xviii, 370.
- Windsor, East, fossil bones of, ii, 146.
- Wines of Madeira, xxiv, 240.
- of Palestine, xxviii, 51.
- —, analysis of, *E. Hitchcock*, xlvi, 249.
- , on the alcoholic strength of, xxxvii, 363.
- and other fermented liquors, researches on ingredients of, *L. C. Beck*, xxviii, 42.
- , *ibid*, specific gravity of, xxviii, 45.
- , *ibid*, proportion of alcohol in, xxviii, 48.

- Wines, grease of, xxii, 192.  
 —, mode of improving, iv, 394.  
 —, odor of, due to a peculiar ether, *Liebig* and *Pelouze*, xxxii, 381.  
 —, tests of coloring material of, *Jacob*, xlix, 198.
- Winnebago, Fort, some account of the region around, *D. Ruggles*, xxx, 1.<sup>f</sup>
- Winslow, M., on the minerals of Ceylon, vi, 192.  
 —, notices from Ceylon, viii, 186.
- Winthrop, J., ancient catalogue of objects of Natural History, xlvii, 282.  
 —, meteorological observations during the years 1741 to 1757, xl, 204.
- Wire drawing, vi, 393.  
 — gauze windows, a protection against malaria, xviii, 370.  
 — rope for deep mines, xxxv, 319.  
 —, covering for, xx, 409.  
 —, conducting power of, xlv, 392.
- Wirttemberg University, viii, 183.  
 —, kingdom of, xx, 176.
- Wisconsin Indian mounds, xxxiv, 88.<sup>f</sup>  
 —, copper ores in, xliii, 38.  
 — lead region, remarks upon, xliii, 35.<sup>f</sup>  
 —, earthworks, *S. Taylor*, xlv, 21.<sup>f</sup>  
 —, elevations in, xlvi, 258.
- Wiseman, N., Connection of Science and Revealed Religion by, noticed, xxxii, 209.
- Witham, H., on the vegetation of the first period of an ancient world, xviii, 110.<sup>f</sup>  
 —, investigations on fossil vegetables, xxv, 108.  
 —, sections of fossil wood, xxvii, 415.
- Witherite in the state of Missouri, iii, 63.
- Withers, R. W., geological notices of Greene Co., Alabama, xxiv, 187.
- Wöhler, F.*, method of obtaining osmium and iridium from the platinum residue, xxvi, 371.  
 —, products of the decomposition of narcotine, xlix, 205.  
 — and *Liebig*, on the radical of benzoic acid, xxvi, 261<sup>f</sup>;—analysis, 267.  
 —, bitter almond oil, xxvi, 263.  
 —, on compact aluminium, xlix, 390.
- Wolchonskoite, *Kammerer*, xxvi, 387.
- Wolf, anecdote of, iv, 310.
- Wolves, destruction to stock in Russia by, xx, 177.
- Wollaston, H. W., remarks on the Cryophorus of, vii, 140.  
 —, scale of chemical equivalents, xii, 4; xvi, 371.  
 —, obituary notice of, xvi, 216; xvii, 159.
- Wollaston Medal, awarded to G. A. Mantell, xxviii, 391.  
 — — — to L. Agassiz, xxx, 382.  
 — — — to Richard Owen, xxxv, 197.
- Wolle, J., catalogue of plants, xxxvii, 310.
- Wonders of Geology, *G. A. Mantell*, xxxiv, 387; xxxv, 384; xxxix, 1.
- Wood, A., Class Book of Botany by, noticed, xlix, 190.
- Wood, charring of, xvii, 395<sup>f</sup>; xx, 189.  
 —, bituminization of, in human era, xxxv, 345; xxxvi, 118.<sup>f</sup>  
 —, coating for, xxiii, 199.  
 —, decay and mouldering of, *Hermann*, xlix, 204.  
 —, attacked by the Limnoria terebrans, xxxiv, 27.  
 —, fossil, see under *Fossil*.  
 —, eatable food from, xxviii, 399.  
 —, rendered incombustible, xiv, 379.  
 —, spontaneous combustion of, xxvii, 178; xxxiii, 150; xxxv, 144.

- Wood, process for drying, xvii, 163.  
 —, inhumed, xvii, 398.  
 —, preservation of, by pyrolignite of iron, *Boucherie*, xl, 213.  
 —, —, xxxiv, 28.  
 —, set on fire by the direct rays of the sun, xxvii, 179.  
 —, silicified, see *Fossil* and *Silicification*.  
 — of different kinds, experiments to determine the strength of, xix, 228.<sup>f</sup>  
 —, locust, for subterranean works, xxx, 182.  
 Wood's inking machine, xxiii, 103.<sup>f</sup>  
 Wood, G. B., United States Dispensatory of, noticed, xxxi, 406.  
 Wood, J., rocks moved by ice, ix, 144.  
 Woodbridge's Geography, notice of, xii, 373.  
 Woodbridge, W. C., American Annals of Education by, notice of, xix, 174, 357.  
 —, Italian engravings, xv, 401.  
 Woodbury basin, ii, 231.  
 Woodhull, S., on the heat of 1825, x, 296.  
 Woodruff, S., on the barn swallow, xix, 172.  
 —, rattlesnake disarmed by leaves of white ash, xxiii, 337.  
 —, on snakes, xxix, 304.  
 —, on hybernation and other topics in Natural History, xxiv, 363.  
 —, the mole carnivorous, xxviii, 168.  
 —, on the fibre of the Rose of Sharon, xxviii, 371.  
 Woods, J., account of a storm in New Hampshire, Sept. 1821, xxxv, 233.  
 Woodward, F. G., spark extinguisher, xlii, 209.<sup>f</sup>  
 Woody tissue, formation of, xxxviii, 128.  
 Wool, method of cleansing, xxiv, 205.  
 Wooldridge, A. S., on the coal mines near Richmond, Va., xliii, 1.
- Worcester, J. E., notice of an American Almanac conducted by, xxxv, 191.
- WORKS.  
 —, number of new, offered for sale at Leipsic, 1819, ii, 341.  
 —, list of new, in science, xxix, 161, 396; xxx, 198.  
 —, F. Adelung's work on languages, iii, 376.  
 —, Agardh, Species Algarum, announced, ii, 363; iv, 200.  
 —, L. Agassiz, on fossil fishes, xxviii, 193; xxx, 33; xxxiv, 212.  
 —, —, Natural History of the freshwater fish of central Europe, xxxix, 390; xlv, 211.  
 —, —, on the Echinodermata, and other works by, xxxiv, 212; xxxvii, 369; xli, 194; xlii, 378; xlv, 399.  
 —, —, Nomenclator Zoologicus, xlv, 11.  
 —, J. H. Alexander, Report on the manufacture of iron, xli, 376.  
 —, F. Alger, Mineralogy, xlvi, 203; xlvii, 333.  
 —, Z. Allen, Mechanics, review of, xvii, 338.  
 —, —, Practical Tourist, xxiii, 213.  
 —, Antiquitates Americanæ, notice of, xxxi, 410.  
 —, N. Arnett's Elements of Physics, xx, 155.  
 —, J. J. Audubon's Birds of North America, xvi, 353; xxxix, 343; xlii, 130.  
 —, C. Babbage, Reflections on the decline of Science in England, notice of, xx, 164.  
 —, —, Economy of machinery and manufactures, analytical examination of, xxiv, 105.  
 —, C. C. Babington, Manual of British Botany, xlvi, 198.  
 —, F. Bache, and G. B. Wood, Dispensatory of the United States, xxxi, 406.  
 —, R. Bakewell, Geology, second American edition, xxvi, 213.

## WORKS.

- , R. Bakewell, *Geology*, third American edition, xxxv, 385; xxxvi, 201.
- , M. Beaufoy, *Nautical and Hydraulic experiments*, xxviii, 340.
- , L. C. Beck, *Gazetteer of Illinois and Missouri*, vi, 367.
- , —, *Botany of the Northern and Middle States*, xxiv, 398.
- , —, *Manual of Chemistry*, xlvii, 414.
- , —, *Report on the Mineralogy of New York*, xlvi, 25.
- , Berkshire Co., Mass., *history of*, xviii, 387.
- , J. J. Berzelius, *System of Chemistry*, xx, 95.
- , —, on the Blowpipe, translated by J. D. Whitney, xlix, 379.
- , F. S. Beudant, *Geological Travels in Hungary*, vii, 256.
- , J. Bigelow, *Elements of Technology*, notice of, xvii, 198.
- , G. W. Bischoff, *Lehrbuch der Botanik*, xlvi, 196.
- , J. R. Blum, on Pseudomorphous Minerals, xlviii, 66.
- , J. C. Booth and M. H. Boyé, *Encyclopædia of Chemistry*, xlvi, 202.
- , *Botany of Capt. Beechey's Voyage*, xxxix, 172.
- , *Botany of the voyage of H. M. ship Sulphur*, xlvii, 202.
- , *Botany of the Erebus and Terror*, xlviii, 204.
- , J. B. Boussingault, *Rural economy*, (translated from the French,) xlix, 182.
- , C. Bowen, *American Almanac*, xxxv, 191.
- , D. Brewster, *Treatise on Mineralogy*, announced, iv, 245, (never published.)
- , —, *Optics*, notice of, xxiv, 389.
- , Ad. Brongniart on the classification and distribution of fossil vegetables, review of, vii, 178.

## WORKS.

- , Al. Brongniart on Fossil Crustacea, vi, 197.
- , —, *Memoir on the Zoological characters of Formations and the application of the same to determining some strata connected with the Chalk*, viii, 213.
- , H. G. Bronn, *Lethæa Geognostica*, xxxiii, 204; xxxvii, 369.
- , —, *Handbuch einer Geschichte der Natur*, xlviii, 213.
- , —, *Index, ad A. P. de Candolle Prodrumum, &c.*, xlvi, 197.
- , W. Buckland, *Reliquiæ Diluvianæ*, viii, 150, 317.
- , —, *Bridgewater Treatise*, xxxi, 419; xxxiii, 112, 210.
- , H. W. Buek, *Genera, Species, et Synonyma Candolleana*, xlii, 375.
- , *Cabinet of Natural History*, xxiii, 402.
- , A. P. de Candolle, *Prodrum of the Vegetable Kingdom*, xxxix, 168; xlvii, 198; xlix, 174.
- , —, *Théorie Elementaire de Botanique*, xlix, 175.
- , —, *Species Plantarum announced*, i, 435.
- , G. Catlin, on the North American Indians, xliii, 203.
- , I. A. Chapman, *History of Wyoming*, xviii, 387.
- , W. Chauvenet, *Binomial theorem and Logarithms*, xlv, 218.
- , Choisy, *de Convolvulaceis, &c.*, xlv, 95.
- , P. Cleaveland, *Mineralogy*, i, 35, 308.
- , — —, second edition announced, ii, 375; v, 404.
- , H. Colman, fourth Report of the Agriculture of Massachusetts, xliii, 202.
- , J. L. Comstock, *Grammar of Chemistry*, v, 404; vi, 369.
- , T. A. Conrad, *American Marine Conchology*, notice of, xx, 409.

## WORKS.

- , T. A. Conrad, on the Tertiary fossils of America, xxiii, 204.
- , —, on the Naiades, notice of, xxix, 391.
- , Conversations on Vegetable Physiology, noticed, xviii, 204.
- , W. D. Conybeare and W. Phillips, Outlines of the Geology of England and Wales, vii, 203; ix, 146.
- , V. Cousin, Elements of Psychology, xxvii, 388.
- , G. Cuvier, work on the fossil bones of quadrupeds, new edition announced, iv, 386.
- , —, Essay on the Theory of the Earth, S. L. Mitchell's edition of, i, 68.
- , —, Règne Animal, xxi, 388.
- , J. D. Dana, System of Mineralogy, xxxi, 413; xlvi, 362.
- , J. F. Dana, Epitome of Chemical Philosophy, notice of, xi, 194.
- , S. L. Dana, Muck Manual for Farmers, xliii, 192.
- , J. Darby, Manual of Botany, xli, 375.
- , W. Darlington, Flora Cestrice, notice of, xii, 177; xxxiii, 183.
- , —, Reliquiæ Baldwinianæ, compiled by, xlvi, 192.
- , Davis, Manual of Magnetism, xliii, 381.
- , H. Davy, Consolations in Travel, xx, 170.
- , J. E. DeKay, on the Zoology of New York, xliv, 188; xlv, 275, 397.
- , B. Delessert's Musée Botanique, xlix, 171.
- , C. Dewey, on the Herbaceous Plants of Massachusetts, xli, 378.
- , E. Donovan, xxxviii, 163.
- , A. J. Downing, Landscape Gardening, xli, 216; xlvi, 214.
- , J. W. Draper, on the Forces which produce the Organization of Plants, &c., xlvi, 214.
- , Dunglison, Human Physiology, xxiv, 165.

## WORKS.

- , A. Eaton, Index to the Geology of the Northern States, i, 69.
- , —, Geological Survey on the Erie Canal, viii, 195; ix, 355; xiii, 383.
- , —, Manual of Botany, xxiv, 398.
- , H. Milne Edwards, Outlines of Anatomy and Physiology, xli, 199.
- , C. G. Ehrenberg, xxxv, 371.
- , Emmerling, on fossils in brown coal, announcement of, iv, 31.
- , E. Emmons, Manual of Mineralogy and Geology, notice of, xxiv, 397.
- , —, on the Taconic System, xlvi, 394.
- , —, on the Quadrupeds of Massachusetts, xli, 378.
- , Encyclopædia Americana, xvii, 413.
- , S. Endlicher, Genera Plantarum, xxxix, 170; xl, 174; xli, 373.
- , —, Enchiridion Botanicum, xlii, 182.
- , —, Mantissa Botanica, xliv, 198; xlvii, 201.
- , —, and C. F. P. von Martius, Flora Brasiliensis, xlv, 217.
- , —, and F. Unger's Grundzüge der Botanik, xlvi, 196.
- , G. W. Featherstonhaugh's Geological Reports, notice of, xxviii, 379; xxxii, 185.
- , L. Feuchtwanger, on Gems, xxxv, 189.
- , H. B. Fielding, Sertum Plantarum, &c., xlvii, 204.
- , T. Flint's History and Geography of the valley of the Mississippi, xxiv, 179.
- , S. Forry, on the climate of the United States, xliv, 193.
- , G. Fownes, Chemistry for Students, xlix, 379.
- , —, Chemistry as exemplifying the Wisdom and beneficence of God, xlvii, 413.
- , G. R. Fresenius, Grundriss der Botanik, xlvi, 197.

## WORKS.

- , Fries, *Syst. Mycologicum*, announced, iv, 200; xii, 235.
- , Geological Reports, see *Geological*.
- , C. Gill, *Mathematical Miscellany*, xxxi, 184.
- , A. Goldfuss, *Petrefakten*, notice of, xxv, 430.
- , A. Gordon, *Treatise upon Elemental Locomotion*, by means of steam carriages, xxvii, 174.
- , J. Gorham, *Chemistry*, i, 434; iii, 330.
- , A. A. Gould, *Report on the invertebrate animals of Massachusetts*, xli, 378.
- , Asa Gray, *Elements of Botany*, xxx, 399.
- , —, *Botanical text-book*, xliii, 388; xlix, 189.
- , — and J. Torrey, *Flora of North America*, xxxv, 180; xxxix, 198; xli, 275; xlii, 377; xlv, 420.
- , O. Gregory, *Treatise on Mechanics*, reviewed, vii, 72.
- , Griesbach, *Genera et Species Gentianearum*, xxxix, 176.
- , Griscom, *Journal of a year in Europe*, vii, 360.
- , Wm. Guy, *Principles of Forensic Medicine*, xlvi, 215.
- , J. Gummere, *Astronomy*, xxxii, 208.
- , S. S. Haldeman, *Monograph of the Limniades*, xxxix, 393; xliii, 391.
- , B. Hall, *Voyage to the Eastern Seas*, notice of, xiv, 206.
- , F. Hall, *Catalogue of Vermont Minerals*, viii, 193.
- , R. Hare, *Compendium of Chemistry*, xx, 95.
- , —, on the *Amphide Salts*, xlv, 192.
- , R. Harlan, *Medical and Physical Researches*, xxx, 188.
- , T. W. Harris, *Insects of Massachusetts*, xlii, 380; xliii, 386.
- , W. H. Harvey, *Genera of South African Plants*, xxxix, 173.

## WORKS.

- , R. W. Haskins, *Astronomy for Schools*, xli, 389.
- , R. G. Hatfield, *American House Carpenter*, xlvi, 215.
- , Hausmann, *Mineralogy*, announcement of, iv, 27.
- , T. Hawkins, on the *Ichthyosauri and Plesiosauri*, xxvii, 413.
- , I. Hays, *Cyclopedia of Practical Medicine and Surgery*, notice of, xxvi, 202.
- , W. Henry, *Elements of Chemistry*, notice of, xx, 89.
- , E. Hitchcock, *Catalogue of Plants in the vicinity of Amherst College*, xvii, 199.
- , —, *Lectures on Diet*, notice of, xix, 167.
- , —, *Report on Massachusetts*, notice of, xxiii, 389; xxvi, 213.
- , J. E. Holbrook, *North American Herpetology*, xxxv, 186.
- , W. J. Hooker, *Flora Scotica*, announced, iv, 200.
- , —, *Icones Plantarum*, xxxix, 178; xl, 391; xlv, 214.
- , —, *Flora Boreali-Americana*, xxxix, 172; xl, 173.
- , —, *British Flora*, xlv, 199.
- , —, *Species Filicum*, xlvi, 205.
- , —, *Journal of Botany*, xxxix, 177; xl, 172; xlii, 189; xliii, 185, 385.
- , Hooker and Arnott, *Botany of Beechey's Voyage*, xli, 374.
- , T. Horsefield, *Plantæ Javanicæ rariores, &c.*, xl, 391.
- , C. T. Jackson, *Geological Reports*, see *Jackson, C. T.*
- , J. C. Jay, *catalogue of shells*, xxxvii, 401.
- , L. Jenyns, xxxvii, 165.
- , L. Johnson, *Botanical Teacher for North America*, xlii, 184, 377.
- , W. R. Johnson, on the use of *anthracite in the manufacture of iron*, xlii, 192.
- , J. F. W. Johnston, *Chemical Tables*, xxxii, 212.



## WORKS.

- , J. F. W. Johnston, Lectures on the application of Chemistry and Geology to Agriculture, xlii, 187; xlv, 189; xlviii, 212.
- , G. Jones, Naval Sketches, review of, xvi, 168, 320.
- , —, Excursions to Cairo, Jerusalem, &c., xxxi, 412.
- , T. R. Jones, General Outlines of the Animal Kingdom, xl, 196.
- , Journal of a Naturalist, notice of, xxi, 390.
- , A. de Jussieu, Cours Élémentaire de Botanique, xlvi, 195; xlvii, 204.
- , R. Kane, Elements of Chemistry, xlv, 192.
- , L. C. Kiener, Genera and Species, &c., of Recent Shells, translated by D. H. Storer, xxxiii, 184.
- , M. Knowlton, Notes on Gunpowder, Percussion Powder, &c., xli, 390.
- , Kunze, Caricography, xl, 174.
- , —, Supplemente der Riedgräser, (Carices) xli, 374; xliii, 189.
- , C. S. Kunth, Enumeratio Plantarum, xlii, 376; xlvii, 200.
- , J. L. Lagrange, xxx, 64; xxxi, 97.
- , P. S. Laplace, Mécanique Céleste, ix, 379; xxxv, 17.
- , Lasteurie, illustrations of machines, implements, &c., notice of, v, 190.
- , T. Lawson, Meteorological Register for 1826–1830, xli, 390.
- , I. Lea, on the Naiades, xxii, 169; xxxiii, 402.
- , —, Observations on the genus Unio, &c., xxxv, 184.
- , C. F. Ledebour, Flora Rossica, xliii, 188; xlvi, 198.
- , A. M. Legendre's Geometry, review of, vi, 283.
- , G. Leonhard, Handwörterbuch der Topographischen Mineralogie, xlix, 188.

## WORKS.

- , K. C. von Leonhard, Geology, xxxix, 393; xli, 387.
- , J. Liebig, Organic Chemistry in its applications to Agriculture and Physiology, xl, 177.
- , —, Animal Chemistry, xliii, 379.
- , G. W. von Leibnitz, Prologæa, review of, xx, 56.
- , J. Lindley, Horæ Botanicæ, notice of, xix, 161.
- , —, Natural System of Botany, xxxii, 211, 292.
- , —, Introduction to Botany, xxxii; xxxix, 179.
- , —, Theory of Horticulture, xli, 210.
- , —, Flora Medica, xlii, 182.
- , —, Elements of Botany, xlii, 183.
- , H. F. Link, Elementa Philosophiæ Botanicæ, second edition, xxxix, 181.
- , —, Jahresbericht über die Arbeiten für physiologische Botanik im Jahre 1841, xlvii, 205.
- , —, Anatomia Plantarum Iconibus Illustrata, xlvii, 205.
- , C. Linnæus, iii, 379; xxxvii, 142.
- , Long, Expedition to the Rocky Mountains, notice of, vi, 374.
- , Loudon, Encyclopedia of Plants, notice of, xix, 160.
- , —, Arboretum et Fruticetum, abridged, xlii, 376; xliii, 188.
- , C. Lyell, Principles of Geology, xxix, 358; xxxiii, 182; xlii, 191.
- , —, Elements of Geology, xxxv, 385; xlii, 191.
- , —, Travels in North America, xlix, 368.
- , W. McCartney, Principles of the Calculus, xlviii, 209.
- , H. M'Murtrie, Translation of Cuvier's Règne Animal, notice of, xxi, 388.

## WORKS.

- , G. A. Mantell, *Geology of the Southwest of England*, xxvi, 216.
- , —, *Wonders of Geology*, xxxiv, 387; xxxv, 384; xxxix, 1.
- , —, *Thoughts on a Pebble*, xliii, 382.
- , —, *Memoir on some Saurian remains of the Tilgate forest*, xliii, 189.
- , —, *Medals of Creation*, xlviii, 105.
- , E. le Maout, *Leçons élémentaire de Botanique*, xlviii, 206.
- , J. P. Mapes, *American Repository of Arts, Sciences and Manufactures*, xxxix, 394.
- , C. F. P. von Martius, *Systema Materię Medicę Vegetabilis Brasiliensis*, xlviii, 207.
- , —, *Flora Brasiliensis*, xlv, 217.
- , M. F. Maury, *Treatise on Navigation*, xxxii, 208.
- , Meyen, *Neues System der Pflanzen-Physiologie*, xxxix, 187.
- , Hugh Miller, *Old Red Sandstone, or New Walks in an Old Field*, xliii, 198.
- , S. L. Mitchill's edition of *Cuvier's Essay on the Theory of the Earth*, i, 68.
- , N. F. Moore, *Ancient Mineralogy*, xxviii, 188.
- , Morrison, *Chinese Dictionary*, progress of, iii, 377.
- , J. and R. C. Morse, *New Gazetteer*, iv, 190.
- , J. and S. E. Morse, *New School Geography and Atlas*, iv, 191.
- , S. G. Morton, *Crania Americana*, notice of, xxxiv, 214; xxxviii, 341.
- , —, *Crania Ægyptiaca*, xlvii, 205.
- , G. J. Mulder, *Chemistry of Animal and Vegetable Physiology*, xlviii, 213; xlix, 186.

## WORKS.

- , R. I. Murchison, *Silurian System*, xlv, 193.
- , J. Murray, *Elements of Chemistry*, notice of, xx, 92.
- , J. Newton, *Principia*, review of, xi, 238; xii, 28, 330; xiii, 311.
- , T. Nuttall, *Introduction to Botany*, review of, xiii, 99.
- , —, *Manual of Ornithology*, xx, 154; xxii, 178.
- , —, *Michaux's Sylva Americana*, xlii, 377; xliii, 188; xlv, 194.
- , *Observations Météorologiques et Magnétiques faites dans l'étendue de l'Empire de Russie, &c.*, xxxviii, 380.
- , D. Olmsted, *Introduction to Natural Philosophy*, xxiii, 351; xxv, 214; xxxiv, 219.
- , —, *Astronomy*, xxxvi, 213.
- , —, *Life and Writings of E. P. Mason*, xliii, 381.
- , M. Paine, *Medical and Physiological Commentaries*, xxxix, 209.
- , R. Park, *Pantology*, xli, 389.
- , Parkes, *Chemical Essays*, second edition, notice of, viii, 190.
- , E. A. Parnell, *Elements of Chemical Analysis*, xlv, 190.
- , Felix Pascalis on the *Culture of Silk*, review of, xviii, 278.
- , B. Peirce, *Cambridge Miscellany of Mathematics, &c.*, xliii, 392.
- , J. G. Percival, *Geology of Connecticut*, xlv, 187.
- , *Perkins's Algebra*, xliii, 380.
- , *Persian Language, Grammar and Dictionary of*, noticed, x, 383.
- , J. Phillips, *Geology of Yorkshire*, extract from, on the principles of *Geology*, xxi, 2.
- , A. L. Porter, edition of *Gray's Operative Chemist*, notice of, xix, 362.
- , R. K. Porter, *Travels in the East*, xxxvii, 247.
- , Presl, *Tentamen Pteridographiæ*, xxxix, 174.

## WORKS.

- , Public Education, Plans for the Government and Instruction of Boys, reviewed, vii, 161.
- , C. S. Rafinesque, *Annals of Nature*, iii, 365.
- , —, Botanical and other writings, xxix, 393, 394; xxxiv, 386; xl, 221; xlii, 280.
- , W. Reid, work on Hurricanes, xxxv, 182.
- , J. Van Rensselaer on Salt, vii, 360.
- , Rensselaer School text-books, xxiv, 399.
- , J. Renwick, *Treatise on the Steam Engine*, review of, xx, 322.
- , —, *Outlines of Geology*, xxxiv, 183.
- , Report to the Regents of the University of New York, notice of, xviii, 385; xxii, 415; xxv, 258<sup>f</sup>; xxvii, 177; xxx, 389; xlix, 176.
- , H. E. Richter, *Caroli Linnæi Systema*, xlii, 375.
- , S. Robinson, *Catalogue of Minerals*, viii, 200; ix, 396.
- , Roemer and Schultes, *Syst. Veg.* announced, iv, 200.
- , S. Rogers, letters on the manufacture of iron, xlii, 380.
- , A. Russell, *Principles of Statistical Inquiry*, xxxix, 395.
- , N. Sargent and A. Halsey, *Magazine of Useful and Entertaining Knowledge*, xx, 412.
- , T. Say, *American Conchology*, notice of, xxi, 179.
- , D. F. L. von Schlechtendal, *Linnæa*, xxxix, 178; xl, 392.
- , E. F. von Schlotheim on petrifications, announcement of, iv, 31.
- , E. L. Schubarth, *Elemente der Technischen Chemie*, xxxiii, 204.
- , G. P. Scrope on Volcanoes, review of, xiii, 103.
- , C. U. Shepard, *Treatise on Mineralogy*, xxi, 389; xxii, 395; xxviii, 374; xxxv, 187; xlviii, 333, 346.

## WORKS.

- , T. Sherwin, *Treatise on Algebra*, xliii, 190.
- , R. Shortrede, *Logarithmic Tables*, xlvi, 208.
- , R. Sibbald, xxxvii, 138.
- , Siebold, *Flora Japonica*, xxxix, 175.
- , B. Silliman, *Chemistry*, notice of, xix, 343; xx, 96.
- , D. B. Smith, *Principles of Chemistry*, xlvii, 414.
- , J. Pye Smith, *Relation between the Holy Scriptures and some parts of Geological Science*, xli, 387.
- , Southwood Smith, *Treatise on Fevers*, notice of, xix, 363.
- , Spring, *Monographie de la Famille des Lycopodiées*, xlv, 196.
- , G. Spurzheim, xxiii, 406.
- , A. de St. Hilaire, *Leçons de Botanique*, xli, 371.
- , K. von Sternberg, *Flora of a Former World*, notice of, iv, 31; xxxvii, 127.
- , E. T. Steudel, *Nomenclator Botanicus*, xl, 174; xli, 373; xlii, 377.
- , —, Stevens, *Travels in Egypt, &c.*, xxxii, 398.
- , D. H. Storer and W. B. O. Peabody, *Reports on the Fishes, Reptiles and Birds of Massachusetts*, xxxviii, 379, 393.
- , William Swainson, *Zoological Illustrations*, iv, 200; xvi, 386.
- , —, *Zoological Miscellany*, iii, 392.
- , —, *Natural History and classification of Fishes, Amphibia and Reptiles*, xxxix, 389.
- , —, on the Monocardian animals, xxxix, 389.
- , A. R. Terry, *Travels in the Equatorial Regions of South America*, xxvii, 387.
- , L. J. Thenard, *Chemistry*, notice of, xx, 94.

## WORKS.

- , J. B. Thomson, *Elements of Geometry*, xlvi, 210.
- , T. Thomson, *Chemistry of Organic Bodies and Vegetables*, xxxvi, 202.
- , —, *First Principles of Chemistry*, notice of, x, 162.
- , —, on *Heat and Light*, notice of, xx, 93.
- , L. Tinelli, on the cultivation of the *Mulberry*, xxxii, 211.
- , J. Torrey, *Compendium of the Flora of the Northern and Middle States*, notice of, vii, 178; viii, 192; xii, 179.
- , — and A. Gray, *Flora of North America*, xxxv, 180; xxxix, 198; xli, 275; xlii, 377; xlv, 420.
- , J. Trimmer, *Practical Geology and Mineralogy*, xliii, 191.
- , E. Tuckerman, *Enumeratio Methodica Caricum, &c.*, xlv, 216.
- , E. Turner, *Elements of Chemistry*, notice of, xx, 88; xlv, 189.
- , W. Turton, xxxvii, 161.
- , A. Tweedie, *System of Practical Medicine*, xxxix, 398.
- , A. Moquin-Tandon, *Elémens de Tératologie Végétale*, xli, 374.
- , A. Ure, *Dictionary of Chemistry*, notice of, xx, 93.
- , D. d'Urville, *Flora of the Greek Archipelago, explored under*, ix, 208.
- , *Vestiges of the Natural History of Creation*, xlvi, 395; xlix, 191.
- , G. G. Walpers, *Repertorium Botanices Systematicæ*, xlvii, 200.
- , W. S. von Waltershausen, *Ætna and its Convulsions*, xlvii, 100.
- , N. B. Ward, on the growth of plants in closely glazed cases, xliii, 383.
- , J. W. Webster, *Manual of Chemistry*, xi, 377; xx, 89; xxxvi, 195; xxxviii, 329.

## WORKS.

- , J. W. Webster, on the *Azores*, announced, iv, 200; notice of, iv, 251.
- , N. Webster, *Dictionary of the English Language*, notice of, xv, 399.
- , G. White, *Natural History of Selborne*, xxxvii, 155.
- , Wikström, *Annual Report on Botany by the Swedish Academy*, xl, 393.
- , C. Wilkes, *Narrative of the U.S. Exploring Expedition*, xlvi, 211; xlix, 149.
- , E. Williams, *Comprehensive Modern Geography and History*, notice of, xxviii, 378.
- , A. Wilson, *American Ornithology*, notice of, xviii, 202.
- , *Theory of wine making*, notice of a treatise on, xi, 396.
- , N. Wiseman, *Lectures on the connection between Science and Revealed Religion*, xxxii, 209.
- , A. Wood, *Class Book of Botany*, xlix, 190.
- , G. B. Wood and F. Bache, *Dispensary of the United States*, notice of, xxiv, 151; xxxi, 406.
- , W. C. Woodbridge, *American Annals of Education and Instruction*, xix, 174.
- , —, *Universal Geography*, noticed, viii, 397.
- , W. H. Wright, *Treatise on Mortars*, xlix, 379.
- , *Young's Elements of Geometry*, xxv, 206.
- , F. Zantedeschi, *Della Elet-troptia, &c.*, xliii, 390.
- , J. G. Zuccarini, *Flora Japonica*, xxxix, 175.
- PERIODICAL.
- , *Annals and Magazine of Zoology, Botany and Geology*, xxxv, 194.
- , *Quarterly Journal of Agriculture and Science*, E. Emmons and A. J. Prime, xlvi, 394.

## WORKS, PERIODICAL.

- , The Southern Agriculturalist, notice of, xviii, 203; xxi, 182.
- , L'Asclépiade, notice of, viii, 388.
- , Forstner's Botanische Zeitung, xlvi, 200.
- , American Botanical Register, by W. Rich and J. A. Brereton, announced to commence, xx, 160.
- , Wm. J. Hooker's Journal of Botany, xxxix, 177; xl, 172; xlii, 185; xliii, 189, 385.
- , The Chemist, C. and J. Watt, xliii, 392.
- , Chemical Gazette, W. Francis and H. Croft, xliv, 191.
- , G. W. Featherstonhaugh's Journal, notice of, xx, 412.
- , Journal of the Franklin Institute, xx, 412.
- , The Geologist, C. Moxon, xliii, 392.
- , S. N. Dickinson's Mechanic's Magazine and Journal of Public Internal Improvements, notice of, xx, 160.
- , Journal Médical de la Gironde, viii, 388.
- , Medical Journal of South Carolina, commenced, xii, 382.
- , U. S. Medical and Surgical Journal, notice of, xxvii, 180.
- , Archives générales de Médecine, when begun, viii, 388.
- , Physical and Medical Journal of Cincinnati, commenced, xii, 382.
- , Microscopic Journal, xliii, 392.
- , Annales des Sciences Naturelles, noticed, viii, 387.
- , Bulletin des Sciences et de l'Industrie, noticed, viii, 386; ix, 205.
- , Archiv für Naturgeschichte, continued by Erichson, xlii, 187.
- , Journal of the Philadelphia College of Pharmacy, xxi, 173.
- , Boston Journal of Philosophy and the Arts, vii, 359.

## WORKS, PERIODICAL.

- , Physiology, Magendie's Quarterly Journal, notice of, v, 185.
- , Rafinesque's Friend of Mankind, a new journal, xx, 415.
- , Revue Encyclopédique, ii, 164; iii, 392; viii, 385; xviii, 184.
- , Thomson's Records of Science, xxviii, 365; xxxii, 212.
- , Sturgeon's Annals of Electricity and Magnetism and Chemistry, xxxii, 213.
- , West of England Journal of Science and Literature, xxviii, 365.
- , Western Minerva, or American Annals of Knowledge and Literature, a Quarterly Journal, Lexington, Ky., iii, 365.
- , Swainson's Zoological Miscellany, iii, 392.
- , Transactions or Proceedings of Societies, see *Academy, Society, Lyceum, &c.*
- 
- Wörthite, Hess, xxvi, 387.
- Woulfe's apparatus, a substitute for, R. Hare, with a plate, i, 410; xiii, 1.<sup>f</sup>
- Wounds dressed with cotton, xxi, 159.
- Wray, J., biographical sketch of, xxxvi, 223.
- Wright, B., on hydraulic limestone of New York, iii, 230.
- Wright, E., a theory of fluxions, xiv, 330.<sup>f</sup>
- , on the different views respecting the theory of fluxions, xvi, 53.
- , application of the fluxional ratio, and the coincidence of the several orders of fluxions with the binomial theorem, xxiv, 298<sup>f</sup>; xxv, 93.<sup>f</sup>
- , mathematical paper on surveying, xxii, 74.<sup>f</sup>
- Wright, R., meteorological observations in Columbia, 1820-1830, xxxvii, 1.
- Wright, W. H., Treatise on mortars, noticed, xlix, 379.
- Writing on a metallic surface, permanent after fusion, xxv, 197.

*Wyatt, T.*, Manual of Conchology; by, noticed, xxxv, 386.

*Wyman, J.*, on an anomalous substance resembling bone, xxxvi, 381.

—, on fossil bones from Georgia and Burmah, xxxvi, 385.

—, on a fœtal kiiten, xxxvi, 391.

—, recent tooth of an elephant from Singapore, xxxvi, 386.

—, on the skeleton of the sloth, xxxvi, 382.

—, dissection of mackerel shark, xxxviii, 197.

—, — of an electrical eel, xxxviii, 197.

—, description of a tooth of a mastodon, xxxix, 53.

—, on *Filaria* in the lungs of a sheep, xxxix, 183.

—, on the *Nantilus umbilicatus*, xxxix, 185.

—, on the *Otion Cuvieri*, xxxix, 182.

—, notice of the howling monkey, xl, 387.

—, blind fish from a cave in Kentucky, xlv, 94.

—, microscopic structure of the teeth of the *Lepidostei*, and their analogies with those of the *Labyrinthodonts*, xlv, 359.<sup>f</sup>

Wyoming, scenery of, iv, 4; xviii, 316.

—, coal regions of, *B. Silliman*, xviii, 308.<sup>f</sup>

—, forts, battle ground, xviii, 317.

—, history of, xviii, 387.

### X.

Xanthic oxide in guano, xlix, 200.

Xanthine, *Unger*, xlix, 391.

Xanthite, a new mineral, *W. W. Mather*, xviii, 359<sup>f</sup>, [*Idocrase*.]

—, formula from the analysis, *J. J. Berzelius*, xxvi, 388.

Xanthium maculatum, memoir on, *C. S. Rafinesque*, i, 151.

Xanthogen, discovery of, vii, 377.

*Xavier, F.*, death of, xxiv, 194.

Xyloidine, *H. Braconnot*, xxviii, 131.

### Y.

Yale College Observatory, latitude and longitude of, xxxiv, 309.

—, —, geological position of, vii, 20.

—, —, Report of the Faculty on a course of liberal education, xv, 297.

—, — Cabinet, presents to, xxvii, 381, 382.

—, — Library, donation to, xxvii, 184.

—, —, Trumbull Gallery of Paintings at, xxxix, 213.<sup>f</sup>

—, —, donation of shells to, xxxix, 195.

Yale Natural History Society, xxx, 187; xxxiv, 397.

Yard, English, as compared with the French metre, xxi, 382.

*Yarrell, W.*, notice of the British Fishes of, xxxvii, 167.

—, on *Osmerus Hebridicus*, xxxv, 312.

—, notice of, xxxvii, 167.

Yeast; mode of making, vii, 378; x, 387.

Yenite, in Connecticut, viii, 59.

—, in Rhode Island, vii, 251; viii, 231.

*Yelloly*, on an acoustic instrument, xxxv, 313.

Yellow copper ore, see *Copper, sulphuret of*.

— wood, iii, 44.

Yew tree, longevity of, xxix, 353; xxxi, 358.

—, —, —, *J. E. Bowman*, xxxi, 358.

Yorkshire Philosophical Society, xxi, 168.

—, Geology of, by *J. Phillips*, noticed, xxi, 1.

*Young, A.*, life and character of *N. Bowditch*, xxxv, 1.

*Young, J. R.*, Elements of Geometry, xxv, 206.

*Young, G.*, antiquity of organic remains, xxxv, 308.

- Young, T.*, memoir of, xxii, 232.  
*Young, Dr.*, cabinet of, at Edenville, N. Y., for sale, xxviii, 400; xxxvi, 393.  
 Yttero-cerite in Massachusetts, *E. Hitchcock*, xlv, 331; xlvii, 351, 353.  
 —, stated to occur in New Jersey, vi, 379.
- Z.**
- Zabians, remarks on the idolatry and philosophy of, *J. W. Draper*, xxviii, 201.  
*Zabriskie, J. B.*, experiments on the induction of metallic coils, xxxii, 308.<sup>f</sup>  
 —, model of an electro-magnetic engine, xxxii, 313.<sup>f</sup>  
 —, construction of galvanic magnets, xxxvi, 124.<sup>f</sup>  
 —, electro-magnetic rotations, xxxvi, 129.<sup>f</sup>  
 Zacatecas, mines of, xxiv, 230.  
*Zach, Baron de*, some account of, xvi, 209; xxiv, 194.  
 Zaffre, new mode of preparing, xxviii, 147.  
*Zamia*, fossil fruits of, *G. A. Mantell*, xlv, 401.  
 —, *sussexiensis*, xlv, 401.  
 Zanesville Atheneum, cabinet of, xxv, 229; xxxi, 79.  
 —, coal formations, iii, 5; xxv, 228.  
 —, remarks on, xxv, 228.  
*Zantedeschi, F.*, memoirs of, on the electrotype, noticed, xliii, 390.  
 Zeolite, recent formation of, xx, 382.  
 Zeolites, order of superposition in amygdaloidal cavities, xlix, 59.  
 —, not usually formed at the formation of the containing rock, *J. D. Dana*, xlv, 116.  
 Zeolitic minerals, origin of, *J. D. Dana*, xlix, 52.  
 — —, of Bergen Hill, N. J., xl, 69; xlv, 54.<sup>f</sup>  
 Zeuglodon, *R. Owen*, xxxvii, 231.  
 —, not a reptile, *R. Owen*, xxxix, 204.  
 —, geognostic position of, xxxviii, 381.  
 —, skeleton of, *S. B. Buckley*, xlv, 409.  
 —, skeleton of, obtained by *A. C. Koch*, xlix, 218.  
 Zeus crinitus, *S. L. Mitchill*, xi, 144.<sup>f</sup>  
 Zinc, action of dilute sulphuric acid on, xix, 372.  
 — blende, see *Blende*.  
 —, equivalent of, xlviii, 187.  
 —, separation of, from manganese, xlvii, 194; xlviii, 187.  
 —, as a covering for buildings, *A. Caswell*, xxxi, 248.  
 —, *ibid*, *L. D. Gale*, xxxii, 315.  
 —, ore of, containing iodine, xvi, 389.  
 —, biseleniuret of, xviii, 391.  
 — and ammonia, carbonate of, xlix, 200.  
 — mines of Franklin, N. Jersey, *F. Alger*, xlviii, 252.<sup>f</sup>  
 —, carbonate of, or calamine in Missouri, xii, 376.  
 —, —, in Michigan, xli, 185.  
 —, silicate of, or electric calamine in Michigan, xli, 185.  
 —, —, in Virginia, xliii, 169.  
 — ores of New Jersey, analyses of, ii, 319.  
 — — —, (Franklinite) reduction of, v, 242.  
 —, red oxide of, v, 242.  
 —, — —, analysis of, *A. Hayes*, xlviii, 260.  
 —, oxide of, or Ancramite, *J. Torrey*, v, 235, 399.  
 —, —, *ibid*, identical with cadmia and of furnace origin, vi, 180.  
 —, —, at Ancram, N. Y., *J. Torrey*, v, 235.  
 —, sulphuret of, see *Blende*.  
 Zipaquera in New Grenada, salt works of, xxxii, 89.  
 Zircon, fusion of, ii, 292.  
 —, from Vermont, *C. U. Shepard*, xvii, 358.<sup>f</sup>

- Zircon crystals, tessellated, in New York, xlv, 36.<sup>f</sup>
- , of Buncombe Co., North Carolina, *C. U. Shepard*, xiii, 392.<sup>f</sup>
- , in Connecticut, vi, 220.
- , in Maine, xviii, 297.
- , in New York, v, 30; ix, 41; xvii, 196; xxi, 325; xlv, 36.<sup>f</sup>
- , in North Carolina, iii, 229; iv, 192; v, 271, 401; xiii, 392.<sup>f</sup>
- , in Pennsylvania, viii, 239; ix, 45; x, 219, 221; xiv, 5, 13, 17.
- , in Vermont, xvii, 358.<sup>f</sup>
- Zirconium, how obtained, ix, 377.
- Zizia pinnatifida, xlv, 175.
- Zodiac of Denderah, removed to France, v, 191; vi, 200.
- Zodiacal light, (?) remarks on, xv, 62<sup>f</sup>, 364.
- Zodiacal light, observations on, *A. D. Bache*, xxvii, 335.
- — — — —, *D. Olmsted*, xxvii, 416; xxix, 378; xxxiii, 390.
- — — — —, Aug. 1840, *E. C. Herrick*, xxxix, 331;—Nov. 1842, xlv, 209.
- — — — —, observations on the cause of, xlii, 395.
- Zoisite, in Connecticut, ii, 240; vi, 223; xii, 161.
- , in Massachusetts, x, 18; xiv, 216.
- , in New Hampshire, viii, 235.
- , in Pennsylvania, xiv, 9, 17.
- , in Rhode Island, viii, 231.
- , in Vermont, iv, 276; vi, 223.
- Zoological nomenclature, notice of the Report of the British Association on, and of the Nomenclator Zoologicus of L. Agassiz, by *A. A. Gould*, xlv, 1, 11.
- — — — —, remarks on, *S. S. Haldeman*, xlv, 18.
- — — — —, notices, on the Catskill Mountains, *J. Pierce*, vi, 86.
- — — — —, weather glass, xvii, 187.
- — — — —, writings of *C. S. Rafinesque*, notice of, *S. S. Haldeman*, xlii, 280.
- ZOOLOGY—*Mammalia*.
- Mammalia, distinctions of under jaws of, from those of Saurians, xxxvii, 229.
- , fossil, in Great Britain, xlvii, 186.
- , — — — — vertebrated animals of the crag of Norfolk and Suffolk, xxxi, 339.
- , North American, *J. Richardson* on, xxxi, 343, 356, 376.
- of New York, number of, *J. E. DeKay*, xlv, 398.
- and birds, in the Fulton market, N. Y., *C. Fox*, xxix, 293.
- of Connecticut, catalogue of, *J. H. Linsley*, xliii, 345.
- , about Richmond, Indiana, catalogue of, with notes, *J. T. Plummer*, xlv, 244.
- , fossil, from Brunswick Canal, Georgia, *R. Harlan*, xliii, 141.<sup>f</sup>
- , — — — —, at Big Bone Lick, xviii, 139; xx, 370.
- , — — — — remains in marl pits, Craven Co., N. C., *H. B. Croom*, xxvii, 168.
- Arvicola ferrugineus, *R. Harlan*, x, 285.
- riparius, note on, *J. T. Plummer*, xlv, 247.
- \*Basilosaurus of Harlan, xxvii, 354; xxxvii, 231.
- \* — — — —, named Zygodon, *R. Harlan*, xli, 179. See beyond, *Zeuglodon*.
- Bradypus tridactylus, remarks on a skeleton of, *J. Wyman*, xxxvi, 382.
- \*Chæropotamus, xxxvii, 231.
- Crocodile, habits of, xxi, 163.
- \*Dicobone, xxxvii, 232.
- \*Dinotherium, *R. Harlan*, xli, 178.

\* Fossil species are indicated by an Asterisk.



ZOOLOGY—*Mammalia*.

- Dipodomys Phillipsii, or Gerboa rat, from Mexico, *J. E. Gray*, xlii, 334.
- Dogs, anecdote of, xlv, 243.
- \*Dorudon, xlix, 216.
- \*Elephant of Siberia, xxvii, 353.
- \*—, fossil, Ohio, Jackson Co., xxxiv, 358, 362.<sup>f</sup>
- \*—, remains of, near Bloomfield, Ohio, xxv, 256.
- \*— bones on the Ironduquot creek, town of Perinton, N. Y., xxxii, 377.
- \*— tooth, found near the shore of Lake Erie, xiv, 31.
- \*— bones and mylodon (?), from Oregon, *H. C. Perkins*, xlii, 136.<sup>f</sup>
- \*— bones (of the mammoth) from near Behring's Straits, xvi, 382.
- \*Elk of Ireland, iv, 246.
- \*— ? bones in North Carolina, xxvii, 170.
- Eupleres, a new genus, from Madagascar, xxxi, 192.
- Felis borealis, taken in Connecticut, xxxvii, 194.
- \*Glyptodon, xxxvii, 232.
- Haliobærus griseus, a species of seal, xxxi, 358.
- Hippopotamus, new, *S. G. Morton*, xlvii, 406.<sup>f</sup>
- Horse, anecdote of, xlv, 243.
- Kangaroo, six new species of, from Australia, *Gould*, xl, 217.
- Macropus frenatus, xl, 217, 218.
- lateralis, xl, 217, 218.
- lunatus, xl, 217, 218.
- psilopus, xl, 218.
- robustus, xl, 217.
- unguifer, xl, 217, 218.
- \*Mastodon, notice of the tooth of, *J. Wyman*, xxxix, 53.
- \*—, on the dental system of, xl, 377.
- \*—, age of, xxvii, 352; xxx, 394.

ZOOLOGY—*Mammalia*.

- \*Mastodon, Bigbone Lick and elsewhere, geological position of, *C. Lyell*, xlvi, 320.
- \*—, skeleton found in excavating the Morris Canal, xiv, 188.
- \*—, — found on the Delaware and Hudson Canal, xiv, 31.
- \*—, —, Genesee Valley Canal, New York, xxxiii, 201.
- \*—, —, Crawford County, Ohio, *J. W. Foster*, xxxvi, 189.<sup>f</sup>
- \*—, —, Gasconade County, Missouri, xxxvi, 199.
- \*—, —, obtained from near St. Louis, *A. C. Koch*, xl, 56.
- \*— remains from near Cheshire, Ct., xiv, 187.
- \*— —, Berlin, Ct., xxvii, 165.
- \*— — in New York, near Rochester, xix, 358.<sup>f</sup>
- \*— — —, Orange Co., xxxi, 171.
- \*— — —, Ontario Co., xii, 380.
- \*— — in New Jersey, *J. Van Rensselaer*, xi, 246.
- \*— — in Ohio, ii, 245<sup>f</sup>, xxv, 256; xxx, 394; xxxi, 56; xxxvi, 189.<sup>f</sup>
- \*— —, near Nashville, Tenn., xxvii, 354.
- \*— —, from the river St. Francis, west of the Mississippi, i, 239.
- \*— — in Missouri, iii, 22; xxxvi, 199; xxxvii, 191.
- \*— — in Louisiana, *W. M. Carpenter*, xxxiv, 201.
- \*— — in North Carolina, xxvii, 170.
- \*— — of Wythe Co., Va., xxvii, 352.
- \*— longirostris in Maryland, xliii, 143.
- \*Megalonyx, localities of, in U. States, xxvii, 353; xlv, 209.

ZOOLOGY—*Mammalia.*

- \**Megalonyx*, remarks on, *R. Owen*, xlv, 342.  
 \**Megatherium* in New Jersey, *R. Harlan*, xiv, 187.  
 \* — in Georgia, xxvii, 353.  
 \* — of Patagonia, xxxiii, 105.  
 \* —, remains of, *R. Haymond*, xlvi, 294.  
 \* —, had not a bony armor, xxxvii, 371.  
 Mice, habit of, xlvi, 242.  
 Mole, on the natural history of, xvii, 386; xxviii, 168.  
*Mus bursarius*, *S. L. Mitchell*, iv, 183.  
 — *palustris*, a new species, *R. Harlan*, xxxi, 385.  
*Mustela pusilla*, *J. T. Plummer*, xlvi, 241.  
 — *vulpina*, description of, *C. S. Rafinesque*, i, 82.  
 \**Myiodon*, *R. Harlan*, xliii, 141; xlv, 209.  
 \* — in Georgia, xlvii, 258.  
 \* — ? in Oregon, xlii, 136.<sup>f</sup>  
 \* —, *R. Owen*, xlv, 341.  
 \**Opossum* in the Stonesfield slate, xxvii, 412; xxxvii, 228.  
 \**Orycterotherium*, *R. Harlan*, xlii, 392; xlv, 69<sup>f</sup>; xlv, 210.  
 \* — *missouriense*, description of, xlv, 69<sup>f</sup>, 344; xlv, 210.  
 \* — *oregonense*, *ibid*, xlii, 136<sup>f</sup>; xlv, 79.  
 \**Ovis*, bones of, in Ohio, xxxi, 80, 82.<sup>f</sup>  
 \**Phascalotherium*, *R. Owen*, xxxvii, 230.  
*Phocena globiceps* on the American coast, xxiii, 301.<sup>f</sup>  
 Pig, anecdote of, xlvi, 243.  
 \**Pleurodon*, remarks on, *R. Owen*, xlv, 342.  
 \**Quadrumanous* animal of the Sub-Himalayan range, xxxiii, 211.  
*Sciurus*, monograph of the genus, *J. Bachman*, xxxvii, 290.

ZOOLOGY—*Mammalia.*

- Sciurus aureogaster*, xxxvii, 297.  
 — *capistratus*, xxxvii, 291.  
 — *carolinensis*, xxxvii, 304.  
 — *cinereus*, xxxvii, 297.  
 — *Collicei*, xxxvii, 307.  
 — *leucotis*, xxxvii, 298.  
 — *magnicaudatus*, xxxvii, 296.  
 — *niger*, xxxvii, 307.  
 — *nigrescens*, xxxvii, 306.  
 — *sub-auratus*, xxxvii, 295.  
 — *texianus*, xxxvii, 295.  
*Simia seniculus*, or howling monkey, some account of, xl, 387.  
 \**Sivatherium*, xxxiii, 104.  
*Sorex*, note on two, *J. H. Linsley*, xxxix, 388.  
 — *brevicaudatus*, *J. T. Plummer*, xlvi, 237.  
 Squirrels containing larvæ of *Estrus*, xlvi, 244.  
*Stenorhynchus leptonyx*, a seal, remarks on, xl, 390.  
 \**Sus americana*, in Georgia, *R. Harlan*, xliii, 143.<sup>f</sup>  
 \**Tapir*, at Darmstadt, xxvi, 218.  
 \* —, tooth of, in Louisiana, *W. C. Carpenter*, xlii, 390.<sup>f</sup>  
 \**Tetracaulodon*, a bad genus, remarks on, xliii, 142.  
 \* —, *R. Harlan*, xlv, 210.  
 \* —, notice of, *R. Owen*, xlv, 345.  
 \**Thylacotherium*, xxxvii, 228.  
*Troglodytes niger*, xlvii, 411.  
*Unicorn*, on the existence of, xxi, 123.  
*Vespertilio pruinosis*, Hoary Bat, met with in Connecticut, xxxvii, 195.  
 \**Whale*, xvii, 289.  
 —, suspension of respiration in, xxix, 348.  
 \**Zeuglodon* of *Owen*, xxxvii, 231.  
 \* —, not a reptile, *R. Owen*, xxxix, 204.  
 \* —, geognostic, position of, xxxviii, 381.  
 \* —, skeleton of, *S. B. Buckley*, xlv, 409.

ZOOLOGY—*Mammalia*.

Zeuglodon of Alabama, obtained by A. C. Koch, xlix, 218.

ORNITHOLOGY—*Birds*.

Birds of Corfu, the Ionian Islands and Crete, number of, *H. M. Drummond*, xlvii, 186.

\*—, fossil, of Tilgate Forest, xxix, 362.

\*—, gigantic Struthoid from New Zealand, xlv, 417; xlv, 184; xlvi, 194; xlix, 219, 403.

— sculptured in an ancient Egyptian building, *Bonomi*, xlix, 403.

— of North America, on the migration of, *J. Bachman*, xxx, 81.

—, American, miscellaneous notices on, *J. P. Kirtland*, xl, 19.

— of Connecticut, catalogue of, with notes, *J. H. Linsley*, xlv, 249.

—, of some North American, notes on, *C. Fox*, xxix, 291.

— near Carlisle, Penn., list of, *W. M. and S. F. Baird*, xlv, 261.

*Corvus canadensis*, *C. Fox*, xxix, 291.

*Cygnus americanus*, or wild swan, a new species, *J. T. Sharpless*, xxii, 83.<sup>f</sup>

\**Dinornis*, *R. Owen*, xlv, 185; xlvi, 194.

\*—, bearing of, on the subject of fossil footprints, xlvi, 199.

\*—, notice of, *G. A. Mantell*, xlv, 184.

*Falco leucocephalus*, iv, 89.

*Fringilla tristis*, blue yellow bird, iv, 310.

*Hirundo fulva*, habits of, *T. M. Brewer*, xxxviii, 392.

*Phalaropus hyperborea*, *C. Fox*, xxix, 291.

ZOOLOGY—*Birds*.

*Ptilonorhynchus holosericeus*, habits of, *J. Gould*, xl, 218.

*Scolopax pygmæa*, *C. Fox*, xxix, 291.

Sparrows, number of caterpillars taken by, ix, 200.

Swallows, barn, notice of, *S. Woodruff*, xix, 172; *J. H. Steel*, xix, 356.

Turkey, wild, in the Kenawha valley, xxix, 85.

*Tyrannula flaviventris* and *T. minima*, *W. M. and S. F. Baird*, xlv, 273.

HERPETOLOGY—*Reptiles*.

Reptiles, notice of *R. Owen's* report on fossil, xlii, 328.

—, notice of *T. Hawkins's* work on fossil, xxvii, 413.

—, on the geological age of fossil, *G. A. Mantell*, xxi, 359.

—, American, *A. Sager*, xxxvi, 320.<sup>f</sup>

—, new species of, of North America, *S. L. Mitchell*, vii, 63.<sup>f</sup>

—, notes on, *Thomas Say*, i, 256.

—, on certain North American, *D. H. Barnes*, xi, 268; xiii, 66.

—, fish and lizards, appearance of, under extraordinary circumstances, *J. E. Muse*, xvi, 41.

— of Connecticut, catalogue of, *J. H. Linsley*, xlv, 37.

Agamas, horned, *R. Harlan*, xxxi, 383.

Alligator from Manilla, capture of, with a sketch of the skull, xxxviii, 313.<sup>f</sup>

*Amphiuma*, the genus, xi, 279.

— *tridactyli*, xiii, 69.

\**Basilosaurus*, *R. Harlan*, xxvii, 354; xli, 179—see farther preceding page, *Zeuglodon*.

ZOOLOGY—*Reptiles.*

Batrachian reptiles, new, *R. Harlan*, x, 53.

— —, arrangement of, *D. H. Barnes*, xi, 268.

Bufo, description of genus, xi, 270.

— vulgaris, notice of, xxxix, 188.

— cornuta, i, 265.

Chameleon, change of color, xxviii, 79.

\**Chelonia Couperi*, Georgia, *R. Harlan*, xliii, 144.<sup>f</sup>

\**Chirotherium*, footprints of, in sandstone, Storeton quarries, England, xxxvi, 394; xxxvii, 223.

\* —, in new red sandstone of Cheshire, xxxvi, 397.

*Coluber fulvius*, i, 262.

— *getulus*, i, 260.

— *heterodon*, i, 261.

— *punctatus*, i, 261.

— *trivittatus*, i, 260.

Crocodile, habits of, xxi, 163.

\* —, remains of, in New Jersey and Delaware, xvii, 289; xxvii, 353.

\**Crocodylus clavirostris*, in New Jersey, *S. G. Morton*, xlvi, 265.<sup>f</sup>

*Crotalus durissus*, or diamond rattlesnake, notice of, *J. Peck*, xxiv, 176.

— *adamanteus*, i, 263.

— *miliareus*, i, 263.

*Emys orionensis*, *R. Harlan*, xxxi, 382.<sup>f</sup>

\**Gavial* of Caen, analysis of the scales of, *A. Connell*, xxxiv, 201.

\**Geosaurus*, xviii, 246.

*Hyla*, description of genus, xi, 273.

— *crucialis*, x, 64.

\**Ichthyosaurus* remains in United States, xxvii, 353.

\* —, largest, found by Miss Mary Anning, xxviii, 369.

\**Iguanodon*, bones of, in Mantell's museum, xxiii, 165.

ZOOLOGY—*Reptiles.*

\**Iguanodon*, discovery of, *G. A. Mantell*, xxvii, 355.<sup>f</sup>

\* —, Maidstone, notice of, xxvii, 420.

*Menopoma*, description of genus, xi, 278.

\**Mosasaurus*, in United States, xvii, 289; xviii, 246; xxvii, 353.

*Natrix torquata* or common snake of Great Britain, incident regarding, xxxix, 186.

*Ophisaurus ventralis*, i, 262.

*Pipa*, description of genus, xi, 271.

\**Plesiosaurus*, xvii, 289.

\* —, from North of Whitby, xxix, 364.

*Proteus*, of the North American lakes, *S. L. Mitchill*, iv, 181; vii, 68.<sup>f</sup>

—, generic character, vii, 67; xi, 284.

—, species of, vii, 68.<sup>f</sup>

— *anguinus*, xi, 284.

— *lateralis*, xi, 285.

— *mexicanus*, xi, 293.

— *tetradactylus*, xi, 291.

*Protonopsis horrida*, xiii, 69.

*Rana*, description of genus, xi, 273.

— *clamata*, x, 63.

— *cornuta*, xi, 271.

— *flaviviridis*, x, 58.

— *halecina*, x, 61.

— *marina*, xi, 271.

— *margaritifera*, xi, 271.

— *melanota*, x, 64.

— *ocellata*, x, 63.

— *palustris*, x, 59.

— *pipiens*, x, 62.

— *scapularis*, x, 59.

— *sylvatica*, x, 58.

— *temporaria*, xxxix, 188.

— *utricularis*, x, 60.

*Salamandra*, description of genus, xi, 276.

— *agilis*, xxxvi, 322.

— *alleganiensis*, i, 263.

— *flurida*, xxxvi, 323.

— *flavissima*, new species, x, 286.

ZOOLOGY—*Reptiles.*

- Salamandra punctata*, i, 264.  
 — subviolacea, i, 264.  
*Saurocephalus*, see beyond, under *Ichthyology*.  
 \**Saurodon leanus*, xviii, 246.  
*Scincus lateralis*, xxxvi, 323.<sup>f</sup>  
*Scytalus cupreus*, or copperhead snake, *C. S. Rafinesque*, i, 84.  
 — cupreus, i, 256.  
*Siren*, characters of the genus, xi, 281.  
 — lacertina, xi, 281; xiii, 69.  
 — striata, xi, 281.  
*Snakes*, remarks on, *S. Woodruff*, xxix, 304.  
 —, two headed, always monsters, facts concerning, *S. L. Mitchill*, x, 48.<sup>f</sup>  
 \**Tortoise*, xvii, 290.  
 —, a new freshwater, *R. Harlan*, xxxi, 382.<sup>f</sup>  
*Triton cristatus*, notice of, xxxix, 189.  
 \**Turtle*, fossil, in the chalk of Kent, xli, 205.

ICHTHYOLOGY—*Fishes.*

- Fishes*, *L. Agassiz's* subdivisions, xxx, 33.  
 —, notice of *Yarrel's* British, xxxvii, 167.  
 —, transferring of salt water species to fresh waters, remarks on, xxxix, 378.  
 —, — from one pond to another, xxxvi, 342; xl, 405.  
 —, limits of occurrence in high latitudes, vi, 383.  
 — of Massachusetts, critical review of, *J. V. C. Smith* on, *D. H. Storer*, xxxvi, 337.  
 — of Connecticut, catalogue of, *J. H. Linsley*, xlvii, 55.  
 — of New York, *DeKay's* Report on, xlv, 275.  
*Fish*, double, *S. Churchill*, xxvi, 116.<sup>f</sup>  
 —, fossil, of the United States, identified by *L. Agassiz*, from fossil teeth, xxviii, 277.

ZOOLOGY—*Fishes.*

- Fishes*, fossil, notices of several American species, *W. C. Redfield* and *J. H. Redfield*, xli, 24.  
 —, —, in the Connecticut valley, *E. Hitchcock*, vi, 76.<sup>f</sup>  
 —, —, in Connecticut, xxvii, 354; xxxiv, 198; xxxvi, 187; xli, 24, 164.  
 —, —, in Massachusetts, iii, 222, 365; xli, 24; xliii, 172.  
 —, —, in New Jersey, *L. D. Gale*, xxxv, 192.  
 —, —, —, *W. C. Redfield*, xxxvi, 186; xli, 24, 164; xlv, 134; xlv, 314.  
 —, —, in Pennsylvania, xlii, 233.  
 —, —, in Virginia, *W. C. Redfield*, xxxiv, 201; xli, 165.

- Alosa tyrannus*, xlv, 281.  
*Amblyopsis*, blind fish from a cave in Kentucky, *J. Wyman*, xlv, 94.  
 \**Ameibodon*, xxxvii, 233.  
*Amia occidentalis*, xlv, 281.  
*Anguilla tenuirostris*, of *DeKay*, the *Muræna bostoniensis* of *Lesueur*, xlv, 282.  
*Baione fontinalis* of *DeKay*, a species of *Salmo*, xlv, 280.  
*Boleosoma tessellatum* of *DeKay* the *Etheostoma Olmstedii* of *Storer*, xlv, 276.  
*Brosmius vulgaris*, xlv, 281.  
 \**Catopterus*, on the genus, *J. H. Redfield*, xli, 26.  
 \* — anguilliformis, xli, 27.  
 \* — gracilis, xli, 27.  
 \* — macrurus, xli, 27.  
 \* — parvulus, xli, 28.  
*Clupea elongata*, xlv, 281.  
*Ctenolabrus uninotatus*, xlv, 279.  
*Cyprinidæ* of India, notice of, *D. H. Storer*, xli, 92.  
*Dory*, new species of, *S. L. Mitchill*, xi, 144.<sup>f</sup>  
 \**Edaphodon*, xxxvii, 233.  
*Exoglossum*, a new genus of fish, *C. S. Rafinesque*, i, 155.  
 — annulatum, i, 156.

ZOOLOGY—*Fishes.*

- Exoglossum vittatum, i, 156.  
 Fistularia tabacaria, xlv, 280.  
 Gasterosteus quadracus, xlv, 277.  
 Gunnellus mucronatus, xlv, 278.  
 Gymnotus, remarks on, xl, 386.  
 Halibut and streaked bass, dissection of the eye of, *W. C. Wallace*, xxvi, 393<sup>f</sup>, 394.  
 \*Holoptychus nobilissimus, Blossburg, Pa., xlii, 233.  
 Labeo gibbosus identical with *Catostomus tuberculatus*, xlv, 279.  
 Lactophrys camelinus, xlv, 283.  
 \*Lamna, in a crag pit in Suffolk, England, xxxviii, 124.  
 Lepidostei, microscopic structure of the teeth of, *J. Wyman*, xlv, 359.<sup>f</sup>  
 Lophius americanus, xlv, 278.  
 Lota inornata of DeKay, the *L. brosmiana* of Storer, xlv, 281.  
 Lumpus anglorum, xlv, 282.  
 \*Megalichthys, &c., Manchester, England, xxxviii, 125.  
 Ophiognathus, a genus of fishes, identical with the *Saccopharynx* of Mitchill, xv, 358.  
 Osmerus viridescens, xlv, 280.  
 Paddle fish of the Ohio, notice of, xii, 201.<sup>f</sup>  
 \*Palæoniscus Agassizii, xli, 26.  
 \* — fultus, xli, 25.  
 \* — latus, xli, 25.  
 \* — macropterus, xli, 25.  
 \* — ovatus, xli, 26.  
 \*Passalodon, xxxvii, 233.  
 Perca nobilis, dissection of the eye of, *W. C. Wallace*, xxvi, 394; xxvii, 216.<sup>f</sup>  
 Percinæ, analogies of, with the Serraninæ, xxxix, 389.  
 Pileoma, genus of fish, by DeKay, identity of, with the *Etheostoma* of Rafinesque, xlv, 276.  
 Polyodon, of the Ohio, xii, 201.<sup>f</sup>  
 Raja erinaceus, *S. L. Mitchill*, ix, 290.<sup>f</sup>  
 Rhombus triacanthus, xlv, 278.  
 Salmo, remarks on the genus, *L. Agassiz*, xxviii, 76.

ZOOLOGY—*Fishes.*

- \*Saurocephalus, of *R. Harlan*, xxvii, 353.  
 \* —, a fish, *R. Owen*, xxxix, 203.  
 \*Shark, xvii, 289.  
 \*Fossil shark's teeth of New Jersey, xxviii, 378.  
 Spinax acanthias, xlv, 283.  
 Squalus, remarks on some species of, *J. E. DeKay*, xv, 359.  
 Stilbe chrysoleucus of DeKay, the *Leuciscus chrysoleucus* of Storer, xlv, 279.  
 Sturgeon, spoonbill, of the Ohio, notice of, xii, 201.<sup>f</sup>  
 Syngnathus fasciatus of DeKay, the *S. Peckianus* of Storer, xlv, 283.  
 — viridescens of DeKay, the *S. fuscus* of Storer, xlv, 283.  
 Torpedo, new species, *D. H. Storer*, xlv, 165.<sup>f</sup>  
 Uranidea quiescens of DeKay, the *Cottus viscosus* of Haldeman, xlv, 277.  
 Zeus crenatus, description of, *S. L. Mitchill*, xi, 144.<sup>f</sup>

## INSECTS and ANNELIDS.

- Ægeria tricineta*, xxxvi, 310.  
 — caudata, xxxvi, 311.  
 — cucurbitæ, xxxvi, 310.  
 — exitiosa, xxxvi, 312.  
 — fulvipes, xxxvi, 312.  
 — pyri, xxxvi, 313.  
 — scitula, xxxvi, 313.  
 — syringæ, xxxvi, 311.  
 — tipuliformis, xxxvi, 312.  
*Alypia octomaculata*, xxxvi, 314.  
 Annelides, slates of Waterville, Maine, xli, 163.  
 Butterflies, emigration of, xiv, 387.  
 Calandra palmarum, or palm weevil, notice of, xl, 387.  
 Caterpillars, emigration of a colony of, *J. Skene*, ix, 284.<sup>f</sup>  
 Cecidomyia destructor, notice of, *Miss M. H. Morris*, xl, 381.  
 —, notice of, with its parasites, *E. C. Herrick*, xli, 153.

ZOOLOGY—*Insects and Annelids.*

- Ceratonia quadricornis, xxxvi, 293.  
 Chærocampa chærilus, xxxvi, 302.  
 — pampinatrix, xxxvi, 301.  
 — tersa, xxxvi, 303.  
 — versicolor, xxxvi, 303.  
 Chrysomela vitivora, [*Haltica chalybea*] some account of, *D. Thomas*, xxvi, 113.<sup>f</sup>  
 —, remarks on, *E. C. Herrick*, xxvii, 420.  
 Cicada septendecim, on the habits of, xiii, 224.  
 — —, notices and observations on, *S. P. Hildreth*, xviii, 47.<sup>f</sup>  
 — —, remarks on, *D. Thomas*, xxi, 188.  
 Cychrus Andrewsii, xxxvi, 391.  
 — angulatus, xxxvi, 392.  
 — cristatus, xxxvi, 392.  
 — Leonardii, xxxvi, 392.  
 — tuberculatus, xxxvi, 392.  
 Deilephela lineata, xxxvi, 304.  
 — Chamænerii, xxxvi, 305.  
 Furia infernalis, notice of, xiii, 396.  
 Geometra vernata, or elm tree moth, parasite of the eggs of, *E. C. Herrick*, xxxviii, 385; xl, 211.  
 Glaucopsis epimenis, xxxvi, 319.  
 — ipomææ, xxxvi, 316.  
 — Latreillana, xxxvi, 319.  
 — omphale, xxxvi, 317.  
 — pholus, xxxvi, 318.  
 — semidiaphana, xxxvi, 318.  
 Goliathus magnus, remarks on, xxxiv, 27.  
 Melolontha or May bug, notice of, *J. Cist*, viii, 269.<sup>f</sup>  
 Phalæna antiqua, and some species of *Papilio*, *Miss D. L. Dix*, xix, 62, 63.  
 — devastator, or cutworm, *J. P. Brace*, i, 154.  
 Philampelus achemon, xxxvi, 300.  
 — satellitia, xxxvi, 299.  
 — vitis, xxxvi, 299.

ZOOLOGY—*Insects and Annelids.*

- Platygaster, a species of, parasitic on the eggs of the elm tree moth, xxxviii, 385; xl, 211.  
 Procris Americana, xxxvi, 315.  
 Pterogon inscriptum, xxxvi, 306.  
 Sesia diffinis, xxxvi, 308.  
 — pelagusus, xxxvi, 308.  
 Smerinthus astylus, xxxvi, 290.  
 — excæcata, xxxvi, 290.  
 — geminata, xxxvi, 291.  
 — Juglandis, xxxvi, 292.  
 — modesta, xxxvi, 292.  
 — myops, xxxvi, 291.  
 Sphinx, American species of, *T. W. Harris*, xxxvi, 282.  
 — carolina, xxxvi, 294.  
 — cinerea, xxxvi, 295.  
 — cingulata, xxxvi, 293.  
 — coniferarum, xxxvi, 297.  
 — drupiferarum, xxxvi, 294.  
 — ello, xxxvi, 297.  
 — gordius, xxxvi, 295.  
 — hylæus, xxxvi, 296.  
 — kalmiæ, xxxvi, 295.  
 — plebeia, xxxvi, 296.  
 — sordida, xxxvi, 296.  
 Thyreus Abbottii, xxxvi, 307.  
 — lugubris, xxxvi, 306.  
 — nesusus, xxxvi, 308.  
 Thyris maculata, xxxvi, 313.  
 Trochilium denudatum, xxxvi, 310.  
 — marginatum, xxxvi, 309.  
 — tibiale, xxxvi, 309.  
 Urocerus, insect, found in the wood of a table, *J. Foggo*, ix, 288.<sup>f</sup>  
 —, remarks in reply, x, 65.
- ARACHNIDA—*Spiders.*
- Spiders and spider-webs, observations of *J. Edwards* on, xxi, 109.<sup>f</sup>  
 —, miscellaneous notices concerning, xxi, 116.  
 —, North American, *N. M. Hentz*, xxi, 99.<sup>f</sup>  
 — of the United States, list of species described by *N. M. Hentz*, xlvi, 411.

ZOOLOGY—*Spiders.*

- Acarus Crossii, xxxii, 374<sup>f</sup>; xxxv, 125<sup>f</sup>; xliii, 395; xlix, 227.
- Aranea aculeata, notice of, *Miss D. L. Dix*, xix, 61.<sup>f</sup>
- Agelena, characters of genus, xxi, 103.<sup>f</sup>
- Attus, characters of genus, xxi, 107.<sup>f</sup>
- Clubiona, characters of genus, xxi, 102.
- Dolomedes, characters of genus, xxi, 106.<sup>f</sup>
- Dysdera, characters of genus, xxi, 101.<sup>f</sup>
- Epeira, characters of genus, xxi, 104.<sup>f</sup>
- Epiblemum, characters of genus, xxi, 108.<sup>f</sup>
- Filistata, characters of genus, xxi, 101.<sup>f</sup>
- Gossamer spider, genus, xvi, 399.
- Herpyllus, characters of genus, xxi, 102.<sup>f</sup>
- Hydrachna formosa, xxx, 354.<sup>f</sup>  
— pyriformis, xxx, 358.<sup>f</sup>
- Linyphia, characters of genus, xxi, 104.<sup>f</sup>
- Lycosa, characters of genus, xxi, 106.
- Mimetus, characters of genus, xxi, 104.<sup>f</sup>
- Oletera, genus, characters of, xxi, 100.<sup>f</sup>
- Pholcus, characters of genus, xxi, 103.<sup>f</sup>
- Segestria, characters of genus, xxi, 101.<sup>f</sup>
- Spermophora, a new subgenus of spiders, *N. M. Hentz*, xli, 116.<sup>f</sup>
- Sphasus, characters of genus, xxi, 105.<sup>f</sup>
- Tegenaria, characters of genus, xxi, 102.<sup>f</sup>
- Tetragnatha, characters of genus, xxi, 104.
- Theridium, characters of genus, xxi, 103.<sup>f</sup>
- Thomisus, characters of genus, xxi, 105.<sup>f</sup>

ZOOLOGY—*Crustacea.*

## CRUSTACEA.

- Anatifa, metamorphosis of, and relation to Crustacea, *J. D. Dana*, xlv, 335.
- Argulus catostomi, *J. D. Dana* and *E. C. Herrick*, xxx, 388; xxxi, 297.<sup>f</sup>
- , new species, *T. W. Harris*, xxxvi, 393.
- Artemia salina, xli, 193.
- \*Astacus, fossil, xvii, 287.
- Balanus peregrinus, xxiv, 131.<sup>f</sup>
- Caligus americanus, description of, *J. D. Dana* and *C. Pickering*, xxxiv, 225.<sup>f</sup>
- \*Cancer, fossil, xvii, 287.
- Entomostraca in chalk, xxx, 382.
- Limnadia, a new genus of Crustacea, iv, 372.
- Trilobite, a supposed recent, from N. S. Shetland, xxvii, 395.
- , nature of, *J. Green*, xxiii, 396; xxxvii, 25.
- Trilobites.*
- \*Asaphus astragalotes, xxv, 335.
- \* — diurus, xxxvii, 40.
- \* — limulurus, xlvi, 309.<sup>f</sup>
- \* — myrmecoides, xxiii, 397.
- \* — platypleurus, xxxii, 169.
- \* — polypleurus, xxxiv, 380.
- \* — tetragonocephalus, xxv, 335.
- \* — Trimblii, xxxii, 347.
- \*Bumastis Barriensis, xlvi, 309.<sup>f</sup>
- \* — Trentonensis, xlvi, 368.<sup>f</sup>
- \*Calymene Bucklandii, xxxvi, 106.<sup>f</sup>
- bufo, xxxvii, 32; xxxviii, 410.
- \* — niagarensis, xlvi, 309.<sup>f</sup>
- \* — odontocephala, xxv, 334.
- \* — phlyctainodes, xxxii, 167.
- \* — Rowii, n. sp., xxxiii, 406.
- \* — senaria, xlii, 230; xlvi, 363.<sup>f</sup>
- \*Ceratocephala goniata, xxxiv, 377.<sup>f</sup>



ZOOLOGY—*Crustacea.*

- \**Ceratocephala ceralepta*, xxxiv, 379.<sup>f</sup>
- \**Ceraurus crosotus*, *J. Locke*, xlv, 346<sup>f</sup>; xlv, 222.<sup>f</sup>
- \* — *pleurexanthemus*, xlvii, 363.<sup>f</sup>
- \**Cryphæus*, new genus, *J. Green*, xxxii, 343.
- \* — *Boothii*, xxxii, 344.<sup>f</sup>
- \* — *collitelus*, xxxii, 346.
- \**Hemicrypturus*, tail of, xlviii, 307.<sup>f</sup>
- \**Homalonotus delphinocephalus*, xlviii, 311.<sup>f</sup>
- \**Illænus Trentonensis*, xlvii, 368.<sup>f</sup>
- \**Isotelus gigas*, xlvii, 363.<sup>f</sup>
- \* — *megistos*, xlii, 366.<sup>f</sup>
- \**Paridoxides*, species of, *J. Hall*, xxxiii, 139.<sup>f</sup>
- \* —, remarks on the genus, *J. Green*, xxxiii, 341.
- \* — *Harlani*, xxv, 336.
- \**Triarthrus Beckii*, xlvii, 370.<sup>f</sup>
- \**Trimerus Jacksonii*, xxxii, 347.
- \**Trinucleus caractaci*, xlvii, 378.<sup>f</sup>
- \* — *tesselatus*, xlvii, 363.<sup>f</sup>

MOLLUSCA—*Shells.*

- Shells, new, of the coast of New England, *J. G. Totten*, xxvi, 366<sup>f</sup>; xxviii, 347.<sup>f</sup>
- of Middlebury, Vt., *C. B. Adams*, xl, 266, 408.
- of Massachusetts, southeastern shores, *C. B. Adams*, xxxvi, 387.
- , new, *A. A. Gould*, xxxviii, 196.
- , —, *J. P. Couthouy*, xxxiv, 216; xxxvi, 389.
- of Connecticut, catalogue of, *J. H. Linsley*, xlviii, 271.<sup>f</sup>
- on the Connecticut Reserve, Ohio, catalogue of, including many *Helices*, &c., xxxi, 36, 200.
- , new species, *H. C. Lea*, xlii, 106.<sup>f</sup>

ZOOLOGY—*Mollusca.*

- Shells, new freshwater, from Alabama, Tennessee, &c., *T. A. Conrad*, xxv, 338.<sup>f</sup>
- about Richmond, Indiana, list of, *J. T. Plummer*, xlviii, 94.
- , new, *B. Tappan*, xxxv, 268.<sup>f</sup>
- of some Ohio rivers, *S. P. Hildreth*, xiv, 276.
- , economical uses of some species of, xxxii, 53, 235.
- , fossil, tertiary of the United States, *T. A. Conrad*, xxiii, 204, 339; xxviii, 104, 280; xli, 344.<sup>f</sup>
- , —, —, remarks on, and list of, *J. T. Hodge*, xli, 332, 343.
- , —, —, of the United States, mostly from Claiborne, Alabama, *H. C. Lea*, xl, 92.<sup>f</sup>
- , —, —, from North Carolina, xxxix, 387.
- , —, chambered univalve, Virginia, *M. Tuomey*, xliii, 187.
- , —, transition, condition and character of, *T. A. Conrad*, xxxvi, 12; xxxviii, 86.
- , —, freshwater shells with coal, Lancashire, England, xxxiv, 26.
- , —, Cornwall, England, *C. W. Peach*, xlii, 327.
- , —, of the Ludlow rocks, xxx, 48; xxxviii, 90.
- , —, microscopic coralines and minute shells in white chalk, *Lonsdale*, xxxiii, 111.
- \**Actæon levis*, xl, 94.<sup>f</sup>
- \* — *magnoplicatus*, xl, 94.<sup>f</sup>
- *parvus*, xlii, 111.<sup>f</sup>
- *trifidus*, xxvi, 368.<sup>f</sup>
- Alasmodonta* and *Unio*, on the genera, with descriptions of species, *D. H. Barnes*, vi, 107<sup>f</sup>, 258.<sup>f</sup>
- , vi, 275.
- *arcuata*, vi, 277.<sup>f</sup>

ZOOLOGY—*Mollusca.*

- Alasmodonta complanata, vi, 278<sup>f</sup>; xiv, 289.  
 — marginata, vi, 279.  
 — radiata, xxv, 341.<sup>f</sup>  
 — rugosa, vi, 278<sup>f</sup>; xiv, 289.  
 — undulata, vi, 279.  
 \*Ammonites in Canada, viii, 84.  
 \* — at Patterson, N. J., v, 241.  
 \* — bellicosus, xxix, 150.<sup>f</sup>  
 \* — colubrellus, xxix, 154.<sup>f</sup>  
 \* — delawarensis, xviii, 244.<sup>f</sup>  
 \* — Hildrethi, xxix, 149.<sup>f</sup>  
 \* — hippocrepis, xvii, 280.  
 \* — placenta, xvii, 279; xviii, 249.<sup>f</sup>  
 \* — telifer, xxiii, 290.  
 \* — Vanuxemi, xviii, 244.<sup>f</sup>  
 \*Amphidesma constricta, xli, 347.<sup>f</sup>  
 \* — nuculoides, xli, 347.  
 \* — protexta, xli, 347.  
 Anatina papyratia in Rhode Island, *J. G. Totten*, xxviii, 347.<sup>f</sup>  
 Anculosa picta, xxv, 342.<sup>f</sup>  
 Anculotus dentatus, xxxvi, 390.  
 \*Anodonta abyssina, xxix, 149.<sup>f</sup>  
 — declivis, xxv, 341.<sup>f</sup>  
 — subvexa, xxv, 341.<sup>f</sup>  
 — undulata, xiv, 290.  
 \*Anomia argentaria, xxiii, 293.<sup>f</sup>  
 \* — tellinoides, xxiii, 294.<sup>f</sup>  
 Astarte castanea, xxviii, 348.<sup>f</sup>  
 — Danmoniensis, xxviii, 349.<sup>f</sup>  
 \* — tellinoides, xxiii, 342.  
 \* — unguolina, xxiii, 342.  
 \*Atrypa affinis, xlviii, 306.<sup>f</sup>  
 \* — congesta, xlviii, 305.<sup>f</sup>  
 \* — extans, xlvii, 369.<sup>f</sup>  
 \* — naviformis, xlviii, 305.<sup>f</sup>  
 \* — plicata, xlviii, 305.<sup>f</sup>  
 \*Avicula demissa, xlvii, 376.<sup>f</sup>  
 \* — leptonota, xlviii, 306.<sup>f</sup>  
 \*Baculites compressa, ii, 41; xxiii, 291.  
 \* — ovata, ii, 41; xvii, 280; xviii, 249.<sup>f</sup>  
 \*Belemnites, age of, xxix, 351.  
 \* —, *Raspail's* opinion respecting, xvii, 184.  
 \* —, animal of, xlv, 403.

ZOOLOGY—*Mollusca.*

- Belemnites ambiguus, xxvii, 281; xviii, 249.<sup>f</sup>  
 \* — americanus, xvii, 281; xviii, 249.<sup>f</sup>  
 \*Bellerophon bilobatus, xlvii, 365<sup>f</sup>; xlviii, 300.<sup>f</sup>  
 \* — punctifrons, xlvii, 369.<sup>f</sup>  
 \* — sulcatus, xlvii, 359.<sup>f</sup>  
 \*Buccinum interruptum, xli, 345.  
 \* — multirugatum, xli, 345.  
 — obsoletum, xxxvi, 387.  
 \* — parvum, xl, 100.<sup>f</sup>  
 — rosaceum, xxxviii, 197.  
 — trivittatum, xxxvi, 387.  
 — vibex, xxxvi, 387.  
 Bulla debilis, xxxviii, 196.  
 — Gouldii, xxxvi, 390.  
 — hiemalis, xxxvi, 390.  
 — insculpta, Rhode Island, xxviii, 350.<sup>f</sup>  
 — lineolata, xxxvi, 389.  
 — obstricta, xxxviii, 196.  
 — oryza, Rhode Island, *J. G. Totten*, xxviii, 350.<sup>f</sup>  
 — triticea, xxxiv, 217.  
 \*Calyptrea costata, ii, 40.  
 \*Cameroceras trentonense, xlvii, 369.<sup>f</sup>  
 Cancellaria buccinoides, xxxiv, 218.  
 \* — pulcherrima, xl, 99.<sup>f</sup>  
 \*Cardita abbreviata, xli, 347.<sup>f</sup>  
 \* — alticostata, xxiii, 342.  
 \* — decisa, xxiii, 292.  
 \* — perplana, xli, 347.<sup>f</sup>  
 Cardium pubescens, xxxiv, 216.  
 — edule, xxxii, 254.  
 — Mortoni, xxiii, 346.  
 \* — sublineatum, xli, 347.<sup>f</sup>  
 Carychium exile, xlii, 109.<sup>f</sup>  
 \*Cassis Hodgii, xli, 346.<sup>f</sup>  
 Cerithium cancellatum, xlii, 111.<sup>f</sup>  
 \* — carolinense, xli, 345.  
 — Emersonii, xxxvi, 388.  
 — nigrocinctum, xxxvi, 388.  
 — reticulatum, of Rhode Island and Massachusetts, *J. G. Totten*, xxviii, 352.<sup>f</sup>  
 — terebrale, xxxix, 373.  
 \* — unilineatum, xli, 345.<sup>f</sup>

ZOOLOGY—*Mollusca.*

- \**Chama congregata*, xxiii, 341.  
 \* — *corticosa*, xxiii, 341.  
 — *gigas*, xxxii, 256.  
*Chiton*, new species of, *D. H. Barnes*, vii, 69.<sup>f</sup>  
 —, remarks on, xxxii, 251.  
 — *echinatus*, vii, 71.<sup>f</sup>  
 — *Emersonii*, xxxiv, 217.  
 — *fulminatus*, xxxiv, 217.  
 — *magellanicus*, vii, 70.  
 — *niger*, vii, 71.<sup>f</sup>  
 — *peruvianus*, vii, 70.<sup>f</sup>  
 — *sagrinatus*, xxxiv, 217.  
 — *striatus*, vii, 70.<sup>f</sup>  
 \**Clavagella armata*, xxiv, 129.<sup>f</sup>  
*Claviger*, characters of genus, *S. S. Haldeman*, xlii, 216.  
*Cochlodesma*, new genus, *J. P. Couthouy*, xxxvi, 389.  
*Columbella avara*, xxxvi, 387.  
 \**Conulariæ*, in Canada, viii, 85.  
 \**Conus adversarius*, xxxix, 388;  
 xli, 345.<sup>f</sup>  
 \* — *gyratus*, xxiv, 131.<sup>f</sup>  
 \* — *parvus*, xl, 103.<sup>f</sup>  
 \**Corbula idonea*, xxiii, 341.  
 \* — *oniscus*, xxiii, 341.<sup>f</sup>  
*Crepidula acuta*, xlii, 108.<sup>f</sup>  
 \* — *lirata*, xxiii, 344.  
 \**Cucullæa vulgaris*, xvii, 285;  
 xviii, 250.<sup>f</sup>  
*Cyclas elegans*, xxxix, 375.  
 — *staminea*, xxv, 347.<sup>f</sup>  
 \**Cyclora*, new genus of fossil shells, *J. Hall*, xlvi, 294.  
 \* — *minuta*, xlvi, 294.  
*Cypræa*, genus, notice of a monograph of, *Duclos*, xx, 379.  
 \* — *carolinensis*, xli, 346.<sup>f</sup>  
 — *moneta*, xxxii, 250.  
 \**Cypricardia alata*, xlvi, 300.<sup>f</sup>  
 \* — *angusta*, xlvi, 306.<sup>f</sup>  
 \* — *angustifrons*, xlvi, 378.<sup>f</sup>  
 \* — *modiolaris*, xlvi, 379.<sup>f</sup>  
 \* — *obsoleta*, xlvi, 306.<sup>f</sup>  
 \* — *orthonata*, xlvi, 300.<sup>f</sup>  
 \* — *ovata*, xlvi, 378.<sup>f</sup>  
*Cyrena purpurea*, xlii, 106.<sup>f</sup>  
 \**Cyrtoceras pilosum*, xlvi, 369.<sup>f</sup>  
 \**Cyrtolites ornatus*, xlvi, 376.<sup>f</sup>

ZOOLOGY—*Mollusca.*

- \**Cytherea excavata*, xxiii, 292.<sup>f</sup>  
 \* — *marylandica*, xxiii, 343.  
 — *Sayana*, *T. A. Conrad*, xxiii, 345.  
 \**Delthyris brachynota*, xlvi, 303.<sup>f</sup>  
 \* — *decemplicata*, xlvi, 313.<sup>f</sup>  
 \* — *expansus*, xlvi, 368.<sup>f</sup>  
 \* — *niagarensis*, xlvi, 313.<sup>f</sup>  
 \* — *radiata*, xlvi, 313.<sup>f</sup>  
 \* — *sinuata*, xlvi, 313.<sup>f</sup>  
 \* — *staminea*, xlvi, 313.<sup>f</sup>  
 \**Dispotæa dumosa*, xli, 346.<sup>f</sup>  
 \* — *multilineata*, xli, 346.<sup>f</sup>  
 \**Donax rusticus*, xxix, 151.<sup>f</sup>  
*Eolis bostoniensis*, xxxiv, 216.  
 — *diversa*, new species, *J. P. Couthouy*, xxxvi, 385.  
 — *gymnota*, xxxiv, 217.  
 — *salmonacea*, xxxiv, 217.  
 \**Exogyra costata*, ii, 43; xvii, 284.  
 \**Fasciolaria mutabilis*, xli, 346.<sup>f</sup>  
 \**Foraminifera* in the green sand of New Jersey, xli, 213.  
 \**Fulgur contrarius*, xxxix, 387.  
 \* — *excavatus*, xxxix, 387.  
 \* — *incilis*, xxiii, 343.  
*Fusus cinereus*, xxxvi, 388.  
 — *harpularius*, xxxiv, 218.  
 \* — *inhabilis*, xxix, 150.<sup>f</sup>  
 — *scalariformis*, xxxviii, 197.  
 — *pleurotomarius*, xxxiv, 218.  
 — *tornatus*, xxxviii, 197.  
*Gnathodon*, observations on the genus, *T. A. Conrad*, xxxviii, 92.  
 — *cuneata*, xxxviii, 92.  
 — *flexuosa*, xxxviii, 92, 93.<sup>f</sup>  
 \* — *Grayi*, xxxviii, 92.  
 — *minor*, xli, 347.<sup>f</sup>  
 \**Gryphæa convexa* and *mutabilis*, xvii, 283.  
 \* — *vomer*, xvii, 283; xviii, 250.<sup>f</sup>  
 \* — *plicatella*, xxiii, 293.  
*Helix*, species of, in Ohio, xxxi, 36.  
 —, observations on some, xl, 272.

ZOOLOGY—*Mollusca.*

- Helix multidentata*, remark on,  
*C. B. Adams*, xl, 274.  
 — pomatia, xxxii, 254.  
 \**Infundibulum centralis*, xli,  
 348.  
*Jamina exigua*, xxxiv, 217.  
 — seminuda, xxxvi, 388.  
*Lacuna neritoidea*, xxxviii, 197.  
*Lima glacialis*, xxiii, 345.  
*Limnea acuminata*, xxxix, 374.  
 — chalybea, xxxviii, 196.  
 — pallida, xxxix, 374.  
 — stagnalis, xxxi, 35.<sup>f</sup>  
 — umbilicata, xxxix, 374.  
 \**Lingula acutirostris*, xlviii, 306.<sup>f</sup>  
 \* — antiqua, xlvii, 356.<sup>f</sup>  
 \* — cuneata, xlviii, 300.<sup>f</sup>  
 \* — elliptica, xlviii, 306.<sup>f</sup>  
 \* — oblata, xlviii, 306.<sup>f</sup>  
 \* — oblonga, xlviii, 307.<sup>f</sup>  
 \**Lucina dolabra*, xxiii, 343.  
 — floridana, *T. A. Conrad*,  
 xxiii, 344.  
 \* — jamaicensis, xxxix, 388.  
 \* — pandata, xxiii, 343.  
 \* — radians, xli, 347.  
 \* — trisulcata, xli, 346.  
 \**Mactra clathrodonta*, xxiii, 340.  
 \* — confraga, xxiii, 340.  
 \* — congesta, xxiii, 340.  
 \* — crassidens, xli, 346.<sup>f</sup>  
 \* — modicella, xxiii, 340.  
 — ovalis, xxxviii, 196.  
 \* — subparilis, xli, 346.<sup>f</sup>  
 \**Maclurea*, xlvii, 360.<sup>f</sup>  
 \* — labiatus, xlvii, 359.<sup>f</sup>  
 \* — striatus, xlvii, 359.<sup>f</sup>  
*Melampus borealis*, xxiii, 345.  
*Melaniæ*, general remarks on,  
*S. S. Haldeman*, xli, 21; xlii,  
 216.  
*Melania cincinnatiensis*, *I. Lea*,  
 xxxviii, 175.  
 — congesta, xxv, 343.  
 — olivula, xxv, 342.<sup>f</sup>  
 — prasinata, xxv, 342.<sup>f</sup>  
 \**Melongena alveata*, xxiii, 344.  
 \**Microceras*, new genus of fossil  
 shells, *J. Hall*, xlviii, 294.  
 \* — inornatum, xlviii, 294.

ZOOLOGY—*Mollusca.*

- \**Mitra carolinensis*, xxxix, 387,  
 [called *Voluta* ;] xli, 345.<sup>f</sup>  
 \* — eburnea, xl, 102.<sup>f</sup>  
 \* — elegans, xl, 102.<sup>f</sup>  
 \* — gracilis, xl, 101.<sup>f</sup>  
*Modiola elliptica*, xlii, 107.<sup>f</sup>  
 — glandula, xxvi, 367.<sup>f</sup>  
 — pulex, xlii, 107.<sup>f</sup>  
*Murex*, xxxii, 235.  
 — despectus, xxxii, 251.  
*Mya margaritifera*, xxxii, 68.  
*Mytilus edulis*, xxxii, 252.  
 \* — incrassatus, xli, 347.  
 — margaritifera, xxxii, 56.  
*Naiades*, some remarks on a me-  
 moir by *I. Lea*, xvi, 378.  
 —, sexual characters of, *J. P.*  
*Kirtland*, xxvi, 117.<sup>f</sup>  
 —, habits of, *J. P. Kirtland*,  
 xxxix, 164.<sup>f</sup>  
*Natica canaliculata*, xxxviii, 197.  
 \* — canrena, xxxix, 387.  
 \* — caroliniana, xli, 347.<sup>f</sup>  
 — consolidata, xxxiv, 217.  
 — flava, xxxviii, 196.  
 — immaculata, xxviii, 351.<sup>f</sup>  
 \* — percallosa, xli, 348.  
 \**Nautilus DeKayi*, xxiii, 291.<sup>f</sup>  
 \**Nucula bella*, xxiii, 343.  
 \* — cœlata, xxiii, 343.  
 \* — faba, xlvii, 369.<sup>f</sup>  
 \* — fabula, xlviii, 295.  
 \* — inflata, xlvii, 369.<sup>f</sup>  
 \* — machæriiformis, xlviii, 306.<sup>f</sup>  
 — mactriiformis, xlviii, 306.<sup>f</sup>  
 — myalis, xxxiv, 216.  
 — navicularis, xxxvi, 389.  
 \* — obliqua, ii, 40; xlviii, 294.  
 — tenuiculata, xxxiv, 216.  
 \**Oliva litterata*, xli, 345.<sup>f</sup>  
 \**Ophileta levata*, xlvii, 357.<sup>f</sup>  
 \* — complanata, xlvii, 357.<sup>f</sup>  
 \**Orbicula*, xlvii, 359.<sup>f</sup>  
 \* — palmulata, xlviii, 300.<sup>f</sup>  
 \**Orthis*, xlvii, 359.<sup>f</sup>  
 \* — canalis, xlviii, 313.<sup>f</sup>  
 \* — circulus, xlviii, 305.<sup>f</sup>  
 \* — costata, xlviii, 295.  
 \* — crispata, xlvii, 379.<sup>f</sup>  
 \* — flabellula, xlviii, 313.<sup>f</sup>

ZOOLOGY—*Mollusca.*

- \**Orthis hybrida*, xlviij, 313.<sup>f</sup>  
 \* — *pectinella*, xlvii, 366.<sup>f</sup>  
 \* — *striatula*, xlvii, 366.<sup>f</sup>  
 \* — *testudinaria*, xlvii, 376.<sup>f</sup>  
 \**Orthoceras multilineatum*, xlvii, 369.<sup>f</sup>  
 \* — *primigenium*, xlvii, 357.<sup>f</sup>  
 \* — *trentonense*, xlvii, 369.  
 \**Orthocerata*, in Canada, v, 213<sup>f</sup>; viii, 84.<sup>f</sup>  
 \* —, in Indiana, *J. T. Plummer*, xlv, 295.  
 \* —, divided into three genera, *Actinoceras*, *Ormoceras* and *Huronina*, xxxvii, 233.  
 \* —, structure of, *J. Hall*, xlvii, 109.  
 \**Orthonota curta*, xlviij, 306.<sup>f</sup>  
 \**Ostrea convexa*, new species, ii, 42.  
 \* — *cristagalli*, xvii, 284; xviii, 250.<sup>f</sup>  
 \* — *edulis*, xxxii, 241.  
 \* — *falcata*, xvii, 284; xviii, 250.<sup>f</sup>  
 \* — *panda*, xxiii, 293.  
 \* — *plumosa*, xxiii, 293.  
 \* — *radians*, xxiv, 130.  
 \* — *scabra*, xxxii, 247.  
 \* — *selliformis*, xxiv, 130.  
 \* — *torosa*, xxiv, 130.<sup>f</sup>  
 \* — *urticosa*, xxiii, 293.  
*Oxinoe?* *glabra*, xxxiv, 217.  
 Oyster shell deposits of the Atlantic coast, of Indian origin, xli, 168.  
*Paludina heterostropha*, xxxv, 269.<sup>f</sup>  
 \**Pasithea cancellata*, xl, 93.<sup>f</sup>  
 \* — *elegans*, xl, 93.<sup>f</sup>  
 \* — *minima*, xl, 92.<sup>f</sup>  
 \* — *nigra*, xxvi, 369.<sup>f</sup>  
 \* — *sordida*, xlii, 110.<sup>f</sup>  
 \* — of *Lea*, the *Actæon trifidus* of *Totten*, xlii, 392.  
*Patella amæna*, of *Say*, note on, *I. Lea*, xl, 31.  
 \* — *candida*, xxxiv, 217.  
 \* — *tentorium*, xxiii, 291.  
 \**Pecten anatipes*, xxiii, 293.<sup>f</sup>

ZOOLOGY—*Mollusca.*

- \**Pecten calvatus*, xxiv, 130.<sup>f</sup>  
 \* — *craticulus*, xxiii, 293.  
 \* — *eboreus*, xxiii, 341.  
 \* — *maximus*, xxxii, 248.  
 \* — *membranosus*, xxiv, 130.<sup>f</sup>  
 \* — *perplanus*, xxiii, 293.<sup>f</sup>  
 \* — *quinquecostatus*, xvii, 285; xviii, 250.<sup>f</sup>  
 \* — *venustus*, xxiii, 293.<sup>f</sup>  
 \**Pectunculus aratus*, xli, 346.  
 \* — *carolinensis*, xli, 346.  
 \* — *cuneus*, xxiii, 342.  
 \* — *quinquerugatus*, xli, 346.  
 \* — *stamineus*, xxiii, 342.  
 \* — *trigonella*, xxiii, 342.  
 \**Pentamerus oblongus*, xlviij, 303.  
*Periploma trapezoides*, remark on, *J. P. Couthouy*, xxxvi, 384.  
 \**Perna torta*, ii, 38.  
 \**Petricola centenaria*, xxiii, 341.  
 \**Pholadomya elongata*, xxix, 153.<sup>f</sup>  
 \* — *occidentalis*, xxiii, 292.<sup>f</sup>  
*Pholas*, xxiii, 292.  
 \* — *costata*, xxiii, 346.  
 \* — *ovalis*, ii, 39.  
*Physa ancillaria*, xl, 268, 269.  
 \* — *elongata*, xl, 269.  
 \* — *gyrina*, xl, 268, 269.  
 \* — *heterostropha*, xl, 268, 269.  
 \* — *pomilia*, xxv, 343.  
 \* — *Sayii*, xxxv, 269.<sup>f</sup>  
*Pinna rotundata*, xxxii, 70.  
 \**Plagiostoma*, xviii, 245.  
 \* — *gregalis*, xxiii, 292.<sup>f</sup>  
 \* — *pelagica*, xxiii, 293.<sup>f</sup>  
*Planorbis antrorsus*, xxv, 343.  
 \* — *hirsutus*, xxxviii, 196.  
 \* — *virens*, xxxix, 374.  
*Pleurotoma bicarinata*, xxxiv, 218.  
 \* — *cancellata*, xl, 98.<sup>f</sup>  
 \* — *decussata*, xxxvi, 390.  
*Pleurotomaria*, xlvii, 367<sup>f</sup>, 368<sup>f</sup>, 376.<sup>f</sup>  
 \* — *lenticularis*, xlvii, 365.<sup>f</sup>  
 \* — *pervetusta*, xlviij, 300.<sup>f</sup>  
 \**Polythalamia*, fossil, from the Upper Mississippi, *J. W. Bailey*, xli, 400.<sup>f</sup>  
 \* —, Petersburg, Va., *J. W. Bailey*, xlv, 313.

ZOOLOGY—*Mollusca.*

- \*Polythalamia, in the U. States, *J. W. Bailey*, xlviii, 340.<sup>f</sup>  
 \*Producta from St. Louis, xliii, 18.<sup>f</sup>  
 \*—, &c., from Illinois, *C. U. Shepard*, xxxiv, 144<sup>f</sup>, 150<sup>f</sup>, 153.<sup>f</sup>  
 \*Productus hepar, xxix, 153.<sup>f</sup>  
 \*— pocillum, xxix, 150.<sup>f</sup>  
 \*— punctatus, xxix, 153.<sup>f</sup>  
 \*Pterinea carinata, xvii, 376.<sup>f</sup>  
 \*— orbicularis, xvii, 369.<sup>f</sup>  
 \*— undata, xvii, 369.<sup>f</sup>  
 Pupa milium of Gould, remarks on, *C. B. Adams*, xl, 271.  
 Purpura lapillus, xxxvi, 388.  
 Pyramis fusca, xxxvi, 388.  
 — striatulus, xxxiv, 218.  
 Ranella caudata, xxxvi, 388.  
 \*Rostellaria arenarum, xxiii, 292.<sup>f</sup>  
 Saxicava, geological changes produced by, in Plymouth Sound, xlii, 326.  
 \*Scalaria annulata, xvii, 281; xviii, 250.<sup>f</sup>  
 \*— elegans, xl, 95.<sup>f</sup>  
 — novangliæ, xxxiv, 218.  
 — subulata, xxxiv, 218.  
 \*— venusta, xl, 95.<sup>f</sup>  
 \*Scalites angulatus, xvii, 359.<sup>f</sup>  
 \*Scaphites Cuvieri, xvii, 280.  
 \*— reniformis, xxiii, 291.  
 Sepiadae, colossal recent, remarks on, xlii, 335.  
 \*Sigaretus bilix, xxiii, 344.  
 Snails, habits of, *J. T. Plummer*, xlviii, 93.  
 \*Solarium elaboratum, xxiii, 344.  
 — cancellatum, xxiii, 344.  
 Solecurtus nitidus, xxxviii, 196.  
 Solemya borealis, Rhode Island, xxvi, 366.<sup>f</sup>  
 Solen siliqua, xxxii, 251.  
 \*Spirifer cameratus, xxix, 150.<sup>f</sup>  
 \*— fastigiatus, xxix, 152.<sup>f</sup>  
 \*— fimbriatus, xxix, 150.<sup>f</sup>  
 \*— rostratus, xxix, 152.<sup>f</sup>  
 Spirorbis, [correctly, Vermetus,] xvii, 282.  
 \*Strophomena alternata, xlvii, 366.<sup>f</sup>

ZOOLOGY—*Mollusca.*

- \*Strophomena deltoidea, xlvii, 363.<sup>f</sup>  
 \*— depressa, xlviii, 307<sup>f</sup>, 312.<sup>f</sup>  
 \*— nasuta, xlvii, 378.<sup>f</sup>  
 \*— sericea, xlvii, 366<sup>f</sup>, 369.<sup>f</sup>  
 \*— striata, xlviii, 312.<sup>f</sup>  
 \*— subplana, xlviii, 312.<sup>f</sup>  
 \*— transversalis, xlviii, 312.<sup>f</sup>  
 \*Subulites elongata, xlvii, 365.<sup>f</sup>  
 Tellina sordida, xxxiv, 216.  
 \*Terebra constricta, xl, 100.<sup>f</sup>  
 \*— multiplicata, xl, 101.<sup>f</sup>  
 \*Terebratulæ in Canada, viii, 85.  
 \*Terebratula bovidens, xxix, 150.<sup>f</sup>  
 \*— fragilis, xvii, 283; xviii, 250.<sup>f</sup>  
 \*— Harlani, xvii, 283; xviii, 250<sup>f</sup>; xxiv, 130.<sup>f</sup>  
 \*— lachryma, xxiv, 130.<sup>f</sup>  
 \*— lapillus, xxix, 153.<sup>f</sup>  
 \*— nuciformis, xxix, 150.<sup>f</sup>  
 \*— pennata, ii, 244.<sup>f</sup>  
 \*— plicata, ii, 43.  
 \*— Sayi, xvii, 283; xviii, 250.<sup>f</sup>  
 — septentrionalis, xxxiv, 216.  
 \*Teredo tibialis, xxiii, 292.  
 Thracia, on the genus, *J. P. Couthouy*, xxxvi, 382.  
 — Conradi, xxxvi, 383.  
 — similis, xxxvi, 383.  
 — inequalis, xliii, 145.<sup>f</sup>  
 — —, identical with the *Periploma trapezoides* of Deshayes, xlv, 420.  
 \*Tornitella bullata, xxiii, 292.<sup>f</sup>  
 Trichotropis costellatus, xxxiv, 219.  
 \*Triton pyramidatum, xl, 99.<sup>f</sup>  
 Tritonia Reynoldsii, xxxiv, 217.  
 Trochlea, characters of genus, *S. S. Haldeman*, xlii, 216.  
 \*Trocholites ammonius, xlvii, 368.  
 \*Trochus planulatus, xl, 96.<sup>f</sup>  
 \*Turbinella fusoides, xl, 98.<sup>f</sup>  
 Turbo cinereus, xxxiv, 218.  
 — incarnatus, xxxiv, 218.  
 — inflatus, xxvi, 368.<sup>f</sup>  
 — minutus, xxvi, 369.<sup>f</sup>

ZOOLOGY—*Mollusca.*

- Turbo obscurus*, xxxiv, 218.  
 \* — *parvulus*, xlvi, 294.  
 \* — *parvus*, xl, 95.<sup>f</sup>  
 \* *Turritella carinata*, xl, 96.<sup>f</sup>  
 — *erosa*, xxxiv, 218.  
 \* — *gracilis*, xl, 97.<sup>f</sup>  
 — *interrupta*, xxviii, 352.<sup>f</sup>  
 \* — *monilifera*, xl, 97.<sup>f</sup>  
 \* *Typhis acuticosta*, xxiii, 344.  
 \* — *gracilis*, xxiii, 344.  
*Ungulina transversa*, xxiii, 345.  
*Unio* and *Alasmodonta*, on the genera, with descriptions of species of *Unio*, *D. H. Barnes*, vi, 107<sup>f</sup>, 258.<sup>f</sup>  
 — and *Anodonta*, on restricting the species of, *C. des Moulins*, xli, 104.  
 — *alatus*, vi, 260; xiv, 285.<sup>f</sup>  
 — *albus*, xiv, 281.  
 — *arctatus*, xxv, 340.<sup>f</sup>  
 — *arcus*, xxv, 340.<sup>f</sup>  
 — *carinatus*, vi, 259.<sup>f</sup>  
 — *cariosus*, vi, 271.  
 — *cœlatus*, xxv, 338.<sup>f</sup>  
 — *cornutus*, vi, 122.<sup>f</sup>  
 — *crassus*, vi, 118<sup>f</sup>; xiv, 278.  
 — *cuneatus*, vi, 263; xiv, 279.<sup>f</sup>  
 — *cylindricus*, xiv, 283.<sup>f</sup>  
 — *Dombeyanus*, xiii, 360.  
 — *ellipticus*, vi, 259<sup>f</sup>; xiv, 278.  
 — *foliatus*, xiv, 284.<sup>f</sup>  
 — *gibbosus*, vi, 262<sup>f</sup>; xiv, 286.  
 — *gracilis*, vi, 274; xiv, 288.  
 — *hians*, xiii, 361.  
 — *inflatus*, vi, 266.  
 — *lienosus*, xxv, 339.<sup>f</sup>  
 — *mucronatus*, vi, 266.<sup>f</sup>  
 — *mytiloides*, xxv, 343.<sup>f</sup>  
 — *nasutus*, vi, 273.  
 — *naviformis*, xiii, 361.  
 — *nodosus*, vi, 124<sup>f</sup>; xiv, 281.  
 — *orbiculatus*, xiv, 284.  
 — *ovatus*, vi, 270; xiv, 287.<sup>f</sup>  
 — *parvus*, vi, 274.<sup>f</sup>  
 — *perovatus*, xxv, 338.<sup>f</sup>  
 \* — *petrosus*, xxix, 149.<sup>f</sup>  
 — *phaseolus*, xiv, 283.  
 — *planus*, vi, 272.<sup>f</sup>

ZOOLOGY—*Mollusca.*

- Unio plicatus*, vi, 120<sup>f</sup>; xiv, 280.  
 — *prælongus*, vi, 261<sup>f</sup>; xiv, 286.<sup>f</sup>  
 — *purpureus*, vi, 264; xiv, 281.  
 — *radiatus*, vi, 265; xiv, 286.  
 — *rectus*, xiii, 361.  
 — *rostratus*, xiii, 360.  
 — *rugosus*, vi, 126<sup>f</sup>; xiv, 282.  
 \* — *saxulum*, xxix, 149.<sup>f</sup>  
 — *Sayii*, xxxv, 268.<sup>f</sup>  
 — *siliquoideus*, vi, 269.<sup>f</sup>  
 — *stramineus*, xxv, 339.<sup>f</sup>  
 — *subtentus*, xxv, 343.<sup>f</sup>  
 \* — *terrenus*, xxix, 149.<sup>f</sup>  
 — *triangularis*, vi, 272<sup>f</sup>; xiv, 287.  
 — *tuberculatus*, vi, 125<sup>f</sup>; xiv, 282.  
 — *tuberculosus*, xiii, 360.  
 \* — *tumulatus*, xxix, 149.<sup>f</sup>  
 — *undatus*, vi, 121<sup>f</sup>; xiv, 280.  
 — *undulatus*, vi, 120<sup>f</sup>; xiii, 360; xiv, 279.  
 \* — *valdensis*, xlvii, 403.<sup>f</sup>  
 — *ventricosus*, vi, 267.<sup>f</sup>  
 — *verrucosus*, vi, 123<sup>f</sup>; xiii, 360; xiv, 281.  
*Unionidæ*, notice of *I. Lea's* memoir on, xxii, 169; xxvii, 371.  
 \* — of the country of the *Iguanodon*, *G. A. Mantell*, xlvii, 402.<sup>f</sup>  
*Unios*, *D. H. Barnes's* reclamation of, xiii, 358.  
 —, remarks on some, xxxii, 256.  
 —, habits of some species, of Ohio, *S. P. Hildreth*, xxxi, 62.  
*Valvata pupoidea*, xxxviii, 196.  
 — *sincera*, xl, 267.  
 \* *Venerupis subvexa*, xxiii, 342.  
 \* *Venilia Conradi*, xxiii, 294.<sup>f</sup>  
*Venus gemma*, Mass., xxvi, 367.<sup>f</sup>  
 \* *Vermetus rotula*, xviii, 250.<sup>f</sup>  
*Vitrina pellucida*, remarks on, *C. B. Adams*, xl, 274.  
 \* *Voluta carolinensis*, xxxix, 387.  
 \* — *dubia*, xl, 103.<sup>f</sup>  
 — *gravis*, xxxii, 250.

## ZOOLOGY.

## ENTOZOA.

- Entozoa, remarks on, *C. A. Lee*, xxxix, 278.<sup>f</sup>  
 Achtheres percarum, notice of, *C. A. Lee*, xxxix, 285.<sup>f</sup>  
 Filaria, different species, *C. A. Lee*, xxix, 282.  
 — in eels and black-fish, *C. A. Lee*, xxxix, 295.  
 — in the eye of a horse, *C. A. Lee*, xxxix, 279.<sup>f</sup>  
 — in the blood of a dog, xlv, 228.

Trichocephalus dispar, a common intestinal worm in the alimentary canal, xxxiv, 10.

RADIATA—including *Crinoidea*, *Corals*, &c.

- \*Actinocrinites, *J. S. Bonny*, xxxi, 165.<sup>f</sup>  
 \*Alcyonium, xvii, 288.  
 Alveolites glomeratus [a species of Bryozoa], description of, *T. Say*, i, 383.  
 \* —, fossil, xviii, 246.  
 \*Ananchytes cinctus, xvii, 287; xviii, 246, 250.<sup>f</sup>  
 \* — cruciferus, [Nucleolites,] xviii, 245, 250.<sup>f</sup>  
 \* — fimbriatus, xviii, 245, 250.<sup>f</sup>  
 \*Anthophyllum, xxix, 150.  
 \* — atlanticum, xvii, 288; xviii, 249.<sup>f</sup>  
 \*Archimedes of Lesueur, a Retepora, *D. D. Owen*, xliii, 19.<sup>f</sup>  
 \*Caryocrinus ornatus, xlvi, 314.<sup>f</sup>  
 \*Caryophyllia, xvii, 288.  
 \*Cateniporæ, American, ii, 34.  
 \*Cidaris diatretum, xxiii, 294.  
 \*Clypeaster, xvii, 287.  
 \* — florealis, xxiii, 294.  
 \* — geometricus, xxiv, 131.<sup>f</sup>  
 \*Columnaria sulcata, xlvi, 360.<sup>f</sup>  
 Comatula, species of, from the Indian Ocean, v, 46.  
 \*Corals, fossil, in New Jersey, xlvi, 213.  
 \* — in Canada, viii, 86, 87.

ZOOLOGY—*Radiata*.

- \*Coralline animalcules in chalk, xxxix, 205.<sup>f</sup>  
 Crinoidea, general remarks on the characters and geological position of, *J. Hall*, xlv, 349.  
 Cristatella mirabilis, remarks on, *J. G. Dalyell*, xxviii, 78.  
 \*Cyathocrinites pyriformis, xlvi, 314.<sup>f</sup>  
 \*Echinus, xvii, 287; xviii, 250.<sup>f</sup>  
 \* — infulatus, xxiv, 131.<sup>f</sup>  
 \*Encrinite, ii, 35.  
 \* —, from near Cincinnati, *J. G. Anthony*, xxxv, 359.<sup>f</sup>  
 \*Favosites lycoperdon, xlvi, 363.<sup>f</sup>  
 \* — striata, i, 384.  
 \*Graptolithes dentatus, xlvi, 370.<sup>f</sup>  
 Holothuria chrysacanthophora, xxxiv, 216.  
 \*Lunulites denticulata, xli, 348.  
 \* — depressa, xli, 348.  
 \*Medusa, fossil, forming a new genus, *Trianisites Cliffordi*, *C. S. Rafinesque*, iii, 285.<sup>f</sup>  
 \*Nummulites Mantelli, xxiii, 291.<sup>f</sup>  
 \*Nucleolites crucifer, xxiii, 294.  
 Pennatula sagitta, iv, 87<sup>f</sup> (correctly, a Lernæa).  
 \*Pentacrinites Hamptonii, xlvi, 376.<sup>f</sup>  
 \*Pentremites, new genus, *T. Say*, ii, 36.  
 \* — pyriformis, from St. Louis, Mo., xliii, 20.<sup>f</sup>  
 Renilla americana, ii, 38.  
 Scutella crustaloides, xxiv, 131.<sup>f</sup>  
 Sertularia utricularis, from New York harbor, *J. E. DeKay*, vi, 361.  
 \*Spatangus cor marinum, xvii, 286; xviii, 250.<sup>f</sup>  
 \* — parastatus, xxiii, 294.  
 \* — stella, xvii, 245.<sup>f</sup>  
 \* — ungula, xxiv, 131.<sup>f</sup>  
 \*Trianisites Cliffordi of Rafinesque, iii, 285.<sup>f</sup>  
 Tubularia indivisa, remarks on, *J. G. Dalyell*, xxviii, 77.  
 Zoophytes, general remarks on, *G. A. Mantell*, xxxiii, 329.



ZOOLOGY—*Radiata*.

Zoophytes, *J. G. Dalyell* on the propagation of, xxviii, 77.

## INFUSORIA.

Infusoria, *C. G. Ehrenberg* on, xxxv, 371<sup>f</sup>; xxxviii, 405.

—, *C. G. Ehrenberg's* notice of American, xliii, 393.

—, siliceous, *Turpin*, xxxii, 400.

— Tripoli of Bohemia, xxxiii, 111.

—, fluviatile localities in the United States, *J. W. Bailey*, xliii, 328.

—, fossil deposits in the United States, xliii, 329.

—, New Haven harbor, *J. W. Bailey*, xlviii, 337.

— of West Point, N. Y., xxxv, 118<sup>f</sup>; xxxix, 191.

— (?), siliceous, in Virginia deposits, *J. W. Bailey*, xliii, 329.

—, new species from the Bermudas, and from Maryland and Virginia, xlviii, 323, 330; —table of, xlviii, 331.

—, bed of, at Petersburg, Va., *M. Tuomey*, xlv, 339.

—, fossil, of Virginia and Maryland, *C. G. Ehrenberg*, xlviii, 201.

—, in Charleston harbor, S. C., *J. W. Bailey*, xlviii, 338.

—, new species from Oregon, *J. W. Bailey*, xlviii, 321.<sup>f</sup>

—, in Nova Scotia, *J. W. Bailey*, xlviii, 339.

—, with bones of Mastodon, *J. W. Bailey*, xlviii, 339.

— in guano, *J. W. Bailey*, xlviii, 338.

— of rock salt, observations on, xli, 193.

*Achnanthes*, xliii, 325.

— *brevipes*, xliii, 325.<sup>f</sup>

*Actinocyclus*, xlii, 93.<sup>f</sup>

*Arthrodesmus curtus*, xli, 292.<sup>f</sup>

— *quadricaudatus*, xli, 292.<sup>f</sup>

ZOOLOGY—*Infusoria*.

*Asterolampra*, characters of genus, xlviii, 203.<sup>f</sup>

*Aulacodiscus*, characters of genus, xlviii, 203.

*Bacillaria*, sketch of, *J. W. Bailey*, xli, 284<sup>f</sup>; xlii, 88<sup>f</sup>; xliii, 321.<sup>f</sup>

— *paradoxa*, xlii, 101.<sup>f</sup>

— *tabellaris*, xlii, 102<sup>f</sup>;—B. — ? 102.<sup>f</sup>

*Biddulphia* — ? xlviii, 336.<sup>f</sup>

*Chætoceros*, xlviii, 328.<sup>f</sup>

*Closterium*, xli, 297.<sup>f</sup>

— *digitus*, xli, 302.<sup>f</sup>

— *lineatum*, xli, 303.<sup>f</sup>

— *lunula*, xli, 302.<sup>f</sup>

— *moniliferum*, xli, 302.<sup>f</sup>

— *rostratum*, xli, 303.

— *striolatum*, xli, 303.<sup>f</sup>

— *tenuis*, xli, 303.

— *trabecula*, xli, 302.<sup>f</sup>

*Cocconeis*, xlii, 101.<sup>f</sup>

*Cocconema*, xliii, 324<sup>f</sup>;—C. —, xliii, 325.<sup>f</sup>

*Coscinodiscus argus*, xlii, 95.

— *lineatus*, xlii, 95.<sup>f</sup>

— *oculus-iridis*, xlii, 95.

— *patina*, xlii, 96.<sup>f</sup>

— *radiatus*, xlii, 95.<sup>f</sup>

*Craspedodiscus*, genus, xlviii, 324.<sup>f</sup>

*Denticella polymera*, xlviii, 328.<sup>f</sup>

*Desmidium aculeatum*, xli, 289.<sup>f</sup>

— *hexaceros*, xli, 289.<sup>f</sup>

— *Schwartzii*, xli, 288.<sup>f</sup>

Diatomæ, American, *J. W. Bailey*, xxxv, 118.<sup>f</sup>

*Dicladia*, characters of genus, xlviii, 204.

*Dictyocha aculeata*, *J. W. Bailey*, xlv, 140.<sup>f</sup>

— *fibula*, *J. W. Bailey*, xlv, 139.<sup>f</sup>

— *ponticulus*, xlviii, 328.<sup>f</sup>

— *quadratum*, xlviii, 328.<sup>f</sup>

*Dictyopyxis*, genus, xlviii, 326.

*Echinella flabellata*, xliii, 324.<sup>f</sup>

—, xliii, 324.<sup>f</sup>

*Euastrum*, xli, 293<sup>f</sup>;—*crux melitensis*, xli, 294.<sup>f</sup>

— *margaritifera*, xli, 295.<sup>f</sup>

ZOOLOGY—*Infusoria*.

- Euastrum rota*, xli, 294.<sup>f</sup>  
 —, xli, 295<sup>f</sup>, 296<sup>f</sup>, 297.<sup>f</sup>  
*Eunotia arcus*, xlii, 100.<sup>f</sup>  
 — diodon, xlii, 100.<sup>f</sup>  
 — pentodon, xlii, 100.<sup>f</sup>  
 — serra, xlii, 100.<sup>f</sup>  
 — tetraodon, xlii, 100.<sup>f</sup>  
 —, xlii, 100.<sup>f</sup>  
*Eupodiscus*, characters of genus, xlviii, 203.  
*Fragillaria pectinalis*, xlii, 103.<sup>f</sup>  
 — trionodis, xlii, 103.  
*Frustulia*, xliii, 326.  
*Gaillonella aurichalcea*, xlii, 90.<sup>f</sup>  
 — distans, xlii, 91.<sup>f</sup>  
 — ferruginea, xlii, 93.  
 — moniliformis, xlii, 89.<sup>f</sup>  
 — sulcata, xlii, 91.<sup>f</sup>  
 — varians, xlii, 91.<sup>f</sup>  
 —, xlii, 92<sup>f</sup>; xlviii, 322.<sup>f</sup>  
*Gloeonema*, xliii, 327.  
*Gomphonema*, xliii, 323.  
 — minutissimum, xliii, 323.<sup>f</sup>  
 —, xliii, 323<sup>f</sup>, 324.<sup>f</sup>  
*Goniothecium* — ? xlviii, 336.<sup>f</sup>  
*Heliopeeta*, genus, xlviii, 324.  
*Hercotheca*, genus, xlviii, 327.  
 — mammilaris, xlviii, 327.  
*Isthmia*, xliii, 321.  
*Lithocampe*, xlviii, 336.<sup>f</sup>  
*Mastogonia*, genus, xlviii, 326.<sup>f</sup>  
*Meridion vernale*, xlii, 103.<sup>f</sup>  
*Micrastenas Boryana*, xli, 293.<sup>f</sup>  
 — tetras, xli, 293.<sup>f</sup>  
 —, xli, 293.<sup>f</sup>  
*Microtheca octoceros*, xli, 304.  
*Naunema*, xliii, 326<sup>f</sup>;—N. —, xliii, 327.<sup>f</sup>  
*Navicula*, xlii, 96.  
 — concentrica, xlvi, 139.<sup>f</sup>  
 — sigma, xlii, 99.<sup>f</sup>  
 — striatula, xlii, 98.<sup>f</sup>  
 — viridis, xlii, 96.<sup>f</sup>  
 — viridula, xlii, 97.  
 —, xlii, 98<sup>f</sup>, 99.<sup>f</sup>  
*Omphalopelta*, genus, xlviii, 325.  
*Pentasterias margaritifera*, xli, 290.  
*Periptera*, genus, xlviii, 327.

ZOOLOGY—*Infusoria*.

- Podiscus Rogersi*, J. W. Bailey, xlvi, 137.<sup>f</sup>  
*Podosphenia*, xliii, 323.<sup>f</sup>  
*Pyxidicula operculata*, xlii, 88.<sup>f</sup>  
 — globata, xlii, 88.  
*Pyxidicula*, xlii, 88.<sup>f</sup>  
*Raphoneis*, characters of genus, xlviii, 204.  
*Sceptroneis*, genus, xlviii, 326.<sup>f</sup>  
*Schizonema*, xliii, 328.  
*Sphastrum*, xli, 290.  
*Staurastrum paradoxum*, xli, 289.  
*Stephanogonia*, genus, xlviii, 326.<sup>f</sup>  
*Stephanopyxis*, sub-genus, xlviii, 327.  
*Striatella*, xliii, 326.  
 — arcuata, xliii, 226.<sup>f</sup>  
*Surirella*, xlviii, 322.<sup>f</sup>  
*Symbolophora*, characters of genus, xlviii, 203.  
*Syncyclia*, xliii, 326.  
*Synedra*, xliii, 322.<sup>f</sup>  
*Systephania*, genus, xlviii, 325.  
*Tessarartha moniliformis*, xli, 290.  
*Tessella catena*, xlii, 102.<sup>f</sup>  
*Triceratium*, xlviii, 336.<sup>f</sup>  
 — solenoceros, xlviii, 329.<sup>f</sup>  
 — spinosum, J. W. Bailey, xlvi, 139.<sup>f</sup>  
*Xanthidium*, xli, 290.<sup>f</sup>  
 — ramosum, xli, 291.  
 —, xli, 291.<sup>f</sup>  
*Xanthiopyxis*, sub-genus, xlviii, 327.<sup>f</sup>  
*Zygoceros bipons*, xlviii, 329.<sup>f</sup>  
 — rhombus, J. W. Bailey, xlvi, 138.<sup>f</sup>  
 — Tuomeyi, J. W. Bailey, xlvi, 138.<sup>f</sup>
- 
- Zoophytes, G. A. Mantell's lecture on, xxxiii, 329.  
 —, see farther under *Zoology*.  
*Zuccarini*, J. G., Flora Japonica of, noticed, xxxix, 175.  
 Zurich, Societies in, ix, 184.  
 Zurlite, xi, 254.  
*Zygodon*, see *Zeuglodon*.

## SUPPLEMENT.

B A C

B I S

- Adams, C. B.*, on shells, found on shores of Mass., xxxvi, 387.
- , shells of Fresh Pond, xxxvi, 393.
- , new species of *Delphinula*, xxxviii, 193.
- , shells obtained by dredging, with account of new species, xxxviii, 396; xxxix, 373.
- Alabama, sketches of geology of, *W. S. Porter*, xiii, 77.
- , *ibid*, Greene Co., *R. W. Withers*, xxiv, 187.
- , *ibid*, near Centreville, xlvi, 399.
- , the galt in, *S. G. Morton*, xxviii, 277.
- , tertiary of, xxv, 417, 419.
- , coal in, xxvi, 190.
- Aldini, J.*, obituary notice of, xxvii, 405.
- Alexander, S.*, letter on the comet of 1843, xlv, 195.
- Alger, F.*, formula of Masonite, xlvi, 218.
- Allen, Z.*, on the Providence tornado, xxxviii, 74; xliii, 137, 264.
- America and Asia, Arctic Geology of, xvii, 1.
- Ashes, volcanic, of Etna, analysis of, xii, 194.
- , —, transported by winds, xxv, 129.
- Bache, A. D.*, on electro-magnetic experiments, xxii, 409.<sup>f</sup>
- , on American Meteorology, xxxviii, 95.
- Bache, A. D.*, rapid corrosion of a chain cable, xxxviii, 176.
- , observations on magnetic dip, xl, 374.
- , magnetic intensity in Europe, xl, 30.
- , improvements by, in the coast survey, xlix, 229.
- Bachelder, J. M.*, on the temperature of the Saco river, xxxiv, 381; xxxvii, 389.
- Bailey, J. W.*, solidification of carbonic acid, xxxvii, 398.
- Bakewell, R.*, on the salt springs of Moutiers, xx, 219.<sup>f</sup>
- , obituary notice of, xlv, 403.
- Barnes, D. H.*, obituary notice of, xv, 401.
- Barratt, J.*, table of closing and opening of Connecticut river, xxxix, 88.
- Beadle, E. R.*, on the level of the Dead Sea, xlii, 214.
- Beck, L. C.*, on iron in salt springs of Salina, xvi, 187.
- Benton, Thos. H.*, letter to H. R. Schoolcraft, on human footprints at St. Louis, v, 230.
- Bessel, F. W.*, parallax of star 61 Cygni, xxxvi, 200.
- , on the U. S. coast survey, xvi, 225.
- , on the astronomical clock, xliv, 160.
- Bingham, H.*, fall of meteorites at Sandwich Islands, xlix, 407.
- Bischof, G.*, origin of quartz and metalliferous veins, xlix, 396.

- Blake, E. W.*, on the manufacture of steel, xvii, 111.
- Bloodgood, S. D.*, on halos, xx, 297.
- Boethor, E.*, obituary notice of, v, 180.
- Bolca, Mount, geology and fossil fish of, iii, 224; xiii, 255.<sup>f</sup>
- Bolton, J.*, on warming houses, xxxiv, 84.
- Bonstetten, C. V. de*, obituary notice of, xxiii, 371.
- Booth, J. C.*, analysis of chrome iron, xxxviii, 243.
- Bowen, G. T.*, obituary notice of, xv, 403.
- Boyé, M. H.*, new compound of platinum, xxxviii, 186.
- Brace, J. P.*, on a vibrating dam, xlv, 372.
- Breccia of the Potomac, i, 216.
- Breislak, S.*, obituary notice of, xii, 192.
- Browne, P. A.*, early geological section, xli, 183.
- Browning gun barrels, *W. Ettrick* on, xxxiv, 45.
- — — — —, process for, *J. Duntze*, ix, 168.
- Buch, L. von*, see *Von Buch*, p. 276.
- Bushnell, D.*, submarine boat of, ii, 94.
- Calendar, floral, see *Floral*.
- Calorimotor, *R. Hare*, ii, 316.<sup>f</sup>
- Candolle, A. P. de*, notice of *G. Cuvier* by, xxiii, 303.
- — — — —, on life and writings of *R. L. Desfontaines*, xxvii, 201.
- — — — —, — — — — — *F. Hubert*, xxiii, 117.
- — — — —, memoir of, *C. F. P. von Martius*, xlv, 217.
- — — — —, see *De Candolle*, p. 65.
- Carbonic acid, solidification of, *J. W. Bailey*, xxxvii, 398.
- Cass, L.*, on the tide at Green Bay, xx, 217.
- — — — —, Address to Alumni of Hamilton College, xxi, 180.
- — — — —, table of tides in Lake Michigan, xx, 205; xlv, 20.
- Cave in Mount Toby, i, 111.
- Chilton, G.*, obituary notice of, xxxi, 421.
- Cleaveland, P.*, on a Maine meteor, vii, 170.
- Coal, in Pennsylvania, anthracite, *B. Silliman*, x, 331.
- Coindet, J. F.*, obituary notice of, xxvii, 404.
- Condensation of gases, *M. Faraday*, xlix, 373.
- Cook, Capt. J.*, account of a bird's nest in New Holland, xlvii, 218, 312.
- Cordage, plants for, xxv, 330.
- Cordier, L.*, Essay on the Temperature of the Earth, analysis of, xv, 109.
- Couthouy, J. P.*, two species of *Cidaridaris* and *Patelloidea*, xxxvi, 381.
- — — — —, monograph of the *Osteodermacea*, xxxvi, 382, 384.
- — — — —, new species of shells, xxxvi, 389.
- Cowles*, statement of, concerning circular fires causing wind, xxxvi, 53.
- Currents, marine, proofs of, in New York, xxxvi, 37.
- Cutbush, J.*, localities of minerals at West Point, vii, 57.
- Dana, J. F.*, analysis of water of Congress Spring, xxxvi, 8.
- Dana, S. L.*, new mode of analysis of soils, xxxvi, 366.
- Davy, H.*, obituary of, xvii, 157, 217.<sup>f</sup>
- — — — —, Consolations in Travel by, noticed, xx, 170.
- Dean, James*, Auroral arch or belt, July 29, 1837, - xxxiii, 212. Aug. 25, 1837, - xxxiii, 212.
- — — — —, spelt incorrectly *Deane*, p. 65, first column.
- Deltas of rivers, formation of, *H. Hayden*, iii, 55.
- Dewey, C.*, on the temperature of Lake Ontario, xxxiii, 403.
- — — — —, on the bones of the mammoth, xxxiii, 201.

- Dewey, C.*, Report on the Herbaceous Plants of Massachusetts, noticed, xli, 378.
- , notice of the Geological Reports of New York, xlii, 227.
- Diell, J.*, on the oil of the candle-nut tree, xxxiv, 209.
- Draper, J. W.*, on the law of the conducting power of wires, xlv, 392.
- Drury, T.*, electrical excitement of leather by friction, xxxvii, 197.
- Duntze, J.*, method of browning gun barrels, ix, 168.
- Dust, atmospheric, *C. S. Rafinesque*, i, 397.
- , —, *ibid*, reply to, ii, 134.
- Eaton, A.*, obituary notice of, xliii, 215.
- Emmons, E.*, localities of minerals, x, 11.
- Fayette, G. M. de la*, letter of, to J. Trumbull, viii, 171.
- Field, M.*, obituary notice of, xxvi, 204.
- Fish, saltwater, transferred to freshwater, xxxix, 378.
- , fossil, of Mount Bolca, iii, 224; xiii, 255.
- Flinders, M.*, on a bird's nest in New Holland, xlvii, 218, 313, 422.
- Foot, Lyman*, meteorological table, 1825, at Fort Brady, x, 303.
- Fowler, S.*, on the sapphire, &c. of Sussex Co., N. J., xxi, 319.
- Fox, C.*, notice of British Naturalists, continued, xxxvii, 136.
- , new mode of preparing fish-skins for museums, xxxvi, 196.
- Fox, R. W.*, on the formation of mineral veins by voltaic action, xxxv, 308; xxxvii, 199.
- Franconia iron works, xviii, 134, 289.
- minerals, xviii, 128.<sup>f</sup>
- Fraunhofer, J.*, obituary of, xvi, 304.
- Fredonia gas works, xxxvi, 6.
- Gale, L. D.*, on zinc roofing, xxxii, 315.
- Gardiner, R. H.*, on vibrating dams, xlv, 371.
- Gaylord, W.*, on removal of fishes, xl, 405.
- , theory of tornadoes, xl, 399.
- Genet, E. C.*, on upward forces of fluids, xi, 110, 339<sup>f</sup>; xii, 94, 310; xiii, 377.
- Geology, cretaceous formation of New Jersey, see *Cretaceous*, p. 60.
- Gibbs, G.*, obituary notice of, xxv, 214.
- Gibbes, R. W.*, on the Dorudon, xlix, 216.
- Gibbs, Wolcott*, on the theory of compound salt radicals, xlvi, 52.
- Gold, T. S.*, new locality of Crichtonite, xxxv, 179.
- Goonong Api, eruption of the volcano of, iv, 375; xiii, 299.
- Gould, A. A.*, new species of Delphinula, xxxviii, 193.
- , new species of shells, xxxviii, 196.
- Graham, T.*, work on Chemistry, noticed, xlv, 401.
- Gray, J. E.*, angular lines on certain mollusca, xxxv, 310.
- , on the boring of the Pholades, xxxv, 312.
- Green, James*, experiments with the elemental voltaic battery, xxviii, 33.
- Haile, A. B.*, map of path of New Haven tornado, xxxvii, 343.
- Haldeman, S. S.*, on zoological nomenclature, xlvi, 18.
- , electrical phenomenon, xlvi, 215.
- Hall, J.*, on the Brachiopoda and Orthocerata, xlvii, 109.
- Halos, xxviii, 304<sup>f</sup>; xxxix, 61.<sup>f</sup>
- Harris, T. W.*, new species of Argulus, xxxvi, 393.
- , on the genus Cychrus, xxxvi, 391.

- Hassler, F. R.*, on weights and measures, xxiii, 405.
- Häuy, R. J.*, biography of, viii, 362.
- Hayes, A. A.*, on alumina with pigments, xvi, 173.
- , on a scarlet pigment, xvi, 174.
- , on bromine in the Saratoga waters, xviii, 142.
- , on pure chromate of potash, xx, 409.
- , on a singular crystallization, xx, 128.
- , on cobalt and nickel, xxi, 195.
- , analysis of Danaite, xxiv, 386; xxxvi, 334.
- , analysis of Ledererite, xxv, 80; xlvii, 339.
- , on native nitrate of soda, xxxix, 375.
- , on Pickeringite, xlvi, 360.
- , on borate of lime, xlvi, 377<sup>f</sup>; xlvii, 215.
- , analysis of red oxide of zinc, xlvi, 260.
- , analysis of Glauberite, xlvii, 338.
- Heights, see farther under *Mountains*, p. 172.
- Henry, J.*, on a large electro-magnet, xx, 201.
- , on the lateral discharge of electricity, xxxiv, 16<sup>f</sup>; xxxviii, 154.
- , on galvanic induction, xxxviii, 170, 404.
- , on capillary action, xxxviii, 180.
- , heat of solar spots, xlix, 405.
- Henry, Wm.*, obituary notice of, xxxii, 216.
- Herschel, J. F. W.*, rediscovery of the sixth satellite of Saturn, xxxiv, 207.
- , remarks on W. C. Redfield's law of storms, xxxv, 281.
- , vitreous humor of shark's eye, xxxv, 293.
- Herschel, J. F. W.*, letter to, on the parallax of the star 61 Cygni, xxxvi, 200.
- , on discovered rays of light, xxxviii, 110.
- Hodge, J. T.*, observations on the geology of the Carolinas, xli, 182.
- Hosack, D.*, obituary notice of, xxix, 395.
- Houghton, D.*, magnetic influence near the great lakes, xli, 171.
- , joints in rocks, xli, 172.
- Hubbard, J. S.*, elements of Southern comet of Dec., 1844, xlvi, 403.
- Humbert, J.*, compound electro-magnet, xxxviii, 204.
- Ives, Eli*, a new species of Gnaphalium, i, 310, 380.<sup>f</sup>
- , on chloric ether, xxi, 406.
- Jackson, C. T.*, on the revolving electric magnet of Pixii, xxiv, 146.<sup>f</sup>
- , on Ledererite, xxv, 78.<sup>f</sup>
- , on mineral manures, xli, 159.
- , trilobites in Maine, xli, 161.
- , joints in rocks, xli, 172.
- , trap dikes, xli, 172, 173.
- , diluvial action in Rhode Island, xli, 176.
- , on pot-holes in New Hampshire, xliii, 154.
- , on drift, xliii, 151.
- , on tin veins in New Hampshire, xli, 161; xliii, 168.
- , analysis of Beaumontite, xlvii, 337.
- , — ytrocercite, xlvii, 353.
- , formula of pink scapolite, xlvii, 418.
- Jenkins, J. F.*, meteorological observations at Middletown, June, 1832, to May, 1834, xxvi, 395.
- Johnston, J.*, meteorological Journal at Cazenovia, May, 1834, xxvi, 398.
- Jones, A.*, on the supposed agency of galvanism in transferring colors through animal substances, xxi, 316.

- Jones, A.*, notes on Gypsies, bituminous coal of Alabama, India rubber carpets, stereotype printing, material for paper, xxvi, 189-193.
- Kendall, E. O.*, elements of Southern Comet of Dec., 1844, xlvi, 403.
- , on the transit of Mercury of May, 1845, xlix, 149.
- , elements of the third comet of 1845, xlix, 221.
- Kingsley, J. L.*, eulogy on A. M. Fisher, v, 367.
- Kirtland, J. P.*, on western fishes, xxxviii, 392; xxxix, 375; xl, 388.
- Klaproth, J.*, on the invention of the mariner's compass, xl, 242.
- Knox, G.*, obituary notice of, xv, 189.
- Koch, A. C.*, discovery of the Zeuglodon, in Alabama, xlix, 218.
- , mastodon remains, xl, 56.
- Kutch, earthquake at, iv, 315.
- Lane, E.*, mine of, i, 316.
- Laplace, P. S.*, obituary notice of, xliii, 166.
- Lea, I.*, new species of Colimacea, xl, 28.
- , on *Patella amœna*, xl, 31.
- , on fossil Brachiopoda, xlvi, 109.
- Lea, M. C.*, analysis of chrome iron, xxxviii, 243.
- Lebanon springs, viii, 21; xxxvi, 7.
- Lederer, L.*, obituary notice of, xliv, 216.
- Lettsom, W. C.*, translation of Kobell on galvanography, xlvi, 221.
- Linsley, J. H.*, catalogue of the shells of Connecticut, xlvi, 271.<sup>f</sup>
- Lloyd, H.*, on the regular variation of the earth's magnetism, xlvi, 391.
- Locke, J.*, on manufacture of copperas at Strafford, Vt., iii, 326.
- , magnetic observations in Ohio, xxxviii, 157; xl, 56.
- Locke, J.*, on terrestrial magnetism, xxxix, 319; xl, 149.
- , diluvial scratches in Ohio, xli, 175.
- , lead region of the Upper Mississippi, xlvi, 106.
- Loomis, E.*, magnetic observations, xl, 378.
- , on the shooting stars of April, 1842, xliii, 214.
- , errata in Hutton's table of products, xliii, 116.
- , supplement to meteorological observations for 1841 to 1844, xlix, 406.
- Lund*, fossil human bones found in South America, xliv, 277.
- Lyell, C.*, on vertical lines of flint, xxxv, 305.
- , on the tertiary of Martha's Vineyard, xlvi, 318.
- Machure, W.*, liberal donations to science by, xxxvii, 399.
- , geological labors of, xliii, 231.
- , proceedings of the Academy of Natural Sciences of Philadelphia on the death of, xxxix, 212.
- Macomber, D. O.*, account of a frozen well, xxxvi, 184.
- Mansfield, J.*, obituary notice of, xviii, 208.
- Mason, O.*, notice of rocking stones, x, 9.<sup>f</sup>
- , localities of minerals, x, 10.
- McCord, J. S.*, meteorological register at Montreal, xxxiv, 208; xxxv, 382; xxxvi, 180.
- Meade, W.*, account of travelled stone by T. L. Dick, vi, 138.
- , a new locality of zircon, xvii, 196.
- , obituary notice of, xxv, 215.
- Miller, Hugh*, geological researches of, xliii, 198.
- Miller, J. S.*, notice of, xx, 300.
- Nest, large bird's, seen by Cook and Flinders, xlvi, 218, 312, 422.
- , *ibid.*, R. Owen, xlvi, 61.

- Obituary, of *F. Pascalis*, xxv, 216.  
 —, of *F. Hall*, xlvii, 139.  
*Ersted, H. C.*, Connection between Magnetism and Electricity, iii, 386.  
*Phelps, O.*, machine for facilitating excavation of earth, xiv, 167.<sup>f</sup>  
*Pontoppidan, E.*, [spelt incorrectly *Pantoppidan*, p. 193,] account of the sea-serpent, ii, 163.  
*Saxton, J.*, letters on electro-magnetism, xxii, 409, 410.  
 Silica, see *Silex*, p. 236.  
*Skaquaw*, Cherokee, prophecy of, iii, 39, [spelt *Shaquaw*, p. 230.]  
 Snowgauge, xli, 331.  
 Solidification of carbonic acid, *J. W. Bailey*, xxxvii, 398.  
 Temperature of the Earth, *L. Cordier's* essay on, xv, 109.

---

 CORRIGENDA TO VOL. XXVIII.

“*Extreme cold*” of 1766–7.—In Volume xxviii, at page 183, are quoted observations at New Haven, Conn., on the cold of 1766, 1767, stated in “*degrees of extreme cold.*” This phrase being obscure, was then erroneously interpreted to be equivalent to “*degrees below zero.*” An examination of the MS. Meteorological Journal of Pres. Stiles, shows that the words “*extreme cold*” were marked on the thermometer (which was probably Hauksbee’s) as comprehending a region, on the scale, of 20° H., viz. from 85° to 105°; 100° H. being equal to 0° Fahr. Immediately above this region of *extreme cold*, is a region of 20° marked “*frost*,” extending from 65° to 85° H. (65° H. being equal to +32° Fahr.) The cold at New Haven ascertained from other sources was, Dec. 31, 1766, —1° F., Jan. 1, 1767, —8½ F., Jan. 2, —9¾ F., which numbers correspond very nearly with the statements in *extreme cold*, when explained on the principles above mentioned. The cold of Jan. 5, 1835, at New Haven, still appears to be more intense than any previously recorded here.

---

 CORRIGENDA TO VOL. XXXII.

*East Bridgewater Meteorite.*—I have examined the East Bridgewater, Mass., Meteorite referred to in vol. xxxii, p. 395, of this Journal, and find the specimens which were collected to be nothing more than old slag from an iron-furnace, which had been spread over the field in former times. Some rounded balls of these had been washed up during the severe thunder shower during which the fall was believed to have occurred. One of the specimens submitted to my inspection was from the identical parcel collected by the lad with whom the report originated. Its surface was much invested, (and its substance partially penetrated) with rootlets of grasses!  
 CHARLES U. SHEPARD.  
 New Haven, April 22, 1847.



PLATES, MAPS AND OTHER ILLUSTRATIONS

IN THE

AMERICAN JOURNAL OF SCIENCE AND ARTS.

VOL. I.—PLATES.

	Page.
1. New Fire Apparatus, by Samuel Morey, - - -	91
2. Geological Map of a part of Massachusetts on Connecticut River, 1817, by Edward Hitchcock, with section of Rock Strata, [omitted in new edition : see note, p. 105.]	105
3, 4, 5, 6. Plates illustrating Revolving Steam Engine of Samuel Morey, [omitted in new edition : see note, p. 163.]	157
7. Figure of the <i>Asclepias lanceolata</i> , by Eli Ives, M. D.,	252
8. Disruption of the Ground by Frost, - - -	286
Dr. J. F. Dana's Electrical Battery, - - -	292
9. Portrait of Archibald Bruce, M. D., - - -	299
10. Geological Map of the Northwest part of Massachusetts, 1819,	337
11. Figure of the <i>Gnaphalium decurrens</i> , by Eli Ives, M. D.,	380
12. Figures of R. Hare's Substitute for Woulfe's or Nooth's Apparatus, (for impregnating fluids with gaseous substances,) - - -	410
13. Figures of R. Hare's Calorimotor, a new Galvanic Instrument, - - -	413

WOOD CUTS.

Section of Calton Hill, near Edinburgh, by J. W. Webster, M. D., - - -	232
Line of Natural Bridge, by Rev. Elias Cornelius, - - -	319

VOL. II.—PLATES.

1, 2, 3. Strong's Mathematics, - - -	54, 266
4. Sullivan's Steam Boat, - - -	106
5. " " " and Doolittle's Mathematical Diagrams, - - -	101
6. Granite Rock singularly supported, - - -	200
Various Fossil Shells, - - -	244, 245
Howard's Differential Thermometer, - - -	327
Green's new Inflammable Air Lamp, - - -	330
7. Human Skull dug up near Circleville, Ohio, - - -	243
Prof. Jacob Green's figures of Snow Crystals, - - -	337

	Page.
Fossil Teeth, - - - - -	246
8. R. Hare's Compound Blowpipe, &c., - - - - -	298
9. R. Hare's Eudiometers, - - - - -	312

## WOOD CUTS.

Bigsby's view of Rock Strata near Carthage Bridge, in mouth of Genesee River, - - - - -	253
--------------------------------------------------------------------------------------------	-----

## VOL. III.—PLATES.

1. Town's Bridge, (Frontispiece,) - - - - -	158
2, 3. Various Coal Fossils, - - - - -	5
4. R. Hare's Galvanic Deflagrator, - - - - -	105
Part of Hare's Blowpipe, - - - - -	93
5, 6. Town's Bridge, - - - - -	158
7. Fossil Médusa, - - - - -	285
Rosemary-Leaved Andromeda, - - - - -	283
Native Copper Rock of Lake Superior, - - - - -	204
8. Dr. Bigsby on Lake Huron, &c., - - - - -	254
“ “ “ Geological Views, &c., - - - - -	264
“ “ “ Organic Remains, - - - - -	270
9. Diagrams illustrating Prof. A. M. Fisher's paper on theory of Printing Presses, - - - - -	320
Jacob Perkins's Piezometer, &c., for Compression of Water, - - - - -	347
10. John I. Wells's Patent Lever Press, Hartford, Conn., - - - - -	313

## WOOD CUTS.

Six cuts illustrating Ørsted on connection of Magnetism and Voltaic Electricity - - - - -	387, 388, 389
----------------------------------------------------------------------------------------------	---------------

## VOL. IV.—PLATES.

1. View of Smith's Coal Mine, Luzerne Co., Penn., - - - - -	2
2. Map of the Wilkesbarre, &c. Anthracite Coal Formation, - - - - -	2
3. Ward's Steam Engine, - - - - -	99
4. Barton on Geology of the Catskills, - - - - -	249
5. Coal Mine of Treuil, near St. Etienne, department of the Loire, - - - - -	267
6. Pearson's Patent Domestic Telegraph, - - - - -	314
7. Aphlogistic or Flameless Lamp, by Dr. J. S. Comstock, - - - - -	328
8. Curves of Trisection, by Rev. Wm. Allen, - - - - -	343

## WOOD CUTS.

Figure of the Pennatula sagitta, [species of Lernæidæ,] - - - - -	89
Prof. Green's Blowpipe, - - - - -	166

VOL. V.—PLATES.

	Page.
1. Portrait of Prof. Alex. M. Fisher, of Yale College, (Frontis- piece,) - - - - -	367
2. Section of Canaan Mountain, Columbia Co., N. Y., by D. H. Barnes, - - - - -	8
3. R. Hare's New Galvanic Deflagrator, - - - - -	97
4. E. and W. section of Kensington, (Berlin,) Conn., - - - - -	42
Effects of Lightning, - - - - -	124
5. View of the junction of the N. E. and Little Ponds, Salisbury, Conn., - - - - -	34
Gas Apparatus used in the Tron Steeple, Glasgow, - - - - -	141
Impression in Sandstone near Pittsburgh, Pa., - - - - -	155
6. Eastman's Rotary Sawing Machine, - - - - -	146
7. Outline of Malbay and the vicinity, (in Canada,) - - - - -	205
8. Impression of Human Feet in Lime rock, (found on the river bank at St. Louis, Mo.,) - - - - -	223
9. Electro-Magnetic Apparatus, by P. Barlow, - - - - -	396

WOOD CUTS.

Cave, - - - - -	212
Fossil Orthoceratite, - - - - -	213
Rocking Stone, Phillipstown, Putnam Co., N. Y., - - - - -	253

VOL. VI.—PLATES.

1. Geological Map of the Valley of the Connecticut, with Profile, by Rev. Edward Hitchcock, - - - - -	1
2, 3, 4, 5, 6, 7, 8. Figures of Shells, (Genus Unio,) by D. H. Barnes, - - - - -	107
9. Figures of two Uniones, by D. H. Barnes, - - - - -	126
Figure of the Botrychium simplex, - - - - -	103
Section of Mount Toby, (Mass.,) - - - - -	78
10. Fossil Fish, and Vegetable Remains, - - - - -	77, 78, 80
Usnea fasciata, (of Torrey,) - - - - -	106
Fasciculite of E. Hitchcock, - - - - -	226
Granite Veins in Sienite, - - - - -	14
Diagrams, by Isaac Orr, - - - - -	134, 137, 140
11. Rocking Stone, Durham, N. H., - - - - -	243
Dr. Dana's Galvano-magnetic Instrument, - - - - -	330
Silver Apparatus for Fluoric Acid, - - - - -	354
Döbereiner's Apparatus for Vegetable Analysis, - - - - -	384
12, 13, 14. Figures of Shells, (Genera Unio and Alasmodonta,) by D. H. Barnes, - - - - -	258

## VOL. VII.—PLATES.

	Page.
1. Fac Simile of Goshen Graphic Granite, - - -	22
Pseudomorphous Granite, - - -	22
Block of Limestone in Granite, - - -	22
Rocking Stone of Roxbury, - - -	59
2. Proteus of the Lakes, (3 figs.) by Dr. S. L. Mitchill, - -	63
3. Shells, (genus Chiton,) by D. H. Barnes, - - -	69
4. Diagrams to Blake's paper on Teeth of Cog-Wheels, - -	86
5. Perkins's new Steam Engine, - - -	111
E. Hitchcock's Mineralogical Hammer, - - -	175
6. R. Hare's Electrical and Chemical Apparatus, 103, 108, 110	201
7. Rocking Stone, Warwick, R. I., - - -	316
8. Diagrams illustrating Quinby's paper on Crank Motion, -	326
Chilton's Rain Gauge, - - -	323
9. Diagrams illustrating Precession of the Equinoxes, - -	337
Halo seen at New Lebanon, - - -	332
10. Jacob Perkins's Improved Steam Engines, - - -	240
Geological Map of Martha's Vineyard, Mass., - - -	347
11. R. Hare's Improved Deflagrators, - - -	

## VOL. VIII.—PLATES.

1. Geological Map of Berkshire Co., Mass., &c., 1824, - -	1
2. New Air-pump (Patten's), - - -	144
Organic Relic, (Orthoceratite,) - - -	85
Singular position of Granite, - - -	5
Precession of the Equinoxes, - - -	140
Figures of Crystals, - - -	91
3. Geological Map of Easton, by F. Finch, - - -	236
4. Granite Veins in Chester, Mass., - - -	250
Dana's Air-pump (Patten's), - - -	275
Inclination of Mica Slate and Argillite, - - -	242
5. Prof. De Butts's New Galvanic Instruments, - - -	271
6. Figures of the May Bug (genus Melolontha), by J. Cist, -	269

## VOL. IX.—PLATES.

1. Snake Hill in Saratoga Lake, (Frontispiece,) - - -	1
2. Rocking Stone in Savoy, Mass., - - -	27
Oolite Formation, Saratoga Co., N. Y., - - -	18
Singular Conformation of Limestone, Williamstown, Mass.,	19
Map of Mineral Localities on Connecticut River, by T. D.	
Porter, - - -	177
3. Gyropodium coccineum, Schw., - - -	56
4. Patten's Air-pump, Gazometer and Balance Beam, - - -	92

	Page.
5 and 6. Dewey's Figures of Carices, Tab. A, figs. 1—4,	
	vii, 273, 277; viii, 266; ix, 257
7 and 8. " " " " B, " 5—8,	
	viii, 98; ix, 60
9 and 10. " " " " C, " 9—12,	
	viii, 97; ix, 60, 257
11. Raja erinaceus, by S. L. Mitchill, - - - - -	290
12. Diagrams illustrating Quinby on Overshot Water Wheels,	304
" " " " Steam-Boilers, - - - - -	313
Bolles's Trigonometer, - - - - -	401
March of Caterpillars, &c., - - - - -	285
Urocerus, a species of, - - - - -	288
13. Instrument for describing the Spiral of Archimedes, by A. B. Quinby, - - - - -	316

---

VOL. X.—PLATES.

1. Geognostical Map of Sicily, by C. Daubeny, (Frontispiece,)	230
Tertiary Formations at Hyde Park, near Poughkeepsie, N. Y.,	227
2. Rocking Stones in North Providence, R. I., - - - - -	9
Two-headed Snakes, by Dr. S. L. Mitchill, - - - - -	48
3, 4, 5, 6, 7. Dewey's Figures of Carices, Tab. D, E, F, G,	
figs. 13—23, - - - - -	vii, 274; ix, 60; x, 30, 265
8. Luminous Circles around the Sun, Aug. 1825, - - - - -	368

WOOD CUTS.

R. Hare's Improved Eudiometer and Calorimotor for Gal-	
vanic Ignition, figs. 1, 2, 3, - - - - -	68, 69
" Sliding Rod Eudiometer, figs. 4 and 5, - - - - -	72, 74
" " " " figs. 6, 7, 8, - - - - -	76, 77

---

VOL. XI.—PLATES.

1. Crinited Dory, or Zeus crinitus, - - - - -	144
2, 3, 4, 5, 6, 7, 8. Dewey's Carices, Tab. H, I, K, L, M, N, O,	
figs. 24—49, vii, 270; viii, 98; ix, 66, 67, 69; x, 36, 44, 45, 276,	
[281, 282; xi, 147, 304, &c.	
On plate H, figures of Grevillea serrata, - - - - -	183
9. Aerostatic Elevator on a Canal, &c., - - - - -	340
10. Hydrostatic Vertical Elevator, on a Canal, - - - - -	342
11. Hydrostatic Tractors, and a Rolling Floor, - - - - -	343
12. Hydrostatic Vessel or Hydronaut, - - - - -	344
13. Aerostatic Vessel or Aeronaut, - - - - -	346

## WOOD CUTS.

	Page.
Plans of Long Lake and Mud Lake, in Vermont, -	39
R. Hare's Apparatus for showing Specific Gravity, 122, 123, 124	124
“ Sliding Rod Eudiometer, - - - - -	125
“ Apparatus for finding Specific Gravity,	127
“ Chyometer, - - - - -	128
“ Litrameter, - - - - -	133
“ Hydrostatic Blowpipe, - - - - -	137
“ Self-regulating Reservoir, - - - - -	140
“ “ “ “ - - - - -	142
“ Hydro-oxygen Blowpipe, - - - - -	143
Figures of the Divining Rod, - - - - -	202, 203
Sketches of Topography, S. side Ontario Valley, N. Y., 214, 215	214, 215
Section of a Valley, and Imaginary Section between Lake Erie and Lewiston, - - - - -	216, 217
Figures of Crystals of Humboldtite, - - - - -	252
“ “ Davyne, - - - - -	257
“ “ Cayolinite and Christianite, 260, 262	260, 262
“ “ Biotina, - - - - -	265, 266
Solar Halos, Aug. 1825, - - - - -	326
“ “ Sept. 1816, - - - - -	328
“ “ “ “ - - - - -	333
Diagram illustrating Crank Motion, - - - - -	338

## VOL. XII.—PLATES.

1. Plans of Engines of Steamboat Babcock, by Patten, -	115
2. Paddle Fish or Spoonbill Sturgeon of the Mississippi,	201
Figures of Tortoises, - - - - -	286, 287
3. Fluids in the Cavities of Minerals, - - - - -	214
4. Geological Map of Lead Mines and Veins of Hampshire Co., Mass., by Alanson Nash, - - - - -	238
5. Dewey's Figures of Carices. Tab. P, figs. 50-52, xi, 150, 162; xii, 296	296

## WOOD CUTS.

R. Hare's Piston Valve Volumeter, - - - - -	36
“ Simple Valve Volumeter, - - - - -	38
“ Sliding Rod Gas Measure, - - - - -	39
“ Barometer Gage Eudiometer, - - - - -	41
“ Improved Mercurial Sliding Rod Hydro-Oxygen Eudiometer, - - - - -	45
“ Carbonicometer, - - - - -	48
Quinby's Diagrams, - - - - -	127, 345
Crystals of Topaz, from Huntington, Ct., by C. U. Shepard,	158
Crystal of Cyanite, - - - - -	159
“ of Sillimanite, - - - - -	160

	Page.
Granite and Mica Slate, nests of, Hampshire Co., Mass.,	242
Granite and other Rocks, - - - - -	242
Feldspar Veins, - - - - -	244
Section of Strata, - - - - -	248
Argentine Cliff and Galena Vein, &c., " - - -	257
Granite Veins, - - - - -	263, 264, 265

VOL. XIII.—PLATES.

1. Doolittle's Hydrostat for Steam Engine Boilers, -	64
Perkins's Steam Engine, - - - - -	59
2. Dog Trains of the Northwest, - - - - -	391

WOOD CUTS.

R. Hare's Substitute for Woulfe's Bottles, - - -	1
" Apparatus for regulating Supply of Gas, - - -	3
" Palm Glass, - - - - -	4
" Apparatus for illustrating Capacities for Heat, -	6
" " for dividing Glass by Friction, - - -	7
Diagram of Barringer's Gold Mine, N. C., - - -	215
View of Ichthyolite Hill, Mount Bolca, - - -	256
Mather's Air Thermometer, - - - - -	369
Marshall's Temporary Rudder, - - - - -	372
Crystals of Zircon, from Buncombe, N. C., by C. U. Shepard,	392

VOL. XIV.—PLATES.

1. Eaton's Geological Profile from the Atlantic to Lake Erie, 1822, 3, (Frontispiece), - - - - -	145
Views of the Village of Black Rock; of Aqueduct Bridges on Erie Canal at Little Falls and Rochester, and of the Entrance of the Canal into the Hudson at Albany. -	
2. Profile Mountain in New Hampshire, - - - - -	64
3. Map and Profile of the Louisville and Portland Canal, -	65
Geological Profile from Louisville to the Knobs, - - -	65
Machine for raising Rocks from Canals, - - - - -	66
4. Map of the Niagara Peninsula, with Course and Profile of the Welland Canal, - - - - -	159
5. Machine for aiding removal of earth in deep cuttings, &c., by O. Phelps, - - - - -	167
6. Improved Elevating Surveyor's Compass, by L. Lyon, -	268
7, 8. Figures of Uniones from Ohio, by S. P. Hildreth, -	276
9. Geological Map of part of Nova Scotia, with a Section, -	305
10. Dewey's Figures of Carices. Tab. Q, figs. 53, 55, -	351
Diagrams illustrating E. Wright's paper on Fluxions, -	330
11. Dewey's Figures of Carices. Tab. R, figs. 56-58, -	351
12. Lunar Circles, Nov. 2, 1827, - - - - -	397

## WOOD CUTS.

	Page.
Geometrical Diagram, - - - - -	61
Diagram explanatory of Electro-magnetic Phenomena,	110
Illustrations of Geological Specimens, 3 pages, -	145
Long's Steam Pump, - - - - -	169
Figures of Water Spouts, - - - - -	173
R. Hare's Hydro-pneumatic Cistern, - - - - -	200
Apparatus for obtaining Labarraque's Disinfecting Liquor,	252
Diagrams illustrating Wright's paper on Fluxions, -	331, 334,
	[335, 339, 341, 347, 348
R. Hare's Apparatus for burning Metals in Chlorine Gas,	354, 355
"    "    procuring Nitrogen, - - - - -	356
"    "    exhibiting properties of Carbonic Acid Gas,	358

## VOL. XV.—PLATES.

1. Cape Sharp, Nova Scotia, - - - - -	136
2. Partridge Island, - - - - -	138
3. Instrument for drawing Curves of Conic Sections, -	368
Polariscope, - - - - -	369

## WOOD CUTS.

Du Commun's Diagram, - - - - -	13
Leslie's Diagram to illustrate a Corona, - - - - -	63
R. Hare's Apparatus for Eudiometry, - - - - -	262, 264
"    Mercurial Sliding Rod Eudiometer, - - - - -	267
"    Subsidiary Eudiometer, - - - - -	271
"    Apparatus for analysis of Cyanogen, - - - - -	272
"    Volumscope, - - - - -	276
"    "    applied, - - - - -	278
Diagrams illustrating effects of blast of air between cards,	363

## VOL. XVI.—PLATES.

1. Geological Map of Gold Region of North Carolina, by Prof. Mitchell, - - - - -	1
2. Plan of a Cylinder Glass House, by H. N. Fenn, M. D.,	112
3. Rock Spring at Saratoga, - - - - -	245
4. Hassler's Repeating Theodolite, - - - - -	253
5, 6. Cooper's Rotative Fire Engine, - - - - -	313

## WOOD CUTS.

Figures illustrating the Tides, - - - - -	81, 82
Rodriguez's Geometrical Diagrams, - - - - -	95
Crystal of Protosulphuret of Iron, by C. U. Shepard, -	202



	Page.
Crystal of Columbite, by C. U. Shepard, - - -	220
R. Hare's Apparatus for obtaining Specific Gravity of the Gases, - - -	295
“ “ “ Nitrous Oxide, - - -	296
Sea Pink, [an Amphitrite,] - - -	329
Lachrymatories, from Island of Milo, &c., - - -	333
Apparatus for blasting Rocks, - - -	373

VOL. XVII.—PLATES.

1. Junction of Trap and Sandstone, at Rocky Hill, near Hartford, Conn., (Frontispiece), - - -	123
2. View and Topographical Plan of Mines of Pasco, - - -	43
3. Figures of Images found in Peru, - - -	117
4. Map of the Magnetic Isodynamic Curves in N. Hemisphere, - - -	145
5. Siamese Twin-Boys, - - -	212
6. Portrait of Sir Humphry Davy, - - -	217

WOOD CUTS.

Apparatus for using Mineral Fusible Cement, - - -	84
Figures illustrating Attraction of Liquids, - - -	98
Crystal of Ferro-Silicate of Manganese, by C. U. Shepard, - - -	142
“ Yenite, by C. U. Shepard, - - -	143
Diagram of a model city, - - -	260
Apparatus for Welther's Tube of Safety, by E. Mitchell, - - -	345
Portable Hygrometer, by A. A. Hayes, - - -	352
Figure of Columbite, by C. U. Shepard, - - -	358
Figures of Zircon, - - -	360
Kiln for making Charcoal, - - -	396

VOL. XVIII.—PLATES.

1. Figures of the American Locust, (Cicada septendecim,) - - -	47
2. View near the Upper Falls on the Genesee River, - - -	209
3. Map of the Wyoming and Lackawanna Valleys, by George Jones, with a Profile of the Railroad from Carbondale to Lackawaxen River, - - -	308
4, 5. Theory of Springs and Fountains, - - -	273
6, 7, 8. Fossil Organic Remains of the Ferruginous Sand Formation of the U. S., - - -	249, 250

WOOD CUTS.

Diagram of Curve of Perpetual Congelation, - - -	9
Wilder's Geometrical Figures, - - -	38, 41
Marine Ventilator, - - -	77
Crystals of Iodine, by W. W. Mather, - - -	85
Fossil Stems, &c., in Mines, - - -	112, 113

	Page.
Plan of a Framè Bridge, by Lieut. G. W. Long, -	125
Crystals of Franconia Epidote, by C. U. Shepard, -	130
Crystals of Garnet, - - - - -	132
Illustration of Decomposition of Water by Galvanic Currents,	200
New Instrument for taking Specific Gravities, -	265
Crystals of Tourmaline, by C. U. Shepard, ' - - - -	299, 301
Ideal Section of Strata at Wilkesbarre, in Pennsylvania,	309
Cross Section of Gaylord's mine, West side of the Susquehanna River, - - - - -	325
View of a Contorted Coal Bed at Pittston, Penn., -	326

## VOL. XIX.—PLATES.

1. Coal Mine at Mauch Chunk, - - - - -	12
2. Map showing the position of Coal Beds now exposed in the Mauch Chunk Coal Region, - - - - -	9
View of the Chute at Mauch Chunk, - - - - -	9
Imaginary Cross Section of the Mountain at the Great Coal Mine, - - - - -	12
3. Vertical Section of Coal Beds, - - - - -	12
4. Chemical Laboratory and Lecture Room in the Medical Department of the University of Pennsylvania, -	26
5. Sections of the Hartz Mountains, - - - - -	105
6. <i>Ulmus racemosa</i> , (Thomas,) a new species, - - - -	170
<i>Phalæna antiqua</i> ; imago, larve, &c., - - - - -	62
7. Illustrations of Arsenious acid and Arsenic acid, -	340

## WOOD CUTS.

Glass lenses, - - - - -	58
Furnace for cementing Steel, - - - - -	183
" " obtaining Potassium, - - - - -	212
Apparatus for trying Strength of Timber, - - - -	234
Diagram illustrating Halley's theory of Trade Winds,	270
Ground plan of Mine of Spathic Iron in New Milford, Conn.,	313
Section of do., - - - - -	317
Improved Surveyor's Compass, - - - - -	338
Tusk of a Mastodon, found near Rochester, N. Y., -	359
Singular impression in Marble, - - - - -	361
Henry's large Electro-magnet, - - - - -	408

## VOL. XX.—PLATES.

1. W. C. Redfield's Chart of the Atlantic Ocean, with track of a storm of August, 1830, - - - - -	17
2, 3, 4. Aldini's Apparatus for Protection against Fire, -	96
5. Transition Rocks of the Cataract, - - - - -	74
Organic Remains, (trilobites,) &c., - - - - -	78
Coal plant, ( <i>Crotalus</i> ? of A. Eaton,) - - - - -	122
6. <i>Tullia pycnanthemoides</i> , - - - - -	343

## WOOD CUTS.

	Page.
Sketch of the Aurora Borealis, March 9, 1831, - - -	263
Lenses for Microscopes, - - - - -	265, 266, 267
Wilder's Geometrical Diagram, - - - - -	285
Safety Apparatus for Steamboilers, - - - - -	321
Henry's Apparatus for Reciprocating Motion by Magnetic Attraction and Repulsion, - - - - -	342
Apparatus for manufacturing smoking Sulphuric Acid,	349
Apparatus for filling barometer tubes in vacuo, - - -	365

## VOL. XXI.—PLATES.

1. Curves of Vaporization, - - - - -	71
2. Prof. Joslin's Electro-magnet, - - - - -	87
3. Section of Strata through a part of Connecticut, from Killingly to Haddam, on Connecticut River, by W. W. Mather,	94
4. Portrait of Eli Whitney, - - - - -	201
5. Tomb of " " - - - - -	264
6. Rotascope by Walter R. Johnson, - - - - -	265
Diagrams to E. F. Johnson's paper on the Epicycloid,	280
7. Geological and Mineralogical Map of a part of Orange Co., New York, by Drs. Young and Heron, 1831, - - -	321

## WOOD CUTS.

Gale's Apparatus for obtaining Potassium, - - - - -	61
Operations of Gossamer Spiders, - - - - -	112
Hazard's Geometrical Diagram, - - - - -	315
Crystal of Specular Iron, by C. U. Shepard, - - - - -	329
Davy's decomposition of Potash, - - - - -	367
Profile of Mohawk and Hudson Railroad, - - - - -	385
Volcanic Island thrown up in the Mediterranean, 1831,	402, 403

## VOL. XXII.—PLATES.

1. Geological Map of Massachusetts, by Edward Hitchcock, 1832,	1
2, 3. Anatomy of the American Wild Swan, (Cygnus ameri- canus,) - - - - -	83
4. Steam Pyrometer, by W. R. Johnson, - - - - -	96
5. Map showing the extent of Primitive and of Secondary Formations in the Connecticut River Valley, with various sections, - - - - -	205
6. Diagrams of Oval Arches, - - - - -	303

## WOOD CUTS.

Wright's Geometrical Diagrams, - - - - -	76, 78, 81, 82
Apparatus for Disinfecting by Heat, (Dr. Wm. Henry's,) -	120

	Page.
Apparatus for measuring Expansion and Contraction of Stone,	137
“ “ showing Effect of Elasticity, - - -	191
Brewster's Diagrams illustrating Polarization of Light by Reflection, - - - - -	278, 284
De Witt's Conical Rain Gauge, - - - - -	321
Thomson's Diagram relative to Railroads, - - -	347
Electro-magnetic Apparatus, - - - - -	410, 412, 415

VOL. XXIII.—PLATES.

1. Geological Map of the Mining Districts in Georgia, and parts of North Carolina and Tennessee, by J. Peck, - - - 1
- 2, 3. Organic Remains of the Ferruginous Sand Formation of the United States, - - - - - 288

WOOD CUTS.

Brewster's Diagrams on certain points in Optics, 29, 30, 31, 226, 227	36
Figures of Hail Stones, - - - - -	39
Diagram to illustrate Field Surveying, - - - - -	66
Ancient American Utensil, - - - - -	76
Wollaston's Reflecting Goniometer, simplified by Graves,	103
Wood's Inking Machine, - - - - -	114
Instrument for Venous Injection, - - - - -	164
Plan of Mantell's Museum of Natural History, - - -	203
Trilobite found in Staffordshire, England, - - -	237, 238
Locke's Microscopic Compass, - - - - -	287
Apparatus for analyzing Atmospheric Air, - - -	302
Figure of the Delphinus globiceps, (Cuv.) - - - -	326
Economical Furnace for warming houses, - - -	330
Stove Drum " " " - - - - -	351
Dumont's Syrup Filter, - - - - -	387
Glass Syphons for transferring Corrosive Fluids, -	

VOL. XXIV.—PLATES.

1. Maps illustrating Canal Surveys in the State of New York, 19
2. Plan of the Canal Locks at Cincinnati, Ohio, - - - 72
- 3, 4. Organic Remains of the Ferruginous Sand Formation of the United States, - - - - - 128
5. Elementary Illustrations of Architecture, - - - 257

WOOD CUTS.

Sections, views, &c., illustrating Phillips's Essay on the Georgia Gold Mines, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17, 18	77
Thomson's geometrical Diagrams, - - - - -	79
Emmet's Magneto-electric Apparatus, - - - - -	

	Page.
View of Sienite in Limestone, (on the Catarauqui,) -	100
“ “ “ - - - - -	102
Pixii's Revolving Magnet, - - - - -	146
Sketches of a Rocking Stone in Hanover, N. H., -	185
*Hare's Chemical Apparatus, 4 leaves, between 252 and	253
Wright's Geometrical Diagrams, 302, 303, 305, 306,	307
Hare's Improved Syphons, - - - - -	318
Sketch of the Bare Hills near Baltimore, - - - -	360
De Witt's Geometrical Diagram, - - - - -	369
De Maistre's Photometer for comparing the brightness of stars,	378

VOL. XXV.—PLATES.

1. Dewey's Figures of Carices. Tab. S, figs. 58-60, - 140
2. Conrad's Freshwater Shells from Alabama, Tennessee, &c., 338

WOOD CUTS.

Strait's Apparatus for Aerial Navigation, - - -	16, 18
De Maistre's Apparatus illustrating the Origin of Water Spouts,	48
Crystal of Ledererite, by C. T. Jackson, - - -	79
Wright's Geometrical Diagrams, - - - - -	93, 97
Hare's Electrical Apparatus, - - - - -	137, 138
Apparatus illustrating Preservation of Copper by connection with Iron, in Seawater, - - - - -	204
Geometrical Diagram, - - - - -	262
Improvement of De Witt's Rain Gauge, - - -	268

VOL. XXVI.—PLATES.

1. *Corydalis formosa*, and *C. canadensis*, - - - 114
- Chrysomela vitivora*, - - - - - 113
2. Dewey's Figures of Carices. Tab. T, figs. 61, 62, 107
3. Transverse Section illustrating the superposition of the Rocks  
between Baltimore and the Ohio River, by W. E. A. Aikin, 219
4. Terra Cotta vessels from Pompeii, - - - - - 238
5. Barberini, or Portland Vase, - - - - - 243
6. The Warwick Vase, - - - - - 244
7. Twining's Projection of the Path of a Meteor, Nov. 13, 1833, 339
8. Figures of new Shells, by J. G. Totten, - - - 366

WOOD CUTS.

Emmet's Figures illustrating his paper on Voltaic Induc- tion, - - - - - 25, 27, 30, 32, 36, 38, 41	
Maury's Instrument for finding true Lunar Distance,	63

\* An asterisk prefixed, as above, indicates that the cut forms a separate sheet.

	Page.
De Maistre's Plan of Marine Grotto, - - -	72
Locke's Galvanometer, - - - - -	105
Long's Parasite Tree in Florida, - - -	106
Page's Electric Syringe, - - - - -	111
Churchill's Double Fish, - - - - -	116
Kirtland's Figures of Shells, (Naiades)	120
Olmsted's Geometrical Diagrams, 145, 148, 159, 164,	171
Edmondson's Rotating Armatures, - - -	205
Gay Lussac's Air-pump, - - - - -	265
Hare's Apparatus for Rock Blasting, with aid of Galvanism,	355, 356
"    "    " transfer of Corrosive Liquids, -	358
"    Improved Galvanometer, - - -	359
Edmondson's Modification of Ampère's Rotating Galvanic Element, - - - - -	370
Locke's Electro-magnetic Apparatus, - - -	378, 380
Wallace's Dissection of Eye of the Halibut, -	394

VOL. XXVII.—PLATES.

1. Sketch of Aurora Borealis of July 10, 1833, and Diagram  
    of its effects on Magnetic Needle, - - - 118
2. Dewey's Figures of Carices, Tab. U, and V, figs. 63-68, 236
3. Section through Mica Slate at Lowell, Mass., showing the in-  
    trusions of Trap and Granite, - - - 340

WOOD CUTS.

Rogers's Galvanometer, - - - - -	40
Johnson's Figures illustrating Rotation of Liquids, -	85, 87
Strait's Figure of Compression Bellows, - - -	89
"    "    Air-pump Bellows, - - -	91
"    "    applications of Balance Principle, 92, 94, 95, 96	98
Durant's Improved Barometer, - - - - -	98
Chapin's Figures illustrating his paper on junction of Trap and Sandstone, in Wallingford, Ct., 105, 106, 108, 109, 110, 111	105, 106, 108, 109, 110, 111
Lapham's Geometrical Diagrams, - - - - -	127, 128
Gorton's "    Diagram, - - - - -	132
Hare's Apparatus for freezing water by aid of Sulphuric acid,	133
Wallace's Dissection of the Eye of the Streaked Bass,	218
Riddell's improved Barometer, - - - - -	223
Rogers's Apparatus for analyzing Calcareous Marl and other Carbonates, - - - - -	300
"    Self-filling Syphon for chemical analysis, - - -	302
Gorton's Geometrical Diagrams, - - - - -	304, 306
Live Snake suspended by Spiders, - - - - -	309
Diagram of Strata from Lake Ontario to Lake Erie, -	333
Bones of the Iguanodon in the Sands of the Chalk, S.E. part of England, - - - - -	358, 359, 360
Crystals of Strontianite, by C. U. Shepard, - - -	365
Figures illustrating phenomena of Magnetization, -	402

## VOL. XXVIII.—PLATES.

	Page.
Dana's System of Crystallographic Symbols, - -	250

## WOOD CUTS.

Plan of improvements at the mouth of the Nile in Egypt,	25
Diagram illustrating computation of Paths of Meteors,	99
Plan of region around Schoharie, N. Y., - -	172
Hare's Apparatus for obtaining the Nitrogen from Atmospheric air, - - - - -	263
“ large Volumescopie for analysis of Atmospheric Air,	265
Conrad's Diagram illustrating Elevation of the Atlantic Coast,	280
Clary's sketch of remarkable Parhelia, Feb. 1835, - -	304
Bache's Apparatus for Radiation, Absorption, &c. of Heat, {	320, 324
*Totten's Figures of new Shells, a separate leaf, to go at p.	325, 326
Bell's improved Air-pump Receiver, - - -	347
Fossil Teeth from Marl Pits of New Jersey, - - -	354
	378

## VOL. XXIX.—PLATES.

1. Topographical and Geological Map of the Coal Measures and of the Muriatiferous and Ferruginous Deposits in the Secondary Region of the Valley of the Ohio; with profile of the Ohio Valley, - - - - -	1
2. Grotto of Plants, Ohio, - - - - -	18
3. Hitchcock's Figures of Ornithichnites, - - -	307
4. “ Proportional View of the Ornithichnites, -	307

## WOOD CUTS.

Hildreth's Section near the Ohio River, - - -	18
“ “ of Rock Strata at the Grotto of Plants,	20
“ “ “ “ at Indian Run, - -	23
“ “ Putnam Hill, - - -	31
“ “ Limestone Strata on the Clear Fork,	41
“ “ Rock strata on Will's Creek, - -	44
“ Topography of Tygart's Valley, and vicinity,	55
“ Figure of outlines of hills near Clarksburgh, -	59
“ Section of Rock Strata “ “ -	60
“ Sectional View of Coal Deposits between Morgantown and Pittsburgh, - - -	64
“ Section of “ Coal Hill,” at Pittsburgh, Pa., -	68
“ “ Rock Strata at Kiskiminitas, - -	75
“ “ Wheeling Coal Strata, - - -	80
“ “ Madreporic Deposit, on Gauly river,	100
“ “ Layers of Sandstone, - - -	102

	Page.
Hildreth's Section of Coal Strata at the Salines, on Kenawha River, - - -	104
“ “ Strata in certain hills, - - -	130
“ “ “ at the Junior Furnace, Scioto Co., - - -	133
*Dewey's Figures of Carices, Tab. W, X, Y, Z, Figs. 69-84, - - -	245
“ “ of Kobresia on Tab. Z, - - -	253
*Thirty separate leaves containing in all 156 figures of organic remains, illustrating Hildreth's paper on Geology of Valley of the Ohio. Details of the contents of these are given on pp. - - -	149-154
View of Pomeroy's Coal Beds, at Carr's Run, Ohio, - - -	50
“ Marshall's Pillar—Cliffs of New River, Va., - - -	91
“ Falls of the Kenawha, Va., - - -	101
“ Kenawha Salines, - - -	104, 113
“ Putnam's Hill, from West Zanesville, - - -	30
“ “ and the Upper Bridge at Zanesville, on the Muskingum river, - - -	30
Fata Morgana at Gibraltar, - - -	217
View of the Traun-Stein Rock, - - -	224
Montezuma's Battle-axe, - - -	229
R. Hare's Apparatus for showing explosive reaction of Hydrogen with Chlorine, - - -	243
“ “ “ for evolution of Prussic Acid, - - -	244
Carson's Diagrams respecting Currents in Water, - - -	342, 343
*Twenty-four Figures of Ornithichnites, by Hitchcock, - - -	307

VOL. XXX.—PLATES.

1, 2. Transition Rocks of the Catawaqui, - - -	233
3, 4. Figures to illustrate Formation of Twin Crystals, by J. D. Dana, - - -	275
5. “ of the <i>Hydrachna formosa</i> , - - -	354

WOOD CUTS.

Ruggles's Section of Stone-quarry hill, - - -	3
“ Plan of Country around Fort Winnebago, - - -	7
Locke's Botanical Press, - - -	54
Bonnycastle's Views of the <i>Aurora Borealis</i> seen in Canada, Dec. 1835, - - -	133, 134, 135, 136
Movable Hood, for smoky chimneys, - - -	170
Filter, for domestic purposes, - - -	172
*Dewey's Figures of Carices. Tab. Aa, and Bb, figs. 85-93, - - -	x, 278; xxx, 59
Bonnycastle's Sketch of Rock with Organic Remains, (Canada), - - -	243
Dana's Diagram to illustrate Ellipsoids, - - -	280
Mather's Apparatus for measuring Expansions of Solid Bodies, - - -	326, 328
Emmons's Section of a Trap Dike, - - -	332
“ “ Contorted Strata, - - -	337



	Page.
Emmons's Section of Cape Split, Nova Scotia, -	337
Various Geological Sections and Views, -	339, 341, 343
Figures of Forms of Calcareous Spar, -	347
Diagram illustrating position of Meteoric Cloud, -	371
Large Crystal of Columbite, (Prof. Johnston,) -	388

---

VOL. XXXI.—PLATES.

✓ 1. Portrait of Rev. John Prince, of Salem, Mass., (Frontispiece,)	201
✓ 2. Redfield's Map of the Western Atlantic, with courses of various Hurricanes, 1835, - - - -	115
✓ 3. <i>Argulus catostomi</i> , - - - -	297
✓ 4, 5. Illustrations of the Impregnation of Plants, - - -	318
6. <i>Emys oregoniensis</i> , - - - -	382

WOOD CUTS.

Indian Pots, - - - -	9
Section of Strata on Yellow Creek, Ohio, - - - -	25
Various Fossil Plants, - - - - 29, 30, 31, 32, 35, 46	35
<i>Lymnæa stagnalis</i> , - - - -	46
Section of Rock Strata of the Cuyahoga, - - - -	52
Plan of the Cuyahoga Falls and vicinity, - - - -	72
Trilobite, Licking Co., Ohio, - - - -	77
Section of Rock Strata at Flint Ridge, - - - -	81, 83
Fossil Bones of a supposed species of Castor and Ovis, -	84
<i>Chiton occidentalis</i> , fossil, - - - -	117
Redfield's Diagram of a whirlwind Gale, - - - -	137
Page's Apparatus for obtaining shocks from the Calorimotor, -	166
Lily Encrinite, fossil found in Schoharie Co., N. Y., -	258, 262, 265
Benedict's Geometrical Diagrams, - - - -	272
Apparatus for making Vinegar, - - - -	293
Grasshopper's leg subjected to Galvanism; Washing Bottles, -	295
Usher's sketch of Elevations of Bank of Mississippi, in 1811, by earthquakes, - - - -	295

---

VOL. XXXII.—PLATES.

1, 2. <i>Cycas revoluta</i> , - - - -	45
---------------------------------------	----

WOOD CUTS.

Outline of Mount Katahdin, Me., - - - -	27
Bailey's mode of testing for Nitric Acid, - - - -	86
“ effects of Air Currents on Flame of Lamps, - - - -	88
Crystals of Columbite, (J. D. Dana,) - - - -	150
R. Hare's Electric Jar, - - - -	155

	Page.
Crystal of Rhomboidal Limestone, (O. P. Hubbard,) . . . . .	232
R. Hare's Electric Machine, - - - - -	273
“ Battery discharger, - - - - -	274
“ Electrical Apparatus, - - - - -	276, 277
“ improved Barometer Gauge Eudiometer, - - - - -	281
“ Calorimotor, - - - - -	284
“ Galvanic Deflagrator of 100 pairs, - - - - -	288
“ “ 700 pairs, - - - - -	289
“ Apparatus for Combustion of Phosphorus in Nitrous oxide, - - - - -	291
Swaim's Apparatus for Electro-meteorological observations, - - - - -	305
Zabriskie's Metallic Coils, - - - - -	309, 310
“ Electro-magnetic Engine, - - - - -	315
Bailey's Figures of Common Blowpipe, - - - - -	319, 320
Glass Balance Springs for Chronometers, - - - - -	336
Crystal of Eremite, by C. U. Shepard, - - - - -	341
Cryphæus Boothii, (Green,) Fossil Trilobite, - - - - -	344
Page's Electro-magnetic Apparatus, - - - - -	356
Crosse's Acari, appearing in solutions of silex, - - - - -	377
Auroral Column, - - - - -	394

---

VOL. XXXIII.—NO PLATES.

WOOD CUTS.

J. D. Dana's Diagrams illustrating principles of drawing figures of Crystals, 33, 34, 35, 36, 37, 38, 39, 41, 43, 44, 45, 49	49
Alembic for distilling amalgam of Gold, - - - - -	69
Crystals of Eremite, (J. D. Dana,) - - - - -	71
Fossil Trilobite, (Paradoxides Beckii and P. Eatoni,) Jas. Hall, - - - - -	140
Specimen of writing with Morse's Magnetic Telegraph, - - - - -	186
Page's Electro-magnetic Apparatus, - - - - -	191, 192
Motion in the melted grease of a burning candle, - - - - -	199
Crystals of Edwardsite, by J. D. Dana, - - - - -	203
E. M. Clarke's Magneto-electric Apparatus, 214, 215, 217, 218, [219, 220, 221, 222, 223, 224	214, 215, 217, 218, 219, 220, 221, 222, 223, 224
R. Hare's Suction and Forcing Pump, - - - - -	239
“ Apparatus, - - - - -	241, 245, 248
“ Collapsed Reservoir, - - - - -	243
“ Hydro-pneumatic Cistern, - - - - -	247
Redfield's Map of Sources of the Hudson River, - - - - -	321
Gaylord's Sketches of Sunset Radiations, - - - - -	338, 339, 340
Loomis's Diagram of the path of the Stow Hurricane, 1837, - - - - -	369
Page's Rotary Multiplier, - - - - -	376
“ new form of Electrepeter, - - - - -	378
Olmsted's Astronomical Diagrams, - - - - -	392, 393

## VOL. XXXIV.—PLATES.

	Page.
1. R. C. Taylor's Ground Plan of a group of Indian Mounds, of various forms, on the elevated Prairie, seven miles east of the Blue Mounds, in Wisconsin Territory, - - -	88
2. " Plan of other Indian Mounds, - - -	88
3, 4, 5. Anatomy of the <i>Caligus americanus</i> , by Pickering and Dana, - - - - -	225
6. Loomis's Magnetic Chart of the United States, 1838, -	290

## WOOD CUTS.

Veins in the Diamond, - - - - -	38
Prof. Johnston's simplified Air-pump, - - - - -	86
O. P. Hubbard, Trap Dikes in Granite, - - - - -	106
" " " at the Falls in Campton, N. H.,	109
" " " in Tamworth and Eaton, N. H.,	113, 114
" Granite Veins in Granite, White Mountains,	123
Prof. Locke's Electro-magnetic Dipping Needle, - - -	129
Lake Shore near Chicago, Illinois, (C. U. Shepard,)	135
Coal Formation of Upper Illinois, " - - - - -	143
Various Fossil Shells, " " " -144, 150, 151, 152,	153
Page's new Magnetic Electrical Machine, 164, 166, 168,	371
Fossil Bones found in Louisiana, - - - - -	202, 203
Galvanic Circuit through different Metals, - - - - -	206
Bones of Fossil Elephant found at Jackson, Ohio, -	363
<i>Ceratocephala goniata</i> , and <i>C. ceralepta</i> , (trilobites,)	378, 379

## VOL. XXXV.—PLATES.

1. Vascular System of Ferns, and monstrous flower of <i>Orchis spectabilis</i> , (J. W. Bailey,) - - - - -	113
2. Bailey's figures of Fossil Infusoria, and recent Diatomæ,	118
3. Figures of new Shells, by Benj. Tappan, - - - - -	268

## WOOD CUTS.

House in which Nathaniel Bowditch was born, - - -	2
Plan of Niagara Falls and vicinity, - - - - -	102
Page's Magnetic Electrometer and Electrotome, - - -	112
Crosse's Electrical Apparatus with insects emerging, -	136
Angles and Casts of Crystals of Carbonate of Lime, 140,	141
Redfield's Map of the Raleigh's Typhoon of 1835, - - -	214
Page's Electro-magnetic Apparatus, 258, 260, 262, 264,	267
Diagram of Circular Storm with reference to steering of ships,	280
Campbell's Electro-magnetic Engine, - - - - -	343
Apparatus for solidifying Carbonic Acid, - - - - -	349

	Page.
Electro-magnetic Multiplier, . . . . .	357
Fossil Encrinure found near Cincinnati, Ohio, . . . . .	360
Ideal Figures of <i>Loxodes bursaria</i> , . . . . .	374

---

VOL. XXXVI.

WOOD CUTS.

Calymene Bucklandii, (J. G. Anthony), . . . . .	107
Section of the Bluff at Port Hudson, La., with imbedded stumps, . . . . .	118, 120
Zabriskie's Electro-galvanic Magnets, 124, 125, 126, 130, 131	131
Page's Galvanoscope, . . . . .	141
Boomerang, or Kilee, of Australia, . . . . .	165
Cranium of the Mastodon, found near Bucyrus, Ohio, . . . . .	189
Molar Tooth of Fossil Elephant, found in Jackson Co., Ohio, . . . . .	190
Illustration of Elevation of Lava, . . . . .	249
Head of <i>Scincus lateralis</i> , . . . . .	324
Coil of Copper Wire for making Magnets, . . . . .	336
Page's Electro-magnetic Apparatus, . . . . .	350, 351, 352
Tube for crystallizing Carbonic Acid, . . . . .	394

---

VOL. XXXVII.—PLATES.

1, 2. Trilobites and recent animals allied to them, from Buck- land's Bridgewater Treatise, . . . . .	27
----------------------------------------------------------------------------------------------------------	----

WOOD CUTS.

Imaginary Rock Section, . . . . .	57, 64, 68
Page's Magneto-electric Multiplier, . . . . .	275
<i>Liatris flexuosa</i> , (a plant,) by David Thomas, . . . . .	339
Plans of the track of the New Haven Tornado, July, 1839, . . . . .	343

---

VOL. XXXVIII.

WOOD CUTS.

<i>Gnathodon flexuosa</i> , by T. A. Conrad, . . . . .	93
Henry's Electro-magnetic Apparatus, 210, 211, 215, 220, 223, 224, [227, 228, 229, 232, 235, 238, 240, 241, 242	256
Tracks of Animals in Variegated Sandstone, at Pölzig, . . . . .	256
Section of Strata of New Red Sandstone at Pölzig, . . . . .	257
Jones's Compensating Pendulum, . . . . .	275, 276
Sections of Town's improved Bridge, . . . . .	292, 293, 295
View of " " " " . . . . .	296

	Page.
Prof. Johnston's Apparatus for solidifying Carbonic acid,	299
Cranium of an Alligator from Luconia, - - -	312
R. Hare's apparatus for decomposition and recomposition of Water, - - - - -	336
"    Rotary Galvanic Multiplier, - - -	339
Figures of Cerebra of American Indian and European,	355
Cranium of a Swiss, - - - - -	358
"    "    an ancient Peruvian, - - - - -	361
"    "    modern Peruvian, - - - - -	366
"    "    Huron, - - - - -	368
"    "    Araucanian, - - - - -	369

---

VOL. XXXIX.—PLATES.

1. Chart of hourly observations of Temperature at Amherst,	36
2. Loomis's Magnetic Chart of the United States, 1840, -	41
3. Trumbull Gallery, Yale College, - - - - -	213

WOOD CUTS.

Galvanic Experiments and Arrangements, - - -	31, 33, 34
Parhelia, (Willis Gaylord,) - - - - -	62
Crystals of Apophyllite, (F. Alger,) - - - - -	159
Crystal—Heulandite, " - - - - -	160
"    Stilbite, " - - - - -	161
"    Rhomboidal quartz, " - - - - -	162
Byssus of the Naiades, (Kirtland,) - - - - -	167
Martin's diagrams illustrating central forces, 263, 265, 269,	273
Filaria in a Horse's eye, - - - - -	278
Achtheres percarum, - - - - -	285
Diagrams illustrating Abbot's paper on the Pneumatic Para- dox, - - - - - 299, 303, 304, 306, 308, 312, 314	314
Crystals of Ledererite, (C. U. Shepard,) - - -	359

---

VOL. XL.—PLATES.

1. Crater of Kirauea, (Hawaii,) 1838, (Frontispiece,) -	117
2. Lea's Figures of twenty-four Fossil Shells, - - -	92

WOOD CUTS.

Solar Halos, Aug. 28, 1840, (A. T. King,) - - -	25
Abbot's Electro-magnetic Apparatus, - - - - - 104, 109,	111
Apparatus for Electrography, - - - - -	158
Illustrations of paper on Temperature of Mercury in a Siphon Barometer, by Prof. F. N. Benedict, - - - - -	253, 258
Dr. Hare's Chemical Apparatus, - - - - - 297, 300, 301,	304
Mass of Native Iron from near Oswego, N. Y., - - -	366
Crystals of new variety of Beryl, from Haddam, - - -	401

## VOL. XLI.—PLATES.

	Page.
1. Portrait of Sheldon Clark, (Frontispiece,) - -	217
2. Taylor's View of Geological Model of Southern Coal Field of Pennsylvania, - - - - -	80
3, 4. Bailey's Figures of American Bacillaria, - - - - -	284, 304
5. Shells from the Secondary and Tertiary Formations, (T. A. Conrad,) - - - - -	344

## WOOD CUTS.

W. C. Redfield's Sketch of the Prostrations on a section of the track of the New Brunswick Tornado, June 19, 1835, - - -	79
Illustrations to Henry's paper on Electro-Dynamic Induction, - - - - -	120, 137, 141, 146
Apparatus for preparing Manilla Hemp, - - - - -	201
Polythalamia from the Upper Mississippi, &c., - - - - -	401

## VOL. XLII.—PLATES.

1, 2. Bailey's Figures of American Bacillaria, - - - - -	88, 104
3. H. C. Lea's Figures of eight new species of Shells, - - - - -	106
4, 5. Leedom's Tellurium, an Astronomical Machine, - - - - -	338
6. <i>Isotelus megistos</i> , - - - - -	366

## WOOD CUTS.

Apparatus for detecting Arsenic, - - - - -	77, 79
Redfield's Charts of the Storm of Dec. 15, 1839, - - - - -	116, 117
Fossil Bones from Oregon Territory, - - - - -	137, 139
Combustion by means of Wood Ashes, - - - - -	167
Furnaces, &c., for smelting Lead, - - - - -	170, 171, 173
Microscopic views of powder which fell on deck of a vessel, - - - - -	196, 197
Alabaster Concretion from Mammoth Cave, Kentucky, - - - - -	207
Spark Extinguisher, - - - - -	209
Sketch of Glaciers, Moraines, &c., - - - - -	347, 354, 355
Sketches of the Alps and the Jura, - - - - -	359, 360
Crown of a Fossil Molar Tooth found in Opelousas, La., - - - - -	390

## VOL. XLIII.—PLATES.

1. Slab of Limestone with Footprints and Scroll found in bed of Mississippi at St. Louis, in 1819, - - - - -	14
2. Dewey's Figures of Carices, Tab. Cc, figs. 94-97, - - - - -	90
3. Bones of two new Fossil Mammals from Georgia, United States, (1) <i>Sus americana</i> , Harl., - - - - -	143
(2) <i>Chelonia Couperi</i> , Harl., - - - - -	144

	Page.
4. Illustrations to Prof. Loomis's paper on the Mayfield Tornado, Feb. 4, 1842, - - - - -	278
5, 6. Prof. Bailey's Figures of American Bacillaria, - - - - -	321, 331
7. Engelmann's North American Cuscutineæ, - - - - -	333, 345

WOOD CUTS.

Fossil Shells, (Producta,) - - - - -	18
“ Coral, (Archimedes,) - - - - -	19
Pentremites pyriformis, - - - - -	20
Indian Axe, of hornblende rock, - - - - -	31
Section of Strata near Mineral Point, Wisconsin Terr., - - - - -	37
Furnace for Smelting Lead, - - - - -	46, 49
Section of Strata, showing Copper-ore Veins, - - - - -	61
New species of Thracia, (C. B. Adams,) - - - - -	145
Acarus and eggs, (the eggs first supposed to be a microscop- ic fungus,) - - - - -	206
Redfield's Diagrams illustrating paper on the Providence Tor- nado, - - - - - 266, 267, 269, 272, 275,	278
Crystals of Washingtonite, (C. U. Shepard,) - - - - -	364

VOL. XLIV.—PLATES.

1. Map of the Province of Tarapaca, in South Peru, - - - - -	1
2, 3, 4, 5. Plans of Ancient American Mounds, &c., in Wiscon- sin, - - - - -	21
6, 7, 8. Bones of a new Fossil Animal, found in Missouri, (Oryc- terotherium missouriense, Harl.,) - - - - -	69

WOOD CUTS.

Diagram to represent the Earth and its Atmosphere, - - - - -	17
Crystals of Mesotype, (L. C. Beck,) - - - - -	57
“ Stilbite and Heulandite, (L. C. Beck,) - - - - -	59
Section of Red Sandstone Strata at Boonton, N. J., - - - - -	135
Figures of a Carbon Voltaic Battery, by B. Silliman, Jr., 181, 182	181, 182
Map of Richmond (Indiana) and vicinity, - - - - -	282
View of Pisolitic Strata, - - - - -	284
Section of ancient Channels of Streams, - - - - -	285
Fossil Fucoids, Richmond, Ind., - - - - -	290, 291
Various Fossils, &c., Richmond, Ind., 292, 293, 294, 295, 299, 300,	301
Nodules of Iron Pyrites, Richmond, Ind., - - - - -	312
Diagrams illustrating Dové's paper on the Law of Storms, 321, 328	321, 328
New Trilobite, (Ceraurus crosotus,) - - - - -	346
Magnetic Apparatus, - - - - -	418

VOL. XLV.—PLATES.

1. Tabular Diagram of observations on Tides in the North Amer- ican Lakes, - - - - -	18
-----------------------------------------------------------------------------------------	----

	Page.
2. Map of the World, with the track of the U. S. Exploring Expedition, and showing distribution of Coral Islands in the Pacific, . . . . .	131
3. Torpedo occidentalis, Storer; . . . . .	165
4. Prof. Alexander's Barometer, . . . . .	233
5. Teeth of Lepidostei, by J. Wyman, . . . . .	359

## WOOD CUTS.

Diagrams illustrating Mr. Chas. Tracy's paper on the Rotary Action of Storms, . . . . .	67, 69, 71, 72
Section of the Ice Mountain of Hampshire Co., Va., . . . . .	79
Diagrams illustrating Dent's new Compensation Balance for Chronometers, . . . . .	87, 88, 90, 91, 92, 93
*Great Comet of February, 1843, between pp. . . . .	200 and 201
Parts of the Ceraurus crosotus, . . . . .	223
Diagram to show operation of Water falling over a Dam, . . . . .	369
Curves showing results of experiments with Grove's Battery, . . . . .	391, 392
Crystals of Eremite, (J. D. Dana,) . . . . .	402

## VOL. XLVI.—PLATES.

1, 2. Fossil Footmarks at Turner's Falls, near Greenfield, Mass., . . . . .	73
3. Bailey's Figures of Fossil Infusoria, . . . . .	137

## WOOD CUTS.

Diagram showing force of Solar Rays, &c., . . . . .	14
Crystals of Calc Spar, (J. D. Dana,) . . . . .	33
“ Zircon, Pyrites and Sphene, (J. D. Dana,) . . . . .	36
Section of Niagara River, . . . . .	70
Diagram illustrating Tails of Comets, . . . . .	128
Draper's Tithonometer, . . . . .	225
Crystals of Beaumontite, . . . . .	234
Twining's Geometrical Diagrams, . . . . .	324, 327, 328, 329
Apparatus for Analysis of the Carbonates, . . . . .	351
Crystals showing striated surfaces, (J. D. Dana,) . . . . .	365
Crystal of Galena distorted, (J. D. Dana,) . . . . .	366
Crystal of Apatite “ (J. D. Dana,) . . . . .	366
Crystals curved, . . . . .	366
Macle Crystal of Staurotide, . . . . .	368
Improvement in Wollaston's Reflecting Goniometer, . . . . .	372
Crystal of Borate of Lime, . . . . .	377
“ Haydenite, . . . . .	379
“ Datholite, (J. D. Dana,) . . . . .	380
Crystals of Andalusite, (J. D. Dana,) . . . . .	381
“ Chondrodite, (J. D. Dana,) . . . . .	381
Crystal of Sillimanite, (J. D. Dana,) . . . . .	382
“ Danaite, . . . . .	384



VOL. XLVII.—PLATES.

	Page.
1. Portrait of William Maclure, . . . . .	1
2. Map illustrating General Laws of Temperature throughout the United States, . . . . .	18
3. Plate exhibiting the different Laws of Temperature at Key West and Fort Snelling, . . . . .	26, 223
4, 5. Ichnolites, or Fossil Footmarks, . . . . .	292, 316

WOOD CUTS.

Crystal of Anatase, . . . . .	216
Diagrams illustrating R. H. Fauntleroy's paper on the Equi- librium between Living and Dead Forces, . . . . .	243, 244, 245
Diagram's illustrating J. H. Coffin's paper on the Secular Acceleration of the Moon's mean motion, . . . . .	325, 329, 332
Lingula antiqua, . . . . .	356
Various Fossils, found in State of New York, . . . . .	358, 361, 363, 364, [365, 366, 367, 368, 370, 376, 377, 378]
Whitlock's Geometrical Diagrams, . . . . .	380, 381
Unionidæ of the Country of the Iguanodon, . . . . .	404, 405
Cranium of a new species of Hippopotamus, S. G. Morton, . . . . .	407

VOL. XLVIII.—PLATES.

1. Bailey's Figures of Crystals found in Plants, . . . . .	17, 32
2. Dewey's Figures of Carices. Tab. Dd, figs. 98-105, . . . . .	140
3. Footmarks of unknown Animals from the Stratified Sandstone of Turner's Falls, near Greenfield, Mass., . . . . .	158
4. Bailey's Figures of Fossil and Recent Infusoria, . . . . .	321, 342
5. Redfield's Chart exhibiting the Ice as observed in the North Atlantic, . . . . .	373

WOOD CUTS.

Apparatus for Galvanography, . . . . .	244, 245, 246
Section of Beds at Sterling, N. J., . . . . .	257
Head of a Fossil Crocodile ( <i>Crocodylus</i> [ <i>Gavialis</i> ] <i>clavirostris</i> ), from New Jersey, . . . . .	265
<i>Astarte</i> <i>mastracea</i> , (Linsl.) a new shell, . . . . .	275
<i>Fusus</i> <i>Trumbulli</i> , (Linsl.) " . . . . .	285
<i>Nautilus</i> <i>connecticutensis</i> , (Linsl.) " . . . . .	286
Various Fossils found in the State of New York, . . . . .	299, 300, 303, [305, 306, 307, 309, 311, 312, 313, 314]
Fossil Footmarks found in Westmoreland County, Penn- sylvania, A. T. King, . . . . .	344, 345, 346, 347, 348, 349, 350, 351
Figure of a mass of Meteoric Iron from Cambria, N. Y., . . . . .	389
Print from " " " " " . . . . .	390

## VOL. XLIX.—PLATES.

## I. Dewey's Figures of Carices. Tab. Ee, figs. 106-117,

Page.  
42

## WOOD CUTS.

Prof. Snell's new articles of Philosophical Apparatus, -	21
Plan of Artificial Mounds in Louisiana, - - -	40
Maps of Copper Harbor, Lake Superior, &c., - - -	65, 66
Prof. Snell's Diagram to illustrate theory of Halos, -	77
New species of Batrachian Footmarks, by J. Deane, -	80, 215
Electrical Apparatus, - - - -	109
Page's new Electro-magnetic Engines, - - - -	133
“ Axial Galvanometer, - - - -	137
“ Double Axial Reciprocating Engine, - - - -	141
Footprints from Westmoreland Co., Penn., (A. T. King,) -	217
Prof. Hitchcock's Map and section, showing a singular case of Drift in Massachusetts, - - - -	260, 261
Solar Index, a new Magnetical Instrument, - - -	306
Sketches of a mass of Meteoric Iron from Tennessee, -	339, 340
Apparatus connected with Prof. Draper's paper on the Allotropism of Chlorine, &c., - - - -	352

250 Col M

---

INDEX VOLUME

OF THE

AMERICAN JOURNAL OF SCIENCE AND ARTS.

---



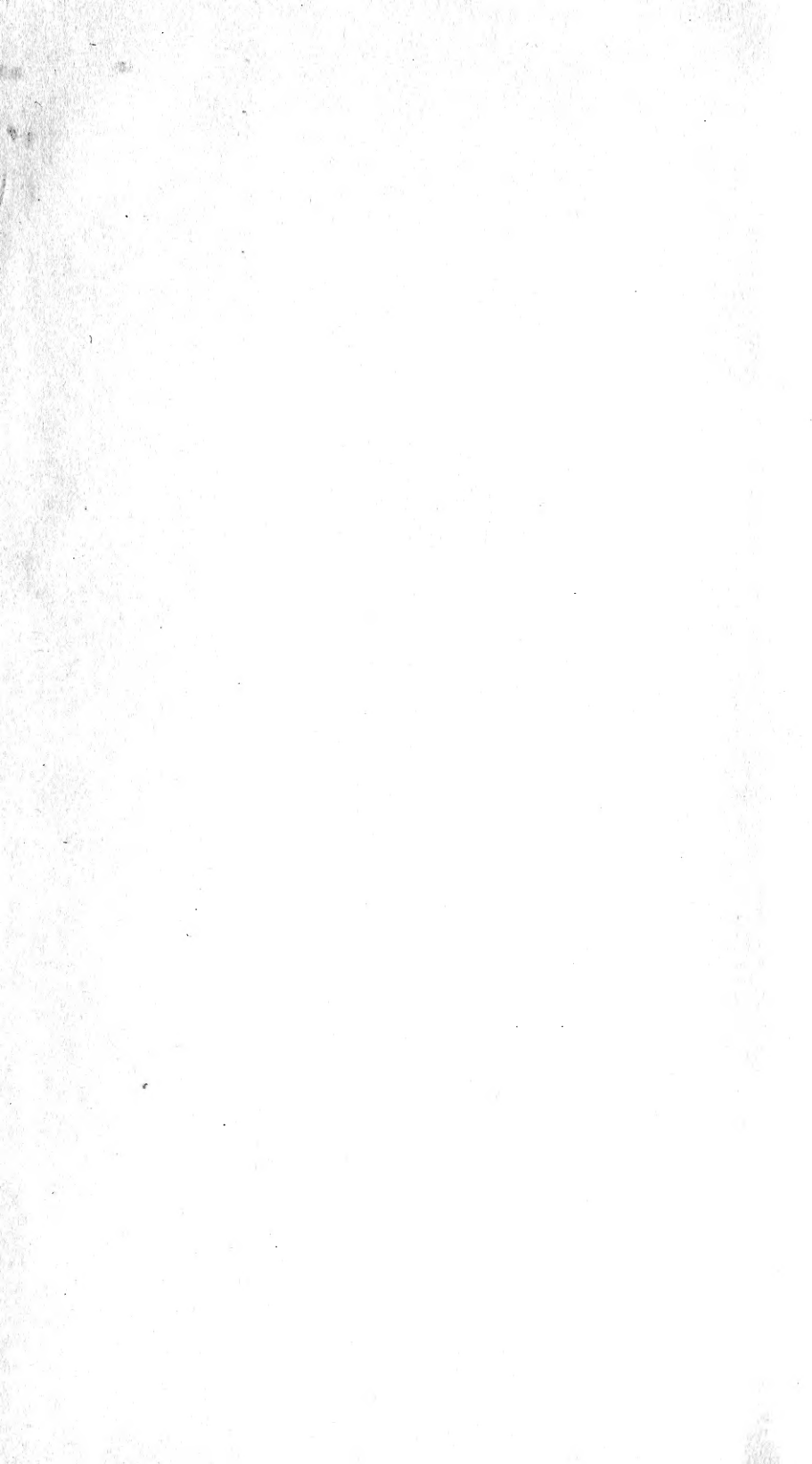












SMITHSONIAN INSTITUTION LIBRARIES



3 9088 01298 4506